



**City of Brisbane Comments**

***California High Speed Rail Project: San Francisco to San Jose Project Section***

***Draft Environmental Impact Report/Environmental Impact Statement***

**State Clearinghouse No. 2016052019**

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September 8, 2020

Client-Matter: 23890-032

**VIA EMAIL AND SUBMISSION TO THE HSR WEBSITE**

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**SAN FRANCISCO TO SAN JOSÉ PROJECT SECTION**

**DRAFT EIR/EIS COMMENT**

100 Paseo de San Antonio, Suite 300  
San José, CA 951413

Re: Comments by the City of Brisbane, California, on the Draft Environmental Impact Report/Environmental Impact Statement for the San Francisco to San Jose Section of the California High-Speed Rail Project

To Whom It May Concern:

**INTRODUCTION**

On behalf of the City of Brisbane, California (the “City”), we hereby submit comments on the Draft Environmental Impact Report/Environmental Impact Statement (“Draft EIR/EIS” or “Draft”) for the San Francisco to San Jose section (“Project”) of the California High-Speed Rail Project under the California Environmental Quality Act (“CEQA”) and the National Environmental Policy Act (“NEPA”).<sup>1</sup>

We conclude that the Draft EIR/EIS is fatally defective under CEQA and NEPA, implementing regulations, and governing case law. Further, the Draft is unusable as a matter of law. It should and must be abandoned in favor of a new, independent, and comprehensive environmental analysis. Anything less would be illegal and a disservice to the environment and to the people of California, the Bay Area, and the City.

The City did not come to this conclusion lightly. The City’s Comments are born of a thorough analysis of the Draft EIR/EIS by subject matter experts. These experts were tasked with independently reviewing the full record that led the California High-Speed Rail Authority (“Authority”) to recommend locating the Light Maintenance Facility (LMF) on the Baylands and only the Baylands. The experts’ reviews conclude that the Draft EIR/EIS does not come close to meeting the requirements of CEQA and NEPA.

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<sup>1</sup> “We” or “us” includes Manatt, Phelps & Phillips, LLP, the Sohagi Law Group, PLC, Metis Environmental Group, and numerous discipline-specific subcontractors referenced herein and in supporting materials. The “City’s Comments” or “Comments” include this cover letter and its attachments, including the detailed subject matter analyses and independent reports upon which these analyses are based.

This left the City with a nagging question. In a state and region that are perhaps more committed to environmental responsibility and sustainability than any others in the nation, why would the Authority publish a legally inadequate Draft EIR/EIS? Perhaps because, as critics of the Project have long said, the objective is not to satisfy the law but to satisfy a deadline.

The City is unwilling to yield to a process that is driven by something other than compliance with environmental law and science.

## EXECUTIVE SUMMARY

The Draft EIR/EIS is legally and materially insufficient as a matter of law and must be set aside and the environmental review process restarted.

The deficiencies in the Draft defy core principles of CEQA and NEPA, including:

- fatally relying throughout the document upon a Project Description that is much too general for a project-level EIR, as well as being inaccurate, imprecise, and uncertain;
- using inaccurate existing conditions and future baselines that effectively hide the Project's significant impacts;
- consistently failing to identify and quantify specific impacts in Brisbane and other localities attributable to the Project—especially noise, land use, biological resources, and hazardous waste impacts—precluding the ability to identify meaningful and enforceable mitigation measures;
- hiding behind so-called impact avoidance and minimization features purportedly incorporated as Project features, thus short-circuiting the CEQA process and avoiding its responsibilities for impact identification and mitigation imposition;
- presenting a cumulative analysis that is so general and inadequate as to be meaningless; and
- failing to identify any meaningful range of potential Project alternatives other than one predetermined location, thereby precluding any evaluation whatsoever of such other potential alternatives, including alternative LMF sites with less environmental impact on the region and the City.

Beyond failing to meet the most rudimentary CEQA and NEPA requirements, the Draft EIR/EIS also disregards core California state policy priorities, environmental protection regimes, and agency regulatory oversight functions.

For all these reasons, the Authority must abandon the Draft document and approach that are fatally deficient under governing precedents and prepare and recirculate a completely rewritten Draft EIR/EIS.

## **THE PROJECT IGNORES THE CITY'S CRITICAL RESPONSE TO THE CALIFORNIA HOUSING CRISIS**

Few issues have activated both state legislators and local elected officials statewide more than California's housing crisis. It is a crisis of both accessibility and affordability, impacting the entire state.<sup>2</sup> And yet, production of more residential units remains highly contentious and polarizing, making progress difficult. And an era of coronavirus threatens to only make things worse.<sup>3</sup>

Brisbane offers one of very few shining success stories of collaboration and compromise by local leaders, Sacramento lawmakers, and on-the-ground advocates in response to the housing crisis.<sup>4</sup> After years of study, often contentious public hearings, and tireless negotiation, Brisbane's City Council partnered with housing champions in the Legislature to find a compromise solution whereby thousands of residential units would be sited in immediate proximity to existing transit, and local oversight and control would be maintained, and fundamental decision-making authority would be vested in local residents.

The result, local ballot Measure JJ, was put on the ballot in 2018 and passed by the City's voters despite meaning voters were agreeing to effectively double the size of the cap of the City. This unselfishness is heralded in Sacramento, and indeed statewide, as a model for bringing proactive housing solutions to critical locations in an environmentally responsible manner that residents can support.<sup>5</sup>

The Authority has been fully aware for years of the critical interest of both Sacramento legislators and local stakeholders in Brisbane's abundant supply of vacant but environmentally impacted land immediately adjacent to an existing Caltrain station—the so-called Baylands. And the Authority is fully aware of the City electorate's vote to support environmentally responsible housing and related development on the Baylands.

Nonetheless, the Authority has forged ahead myopically, determined to site its 100-acre LMF on the Baylands with no regard whatsoever for the implications for the provision of housing on those same lands. So focused has been the Authority that, as its plans moved forward and the need for housing on the Baylands grew, the Authority evolved its criteria analysis for the LMF to exclude virtually any potential site other than the Baylands. Among many other fatal

<sup>2</sup> <https://sanfrancisco.cbslocal.com/2019/06/02/housing-crisis-california-legislators/>.

<sup>3</sup> <https://www.latimes.com/socal/daily-pilot/opinion/story/2020-07-22/commentary-a-housing-crisis-may-be-the-next>.

<sup>4</sup> <https://www.kqed.org/news/11704646/plan-to-build-housing-on-toxic-landfill-site-looks-likely-to-pass>.

<sup>5</sup> <https://www.mercurynews.com/2018/04/15/sacramento-leans-on-cities-to-solve-the-housing-crisis/>.

deficiencies, the blatant failure to meaningfully consider the impact of its proposed LMF on both existing and proposed future housing, as well as the failure to evaluate potential alternative sites for the LMF, dooms the Draft EIR/EIS under well-established precedents for both CEQA and NEPA.

## **THE DRAFT EIR/EIS FATALLY IGNORES STATE PROTECTIONS OF AQUATIC RESOURCES**

The Draft EIR/EIS makes no effort to even identify, let alone mitigate, impacts to aquatic resources such as wetlands and other waters protected under state law. Instead, the Draft EIR/EIS erroneously and illegally purports to take an over-inclusive approach to protecting waters that “may” be jurisdictional federally, apparently insinuating that such a casting of the regulatory net would necessarily catch resources protected under state law. This is wrong and legally impermissible. In fact, California prides itself on a robust and distinct regime of resource identification and protection specifically because of perceived deficiencies in federal regimes.

To highlight the unjustifiable disregard of state regulatory regimes for waters of the state, we note that the Draft EIR/EIS fails to even mention the most recent regulatory enactment by the State Water Resources Control Board, the product of over a decade of evaluation and negotiation with the regulated community and environmental NGOs. The “State Wetland Definition and Procedures for Discharges of Dredge or Fill Materials to Waters of the State” (“State Waters Policy”) was adopted on April 2, 2019, and became effective on May 28, 2020. The Draft EIR/EIS never mentions, let alone seeks to demonstrate future compliance with, the State Waters Policy.

## **THE DRAFT EIR/EIS CONCLUDES “FULLY PROTECTED” SPECIES WILL BE ILLEGALLY KILLED**

California law identifies a small universe of species that are fully-protected. Statute and California Supreme Court precedent make clear that as to these “fully protected species,” no negative implications are permissible. None. They may not even be “caught” by agency biologists for relocation purposes. And yet, two such species are in the path of the Project, and the technical analysis underlying the Draft EIR/EIS says plainly that there is no strategy to ensure the avoidance of potentially fatal harm to members of these species. It is illegal to harm fully protected species, and the Authority acknowledges that locating the LMF on the Baylands will result in harm. Consequently, the Draft cannot be certified.

## **THE DRAFT EIR/EIS FAILS TO MEANINGFULLY ADDRESS HAZARDOUS MATERIALS AND AN ABANDONED LANDFILL ON THE SITE**

The presence of hazardous wastes and materials on the Baylands is not a secret to anyone. Nor is one of the primary priorities embodied in Measure JJ that local officials and the local community must remain in a position of oversight for remediation of the site prior to any housing being approved. The planning documents for the Baylands, in fact, require adoption of a landfill closure plan and remediation plan for the site in advance of any approvals for construction activities.

Despite the agreement between Sacramento and Brisbane, the Draft EIR/EIS—though readily recognizing the contamination on the proposed West location for the LMF and the historic abandoned landfill on the East location—makes no effort to identify, let alone quantify, the measures and costs implicated in remediating either site to the satisfaction of governing regulatory agencies. Included with these Comments is an analysis by EKI Environment & Water (“EKI”), experts in the remediation of contaminated sites and the handling of hazardous wastes. In its general introductory comments, EKI notes the glaring omission of any consideration of remedial measures and costs for either site:

The description of the East Brisbane [maintenance facility] (p. 2-77) does not acknowledge the fact that the 100-acre facility would be located at an existing landfill site that has active oversight by the Water Board and would require closure by the Water Board and CalRecycle prior to construction of the [maintenance facility]. Rather, the description focuses on nearby track modifications and realignments but does not indicate that millions of cubic yards of landfill would have to be excavated to achieve the grade of the railroad tracks. While Section 3.10 of the Draft EIR[/EIS] (Hazardous Materials and Wastes) acknowledges that the East Brisbane [maintenance facility] would overlie the former Brisbane Landfill, the Draft EIR[/EIS] never presents the full regulatory closure process that would have to be implemented as part of the project (see comments on Impact HAZ#10).

...

The description of the West Brisbane [maintenance facility] (p. 2-98) does not acknowledge the fact that the 110-acre facility would largely be located at an existing remediation site that has active oversight by the Water Board and the DTSC, and construction of the LMF would require planning and oversight by those agencies.

The open acknowledgment of the contamination and unclosed landfill on the Baylands and an absolute failure to address in any way what would be required to remediate either site sufficiently to allow construction of the proposed LMF are fatal defects in the Draft EIR/EIS. In fact, the implications of an LMF on either portion of the Baylands are sufficiently complex that a freestanding, project-level CEQA/NEPA analysis of its own is legally warranted.

## **THE DRAFT EIR/EIS IGNORES SIGNIFICANT TRAFFIC AND INFRASTRUCTURE IMPACTS**

The LMF will have significant, adverse impacts on traffic and related infrastructure in Brisbane, yet the Draft EIR/EIS fails to address these even though avoiding conflicts with existing infrastructure is specifically identified as a "site requirement" by the Authority.

The Authority published a fact sheet describing the reasons that Brisbane was selected for the LMF. The fact sheet added a site requirement that was not actually part of the Authority's Supplemental Alternative Analysis: (Site Availability (Avoid conflicts with built improvements). The notion that the Brisbane LMF would "avoid conflicts with built improvements" is belied by the fact that its construction would require:

- Demolition and relocation of the existing Tunnel Avenue bridge, resulting in 1-3 months of unacceptable emergency response within a portion of the community;
- Demolition and realignment of both Tunnel Avenue and Lagoon Road, as well as realignment of City streets providing access to the community's downtown area;
- Demolition and relocation of the City's existing fire station;
- Excavation into the former Brisbane Landfill requiring disposal of an unknown amount of hazardous and non-hazardous waste placed in the landfill before operations ceased in 1967 (East LMF);
- Demolition and removal of the City's existing corporation yard (East LMF); and
- Demolition of the historic Machinery & Equipment building, along with demolition of the Mission Blue Nursery.

## **THE DRAFT EIR/EIS IGNORES UNIQUE NOISE ISSUES IN THE AREA**

There has long been a perception by Brisbane residents that noise is amplified in the City compared with other communities, and this concern was raised by residents in multiple public meetings. In addition, the Final Brisbane Baylands Program EIR analyzed this phenomenon and confirmed it—the City's terrain does, in fact, have an effect on ambient noise and sound propagation in the community.

This phenomenon is attributable to many factors, but the most obvious is that the slopes on which most City residents reside form a natural amphitheater that gives those residents the “best seats in the house” for all the activity that the LMF would bring.

The Draft EIR/EIS’s failure to evaluate noise impacts to existing homes given these unique acoustic dynamics of the City, coupled with the complete ignoring of future housing approved for the immediate vicinity, renders the analysis of noise impacts fatally deficient under both CEQA and NEPA requiring full re-analysis of impact significance and formulation of appropriate mitigation measures and alternatives.

## **THE DRAFT EIR/EIS IMPROPERLY SEEKS TO JUSTIFY A SINGLE, PREDETERMINED OUTCOME**

The Draft EIR/EIS is legally inadequate as a matter of law for the reasons discussed in this letter and more fully documented in the City’s Comments. The Draft is also legally deficient because it is born of a process that was changed in odd ways that virtually ensured elimination of any site but the Baylands for the LMF. Specifically, although a 65-acre site was determined to be adequate to accommodate all specified functions for the LMF, the Authority surprised the City by announcing at least 100 acres is required. Though “stub-ended” facilities are standard in the industry and are functionally commensurate, the Authority also mandates that the LMF have double-ended access at both ends of the facility.

These changes and other disqualifying criteria—some added only after the initial criteria were published—made other alternative sites appear to be infeasible while ensuring only the Baylands could meet all of the criteria. Yet even with this unduly and illegally narrow focus, as noted above and otherwise addressed in the City’s Comments, the analysis of the Baylands makes clear that the Draft EIR/EIS are fatally deficient and cannot be certified.

## **CONCLUSION**

As thoroughly documented herein, the fatal deficiencies in both the factual content of and methodological approach to the Draft EIR/EIS are so foundational, systemic, and pervasive throughout the entirety of the document that the Draft cannot be certified as a matter of law on multiple grounds.

We anticipate the Authority will offer to correct deficiencies in the Draft with minor revisions, but that is legally insufficient. The Draft must be set aside.

We also anticipate the Authority will argue that the Project is incredibly complex and can be changed over time to address the City’s legal and environmental concerns. Respectfully, the



Northern California Regional Office  
CALIFORNIA HIGH-SPEED RAIL AUTHORITY  
September 8, 2020  
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Authority had more than a decade to get this Draft right and failed. Giving the Authority more time will accomplish nothing.

It is obvious to the City that the Authority failed because it focused on a location and tried to justify it, rather than let the law and science guide the site selection process as CEQA and NEPA require. It is time for the Authority to rule out the Baylands and instead focus on safe and legal alternatives.

Very truly yours,

*Thomas R. McMorrow*

Thomas R. McMorrow

cc: Governor Gavin Newsom  
State Senator Jerry Hill  
Assembly Speaker Pro Tempore Kevin Mullin  
Brisbane City Council  
Clay Holstine, City Manager  
John Swiecki, Community Development Director

Attachments

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September 8, 2020

**VIA EMAIL AND SUBMISSION TO THE HSR WEBSITE**

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**SAN FRANCISCO TO SAN JOSÉ PROJECT SECTION**

**DRAFT EIR/EIS COMMENT**

100 Paseo de San Antonio, Suite 300

San José, CA 951413

*Re: Comments by the City of Brisbane, California, on the Draft Environmental Impact Report/Environmental Impact Statement for the San Francisco to San José Section of the California High-Speed Rail Project (State Clearinghouse No. 2016052019)*

To Whom It May Concern:

**I. INTRODUCTION**

On behalf of our client the City of Brisbane (“City”), The Sohagi Law Group is submitting these comments on the Draft Environmental Impact Report/Environmental Impact Statement (“Draft EIR/EIS”) for the High-Speed Rail San Francisco to San José Project Section (“Project”). As this letter demonstrates, the Draft EIR/EIS fails to meet the requirements of the California Environmental Quality Act (“CEQA,” Pub. Resources Code, § 21000 et seq.), the National Environmental Policy Act (“NEPA,” 42 U.S.C. § 4321 et seq.), and numerous other environmental laws.

**II. SUMMARY OF MAJOR DRAFT EIR/EIS DEFICIENCIES**

The Draft EIR/EIS totally fails to meet an EIR’s fundamental objective: to provide a sufficient degree of analysis to provide decision makers with information that enables them to make a decision which intelligently takes account of environmental consequences. As demonstrated below, the Draft EIR/EIS suffers from many deficiencies, including the following:

- The project description is opaque and fails to accurately describe the proposed Project features at a project-level, or even a programmatic-level in many instances.
- The Draft EIR/EIS fails to analyze any alternatives to the proposed alignment and ignores the recommendations of the California High-Speed Rail Authority’s

(“Authority”) own consultants to study alternative sites for the light maintenance facility (“LMF”) proposed in Brisbane. There are numerous potentially feasible alternative sites that would reduce significant environmental impacts and must be studied in detail.

- The Authority prejudicially abuses its discretion by failing to disclose critical information relied upon in the Draft EIR/EIS, including dozens of reports, studies, and memoranda omitted from the appendices and not available on the Authority’s Project website.
- The Authority has prematurely committed to approving the sole alignment evaluated in the Draft EIR/EIS regardless of its significant environmental effects or the availability of feasible alternatives.
- Reliance on inaccurate baselines skews the Draft EIR/EIS’ impact analyses to minimize Project impacts. Existing conditions baselines – e.g., for noise levels and biological resources – are woefully outdated. Future 2029 and 2040 baselines omit the proposed Brisbane Baylands development (“Brisbane Baylands” or “Baylands”)<sup>1</sup>, even though the Baylands project is called for by the City’s General Plan and recognized as a reasonably foreseeable project in Draft EIR/EIS Appendix 3.8-A, thereby ignoring substantial Project impacts on future Baylands residents.
- The impact analyses are far too generalized and vague, downplaying or simply ignoring significant impacts in Brisbane for most resource topics analyzed, including noise, land use, biological resources, and hazardous materials/waste. Major deficiencies include:
  - The Draft EIR/EIS fails to analyze the unacceptably high noise levels that future Baylands residents will experience and does not quantify noise impacts from the LMF at all, even through it is planned to operate 24 hours a day, seven days a week and LMF noise would be audible to much of the community during the day and throughout the night even when no trains are passing by.
  - The land use impact analysis minimizes the substantial land use conflicts and General Plan inconsistencies that the proposed LMF sites cause in Brisbane. These inconsistencies are simply unacceptable given the state’s housing crisis and will compound the negative impacts of this crisis on the region, including housing affordability, displacement, quality of life, and traffic congestion. The Project would significantly impact residential Baylands areas on a 24/7 basis, while offering no mitigation for such impacts.
  - The biological resources impact analysis omits site-specific analysis and mitigation for many sensitive biological resources in Brisbane. For example,

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<sup>1</sup> See <https://brisbanebaylands.com/event/project-updates/>.

the analysis minimizes significant impacts on special status species and wetlands found on Icehouse Hill from West LMF construction. Similarly, nowhere does the Draft EIR/EIS analyze or mitigate the serious environmental impacts caused by the proposed relocation of Visitacion Creek, despite the fact that one option involves constructing a new 2,300-foot open channel that would discharge the Creek into Brisbane Lagoon rather than San Francisco Bay.

- The hazardous materials/waste analysis fails to analyze site-specific hazards associated with LMF construction on either the former Brisbane Landfill or Brisbane Rail Yard remediation sites. Construction at either location could expose existing and future Brisbane residents to unacceptably high concentrations of methane, and toxic air and water pollutants. In addition, the Draft EIR/EIS fails to acknowledge or commit to the site remediation that would be required as a prerequisite for the West LMF or the Title 27 compliant landfill closure procedures required as a prerequisite for construction of the East LMF.
- The Draft EIR/EIS fails to recognize that LMF construction would require truck-hauling of up to 3 million cubic yards of spoils including at least 432,000 cubic yards of contaminated soils for the West LMF and an undisclosed amount of and hazardous waste for the East LMF, causing significant impacts on transportation, air quality, greenhouse gas (“GHG”), and solid waste disposal systems.
- The impact analyses improperly rely on Impact Avoidance and Minimization Measures (“IAMFs”), many of which are not physical design features at all but rather poorly disguised mitigation measures lacking in any performance standards. Many of these IAMFs also defer analysis of the Project’s impacts, including identification of emergency access routes during temporary road closures identified in the document, as well as hydrology and geotechnical studies. This short-circuits the CEQA process, making it impossible to understand the nature of the Project’s site-specific impacts, whether they are significant pre-mitigation, whether the IAMFs would be effective, and whether other more effective measures exist in violation of the court’s ruling in *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645 (“*Lotus*”).
- Many IAMFs and mitigation measures are improperly deferred, unenforceable, and/or ineffective. Many IAMFs and mitigation measures call for vague future studies, plans, or memoranda to define the extent of impacts and provide mitigation details without performance standards. The Draft EIR/EIS does not explain why it is impractical or infeasible to include mitigation details in the Draft EIR/EIS now.
- The cumulative impact analysis approach does not comply with basic CEQA requirements. It is so high-level as to be meaningless, fails to disclose the impacts

of related future projects such as the Baylands development, and fails to recognize that the Project has cumulatively considerable contributions to many significant cumulative impacts.

- The Draft EIR/EIS does not demonstrate compliance with other environmental laws, as required by CEQA. For example, it fails to recognize the existence of California’s recently enacted state wetlands regulatory program, fails to identify state-protected wetlands and waters affected by the Project, and admits that that the Project may result in the illegal taking of at least two species designated as “fully protected” under state law.

These deficiencies can be remedied only by *discarding and completely rewriting* the Draft EIR/EIS to comply with CEQA requirements. The rewritten Draft EIR/EIS must then be recirculated for additional public review, pursuant to CEQA Guidelines section 15088.5. After completing a thorough project-level analysis based on site-specific investigations of the Brisbane LMF sites and a CEQA-compliant analysis of potentially feasible alternative LMF sites, it will be clear that Brisbane is an undesirable and infeasible location for the LMF.

The comments below demonstrate why the Draft EIR/EIS fails to meet many CEQA requirements, especially for a project-level EIR, and why it must be substantially revised and recirculated for another round of public comments. The comments are organized as follows:

- Statement of general standards for EIR adequacy
- Summary of major Draft EIR/EIS deficiencies
- Project description and alternatives analysis deficiencies
- Impact analysis and mitigation measures inadequacies
- Cumulative impact analysis inadequacies
- Draft EIR/EIS recirculation requirements
- Lack of compliance with other environmental laws

These legal comments are supported by the following consultant reports prepared by experts, which further demonstrate why the Draft EIR/EIS is inadequate. These consultant reports are hereby incorporated into this letter by reference. The consultant comments represent separate City technical comments on the Draft EIR/EIS, for which the City expects the Authority to provide separate responses.

- Metis Environmental Group (“Metis”) letter, including the following consultant reports as attachments to the Metis letter:
  - Attachment Metis-A: Metis Environmental Group Resumes

- Attachment Metis-B: Hexagon Transportation Consultants Comments and Resumes
- Attachment Metis-C: EKI Hazardous Materials and Wastes Comments and Resumes
- Attachment Metis-D: Entech Northwest Noise and Vibration Comments and Resumes
- Attachment Metis-E: Ten Over Studio Fire Station Site Design Comments and Statement of Qualifications
- Attachment Metis-F: City of Brisbane Public Works Department, Brisbane LMF Evaluation and Alternatives Review
- Attachment Metis-G: Brisbane Baylands Project Water Supply Assessment, May 24, 2013
- Attachment Metis-H: Page & Turnbull Memorandum and Resume
- Letter from Chief Elizabeth Macias, City of Brisbane Police Department, September 4, 2020
- Letter from Todd Johnson, Deputy Fire Chief, North County Fire Authority, September 4, 2020

The legal comments and consultant reports emphasize inadequacies of the Draft EIR/EIS in analyzing impacts within Brisbane but also point out many flaws affecting local areas along the entire San Francisco to San José Section.

### **III. STANDARDS FOR EIR ADEQUACY**

““The EIR is the heart of CEQA” and the integrity of the process is dependent on the adequacy of the EIR. [Citations.] [Citation.] ‘The purpose of an [EIR] is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.’” ([Pub. Resources Code,] § 21061.)” (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1045 (“*Treasure Island*”).)

The Draft EIR/EIS utterly fails to meet the following general standards for EIR adequacy established by case law the CEQA Guidelines (Cal. Code Regs., tit. 14., § 15000 et seq.; hereafter “Guidelines.”).

- An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which “intelligently takes account of environmental consequences.” (Guidelines, § 15151.)

- A lead agency preparing an EIR must use its “best efforts to find out and disclose all that it reasonably can.” (Guidelines, § 15144.)
- An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. ... The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.’ (Guidelines, § 15151.)” (*Treasure Island, supra*, 227 Cal.App.4th 1036, 1045.)
- The level of detail of an EIR should match the level of detail of a proposed project. An EIR prepared on a construction project such as the High-Speed Rail (“HSR”) Project will necessarily more detailed in the “specific effects” of the project than an EIR for a local plan or zoning ordinance. (Guidelines, § 15146.)
- An EIR must present a fact-based analysis, not just the lead agency’s conclusions or opinions. (See *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 522 (“*Friant Ranch*”).) Specific data must be presented when it is required for a meaningful analysis of a significant impact and it is reasonably feasible to provide the specific data. (*Id.*, at 519.)

#### IV. INADEQUATE PROJECT DESCRIPTION

##### A. Project Description is Insufficiently Detailed to Allow Meaningful Environmental Review

“An accurate, stable and finite project description is the Sine qua non of an informative and legally sufficient EIR.” (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192–193.) “[A] project description that gives conflicting signals to decision makers and the public about the nature and scope of the project is fundamentally inadequate and misleading. [Citation.] ‘Only through an accurate view of the project may affected outsiders and public decision makers balance the proposal’s benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal i.e., the “no project” alternative[ ], and weigh other alternatives in the balance.’ [Citation.]” (*Treasure Island, supra*, 227 Cal.App.4th 1036, 1052.)

Here, the Draft EIR/EIS fails to meet basic CEQA standards for describing a proposed project accurately and with sufficient detail to allow for meaningful analysis.

##### 1. *Lack of detail and precision in the project description violates CEQA.*

A project description that fails to adequately describe a project’s technical characteristics prejudicially violates CEQA’s requirements to provide an accurate, stable, and finite description of the project. (*Stopthemillinniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 18—19 (“*Stopthemillinniumhollywood.com*”).)



The Draft EIR/EIS states that the project is “designed to a preliminary level of engineering,” which the Authority claims is “sufficient to identify and analyze potential environmental impacts.” (Draft EIR/EIS, p. 2-1.) However, the level of detail provided in the project description is far from sufficient as discussed throughout this letter and the letter from Metis, incorporated into this letter by reference. In many ways, this is due to the inherent, and potentially insurmountable, challenge of attempting to analyze this 49-mile, multi-jurisdictional, multi-faceted behemoth of a project in a single project-level document. This is most apparent with respect to the proposed 100-acre LMF in the City of Brisbane, which the Draft EIR/EIS fails to describe in sufficient detail to allow for meaningful review as demonstrated throughout this letter and discussed in [Section IV.A.2](#), *infra*.

It is also apparent that the project description is subject to change in potentially dramatic ways. Specifically, the EIR/EIS explains:

Portions of the Project Section with blended Caltrain and HSR operations would be implemented on facilities owned by the Peninsula Corridor Joint Powers Board (PCJPB).<sup>2</sup> **While the alternative descriptions have been developed based on planning assumptions and preliminary engineering conducted by the Authority for the purposes of environmental analysis, the ultimate implementation of the project (both physical infrastructure and service operations) on PCJPB-owned facilities would be subject to further joint blended system planning and agreement with PCJPB as governed through existing and future interagency agreements.**

(Draft EIR/EIS, p. 2-4, emphasis added.)

Thus, there is no certainty that the “planning assumptions and preliminary engineering” upon which the project description is based will be anything like the project that the PCJPB may ultimately agree to, and the Draft EIR/EIS does not explain, much less analyze, what types of changes might result from “further joint blended system planning” with PCJPB. This leaves the public and the decision makers with no confidence that the project described and analyzed in the Draft EIR/EIS will be anything like the final project design, and it gives them no clues as to how that final design might differ from the project analyzed in the Draft EIR/EIS. This is fundamentally unacceptable.

The Draft EIR/EIS also explains that “geotechnical investigations to define precise geologic, groundwater, and seismic conditions along the alignment” would not occur until final design, despite the fact that “[t]he results of this work would guide final design and construction methods for foundations, stations, and aerial structures.” (Draft EIR/EIS, p. 2-130.) Thus, the Authority admits that it does not currently have sufficient information about the design and construction methods for the Project’s foundations, stations, and aerial structure. These are critical components of the Project. By not defining these technical

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<sup>2</sup> PCJPB is the owner and managing authority for the Peninsula Corridor.

characteristics now, the Draft EIR/EIS cannot meaningfully evaluate and disclose their impacts. Further, by waiting for final design to undertake geotechnical investigations, the Authority is depriving the public of information about whether the proposed design is feasible or requires revisions, the extent to which adverse geotechnical conditions would be encountered at specific locations, and their severity. Within the East LMF in Brisbane, for example, it cannot be known what would need to be done to create a stable platform for the LMF.

One of the more egregious features of the project description is its discussion of stations. The Draft EIR/EIS admits that “Station design is developed at a conceptual level” and only provides examples of other existing stations, acknowledging that actual station design would be developed much later. (Draft EIR/EIS, p. 2-8.) This is insufficient for project-level review, and it squarely falls within the type of conceptual project description found to violate CEQA in *Stoephemillinniumhollywood.com*. There, the court found that conceptual scenarios that fail to describe the siting, size, mass, or appearance of proposed buildings do not satisfy CEQA. (*Stoephemillinniumhollywood.com, supra*, 39 Cal.App.5th 1, 18.) The Draft EIR/EIS’s description of stations clearly fails this test.

The description of station-area parking suffers from the same fatal flaw. The Draft EIR/EIS acknowledges that “[b]ecause of the uncertainty regarding the need for station-area parking, this Draft EIR/EIS conservatively identifies parking facilities based on the maximum forecast for parking demand at each station, the local conditions affecting access planning, and practical means for delivering required parking. This approach identifies the upper range of actual needs and the maximum potential environmental impacts of that range.” (Draft EIR/EIS, p. 2-114.) This is, again, the type of conceptual, worst-case-scenario analysis that the court specifically rejected in *Stoephemillinniumhollywood.com*.

Another example of the Draft EIR/EIS’s failure to adequately describe the Project is its brief and high-level discussion of acquisition of “excess property” that is not intended to be part of the operation right-of-way. Without identifying any particular property with specificity, the Draft EIR/EIS explains that “activities required on a given parcel would depend on site conditions including the presence of buildings or other structures, existing land uses, and habitat conditions.” (Draft EIR/EIS, p. 2-131.) Such activities may include structure demolition, vegetation management, pest management, site security, and structure maintenance. (*Id.*, pp. 2-132 to -133.) Yet these activities are not analyzed anywhere in the Draft EIR/EIS, and the Draft EIR/EIS gives no indication that the Authority plans to analyze these activities at some future point. Troublingly, in its analysis of socioeconomic and communities, the Draft EIR/EIS indicates that “[p]artial acquisitions that would not result in displacement or relocation are not included in this analysis because they would consist of minor sliver acquisitions of parcels that are currently adjacent to the Caltrain corridor, which would not substantially affect communities and neighborhoods.” (Draft EIR/EIS, p. 3.12-12.) However, this is not the case in Brisbane where the East LMF would remove Golden State Lumber’s existing lay-down area for off-loading and storing lumber shipped by rail. Loss of its lay-down area would require Golden State Lumber to block Tunnel Avenue



while it unloads lumber shipments from rail cars. The Draft EIR/EIS also does not address displacement of the City's corporation yard under the East LMF. Thus, in clear violation of CEQA and NEPA, the Authority has simply failed to analyze major components of its proposed project. The environmental impacts from acquisition of excess property must be analyzed and disclosed now in a recirculated Draft EIR/EIS.

**2. *There is insufficient detail about the LMF in Brisbane to allow for meaningful evaluation.***

The LMF proposed for Brisbane would consume between 100 and 110 acres and include 17-yard tracks adjacent and parallel to a maintenance building containing eight (8) shop tracks with interior access and inspection pits for underside and truck inspections. The maintenance building would provide storage areas for reserve equipment, workshops, and office space. A power generator, sewage system, cistern, collection point, and electrical substation would be north of the maintenance building with a 400-space surface parking lot for automobiles and trucks east of the maintenance building. (Draft EIR/EIS, pp. 2-77, 2-98.)

In many respects, due to its size, scale, and potential for impacts unique to its location, the LMF is a large industrial project unto itself. Yet the Draft EIR/EIS seems to treat it as just another part of the track.<sup>3</sup> Critically, the project description fails to mention that the proposed locations of both the West and East LMFs are within areas undergoing active site remediation and Title 27 of the California Code of Regulations landfill planning and regulatory review.<sup>4</sup> This fact is also ignored in the Draft EIR/EIS's evaluations of potential impacts to hazards and hazardous materials, water quality, erosion, air quality, and land use impacts. (See, *infra*, comments specific to these resource topics.)

A large portion of the East LMF is located on the former Brisbane Landfill. As explained in detail in the attached Metis letter, the project description fails to disclose the fact that, as a result, construction of the East LMF would require removal of a large portion of the former landfill and completion of Title 27 landfill closure procedures. It also fails to address whether the proposed excavation and offsite hauling of over 2.2 million cubic yards of materials would leave sufficient soil for a landfill cover over the remaining portions of the landfill or provide sufficient cover material for use in remediation of Operable Unit San Mateo ("UPC-OU-SM"), which is in the northwestern portion of the Baylands and is under the jurisdiction of the California Department of Toxic Substances Control ("DTSC") and Operable Unit 2 ("UPC-OU-2"), which is in the southwestern portion of the Baylands and is under the jurisdiction of the Regional Water Quality Control Board ("RWQCB").<sup>5</sup>

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<sup>3</sup> For example, the analysis of temporary construction impacts on utilities never discusses water or wastewater impacts from the LMF, only electrical impacts.

<sup>4</sup> See Metis discussion of project description and setting's failure to adequately analyze hazards and hazardous materials.

<sup>5</sup> See Figures Metis-1 and Metis-2.

Information regarding site remediation for UPC-OU-SM and UPC-OU-2 as well as Title 27 landfill closure needs to be incorporated into the Draft EIR/EIS, including its description of the Project and its analyses of hazards and hazardous materials, water quality, erosion, air quality, odor, biological resources, public health, land use, and other relevant impacts.

The Draft EIR/EIS also fails to disclose that the LMF in Brisbane is proposed to function in conjunction with an LMF proposed in Gilroy, approximately 20 miles south of the San José Diridon Station, as part of the Merced to San José Section. This information is buried in Appendix F-2 of the Draft EIR/EIS, frustrating the public's ability to understand the relationship between the proposed Brisbane LMF and the entirety of the line. Critically, Appendix F-2 reveals that the LMFs at Brisbane and Gilroy are "envisioned to work together" and that "[m]aximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability." (Draft EIR/EIS, Appx. 2-F, pp. 7-8.) This information must be included in the body of the Draft EIR/EIS and is essential to the discussion of the Project's purpose and need as well as alternatives, as further discussed below.

Additionally, the Draft EIR/EIS does not include adequate detail about the LMF facility to allow for meaningful analysis. For example, the analysis of aesthetic impacts states, "The LMF would be integrated into the surrounding commercial and industrial visual environment to the extent feasible. The Authority would solicit input from local jurisdictions and incorporate local aesthetic preferences into final design and construction of the LMF with regard to vegetative screening, the design of the realigned Tunnel Avenue overpass, and modifications to the Bayshore Station (AVQ-IAMF#1, AVQ-IAMF#2)." (Draft EIR/EIS, p. 3.15-100.) In other words, there is no current proposal for what the LMF will actually look like, making analysis of its aesthetic impacts virtually impossible. As a related issue, the analysis of aesthetics fails to address the loss of Icehouse Hill that would occur with construction of the West LMF. It also does not address impacts of night lighting for an over 100-acre operation proposed to operate 24 hours a day, seven days a week in an area that is currently largely devoid of light. While AVQ-IAMF#1 refers the reader to the Authority's Aesthetic Options for Non-Station Structures, that document does not actually have any standards or guidelines related to light trespass or dark night sky. This is just one example; many others are identified throughout this letter and in the attached letter from Metis.

As further detailed in the attached letter from Metis, the Draft EIR/EIS also lacks information regarding emergency access during the closure of the Tunnel Avenue bridge and Tunnel Avenue in the vicinity of the East and West Brisbane LMF sites, the location of the East and West LMFs in relation to ongoing site remediation and Title 27 landfill closure plans, site grading, and construction activities, and emergency access during LMF construction.

In sum, because the project description is so general and imprecise, the level of analysis presented in the Draft EIR/EIS is even more general than a program-level analysis.

Before the Authority could approve any portion of the Project, including the LMF, it must analyze its impacts at a project-level to ensure full disclosure of impacts and informed decision making.

**B. The Draft EIR/EIS Fails to Clearly Identify the Proposed Project, Frustrating Public Participation**

The Draft EIR/EIS presents the proposed project as “Alternative A.” This use of NEPA terminology is likely to confuse and mislead the public, which is far more familiar with CEQA terminology. (See *Washoe Meadows Community v. Dept. of Parks and Recreation* (2017) 17 Cal.App.5th 277, 288 (“*Washoe Meadows*”) [“[F]ailure to identify or select any project at all ... impairs the public’s right and ability to participate in the environmental review process.”].) The body of the Draft EIR/EIS should be revised to clearly identify Alternative A as the proposed Project. This naming convention also gives the impression that there are two Project alternatives, A and B. In fact, and as discussed in [Section V](#), *infra*, the Draft EIR/EIS actually analyzes only one proposed project, with extremely minor variations described as “Alternative B.”

Additionally, the Draft EIR/EIS discusses a design variant within the San José Diridon Station Approach Subsection (“Diridon Design Variant”) but fails to inform the public whether this design variant is part of the Authority’s Preferred Alternative. Confusingly, there is no mention of the Diridon Design Variant in Chapter 8, *Preferred Alternative*, and discussion of the Diridon Design Variant in Chapter 2, *Alternatives*, and Section 3.19, *Design Variant to Optimize Speed*, sheds no additional light on this question.

Further obscuring the issue is the statement in the Draft EIR/EIS that “[t]he ongoing multi-agency Diridon Integrated Station Concept planning process is a separate planning process and decisions about future changes to the San José Diridon Station and the surrounding, PCJPB ed rail infrastructure and corridor are the subject of multiple planning and agreement processes that are proceeding independently from this environmental process.” (Draft EIR/EIS, p. 2-4.) The Draft EIR/EIS does not elaborate on the referenced “ongoing multi-agency Diridon Integrated Station Concept planning process,” but it appears there is significant additional planning work to be done on the Diridon Station before it could possibly be analyzed at a project-level under CEQA as the document purports to do. Thus, the Draft EIR/EIS presents the Diridon Design Variant “without the designation of a stable project [which is] an obstacle to informed public participation” and is prejudicial error. (See *Washoe Meadows*, *supra*, 17 Cal.App.5th 277, 290.) The Draft EIR/EIS must be revised and recirculated to clearly describe the proposed Project’s Diridon Station design in sufficient detail to allow for meaningful analysis and to ensure adequate public participation on the Authority’s selection of the Diridon Design Variant.

**C. Certain Project Features are Assumed in Impact Analyses, But Not Included in Project Description**

“[A]n accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.” (*San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730.) Where an EIR includes conflicting, shifting, or incomplete information about a project, it fails to comply with CEQA. (*Ibid.*)

Throughout this letter and that of Metis, there are examples of information about the Project’s characteristics that have only been gleaned through careful review of the individual resource sections, appendices, and technical reports requested from the Authority. That violates CEQA. Instead, they ought to have been located up front in the document’s description of the Project and included on the Authority’s website, so that the EIR’s analysts, the public, and the decision makers would have a complete picture of the Project without having to resort to making special requests for documents to the Authority.

As one example, Impact BIO#19 in Section 3.7, Biological and Aquatic Resources, discloses that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands.” (Draft EIR/EIS, p. 3.7-71.) It would appear, therefore, that the Project includes relocation of Visitacion Creek, but that fact is not mentioned in the Project description. As a result, this significant project element is not analyzed in the other resource areas and its full impacts have not been disclosed.

Other examples include (1) the fact that the Authority is proposing to modify the street pattern that provides access to Brisbane’s downtown area, which is never mentioned in Chapter 2 or elsewhere in the EIR and can only be discerned with a careful review of Draft EIR/EIS graphics such as Figure 2-32 and 2-43; (2) the fact that construction of the West LMF would excavate approximately 432,000 cubic yards of soils that may be contaminated and require special disposal as hazardous waste, which is only mentioned in Section 3.6, Public Utilities and Energy and is inexplicably ignored in Section 3.10, Hazards Materials and Wastes; (3) the fact that the Brisbane LMF is proposed to be a 24-hour per day, 7 days per week operation requiring night lighting for worker safety and security (only disclosed in Section 3.15, Aesthetics and Visual Quality); (4) the fact that the East LMF would remove Golden State Lumber’s existing lay-down area for off-loading and storing lumber shipped by rail; (5) the lack of any information regarding emergency and public access during the closure of the Tunnel Avenue bridge and Tunnel Avenue in the vicinity of the East and West Brisbane LMF sites and during LMF construction; and (6) other issues discussed in detail in the incorporated Metis letter.

**D. Project Purpose, Need, and Objectives are Inadequate**

Under CEQA, an EIR’s statement of objectives should include the underlying purpose of the project and should be clearly written to guide the selection of mitigation

measures and alternatives to be evaluated in the EIR. (Guidelines, § 15124(b).) A clear statement of project objectives is critical to the evaluation of project alternatives in an EIR since CEQA requires that alternatives should be consistent with attaining most of the basic objectives of the project. (Guidelines, §§ 15126.4(a)(1), 15126.6(a).)

The Draft EIR/EIS identifies ten “CEQA Project Objectives.” (Draft EIR/EIS, pp. 1-13 to -14.) There are at least two major issues with these objectives.

First, Draft EIR/EIS Section 2.5.2.1 explains that the April 2010 *Preliminary Alternatives Analysis Report for the San Francisco to San José Section* (“PAA”)<sup>6</sup> documents the 2009 scoping process that “informed the initial range of alternatives for the Project Section.” (Draft EIR/EIS, p. 2-31.) The PAA identified eight (8) project objectives, which generally align with the first eight objectives identified in the Draft EIR/EIS. Notably, however, the Draft EIR/EIS includes *two additional* objectives, including an objective to “[p]rovide [a] blended system infrastructure that supports a viable operations plan for HSR, while also minimizing environmental impacts and maximizing compatibility with Peninsula communities.” (Draft EIR/EIS, p. 1-14.) Because the Authority has identified two additional project objectives since its 2009 scoping process, it is possible that additional alternatives may now meet “most” of the project objectives and should be analyzed in the Draft EIR/EIS. It is also apparent that the Brisbane LMF site thwarts the Project’s ability to meet the objectives of maximizing compatibility with Peninsula communities. The Authority must reevaluate previously dismissed alternative sites in light of these new objectives.

Second, none of ten project objectives address maintenance or apply to the proposed LMF facility. Thus, there is no connection between the project objectives and the evaluation of alternatives to the proposed LMF in Brisbane. This is unacceptable and renders the Draft EIR/EIS’s list of project objectives and analysis of alternatives inadequate. When the Authority revises this list of project objectives, it should not fail to account for the fact that maintenance objectives for the San Francisco to San José Section are intrinsically linked to the Merced to San José Section and the proposed Gilroy LMF. (See Draft EIR/EIS, Appx. 2-F.)

Moreover, the Draft EIR/EIS’s identification of three “siting criteria for maintenance facilities” is misleading, incomplete, and unstable. Specifically, while the Draft EIR/EIS mentions the criteria of (1) site size, (2) proximity to the mainline tracks, and (3) double-ended lead tracks (Draft EIR/EIS, p. 2-35), the “fact sheet” presented at the July 20, 2020 Online Open House adds two more criteria: (4) proximity to the San Francisco Terminal Station, and (5) site availability.<sup>7</sup> Adding and/or disclosing new criteria for the first time at this late stage shifts the floor beneath the public’s feet during the Draft EIR/EIS review

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<sup>6</sup> The PAA is not included as an appendix to the Draft EIR/EIS and is not available on the Authority’s website for public review.

<sup>7</sup> Available at <https://www.meethsrnorcal.org/light-maintenance-facility.html?locale=en>.



period, fails to ensure that all stakeholders have an opportunity to review and understand the criteria, and frustrates public participation. It also opens the possibility of additional alternatives to the LMF that could meet the Authority's criteria if a proper scoping and analysis process is allowed to take place. As discussed below, there are a number of potentially feasible LMF alternatives that the Authority must evaluate.

#### **E. Ridership Projections Justifying the Project are Inflated Given COVID-19**

The Draft EIR/EIS relies on ridership forecasts developed for the 2016 Caltrain Business Plan with some consideration of Caltrain's 2018 Business Plan and the Draft 2020 Business Plan. (Draft EIR/EIS, pp. 2-111 to -112.) This data obviously pre-dates the onset of the ongoing COVID-19 pandemic in the United States and the significant changes in behavior it has introduced. The severity and duration of the pandemic are still unknown, but it is clear it will have a major, lasting effect on human behavior, including huge declines in transit ridership in the Bay Area.<sup>8</sup> In fact, on July 27, 2020 Caltrain published a COVID-19 Rider Survey, which reveals that 79% of riders are not currently riding Caltrain, 45% of riders do not know when they will start riding Caltrain, and 45% of riders anticipate they will ride Caltrain less than before COVID-19 or not at all.<sup>9</sup>

Despite the dramatic decline in transit ridership, the Draft EIR/EIS makes no mention of the pandemic. This is a critical mistake because reduced ridership forecasts call the entire purpose of the Project into doubt. The public and the decision makers must be given an accurate picture of the demand for the Project that supposedly justifies its construction despite its significant environmental impacts. Further, it is not the case that lower ridership levels would result in fewer impacts than presented in the Draft EIR/EIS, as the Authority claims. (See Draft EIR/EIS, p. 2-112.) In fact, lower ridership numbers may open the door to new potentially feasible alternatives with even fewer impacts overall. This is particularly true of the LMF in Brisbane, the size of which the Authority admits is dependent on ridership. (Draft EIR/EIS, p. 2-113.)

These issues are perhaps symptomatic of a larger crisis facing the Authority, calling the viability of the entire HSR system into question.<sup>10</sup>

#### **V. INADEQUATE RANGE AND ANALYSIS OF ALTERNATIVES**

CEQA requires an EIR to identify feasible alternatives that could avoid or substantially lessen a proposed project's significant environmental effects. (Pub. Resources

<sup>8</sup> See California Transit Association, *Bay Area in Transit Crisis*, July 27, 2020, available at <https://caltransit.org/resources/coronavirus-awareness/bay-area-fact-sheet/>.

<sup>9</sup> Caltrain COVID-19 Rider Survey, June 22 – July 12, 2020, available at [https://www.caltrain.com/Assets/\\_MarketDevelopment/pdf/Caltrain+COVID-19+Rider+Survey+Topline+Results.pdf](https://www.caltrain.com/Assets/_MarketDevelopment/pdf/Caltrain+COVID-19+Rider+Survey+Topline+Results.pdf).

<sup>10</sup> See SLG, Exh. 3, Los Angeles Times Article.

Code, § 21002.) The discussion of alternatives is “core” to an EIR. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.) An EIR must include a “reasonable range” of alternatives to the proposed project, or to its location, that would feasibly attain most of the project’s basic objectives while reducing or avoiding any of its significant effects. (Guidelines, § 15126.6(a).) The discussion of alternatives “shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” (Guidelines, § 15126.6(d).)

Further, “[u]nder CEQA, the range of alternatives that an EIR must study in detail is defined in relation to the adverse environmental impacts of the proposed project. An EIR must include a description of feasible project alternatives that would substantially lessen the project’s significant environment effects.” (*In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1167, citing Pub. Resources Code, § 21061 and Guidelines, § 15126.6(d), (f).) An EIR must focus on alternatives that would avoid or substantially lessen a project’s significant environmental effects. (Pub. Resources Code, § 21002; Guidelines, § 15126.6(a)-(b).) An EIR should not exclude an alternative from detailed consideration merely because it “would impede to some degree the attainment of the project objectives, or would be more costly.” (Guidelines, § 15126.6(b).)

The Draft EIR/EIS fails to meet these basic requirements for alternatives analysis, as explained below.

**A. The Tiered Nature of the Draft EIR/EIS Does Not Excuse the Authority from Analyzing Alternatives to the Proposed Alignment**

As a preliminary matter, it is important to understand the context of the Draft EIR/EIS within the larger HSR system and its environmental analysis. The Authority has used a “tiered” system of environmental review, addressing the broad HSR program in a series of Tier 1 environmental documents, then analyzing the details of sections of the system in subsequent, project-level Tier 2 documents. (See Draft EIR/EIS, pp. 1-3 to 1-4.)

Specifically, in 2005, the Authority and the Federal Railroad Administration (“FRA”) programmatically analyzed a statewide HSR system in a Tier 1 environmental document: the *Final Program EIR/EIS for the Proposed California High-Speed Train System* (“*Statewide Program EIR/EIS*”).<sup>11</sup> At the conclusion of this Tier 1 process, the Authority and FRA selected “preferred corridors” for the statewide HSR system to be studied in more detail in Tier 2 EIR/EISs. (Draft EIR/EIS, p. 1-3.)

In 2008, after completing the Statewide Program EIR/EIS, the Authority and FRA prepared additional Tier 1 environmental analysis of the HSR system: the *Bay Area to*

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<sup>11</sup> California HSR Authority, Statewide Program EIR/EIS, located, in part, at [https://hsr.ca.gov/programs/environmental/eis\\_eir\\_statewide.aspx](https://hsr.ca.gov/programs/environmental/eis_eir_statewide.aspx).

*Central Valley High-Speed Train Program EIR/EIS*.<sup>12</sup> In that EIR/EIS, the Authority evaluated corridor and station locations for the HSR connection between the Bay Area and the Central Valley within the broad corridor between and including the Altamont Pass and Pacheco Pass. The *Bay Area to Central Valley High-Speed Train Program EIR/EIS* analyzed only one alignment between San Francisco to San José – the shared alignment with Caltrain, i.e., the same alignment evaluated in the Tier 2 Draft EIR/EIS under review today.<sup>13</sup> At the conclusion of this process, the Authority approved the “Pacheco Pass Network Alternative with San Francisco and San José Termini, including the shared-Caltrain alignment between San Francisco and San José.”<sup>14</sup> Following certification of the *Bay Area to Central Valley High-Speed Train Program EIR/EIS*, project opponents including the Town of Atherton, the Planning and Conservation League, the City of Menlo Park, Transportation Solutions Defense and Education Fund, the California Rail Foundation, and the Bayrail Alliance petitioned for a peremptory writ of mandate to set aside certification of the *Bay Area to Central Valley High-Speed Train Program EIR/EIS*. The history of that litigation is discussed in *Town of Atherton v. California High Speed Rail Authority* (2014) 228 Cal.App.4th 314 (“*Town of Atherton*”).<sup>15</sup>

In 2012, as a result of that litigation, the Authority performed additional programmatic environmental review for the Bay Area and the Central Valley section and again selected the Pacheco Pass connection (in the *Bay Area to Central Valley High-Speed Train Partially Revised Final Program EIR*). The Authority advanced the existing Caltrain corridor in the San Francisco to San José Section for Tier 2 study, including the four station locations included in the current Tier 2 Draft EIR/EIS that is the subject of this letter.

While it is appropriate for the Tier 1 decisions to have guided the Authority to advance this alignment for further study, nothing in CEQA or NEPA excuses the Authority from identifying and analyzing geographic alternatives that would reduce or avoid the significant environmental impacts that arise along the alignment. Similarly, nothing in CEQA or NEPA prevents the Authority from reexamining the statewide system, including alignment alternatives that could completely avoid impacts in the City of Brisbane and throughout the San Francisco Peninsula.

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<sup>12</sup> California HSR Authority, Project Section Environmental Documents, Bay Area to Central Valley: Partially Revised Final Program EIR, list of documents, located at [https://hsr.ca.gov/programs/environmental/eis\\_eir/bay\\_area.aspx](https://hsr.ca.gov/programs/environmental/eis_eir/bay_area.aspx).

<sup>13</sup> HSR Authority, Staff Report to *Bay Area to Central Valley High Speed Train Program EIR/EIS*, June 2008, available at [https://hsr.ca.gov/docs/programs/bay\\_area\\_eir/HSR%20Staff%20Report\\_Jun08.pdf](https://hsr.ca.gov/docs/programs/bay_area_eir/HSR%20Staff%20Report_Jun08.pdf).

<sup>14</sup> HSR Authority, Resolution No. 08-01, available at [https://hsr.ca.gov/docs/programs/bay\\_area\\_eir/resolution-08-01.pdf](https://hsr.ca.gov/docs/programs/bay_area_eir/resolution-08-01.pdf).

<sup>15</sup> Notably, the *Town of Atherton* decision indicates that the Authority promised to study a proposed alternative to use an elevated structure over the Highway 101 corridor from the Dumbarton Bridge to San Francisco at the project-level for the San Francisco to San José Section. (*Town of Atherton, supra*, 228 Cal.App.4th 314, 359.)



Despite this, the Draft EIR/EIS concedes that the Tier 2 “alternatives analysis primarily addressed the potential vertical configurations of the alignment alternatives with the Caltrain shared-use corridor.” (Draft EIR/EIS, p. 2-31.) It does not analyze any alternatives to the alignment selected at the Tier 1 phase. The Draft EIR/EIS identifies two so-called “alternatives” for the San Francisco to San José Project Section – Alternative A and Alternative B – in addition to the No Project Alternative. The idea that either of these are true alternatives as that term is used in CEQA, however, is a farce. As explained above, Alternative A is really the proposed Project, though this is difficult to discern from the text of the Draft EIR/EIS. By default, then, Alternative B is the only “build” alternative addressed in the Draft EIR/EIS. For a project of this size and scope, it is patently unreasonable to analyze only one build alternative.

Compounding this problem is the fact that Alternative A and Alternative B follow the *exact same alignment* for all 49 miles of track. (See Draft EIR/EIS, Fig. 2-1.) There are only three minor variations between these “alternatives”:

- Alternative B would locate the LMF just west of the Caltrain corridor within the Brisbane Baylands; Alternative A would place it just east of the Caltrain corridor in the same general location in the Brisbane Baylands;
- Alternative B would include six miles of additional passing tracks between the cities of San Mateo and Redwood City; Alternative A would have no additional passing tracks; and
- Alternative B includes viaduct options to Diridon Station; Alternative A does not.

Other than that, Alternatives A and B include the same three rail stations, the same alignment, and the same technology. In fact, the Draft EIR/EIS concedes that Alternatives A and B are both “consistent with and built from the train technology, alignment corridor, and station locations selected ... at the end of the Tier 1 EIR/EIS process for the HSR system” (Draft EIR/EIS, p. 2-1) and that the “alternatives analysis primarily addressed the potential vertical configurations of the alignment alternatives within the Caltrain shared-use corridor” (Draft EIR/EIS, p. 2-31).

Further, there is no indication that any of the three minor variations between Alternatives A and B were developed to avoid, or are capable of avoiding, the environmental impacts of the proposed Project. They are merely design options. In fact, Alternative B would not reduce any of the proposed Project’s significant and unavoidable impacts to traffic, air quality, noise and vibration, safety and security, land use, and cultural resources. This reveals the backwards approach the Authority has taken to analyzing the proposed Project and confirms that the Authority has pre-committed to approving the Project in violation of CEQA (see [Section VI](#), *infra*). It also fundamentally violates CEQA requirements to analyze alternatives that that would reduce or avoid the significant environmental impacts of the proposed Project. Since the Authority has already made up its

mind to approve Preferred Alternative A, it apparently sees no point in bothering to identify alternatives that would reduce the significant impacts of that project.

In short, Alternative A and Alternative B are actually one project with minor design variations. In violation of CEQA, the Draft EIR/EIS does not analyze even one true alternative.

**B. The Authority Must Analyze Alternative Locations for the LMF Outside of the City of Brisbane**

The Authority's Tier 1 review did not evaluate alternative maintenance facilities. As the Authority's 2008 *CEQA Findings on the Bay Area to Central Valley Program EIR* explain, "The need for a maintenance facility was generally considered and will be further addressed in project-level studies when more detailed engineering information is available concerning facility design and specific alignments."<sup>16</sup>

The 2012 *Bay Area to Central Valley High-Speed Train Partially Revised Final Program EIR* provided the following summary of the Authority's approach to maintenance facilities at the program level:

**D. MAINTENANCE FACILITIES**  
**Preferred Location within study area**  
**Merced Area (Castle AFB)**

*Analysis*

The Program EIR previously identified a preferred maintenance and storage facility location to support the HST fleet in the study region in the Merced area (Castle AFB). For purposes of this Program EIR, two locations were considered for "Fleet Storage/Service and Inspection/Light Maintenance" within the study region: (1) West Oakland; and (2) Merced (near or at Castle AFB). There is strong support in the Merced region (Merced County, U.C. Merced, Congressman Cardoza, Merced County HSR Committee, and the Merced County Association of Realtors) for the maintenance facility. The West Oakland site would not serve the preferred Pacheco Pass alternative but should be considered as a part of future Regional Rail/HST project via the Altamont corridor. **Program-level evaluation considered only a site in the Bay Area at West Oakland as representative of system maintenance needs in the Bay Area. Possible Bay Area locations and sites for fleet storage/service and inspection/light maintenance facility along the preferred HST alternative between Gilroy and San Francisco will be considered as part of project-level**

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<sup>16</sup> California HSR Authority, Bay Area to Central Valley HST, *CEQA Findings of Fact and Statement of Overriding Considerations*, Resolution No. 08-01, June 2008, available at [https://hsr.ca.gov/docs/programs/bay\\_area\\_eir/2%20A1a-Exhibit%20A-%20CEQA%20Findings%20and%20Override.pdf](https://hsr.ca.gov/docs/programs/bay_area_eir/2%20A1a-Exhibit%20A-%20CEQA%20Findings%20and%20Override.pdf).

**engineering and environmental review. In conclusion, for purposes of the Program EIR process, the Merced area remains preferred.**

Over the past two years, additional study and consideration of the heavy maintenance facility for the high-speed train system has been explored as part of project-level EIR/EIS documents for the Merced to Fresno and Fresno to Bakersfield sections. The Authority released a Request for Expression of Interest in 2009, which resulted in multiple potential sites for a heavy maintenance facility in the Central Valley being evaluated, including sites outside the study area for the Bay Area to Central Valley. Accordingly, while the Merced area is preferred at the program level, a wide range of alternatives is being examined as part of project-level EIR/EIS documents.

*(2012 Bay Area to Central Valley High-Speed Train Partially Revised Final Program EIR, p. 6-29, emphasis added.)*

In other words, the Authority's Tier 1 documents did not identify a proposed site for maintenance facilities or any alternative sites. They left that for Tier 2. Unfortunately, the current Tier 2 Draft EIR/EIS fails to evaluate any sites outside of the Brisbane LMF.

Tier 2 planning for the San Francisco to San José Section began in 2008, including development of alternatives for the Project Section. Some of this process is documented in the April 2010 PAA and the August 2010 *Supplemental Alternatives Analysis Report for the San Francisco to San José Section* ("2010 SAA").<sup>17</sup> As described on Draft EIR/EIS page 2-35, alternative LMF sites were preliminarily addressed in the 2010 SAA. "Sites that could potentially accommodate an LMF were subjected to an initial screening process, which focused on the capacity of the sites to meet engineering and design guidelines established through the Authority's Technical Memoranda. This assessment resulted in the identification of four sites that were analyzed in the 2010 SAA." These include the East and West Brisbane sites that are now incorporated into Alternatives A and B,<sup>18</sup> as well as two additional sites: Port of San Francisco (Piers 90-94) and San Francisco Airport ("SFO"). The Authority conducted additional assessment of these four sites as part of its 2019 *San Francisco to San José Project Section Checkpoint B Summary Report*.<sup>19</sup>

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<sup>17</sup> The SAA is not included as an appendix to the Draft EIR/EIS and is not available on the Authority's website for public review.

<sup>18</sup> Although the East Brisbane LMF site is evaluated as part of the Alternative A and the West Brisbane LMF site is evaluated as part of Alternative B, the Draft EIR/EIS makes clear that these are really just "site options for the Brisbane LMF." (Draft EIR/EIS, p. 2-70.)

<sup>19</sup> The *Checkpoint B Summary Report* is not included as an appendix to the Draft EIR/EIS and is not available on the Authority's website for public review and had to be specially requested from the Authority.

Importantly, the Technical Memorandum on which the 2010 SAA relied summarized requirements and guidelines for HSR maintenance facilities<sup>20</sup> and requirements for its operations and maintenance facilities (“O&M Requirements Memorandum”).<sup>21</sup> The stated purpose of the O&M Requirements Memorandum was to “develop a comprehensive listing of requirements for O&M facilities throughout the Phased Implementation of the California High-Speed Train (“CHST”) System. This memorandum describes the characteristics of the facilities: dimensions, overall acreage requirements, special environmental considerations, and considerations for interface to the rest of the CHST System. Environmental, business, commercial, and economic impacts of the facilities on the local communities will be described. The goal is to better inform at the preliminary design phase the decisions associated with engineering and environmental clearance.” Though the Memorandum does not specifically discuss the term “Light Maintenance Facility,” it discusses a Terminal Storage and Maintenance Facility (“TSMF”) with similar operations, which is equivalent to what is described in the San Francisco to San José Section Draft EIR/EIS as the LMF. Critically, the Memorandum does not address any proposed locations for O&M facilities. Instead, the Memorandum concludes that **“to ensure a satisfactory range of alternatives under State and Federal law, multiple site alternatives for the [Heavy Maintenance Facility] sites and TSMF sites should be developed and fully analyzed in project-level EIR/EIS documents.”**

Despite this, for the San Francisco to San José Section, the Authority has failed to develop or fully analyze multiple site alternatives. Instead, it provides only a cursory explanation for why the Port of San Francisco and SFO sites were withdrawn from full evaluation. (Draft EIR/EIS, p. 2-35.) The 2019 *San Francisco to San José Project Section Checkpoint B Summary Report* provides a few additional, but still insufficient, details. That report also fails to demonstrate why other sites beyond the four mentioned in the Draft EIR/EIS would not be feasible. Instead, it simply refers to unspecified “sites throughout the Peninsula” that it claims were assessed and determined to be unsuitable for a host of vague reasons. The *Checkpoint B Summary Report* devotes no more than a page to summarizing these issues, without identifying any site specifically. (See *San Francisco to San José Project Section Checkpoint B Summary Report*, p. 3-13 to 3-14.)

The Draft EIR/EIS makes no mention of other sites at all except in a footnote where it indicates it “recently reviewed and reassessed the 11 sites it considered during its initial

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<sup>20</sup> The referenced technical report is not included as an appendix to the Draft EIR/EIS and is not available on the Authority’s website for public review and had to be specially requested from the Authority. The report is entitled *TM 5.3: Summary Description of Requirements and Guidelines for: Heavy Maintenance Facility (“HMF”), Terminal Layup/Storage & Maintenance Facilities & Right-of-Way Maintenance Facilities*, August 25, 2009.

<sup>21</sup> The O&M Requirements Memorandum is not included as an appendix to the Draft EIR/EIS and is not available on the Authority’s website for public review and had to be specially requested from the Authority. The report is entitled *Summary of Requirements for O&M Facilities*, August 25, 2019.

screening process” and cites to a 2020 evaluation that is not included in the Draft EIR/EIS and is not available on the Authority’s website. (Draft EIR/EIS, p. 2-27, fn.12.) This is the only time the Draft EIR/EIS mentions the existence of other potential alternative LMF sites. Upon request, the Authority provided its May 4, 2020 *Light Maintenance Facility Site Selection Evaluation: San Francisco to San José Project Section Memorandum*, which finally identifies nine other potential LMF sites the Authority eliminated from review. As an initial matter, the failure to disclose these potential alternative sites in the Draft EIR/EIS violates CEQA Guidelines section 15126.6(c), which requires an EIR to “identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the Lead Agency’s determination.”<sup>22</sup> The Authority must circulate for public review and comment its rationale for rejecting these nine potential LMF sites. When it does, it must remember that “the feasibility of the alternatives must be evaluated within the context of the proposed project. ‘The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.’” (*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 599.) For example, the May 4, 2020 memorandum includes cost estimates for the rejected alternatives, but it does not compare these to the cost of constructing the LMF in Brisbane.<sup>23</sup> Absent that comparison, the expense of building the LMF in other locations is meaningless and does not render an alternative infeasible.

The Authority must also consider the other elements of CEQA’s definition of feasibility. “‘Feasible’ means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.” (Pub. Resources Code, § 21061.1.) CEQA Guidelines section 15364 generally repeats this definition verbatim and adds “legal” considerations to those which may be taken into account in determining the feasibility of mitigation measures.

The Authority completely ignores this definition. Rather than evaluating LMF alternatives for their feasibility, the Authority has impermissibly limited its consideration to only those alternatives it deems “optimal” – a term that never appears in CEQA or NEPA. Indeed, Draft EIR/EIS Appendix 2-F, Summary of Requirements for Operations and Maintenance Facilities, explains its purpose as analyzing “the optimal siting of facilities” for maintenance across the high speed rail network and explains that only the “optimal locations [for maintenance facilities] have been identified.” But even this appendix recognizes that

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<sup>22</sup> Mysteriously, the header of the May 4, 2020 memorandum is marked “privileged and confidential” despite the lack of anything indicating it would be subject to any privilege.

<sup>23</sup> Nor does the Draft EIR/EIS provide a cost estimate for the LMF in Brisbane, lumping it all into the total preliminary Project cost estimate. (See Draft EIR/EIS, p. 8-16.)

Importantly, the cost of constructing the LMF in Brisbane is likely to be much greater than preliminarily estimated once the Authority properly considers the geotechnical challenges of construction on a former landfill and other related issues.



“less optimal” maintenance configurations “**must be analyzed further in order to evaluate the trade-off of the additional yearly operating costs versus the increased capital construction costs and the potential increase in environmental impacts.**” (Draft EIR/EIS, Appx. 2-F, p. 15, emphasis added.) Despite this recognition, the Draft EIR/EIS refuses to look at any “less optimal” options, focusing exclusively on the Brisbane site, which meets its “optimal” criteria.

In the absence of an appropriate inquiry into potentially feasible alternative LMF sites by the Authority, the City took it upon itself to evaluate the Draft EIR/EIS’s dubious claim that only Brisbane will do. The City’s September 8, 2020 *Brisbane LMF Evaluation and Alternatives Review* (Attachment Metis-F) shows this to be false. In fact, both the Port of San Francisco (Piers 90-94) site and the SFO site that the Authority neglect to carry forward for analysis in the Draft EIR/EIS are potentially feasible under the Authority’s “less optimal” siting criteria. (See Attachment Metis-F, pp. 13-14.) The Authority may consider these potential layouts less than optimal, but what matters for purposes of CEQA is that they are potentially feasible, would reduce and avoid significant environmental impacts, and, therefore, should have been studied further. The Draft EIR/EIS must be recirculated to include additional analysis of these sites.

The *Brisbane LMF Evaluation and Alternatives Review* identifies four other potentially feasible locations for the LMF that must be analyzed in the Draft EIR/EIS. These include:

- The Bayview Industrial District in San Francisco
- The Newhall Yard in San José
- Coyote Valley in Santa Clara County
- The City of Gilroy

As explained in detail the *Brisbane LMF Evaluation and Alternatives Review* and in Metis’ comments regarding alternatives, these sites meet, at a minimum, the Authority’s “less optimal” criteria, would reduce and avoid significant environmental impacts, and must be analyzed in a recirculated Draft EIR/EIS. (Attachment Metis-F, pp. 28-32 and Figures TC1-A3, TC1-A4, TC1-A5, and TC1-A6.)

### **C. The Authority Must Analyze Alternative Layouts and Sizes for the LMF**

In addition to analyzing alternative sites, the Authority must consider the possibility that the LMF could be constructed with a smaller footprint and/or an alternative layout, whether in Brisbane or elsewhere. This is particularly true given the Authority’s admission that “[m]aximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability.” (Draft EIR/EIS, Appx. 2-F, p. 8.) It is not enough for the EIR/EIS to merely make this statement. It must *analyze* what it concedes is a

potentially feasible alternative – a Level I facility in Brisbane – and identify the extent to which this alternative would reduce or avoid environmental impacts.

It is also possible that reducing the maintenance facility along the San Francisco to San José Section to Level I would open up new siting possibilities as sites smaller than those already examined and rejected by the Authority may accommodate a smaller Level I facility.

Additionally, the Draft EIR/EIS identifies two new CEQA project objectives that were not previously identified in the 2010 PAA. One of these is to “[p]rovide blended system infrastructure that supports a viable operations plan for HSR, while also minimizing environmental impacts and maximizing compatibility with Peninsula communities.” (Draft EIR/EIS, p. 1-14.) The Authority must re-evaluate previously dismissed alternative LMF sites and configurations in light of these new objectives. It also appears that the Brisbane LMF fails under this objective as it is inherently incompatible with the City’s community.

#### **D. No Project Alternative is Inaccurate and Misleading**

The Draft EIR/EIS admits that it does not include the development of the Brisbane Baylands as part of the “No Project” scenario. (Draft EIR/EIS, p. 2-56, fn. 18.) This is unacceptable and improperly skews the comparison of alternatives.

Under CEQA, if a project is a development project on identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. (Guidelines, § 15126.6(e)(3)(B).) “In certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” (*Ibid.*)

If the Authority does not approve the Brisbane LMF, the practical result would likely be that the Baylands Development proceeds as envisioned in the City of Brisbane’s 2018 General Plan Amendment<sup>24</sup> and as described in the Notice of Preparation (“NOP”)<sup>25</sup> of an EIR for the Brisbane Specific Plan that the City issued on February 24, 2020. The Draft EIR/EIS must, therefore, include the Baylands Development in the analysis under the No Project scenario. This means that reasonably foreseeable Baylands development would be included in the 2029 and 2040 future baselines, resulting in more severe impacts on future residents. (See comments below on individual resource topics such as noise and air quality.)

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<sup>24</sup> Metis, discussing how LMF construction adversely affects planned land uses and undermines the City’s commitment to providing housing.

<sup>25</sup> Metis, analyzing failure to disclose Project’s relation with State Lands Commission.

### **E. The No Project Alternative is the Environmentally Superior Alternative**

CEQA Guidelines section 15126.6(d) requires an EIR to “include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” The CEQA Guidelines suggest that a “matrix displaying the major characteristics and significant effects of each alternative may be used to summarize the comparison. (*Ibid.*) Draft EIR/EIS Table 8-1 summarizes the impacts of Alternatives A and B, but it completely ignores the No Project Alternative. Similarly, none of the individual resource area sections of the Draft EIR/EIS identify whether impacts under the No Project scenario would be significant nor do they address the No Project Alternative in the summary of CEQA significance conclusions at the end of each section. This makes it impossible for the public and the decision makers to understand the impact of not approving the Project. The Draft EIR/EIS must be revised to clearly identify how the Project’s impacts compare to the No Project Alternative.

Despite this lack of meaningful comparison, the Draft EIR/EIS somehow concludes that the No Project Alternative is not the “environmentally superior alternative” as that term is used in CEQA Guidelines section 15126.6(e)(2). The Draft EIR/EIS does not substantiate or explain this conclusion, referencing instead the benefits it claims the proposed Project would provide “to help California meet reduction targets for 2030 in SB 32 and beyond, all of which would not be realized under the No Project Alternative.” (Draft EIR/EIS, p. 8-17.) These alleged and self-serving benefits are beside the point and have no relevance to the determination of the environmentally superior alternative. Instead, the Draft EIR/EIS must clearly compare the significant impacts of the proposed Project to those of the No Project Alternative and identify which would have greater impacts. Only then can the decision makers and the public appreciate the environmental consequences of proceeding with the Project, regardless of any benefits it may have.

## **VI. PREMATURE COMMITMENT TO THE PROJECT**

### **A. The Authority has Prematurely Committed to Approving the Project**

While the Draft EIR/EIS purports to discuss a “proposal” to construct the HSR between San Francisco and San José and to evaluate “alternatives,” it is clear from the record that the Authority intends to approve the Project along the sole alignment it evaluates regardless of the conclusions in the Draft EIR/EIS.

In 2012, Caltrain and the Authority formally agreed to electrify the existing Caltrain corridor, share the tracks, and maintain the corridor as primarily a two-track railroad.<sup>26</sup> Thus, almost a decade before release of the San Francisco to San José Project Section Draft

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<sup>26</sup> California HSR Authority, *Draft EIR/EIS Fact Sheet*, San Francisco to San José Project Section, available at:

[https://hsr.ca.gov/docs/programs/statewide\\_rail/proj\\_sections/SanFran\\_SanJose/San\\_Francis\\_co\\_to\\_San\\_Jose\\_Draft\\_EIREIS\\_Fact\\_Sheet.pdf](https://hsr.ca.gov/docs/programs/statewide_rail/proj_sections/SanFran_SanJose/San_Francis_co_to_San_Jose_Draft_EIREIS_Fact_Sheet.pdf).



EIR/EIS, the Authority had committed to the alignment it purports to analyze in the Draft EIR/EIS. This is flatly impermissible under CEQA. (See *Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116 (“*Save Tara*”) [lead agency may not contract away its ability to respond to the results of later environmental review].)

Since then, the Authority has repeatedly advanced the same project towards the current Tier 2 review, never bothering to genuinely examine alternatives, including the No Project Alternative. It is obvious from the way the Authority has ignored the advice of its own studies, discussed above, that urged the Authority to consider LMF sites other than Brisbane at the project-level that the Authority has already made up its mind to put the LMF in what it considers the most “optimal” location. This contravenes CEQA’s prohibition on taking actions that would preclude consideration of alternatives. (*Save Tara, supra*, 45 Cal.4th 116, 138—139.)

In the most recent example of its impermissible commitment to the Project before completion of environmental review, on August 13, 2020, the Authority’s Chief Executive Officer, Brian P. Kelly, sent a letter to Brisbane’s Mayor, the Honorable Terry O’Connell, explaining, “While we understand that the City of Brisbane would prefer that we locate the [light maintenance] facility elsewhere, we have carefully and thoroughly reviewed numerous other options before settling on the locations in Brisbane.”<sup>27</sup> This leaves no doubt that the Authority has impermissibly “settled” on locating the LMF in Brisbane, pre-committing to this location without regard to any of the significant environmental impacts the CEQA/NEPA process may identify. This fundamentally contravenes CEQA and NEPA.

## VII. INADEQUATE IMPACT ANALYSES AND MITIGATION MEASURES

### A. Impact Analysis Approach Does Not Comply with CEQA

#### 1. *The Draft EIR/EIS uses inaccurate baselines and excludes an existing conditions baseline for operational impacts.*

##### a) *Existing conditions baselines are often inaccurate.*

The purpose of an existing conditions baseline is to give the public and decision makers “the most accurate and understandable picture practically possible” of the project’s likely near-term and long-term impacts. (Guidelines, § 15125; *Neighbors for Smart Rail v. Exposition Metro Line Const. Auth.* (2013) 57 Cal.4th 439, 449 (“*Neighbors for Smart Rail*”).) An inaccurate existing conditions baseline means that an EIR’s impact analysis may understate a project’s actual impacts.

A number of Draft EIR/EIS sections have inaccurate and/or outdated existing conditions baselines, as discussed in the comments below. For example, the noise baseline

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<sup>27</sup> See SLG, Exh. 1, Letter from Brian P. Kelly, HSR Chief Executive Officer to the Honorable Terry O’Connell, Mayor of the City of Brisbane, August 13, 2020.

includes noise measurements for some locations going back to 2009-2010, and the biological resources baseline is partially based on 2009-2010 surveys. Further, the Draft EIR/EIS entirely omits a project-specific hazardous materials baseline along the entire segment, by deferring the essential Phase 1 and Phase 2 environmental site assessment (“ESA”) analyses until the right-of-way acquisition phase.

b) *Future baselines are often inaccurate and exclude reasonably foreseeable Baylands development.*

A lead agency may use baselines consisting of projected future conditions only if supported by reliable projections based on substantial evidence in the record. (Guidelines, § 15125(a)(1); See *Poet, LLC v. State Air Resources Bd.* (2017) 12 Cal.App.5th 52, 80 [“An agency that deviates from the norm [established by CEQA Guidelines section 15125] must provide an adequate justification for omitting an existing conditions analysis.”]; and *Neighbors for Smart Rail, supra*, 57 Cal.4th 439, 512—513 [an agency’s determination is reviewed only for substantial evidence supporting it].)

Future 2029 and/or 2040 baselines in a number of EIR/EIS sections are inaccurate and not supported by substantial evidence. For example, Baylands development consistent with the existing Brisbane General Plan is omitted from future baselines for the noise and vibration, transportation, and air quality impact analyses. Also, transportation modeling and population growth are based on the outdated Association of Bay Area Governments (“ABAG”) Projections 2013 that were replaced with Plan Bay Area 2040 projections in November 2018.

c) *Existing conditions as well as future baselines should be used for operational impact analyses.*

A lead agency may use a projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record. (Guidelines, § 15125(a)(2); *Neighbors for Smart Rail, supra*, 57 Cal.4th 439, 445.)

In some Draft EIR/EIS sections, e.g., transportation and noise, operational impacts are assessed against future 2029 and 2040 baselines only. The Draft EIR/EIS provides no explanation as to why using an existing conditions baseline for operational impacts, would be “misleading or without informative value. This violates CEQA.

In fact, using an existing conditions baseline for many operational impacts would be highly informative, because it would show that, compared to existing conditions, impacts would increase. These increases would likely be significant operational impacts, requiring mitigation.

**2. *Combined (cumulative) impacts of individual Project components are not sufficiently analyzed for certain resources.***

CEQA forbids the chopping up (“piecemealing”) of one large project into multiple small projects for the purpose of evading environmental review of the entire project. Because a project is defined as “the whole of an action” (Guidelines, § 15378(a)), a lead agency may not segment a project into several pieces if the effect is to avoid full disclosure of environmental impact. (See, e.g., *Tuolumne County Citizens for Responsible Growth, Inc. v. City of Sonora* (2007) 155 Cal.App.4th 1214, 1231.)

In some resource sections, the Draft/EIR/EIS grossly understates impacts of the entire Project by presenting impacts caused by individual Project components, and never combining them to reveal the total Project impact. As discussed below, examples include the noise and biological resources impact analyses, where presenting only impact analyses for individual Project components hides the true magnitude of the Project’s total construction and operational impacts on sensitive receptors and resources, respectively.

**3. *The impact analyses are overgeneralized and vague, and site-specific analyses of significant impacts in Brisbane are missing.***

Although the Draft EIR/EIS purports to be a project-level EIR that will lead to design and construction following Project approval without further CEQA review, many impact analyses are much too general and vague. An EIR must present specific data when it is required for a meaningful analysis of a significant impact and it is reasonably feasible to provide the specific data. (*Friant Ranch, supra*, 6 Cal.5th 502, 519.) Many impact analyses, such as air quality and noise, do not disclose the “specific effects” of the Project in particular locations, e.g., in each city along the alignment, thereby hiding site-specific impacts that must be disclosed and site-specific mitigation measures for those impacts.

As another example, as discussed in the comments below, the Draft EIR/EIS makes only a minimal attempt to survey for and disclose important sensitive biological and cultural resources in Brisbane known by the City that would likely be damaged by the Project. This same flaw likely exists for other local areas along the entire segment. The Draft EIR/EIS obviously did not “use best efforts to find out and disclose all that it reasonably can.” (Guidelines, § 15144.)

**4. *The Draft EIR/EIS improperly uses IAMFs to disguise pre-mitigation impacts.***

As discussed in the comments below, many of the Draft EIR/EIS IAMFs that are purportedly part of the project description are clearly not Project design features, but actually are disguised mitigation measures. Under *Lotus, supra*, 223 Cal.App.4th 645, 656, footnote 7, an EIR must identify mitigation measures as such and not include them in the project description unless they are so clearly part a project itself that it “would be nonsensical” to analyze impacts without them.

Improperly using IAMFs to minimize impacts makes it impossible to understand the nature of the Project’s description and its site-specific impacts, whether they are significant pre-mitigation, whether the IAMFs recast as mitigation measures would be effective, and whether there other more effective measures exist. (See *Lotus, supra*, 223 Cal.App.4th 645, 656 [“Absent a determination regarding the significance of the impacts . . . , it is impossible to determine whether mitigation measures are required or to evaluate whether other more effective measures than those proposed should be considered.”].) This “shortcutting of CEQA requirements subverts the purposes of CEQA by omitting material necessary to informed decision making and informed public participation.” (*Id.*, at p. 658.)

To compound this defect, many of the IAMFs that are disguised mitigation measures do not even meet CEQA’s minimum standards for adequate mitigation: lack of deferral, effectiveness, and enforceability. Particularly egregious examples include: NV-IAMF#1 (Noise and Vibration), TR-IAMF#2 (Construction Transportation Plan), BIO-IAMF#5 (Prepare and Implement a Biological Resources Management Plan), and CUL-IAMF#3 (Pre-Construction Cultural Resource Surveys).

**5. Many IAMFs and mitigation measures are improperly deferred, unenforceable, and/or ineffective.**

CEQA Guidelines section 15126.4(a), summarizing case law, provides that:

Formulation of mitigation measures shall not be deferred until some future time. The specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project’s environmental review provided that the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will considered, analyzed, and potentially incorporated in the mitigation measure.

“““[I]mpermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR.”” [Citation.]” (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 17 Cal.App.5th 413, 443.) HYD-IAMF#1 prescribes to postpone this analysis until sometime prior to construction. A mitigation measure that relies on development of a future plan to mitigate a project’s significant impact can only do so if the lead agency identifies specific performance criteria at the time of approval that the mitigation measure will satisfy. (See *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1028-29 (“*Sacramento Old City Assn.*”).) Mitigation measures calling for a mitigation plan to be devised on the basis of further study are legally inadequate if they do not identify steps that would be taken to mitigate the impact once the study is completed. (*Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 280; see also *Save Agoura Cornell Knoll v. City of Agoura*

*Hills* (2020) 46 Cal.App.5th 656, 686-690 [improperly deferred mitigation for archaeological resources rejected]; and Guidelines, § 15126.4(a)(1)(B).) The CEQA Guidelines further require that mitigation measures “must be fully enforceable through permit conditions, agreements, or other legally binding instruments.” (Guidelines, § 15126.4.) And CEQA case law further provides that conclusions that a mitigation measure will be effective in reducing impacts to less than significant must be supported by substantial evidence, i.e., facts and reasons. (See Pub. Resources Code, §§ 21080(e), 21082.2(c) and *Sacramento Old City Assn.*, *supra*, 229 Cal.App.3d 1011, 1027.)

As discussed below, a very large number of the Draft EIR/EIS IAMFs and mitigation measures call for vague future plans or memoranda to provide mitigation details without performance standards. These measures are improperly deferred, unenforceable, and/or ineffective. And for each improperly deferred measure, the Draft EIR/EIS fails to explain why it is “impractical or infeasible” to include mitigation details in the EIR/EIS.

Some of the most egregious examples include LU-MM#1 (Implement Noise Mitigation in Conjunction with Land Use Development in Brisbane), NV-MM#1 (Construction Noise Mitigation Measures), many cultural resource mitigation measures that improperly defer mitigation to the future “National Historic Preservation Act (“NHPA”)<sup>28</sup> Section 106 consultation process, BIO-MM#1 (Prepare and Implement a Restoration and Revegetation Plan), BIO-IAMF#5 (Biological Resources Management Plan) and BIO-MM#8 (Prepare a Compensatory Mitigation Plan for Species and Species Habitat).

To comply with CEQA requirements, the Draft EIR/EIS must be rewritten to analyze impacts and judge their significance. The effectiveness of IAMFs and other identified mitigation measures to reduce impacts to less-than-significant levels must be disclosed.

**6. *The Draft EIR/EIS does not recognize conflicts with local plans, policies, and regulations protecting environmental resources as significant impacts.***

The Draft EIR/EIS does not recognize the fact that conflicts with certain local plans, policies, and regulations protecting environmental resources means that impacts to those physical resources would be significant. The document attempts to isolate the conflicts analysis to Appendix 2-J and introductions to each impact section, but does not integrate findings of conflicts into the actual impact analyses for affected resources. For example, conflicts with local plans, policies, or regulations on aesthetics, biological resources, transportation, and noise identified in Appendix 2-J are not recognized as significant impacts for those resources in their respective impact analyses.

Also, Appendix 2-J is incomplete because it does not recognize all conflicts that would occur. It inexplicably does not identify local plan, policy, and regulations conflicts for all the resource topics for which plan, policies, and regulations are inventoried in

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<sup>28</sup> 16 U.S.C. § 470.



Appendix 2-I. For example, local plans, policies, and regulations for biological resources and parks, recreation and open space are inventoried in Appendix I, but potential conflicts are not analyzed in Appendix 2-J.

Finally, Appendix 2-J improperly justifies and attempts to override plan, policy, and regulations conflicts by repeatedly asserting: “The Authority is mandated to build and operate the HSR project. This is a state-level project that would have benefits across multiple resource areas.” (See, e.g., Draft EIR/EIS, p. 2-J-6.) CEQA is concerned with identifying all individual adverse impacts of a proposed project and does not allow EIRs to internally balance and override adverse impacts with self-serving statements of project benefits. An EIR is not intended to prematurely “override” adverse impacts with project benefits; that is the purpose of the Statement of Overriding Considerations adopted at the end of the EIR process. (See CEQA Guidelines, § 15093.)

**7. *The Project’s environmental benefits are overstated.***

The Draft EIR/EIS transportation, air quality, GHG, and energy impact analyses all improperly rely on artificially inflated estimates of HSR ridership to offset the Project’s significant operational impacts and avoid mitigation responsibility for those impacts. Insufficient evidence is presented to show that the ridership estimates are accurate, especially in light of the long-term reductions in intercity travel and rail transit likely to be caused by COVID-19 changes in travel behavior. Further, the Draft EIR/EIS only uses medium and high ridership numbers to analyze Project benefits. For both the decision makers and the public to be fully informed, a low ridership scenario analysis, adjusted for COVID-19 impacts, is required, and the Draft EIR/EIS must be comprehensively revised to reflect this additional data.

**8. *The NEPA-like structure of the document makes it fundamentally inadequate for CEQA disclosure purposes.***

The NEPA-like structure of the Draft EIR/EIS makes it fundamentally inadequate for CEQA compliance purposes. The document’s structure makes it very difficult for decision makers and the public to understand: which impacts of the proposed project are significant, why they are significant, which mitigation measures reduce impacts to less than significant levels, and why. Specific concerns are discussed in detail below for individual resource sections, but the structure of the transportation section, the first impact section, provides a representative example of the overall problem.

The transportation section includes a section on consistency with plans and policies. (Draft EIR/EIS, § 3.2.2.) The Thresholds of Significance section (Draft EIR/EIS, § 3.2.4.5) later provides that the Project would have a significant impact if it would “conflict with a program, plan, ordinance, or policy” regarding public transit and non-motorized transportation, but the impact analyses in Section 3.2.6 and the “CEQA Significance

Conclusions” sections in Section 3.2.9 simply do not consider whether any such conflicts exist.

The CEQA Significance Conclusions section (Draft EIR/EIS, § 3.2.9) is thrown in almost as an afterthought at the end of the Environmental Consequences section. This section confusingly rehashes and summarizes the prior impact analyses but uses different language. Section 3.2.9’s text and summary table (Draft EIR/EIS, Table 3.2-26) do not explicitly reference the CEQA impact significance thresholds when drawing significance conclusions, and do not explain why IAMFs and mitigation measures would be effective in potentially reducing impacts to less-than-significant levels (i.e., why significant would be exceeded). (*Friant Ranch, supra*, 6 Cal.5th 502, 519 [“a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact.”]; *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 394 (“*Laurel Heights I*”).)

These major structural shortcomings span each of the Draft EIR/EIS’s 17 impact analysis sections. It is entirely unreasonable to expect the public and decision makers to wade through long impact analysis sections and redundant analyses to attempt to divine facts and reasons supporting basic CEQA conclusions: why impacts of a proposed project are significant, and why mitigation measures are capable of reducing them to less than significant levels. These structural shortcomings contribute to making the Draft EIR/EIS “so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded,” which is one of many reasons why the Authority must recirculate the Draft EIR/EIS. (Guidelines, § 15088.5(a)(4).)

## **B. Station Planning, Land Use, and Development Impacts**

The Draft EIR/EIS’s analysis of impacts to land use fails to adequately capture the significant environmental impacts that would occur due to conflicts with the proposed LMF sites in Brisbane. The Draft EIR/EIS misleadingly states, “The proposed stations have been planned in collaboration with the cities along with public input to identify key site planning concepts regarding station design, access, connectivity, circulation, and parking.” (Draft EIR/EIS, p. 3.13-10.) It also claims that “[t]he Authority will continue ongoing coordination with Brisbane and the developers for the Brisbane Baylands site in order to minimize potential incompatibilities between the Brisbane LMF and future planned development on the Brisbane Baylands site.” (Draft EIR/EIS, p. 3.13-63.) These statements ignore the fact that Brisbane vehemently opposes locating the LMF within its borders and has vocalized this opposition throughout the planning process.<sup>29</sup>

- August 25, 2010 City Letter to HSR Authority (SLG, Exh. 2-A)
- September 28, 2010 HSR Response to City (SLG, Exh. 2-B)

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<sup>29</sup> SLG, Exhs. 2-A through 2-E.



- October 5, 2010 City Response to HSR Authority (SLG, Exh. 2-C)
- June 9, 2016 City Comment Letter to HSR (SLG, Exh. 2-D)
- August 21, 2019 City Comment Letter to HSR (SLG, Exh. 2-E)

**1. *The LMF is fundamentally inconsistent with the Brisbane General Plan and Plan Bay Area 2040.***

In November 2018, the City of Brisbane voted to approve Measure JJ, a General Plan Amendment (Amendment GP 1-18) that allows for a potential range of 1,800 to 2,200 residential units along with approximately seven million square feet of new commercial development and hotel uses. This General Plan Amendment provides an extraordinary solution to the state’s housing crisis, allowing the City to permit substantial housing in proximity to existing transit and doubling the City’s population, while simultaneously addressing the Baylands’ many complexities and development constraints. The attached Metis letter provides additional details on permitting and development complexities at the Baylands site. The Draft EIR/EIS acknowledges this planned land use (see Draft EIR/EIS, p. 2-56), but disregards the significant achievement and compromise it represents, and admits that the Project is inconsistent with the City of Brisbane 2018 General Plan Amendment’s designation for planned development – both residential and nonresidential – on the site.<sup>30</sup> (Draft EIR/EIS, pp. 3.13-25 to -30.)

The July 2017 *Final Plan Bay Area 2040* designated the Baylands as a priority development area due to its potential for transit-oriented development (“TOD”).<sup>31</sup> As the Draft EIR/EIS acknowledges, building an LMF on the Baylands is inconsistent with this TOD designation. (Draft EIR/EIS, pp. 3.13-7 to -8.)

These inconsistencies are simply unacceptable given the state’s housing crisis and will compound the negative impacts of this crisis on the region, including housing affordability, displacement, quality of life, and traffic congestion. The full negative impacts of building the LMF on the Baylands property should be disclosed and analyzed in the Draft EIR/EIS and recognized by the Authority’s decision makers.

The Draft EIR/EIS also incorrectly identifies land uses on the East LMF site as “industrial, vacant, parks/open space.” (Draft EIR/EIS, Table 3.13-2.) In fact, these are the former Brisbane Landfill. As discussed throughout this letter and attachments, the Draft EIR/EIS fails to fully acknowledge the existence of the landfill and the implications of building on top of it.

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<sup>30</sup> City of Brisbane General Plan, available at <https://www.brisbaneca.org/cd/page/general-plan>.

<sup>31</sup> See *Final Plan Bay Area 2040*, July 26, 2017, Map 4.5, p. 57, available at [http://2040.planbayarea.org/sites/default/files/2020-02/Final\\_Plan\\_Bay\\_Area\\_2040.pdf](http://2040.planbayarea.org/sites/default/files/2020-02/Final_Plan_Bay_Area_2040.pdf).

**2. *Impact LU#5 and Impact LU#6 understate conflicts with the adopted Brisbane General Plan.***

Impact LU#5 (Permanent Alteration of Land Use Patterns from Land Use Conversion at the Brisbane Light Maintenance Facility) and Impact LU#6 (Permanent Alteration of Land Use Patterns from Increased Noise, Light, and Glare) understate conflicts with the Brisbane General Plan. The Draft EIR/EIS acknowledges that construction of the Brisbane LMF would reduce the amount of land available for development by approximately 16.2% for the East Brisbane LMF and 18.9% under the West Brisbane LMF and that construction of both the East LMF and West LMF “would be considered a permanent alteration of a planned land use pattern.” (Draft EIR/EIS, p. 3.13-63.) Then, without any explanation, it claims that the permanent acquisition of land planned for commercial development in the Baylands “would not necessarily impede the planned development envisioned in the Brisbane 2018 General Plan Amendment” and asserts that “this development could still occur in the areas not affected by the project.” (*Ibid.*) There is no evidence for this conclusion. While the LMF’s footprint may not physically occupy all of the Baylands, it would have an enormous impact on the ability to develop essential residential and related uses in the Baylands. Taking away 16—18% of the land currently designated for planned development and converting it to an incompatible industrial use—the LMF—will have a significant impact on the viability of the Baylands Development.

Additionally, the Draft EIR/EIS fails to identify all conflicts with the Brisbane General Plan, as set forth in detail in the attached Metis letter. This omission results in a failure to identify significant physical environmental effects within the City, including, but not limited to, impacts to traffic/transportation, safety, water supply, biological resources, adaptation to sea level rise, hazardous materials and wastes, parks and recreation, and aesthetics. (See Metis letter, Table Metis-1.)

The analysis also improperly downplays and mischaracterizes how the Project would interfere with Brisbane’s ability to meet its Regional Housing Needs Allocation (“RHNA”) numbers. The Draft EIR/EIS states:

The project’s acquisition of lands in Brisbane, where residential development is planned and permitted, could affect the City of Brisbane’s ability to meet its required Housing Element and Regional Housing Need Allocation (RHNA). The 2015–2022 Housing Element for the City of Brisbane General Plan identifies the City of Brisbane required RHNA as 293 housing units (City of Brisbane 2015b). In addition, as of April 2019, the California Legislature is in the process of considering an increase in the City of Brisbane’s required RHNA, per SB 672. Alternative B would have a greater impact on the City of Brisbane’s ability to meet its RHNA than Alternative A because Alternative B would require the acquisition of more lands where residential development is permitted than Alternative A.

(Draft EIR/EIS, p. 3.13-63.)

As a preliminary matter, the Draft EIR/EIS is wrong that SB 672 would have increased the City’s required RHNA. In fact, SB 672 would have exempted Brisbane from receiving new regional housing responsibilities during the current (through 2023) and next (2023—2031) housing element planning period in recognition of the extraordinary vote of the people of Brisbane to potentially more than double the size of the City’s housing with development of the Baylands in response to the state’s housing crisis.<sup>32</sup> Unfortunately, the bill was vetoed by the Governor, and there are currently no legislative efforts to revive it. The Draft EIR/EIS should be revised to remove reference to SB 672, to clarify that the City’s 2015—2022 RHNA is 83 housing units, and to explain that ABAG may increase the City’s RHNA for the next planning period. With this clarification, there is no question that the Project would have an enormous negative impact on the City’s ability to meet its required RHNA allocation. The Authority must acknowledge this fact head on and grapple with its consequences.

Additionally, the Draft EIR/EIS fails to acknowledge the extent of the impact of noise on planned development from the LMF in Brisbane that would “exceed both the normally acceptable and conditional [sic] acceptable noise levels for residential and commercial uses per the Brisbane General Plan.” (Draft EIR/EIS, p. 3.13-66.) While the Authority acknowledges that this “could result in a change in planned land uses by forcing development adjacent to the future track alignments to be placed further away and thus change planned land use patterns,” it stops its analysis there. (*Ibid.*) This is unacceptable. The Draft EIR/EIS must acknowledge that planned development, especially residential development, is simply incompatible with a 17-track LMF facility that would operate on a 24/7 basis just steps away. These noise impacts make development of the Baylands all the more challenging, further threatening the City’s ability to meet its current and future assigned RHNA allocations. The Authority must also analyze the environmental impacts of the changes in land use patterns and displaced development its Project will induce.

In a similar vein, the Draft EIR/EIS must be revised to consider the cumulative impacts of increased noise, light, and glare on the existing and planned uses in Brisbane. Analyzing these impacts individually fails to disclose the combined, permanent land use impacts of the Project on the Baylands.

**3. *Appendix 3.13-A incorrectly identifies the Brisbane Baylands as designated for exclusively commercial development.***

Appendix 3.13-A, Figure 1, purports to identify General Plan land use designations along the San Francisco to South San Francisco subsection, including within Brisbane. However, the figure incorrectly identifies the entire Baylands site as “commercial.” In fact,

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<sup>32</sup> City of Brisbane, Webpage, *City’s Support of SB 672*, available at <http://archive.brisbaneca.org/news/citys-support-of-sb-672>.

the Brisbane General Plan designates the entire area as Planned Development.<sup>33</sup> The majority of the site is designated “Baylands Planned Development – Residential Permitted” and “Baylands Planned Development – NonResidential.”<sup>34</sup> Appendix 3.13-A, Figure 1 should be revised to identify the current General Plan land use designations so as to avoid misleading the public and the decision makers.

**4. *No evidence supports the conclusion that it would be infeasible to mitigate impact LU#5 by relocating the LMF.***

The analysis concludes that it is not feasible to reduce or avoid Impact LU#5 by relocating the LMF to a different area because there are a “limited number of sites near the existing Caltrain right-of-way that could potentially accommodate an LMF because of the dense urban development throughout the Project Section” and “[n]o other sites have been identified to be practicable to support the activities required for the LMF.” (Draft EIR/EIS, pp. 3.13-72 to -73.) The Draft EIR/EIS provides no evidence or explanation for these conclusions. As noted in the [Section V.C](#), *supra*, the Authority has failed to adequately evaluate feasible alternative locations for the LMF, including the possibility of an LMF in Gilroy and the other potentially feasible alternative sites Brisbane has identified. Such an analysis must be performed before concluding that alternative LMF locations are not feasible.

**5. *LU-MM#1 is improperly deferred.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. LU-MM#1 (Implement Noise Mitigation in Conjunction with Land Use Development in Brisbane) presents several options designed to address noise impacts on planned land uses within Brisbane. But the measure concedes that “specific mitigation would be developed in consultation with the City of Brisbane and the site developer.” (Draft EIR/EIS, p. 3.13-73.) Despite the inclusion of “performance standards” based on the City’s General Plan, the mitigation measure is impermissibly deferred. Specifically, it fails to show the specific locations where noise mitigation is required. There is also no evidence that the listed mitigation options are feasible or capable of meeting the stated noise performance standards. The measure is essentially the type of measure that might be appropriate for a program-level of analysis but fails the test for project-level review. The Draft EIR/EIS must be revised to include appropriate, project-level mitigation for noise impacts on the Baylands Development.

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<sup>33</sup> City of Brisbane, Community Development Department, *Figure LU-1: Land Use Diagram*, September 5, 2019, available at [https://www.brisbaneca.org/sites/default/files/fileattachments/community\\_development/page/2401/landusediagram.pdf](https://www.brisbaneca.org/sites/default/files/fileattachments/community_development/page/2401/landusediagram.pdf).

<sup>34</sup> *Ibid.*

6. ***Table 3.13-7 (Permanent Right-of-Way Acquisition) should list acreages of right-of-way (“ROW”) needed for each component to accurately disclose impacts.***

Table 3.13-7 provides an overview of the Project elements in each jurisdiction that would require permanent right-of-way acquisition, but it does not identify acreages of acquisitions. Additionally, the Draft EIR/EIS does not identify partial acquisitions at all. As a result, impacts to Golden State Lumber resulting from loss of its laydown yard and to the Kinder Morgan Brisbane Terminal from loss of existing buildings are not addressed. This information should be presented to allow for accurate disclosure of impacts.

7. ***Realignment of Lagoon Road with Mitigation Measure LU-MM#2 would have additional impacts beyond the impacts on aquatic resources briefly acknowledged.***

Mitigation Measure LU-MM#2 would relocate Lagoon Road north to avoid the priority use area within the San Francisco Bay Conservation and Development Commission’s (“BCDC’s”) jurisdiction. (Draft EIR/EIS, p. 3.13-74 to -75.) The Draft EIR/EIS acknowledges that “[i]mplementing LU-MM#2 would result in secondary impacts on aquatic resources that would be greater in magnitude than the proposed project alternatives, due to temporary and permanent impacts on two constructed water basins adjacent to the realigned Lagoon Road.” (*Ibid.*) Then, without explanation or citation to any evidentiary support, the Draft EIR/EIS concludes that “[t]hese secondary impacts on aquatic resources would be mitigated to a less-than-significant level under CEQA through application of BIO-MM#36: Restore Aquatic Resources Subject to Temporary Impacts (described in Section 3.7).” (*Ibid.*) The Draft EIR/EIS, including Section 3.7, Biological and Aquatic Resources, does not describe or analyze the unspecified secondary impacts that would be caused by the relocation of Lagoon Road, and Mitigation Measure BIO-MM#36 (see [Section J.14](#) below) is inadequate to mitigate such impacts in any event.

8. ***Land use cumulative impact analysis is inadequate.***

Incredibly, the Draft EIR/EIS (p. 3.18-069) concludes that there are no significant cumulative land use impacts because cumulative projects are generally included in general plans and Regional Transportation Plans (“RTPs”), and because future land use changes would be consistent with general plans. These generalizations are not supported by substantial evidence; general plan consistency does not always preclude the possibility of land use impacts, e.g., land use conflicts, for a particular development project.

More fundamentally, the analysis entirely downplays and minimizes the Project’s incremental contributions to land use conflicts, which are significant, and in Brisbane’s and the City of Millbrae’s case, significant and unavoidable. (See Draft EIR/EIS, Table 3.13-15.) The Draft EIR/EIS analysis of Project contributions misleadingly states that “[a]lthough the project alternatives would result in some localized changes in land use patterns near the



East or West Brisbane LMF and at the Millbrae Station, the project alternatives would not lead to incompatible uses on a broad scale that would result in the substantial alteration of land use patterns within the cumulative [resource study area] RSA.” (Draft EIR/EIS, p. 3.18-69.) However, land use impacts, such as conflicts with adjacent uses, are highly localized, and whether “broad scale” impacts are felt in the “cumulative RSA” is immaterial to such localized cumulative impacts. The Draft EIR/EIS land use cumulative impact analysis must be revised to disclose the Project’s significant cumulative impacts in particular locations such as Brisbane and Millbrae, considering reasonably foreseeable future development specific to those locations. It must disclose that the Project’s contribution to such localized cumulative impacts is cumulatively considerable.

### **C. Noise and Vibration Impacts**

The Draft EIR/EIS noise and vibration analysis is totally inadequate and must be redone. Major legal deficiencies are described below. Evidence supporting many of these comments, and additional deficiencies with the analyses, are pointed out within the Metis letter and Attachment Metis-D: Entech Northwest Noise and Vibration Comments.

#### ***1. NV-IAMF#1 (Noise and Vibration) is actually an improperly deferred mitigation measures with no performance standards.***

As discussed in [Section VII.A.4](#), CEQA requires an EIR to identify mitigation measures as such, and not to be moved to the project description to avoid disclosure of significant impacts. NV-IAMF#1 is actually a mitigation measure because it calls for the contractor to prepare a technical memorandum showing how construction noise and vibration impacts would be minimized. It is also an improperly deferred mitigation measure because the technical memorandum would be prepared after Project approval and because it includes no mitigation performance standards to be achieved.

#### ***2. Baseline (“existing”) noise and vibration levels reported in Table 3.4-11 and 3.4-12 for some locations are outdated and incomplete.***

The existing conditions baseline (shown in Table 3.4-11) at many locations is outdated; many locations’ noise measurements were taken in 2009, 2010, and 2013. Noise levels have increased since those times due to new development, increased traffic, and increased Caltrain operations. To provide the basis for an accurate impact analysis, the existing conditions baseline must be updated with more recent noise monitoring data. Also, an insufficient number of locations were monitored to allow determination of localized impacts, e.g., only three locations in Brisbane, one in 2009.

#### ***3. Future noise baselines should have expressly included reasonably foreseeable 2029 and 2040 development in Baylands.***

The No Project Alternative 2029 and 2040 descriptions on page 3.4-40, which are used as future baselines, state that No Project conditions include “anticipated future



development projects” in Appendix 3.18-A. However, specific development projections for Baylands development based on the existing Brisbane General Plan are not included in the appendix.

It is reasonable to assume that the first increment of Baylands residential development, approximately 100-200 dwelling units, would be constructed and occupied by 2029, that additional residential development and some office/commercial development would be constructed and occupied by 2029, and that by 2040 the Baylands would be built out (with 2,200 dwelling units and 6.5 million square feet of commercial/office use and 500,000 square feet of hotel use). The noise impact analyses must be redone to expressly identify noise impacts on specific future sensitive receptors associated with these Baylands development projections.

**4. *The noise analysis does not follow FTA and FRA guidance.***

As discussed in detail in the Metis letter’s discussion of the methodology used to analyze noise and vibration impacts, the Draft EIR/EIS does not properly define Project noise impacts because it does not fully follow Federal Transit Administration (“FTA”) and Federal Railroad Administration (“FRA”) guidance. For example, it lacks sufficient detail, does not quantify noise levels for all noise sources, makes unsupported Project description assumptions, and fails to sufficiently map affected land uses.

**5. *Operational train noise analyses should have used an existing conditions baseline in addition to future baselines.***

As mentioned in [Section VII.A.2](#), when future baselines are used, EIRs must use both an existing and future conditions baseline unless the existing conditions baseline would be misleading or without informative value. For train noise, the following sentence indicates that only future baselines were used: “The Authority modeled noise level changes associated with changes in passenger and freight operations in 2029 and based on FTA methods, and incorporated this analysis into the 2029 and 2040 No Project conditions and the 2029 and 2040 Plus Project combined conditions.” (Draft EIR/EIS, pp. 3.4-22 and 3.42-23, emphasis added.) The Draft EIR/EIS provides no explanation as to why an existing conditions baseline would be misleading or uninformative. To the contrary, an existing conditions baseline would likely have resulted in greater train noise impacts than a future No Project baseline, and the Draft EIR/EIS should be revised to add this analysis.

**6. *The EIR/EIS noise thresholds using FRA and FWA guidelines are too high, and do not assure noise impacts would be less than significant.***

The noise significance thresholds used by the Draft EIR/EIS are much higher than accepted CEQA practice, and, based on substantial evidence, would still allow significant noise impacts. Accepted CEQA practice is to use thresholds derived from local noise elements or ordinances. (See Guidelines, Appendix G, Question XIII(a).) These in turn, are

typically based on State Land Use Compatibility Guidelines.<sup>35</sup> Instead, the Draft EIR/EIS uses noise thresholds that allow much higher noise levels, from the FRA for train noise and Federal Highway Administration (“FHWA”) for traffic noise.

Confusingly, a Brisbane noise analysis using State Land Use Compatibility Guidelines *is* presented in the Station Planning, Land Use, and Development section (Draft EIR/EIS, pp. 3.13-65 to -66), and demonstrates that noise impacts are significant. For a complete noise impact analysis, this analysis should be expanded to all local jurisdictions and be integrated into the Noise and Vibration Section. Inconsistency with local noise standards is not just a land use impact, it is a physical noise impact; to the extent this threshold is exceeded, noise mitigation measures must be proposed to attain consistency with local standards along the entire Project alignment. The Draft EIR/EIS should be revised to analyze the consistency of Project-generated construction and operational noise with general plan noise standards or noise ordinances of local agencies, which should be used as noise significance thresholds.

**7. *The operational noise impact analysis is inadequate.***

The Draft EIR/EIS operational noise impact analysis suffers from numerous flaws. First, it fails to disclose quantitative noise levels (in decibels) that each of the many locations experiencing significant noise impacts would experience. Table 3.4-16, for example, merely discloses that under Alternative A, 4,296 locations would experience “moderate” noise impacts and 1,758 locations would experience “severe” noise impacts. The Draft EIR/EIS does not disclose the actual noise levels that sensitive receptors at those numerous locations would experience, nor does it describe how frequently and for what length of time the lenient Draft EIR/EIS noise thresholds would be exceeded. This disclosure is required by *City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, 487 [to be adequate, air quality analysis must disclose “how frequently and for what length of time” sensitive receptors near an industrial project would be exposed to particulate concentrations exceeding thresholds.]. The Draft EIR/EIS Impact NV#2 analysis must be revised disclose the magnitude of significant noise impacts at each affected location, and how frequently and for what length of time noise thresholds are exceeded at these locations.

Second, cumulative operational noise impacts from multiple Project components being operated at the same time are not analyzed. Separate piecemealed noise analyses are presented for train noise (Impact NV#2), passenger station parking (Impact NV#3), the LMF (Impact NV#4), and vehicular traffic noise (Impact NV#6), yet inexplicably the Draft EIR/EIS fails to disclose the combined noise impacts when all these components are operating together.

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<sup>35</sup> Governor’s Office of Planning and Research. 2017. Noise Element Guidelines, Figure 2. [https://opr.ca.gov/docs/OPR\\_COMPLETE\\_7.31.17.pdf](https://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf).

Third, in Impact NV#4, the Draft EIR/EIS fails to disclose noise impacts of the LMF on Brisbane sensitive receptors and to analyze them for significance. It compares LMF noise impacts on Brisbane sensitive receptors to HSR operational noise impacts and concludes that because LMF noise levels are lower, “the additional noise from either LMF would not contribute to or cause noise impacts at nearby sensitive receptors.” (Draft EIR/EIS, p. 3.4-61.) This approach does not meet CEQA requirements because it fails to combine all operational noise levels into a project-wide impact, and because Brisbane LMF noise impacts would be occurring 24/7.

Finally, the noise analysis prepared for the Draft EIR/EIS (both construction and operational noise) does not specifically account for the unique topographic effects of noise within Brisbane. Noise generated within the Brisbane LMF will propagate through the community and be more intrusive for Brisbane residents, particularly at night, than would typically occur in the more urban communities along the San Francisco to San Jose HSR line. Thus, the Draft EIR/EIS understates impacts of Project-generated noise from high-speed rail trains and LMF operations on the community.

Additional reasons why the operational noise analysis is inadequate are described in the Metis letter.

**8. *The Draft EIR/EIS omits discussion of human health impacts of exceeding noise and vibration thresholds, as required by CEQA.***

The Draft EIR/EIS Noise and Vibration section does not mention the term “human health” even once, and utterly fails to disclose the human health consequences of the Project’s significant noise and vibration impacts. An EIR is required to disclose the “relevant specifics of ... health and safety problems caused by the physical changes” caused by a project. (Guidelines, § 15126.2(a); See *Friant Ranch, supra*, 6 Cal.5th 502, 521 [EIR must include a reasonable effort to discuss connection between the general health effects of pollutants and the amount of pollutants a project produces.]; See also *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1220 [EIR must “correlate” increased air pollutant emissions caused by a project with adverse human health effects.])

It is well known that excessive noise vibration levels cause adverse human health effects.<sup>36</sup> The Draft EIR/EIS’s noise analysis is inadequate because it: 1) fails to disclose these generalized health effects, 2) fails to disclose the actual increased noise levels the Project will cause, and 3) fails to connect or correlate these two pieces of information.

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<sup>36</sup> See, e.g., USEPA. 1981. *Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise*. Available at: <https://www.nonoise.org/library/handbook/handbook.htm>.

**9. Noise and vibration mitigation measures are inadequate.**

As discussed in [Section VII.A.5](#), CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. Most of the Draft EIR/EIS noise mitigation measures do not meet these requirements:

- Mitigation Measure NV-MM#1 (Construction Noise Mitigation Measures) is improperly deferred because it calls for the contractor to prepare a construction noise monitoring program after Project approval. It is also unenforceable because noise control mitigation measures would be implemented “as necessary, and as feasible within the constraints of working in an active rail corridor.” There are no objective standards presented to govern when noise control mitigation measures will be considered “necessary” and “feasible.”
- Mitigation Measure NV-MM#2 (Construction Vibration Mitigation Measures) is improperly deferred because it calls for the contractor to prepare a vibration technical memorandum after Project approval documenting how Project pile driving criteria would be met.
- Mitigation Measure NV-MM#3 (Implement Proposed California High-Speed Rail Project Noise Mitigation Guidelines) is improperly deferred because it does not commit to specific locations where one of three mitigation options (noise barriers, building sound isolation, or noise easements) would be implemented. Nor does it provide any objective standards governing which of these options would be selected or effective at a particular location.
- Mitigation Measure NV-MM#6 (Special Trackwork at Crossovers, Turnouts, and Insulated Joints) is improperly deferred because it calls for the contractor to prepare an operational noise technical report to address rail gaps at crossovers and turnouts after Project approval.
- Mitigation Measure NV-MM#8 (Project Vibration Mitigation Measures) is unenforceable because it does not commit the Authority to take any particular actions, but merely provides a general list of potential vibration mitigation measures.

Additional feasible mitigation measures are available to reduce the significant and unavoidable noise and vibration impacts in Draft EIR/EIS, Table 3.4-26. (See pp. 3.4-127-128.) See Metis discussion of noise mitigation measures.

**10. Noise cumulative impact analysis is inadequate.**

In addition to sharing the general approach problems reviewed previously, the noise cumulative impact analysis presented in Draft EIR/EIS section 3.18.6.3 is flawed for several reasons. First, it is unclear which (if any) of the future land use projects listed in Appendix 3.18-A were included. The Draft EIR/EIS (p. 3.18-25) merely observes that: “Construction

of some of the planned developments listed in Volume 2, Appendix 3.18-A could add localized noise increases from increased traffic and contribute to noise increases in the cumulative RSA.” The Draft EIR/EIS cumulative impact analyses for noise and vibration (both construction and operations impact) should be revised to clearly include impacts of all reasonably foreseeable development projects in Appendix 3.18-A.

Also, the construction noise analysis is inadequate because it assumes, without any evidence, that construction of the Project and construction of cumulative projects would not occur simultaneously near sensitive receptors such that noise thresholds would be exceeded. (Draft EIR/EIS, p. 3.18-28.) An unsupported assumption is a poor substitute for a CEQA-compliant impact analysis. Instead, the Draft EIR/EIS should have quantified construction noise impacts from reasonably foreseeable future projects that would likely be constructed during the Project construction period, based on existing information in Appendices 3.18-A and 3.18-B, and using reasonable assumptions. Future Project impacts should then have been added to Project impacts to determine if noise thresholds would be exceeded during construction.

Finally, the Draft EIR/EIS cumulative operational noise analysis suffers the same major shortcomings as the direct impact analysis. It fails to disclose the magnitude of significant cumulative noise impacts at each affected location, how frequently and for what length of time cumulative noise levels would exceed noise thresholds at these locations, and whether mitigation measures for cumulative noise impacts would be effective at any particular affected location. These types of specific cumulative impacts on Baylands and other local sensitive receptors are simply not disclosed.

In addition to using noise thresholds derived from local noise elements or ordinances, the Draft EIR/EIR should have considered an additional noise threshold based on incremental increases in noise levels for all construction and operation noise sources. Use of a cumulative noise level, whether from FRA criteria or even from local noise elements/ordinances, as the sole CEQA significance criterion for noise impacts violates CEQA unless substantial evidence presented in the EIR shows incremental noise increases are irrelevant. (See *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 894.)

#### **D. Transportation Impacts**

The Draft EIR/EIS transportation impact analysis suffers from many legal and technical deficiencies. Some major legal and technical deficiencies are summarized below. The attached comments from Metis and Hexagon Transportation Consultants<sup>37</sup> provide

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<sup>37</sup> See Metis letter, incorporating Hexagon’s comments on the Draft EIR/EIS’s failure to address transportation impacts; and Attachment Metis-B, Hexagon Transportation Consultants Comments.



more detailed comments on most of these deficiencies, and also point out many additional deficiencies.

**1. *TR-IAMF #2, TR-IAMF#11, and TR-IAMF#12 are actually improperly deferred mitigation measures with no performance standards.***

TR-IAMF #2 (Construction Transportation Plan), TR-IAMF#11 (Maintenance of Transit Access), and TR-IAMF#12 (Pedestrian and Bicycle Safety) are actually improperly deferred mitigation measures with no performance standards. As discussed in [Section VII.A.4](#), CEQA requires an EIR to identify mitigation measures as such, and not moved to the project description to avoid disclosure of significant impacts. TR-IAMF #2 is actually a mitigation measure because it calls for the contractor to prepare a detailed construction transportation plan to minimize the impacts of construction and construction traffic on roadways. It is also an improperly deferred mitigation measure because the construction transportation plan would be prepared after Project approval and because it includes no mitigation performance standards to be achieved. TR-IAMF#12 (Pedestrian and Bicycle Safety) suffers from the same defects: a technical memorandum is to be prepared after Project approval that would show how pedestrian and bicycle safety would be achieved across the HSR corridor, and no performance standards are included.

**2. *VMT analysis omitted substantial VMT from construction vehicles.***

The transportation impact analysis omits vehicle miles traveled (“VMT”) from substantial numbers of construction vehicles, without explanation.<sup>38</sup> This approach precludes the opportunity to add mitigation measures to reduce construction VMT; for example, by promoting construction employee ridesharing and reducing the number and length of truck haul trips. Construction vehicle VMT has already been calculated because it is an input for the EIR/EIS air quality and GHG modeling, so it would take little additional work to include it as a transportation impact as well.

**3. *Construction impact analysis inadequate.***

Both Impact TR#2 (Temporary Congestion/Delay Consequences on Intersections from Temporary Road Closures, Relocations, and Modifications) and Impact TR#3 (Temporary Congestion/Delay Consequences on Major Roadways and Intersections from Construction Vehicles) fail to provide quantitative or qualitative analysis or other substantial evidence to support their conclusions while also improperly deferring impact analysis and mitigation. Also, by segregating analysis of Impacts TR#2 and TR#3, the Draft EIR

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<sup>38</sup> The CEQA Guidelines (Guidelines, § 15064.3) do provide that “for many projects,” a qualitative analysis of construction VMT maybe appropriate if existing models or methods are not available to estimate VMT. However, methods are available to quantify [this](#) Project’s construction VMT, and were used to provide input for the air quality and GHG impact analyses.



understates the severity of the Project's construction traffic impacts. For details, see Metis comments regarding the Draft EIR/EIS's improper traffic impact analysis.

**4. *Uncertainties in the number of truck trips and associated VMT for offsite hauling of LMF construction waste must be resolved.***

As pointed out by comments from Metis (See Metis discussion of transportation impacts), the Draft EIR/EIS must be revised to clearly and consistency describe the number of truck trips for hauling offsite LMF construction waste, by waste classification, and the VMT associated with those truck trips. This information may result in substantial changes not only to the traffic analysis, but also to the noise, air quality, and GHG analyses that rely on estimated construction VMT by vehicle type.

Specifically, the Draft EIR/EIS construction traffic impact analysis should quantify the number of truck trips, based on the volume of excavated materials to be hauled, and analyze their impacts on intersection impacts and traffic delays. The EIR should also describe the duration of the hauling of material, the number of trucks per day, planned truck routes, and time periods during the day when hauling trucks are allowed. See Metis analysis of landfill excavation and disposal.

**5. *Future transportation baselines and No Project Alternative analyses should have expressly included reasonably foreseeable 2029 and 2040 development in Baylands.***

The 2029 and 2040 future transportation baselines described on Draft EIR/EIS p. 3.2-51 do not specify the amounts of development assumed for the Baylands. As discussed in Metis' analysis of the Draft EIR/EIS's noise and vibration methodologies, ABAG's land use data sets utilized to project future traffic volumes did not account for residential development in the Baylands, and only minimal job growth. The No Project Alternative transportation impact analyses for 2029 and 2040, which are used as 2029 and 2040 baselines, must be revised to account for reasonably foreseeable Baylands development, which would greatly increase the 2029 and 2040 traffic levels, congestion, and VMT.

**6. *Operational VMT analysis should have used an existing conditions baseline in addition to future baselines.***

As mentioned in [Section VII.A.2](#), when future baselines are used, EIRs must use both an existing and future conditions baseline unless the existing conditions baseline would be misleading or without informative value. For vehicular circulation impacts (Section 3.2.6.2), the Draft EIR/EIS used only future 2029 and 2040 No Project baselines. The Draft EIR/EIS provides no explanation as to why an existing conditions baseline would be misleading or uninformative. The Draft EIR/EIS should be revised to add this analysis, which likely would reveal additional significant impacts.

**7. *Trip generation estimates for the LMF were erroneous.***

As described in detail in Metis' comments regarding the questionable methodologies the Draft EIR/EIS used to analyze traffic impacts, trip generation estimates did not give a true picture of the number or timing of trips associated with LMF operation. As stated on Draft EIR/EIS page 3.2-13, trip generation from the LMF was based on trip rates for a general light industrial use. The Brisbane LMF is not, however, a typical "general light industrial" use. It is proposed as a 24-hour, 7-days-per-week operation. The Authority could have, and should have, estimated the number of employees that would be working at the facility during any given shift, general times for shift changes, and operational details. This information would provide for a more realistic analysis of anticipated LMF traffic characteristics. The Draft EIR/EIS's generic analysis fails to inform the public of actual traffic conditions that the community could expect from 24-hour operations at the LMF. Instead, the Draft EIR/EIS informs the public about the traffic impacts of a generic industrial plant that is not actually being proposed.

**8. *The level of service analysis for Brisbane intersections is erroneous.***

Although automobile delay as measured by level of service ("LOS") is no longer considered a CEQA physical impact, it is still considered a NEPA impact that must be adequately addressed in the Draft EIR/EIS. The LOS impact analysis presented in Impact TR#5 is flawed for many reasons, as described in detail in Metis' discussion of Impact TR#4. In addition to underestimating congestion by omitting Baylands development in the 2029 and 2040 baselines, the Draft EIR/EIS LOS analysis is flawed because the Bayshore Boulevard/San Bruno Avenue intersection that would be affected by the Project was omitted. In addition, the Santa Clara Valley Transportation Authority ("VTA") model used to forecast the increase in vehicular traffic at Brisbane intersections is too coarse to produce turning movements in with reasonable accuracy.

**9. *Impact TR#4 (Permanent Congestion/Delay Consequences on Intersections from Permanent Road Closures and Relocations) fails to analyze the adequacy or long-term safety effects of realigning Brisbane streets providing access to its downtown area.***

As part of the Project, the Authority proposes to extend Visitacion Avenue from its current terminus at Old County Road to a new unsignalized intersection with Valley Drive at Old County Road. However, the Draft EIR/EIS fails to analyze the adequacy or safety of the Project's proposed roadway realignments. For example, the Draft EIR/EIS fails to present specific analysis of traffic and required turning movements along Bayshore Boulevard at Valley Drive, proposed new intersections, and the Valley Drive/Park Place intersection adjacent to the Brisbane Police Department, as well as left turn queueing requirements in the area. Therefore, the Draft EIR/EIS does not provide substantial evidence to support a significance conclusion for Impact TR#4. See Metis analysis of Impact TR#4.

**10. *Analysis of conflicts with transportation programs, plans, ordinances, and policies is unsupported and incomplete.***

The Draft EIR/EIS (p. 3.2-19) includes the following significance thresholds:

- Transit: Conflict with a program, plan, ordinance, or policy regarding public transit, or otherwise materially decrease the performance of such facilities or services.
- Nonmotorized transportation: Conflict with a program, plan, ordinance, or policy regarding bicycle or pedestrian facilities, or otherwise materially decrease the performance of such facilities.

Even though the Draft EIR/EIS concludes that no such conflicts would exist, these conclusions (e.g., on pp. 3.2-83,3.2-85, 3.2-87) are based on mere assumptions of no conflicts, and are not supported by substantial evidence analyzing conflicts with particular agency plans, policies, and regulations. Also, the Draft EIR/EIS entirely omits analyzing another important source of transportation policy conflict, conflict with a program, plan, ordinance, or policy regarding roadways, i.e., vehicular circulation exclusive of LOS. CEQA Guidelines Appendix G expressly lists “roadway” policy conflicts as a possible significant impact under CEQA. (Guidelines, Appendix G, Question XVII(a).)

The Draft EIR/EIS transportation impact analysis in Section 3.2. should provide a real analysis that provides evidence supporting conclusions about conflicts with policies for transit, nonmotorized transportation, and vehicular circulation (other than conflicts with LOS policies that are not CEQA impacts), and use them to judge impact significance for both construction and operation impacts. In particular, individual conflicts with each jurisdiction’s general plan or local circulation element, such as the Brisbane Circulation Element, should be used to judge impact significance. For example, the Draft EIR/EIS fails to disclose that the design of the Brisbane LMF would preclude the long-planned Geneva Avenue overcrossing of the Caltrain right-of-way, which is an important east-west linkage to the US 101 freeway. The Geneva Avenue extension from Bayshore Boulevard to the US 101 freeway is also proposed as part of the multi-jurisdictional San Francisco-San Mateo Bi-County Transportation Study approved in 2013.<sup>39</sup>

In what minimal attempt the Draft EIR/EIS makes to disclose conflicts with plans, policies, and regulations, it inexplicably focuses almost exclusively on LOS impacts, which are no longer CEQA impacts. (See Draft EIR/EIS, §3.2.3 ([which mentions only LOS conflicts] and Appendix 2-J, Table 1 [which mentions almost entirely LOS conflicts].) Instead, the Draft EIR/EIS must recognize the Project’s conflicts with each of the circulation element policies identified in Table Metis-1.

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<sup>39</sup> Available on this San Francisco County Transportation Authority webpage:  
<https://www.sfcta.org/projects/bi-county-transportation-study>.

***11. The NEPA mitigation measure TR-MM#1 is ineffective.***

Under NEPA, all relevant, reasonable mitigation measures that could alleviate the environmental effects of a proposed action must be identified, even if they are outside the lead agency’s jurisdiction; the probability of mitigation measures being implemented must also be discussed.<sup>40</sup> Mitigation Measure TR#1 (Potential Mitigation Measures Available to Address Traffic Delays) is inadequate because it does not disclose “all relevant” mitigation measures for specific roadway congestion impacts and their probability of implementation. It merely lists generic mitigation possibilities. To be adequate, this mitigation measure must be revised to present specific mitigation measures for each affected roadway and intersection, analyze them for effectiveness, and assess their probability of implementation.

For full disclosure, adverse secondary impacts of roadway improvements mitigation measures on VMT, air quality, and GHG emissions should also be disclosed, based on reasonable assumptions and forecasts. The Draft EIR/EIS excuse (p. 3.2-96) that “it is speculative to ascribe specific [secondary] impacts absent detailed location and designs” is unconvincing and does not show best efforts to disclose impacts.

***12. Mitigation measures TR-MM#3 and TR-MM#5 are improperly deferred mitigation measures with no performance standards.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. Mitigation measures TR-MM#3 (Implement Railway Disruption Control Plan) and TR-MM#5 (Contribute to 5th and King Street Station Pedestrian Improvements) are improperly deferred because they call for the contractor to prepare mitigation plans after Project approval that would identify specific mitigation measures. There are no objective performance measures presented to guide selection of specific mitigation measures, and therefore there is no assurance that the mitigation measures would be effective in reducing impacts to less than significant levels.

***13. Many transportation mitigation measures are uncertain and unenforceable because they require approvals and actions by other agencies.***

CEQA requires effective mitigation measures to be fully enforceable. (Guidelines, § 15126.4(a)(2).) A number of the Draft EIR/EIS transportation mitigation measures require approvals or other actions by local governments, San Francisco Municipal Transportation Agency (“MUNI”), and other agencies that have not committed to implement these measures. Examples include Mitigation Measure TR-MM#2 (Install Transit Priority Treatments), TR-MM#4 (Install San Carlos Station Pedestrian Improvements), and (R-MM#5 (Contribute to 5th and King Street Station Pedestrian Improvements). The Draft

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<sup>40</sup> Council on Environmental Quality. 1986. Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Question 19b). Available at: <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>.

EIR/EIS may not rely upon these types of unenforceable measures (e.g., in Table 3.2-26) to conclude that certain significant impacts would be less-than-significant post-mitigation.

**14. *Transportation cumulative impact analysis is inadequate.***

In addition to sharing the general approach problems reviewed previously, the transportation cumulative impact analysis presented in Draft EIR/EIS Section 3.18.6.1 is flawed for several reasons. First, it is unclear which (if any) of the future land use projects listed in Appendix 3.18-A were included. The Draft EIR/EIS (p. 3.18-25) merely observes that: “Traffic volumes on roadways in the cumulative [resource study area] would increase because of the cumulative projects, including the planned developments listed in Volume 2, Appendix 3.18-A.”

The 2040 analysis contained in the transportation section uses outdated ABAG Projection 2013 and therefore paints an inaccurate picture of projected 2040 conditions that does not, for example, include Baylands development. The Draft EIR/EIS cumulative transportation impact analysis (both construction and operations impact) should be revised to clearly include impacts of all reasonably foreseeable development projects in Appendix 3.18-A or use updated ABAG projections, verifying that they include reasonably foreseeable Baylands development. Also, like the direct impact analysis, the cumulative impact analysis omits an analysis of whether cumulative impacts would cause location-specific conflicts with plans, policies, and regulations for roadways (non-LOS), transit, and non-motorized transportation. Cumulative conflicts with each jurisdiction’s general plans or local circulation elements, such as the Brisbane Circulation Element, should be used to judge whether the Project’s impacts are cumulatively considerable.

**E. *Air Quality and Greenhouse Gas Impacts***

**1. *AQ-IAMF#1 is actually an improperly deferred mitigation measure with no performance standards.***

As discussed above, CEQA requires an EIR to identify mitigation measures as such, and not to be moved to the project description to avoid disclosure of significant impacts. AQ-IAMF#1 is not a Project design feature but a mitigation measure, because it calls for the contractor to prepare a detailed fugitive dust control plan for each distinct construction segment. It is also an improperly deferred mitigation measure because the fugitive dust control plans would be prepared after Project approval and because it includes no mitigation performance standards to be achieved.

**2. *Future air quality baselines should have expressly included reasonably foreseeable 2029 and 2040 development in Baylands.***

For the same reasons discussed in the [Section VII.C](#), Noise and Vibration comments above, the air quality impact analyses must be redone to specifically identify air quality



impacts on specific future sensitive receptors associated with reasonably foreseeable Baylands development in 2029 and 2040.

**3. *EMFAC 2017 results for air pollutant and GHG emissions should have been adjusted upwards based on CARB SAFE Vehicle Rule adjustment factors.***

The Draft EIR/EIS (p. 3.3-18) states that EMFAC 2017 was used for mobile source air pollutant and GHG emission calculations, but there is no indication that off-model adjustments were made to the EMFAC results as required by the California Air Resources Board (“CARB”).<sup>41</sup> CARB’s adjustment factors account for changes in federal fuel efficiency standards (the federal Safer Affordable Fuel-Efficient (“SAFE”) Vehicles Rule”), and require increases in modeled air pollutant and GHG emissions. The Draft EIR/EIS emission calculations must be revised to correct this inaccuracy, as some air quality and GHG impacts affected by the adjustment factors, e.g., construction worker commute vehicle emissions, were underestimated.

**4. *The analysis of Impact AQ#3 (Temporary Direct Impacts on Localized Air Quality – Criteria Pollutants) is inadequate because it does not fully disclose impacts on particular receptors.***

The analysis of Impact AQ#3 (Temporary Direct Impacts on Localized Air Quality – Criteria Pollutants) is inadequate because it merely discloses the Project’s “maximum impact” during construction along five sub-sections of the Project alignment. The “combined” concentration for each sub-section “conservatively estimates the sum of worst-case concentrations from all features that can occur concurrently at one receptor location.” (See, e.g., Draft EIR/EIS, Table 3.3-14, fn. 10.)

In *City of Long Beach v. City of Los Angeles*, *supra*, 19 Cal.App.5th 465, 487, the court held that such a “worst case” analysis does not sufficiently disclose “how frequently and for what length of time” sensitive receptors near an industrial project would be exposed to particulate concentrations exceeding standards. Similarly, based on the Impact AQ#3 analysis, particular receptors along the HSR alignment, such as Brisbane residents near the alignment, have no way of knowing how long air pollution concentrations would be exceeded or how great the exceedances would be during each year of construction. To be adequate, the Draft EIR/EIS Impact AQ#3 analysis must be revised to disclose how frequently and for what length of time air pollutant concentration thresholds are exceeded, and the locations of sensitive receptors experiencing these exceedances, as required by case law.

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<sup>41</sup> See [https://ww3.arb.ca.gov/msei/emfac\\_off\\_model\\_adjustment\\_factors\\_final\\_draft.pdf](https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf) and [https://ww3.arb.ca.gov/msei/emfac\\_off\\_model\\_co2\\_adjustment\\_factors\\_06262020-final.pdf](https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf).



**5. *The Draft EIR/EIS should have included a site-specific Health Risk Assessment for LMF operations.***

By performing generic and vague analyses, the Draft EIR/EIS hides potentially significance health risks associated with large increases in toxic air contaminants (“TACs”) and PM<sub>2.5</sub> in Brisbane caused by LMF operations. The Draft EIR/EIS should have treated the LMF as a discreet large industrial facility (which it is) and analyzed the significance of its project-level and cumulative TAC and PM<sub>2.5</sub> impacts using standard Bay Area Air Quality Management District (“BAAQMD”) methodologies.<sup>42</sup> The generic cumulative health risk assessment (“HRA”) in Draft EIR/EIS Section 3.18.6.2 does not sufficiently disclose specific health risks to future Baylands residents from LMF operations.

LMF TAC and PM<sub>2.5</sub> emissions sources include truck trips, employee commute trips, and the diesel generator. (See Draft EIR/EIS, Appx. 3.3-A, p. 6-6) Total TAC and PM<sub>2.5</sub> emissions from all these sources should be analyzed for health risks using standard BAAQMD methodologies. Although the air quality appendix (p. 6-6 states) that there are no (existing) sensitive receptors within 1,000 feet of the potential LMF generator locations, it provides no factual support for this statement. Further, by 2029 and 2040, additional sensitive receptors near the LMF sites are reasonably foreseeable and should have been included in the 2029 and 2040 future baselines due to planned residential development at the Baylands.

The Draft EIR/EIS’s existing analyses of TAC and PM<sub>2.5</sub> hide LMF health risk impacts on Brisbane receptors through generic or irrelevant analyses. For example:

- Impact AQ#10 (Continuous Permanent Direct Impacts on Localized Air Quality – Exposure to Mobile Source Air Toxics) uses FHWA screening criteria, rather than BAAQM methodologies, to conclude that localized emissions of mobile source air toxics (“MSATs”) would not be significant.
- Impact AQ#11 (Continuous Permanent Direct Impacts on Localized Air Quality – Particulate Matter Hot Spots) uses generic US Environmental Protection Agency (“US EPA”) guidance to conclude that local PM<sub>2.5</sub> concentration increases would not be significant.
- Impact AQ#12 (Continuous Permanent Direct Impacts on Localized Air Quality – Exposure to Diesel Particulate Matter and PM<sub>2.5</sub>) is the only quantified operational HRA. However, its scope is limited to the impacts of the shifting of tracks carrying freight trains to accommodate higher speeds for existing and new passenger rail.

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<sup>42</sup> BAAQMD, CEQA Air Quality Guidelines, Chapter 5, May 2017, available at: [https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en).

**6. Construction GHG emissions are improperly “offset” by reductions from seven years of operation.**

The Draft EIR/EIS improperly claims that the Project’s amortized construction GHG emissions from 2021-2026 would be offset by one to seven months of Project operations. (Draft EIR/EIS, p.3.3-88.) The significance of increased construction GHG emissions (unamortized) should be considered separately from GHG reductions from Project operations and mitigated because every year of delay in reducing GHG emissions worsens the climate crisis, and because, as discussed in [Section VII.E.8](#) *infra*, the Authority’s Sustainability Policy<sup>43</sup> requires the Project to achieve net-zero construction GHG emissions.

**7. Air quality construction mitigation measures are inadequate.**

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. Mitigation Measure AQ-MM#1 (Offset Project Construction Emissions in the San Francisco Bay Area Air Basin (“SFBAAB”)) is too uncertain to be effective. The amount of the mitigation fee, the timing of payment, and the offset projects to which it would be applied are not specified. Although the mitigation measure established a detailed process for setting the fee and finding mitigation projects, specific mitigation projects are not presented, and no evidence is presented that mitigation will actually result. (See *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1122 [traffic impact fee rejected when no specific fee amount was specified and the fee was not tied to specific mitigations projects].)

In addition, AQ-MM#1 inexplicably resorts straight to an uncertain and improperly deferred mitigation fee approach without first proposing that all feasible on-site mitigation measures be implemented. Many of these are specified in BAAQMD lists of “basic” and “additional” construction mitigation measures,<sup>44</sup> which are commonly used as CEQA construction mitigation measures in Bay Area projects. Because their implementation is more certain and enforceable, applicable measures from the BAAQMD lists should be added to AQ-MM#1 and their effectiveness in reducing emissions should be quantified using BAAQMD guidance before offset fees are considered to mitigate residual impacts that cannot be mitigated onsite.

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<sup>43</sup>[https://hsr.ca.gov/docs/brdmeetings/2019/brdmtg\\_041619\\_Item2\\_Final\\_RESOLUTION\\_HSRA19-02\\_Revised\\_Sustainability\\_Policy.pdf](https://hsr.ca.gov/docs/brdmeetings/2019/brdmtg_041619_Item2_Final_RESOLUTION_HSRA19-02_Revised_Sustainability_Policy.pdf).

<sup>44</sup> BAAQMD (2017). (CEQA Guidelines, Section 8.1.2.)

**8. *The Draft EIR/EIS does not demonstrate compliance with the Authority's Sustainability Policy principle to achieve net-zero GHG and criteria pollutant emissions in construction.***

The Draft EIR/EIS alternatives description states that the Authority's general approach to the Project includes continued implementation of its Sustainability Policy,<sup>45</sup> including a commitment to “net-zero GHG and criteria pollutant emissions in construction.” However, this commitment is not even mentioned in the Draft EIR/EIS air quality and GHG impact analysis section (Section 3.3), let alone complied with.

Mitigation Measure AQ-MM-MM#3 does not follow through with the net-zero commitment for criteria pollutant emissions during construction. It requires that for emissions not exceeding federal conformity de minimis thresholds, offsets are required only to stay below BAAQMD CEQA significance thresholds. The Draft EIR/EIS should either revise this mitigation measure to be consistent with the Sustainability Policy principle for net-zero criteria pollutant emissions or explain why it has decided not to implement it.

The Sustainability Policy inconsistency is even worse for construction GHG emissions, where no emissions offsets are proposed at all. Instead, the Draft EIR/ES (p 3.3-88) claims that the Project's considerable construction emissions would be “fully offset” by GHG emissions reductions during Project operations. However, this approach simply does not comply with the Sustainability Policy principle to achieve net-zero GHG emissions “in” (not “after”) construction. The policy inconsistency means that the Project's construction GHG emissions should be considered a significant impact since they conflict with the Authority's own “policy... adopted for the purpose of reducing the emissions of GHGs,” which is a GHG significance threshold.

This new significant impact triggers Draft EIR/EIS recirculation under Guidelines section 15088.5. To reduce this impact to less-than-significant, the Draft EIR/EIS should be revised to include a construction GHG emissions mitigation measure that achieves the net-zero target. The new mitigation measure should incorporate best management practices to reduce construction GHG emissions recommended by BAAQMD:<sup>46</sup> using alternatively fueled (e.g., biodiesel, electric) construction vehicles/equipment in at least 15% of the fleet; using local building materials of at least 10%; and recycling or reusing at least 50% of construction waste or demolition materials.

**9. *Air quality cumulative impact analysis is inadequate.***

In addition to sharing the general approach problems reviewed previously, the air quality cumulative impact analysis presented in Draft EIR/EIS Section 3.18.6.2 is flawed for several additional reasons. First, the construction cumulative impact analysis does not

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<sup>45</sup> See [https://hsr.ca.gov/docs/brdmeetings/2019/brdmtg\\_041619\\_Item2\\_Final\\_RESOLUTI ON\\_HSRA19-02\\_Revised\\_Sustainability\\_Policy.pdf](https://hsr.ca.gov/docs/brdmeetings/2019/brdmtg_041619_Item2_Final_RESOLUTI ON_HSRA19-02_Revised_Sustainability_Policy.pdf).

<sup>46</sup> BAAQMD (2017). (Guidelines, § 8.2.)

include contributions from reasonably foreseeable future projects that would likely be constructed during the Project construction period, only emissions from past and present projects; it is possible to forecast future project construction emissions based on existing information in Appendices 3.18-A and 3.18-B, and using reasonable assumptions. The Draft EIR/EIS's excuse on p. 3.18-16 for not considering construction impacts from future projects is entirely unconvincing and does not show best efforts to disclose impacts ("construction and operations details are not available, and those projects would be responsible for analyzing their contributions").

Second, a cumulative project-specific cancer risk and chronic health hazard assessment complying with BAAQMD requirements should have been conducted. Tables 3.18-3 and 3.18-4, which present cumulative health risks, have erroneous footnotes<sup>47</sup> indicating this is not required because "BAAQMD Regulation 2, Rule 5, Section 302, prohibits generator use if they would result in cancer or acute hazard impacts in excess of BAAQMD's health risk thresholds of significance." However, the Project does not include this assumption, which would be highly impractical once the generators are in use.

Third, footnotes to these tables,<sup>48</sup> and their associated text, omit analysis of Alternative A (the CEQA proposed Project), by erroneously stating that: "No ambient sources were identified within 1,000 feet of the East Brisbane LMF and receptors under Alternative A. Accordingly, there would be no cumulative effect." However, under reasonably foreseeable Baylands development, this assumption is incorrect, and Alternative A's cumulative impacts should have been analyzed assuming reasonably foreseeable Baylands development.

Fourth, it is impossible to determine whether the operational air quality cumulative impact analyses included emissions from all the reasonably foreseeable future development and transportation projects in Appendices 3.18-A and 3.18-B, respectively. The Draft EIR/EIS should explain how these operational emissions were included or be revised to include them.

Finally, conclusions regarding the Project's contribution to cumulative impacts on Draft EIR/EIS pp. 3.18-22 and 3.18-23 do not comply with CEQA requirements. For construction-related criteria pollutant impacts, the Project's contribution must be analyzed pre-mitigation, and therefore must be judged cumulatively considerable. Also, total cumulative cancer risks and PM<sub>2.5</sub> concentrations for combined construction and operations would be significant, and the Project would have a cumulatively considerable contribution to this impact. The Draft EIR/EIS's excuse of why this is not the case<sup>49</sup> shows utter

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<sup>47</sup> Draft EIR/EIS, footnote 2 in Table 3.18-3 and footnote 7 in Table 3.18-4.

<sup>48</sup> Draft EIR/EIS, footnote 3 in Table 3.18-3 and footnote 3 in Table 3.18-4.

<sup>49</sup> Draft EIR/EIS p. 3.18-23 states: "The relative contribution of the combined construction and operation of the project to the exceedances of the thresholds would be less than the BAAQMD's project-level thresholds and minor compared to ambient cancer risks and PM<sub>2.5</sub>

disregard for the basic CEQA principle that an impact may be cumulatively considerable even though it constitutes only a small ratio of the total impact to which it contributes. (See, e.g., *Gray v. County of Madera, supra*, 167 Cal.App.4th 1099, 1123 [cumulative noise impact analysis was inadequate where EIR focused on significance of individual noise impact rather than its contribution to cumulative noise impacts that already exceeded acceptable noise levels.].)

## F. Cultural Resources Impacts

### 1. *The Draft EIR/EIS does not sufficiently consider known cultural resources.*

Projects that may cause a substantial adverse change in the significance of a “historical resource,” unique archaeological resource, or tribal cultural resource are projects that may have a significant effect on the environment under CEQA. (Pub. Resources Code, §§ 21084.1, 21083.2, and 21083.09.)

The Draft EIR/EIS’s cultural resources analysis is insufficient because it fails to provide facts necessary to allow the Authority and the public to make informed decisions about the Project. Specifically, there was no investigation of the potential to encounter unrecorded cultural resources during the Project’s construction, and the Draft EIR/EIS’s analysis failed to consider already known archaeological sites that could be classified as historical resources. The Draft EIR/EIS admits (p. 3.16-96) that “most of the project [area of potential effect] APE has not been subject to archaeological field inventories” and that “field surveys are a necessary component of the archaeological resource identification and evaluation effort.”

For the San Francisco to San José Project Section, a length of approximately 49 miles, the Draft EIR/EIS remarkably identifies only 27 historic built properties within the APE that are National Register of Historic Places (“NRHP”)-listed or NRHP-eligible properties and 26 archaeological resources that are listed in the NRHP or assumed eligible for listing in the NRHP and “determined also to be historical resources for CEQA.” (Draft EIR/EIS, p. 3.16-42.) However, the Authority should have sought additional information about the existence of archaeological sites located on the Project site and included that information in the Draft EIR/EIS.

In June 2020, Page & Turnbull prepared a technical memorandum for the applicant of the Brisbane Specific Plan for development of the Baylands evaluating archaeological monitoring of geotechnical coring taken at 146 locations for the Baylands Specific Plan hazardous waste characterization studies.<sup>50</sup> A total of 712 core locations were monitored.

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concentrations from existing sources. Therefore, the contribution of the project alternatives would not materially increase this impact.”

<sup>50</sup> See Metis discussing inadequate analysis of cultural resource impacts; also see Attachment Metis-H: Page & Turnbull, Memorandum.



Twenty-three (23) of those core locations identified prehistoric archaeological deposits of intact shell midden and redeposited or displaced shell midden material. Both intact and displaced shell midden deposits are considered to be highly sensitive for the discovery of Native American human remains.<sup>51</sup>

The Project proposes extensive work to construct the West Brisbane LMF on the *same sites* described in the memorandum yet the Draft EIR/EIS fails to acknowledge these archaeological deposits – a basic first step for legal adequacy under CEQA. The Draft EIR/EIS must be revised to evaluate *all* core locations containing prehistoric artifacts that could potentially qualify as a historical resource under CEQA. The Authority must evaluate these resources’ eligibility for listing in the California Register of Historical Resources or a local register. If eligible for listing, the Authority should determine whether the Project would have substantial adverse effects on these eligible resources, and if so, develop site-specific mitigation measures to reduce their impacts to a less than significant level.

The Page & Turnbull memorandum recommended additional “intensive subsurface testing with more closely spaced cores dug consistently to the top of the Bay Mud” to provide “greater clarity on the nature and extent of subsurface archaeological” sites within areas subject to soil remediation and grading in preparation for development.<sup>52</sup> The presence of additional archaeological sites in Brisbane that could likely be CEQA-defined historical resources presents significant new information that triggers recirculation under CEQA because it shows a substantial increase in the severity of impacts under Impact CUL#2 would result from the Project that are not effectively mitigated. (Guidelines, § 15088.5(a).)

**2. *Many cultural resources IAMFs are improperly deferred mitigation, and some have no performance standards to assure less than significant impacts.***

Under *Lotus, supra*, 223 Cal.App.4th 645, 656 n. 7, mitigation measures must be identified as such unless they are so clearly part a project itself that it “would be nonsensical” to analyze impacts without them. The cultural resource discussion fails the *Lotus* test. Specifically, CUL-IAMF#1 (Geospatial Data Layer and Archaeological Sensitivity Map), CUL-IAMF#3 (Pre-Construction Cultural Resource Surveys), CUL-IAMF#4 (Relocation of Project Features when Possible), CUL-IAMF#5 (Archaeological Monitoring Plan and Implementation), CUL-IAMF#6 (Pre-Construction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage), CUL-IAMF#7 (Built Environment Monitoring Plan), and CUL-IAMF#8 (Implement Protection and/or Stabilization Measures) are improperly included as part of the project description, and should be evaluated as Draft EIR/EIS mitigation measures.

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<sup>51</sup> Attachment Metis-H: Page & Turnbull, Memorandum.

<sup>52</sup> See Attachment Metis-H: Page & Turnbull Memorandum.



Not only are these IAMFs mitigation measures, but many are improperly deferred mitigation measures because they seek to reduce or avoid potential cultural resources impacts, the specifics of which are postponed until after Project approval. Many of the IAMFs require surveys prior to the start of construction to minimize any potential Project impacts. To accurately describe cultural resources impacts and mitigation measures, the Draft EIR/EIS must be revised to include results of these surveys prior to Project approval.

For example, IAMF#1 and IAMF#3 require the employment of cultural resource specialists to create a geospatial data layer to identify locations of cultural resources as well as archaeologists to conduct pre-construction cultural resource surveys. (Draft EIR/EIS, p. 3.16-42.) These surveys should have been completed and included in this Draft EIR/EIS, not deferred to a post Project approval date. IAMF#5 requires the contractor's archaeologist to prepare a monitoring plan based on the results of the surveys. This monitoring plan will be approved by the Authority prior to construction activities, but there are no standards presented governing this discretionary approval. These IAMFs improperly defer identification of locations of resources that require avoidance or protection, and areas of archaeological sensitivity that require monitoring.

Many IAMFs do not identify appropriate performance standards to ensure significance impact are reduced to a less than significant level.<sup>53</sup> For example, IAMF#7 requires the contractor to prepare a built environment monitoring plan, which would “detail the monitoring methods and process required for ground-disturbing activities” near the Project site.<sup>54</sup> (Draft EIR/EIS, p. 3.16-61.) However, the Draft EIR/EIS does not provide any further details regarding such monitoring methods or process requirements to ensure that impacts would be less than significant.

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<sup>53</sup> Generally, “[f]ormulation of mitigation measures shall not be deferred until some future time;” however, when it is impractical or infeasible to include specific details of a mitigation measure during the project’s environmental review, details may be developed after project approval, provided that the agency (1) commits to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies types of potential actions that can feasibly achieve that performance standards. (Guidelines, § 15126.4(a)(1)(B).)

<sup>54</sup> Other IAMFs that do not provide performance standards include: (1) CUL-IAMF#4 (Relocation of Project Features when Possible) fails to specifically discuss the kind of construction “avoidance and protection measures” that would be used to avoid or reduce impacts to existing cultural resource sites to a less than significant level; (2) CUL-IAMF#5 (Archaeological Monitoring Plan and Implementation) does not include monitoring plan information to ensure monitoring would be effective; (3) and CUL-IAMF#6 (Pre-Construction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage); and (4) CUL-IAMF#8 (Implement Protection and/or Stabilization Measures) which do not specify performance standards for protection or stabilization measures to minimize adverse effects.

**3. *CUL-IAMF#4 is unenforceable.***

In Mitigation measures must be enforceable through conditions of approval, contracts, or other means that are legally binding. (Pub. Resources Code, § 21081.6(b); Guidelines, § 15126.4(a)(2).) The Draft EIR/EIS states that changing the Project’s rail alignment to avoid newly discovered sites is likely infeasible, however, access areas and laydown sites may be relocated if found to affect newly-discovered cultural resources. (Draft EIR/EIS, p. 2-E-9.) CUL-IAMF#4 is unenforceable because it limits the relocation of construction sites to “when possible,” but does not objectively define factors to determine when it would be possible to do so. Because there are no objective standards to inform the parameters of “when possible,” this measure is illusory.

**4. *The Draft EIR/EIS does not analyze whether the Project may have a significant impact on tribal cultural resources.***

“A project with an effect that may cause a substantial adverse change in the significance of tribal cultural resource is a project that may have a significant effect on the environment.” (Pub. Resources Code, § 21084.2.) Tribal cultural resources are defined as “sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe.” (Pub. Resources Code, § 21074(a).) An EIR must discuss whether the project “has a significant impact” on the tribal cultural resource and whether feasible alternatives or mitigation measures could avoid or substantially lessen that impact. (Pub. Resources Code, § 21082.3(b).)

The Draft EIR/EIS fails to disclose whether the Project’s impacts on tribal cultural resources are significant. Although as a CEQA significance threshold states (p. 3.16-17) that impacts would be significant if the Project would cause a “substantial adverse change in the significance of a tribal cultural resource,” inexplicably the Draft EIR/EIS fails to identify any tribal cultural resources to determine whether impacts to them would be significant. A lead agency has an affirmative obligation to do this even if tribes, as in this case, have not identified tribal cultural resources during AB 52 consultation.<sup>55</sup>

Due to the presence of known and potential archaeological sites, it is likely that many tribal cultural resources exist within the APE, and that the Project has the potential to significantly impact them given the extensive grading and excavation. Draft EIR/EIS Section 3.16.7 must be revised to disclose whether the Project may have a significant impact

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<sup>55</sup> A project that may cause a substantial adverse change in the significance of a tribal cultural resource is considered a project that may have a significant effect on the environment; the project’s CEQA document must discuss whether the project “has a significant impact on an identified tribal cultural resource” and whether feasible alternatives or mitigation measures could avoid or lessen the impact. (See Pub. Resources Code, §§ 21084.2, 21082.3(b).)

on tribal cultural resources, in which case the Authority must analyze feasible alternatives or mitigation measures to lessen the impacts.

**5. *Mitigation measure development is improperly deferred to the Section 106 consultation process.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. The Draft EIR/EIS conflates federal agency compliance with Section 106 of the NHPA with CEQA compliance because the Authority plans to further assess the Project’s environmental impacts and establish mitigation measures considered in consultation after the Project’s approval. The Draft EIR/EIS (p. 3.16-92) does not commit to specific mitigation measures, but rather states that “[t]he following measures are standardized mitigation measures that would be considered in consultation and may be included in a memorandum of agreement “MOA” that would be negotiated between consulting parties and executed just prior to the Record of Decision “ROD”; however, the consulting parties may negotiate other mitigation measures.” Further, the Draft EIR/EIS (p. 3.16-92) states that mitigation measures will be “negotiated in consultation” with the consulting parties and formalized in an MOA. The “agreed-upon mitigation would be implemented after the MOA is executed” and will be subject to modification in the MOA or “associated treatment plans to mitigate impacts on specific properties.” (Draft EIR/EIS, p. 3.16-92.)

Two treatment plans would be developed from the MOA: an archaeological treatment plan (“ATP”) and a built environment treatment plan (“BETP”), which would provide “specific performance standards to avoid, minimize, or reduce each impact to the extent possible and provide enforceable performance standards to follow the NRHP and the Secretary of Interior’s standards when implementing the mitigation measures” and would include “relevant mitigation measures for the purposes of NEPA and CEQA to be implemented in compliance with Section 106.” (Draft EIR/EIS, pp. 3.16-92 to -93.) The “ATP would be prepared in consultation with the tribes to focus on the treatment of known and unknown archaeological resources, and it would require the phased identification, evaluation, and mitigation of archaeological resources that may be on parcels.” (Draft EIR/EIS, p. 3.16-93.) The BETP would describe treatments to be applied and protection measures for properties to avoid impacts. (Draft EIR/EIS, p. 3.16-93.) These are examples of improper deferral of project-specific mitigation measures under CEQA.

The Draft EIR/EIS improperly defers the formulation of mitigation measures until after the Section 106 consultation process begins. Even then, the consulting parties and the Authority will “negotiate” mitigation measures for implementation, so that reducing impacts to a less than significant level through the implementation of undefined mitigation measures will be uncertain. Additionally, the Draft EIR/EIS fails to commit the Authority to specific performance standards that would be used to develop specific mitigation options once the consultation process is completed.

Because the Draft EIR/EIS cultural resources mitigation measures present no performance standards and are improperly deferred, its conclusions that they reduce Impacts CUL#1 and CUL#2 to less than significant levels (see Table 3.16-6) are not supported by substantial evidence. The Draft EIR/EIS should be revised to present revised cultural resources mitigation measures that clearly meet the requirements of the CEQA Guidelines (Guidelines, § 15126.4(a)(1)(B)) and applicable case law. For example, Mitigation Measures CUL-MM#1, CUL-MM#2, and CUL-MM#3 should be revised to firmly commit the Authority to the specific historical resources mitigation standards included in the CEQA Guidelines. (Guidelines, § 15126.4(b).)

**6. *Cumulative impact analysis for archaeological resources is inadequate.***

The archaeological cumulative impact analysis improperly assumes that existing laws and regulations and mitigation measures would prevent any cumulative impacts on archaeological resources from occurring. Therefore, there would be no cumulatively considerable Project contribution to such impacts. (Draft EIR/EIS, pp. 3.18-79 to -80.) The Draft EIR/EIS presents no evidence that all reasonably foreseeable future projects would comply with all applicable archaeological resources laws and regulations, and it is unrealistic to expect they would do so.

Further, the archaeological resources cumulative impact analysis is inadequate because it fails to recognize that the Impacts CUL#1 and CUL#2 are significant impacts pre-mitigation. (See Draft EIR/EIS, Table 3.16-6.) In addition, the above comments demonstrate that Impact CUL#2 is much greater in magnitude than indicated in the Draft EIR/EIS. The cumulative impact analyses for these specific impacts should have used the same significance thresholds as for direct impacts, added the impacts of probable future projects, and concluded that cumulative impacts were also significant, with the Project's contributions being cumulatively considerable. (See Guidelines, § 15130.) Instead, the Draft EIR/EIS illogically concludes that, notwithstanding these significant direct impacts, the Project would have no cumulative archaeological resources impacts at all.

**G. *Geology, Soils, Seismicity, and Paleontological Resources Impacts***

**1. *The Draft EIR/EIS fails to analyze the soils and geologic hazards associated with constructing the LMF on a landfill.***

In preparing an EIR, a lead agency is required to “use best efforts to find out and disclose all that it reasonably can.” (Guidelines, § 15144.) The analysis of Impact GEO#6. (Construction on Landfills) runs afoul of this fundamental mandate as it does not sufficiently analyze soils and geological hazards associated with the construction of the proposed LMFs on the former Brisbane Landfill or the site west of the Caltrain corridor. This lack of analysis is particularly egregious given the history of use as an unclassified landfill and contaminated railyard.

Despite recognizing that construction of the East LMF “would require significant earthwork cut and fill” of approximately 2,082,800 cubic yards of earth, Impact GEO#6 does not analyze the effects of that extensive excavation within the landfill site, which was in operation from 1932 to 1967 and consists of approximately 364 acres containing refuse as deep as 40 feet. (Geology, Soils, and Seismicity Technical Report [“GEO Technical Report”], p. 5-33.) The Draft EIR/EIS notes that landfills “pose hazards for construction associated with the release of flammable gases (e.g., methane) and the potential for ground settlement due to the compressibility of refuse and decomposition of organic materials.” (*Ibid.*) However, despite requiring significant earthwork cut and fill,<sup>56</sup> the likelihood of geologic and soil hazards from East LMF construction on the former landfill are not analyzed beyond that sentence. Instead, the Draft EIR/EIS determines there is a less than significant impact due to the implementation of Project design features (that are actually deferred mitigation measures). The Draft EIR/EIS improperly attempts to minimize potential impacts without first analyzing whether there would be a significant impact. Because of decades of use as an unclassified landfill, prior to the distinction between hazardous and non-hazardous wastes, the large size and depth of the landfill, and the extent of construction, the Draft EIR/EIS must undertake adequate analysis of geologic and geotechnical hazards impacts associated with LMF construction to provide substantial evidence to support the significant impact conclusion.

Additionally, the Draft EIR/EIS concludes construction of the West LMF on the contaminated Brisbane Rail Yard “would not expose people or structures to risks associated with construction on landfills” despite being only 450 feet west of the former Brisbane Landfill. (Draft EIR/EIS, p. 3.9-56.) The Draft EIR/EIS must analyze whether construction requiring significant amounts of excavation and grading on a site adjacent to a former landfill may result in soils and geologic hazards.<sup>57</sup> Again, the Authority improperly relies on the contractor’s preparation of *future* gas monitoring plans to conclude “potential risks associated with subsurface migration of landfill gases would be minimized through the implementation of project features.” (Draft EIR/EIS, p. 3.9-56.) The Draft EIR/EIS must

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<sup>56</sup> See Metis comments, stating the Draft EIR/EIS does not disclose that the “materials” for disposal will largely be composed of domestic, industrial and shipyard waste, sewage, and rubble deposited in the former landfill prior to the classification of wastes as hazardous or nonhazardous and prior to the segregation of waste streams.

<sup>57</sup> For example, Impact GEO#6 fails to analyze the regulatory agencies’ approval of landfill closure and post-closure plans in its geologic and soils impact analysis. Lack of coordination with the lead regulatory agencies for determination and oversight of soil and groundwater cleanup requirements has the potential to exacerbate geologic and soils impacts resulting from LMF construction. Remediation standards and requirements for the use of specific technologies for Title 27 landfill closure must be discussed and analyzed in the Draft EIR/EIS. Please refer to [Section VII.H](#) of this letter, discussing the requirements for regulatory approval for remediation of the Brisbane Rail Yard and closure requirements for the former Brisbane Landfill and the Authority’s inadequate analysis of hazardous materials and waste impacts.



first analyze the potential for soils and geologic hazards from construction on a site contaminated with hazardous material that is directly adjacent to a former landfill before concluding there would be a less than significant impact.

**2. *Many GEO-IAMFs are improperly deferred mitigation measures with no performance standards.***

As discussed above, CEQA requires an EIR to identify mitigation measures to be identified as such, and not moved to the project description to avoid disclosure of significant impacts. GEO-IAMF#1 (Geologic Hazards), GEO-IAMF#3 (Gas Monitoring), GEO-IAMF#5 Hazardous Minerals), GEO-IAMF#10 (Geology and Soils), and GEO-IAMF#13 (Prepare and Implement Paleontological Resources Monitoring and Mitigation Plan) should be identified as Draft EIR/EIS mitigation measures because they are not clearly part of the Project and insufficiently describe measures to avoid or reduce potential geological and geotechnical impacts.

These IAMFs are also improperly deferred mitigation measures. GEO-IAMF#1 requires preparation of a construction management plan to identify ways the contractor “would address geologic constraints and minimize or avoid impacts to geologic hazards during construction.” (Draft EIR/EIS, p. 2-E-12.) The construction management plan would be created *after* Project approval and include “design measures” and “safety procedures and guidelines” (p. 3.9-55) and would “at a minimum,” address six listed geological and geotechnical constraints and resources. The construction management plan should be prepared and included in the Draft EIR/EIS, with specificity, including the details of design measures or safety procedures to adequately determine whether impacts would be reduced to less than significant levels.

GEO-IAMF#1’s insufficient description of the construction management plan is plagued with voluntary terminology: if soft soils are encountered, they “can be excavated and replaced with competent soils”; and preloading “can be used” to improve soil strength. (Draft EIR/EIS, p. 2-E-12.) There are no mandatory statements requiring adherence to the construction management plan, let alone articulated performance standards to be achieved. For instance, GEO-IAMF#1 states, “consideration is being given to overbuild” the railbed and construction specifications “would be based upon the decision whether to remove or treat the soil” (p. 2-E-12), but the Draft EIR/EIS does not identify the parameters of that consideration or how, when, or why the decision whether to remove or treat the soil will be made.

GEO-IAMF#3 (Gas Monitoring), GEO-IAMF#5 (Hazardous Minerals), GEO-IAMF#10 (Geology and Soils) and GEO-IAMF#13 (Prepare and Implement Paleontological Resources Monitoring and Mitigation Plan) are similarly improperly deferred mitigation measures that require post-Project-approval of the development of surveys, best management practices, plans, and procedures for minimizing potential geological and geotechnical impacts. Additionally, GEO-IAMF#3 proposes an insufficient gas monitoring



measure because it is solely designed for worker protection and active construction work and fails to address exposure to the nearby community, including future workers within the LMF and long-term requirements for landfill gas monitoring needed at the East LMF.

The Draft EIR/EIS incorrectly concludes that geology and soils impacts will be less than significant because of implementation of these disguised and deferred mitigation measures without sufficient description of performance standards that would ensure a less than significant impact determination.

**3. *Geology and soils impact analyses do not identify the significant impacts associated with LMF construction on soft, unstable soil that is contaminated.***

The Draft EIR/EIS insufficiently analyzes the extent of aggregate impacts associated with extensive excavation, grading, and construction on soft, unstable soil that is also contaminated with landfill waste or hazardous material. The GEO Technical Report discusses how the San Francisco Bay is comprised of soft, compressible clayey silt to silty clay, known as Young Bay Mud, which underlies much of the artificial fill in Brisbane on which construction of both Brisbane LMF sites are anticipated. Young Bay Mud is a sensitive soil with “low strength” that may not support new construction loads and results in bearing capacity and ground failures. (GEO Technical Report, p. 5-19.) The Technical Report notes that Young Bay Mud “is not always visible or mapped at the ground surface” but is susceptible to large consolidation settlement and its presence has a potential for significant settlement under new construction loads. (GEO Technical Report, p. 5-19.)

The GEO Technical Report notes that the former Brisbane Landfill,<sup>58</sup> a site of approximately 364 acres, “sits directly on Young Bay Mud deposits” ranging in thickness from approximately 35 to 40 feet. (GEO Technical Report, p. 5-33.) The thicker the Young Bay Mud, the more the soil will settle under new construction loads. (Draft EIR/EIS, p. 3.9-28.) Structures built on Young Bay Mud “are susceptible to potentially large consolidation settlement and must be able to accommodate or avoid such deformation.” (Draft EIR/EIS, p. 3.9-28.) In fact, subsidence along Lagoon Road is a frequent occurrence because it sits upon municipal wastes.<sup>59</sup> The Draft EIR/EIS does not sufficiently discuss how the Brisbane LMF would “accommodate or avoid” soil settlement.

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<sup>58</sup> Response to Comment BBCAG-109 in the Final Program EIR for the Brisbane Baylands project provides insight into ground beneath the Brisbane Landfill: “Basically, fill comprised of solid waste accepted by the landfill was placed on top of (1906 San Francisco) earthquake rubble that was placed on top of marine sediments to form land. Soil has been placed on top of the solid waste to prevent contact with the waste. More than likely, soil was placed on top of the solid waste during the operations of the landfill as ‘daily cover’ to prevent the materials from being blown into the community or the Bay.”

<sup>59</sup> See Metis discussion of Impact GEO#1 and location of Lagoon Road, near the southerly edge of the former Brisbane Landfill.

While the Draft EIR/EIS reiterates the GEO Technical Report's issues of construction on Young Bay Mud soil (Draft EIR/EIS, p. 3.9-28), Impact GEO#1 does not adequately analyze how impacts from construction, such as excavation of the soft soil under both possible Brisbane LMF sites, could be heightened because both sites contain hazardous waste materials, which bolsters the necessity of site-specific geotechnical studies prior to construction.<sup>60</sup> Construction on a landfill has the potential to release flammable gases. (Draft EIR/EIS, p. 3.10-39.) This combustible hazard is compounded by the fact that construction of the Brisbane LMF on either site would require the excavation of millions of cubic yards of cut, the impacts of which could be intensified by the soft soil makeup of the ground underneath. Thus, the impact analysis and conclusory significance determination are inadequate.

In fact, Impact-GEO#2, Impact-GEO#3, Impact-GEO#4, and Impact-GEO#5 all similarly do not consider how construction of the Brisbane LMF on both locations and the relocation of Bayshore Station and Tunnel Avenue overpass are located on or very near sites containing hazardous waste and materials. The susceptibility of construction on expansive soils, corrosive soils, soil erosion, and shallow bedrock and groundwater must be analyzed in conjunction with the fact that the soils contain hazardous waste and materials.<sup>61</sup>

**4. *Impact GEO#6 (Construction on Landfills) presents an incomplete and misleading evaluation of impacts.***

Many specific shortcomings of Impact GEO# 6 analysis are presented in Metis comments on this impact. To be adequate, the Draft EIR/EIS impact analysis must be revised to provide: (1) a detailed analysis of the amount of soil and waste materials that would be removed from the former landfill; (2) geotechnical analysis of the stability of the pad that would be constructed to support the East LMF; (3) identification of feasible remedial measures required to avoid subsidence during LMF operations; and (4) a Title 27-compliant plan that includes specific capping requirements, long-term landfill gas monitoring requirements, drainage controls, and other measures that would need to be addressed under the oversight of the RWQCB and CalRecycle for any portion of the landfill left in place, and; (5) analysis of the environmental impacts associated with excavating into and building the LMF on the former landfill.

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<sup>60</sup> Metis, discussing Impact GEO#1.

<sup>61</sup> Dr. Michelle King noted that a geotechnical evaluation is needed to address the surrounding slopes of the landfill to appropriately evaluate subsidence and slope stability. (Attachment Metis-C: EKI Hazardous Materials and Wastes Comments and Resumes.)

## H. Hazardous Materials and Wastes Impacts

### 1. *HMW-IAMF#1 improperly defers Phase 1 and Phase 2 Environmental Site Assessments.*

An accurate characterization of the environment setting is the critical starting point for a legally adequate impact analysis. (Guidelines, § 15125). Yet here, the EIR improperly defers the essential Phase 1 and Phase 2 ESA analyses along the entire segment until the ROW acquisition phase, until after Project approval. (HMW-IAMF#1 (Property Acquisition Phase 1 and Phase 2 Environmental Site Assessments).)<sup>62</sup> It is axiomatic that Phase 1 and Phase 2 ESA results should have been disclosed in the Draft EIR/EIS and not improperly deferred. Without this information, the baseline conditions have not been accurately described and it is impossible to properly determine the significance of the Project's hazardous materials and waste impacts. Many other hazardous IAMFs are improperly deferred mitigation with no performance standards.

### 2. *Other hazardous materials/waste IAMFs are also improperly deferred, with no performance standards.*

CEQA requires an EIR to identify mitigation and not fold it into the project description to avoid disclosure of significant impacts. Specifically, HMW-IAMF#4 (Undocumented Contamination), HMW-IAMF#5 (Demolition Plans), and HMW-IAMF#6 (Spill Prevention) should be properly characterized and evaluated as Draft EIR/EIS mitigation measures.

These three IAMFs also fail because they defer the critical components of the measures themselves, instead offering only concepts and generalities. An EIR is required to describe feasible measures that could minimize significant adverse impacts. (Pub. Resources Code, § 21002.1(a); Guidelines, § 15126.4(a)(1).) The CEQA Guidelines (Section 15370) describe the type of measures lead agencies may consider and identify standards for determining what constitutes an adequate discussion of mitigation measures, such as the measures' enforceability.<sup>63</sup> (Guidelines § 15126.4(a)(2).) Generally, conceptual, these IAMFs require the Project's contractor to prepare future construction management plan articulating the required actions and procedures for handling undocumented contamination, demolition, and spill prevention prior to the start of construction to minimize any potential

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<sup>62</sup> See Metis discussion of HMW-IAMF#1.

<sup>63</sup> CEQA Guidelines section 15126.4(a)(1)(B) sets requirements for the lead agency to adhere to when developing the specific details of a mitigation measure after project approval when it is impractical or infeasible to include such details. Under these circumstances, the lead agency must (1) commit itself to the mitigation, (2) adopt specific performance standards the mitigation will achieve, and (3) identify the type of potential actions that can feasibly achieve that performance standard that will be considered, analyzed, and potentially incorporated into the mitigation measure. (CEQA Guidelines § 15126.4(a)(1)(B).)

impacts. They do not include appropriate detail to ensure significant impacts are reduced to a less than significant level.

For example, HMW-IAMF#4 (Undocumented Contamination) requires the contractor to prepare a construction management plan specifying how “the contractor would work closely with local agencies to resolve any such encounters and address necessary clean-up or disposal.” (Draft EIR/EIS, Appx. 2-E, p. 2-E-19.) HMW-IAMF#4 is overly vague because it does not discuss which agencies the contractor will consult, how the contractor will work with them, what working “closely” entails, what steps are necessary upon encountering hazardous materials, or the parameters required for addressing necessary clean-up. Further, this measure is insufficient for mitigating impacts on sites where contamination is already documented and requires plans for site remediation and landfill closure (e.g., the East and West LMF sites).<sup>64</sup>

Similarly, HMW-IAMF#5 requires the contractor to prepare demolition plans for the “safe dismantling and removal of building components and debris” including a plan for the abatement of lead and asbestos. (Draft EIR/EIS, Appx. 2-E, p. 2-E-19.) No further information regarding this demolition plan is provided to illuminate the parameters of “safe dismantling,” where such debris will be removed, or how abatement procedures of these hazardous materials would follow to ensure the impact reduction to a less than significant level.

Lastly, HMW-IAMF#6 describes a construction management plan for spill prevention prescribing best management practices to prevent hazardous materials releases and address hazardous materials clean-up. (Draft EIR/EIS, Appx. 2-E, p. 2-E-19). However, the Draft EIR/EIS provides no examples of what practices would qualify as best management practices to properly inform decision makers as to whether such practices would sufficiently reduce impacts to a less than significant level.

**3. *HMW-IAMF#9 is improperly deferred mitigation and is also unenforceable.***

HMW-IAMF#9 (Environmental Management System) is also an improperly deferred mitigation measure because it seeks to identify, avoid, and minimize the use of hazardous substances in construction, operation, and maintenance of the Project. (Draft EIR/EIS, Appx. 2-E, p. 2-E-19.) HMW-IAMF#9 suggests the Authority would use an Environmental Management System “to describe the process used to evaluate the full inventory of hazardous materials,” which is a process that should be conducted prior to Project approval. Even though HMW-IAMF#9 states how the process would be used to evaluate hazardous sites, it does not state what that process would entail, how the Authority would “replace

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<sup>64</sup> See Metis discussion of HMW-IAMF#4; the deferral of documentation of measures to address existing site contamination deprives the public of critical information needed to review and provide comments on the Project’s impacts.

hazardous substances with nonhazardous materials,” or present objective feasibility standards to determine the effectiveness of the process to ensure a less than significant impact determination.

Mitigation measures must also be fully enforceable. HMW-IAMF#9 is not enforceable in part because it states, “[t]o the extent feasible, the Authority is committed to identifying, avoiding, and minimizing hazardous substances.” (Draft EIR/EIS, p. 2-E-19.) The Authority retains discretion, without objective standards guiding that discretion, to determine whether use of the Environmental Management System is “feasible.” Because the factors for determination of infeasibility are not objectively defined, this measure is illusory.

**4. Hazards associated with LMF construction on Brisbane Landfill and Brisbane Rail Yard remediation sites are not sufficiently disclosed.**

An EIR must provide a “sufficient degree of analysis” to provide decision makers with the information needed “to make a decision which intelligently takes account of environmental consequences.” (Guidelines, § 15151; *Laurel Heights I, supra*, 47 Cal.3d 376, 392 [EIRs should provide a reasonable, good faith disclosure and analysis of the project’s environmental impacts].)

The Draft EIR/EIS does not adequately discuss the direct environmental impacts caused by the construction of the Brisbane LMF on either the former Brisbane Landfill or remediation operable units UPC-OU-SM and UPC-OU-2 and the construction’s potential for hazardous materials exposure. The Draft EIR/EIS and Hazardous Materials and Wastes Technical Report (“HMW Technical Report”) recognizes the potential impacts only in a qualitative manner and lists contaminants “that could be disturbed by excavation.” Draft EIR/EIS, p. 3.12-29 includes a brief discussion of possible accidents (p. 3.12-29), briefly mentions generation of additional waste materials (p. 3.12-31), and, in one sentence, states the potential for the release of flammable gases for construction on a landfill (p. 3.10-39).<sup>65</sup> However, the brief listing of possible hazards in one sentence is not sufficient (p. 3.11-40). The Draft EIR/EIS does not provide any analysis whatsoever as to the potential health risks and public health and safety impacts and their severity<sup>66</sup> associated with construction (i.e., grading, excavations, offsite hauling) on the former Brisbane Landfill or Brisbane Rail Yard. No mitigation measures are presented for these impacts.

Additionally, the Draft EIR/EIS improperly pigeonholes potential hazardous waste and materials impacts from construction of the Project because it characterizes construction Impacts HMW#2 and HMW#10 as temporary. However, the impact analyses must consider

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<sup>65</sup>The Draft EIR/EIS’s GEO Technical Report similarly only briefly identifies hazards associated with landfills, such as the flammability of landfill gas if released and the compressibility of the buried reuse. (GEO Technical Report, p. 5-33.)

<sup>66</sup> See *Friant Ranch, supra*, 6 Cal.5th 502, 518 [finding inadequate EIR’s general discussion of public health impacts.]



that construction on the site west of the Caltrain right-of-way or landfill may have long-term effects, since remedial action plans and landfill closure plans are required, which address long-term protection of human health and environment.

To fully inform the public and decision makers about the hazardous waste impacts of significant construction on such hazardous sites, the Authority must quantitatively disclose and sufficiently analyze hazards related to construction on the proposed Brisbane LMF sites to adequately assess very likely impacts and whether those impacts can be reduced to a less than significant level through the incorporation of mitigation measures. These impacts would be significant because they would “create a significant hazard to the public and environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which is one of the Draft EIR/EIS significance thresholds. (See Draft EIR/EIS, p. 3.10-11.)

**5. *The former Brisbane Landfill and Remediation Operable Units UPC-OU-SM and UPC-OU-2 contain dangerous hazardous materials and waste.***

The level of contamination on the Brisbane Rail Yard and former Brisbane Landfill is significant. The former Brisbane Landfill, on which the East LMF would be constructed, was in operation from 1932 to 1967 during which it received waste streams of domestic, industrial and shipyard waste, sewage, and rubble. It received such refuse prior to the classification of wastes as hazardous or nonhazardous, the segregation of waste streams, and classification of landfills. Because the former Brisbane Landfill was in operation before classification of landfills as Class I, II, and III, which differentiates the facilities by the type of material they accept, the Draft EIR/EIS should not refer to the Brisbane Landfill as a “Class II facility” and such references must be revised.

The former Brisbane Landfill site contains groundwater contamination with aviation fuel, diesel, gasoline, benzene and fuel oxygenates (p. 3.10-18) and contains heavy metals, VOCs (including methane), semi-VOCs, petroleum hydrocarbons, PCBs, pesticides, and asbestos products. (HMW Technical Report, p. 5-7.)

The Draft EIR/EIS notes that the area on which the West LMF would be constructed, has groundwater contaminated with halogenated organic solvents, the soil is contaminated with metals such as chromium, copper, zinc, lead, arsenic as well as petroleum hydrocarbons and VOCs. (Draft EIR/EIS, p. 3.10-18.)

Constructing the Brisbane LMF on either site will require extensive construction activities, including significant earthwork cut and fill into the contaminated soils. Construction of the East LMF on the former Brisbane Landfill requires an estimated 2,082,800 cubic yards of cut, with excavation depths of 60-feet below ground surface.



(Draft EIR/EIS, Table 2-25.)<sup>67</sup> Site grading requires removal of a portion of the former Brisbane Landfill and off-site hauling<sup>68</sup> of wastes currently within the landfill. No information is provided to identify the quantity or quality of the type of material the Authority plans to use to cap the landfill, which the Authority must clarify should not include the contaminated, excavated materials. Construction of the East LMF requires construction close to the grade of the existing Caltrain line and would require construction of a large, manufactured, westerly facing slope.<sup>69</sup> The Draft EIR/EIS does not, but must, address the slope's design requirements, how slope stability would be ensured during landfill excavations, necessary additional remedial work, and whether the slope would be located on the Authority's property or adjacent property to the east of the East LMF site.<sup>70</sup>

Further, no information is provided on impacts associated with moving the contaminated soils, the quantity or quality of the replacement soil, and where those contaminated soils will be disposed.<sup>71</sup> Because the Draft EIR/EIS does not adequately provide a characterization of the type of waste that would be excavated, removed, and hauled away, the facility of disposal is unknown. There are only three Class I landfill facilities in California<sup>72</sup> that accept hazardous materials, which are located not only outside of San Mateo County but a significant distance from the former Brisbane Landfill, requiring

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<sup>67</sup> The City of Brisbane's expert consultant, Dr. Michelle King, who has been working with the landowner of the Brisbane Baylands and state regulatory agencies on the site's remediation and landfill closure plans estimates excavation may total as much as 3 million cubic yards. (Metis discussing underestimation of amount of excavated materials required for the Project and Impact GEO#6.)

<sup>68</sup> The Draft EIR/EIS does not disclose the length of time required for excavations and offsite hauling of materials. (See Metis discussion of description of Project and setting's failure to adequately analyze hazards and hazardous materials.)

<sup>69</sup> See Metis discussion of Draft EIR/EIS's failure to adequately analyze hazards and hazardous materials, stating remedial actions must be implemented for any remaining portions of the landfill such as the slopes that would remain in place adjacent to the East LMF.

<sup>70</sup> Metis, discussing description of Project and setting's failure to adequately analyze hazards and hazardous materials.

<sup>71</sup> See Metis discussion of Draft EIR/EIS's Project description and setting's failure to adequately analyze hazards and hazardous materials related to site remediation and disposal of excavated material and type of soil that would replace excavated materials.

<sup>72</sup> The California State Water Resources Board ("SWRCB") identifies three statewide Class I landfills, the Kettleman Hills Facility in Kings County, the Clean Harbors Facility in Kern County, and the Clean Harbors Facility in Imperial County. See the Region 6 Waste Acceptance List, available at

[https://www.waterboards.ca.gov/water\\_issues/programs/land\\_disposal/docs/wal\\_r5.pdf](https://www.waterboards.ca.gov/water_issues/programs/land_disposal/docs/wal_r5.pdf) and Region 7 Waste Acceptance List, available at [https://www.waterboards.ca.gov/water\\_issues/programs/land\\_disposal/docs/wal\\_r7.pdf](https://www.waterboards.ca.gov/water_issues/programs/land_disposal/docs/wal_r7.pdf).

long-haul trucks to transport the hazardous material the considerable distance, the impacts of which are not analyzed whatsoever.<sup>73</sup>

Similarly, the West Brisbane LMF requires an estimated 1,463,700 cubic yards of cut. (Draft EIR/EIS, Table 2-25 and p. 3.8-16.) Approximately 432,000 cubic yards of the total cubic yards of cut are proposed to be hauled offsite, requiring approximately 36,000 truckloads of hazardous material which must be analyzed.<sup>74</sup> Surprisingly, and with no factual basis, the Draft EIR/EIS assumes that the West Brisbane LMF will reuse approximately 79% of excavated materials from the West LMF without analyzing the site's required remediation. (Draft EIR/EIS, Table 2-25.) In fact, the Draft EIR/EIS completely fails to mention at all that the West LMF is within an active remediation site for which regulatory approval and implementation of remedial action plans and remedial development implementation plans are a prerequisite to site development. (See [Section VII.H.6](#), *infra*, for further discussion on required remediation processes.)

The Draft EIR/EIS does not sufficiently analyze the Project's hazardous waste impacts because it fails to set forth the grounds for its findings of less than significant impacts or provide an explanation of its factual and analytical basis. CEQA requires this explanation. (*Laurel Heights I, supra*, 47 Cal.3d 376, 404.) The Draft EIR/EIS must describe the nature of the excavations on the former landfill and remediation sites, including the specifics regarding the quantity and depth of the excavations, the details regarding the movement of the hazardous excavated material and how that increases risks of an accidental release of hazardous materials, and the type of material the Authority plans to use to cap the landfill to minimize risks. Furthermore, site remediation and Title 27 landfill closure of portions of the Baylands not within the Brisbane LMF must be addressed as a cumulative project in the Draft EIR/EIS.

**6. *To minimize hazardous waste impacts, the Authority should approve and develop a Brisbane LMF site only after regulatory agency final approvals.***

An EIR requires a lead agency must “use best efforts to find out and disclose all that it reasonably can.” (Guidelines, §15144.) The Draft EIR/EIS is insufficient because it does not discuss the construction timing of either the East or West LMF in relation to the necessary hazardous waste remediation requirements, even though such information is available and must be considered to adequately analyze the significance of hazardous materials and waste impacts.

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<sup>73</sup> The Draft EIR/EIS Section 3.6 Public Utilities notes the limited availability of landfill facilities that accept hazardous waste (p. 3.6-59) but does not analyze hazards impacts associated with transport to those facilities.

<sup>74</sup> See Metis Project description and setting discussion.

The Draft EIR/EIS concedes that construction activities could interfere with ongoing remediation efforts and opines, “[u]nless construction activities are coordinated with site remediation activities, there could be a temporary increased risk of damaging or interfering with remediation site controls such as soil containment areas.” (Draft EIR/EIS, p. 3.10-31.) The Draft EIR/EIS does not sufficiently discuss and analyze regulatory compliance for remediating significantly contaminated soil despite the fact that the Authority concedes a potential site is a former landfill requiring Title 27 landfill closure compliance and a Remedial Action Plan for a portion of the West LMF site has already been prepared.

The Authority should have sought more information about planned remediation activities located on the East and West LMF sites and considered that information in the Draft EIR/EIS’s hazardous waste impact analysis. Without this analysis accounting for landfill closure or site remediation, the Authority cannot proceed to design the Project and predict its hazardous waste impacts.

The West LMF is planned to be constructed on a site west of the Caltrain alignment, which is comprised of two operable units for remediation regulatory purposes: UPC-OU-SM and UPC-OU-2. The northern section, UPC-OU-SM, has a remedial action plan. A Draft Feasibility Study/Remedial Action Plan (“Draft RAP”) was prepared for this section in April 2019<sup>75</sup> and a DTSC Consent Order was signed in 2008, which established legal and administrative responsibilities and procedures for cleanup of chemicals at the site.<sup>76</sup> Astoundingly, the Draft EIR/EIS does not discuss the existence of this Draft RAP<sup>77</sup> or consider its necessary implementation in conjunction with the Project despite the feasibility of obtaining this information. The other site, UPC-OU-2, is also under the jurisdiction of a regulatory agency, the RWQCB, which will require approval of a remedial action plan for the site, which has yet to be prepared.

Closure of the former Brisbane Landfill, located where the Draft EIR/EIS anticipates construction of the East LMF, requires similar regulatory approval from the RWQCB and San Mateo County Environmental Health Services in accordance with the requirements set forth in Section 20260 of Title 27 of the California Code of Regulations.

These regulatory agencies are the designated lead agencies for determination and oversight of soil and groundwater cleanup requirements within the sites proposed for the

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<sup>75</sup> Draft Feasibility Study/Remedial Action Plan, San Mateo County Portion of Universal Paragon Corporation Operable Unit (“UPC-OU-SM”), Brisbane, California, April 9, 2019.

<sup>76</sup> See DTSC Consent Order, May 22, 2008, available at: [https://www.envirostor.dtsc.ca.gov/public/deliverable\\_documents/9240949332/consent%20FINAL%20clean.pdf](https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/9240949332/consent%20FINAL%20clean.pdf).

<sup>77</sup> Nor does the Draft EIR/EIS discuss the previous DTSC Final Remedial Action Plan for the Bayshore Railyard North Area completed in 1993, available at: [https://www.envirostor.dtsc.ca.gov/public/deliverable\\_documents/6438749015/bayshore%20rap.pdf](https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/6438749015/bayshore%20rap.pdf).

Brisbane LMF. Such a process involves DTSC and RWQCB setting remediation standards and requirements for the use of specific technologies for such remediation, as well as CEQA compliance for remediation plans and Title 27 landfill closure.

The Draft EIR/EIS is inadequate because the hazardous waste impact analysis, IAMFs, and Mitigation Measure HMW-MM#1 do not take into consideration the necessity and extent of preparing and securing regulatory approval for such plans, as well as the need for remediating the site before construction and the timing of the plans in conjunction with the construction of the Project; therefore, the extent and significance of the Project's hazardous waste impacts, pre- and post-mitigation, cannot be meaningfully analyzed. This is a shocking oversight that must be analyzed, rectified, and reflected in an adequate hazardous waste analysis in a recirculated Draft EIR/EIS.

Additionally, the Draft EIR/EIS does not recognize that Brisbane General Plan Policy BL1<sup>78</sup> requires that detailed plans for Title 27 compliance be completed for the closure of the landfill and RAPs for UPC-OU-SM and UPC-OU-2 be approved by the required regulatory agencies prior to approval of a specific plan for the Baylands area.

To minimize hazardous waste impacts, the Authority should consider requiring similar regulatory approvals prior to Project approval and implementation. In 2015, a Final EIR was prepared to analyze development of the Brisbane Baylands,<sup>79</sup> which is the same area on which the Project proposes construction of the LMFs.<sup>80</sup> In considering approval of this program EIR, the City approved hazardous waste impact mitigation measures requiring approvals from the appropriate regulatory agencies.<sup>81</sup> Mitigation Measure 4.G-2a required: (1) prior to approval of a specific plan for development, confirmation that DTSC, RWQCB, and/or the San Mateo County Environmental Health Division have accepted RAPs for sites on the Brisbane Rail Yard or landfill final closure and post-closure maintenance plans for sites on the former Brisbane Landfill; (2) prior to issuing a building or grading permit, DTSC/RWQCB approval of RAPs and landfill closure plans, and (3) prior to construction or grading, regulatory approval from DTSC/RWQCB in the form of a Remediation Action

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<sup>78</sup> City of Brisbane General Plan,

[https://www.brisbaneca.org/sites/default/files/fileattachments/community\\_development/page/2401/012\\_chapterxii-policiesandprogramsbysubarea.pdf](https://www.brisbaneca.org/sites/default/files/fileattachments/community_development/page/2401/012_chapterxii-policiesandprogramsbysubarea.pdf).

<sup>79</sup> See Baylands Final EIR, <http://archive.brisbaneca.org/feir-documents>. The owner of the Brisbane Baylands site, UPC, will likely defer Brisbane Rail Yard remediation efforts until after the Authority approves or disapproves construction of the LMF and after initiation of site acquisition for the HSR Project, deferring regulatory compliance to the Authority, which would be responsible and pay for remediation of the West LMF site. See Metis discussion of Draft EIR/EIS's Project description and setting's failure to adequately analyze hazards and hazardous materials related to site remediation.

<sup>80</sup> Brisbane Baylands Final EIR, May 2015.

<sup>81</sup> Brisbane Baylands Final EIR, Mitigation Monitoring and Reporting Program, p. 4-46, May 2015, available at: [http://archive.brisbaneca.org/sites/default/files/4\\_mmrp\\_feir.pdf](http://archive.brisbaneca.org/sites/default/files/4_mmrp_feir.pdf).

Completion Report or equivalent closure letter stating that remediation goals have been achieved.<sup>82</sup>

The City prudently approved these measures to protect its citizens and the environment from risks of accidental releases of hazardous materials from the two sites prior to final regulatory agency review and approval of remedial action plans or landfill closure plans. Its citizens and the environment deserve no less from the Authority before approval and implementation of the HSR Project's LMF.

**7. *The Authority should consult with schools as required under Public Resources Code section 21151.4 now.***

Public Resources Code section 21151.4 requires special consultation and notification for projects located within 0.25 miles of a school concerning construction that involves extremely hazardous substances which may pose a health or safety hazard to those at the school. (Guidelines, § 15186(b).) Draft EIR/EIS Table 3.10-15 lists over 60 schools within 0.25 miles of the alignments, yet improperly defers consultation with these schools until after Project approval. (See Draft EIR/EIS, p. 3.10-44.) The Authority should consult with these potentially affected schools now to accurately assess the Project's hazardous materials and waste impacts and determine feasible mitigation measures for the specific schools that would be the most affected by the Project.

The consultation results should be reported in a revised and recirculated Draft EIR/EIS. In particular, the results should be incorporated into the text of Mitigation Measure HMW-MM#1 (Limit Use of Extremely Hazardous Materials Near Schools During Construction) to ensure that effective and enforceable mitigation would occur at each affected school.

**I. *Safety and Security Impacts***

**1. *Safety and Security IAMFs and a Transportation IAMF are improperly deferred mitigation measures with no performance standards.***

As discussed above, CEQA requires an EIR to identify mitigation measures to be identified as such, and not moved to the project description to avoid disclosure of significant impacts. SS-IAMF#1 (Construction Safety Transportation Management Plan), SS-IAMF#2 (Safety and Security Management Plan), SS-IAMF#3 (Hazard Analyses), and TR-IAMF#2 (Construction Transportation Plan) should be Draft EIR/EIS mitigation measures because they are not clearly part of the Project and insufficiently describe measures to avoid or reduce potential safety and security impacts.

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<sup>82</sup> Brisbane Baylands Final EIR, Mitigation Monitoring and Reporting Program, pp. 4-46-47, May 2015.



SS-IAMF #1 (Construction Safety Transportation Management Plan), SS-IAMF#2 (Safety and Security Management Plan), SS-IAMF#3 (Hazard Analyses) and TR-IAMF#2 (Construction Transportation Plan) are also improperly deferred because they call for the formulation of future plans to reduce safety and security impacts, and fail to include performance standards or list specific mitigation options to meet the standards. Additionally, the IAMFs describe the implementation of future plans only in a very general, conceptual fashion, and details are deferred to after Project approval. None of these plans, as identified and described in the Draft EIR/EIS, would ensure impact reductions to a less than significant level.

SS-IAMF#1 requires the contractor to prepare a construction safety transportation management plan for Authority approval describing the contractor's procedure for coordination with local jurisdictions to maintain emergency vehicle access during construction, procedures for implementing road closures, access to residences and businesses, and alternative access locations. SS-IAMF#1 is inadequate because it only describes such procedures in a very general fashion with no description of details to support the Draft EIR/EIS's conclusion that safety and security impacts would be less than significant.<sup>83</sup> For instance, without identification of the specific procedures for maintaining emergency vehicle access during construction, the public will not know whether such procedures will be effective until after such procedures are actually implemented and emergency vehicles succeed or fail to arrive at their destination on time to the detriment of those waiting for a response. Such an important consideration should be analyzed and examined now, prior to Project approval.

Similarly, SS-IAMF#2 and TR-IAMF#2 are deferred mitigation measures that are intended to reduce safety and security impacts. SS-IAMF#2 requires the contractor's preparation of a technical memorandum discussing "requirements, plans, programs and guidelines" related to workplace worker safety, safety and security management, system security plans, and a fire/life safety and security program, among others, "to protect the safety and security of construction workers and users of the HSR." (Draft EIR/EIS, p. 2-E-25.) TR-IAMF#2 requires the preparation of a construction transportation plan ("CTP") that "would address, in detail, the activities to be carried out in each construction phase" such as "temporary road closures." (Draft EIR, EIS, p. 2-E-28.) These two IAMFs explain the preparation of future plans after Project approval but do not include sufficient information to describe the plans' effects so that the public and decision makers can fully determine whether such measures will be effective in reducing security and safety impacts. An EIR must provide a reason or basis for the deferral of future management plans. (See *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 671.)

SS-IAMF#3 vaguely refers to the Authority's "hazard management program" which includes identifying hazards, risk assessment, and the "application of control measures

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<sup>83</sup> See Metis discussion regarding safety risks associated with the Project's proposed closure of the Tunnel Avenue bridge.



(mitigation) to reduce the risk to an acceptable level.” (Draft EIR/EIS, p. 2-E-25.) The Draft EIR/EIS states SS-IAMF#3 will include “a preliminary hazard analysis (“PHS”) and a threat and vulnerability assessment (“TVA”). (Draft EIR/EIS, p. 2-E-25.) The Authority is deferring the creation of the PHS and TVA, essential environmental hazards studies, to the future, which in turn, defers the impact analysis. Rather than preparing these studies in the future, the Authority should conduct and include these essential studies in the Draft EIR/EIS to accurately determine significant safety and security impacts. Further, SS-IAMF#3 does not mention its hazards analysis program in relation to the construction of the Brisbane LMF on sites that require the remediation and/or closure of the Brisbane Landfill and Brisbane Rail Yard. The Authority must include such remediation considerations in its discussion of SS-IAMF#3 because they are indispensable to determining safety and security significance impacts.

**2. *Impact S&S#1 is inadequately analyzed and requires development of additional feasible mitigation measures.***

**a) Construction impacts on response times are not sufficiently analyzed.**

The Impact S&S#1 analysis is not adequate because it does not describe the nature and magnitude of temporary road closures, relocations of services, and construction-related modifications that would result in emergency vehicle access delays and increases in response times. While the Draft EIR/EIS concedes there would be a significant impact due to the temporary closure of the Tunnel Avenue bridge, realignment of Lagoon Road, and realignment of Tunnel Avenue (for the East LMF), it does not explicitly analyze how construction would specifically identify emergency access routes or analyze impacts of emergency vehicle access delays and increases in response times despite the feasibility of presenting this analysis.

**(1) *The time frame for construction of the Tunnel Avenue overpass under is underestimated.***

The Draft EIR/EIS states that construction of either LMF requires closure of the existing Tunnel Avenue overpass, and construction of the East LMF requires the closure of Tunnel Avenue. (Draft EIR/EIS, p. 3.11-48.) It is estimated that construction of the Tunnel Avenue overpass and realignment of Tunnel Avenue would require bridge and roadway closure for only 1-3 months during construction. (Draft EIR/EIS, Table 3.11-9.)

However, this estimated time frame is not based on site-specific geotechnical studies or supported with substantial evidence and likely underestimates the time needed for such bridge and roadway closures for significant construction activities. The construction of the current Tunnel Avenue bridge took between 1 to 2 years total due to large-scale soil

settlement.<sup>84</sup> It would likely take a similar amount of time to construct the Tunnel Avenue overpass as proposed by the Project, which could result in road closures and construction impacts for a longer duration than the estimated 1-3 months. The Draft EIR/EIS should be revised to present a more accurate time for construction of the Tunnel Avenue overpass rather than rely on an unrealistic and unsupported time estimate.

(2) *Impacts to fire service emergency response routes are insufficiently analyzed.*

Despite the acknowledgement of the Project's 30-second increase in response times, and despite the Authority's statement that it "further identified locations where increases in response times could occur and assessed the impact based on a 30-second threshold increase," the Draft EIR/EIS does not actually evaluate increased response times for its significant impact determination. (Draft EIR/EIS, p. 3.11-14.) To analyze the impacts resulting from an increase in response times, the Draft EIR/EIS stated the Authority reviewed "the potential emergency vehicle response disruptions and rerouting associated with building the project alternatives" and evaluated "potential changes in the roadway network, routing, and construction hours." (Draft EIR/EIS, p. 3.11-14.)

The Draft EIR/EIS does not disclose any specifics associated with this review or its findings. The emergency vehicle response disruptions were not addressed and the Draft EIR/EIS does not identify alternative route locations for fire emergency services despite the closure of Tunnel Avenue and its overpass. Specific changes in the roadway network and routing were not disclosed because the Draft EIR/EIS does not specify what section of Tunnel Avenue will be closed or how traffic will be rerouted during the time of Project construction.

Additionally, the impacts associated with closure of the Tunnel Avenue overpass, which would greatly restrict fire and police<sup>85</sup> emergency response, are not fully disclosed in the Draft EIR/EIS. Instead, the Draft EIR/EIS describes the closures as "temporary" and inappropriately relies on SS-IAMF#1 and SS-IAMF#2, both deferred mitigation measures without performance standards, to avoid and minimize S&S Impact#1. S&S Impact #1 must fully consider restrictions to emergency fire service response times resulting from the LMF construction.

The only fire station in Brisbane is located at 3445 Bayshore Boulevard, where Bayshore Boulevard meets Valley Drive. This lone fire station services the entirety of the

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<sup>84</sup> See Metis comments regarding the poor design of the Tunnel Avenue bridge relocation and Lagoon Road alignment.

<sup>85</sup> In correspondence from the City of Brisbane Police Department, Police Chief Lisa Macias states the closure of the Tunnel Avenue bridge "would have a dramatic adverse effect" on the department's ability to respond quickly to emergencies east of the Caltrain railroad. (See City of Brisbane Letters, Police Department Correspondence.)

City, and its closure would result in a significant impact that must be analyzed and mitigated.<sup>86</sup> Construction of the LMF requires closure of the Tunnel Avenue overpass and Tunnel Avenue itself, as well as the realignment of Lagoon Road. (Draft EIR/EIS, p. 3.11-52.) Relocation of the overpass would include relocating the southern terminus of Tunnel Avenue from the intersection of Bayshore Boulevard/Old County Road to Bayshore Boulevard/Valley Drive. (*Ibid.*)

When the Tunnel Avenue overpass is closed, direct access for fire and police first responders to those portions of the City east of the Caltrain right-of-way will be nonexistent. Fire trucks and police responding to emergencies on Tunnel Avenue, north of Lagoon Road, such as Golden State Lumber or the Kinder Morgan Brisbane Terminal, both of which are vulnerable sites containing highly-flammable material, would need to take a roundabout way and travel north into San Francisco, which would add distance and prolong emergency service response times.<sup>87</sup> For the industrial uses even further south on Tunnel Avenue, namely the susceptible Golden State Lumber and the Kinder Morgan Brisbane Terminal, the distance and response times are further lengthened and prolonged by as much as 3.7 miles and ten minutes, respectively.<sup>88</sup> Fire trucks and police responding to emergencies at Sierra Point, which is where the marina and businesses such as the Doubletree Hotel are located, would need to travel south into the City of South San Francisco and take the US 101 freeway back north.<sup>89</sup> This alternative route would add 0.8 miles and three minutes to the response time of the existing emergency access route.<sup>90</sup>

These meandering routes that would be available to fire and police first responders when the Tunnel Avenue bridge is closed are inefficient and would cause deplorable impacts during Project construction, risking the lives of Brisbane residents, workers, and visitors staying at Brisbane's two hotels. Increasing emergency response times to reach Brisbane residents and residents in a disaster is a significant impact that must be fully analyzed in a recirculated Draft EIR/EIS and fully mitigated before Project approval.

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<sup>86</sup> Major conflagrations have occurred in California for the past consecutive four years; this year, the fires have affected more than eight million people around the Bay Area, killing people and destroying 1,200 homes and businesses as of August 2020. Many of the fires have started in forests that have not seen such fires, Governor Newsom stated, in "modern recorded history." (See Fuller, Thomas, "4 Years of Catastrophic Fires in California: 'I'm Numb'," The New York Times, Aug. 26, 2020, available at: <https://www.nytimes.com/2020/08/24/us/california-fires-wildfires.html>.) The Project must consider this increase in wildfires during California's dry summer and fall months and analyze the Project's potential to inhibit emergency access to a possible wildfire in the San Bruno Mountain area, or other areas in Brisbane, during construction.

<sup>87</sup> Metis, Figures Metis-7 and Metis-8.

<sup>88</sup> Metis, Figures Metis-7 and Metis-8.

<sup>89</sup> Metis, Figure Metis-9.

<sup>90</sup> Metis, Figure Metis-9.

- (3) *The Draft EIR/EIS must analyze impacts related to fire station relocation and provide alternative emergency access during project construction.*

S&S Impacts #1 and #3 must fully consider impacts related to relocating the Brisbane fire station and associated impacts.<sup>91</sup> The Draft EIR/EIS analysis of fire station relocation is inadequate because it does not consider the implications of the fire station relocation on the Project construction schedule in detail. Further, both options for relocating the City's fire station 150 feet or more to the south to make way for the proposed new Tunnel Avenue bridge are infeasible.

Construction of the East LMF would require the relocation of the fire station approximately 600 feet to the south of the existing fire station, with two driveways connecting to Bayshore Boulevard. (Draft EIR/EIS, p. 3.11-53.) Relocation of the fire station associated with construction of the West LMF is analyzed to a lesser extent. It requires relocating the fire station approximately 150 feet to the south of the existing station "with a single driveway for the relocated fire station connecting to Bayshore Boulevard via the existing station's secondary driveway." (Draft EIR/EIS, p. 3.11-54.) The Draft EIR/EIS fails to adequately analyze the safety impacts of providing one driveway for fire service response or requiring fire trucks returning to the station to stop on Bayshore Boulevard and back into and along the driveway to the station's apparatus bay.<sup>92</sup>

The relocation of the fire station to both of these sites is infeasible to the North County Fire Authority because it would extend fire truck response times since its proposed placement would require fire trucks to take an inefficient route to access Bayshore Boulevard.<sup>93</sup> How the closure of the fire station and construction of the relocated station affects service times, traffic patterns, and road closures must be further analyzed to adequately disclose all Project impacts. This proposed relocation results in serious safety and security impacts that must be analyzed thoroughly in the Draft EIR/EIS.

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<sup>91</sup> Impact S&S#3 (Permanent Impacts on Emergency Access and Response Times Caused by Construction) must be revised to thoroughly analyze the constraints of relocating the fire station to the south, to identify an alternative offsite location acceptable to the City of Brisbane and the North County Fire Authority, and to analyze associated environmental analysis of relocating to this alternative site. (See Metis discussion regarding the infeasibility of the relocating the fire station to the proposed sites in the Draft EIR/EIS.)

<sup>92</sup> See Metis comments on the infeasibility of relocating the fire station to the proposed sites.

<sup>93</sup> See Letter from Todd Johnson, Deputy Fire Chief, North County Fire Authority, September 4, 2020, p. 2, stating, "Both of these poorly designed alternatives are infeasible and unacceptable. Both alternatives described in the Draft EIR/EIS require placement of the relocated fire station with its apparatus bays facing parallel to Bayshore Boulevard instead of perpendicular, which would increase response times." Also see Metis discussion regarding infeasibility of relocating fire station to the proposed sites.

The Draft EIR/EIS does not analyze how fire services would be provided during the relocation of the City's only fire station or how the relocation coincides with the timing of the Project. Most amazingly, the Draft EIR/EIS does not provide a discussion of how fire trucks will utilize alternative routes during Project construction and before operation of the relocated fire station. There is also no discussion of alternative site locations for the new fire station or analysis of other sites.

(4) *Fires on industrial sites would cause potentially catastrophic results.*

Closure of the Tunnel Avenue overpass and Tunnel Avenue during Project construction has the potential to result in disastrous effects, as construction road closures would restrict access to businesses highly vulnerable to fires within Brisbane, specifically Golden State Lumber, the Kinder Morgan Brisbane Terminal, as well as other industrial businesses located on Tunnel Avenue. (See Figure Metis-8.) If a fire were to break out on these sites susceptible to fire hazards, delays in fire emergency response caused by closure of the Tunnel Avenue bridge could have catastrophic consequences. The Impact S&S#1 analysis is inadequate because it does not analyze the magnitude of increased emergency fire response times to such vulnerable sites, even though such analysis is feasible and necessary to fully comprehend safety and security impacts resulting from the Project.

The Draft EIR/EIS identifies the Kinder Morgan Brisbane Terminal as “a bulk petroleum storage and distribution terminal that provides aviation fuel to SFO as well as gasoline and diesel fuel to various retail stations on the peninsula. Gasoline, diesel, and aviation fuels are delivered to the facility through pipelines and are stored in 21 aboveground storage tanks. Aviation fuel is piped directly from the facility to SFO (Kinder Morgan n.d.)” (Draft EIR/EIS, p. 3.6-27.) Construction of the East LMF would result in eight major utility fuel pipelines crossing the HSR alignment; for the West LMF, six major utility fuel pipelines would cross the alignment. (*Ibid.*) Despite the recognition of such volatile materials that have the possibility of combusting and resulting in disastrous consequences, the Draft EIR/EIS does not do anything further to discuss and analyze potential safety impacts resulting from delayed emergency response due to bridge and road closures.

Similarly, Impact S&S#1 omits any meaningful analysis of potential impacts associated with delayed emergency response due to bridge and road closures to a potential fire at Golden State Lumber. Lumber is a highly flammable material, and the Draft EIR/EIS should have considered the implications of restricting fire emergency access to such a site.

The road closures described above would greatly delay fire, police and hazardous materials crews from addressing any disasters at the Golden State site,<sup>94</sup> Kinder Morgan

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<sup>94</sup> Metis, Figure Metis-9.



Brisbane Terminal,<sup>95</sup> and other industrial uses in the area until after a significant amount of time has passed, exposing employees and patrons to significant safety hazards. The Draft EIR/EIS must fully disclose and mitigate these risks by redesigning the Tunnel Avenue bridge so that access along Tunnel Avenue from Bayshore Boulevard across the Caltrain right-of-way through to Beatty Avenue remains open at all times during LMF construction.<sup>96</sup>

b) *Additional feasible mitigation measures are available and must be proposed.*

**3. *Impact S&S#1 analysis concludes impacts will be significant and unavoidable, but feasible mitigation measures are available to reduce these impacts.***

The Draft EIR/EIS Impact S&S#1 analysis<sup>97</sup> concludes impacts related to temporary road closures, relocations and modifications during construction and delays in emergency response times would be significant and unavoidable yet proposes no mitigation measures in Brisbane to reduce these impacts. The Draft EIR/EIS should instead propose a mitigation measure requiring the maintenance of emergency access at all times, with no additional delay, to Golden State Lumber Yard, the Kinder Morgan Brisbane Terminal, and all other uses that will be isolated when Tunnel Avenue is closed, when the Tunnel Avenue overpass is realigned, and when Lagoon Road is extended. Furthermore, the implications of these measures should be taken into account in a revised Project construction schedule. Impact S&S#10 must consider and be consistent with Caltrans Interim Safety Guidance.

**4. *Impact S&S#10 analysis is inadequate.***

Impact S&S#10 (Permanent Exposure to Traffic Hazards) concludes that impacts on community safety related to permanent roadway closures would be less than significant. However, the Impact S&S#10 impact analysis is inadequate because it is limited in scope and does not consider and implement Caltrans Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance<sup>98</sup> (“Caltrans Interim

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<sup>95</sup> Metis, Figure Metis-8, showing an emergency response time of ten minutes.

<sup>96</sup> North County Fire Authority Correspondence; Metis comments analyzing how the closure of the Tunnel Avenue bridge would pose a safety risk.

<sup>97</sup> Impact S&S#3 (Permanent Impacts on Emergency Access and Response Times Caused by Construction) must be revised to thoroughly analyze the constraints to relocating Brisbane’s existing fire station to the south.

<sup>98</sup> Caltrans Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance (“Caltrans Interim Safety Guidance”), July 2020, accessed at: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-07-01-interim-ldigr-safety-guidance-a11y.pdf>.



Safety Guidance”) in determining the significance of the Project’s potential safety and security impacts.

The purpose of the Caltrans Interim Safety Guidance is to provide immediate direction about the safety review of projects “affecting the safety of connections to or travel on state roadways” while final Caltrans guidance is being developed.<sup>99</sup> Caltrans provides instructions on conducting an intergovernmental traffic safety review of potential projects focused to identify and reduce risks to road users.<sup>100</sup>

The Interim Safety Guidance recommends the lead agency review safety-related plans and programs that may apply to the study area such as local roadway safety plans and general plan or specific plan safety elements, among others.<sup>101</sup> Caltrans also recommends lead agencies, in their review, address a list of safety review topics including identification of safety issues (such as a high injury network or presence of systemic crash or typologies in the project area), actions, or projects in the study area affecting the State Highway System as documented in the above-mentioned plans, and prioritize vulnerable road users and communities.<sup>102</sup> The Interim Safety Guidance recommends the lead agency “determine whether the project’s contribution to the adverse impacts identified through the review [. . .] constitutes a significant impact under CEQA.”<sup>103</sup>

Impact S&S#10 does not consider this guidance document in determining significant safety and security impacts under CEQA. Instead, the Draft EIR/EIS’s Affected Environment Section (Draft EIR/EIS, § 3.11.5.2) only identifies surface transportation safety issues related to grade crossing and railroad hazards. The Draft EIR/EIS does not provide an inventory of applicable local safety-related plans as recommended by Caltrans, address such plans’ applicability to the Project, or identify or address any of the safety review topics mentioned in the Guidance.

“The Authority, as the lead agency proposing to construct and operate the HSR system, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction of the selected alternative. Therefore, there would be no inconsistencies between the project alternatives and these federal and state laws and regulations.” (Draft EIR/EIS, p. 3.17-5.) To adequately determine whether the Project will result in a significant safety and security impact, Impact S&S#10 should apply the Caltrans Interim Safety Guidelines.

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<sup>99</sup> Caltrans Interim Safety Guidance, p. 1.

<sup>100</sup> Caltrans Interim Safety Guidance, p. 1.

<sup>101</sup> Caltrans Interim Safety Guidance, p. 6.

<sup>102</sup> Caltrans Interim Safety Guidance, pp. 6-7.

<sup>103</sup> Caltrans Interim Safety Guidance, p. 7.

**5. *Impact S&S#13 does not provide details of risks on hazardous materials release from contaminated sites due to LMF construction.***

The Draft EIR/EIS insufficiently analyzes Impact S&S#13 (Temporary Exposure to High-Risk Facilities and High-Risk Utilities) because it lacks sufficient detail. Information is missing regarding the explosion risk of flammable gases such as methane on the former Brisbane Landfill due to construction of the East LMF or risks with West LMF construction on a contaminated site currently undergoing remediation.

The Draft EIR/EIS notes that there are 166 high-risk facilities and a total of 44 active or closed landfills and waste transfer/processing facilities within two (2) miles of the Project footprint. (Draft EIR/EIS, p. 3.11-74) The Draft EIR/EIS concedes that even though activities have ceased at the Brisbane Landfill, “methane gas and leachate from decomposing material is still being generated, which requires treatment and monitoring.” (Draft EIR/EIS, p. 3.11-40.) However, Impact S&S#13 does not analyze this possible hazard on any of the landfills in the RSA, including the extent of construction required on the Brisbane Landfill in particular, which necessitates removal of a portion of the landfill, the hauling of wastes currently within it, and the regulatory approval process for Title 27 landfill closure.<sup>104</sup>

Instead of discussing impacts at all, the Draft EIR/EIS simply concludes that any anticipated impacts from these high-risk facilities are expected to be alleviated by IAMFs. SS-IAMF#2, would “identify potential hazards,” “identify methods to mitigate or eliminate hazards associated with high-risk facilities and utilities” which would be “removed, abandoned in place, relocated, or protected in place during construction.” (Draft EIR/EIS, p. 3.11-74.) IAMF#2 defers identification of safety and security impacts, as well as appropriate methods to lessen the impacts, until after Project approval. Further, and despite the IAMFs being cloaked mitigation measures, they are ineffective in preventing harms arising from hazardous facilities, in particular landfills, because landfills cannot be “removed,” “abandoned in place,” “relocated” or “protected in place during construction.”

**6. *Safety and security mitigation measures are deferred mitigation and unenforceable because they require local agency approval.***

SS-MM#2 (Modify Driveway Access Control for Relocated Brisbane Fire Station) and SS-MM#3 (Install Emergency Vehicle Priority Treatments Near HSR Stations) are both improperly deferred as well as unenforceable mitigation measures because they require local agency approval for implementation. The Authority does not know whether these local agencies will approve such measures and thus, cannot rely on them to reduce impacts to less than significant levels.

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<sup>104</sup> More information regarding the Draft EIR/EIS’s inadequate analysis related to Title 27 landfill closure of the former Brisbane Landfill is included in the Hazardous Waste subsection of this letter ([VII.H.](#)).

SS-MM#2 requires the Project contractor to develop a modified driveway access control plan for the Brisbane Fire Station before construction, requiring the installation of a new mid-block signalized intersection and median modifications. The Draft EIR/EIS notes that “[t]he contractor would prepare all materials necessary for and obtain the approval of the City of Brisbane for the implementation of this improvement.” (Draft EIR/EIS, p. 3.11-84.) There is no guarantee that the North County Fire Authority will approve the Authority’s proposed relocation of the Brisbane Fire Station. In fact, the North County Fire Authority already considers the proposed sites for relocation of the fire station unacceptable because both proposals would place the fire station’s apparatus bays in an inefficient manner that would increase response time.<sup>105</sup>

Similarly, SS-MM#3 requires the contractor to develop an emergency vehicle priority plan and install emergency vehicle priority treatments and new traffic control devices subject to approval from the City and County of San Francisco. Similar to its analysis of SS-MM#2, the Draft EIR/EIS incorrectly notes that SM-MM#3 would be effective in minimizing impacts on emergency response time. (Draft EIR/EIS, p. 3.11-84.) There is no guarantee that San Francisco will approve the construction of the new traffic control devices.

**7. *Mitigation Measure SS-MM#4 is improperly deferred mitigation with no performance standards.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. SS-MM#4 (Install Emergency Vehicle Priority Treatments Related to Increased Gate-Down Time Impacts) is improperly deferred mitigation because it does not provide any performance standards or commit the Authority to implement any specific measure. The Draft EIR/EIS incorrectly suggests implementation of SS-MM#4 is sufficient to mitigate fire station and first responder emergency access impacts related to the delay from rail gate-down time at at-grade crossings. (Draft EIR/EIS, p. 3.11-84.)

SS-MM#4 is inadequate for several reasons. First, SS-MM#4 defers monitoring of travel time for at-grade crossings and defers the creation of an “emergency vehicle priority treatment plan in conjunction with local agencies” (Draft EIR/EIS, p. 3.11-84) until after Project approval. However, the at-grade travel time data should be collected now, prior to Project approval, to support the Draft EIR/EIS’s analysis of impacts. Instead, the data will be collected one year prior to initiation of new HSR service “to establish a baseline travel time for each corridor” and six months after the start of any HSR service as well as annually thereafter for three years. (Draft EIR/EIS, p. 3.11-85.) Data should be collected now to

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<sup>105</sup> See Metis discussion explaining that fire station siting would require fire trucks to make a 90-degree turn before turning onto Bayshore Boulevard, and would require returning trucks to inappropriately stop on Bayshore Boulevard and back into the driveway to the station’s apparatus bays.

determine the “baseline travel time” so that the safety and security impact analysis can be comprehensive enough to determine whether the emergency vehicle priority treatment plan would sufficiently reduce impacts.

Second, development of the emergency vehicle priority treatment plan is deferred until after initiation of HSR service, and the mitigation measure suggests possible strategies without commitment. Possible strategies “may include building improvements to streets parallel to the HSR corridor [ . . . ] or provide new emergency service facilities (i.e., new fire stations or ambulance/paramedic staging facilities).” (Draft EIR/EIS, p. 3.11-85.) However, these strategies must be identified and committed to prior to Project approval; otherwise the measures identified in the treatment plan are discretionary and ineffective.

As it pertains to the City of Brisbane, the Project requires the relocation of the only fire station in the City to one of two alternative locations. Such relocation necessitates the implementation of mitigation measures to relieve impacts related to increased gate-down time impacts. SS-MM#4 briefly mentions a mitigation strategy to create new fire station staging facilities, but this is inadequate to mitigate the impacts from closing the only fire station in Brisbane and constructing a replacement fire station at another location. The Draft EIR/EIS must provide details regarding fire staging facilities, as well as how their construction fits within the Project construction schedule.

SS-MM#4 could also consider the construction of a temporary, replacement fire station to ensure sufficient fire service during the time of HSR construction while the new fire station is constructed. Local agencies may need to conduct environmental analysis after Project approval (Draft EIR/EIS, p. 3.11-85) for building new fire stations or other emergency vehicle priority improvements, but the Draft EIR/EIS does not analyze this fact despite its conclusion that the Project will necessitate the relocation of the Brisbane fire station. Further, the relocation and potential construction of a temporary or new fire station will more than likely result in secondary impacts that must also be analyzed prior to Project approval.

Third, SS-MM#4 fails because it discusses the Authority’s payment of capital funds to local agencies for Project implementation without specifying anything further to ensure its implementation. (Draft EIR/EIS, p. 3.11-85.) The Draft EIR/EIS concedes that this mitigation measure “may not mitigate certain fire station emergency vehicle response times” if affected cities choose not to accept such capital funds and that is the reason why the safety and security impacts are considered significant and unavoidable. However, the specifics of the Authority’s payment of capital funds to local agencies are not identified here and no performance standards are articulated.

## **J. Biological and Aquatic Resources Impacts**

The Draft EIR/EIS biological and aquatic resources impact analysis has many deficiencies, including those described below. Evidence supporting many of these

comments, and additional deficiencies with the analyses, are pointed out in Metis comments on biological resources

*1. The existing conditions baseline is inaccurate.*

The Draft EIR/EIS describes determination of existing conditions as “based on desktop analyses or unpublished field surveys conducted in 2009 and 2010” and that “no presence-absence surveys for special-status wildlife species in the habitat study area” were conducted. (Draft EIR/EIS, p. 3.7-19.) Habitat modeling was used to project where Project construction and operations impacts would affect special status species. (Draft EIR/EIS, p. 3.7-20.) However, the information underlying the model appears to incorporate outdated information from 2009 and 2010. The reconnaissance field surveys described in the Biological and Aquatic Resources Technical Report (“BIO Technical Report”) at p. 4-11, which presumably also incorporated the modeling effort, were conducted in areas that were surveyed for aquatic resources delineation field work. Vegetation and land cover mapping is described as based on National Agriculture Imagery Program imagery from 2014. (Draft EIR/EIS, p. 3.7-16.) Other sources described in the BIO Technical Report are also more than two years old and should be updated and incorporated into the model(s) and the Draft EIR/EIS. The BIO Technical Report also notes, briefly, and without any explanation as to how the data gap was (or will be) filled, that the Authority did not conduct any presence-absence surveys within the habitat study area. (BIO Technical Report, p. 4-11.)

The California Department of Fish and Wildlife’s (“CDFW”) May 31, 2016 scoping comments recommended that the Draft EIR/EIS include results of surveys for special status wildlife and plant species using CDFW protocols; however, this was not done. Some additional site visits were apparently conducted for the limited purpose of verifying and possibly updating information for delineations of federally regulated waters or wetlands. Site visits to the West LMF site occurred in November 2018 and January 2020 for federal delineation efforts, and in September 2019 for state aquatic resources identification. (Draft EIR/EIS, p. 3.7-19; BIO Technical Report, p. 4-11.) Prior field surveys for delineations were conducted in a limited number of other locations, the most recent in 2014; these surveys would also not meet CDFW recommendations for currency.<sup>106</sup> Further, for CEQA purposes, these efforts would not necessarily encompass all wetland resources because the criteria for delineating wetlands for purposes of the Clean Water Act are more restrictive

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<sup>106</sup> “According to the CDFW, botanical surveys that are older than two years and performed in conditions that do not maximize detection “may overlook the presence or actual density of some special status plant species on the [p]roject site.” The CDFW, therefore, recommended that “additional botanical surveys be conducted at the appropriate time of year with proper weather conditions and the results incorporated into the environmental document for review and comment.” (*Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal.App.5th 665, 692], reh'g denied (Apr. 10, 2020), review denied (June 24, 2020).)



than other criteria; for example, the U.S. Fish and Wildlife Service (“USFWS”) criteria<sup>107</sup> are more inclusive of intermittently wet areas.

The Draft EIR/EIS should be revised to provide more current existing conditions baselines for all biological resources. In the absence of these updates, the biological resources impact analyses are inaccurate and do not support informed decision making.

**2. *BIO-IAMF#5 is actually an improperly deferred mitigation measure with no performance standards.***

BIO-IAMF#5 (Prepare and Implement a Biological Resources Management Plan [“BRMP”]) directs the Project biologist to prepare a BRMP, including “a compilation of the biological resources avoidance and minimization measures,” and “project environmental plans” such as restoration and revegetation plans (“RRPs”) and weed control plan (“WCPs”). As discussed above, CEQA requires an EIR to identify mitigation measures as such, and not to move them to the project description to avoid disclosure of significant impacts. BIO-IAMF#5 is actually a mitigation measure because it calls for the contractor to prepare the BRMP after Project approval. It is also improperly deferred because the technical memorandum would be prepared after Project approval and because it includes no mitigation performance standards to ensure that impacts would be less than significant.

BIO-IAMFs #1 and #5 assign the task of preparing the BRMP to the “Project Biologist.” Which “Project Biologist” this task would ultimately fall on is unclear, because BIO-IAMF#1 also states that the term “Project Biologist” means all of the roles identified for biologists: Project Biologist, Designated Biologists, Species-Specific Biological Monitors, and General Biological Monitors. Without additional clarification, it is not clear who will be in charge of preparing the BRMP and all of its subparts and appendices. There is obvious potential for confusion about what practices are required in various locations, and whether the Authority or one of the myriad “Project Biologists” has final decision-making authority, oversight, and responsibility for developing and implementing mitigation; this confusion can and should be avoided by clarifying the organizational structure so vaguely referenced in these and the other relevant BIO-IAMFs, including BIO-IAMFs #2, #3, and #4. These BIO-IAMFs should also be reviewed and revised to address other inadequacies. For example, BIO-IAMF#2 should be revised to include other agencies that may require access to Project and mitigation sites, such as the US EPA, RWQCB, and BCDC, and the corresponding laws, regulations and policies they enforce should be included in BIO-IAMF#4. BIO-IAMF#3 should be revised to include applicable state law, regulations, and relevant departments and agencies.

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<sup>107</sup> See <https://www.fws.gov/wetlands/documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf>.



**3. *BIO-IAMF#12 is ineffective in reducing impacts to birds.***

BIO-IAMF#12 (Design the Project to be Bird Safe) gives readers the Authority’s assurance that final project design would be bird safe, or at least as far as following Avian Power Line Interaction Committee (“APLIC”) recommendations can be implemented. However, the recommendations do not specify minimum design standards to ensure impacts would be less than significant. For example, BIO-IAMF#12 lists “[m]inimizing the use of guywires” and demarcating guywires where their use is “unavoidable,” and avoiding “to the extent feasible” siting transmission lines across canyons or on ridgelines to avoid bird collisions. (Draft EIR/EIS, Appx. 2-E, pp. 2-E-7 and 8.) Impact analyses fail to examine how well project design can avoid or minimize the use of guywires, or whether any project features would be considered “overhead lines.”

**4. *The effects of climate change and sea level rise on increasing the vulnerability of special status species and habitats to project impacts was not assessed and should be evaluated.***

Elevations within the RSA for biological and aquatic resources “range from approximately 1 foot below sea level at the northern end of the RSA to 74 feet above sea level near the southern end.”(Draft EIR/EIS, p. 3.7-26), yet the biological impact analyses fail to address whether structural modifications or relocations of elements of the Project would be required to maintain structures and operations. Future modifications would likely be necessary to maintain the Project during operation, and these modifications may, in turn, have further impacts on near-shore habitats. The analysis also fails to specify how projected sea level rise would be taken into account in selecting mitigation sites for wetland or waters resources that would be affected by the Project.

**5. *Potential effects of fugitive dust and landfill pollutants are not sufficiently disclosed.***

Dust deposition is known to affect plant communities by diminishing light (haze and foliar deposition). Particles of dust can be carried over long distances and may also include material that may be hazardous to plant and wildlife species, as well as human health. Depending on the composition, “fugitive dust” may affect the pH of streams and waterbodies, change the nutrient balance in coastal waters, deplete soil nutrients, and other ecosystem functions.<sup>108</sup> The Draft EIR/EIS fails to analyze the effects of fugitive dust created by Project construction and operation on plant and wildlife species.

Also, the Project proposes to construct the East LMF overlying contaminated groundwater on the former Brisbane Landfill (Draft EIR/EIS, p. 3.8-34). Excavation, extensive over a long period of time, would be required to prepare the site for construction of the LMF. Excavation could mobilize the various pollutants in these areas as dust,

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<sup>108</sup> <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

contaminated water runoff, and contaminated groundwater. Potential contaminants that could be disturbed by excavation in the former landfill under Alternative A include heavy metals, VOCs (including methane), semi-VOCs, petroleum hydrocarbons, PCBs, pesticides, and asbestos products. (See Draft EIR/EIS, p. 3.10-29.)

Exposure of the underlying layers of the landfill site would also likely attract more birds and small mammals. The Draft EIR/EIS did not consider potential effects related to bird mortality, invasive species, and increased mobility of landfill pollutants related to the activities of birds and small mammals at an exposed landfill site.

**6. *Wetlands and waters delineations and impact analyses used unclear federal procedures, and there was no separate delineation of waters of the state using new state procedures.***

The Draft EIR/EIS is unclear about the extent of federally protected wetlands and waters that would be affected by the Project, or the methods used to identify them. Wetland delineation efforts are described at Draft EIR/EIS p. 3.7-21 to -22 as based on limited surveys in some wetland and adjacent upland areas along with aerial imagery interpretation, and that wetland boundaries were “extrapolated by following topographic contours, wetland vegetation boundaries, and clear hydrologic boundaries.” Other efforts collected “wetland delineation data” for “potential LMF” sites in February 2010. Wetland characteristics were evaluated at “nine sampling points within the aquatic RSA in 2009.” The text does not explicitly identify the locations for these nine points. Perhaps the sites are adjacent to the nine “channels and creeks” listed in the text at Draft EIR/EIS p. 3.7-41; readers are left to search and guess. The Draft EIR/EIS states that delineation methods described in the USACE Delineation Manual (Environmental Laboratory 1987) and the 2010 USACE Arid West Supplement were used for a 2014 field investigation in “right-of-way and electrical safety zone areas,” and for a 2018 field investigation of the Brisbane wetlands at the proposed LMF sites. But in January 2020, U.S. Army Corps of Engineers (“USACE”) used the 2008 USACE Arid West Regional Supplement. The Draft EIR/EIS does not explain how these methods differ in data collection, or how the data collected using these different guidance documents is or is not integrated.

Also, updated information from Metis surveys indicate that that the Draft EIR/EIS estimates of jurisdictional waters and wetlands affected by the Project in Brisbane are too low. (See Metis discussion of Impact BIO#9.) The Draft EIR/EIS does not capture wetlands at Icehouse Hill, understates the wetland areas north of Icehouse Hill, and does not capture wetlands near the proposed relocated fire station. A drainage just south of the proposed Tunnel Road relocation is also not included in the wetland maps found in the BIO Technical Report; this means that impacts to that drainage caused by the Tunnel Avenue bridge and roadway relocation as well as relocation of Visitacion Creek are not addressed. The Draft EIR/EIS must be rewritten to more accurately estimate the types and acreage of jurisdictional waters and wetlands affected by the Project in Brisbane.

Also, the Draft EIR/EIS does not clearly identify state-protected wetlands. The method described in Section 3.7.6.5 simply states that the “top of bank” (“as required under Section 1600”) could not be identified but appears to assume that the ordinary high-water mark (“OHWM”) is close enough. It is not clear whether any of the mixed riparian habitat extending beyond the OHWM was included. Further confusing readers, the Draft EIR/EIS at page 3.7-5 appears to conclude, without analysis or illustration, that all of the “isolated waters” affected by the Project would be within federal jurisdiction, and that no isolated waters would be only under state jurisdiction. This approach fails to assess existing conditions, and also misleads readers about the permitting requirements for waters that fall under both federal and state jurisdiction. The Draft EIR/EIS fails to clarify that waters of the state that are also under federal jurisdiction would be required to obtain a section 401 water quality certification from the Water Boards verifying that the project will comply with state water quality standards.

The impact analysis in Section 3.7.8.5 (Aquatic Resources) limits its evaluation of impacts to state or federally protected wetlands to simply quantifying the acreage. Readers are not directed to figures or images to show the locations for these acreages. Failing to include the locations for these impacts essentially frustrates the purposes of public review. To provide an accurate understanding of localized impacts, the locations of these impacts to state or federally protected wetlands must be considered in the impact analyses.

#### ***7. Impacts of relocating Visitacion Creek are not analyzed.***

Importantly, the Draft EIR/EIS fails to address the substantial impacts associated with relocation of Visitacion Creek, as discussed in detail in Metis biological resources comments. The discussion of Impact BIO#19 in the Draft EIR/EIS (p. 3.7-71) states that the Project “would result in the conversion and degradation of aquatic resources by relocating a portion of Visitacion Creek and filling several wetlands” but fails to describe where or how the creek would be relocated, or address any impacts of creek relocation. Although not explicitly disclosed in the Draft EIR/EIS, because the East LMF would be constructed on top of Visitacion Creek, it appears that the Authority plans to either:

(1) Fill approximately 980 linear feet of the existing Visitacion Creek and construct a culvert under the widest point of the East LMF, or

(2) Reroute Visitacion Creek from where it daylights just east of the Caltrain tracks and construct a new 2,300 linear foot open channel running south, adjacent to the East LMF, that discharges the creek into Brisbane Lagoon rather than the San Francisco Bay.

Neither the Draft EIR/EIS nor the BIO Technical Report discloses any information as to what is proposed in relation to Impact BIO#19’s disclosure of “relocating a portion of Visitacion Creek.” As a result, the Draft EIR/EIS fails to analyze impacts associated with relocating a portion of Visitacion Creek, or present mitigation measures for these impacts. To discover what “relocating a portion of Visitacion Creek” might involve, readers of the

Draft EIR/EIS would have had to review an appendix to the Authority's May 2020 preliminary Compensatory Mitigation Plan ("pCMP"), which provides the only description of creek relocation. However, the hard-to-find pCMP was not made available to the public when the Draft EIR/EIS was made available for public review.

The Draft EIR/EIS fails to address impacts that would result from relocating Visitacion Creek. Impact BIO#19 must be revised to disclose the environmental impacts associated with relocation including:

- Degradation of aquatic resources within the 1,100 linear feet of existing creek that would remain in place east of the LMF resulting from reducing or eliminating natural runoff from the creek's watershed.
- Impacts associated with construction of the relocated channel, including impacts to habitats where the relocated creek outlet drains into the Brisbane Lagoon.
- Long-term impacts such as increased turbidity and velocity that could destroy habitats and create additional erosion at the creek's new discharge location in the Brisbane Lagoon.
- Potential for construction of the creek relocation efforts to disturb or cut into waste should the relocated creek channel encroach upon the boundary of the former.
- Impacts to Brisbane Lagoon habitat and species in that habitat that would be affected by Visitacion Creek relocation.

**8. *Biological impacts of constructing the LMFs and other biological impacts in Brisbane, are not adequately disclosed.***

Substantial grading would be required to level the East LMF site and would eliminate the habitat, including habitat for the Callippe Silverspot butterfly. Loss of the site, and its soils and substrate, may limit the possibility of successfully creating compensatory habitat.

The Draft EIR/EIS also fails to disclose impacts to a population of the rare plant coast iris (*Iris longipetala*), a California Rare Plant Rank ("CRPR" 4.2) species on the north slope of Icehouse Hill, as well as a significant impact associated with destruction of the native grass and flower fields, which are sensitive plant communities found on Icehouse Hill. These sensitive resources would be completely eliminated as a result of the grading of Icehouse Hill for the West LMF.

The Draft EIR/EIS also completely discounts the possibility that special status species could occur in some locations, stating: "However, because the project footprint is almost entirely within the existing Caltrain right-of-way, most of the project footprint does not contain habitat for special-status species. Many of the areas where permission to enter was not granted did not need to be surveyed because they had no potential to support

special-status species and could be accurately assessed based on the desktop review.” This assumption results in an inaccurate presentation of existing conditions and under-representation of potentially significant impacts to biological resources, both in the Project corridor and on the LMF sites proposed. Construction of the Brisbane LMF (under Alternative A or B) would also require bridge relocation, roadway realignments, and relocation of the Brisbane fire station. The size and scale of Project construction and operation at these sites warrant site-specific and current field investigations consistent with CDFW recommendations.

Reliance on old data, desk top analyses, and modeling, as discussed above, is inadequate to identify existing conditions and significant impacts to all of the biological and aquatic resources that would be affected by LMF construction. Metis’ comments on the Draft EIR/EIS’s deferral of site-specific and species-specific surveys provides updated information showing that the Draft EIR/EIS failed to recognize or assess impacts to special status species and wetlands known to exist on the West LMF site. New habitats and species on Icehouse Hill within the West LMF footprint include Coast Iris (*Iris longipetala*), seasonal wetland and drainage habitat, Arroyo Willow thickets, and locally rare ferns. These resources would be destroyed as a result of grading and removal of Icehouse Hill for the West LMF.

Another example of this faulty assumption about where special status species could occur is the Draft EIR/EIS’s failure to evaluate potential impacts to white-throated swift (*Aeronautes saxatalis*, IUCN 3.1), a migratory bird species known to nest in in overpasses that cross the Caltrain ROW.

**9. *Impacts on California fully protected species are not sufficiently disclosed and mitigated and “take” is not authorized.***

The Project would impact the white-tailed kite and San Francisco garter snake. Impacts would include effects considered a “take” under Fish and Game Code section 86. Both species are “fully protected” under California law. (Fish & G. Code, §§ 3511, 5050.) The Draft EIR/EIS fails to acknowledge that a “take” of a California fully protected species is not authorized in the absence of a Natural Communities Conservation Plan (“NCCP”). (Fish & G. Code, §§ 2805, 2835.)

Impact BIO#9 (Removal or Disturbance of Active White-Tailed Kite Nests) fails to acknowledge that this is a fully protected species under Fish and Game Code section 3511. Mitigation identified for Impact BIO#9 is inadequate to prevent significant impacts to nesting white-tailed kites. BIO-MM#12 allows the Project biologist to relocate individuals; this would constitute a “take” under California law. (Fish & G. Code, § 86.)

BIO-MM#12 addresses circumstances allowing the Project biologist to halt work, but only if the special-status wildlife is found in the work area. Because of the white-tailed



kite's sensitivity, CDFW guidance<sup>109</sup> directs a 0.5-mile radius “no-disturbance buffer” around construction areas until young have fledged and are no longer reliant on the nest or parental care for survival. BIO-MM#25 does not fill these gaps; it fails to set an appropriate, species-specific, time window for pre-construction surveys and sets an inadequate (75-foot) “no-work” buffer. It would further allow that buffer to be reduced, despite, for example, acknowledging in the analysis that construction-generated noise and vibration “near” active nests could cause adults to abandon eggs or recently hatched young. (Draft EIR/EIS, p. 3.7-61). The Draft EIR/EIS also fails to define “active nest.” For some species, in particular raptor species such as white-tailed kite, the definition of “active nest” should not be limited to the presence of eggs or young.

Impacts to San Francisco garter snake are discussed in Impact BIO#5 (Permanent Conversion or Degradation of Habitat for and Direct Mortality of San Francisco Garter Snake) and Impact BIO#26 (Conflict with Pacific Gas and Electric Company Bay Area Operations & Maintenance Habitat Conservation Plan). Discussion in Impact BIO#5 explicitly states that “[w]hile many protections would be implemented, the potential for *physical harm and mortality of individuals would not be eliminated.*” (Emphasis added.) These effects would constitute a “take” under California law. The Authority does not have take authorization, and the Draft EIR/EIS fails to even mention this. Neither do the analyses or the mitigation acknowledge that garter snake and red-legged frog have a predator-prey relationship; the needs of both species must be taken into account in determining appropriate locations and ratios for compensatory habitat.

**10. *Impacts of high-speed trains on special status wildlife are not sufficiently disclosed.***

Impact BIO#13 (Intermittent Disturbance of Habitat for and Direct Mortality of Special-Status Wildlife during Operations) does not identify any species-specific vulnerabilities, despite inclusion of BIO-IAMF#12 (Design the Project to be Bird Safe). Because IAMF#12 includes some provisions related to reducing the potential for collision or entanglement, discussion of which species these features must be designed for is necessary for readers to understand the impacts to individual species, in particular, special status species. (Draft EIR/EIS, Appx. 2-E, p. 2-E-7) The discussion also fails to address or explain whether high-speed trains present a greater risk of collision for some species, including migratory species that may stopover near the Project route along the Pacific Flyway. Further, the increase in the number of trains, as the Project proposes, would likely increase the number of bird-train collisions.

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<sup>109</sup> “Horizon Water and Environmental, LLC. Appendix I CDFW’s Conservation Measures for Biological Resources That May Be Affected by Program-level Actions. California Department of Fish and Wildlife; 10/7/2013. [Cited 2020 July 23]. Available from: <https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=R4-HabCon>. Link to document: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=73979>.”



***11. Impacts on migratory birds are significant.***

Regarding Impact BIO#15 (Removal of Active Non-Special-Status Bird Nests), all migratory birds are legally-protected wildlife species under the California Fish and Game Code section 3515 whose take would be a significant impact, even if not identified in Appendix 3.7-A as having “special-status.” This analysis thus fails to consider whether removal or destruction of migratory bird nests, which are ubiquitous throughout areas affected by the Project, would result in significant impacts. Such activity may violate California Fish and Game Code section 3515 and is at odds with the Advisory issued by the California Attorney General on November 29, 2018<sup>110</sup> affirming California’s protection for migratory birds. (Draft EIR/EIS, p. 3.7-67.) The Advisory specifically affirms that protection for migratory birds includes a prohibition against an incidental take.

A science-based definition for “active nest” is also necessary for this impact analysis. Determining whether a nest is “active” should include criteria that cover, or allow for, species-specific nesting behaviors. Nests should be considered “active” as soon as construction of a new nest or use of an existing nest or nest site begins. Mitigation measures should include monitoring and surveillance by a qualified avian biologist to determine whether nest or nest sites are “active.”

The Brisbane LMF sites are proposed along the Pacific Flyway, positioned in the transition between uplands and the wetland and estuarine habitats of the San Francisco Bay shoreline. Electrification and night lighting of the 100+ acre LMF could adversely affect avian night movement which is a critical aspect of avian seasonal migration. The Draft EIR/EIS does not, however, address impacts to migratory birds and local wildlife species’ movement that the Project would cause; these impacts would be caused by LMF night lighting, 24-hour per day noise generation, and the impact of electrical wires for train movement within the LMF.

Local wildlife in the vicinity of the Brisbane LMF sites may have adapted to noise generated by passing trains along the Caltrain right-of-way. However, 24-hour noise generation from the LMF across an area of 100+ acres could prevent sensitive wildlife species from traversing the site for local movement or migration, or successfully occupying or reproducing in otherwise suitable habitat areas.

Also, as mentioned above, the Draft EIR/EIS fails to evaluate potential impacts to white-throated swift. White-throated swift is a migratory bird species known to nest in overpasses that cross the Caltrain ROW.

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<sup>110</sup> California Department of Fish and Wildlife and California Attorney General Xavier Becerra Advisory Affirming California’s Protections for Migratory Birds November 29, 2018: <https://oag.ca.gov/system/files/attachments/press-docs/20181129mbta-advisory3.pdf>.

**12. *Impacts on special status plants are insufficiently disclosed.***

Impact BIO#17 (Permanent Conversion or Degradation of Special-Status Plant Communities) and other analyses in Section 3.7 list impacts solely in terms of acreage. Affected acreage, in turn, is based on the desktop analyses, limited surveys, and modeling incorporating outdated survey information. BIO-MM#6, requiring pre-construction presence/absence surveys for special status plants, may be intended to address these deficiencies, but BIO-MM#6 fails to require appropriate seasonal timing to ensure all such plant species could be detected.

There are no references to figures to show where impacts would occur. This limitation hobbles the analyses and fails to allow readers to see the ecological context. Are the impacted areas isolated or connected to larger habitat areas for special status wildlife? There are no figures or references to figures that allow readers to easily find this information.

**13. *Biological resource mitigation measures should not rely on compliance with permit conditions as effective mitigation for impacts to special status species and sensitive habitat areas.***

Federal regulations and enforcement priorities implementing NEPA, the Federal Endangered Species Act (“FESA”)<sup>111</sup>, the Migratory Bird Treaty Act (“MBTA”),<sup>112</sup> and the Clean Water Act (“CWA”),<sup>113</sup> are rapidly changing, and the outcome of various matters under litigation may further change those regulations and priorities.<sup>114 115</sup> Especially in light of these uncertainties, mitigation measures should not assume that compliance with future permit conditions will adequately avoid or reduce significant impacts to sensitive biological or aquatic resources. Mitigation measures should be identified that would reduce impacts to

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<sup>111</sup> 16 U.S.C. § 1531 et seq.

<sup>112</sup> 16 U.S.C. § 703 et seq.

<sup>113</sup> 33 U.S.C. §§ 1251–1376

<sup>114</sup> See, e.g., USFWS Press Release, “U.S. Fish and Wildlife Service Solicits Public Input on Proposed Rule and Environmental Impact Statement for Migratory Bird Treaty Act” January 30, 2020, [https://www.fws.gov/news/ShowNews.cfm?ref=u.s.-fish-and-wildlife-service-solicits-public-input-on-proposed-rule-and-&\\_ID=36517](https://www.fws.gov/news/ShowNews.cfm?ref=u.s.-fish-and-wildlife-service-solicits-public-input-on-proposed-rule-and-&_ID=36517); Council on Environmental Quality Revised NEPA Regulations, 85 C.F.R. § 43304 (July 16, 2020); <https://www.jdsupra.com/legalnews/nepa-overhaul-trump-administration-19845/>; National Law Review, “New Regulations Reform Implementation of Endangered Species Act” September 17, 2019 <https://www.natlawreview.com/article/new-regulations-reform-implementation-endangered-species-act>; USEPA Revised Definition of Waters of the United States, 85 C.F.R. § 22250 (April 21, 2020); USEPA Revised Clean Water Act Section 401 Certification Rule, 85 C.F.R. § 42210 (July 13, 2020).

<sup>115</sup> *State of California, et. al., v. David Bernhard, U.S. Secretary of the Interior, et.al / Complaint for Declaratory and Injunctive Relief* (N.D. Cal. Case 4:19-cv-06013-JST).

less than significant under CEQA, with the provision that permit conditions imposed by the relevant federal or state agencies can impose alternative mitigation measures that are equally or more effective.

**14. *Habitat restoration mitigation measures do not meet CEQA requirements.***

Setting aside the Draft EIR/EIS methodology that is overly reliant on old and limited data, impact analyses generally acknowledge that the Project will have temporary and permanent impacts to sensitive species. But these analyses in the Draft EIR/EIS fail to address temporal loss. When impacts occur may increase the significance of an impact, for example, during a blooming or breeding season.

The time gap between impact and habitat restoration mitigation may also increase the significance of an effect. Although the Draft EIR/EIS acknowledges some “Secondary Impacts of Implementing Compensatory Mitigation” for some mitigation measures, these acknowledgements generally address ground disturbance at off-site locations and further impacts to special status plant and animal species at or near that site, if present. These discussions reference, but do not address, the timing for securing any necessary state or federal permits for establishing compensatory mitigation at the as yet undetermined sites.

Similarly, habitat restoration on the sites of the Project’s temporary impacts cannot begin until work at the site is finished. The temporal loss must be accounted for and mitigation to compensate for temporal loss must also be identified.

Habitat restoration is identified as mitigation for a number of impacts to biological resources. Habitat restoration generally includes restoring native vegetation, including plants that support sensitive wildlife species (e.g., Mission blue butterfly). Analysis in the Draft EIR/EIS does not consider whether appropriate seeds, cuttings, and transplantable plants will continue to be available for these efforts, despite the broad hint in BIO-MM#1 that the Project biologist obtain locally sourced native seed mix for habitat restoration. A potentially critical source for these plant materials, Mission Blue Nursery,<sup>116</sup> would be displaced by LMF construction. Mission Blue Nursery provides genetically local plants for restoration and enhancement of San Bruno Mountain State & County Park habitats that have been preserved to protect endangered species. The Draft EIR/EIS provides no assurance that Mission Blue Nursery’s operations would not be disrupted or curtailed when it is displaced by the Project. The Draft EIR/EIS fails to consider how effects on Mission Blue Nursery operations would affect San Bruno Mountain habitat conservation activities. Continued availability and timing of availability for suitable habitat restoration materials must be examined to ensure feasibility.

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<sup>116</sup> <https://www.mountainwatch.org/missionbluenursery/>.

**15. *BIO-MM#1, BIO-MM#8, and many other mitigation measures are improperly deferred with no performance standards.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. Mitigation measures BIO-MM#1 (Prepare and Implement a Restoration and Revegetation Plan) and BIO-MM#8 (Prepare a Compensatory Mitigation Plan for Species and Species Habitat) are improperly deferred because they call for preparation of a mitigation plan without identifying objective performance standards and specific mitigation activities for each affected habitat/species. BIO-MM#1, BIO-MM#6, and BIO-MM#10 also defer identification of existing conditions.

Each of these biology mitigation measures include pre-construction surveys to “document” pre-construction conditions. More typically, pre-construction surveys are used to document the current locations of *previously identified* sensitive resources to ensure that avoidance and minimization procedures are properly implemented. Instead, in the absence of adequate baseline information in the Draft EIR/EIS, these “pre-construction” surveys are de facto baseline studies improperly undertaken after Project approval.

BIO-MM#1 (Draft EIR/EIS, p. 3.7-90) restates some of the actions incorporated into the Project described in BIO-IAMF#5 (e.g., the Project biologist would prepare an RRP. BIO-MM#1 directs this effort more specifically to temporary impacts. BIO-MM#1 does not specify any performance standards for either terrestrial or aquatic habitat restoration (e.g., percent cover of affected plant species), remedial actions if those standards are not met, or how long monitoring should continue to ensure the habitat has been successfully established. Nor does it address whether the conditions of adjacent habitat areas that could affect restoration efforts should be included in monitoring, and potentially in remedial efforts (e.g., spread of invasive weed species).

BIO-MM#6 (Draft EIR/EIS, p. 3.7-93) requires the Project biologist to conduct presence/absence botanical surveys for special status plants and special-status plant communities. Because site-specific surveys were not conducted for upland species and habitat, this is essentially an initial site survey, not a survey to document whether any conditions have changed subsequent to initial site surveys already undertaken and disclosed to the public in a CEQA or NEPA document. The baseline information should have been presented in the Draft EIR/EIS. Survey areas are also limited to work areas. Survey areas should be expansive enough to encompass adjacent or nearby resources that would be affected by impact mechanisms such as fugitive dust or hydrologic modifications.

BIO-MM#8 (Draft EIR/EIS, pp. 3.7-94,95) states that the Authority would prepare a compensatory mitigation plan (“CMP”). The CMP appears to be intended to identify other entities that the Authority would use to provide compensatory mitigation by purchasing mitigation credits, paying in-lieu fees, or acquiring fee-title or conservation easements. The CMP would include “[a] description of the species and habitat types for which compensatory mitigation is being provided” and would also allow a form of post-approval

environmental review to reduce or increase the amount of compensatory mitigation required. Again, this improperly defers identification of existing conditions and analysis of significant impacts.

Even if deferral were appropriate, the criteria for “adjusting” the amount of compensatory mitigation required includes guidance that must be corrected and clarified in the Draft EIR/EIS. For example, BIO-MM#8 states adjustments to impact estimates and compensatory mitigation would occur if habitat were “determined to be unoccupied based on negative species surveys.” However, depending on the species, “an inappropriately timed survey may not identify signs of occupancy or presence.” However, different species may use habitat seasonally or for particular life cycle needs (e.g., Callippe Silverspot butterfly seek topographic summits for mating). An inappropriately timed survey may fail to identify signs of occupancy, or presence, or use as mating or dispersal habitat. “Unoccupied habitat” may also be important (and included in designated critical habitat) for listed species.

BIO-MM#8 is intended to provide compensatory mitigation for both temporary and permanent impacts to “federal and state-listed species and their habitat, fish and wildlife resources regulated under Section 1600 et seq. of the Cal. Fish and Game Code, and certain other special-status species.” This description of which species are covered is much too vague. Readers would have to hunt through the Draft EIR/EIS and appendices to see what “certain other species” are included, and intuit whether special status species that the Draft EIR/EIS fails to identify as such (e.g., migratory birds) are somehow included. BIO-MM#8 requires descriptions of various plan components, but “descriptions” are not performance standards, and so the measure fails to ensure, for example, that in-lieu fee programs are adequately funded and focused to mitigate specific impacts. Confusingly, the Draft EIR/EIS does not disclose that a preliminary CMP had been prepared in May 2020; it was not included as part of the Draft EIR/EIS or its appendices, but was a technical report that was only available to members of the public who requested a copy to review, and its relationship to BIO-MM#8 is totally unclear and never explained.

BIO-MM#8 fails to disclose off-site mitigation actions already being considered by the Authority that could be “potentially incorporated in the mitigation measure.” The Authority’s pCMP describes on-site and off-site mitigation being considered by the Authority. Neither the BIO Technical Report nor the Draft EIR/EIS text discuss whether the pCMP is intended to be part of the applicable compensatory mitigation measures for listed species (BIO-MM#8) or for regulated waters (BIO-MM#37). The Draft EIR/EIS must be corrected to explain the exact relationship between the Draft EIR/EIS mitigation measures and the pCMP. It is also important to note that the pCMP is a good example of the problems involved with deferring mitigation details to the permit process. (See comment [Section VII.J.13](#), *supra*.)

BIO-MM#8 also appears to authorize a reduction in the amount of compensatory mitigation required based solely on the amount of habitat loss. This approach repeats the impact analysis error of ignoring the effects of timing and temporal loss, and whether the



location of the habitat loss affects dispersal, migration, or other essential life-cycle activities. BIO-MM#8 also appears to rely on compliance with future permit terms, rather than establishing success criteria and performance standards, to ensure that its future plans would be implemented.

Many other biological resources mitigation measures share the same inadequacies: improper deferral, lack of performance standards, and failure to identify specific, effective mitigation measures to be implemented at specific locations, in particular in Brisbane. These include BIO-MM#2 (Weed Control Plan), BIO-MM#7 (Plant Salvage and Relocation Plan), BIO-MM#10 (Compensate for Impacts on Listed Plant Species), BIO-MM#14 (Dewatering Plan) BIO-MM#15 (Fish Rescue Plan), BIO-MM#16 (Underwater Sound Control Plan), BIO-MM#31 (Bat Avoidance and Relocation Plan, BIO-MM#36 (Restore Aquatic Resources Subject to Temporary Impacts), and BIO-MM#37 (Aquatic Compensatory Mitigation Plan).

**16. *Mitigation Measure BIO-MM#12 is ineffective in reducing impacts to special status species.***

BIO-MM#12 (Work Stoppage) gives the Project biologist the authority to halt work under limited circumstances to “prevent the death or injury to the species.” (Draft EIR/EIS, p. 3.7-100.) The Project biologist could stop work if any special-status wildlife species is found in a work area, but could only stop work within the work area. These limitations are inadequate to prevent harm to all special status species. Special status species, including nesting birds occurring outside the work area, may be affected by noise, dust, night-lighting, and/or human activities or presence. The Project biologist may also relocate individuals of special status species out of the work area if the individual does not move out of the work area on its own. The Draft EIR/EIS should acknowledge that this scenario contemplates activities that would constitute a “take” for species listed under either the state or federal Endangered Species Act, or “fully protected” under California Fish and Game Code sections 3511, 4700, 5050, 5515, and would require appropriate permits.

**17. *The cumulative impact analysis for biological resources is inadequate.***

The biological resources cumulative impact analysis is inadequate because it fails to recognize that the Project would have many significant impacts pre-mitigation: Impacts BIO#1 through BIO#11, BIO#13, BIO#17, and BIO#19 through 22. (See Draft EIR/EIS, Table 3.7-22.) The cumulative impact analyses for these specific impacts should have used the same significance thresholds as it did for direct impacts, added the impacts of probable future projects, and concluded that cumulative impacts were also significant, with the Project’s contributions being cumulatively considerable. (See Guidelines, § 15130.) In addition, the magnitude of the Project’s contributions to cumulative biological impacts would be much higher than disclosed in the Draft EIR/EIS given the above inadequacies identified in the biology IAMFs, impact analyses, and mitigation measures.



Further, the cumulative impact discussions for all biological and aquatic resources are inadequate because they rely on the same “cumulative RSA.” However, the text does not explain why the same RSA is appropriate for every type of affected biological or aquatic resource. Geographic scope of cumulative impact analysis should be determined based on the affected resource. Reliance on the same RSA for all biological and aquatic resources distorts the analyses. For example, impacts to habitat assessed or quantified solely in terms of acreage may inappropriately dilute the Project’s contribution to a cumulative impact in both the quantitative terms (by making the Project’s contribution appear smaller) and qualitatively by ignoring other aspects of the lost acreage’s value to species by virtue of its location, or use as mating habitat, dispersal habitat, nesting habitat, or foraging habitat.

## **K. Hydrology and Water Resources Impacts**

### ***1. HYD-IAMF#1 and HYD-IAMF#2 are improperly deferred mitigation.***

As discussed above, CEQA requires an EIR to identify mitigation measures as such and they cannot be moved to the project description to avoid disclosure of significant impacts. Both HYD-IAMF#1 (Stormwater Management) and HYD-IAMF#2 (Flood Protection) are improperly included as part of the project description and should instead be discussed as mitigation measures.

HYD-IAMF#1 and HYD-IAMF#2 require the Project’s contractor to prepare future management plans articulating the required management measures and design standards to minimize any potential impacts from stormwater management and treatment as well as flood protection. For example, HYD-IAMF#1 requires, after Project approval but before construction, the preparation of on-site stormwater management measures and facilities as well as low-impact development techniques. (Draft EIR/EIS, Appx. 2-E, p. 2-E-20.) This defers analysis of the impacts to the current stormwater system’s capacity from the Project’s production of additional runoff to the system and attempts to minimize and rectify the impact by purporting to restore the area to regular conditions. Similarly, HYD-IAMF#2’s flood protection plan intends to “minimize the impacts” to floodplains and floodways to “avoid the risk of pollutant discharges during flood events.” (Draft EIR/EIS, p. 3.8-67.)

Furthermore, the IAMFs do not identify appropriate performance standards to ensure significant impact reductions to a less than significant level.<sup>117</sup> HYD-IAMF#1 requires mitigation in the form of “low-impact development techniques” to “be used where appropriate.” (Draft EIR/EIS, Appx. 2-E, p. 2-E-20.) HYD-IAMF#1 also improperly delays the identification of the kind of stormwater capture devices, at which specific sites those

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<sup>117</sup> HYD-IAMF#1 does not discuss performance standards but rather simply refers to the Authority Technical Memorandum 2.6.5 *Hydraulics and Hydrology Guidelines*, which was not made available to the public as part of the Draft EIR/EIS documents on the Project’s webpage.

devices will be utilized, and how reductions will reduce impacts. HYD-IAMF#2 has a vague performance criterion, to “minimize increases in 100-year or 200-year flood elevations, as applicable to locale.” (*Ibid.*). Without specific performance standards, it is impossible to determine whether these improperly deferred mitigation measures will be effective in reducing impacts to less than significant levels.

**2. *The Impact HYD#2 impact analysis is inadequate.***

The Draft EIR/EIS incorrectly identifies Impact HYD#2 (Permanent Impacts on Drainage and Stormwater Runoff) as less than significant because the impact analysis does not consider the factual circumstances surrounding the Baylands site and the extent of construction, which includes grading and earthwork, filling “most of the Brisbane wetlands” and a portion of the Visitation Creek wetlands and scrub/shrub wetlands, as well as placing Visitation Creek Tributary and Wetland into a culvert.

Project construction would require “substantial quantities of grading and earthwork” for the Tunnel Avenue overpass and construction of the Brisbane LMF under both alternatives, resulting in “permanent, direct, localized impacts on existing drainage patterns.” (Draft EIR/EIS, p. 3.8-46.) “Larger quantities of grading would result in larger changes in topography, which would translate into a larger impact on drainage patterns.” (*Ibid.*) The extensive grading and construction of impervious surfaces would substantially alter the existing drainage pattern of the area, a significant impact under CEQA.

According to Table 3.8-16, approximately 2.8 million cubic yards of earthwork is required to construct East LMF,<sup>118</sup> which includes minor and major grading in the area and the creation of flat areas for structures. Similarly, construction of the West LMF estimates roughly 3.6 million cubic yards of earthwork is required in addition to 46 acres of new impervious surface additions in the Baylands area. Based on the limited information included in the Draft EIR/EIS, it seems over half of Icehouse Hill would be graded to construct the West LMF; the hydrology and water impacts of this extensive grading are not fully analyzed. Because the Draft EIR/EIS fails to quantify the specific amounts of grading for any of the specific construction activities, it fails to provide decision makers and the public with a detailed, accurate assessment of the Project’s impacts on drainage patterns and runoff volumes.

The impacts from grading are analyzed in a piecemeal fashion, but when they are added to drainage/stormwater impacts in Brisbane from other Project construction activities, the significant impact is magnified. In addition to the earthwork activities, the Draft EIR/EIS states that construction includes 45 acres of new impervious surfaces for the

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<sup>118</sup> The Draft EIR/EIS presents inconsistent grading quantities for the West and East Brisbane LMF in two tables, Table 2-25 and Table 3.8-16; this inconsistency requires further thorough analysis and rectification of the incorrect grading estimates to properly analyze the Project’s potential impacts on hydrology and water resources.

Brisbane LMF on either site (Draft EIR/EIS, p. 3.8-53), mostly in wetland and undeveloped areas (Draft EIR/EIS, p. 3.8-53) .

However, the Draft EIR/EIS incorrectly states that the new impervious surfaces “would be minimal when compared to the amount of existing impervious surfaces in those watersheds.” The combined environmental impact of construction of new impervious surface areas on undeveloped land would undoubtedly alter drainage patterns and increase the rate and amount of surface runoff to a substantial degree. Additionally, construction of the Brisbane LMF under either alternative requires construction of new onsite and offsite drainage systems and the modification of existing drainage systems. (Draft EIR/EIS, p. 3.8-55.) The Draft EIR/EIS, however, fails to address the impacts of new drainage facilities developed for the Project.<sup>119</sup>

The Draft EIR/EIS attempts to minimize these impacts by saying that IAMFs, along with planned drainage systems, would result in a less than significant impact. This conclusion is not supported by substantial evidence because drainage studies were not prepared and because the Draft EIR/EIS does not analyze how the undisclosed amounts of grading, the filling of significant portions of wetlands, redirecting of channels, and over 45 acres of new impervious area would have a substantial impact on the rate and amount of surface runoff.

Impact HYD#2 does not analyze, but must discuss: (1) a drainage study to quantify increased flows from the Project’s impervious surfaces, (2) analysis of the capacity of downstream drainage facilities to accept those flows, (3) a description of the on- and off-site facilities needed to convey runoff from Project facilities, (4) analysis of the impacts that would result from construction of on-and off-site drainage improvements, and (5) mitigation measures for any significant impacts that might result from Project-induced changes to drainage patterns and stormwater runoff.<sup>120</sup> Also missing from Impact HYD#2 is any discussion or analysis of the relocation of Visitacion Creek identified in Impact BIO#19, which states that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands.”<sup>121</sup>

**3. *Impact HYD#4 fails to fully address impacts associated construction of the LMF.***

Impact HYD#4 (Temporary Impacts on Surface Water Quality during Construction) does not address impacts related to excavations into the former Brisbane Landfill and its buried waste (East LMF) or into contaminated soils within remediation Operable Units UPC-OU-SM and OU-2 (West LMF). The Draft EIR/EIS states on page 3.8-60 that the

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<sup>119</sup> See Metis discussion of Impact HYD#2.

<sup>120</sup> See Metis discussion of Impact HYD#2.

<sup>121</sup> The Metis letter discusses Impact HYD#2 and the Draft EIR/EIS’s failure to disclose the full extent of impacts to Visitacion Creek.

“primary water quality pollutant associated with construction of the project alternatives would be sediment.” As a result, analysis of Impact HYD#4 focuses on grading activities and the total amount of soil that would be excavated for either LMF site. No analysis is conducted related to water quality hazards associated with excavations into the former Brisbane Landfill and its buried wastes that have not been characterized as either hazardous or non-hazardous. Also not analyzed in Impact HYD#4 are water quality impacts of the 432,000 cubic yards of contaminated soils that are proposed to be excavated, loaded on trucks, and hauled offsite during construction of the West LMF. In the absence of such analysis and substantial evidence that BMPs designed for non-hazardous soils would, in fact, avoid significant impacts during excavations of contaminated soils and uncharacterized solid wastes, the Draft EIR/EIS cannot substantiate its CEQA conclusion that Impact HYD#4 would be less than significant.

Also, Impact HYD#4 does not address water quality impacts related to relocation of Visitacion Creek. While Impact BIO#19 states that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands,” no discussion of construction water quality impacts that would be associated with such relocation is provided in Impact HYD#4. Whether relocating a portion of Visitacion Creek is part of the Project (as described in Impact BIO#19) or an action being considered by the Authority for incorporation into Project mitigation as described in the Preliminary Compensatory Mitigation Plan, Impact HYD#4 must analyze and disclose the water quality impacts associated with filling a large portion of Visitacion Creek and relocating the creek to flow into the Brisbane Lagoon rather than into the San Francisco Bay.

**4. *Impact HYD#7 fails to adequately analyze Brisbane LMF operational impacts.***

Impact HYD#7 (Continuous Impacts on Surface Water during Operations) does not adequately analyze the Project’s operational impacts on surface water quality at the LMF sites because it does not consider the Baylands’ unique soil composition. During Project operations, pollutants such as brake dust, metals and PAHs would be discharged into aquatic resources, deposited on nearby impervious surfaces and possibly into a storm drain inlet and then, into aquatic resources, which could affect water quality. (Draft EIR/EIS, p. 3.8-69.) The Draft EIR/EIS nevertheless incorrectly concludes that the continuous impacts on surface water at the LMF sites would be less than significant.

The LMF sites are located in an area of wetlands and tidally influenced<sup>122</sup> zones, and the soil is a mix of native soils, marine sediment, and layered with trash.<sup>123</sup> This unique soil

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<sup>122</sup>Draft Baylands Specific Plan, Chapter 4.G, June 2013, discussing, “B&M identified 27 wetland areas, one tidally influenced drainage area (the interior drainage channel), and one tidal water body (Brisbane Lagoon) within the Brisbane Baylands boundaries during wetland surveys.” Available at:

[http://archive.brisbaneca.org/sites/default/files/4g\\_hazards.pdf](http://archive.brisbaneca.org/sites/default/files/4g_hazards.pdf).

composition must be analyzed in conjunction with the release of pollutants during Project operations because tidally influenced areas will likely make it easier for pollutants to reach waterways. Furthermore, both proposed LMF sites are already highly contaminated with waste and hazardous materials; these sites must be fully remediated before construction and operation to ensure no additions to the pollution load.

The Draft EIR/EIS impact analysis improperly includes implementation of HYD-IAMF#1, which would potentially use treatment BMPs such as “infiltration areas, infiltration devices, bioretention systems, detention devices, media filters, and wet basins” throughout the Project to determine that potential water quality impacts are less than significant. (Draft EIR/EIS, p. 3.8-70.) As stated above, HYD-IAMF#1 is actually improperly deferred mitigation with no performance standards. The Draft EIR/EIS should have disclosed pre-mitigation operational water quality impacts at the LMF sites in the absence of IAMF#1 and judged them as significant. A more effective, non-deferred operational water quality mitigation measure should then have been formulated that identified specific measures to be implemented in Brisbane given its unique historical uses, makeup of soil materials, and tidally influenced and wetland areas.

**5. *Impact HYD#8 improperly defers site-specific analysis of soil and groundwater contamination risks.***

Impact HYD#8 (Temporary Impacts on Groundwater Quality and Volume During Construction) improperly defers site-specific analysis of soil and groundwater contamination risks at LMF sites. The Draft EIR/EIS inappropriately defers analysis of whether the Project will have significant environmental impacts to groundwater quality during construction activities.

Impact HYD#8’s analysis specifically states that “[r]esolutions may involve conducting a site investigation, implementing remediation activities, and properly disposing of contaminated materials...” if undocumented contamination is detected *during* construction activities. (Draft EIR/EIS, p. 3.8-75.) Site investigations and remediation plans should not be conducted during the construction of the Project but must be conducted prior to construction in order to properly disclose impacts and mitigate them. Contamination is already known to exist within the West LMF. Without substantial evidence, the Draft EIR/EIS erroneously concludes that the impact is less than significant.

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<sup>123</sup> As stated in the Final Program EIR for the Brisbane Baylands Response to Comment BBCAG-109: “Basically, fill comprised of solid waste accepted by the landfill was placed on top of (1906 San Francisco) earthquake rubble that was placed on top of marine sediments to form land. Soil has been placed on top of the solid waste to prevent contact with the waste. More than likely, soil was also placed on top of the solid waste during the operations of the landfill as ‘daily cover’ to prevent the materials from being blown into the community or the Bay.” Available at: [http://archive.brisbaneca.org/sites/default/files/2-9\\_organizations-rtc\\_feir.pdf](http://archive.brisbaneca.org/sites/default/files/2-9_organizations-rtc_feir.pdf).



**6. *Impact HYD#13 fails to fully analyze permanent impacts from runoff increases.***

The Draft EIR/EIS’s analysis of Impact HYD#13 (Permanent Impacts on Floodplain Hydraulics) fails to comprehensively analyze construction of the West LMF, which would create a significant environmental impact on floodplain hydraulics. The Draft EIR/EIS concludes that construction of the West LMF would result in a less than significant impact because it relies on the implementation of future flood protection plans (described in HYD-IAMF#2) and coordination with local floodplain managers to “avoid substantial permanent impacts on floodplains.” (Draft EIR/EIS, p. 3.8-86.) As stated above, HYD-IAMF#2 is actually improperly deferred mitigation with no performance standards. The Draft EIR/EIS should have disclosed pre-mitigation floodplain hydraulics impacts at the LMF sites in the absence of IAMF#2 and judged them as significant. A more effective, non-deferred operational water quality mitigation measure should then have been formulated that identified specific measures to be implemented at the LMF sites, given their unique environmental setting.

**7. *HYD-MM#1 is deferred mitigation and is also unenforceable.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. HYD-MM#1 (Maintain Existing 100-Year Water Surface Elevations of Guadalupe River in San José) is an improperly deferred mitigation measure because it seeks to identify design improvements in a very general, conceptual fashion after Project approval. HYD-MM#1 states, “to ensure there would be no increase in the 100-year water surface elevation [. . .] mitigation *may* include, but would not be limited to, optimizing the design of the proposed HSR bridge, [. . .] widening the river and floodplain, improving the hydraulics of the existing railroad bridges immediately downstream from the proposed HSR bridge, and increasing the channel flow capacity of the river.” (Draft EIR/EIS, p. 3.8-86.) HYD-MM#1 offers a range of vague mitigation options, details of which are deferred to the future. HYD-MM#1 is unenforceable because the hypothetical measures it proffers “*may*” be implemented but does not explain who retains discretion to decide what measures would be implemented, if they are implemented at all.

**8. *Sea level rise must be analyzed as a CEQA impact.***

The EIR/EIS must analyze sea level rise as a CEQA impact because the Project’s drainage pattern alterations will exacerbate inundation impacts. Sea level rise analysis under CEQA is warranted when a proposed project may exacerbate an environmental hazard. (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 388.) It is also required when sea level rise will create a flood hazard causing a proposed project to release pollutants due to inundation. (See, e.g., Guidelines, Appendix G, Question X(d).) Nevertheless, the Draft EIR/EIS does not include a CEQA-compliant sea level rise analysis, and instead and incorrectly states (in Draft EIR/EIS, § 3.8.10) that such analysis is not required by CEQA.



The Draft EIR/EIS must analyze sea level rise as a CEQA impact because the Project will alter drainage patterns which will likely intensify inundation impacts caused by sea level rise. Numerous changes to the drainage system will result from the construction of either LMF site due to the grading of the sites to a flat surface, including the substantial grading of Icehouse Hill, as well as the construction of additional impervious surface area for the LMF on wetlands that must be filled to create the LMF sites. Additional impervious surfaces that would increase runoff would be added in other locations along the Project alignment. (See Draft EIR/EIS, Table 3.8-18 for a list.)

The Draft EIR/EIS identifies the Brisbane Lagoon and portions of the LMF as a location most susceptible to sea level rise. (Draft EIR/EIS, p. 3.8-103.) While the Draft EIR/EIS identifies the current sections of track that have the potential to be inundated by sea level rise in Table 3.8-28, it ignores analysis of how the Project's drainage impacts would exacerbate local sea level rise impacts in Brisbane and other site-specific locations. These local sea level rise impacts must be evaluated and recirculated in a Draft EIR/EIS to adequately analyze sea level rise impacts.

Also, the Draft EIR/EIS must analyze sea level rise as a CEQA impact because the LMF and other Project facilities will be located in flood hazard areas, risking release of pollutants due to inundation. These pollutants are catalogued in Impact HYD#5, but the Draft ER/EIS does not analyze or explain how inundation due to sea level rise would worsen water quality impacts due to release of the pollutants.

The Draft EIR/EIS should also discuss the requirements of the BCDC to ensure the Project is consistent with BCDC's policies on addressing the impacts of climate change in the San Francisco Bay.<sup>124</sup> The policies describe the requirements for assessing risks when designing shoreline projects.<sup>125</sup> To fully analyze sea level rise impacts, the Draft EIR/EIS must analyze the Project's compliance with BCDC's policies and the results should be included in a recirculated Draft EIR/EIS.

**9. *A long-term sea level rise vulnerability assessment and adaption plan are improperly deferred.***

The Draft EIR/EIS does not articulate the Authority's plans to address long-term sea level rise and delays the preparation of a long-term vulnerability assessment and adaptation plan until a later, unspecified time. (Draft EIR/EIS, p. 3.8-103.) Without assessing the Project's long-term vulnerability to sea level rise, the Authority is incapable of assessing how the Project will exacerbate sea level rise impacts. Additionally, deferring preparation of

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<sup>124</sup> BCDC, San Francisco Bay Plan, accessed at: [https://www.bcdc.ca.gov/plans/sfbay\\_plan.html](https://www.bcdc.ca.gov/plans/sfbay_plan.html).

<sup>125</sup> BCDC, San Francisco Bay Plan, Policies, accessed at: [https://www.bcdc.ca.gov/plans/sfbay\\_plan.html](https://www.bcdc.ca.gov/plans/sfbay_plan.html).

an adaptation plan prohibits the public and decision makers from analyzing necessary information to understand how sea level rise risks would be mitigated.

The Draft EIR/EIS provides no explanation as to why a long-term sea level rise vulnerability assessment and adaptation plan cannot be prepared now and included in the document. The Draft EIR/EIS is inadequate because it recognizes the vulnerability of both Brisbane LMF sites while deferring consideration of how best to protect the LMF until some unknown time in the future after the Project is approved and the LMF is constructed. By pursuing this approach, the Authority would effectively shift costs to others.<sup>126</sup>

The Draft EIR/EIS admits that the sea level rise analysis presented in Section 3.8.10 is inadequate because it defers preparation a long-term vulnerability assessment and adaptation plan to some uncertain time in the future after project approval. Instead, the long-term vulnerability assessment and adaptation plan should be presented in a revised Draft EIR/EIS, and based on the latest integrated Bay Area Sea Level Rise and Shoreline Analysis maps, developed by the Adapting to Rising Tides (“ART”) program.<sup>127</sup>

Even in the absence of a long-term adaptation plan, the Draft EIR/EIS hydrology impact analysis is inadequate because it fails to commit to specific short-term (2050) adaptation measures for the LMF. The Draft EIR/EIS vaguely states that the “Authority would incorporate adaptation features into both project alternatives for the LMF to avoid inundation associated with sea level rise and associated pollutant discharges....Adaptation features, such as floodwalls, pump stations, and berms would address effects from sea level rise over the near term with design modifications that would avoid or minimize potential effects in the year 2050.” (Draft EIR/EIS, p. 3.8-103) Without greater certainty about which specific adaptation measures would be implemented and an evaluation of their effectiveness, there is no assurance that flooding and inundation impacts associated with the LMF would be less than significant.

**10. *The hydrology/water resources cumulative impact analysis is inadequate.***

Incredibly, the hydrology/water resources cumulative impact analysis improperly assumes that existing laws and regulations would prevent *any* cumulative impacts on surface water hydrology, surface water quality, groundwater, and floodplains from occurring. Therefore, there would be no cumulatively considerable Project contribution to such impacts. (Draft EIR.ES, pp. 3.18-51 to -52.) The Draft EIR/EIS presents no evidence that *all*

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<sup>126</sup> See Metis discussion regarding the Draft EIR/EIS’s inadequate discussion of projected sea level rise.

<sup>127</sup> See <http://www.adaptingtorisingtides.org/project/regional-sea-level-rise-mapping-and-shoreline-analysis/>.

reasonably foreseeable future projects would comply with *all* applicable hydrology/water resources laws and regulations, and it is unrealistic to expect they would do so.<sup>128</sup>

Further, the hydrology/water resources cumulative impact analysis is inadequate because it fails to recognize that the Project would have several significant impacts pre-mitigation: Impacts HYD#4, HYD#5, and HYD#13. (See Draft EIR/EIS, Table 3.8-26.) In addition, the above comments demonstrate that Impacts HYD#2, HYD#7, and HYD#13 should also have been significant pre-mitigation. The cumulative impact analyses for these specific impacts should have used the same significance thresholds as for direct impacts, added the impacts of probable future projects, and concluded that cumulative impacts were also significant, with the Project's contributions being cumulatively considerable. (See Guidelines, § 15130.) Instead, the Draft EIR/EIS illogically concludes that, notwithstanding these significant direct hydrology/water resources impacts, the Project would have no cumulative hydrology/water resources impacts at all.

#### **L. Aesthetics and Visual Quality Impacts**

##### ***1. AVQ-IAMF#1 and AVQ-IAMF#2 are improperly deferred mitigation measures with no performance standards.***

AVQ-IAMF#1 (Aesthetic Options) and AVQ-IAMF#2 (Aesthetic Review Process) are improperly deferred mitigation measures with no performance standards to assure the impacts they reduce would be less than significant. Both AVQ-IAMF#1 and AVQ-IAMF#2 state that the contractor will, prior to construction, issue technical memoranda and document the procedures used to comply with local agency's aesthetic guidelines for non-station structures. These two IAMFs would be used, for example, prior to the construction of the Brisbane LMF. However, the IAMFs are, in fact, improperly deferred mitigation of aesthetic impacts from non-station structures. Furthermore, the IAMFs contain no objective performance standards to assure that impacts would be reduced below significance.

The Draft EIR/EIS project description should have enough preliminary detail to allow aesthetic impacts of these facilities to be disclosed and assessed for significance. However, by relying, without analysis, on the IAMFs to reduce aesthetic impacts to less than significant, the Draft EIR/EIS fails to properly recognize the aesthetic impacts of the LMF. The IAMFs should be discussed as mitigation measures, not as impact avoidance and minimization features.

The IAMFs incorporate no performance standard of their own, but instead state they will be guided, at least in part, by "local aesthetic preferences." (Draft EIR/EIS, p. 3.15-87.) The Draft EIR/EIS provides no examples of these local aesthetic preferences, nor does it

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<sup>128</sup> See Metis discussion of cumulative impacts, stating the Draft EIR/EIS must provide an explanation as to why existing laws and regulations would be adequate to prevent any significant hydrology/water resource impacts from the Project or cumulative significant hydrology/water resource impacts from the other projects.

provide any specifics about how non-station structures could be designed to avoid significant aesthetic impacts. Indeed, the Draft EIR/EIS does not even attempt to describe the *types* of aesthetic impacts these features would try to avoid, whether they be from lighting, glare, massing, shadows, etc.

Regarding the LMF, the Draft EIR/EIS states that these IAMFs would only incorporate local aesthetic preferences “with regard to vegetative screening, the design of the realigned Tunnel Avenue overpass, and modifications to the Bayshore Station.” (Draft EIR/EIS, pp. 3.15-100, 103.) No performance standards for vegetative screening, design, or modifications are described. Impact AVQ#4 (Permanent Direct Impacts on Visual Quality – Brisbane Landscape Unit) should specifically address visual impacts on Baylands residential uses designated by the General Plan.

**2. *The visual impacts of LMF on future Brisbane residents has not been analyzed.***

In analyzing the “Permanent Direct Impacts on Visual Quality” in the Brisbane Landscape Unit, the Draft EIR/EIS states that “[t]here are few viewers immediately adjacent to the Caltrain railway in the Brisbane Landscape Unit other than passengers, who are travelers with moderately low viewer sensitivity.” (Draft EIR/EIS, p. 3.15-99.) The Aesthetics and Visual Quality Impacts Technical Report (“AVQ Technical Report”), in discussing Temporary Construction Effects, states that viewers would have “low to moderately low viewer sensitivity, such as industrial workers at the Recology facility and nearby lumberyard.” (AVQ Technical Report, p. 5-29.)

The Draft EIR/EIS does not address future visual impacts to Baylands residents who will have much higher viewer sensitivity than travelers or industrial workers. The Draft EIR also fails to analyze the visual impacts of the LMF on the recreational users at the Brisbane Lagoon, who would have a higher sensitivity to aesthetics than travelers or industrial workers.

Furthermore, the Draft EIR/EIS fails to account for the effect of higher elevations when concluding that Brisbane residents would have a “moderate viewer sensitivity due to their distance from the railway.” (Draft EIR/EIS, p. 3.15-99.) The City of Brisbane’s elevation means that higher-elevation residents will be far more affected by the aesthetic impacts of the LMF than a similar group of residents at the same distance but at a level elevation. The Draft EIR/EIS concludes that the distance of one mile would limit their exposure and result in moderate viewer sensitivity, but fails to recognize the impact of elevation on the sensitivity of residential viewers. (Draft EIR/EIS, p. 3.15-100.) Additionally, the above conclusion references only the distance of residential viewers from the “railway,” but not the LMF.

Finally, Impact AVQ#4 also needs to be revised to recognize the significant visual impact associated with removing Icehouse Hill to make room for the West LMF. Removing

the most prominent natural feature within the Baylands would have a substantial negative visual effect and this impact cannot be considered to be less than significant.

**3. *AVQ-MM#3 and other aesthetics mitigation measures are improperly deferred mitigation with no performance standards.***

As discussed above, CEQA mitigation measures must meet basic requirements for effectiveness, enforceability, and non-deferral. AVQ-MM#3 (Incorporate Design Aesthetic Preferences into Final Design and Construction of Non-Station Structures) is improperly deferred mitigation with no performance standards. AVQ-MM#3 is similar to AVQ-IAMF#1 and #2, and therefore fails for the same reasons. This mitigation measure states that “[p]rior to construction (any ground-disturbing activity) the contractor would work with the Authority and local jurisdictions to incorporate the Authority-approved aesthetic preferences for non-station structures into final design and construction (refer to Authority 2014). A technical memorandum would be submitted to the Authority to document compliance.” (Draft EIR/EIS, p. 3.15-142.)

This mitigation measure is improperly deferred; rather than incorporating local design guidelines and consulting local jurisdictions regarding the aesthetic impacts of the Project, the Draft EIR/EIS improperly defers mitigation of aesthetic impacts until after Project approval and just prior to construction. Additionally, the mitigation measure includes no performance standards by which to judge how aesthetic impacts will be mitigated to less than significant levels or to judge whether the Project’s construction is, in fact, complying with the mitigation measure.

The following aesthetics mitigation measures are also improperly deferred with no objective performance standards: AVQ-MM#1 (Visual Impact Minimization Memo), AVQ-MM#2 (Light and Glare Impact Minimization Memo), and AVQ-MM#6 (Visually Sensitive Receptors Memo).

**4. *Nighttime lighting analysis is inadequate.***

The Draft EIR/EIS acknowledges that in the Brisbane Landscape Unit, “[v]iews to the lagoon and beyond to the Bay are available from the residences on the steep slopes of San Bruno Mountain.” (Draft EIR/EIS, p. 3.15-25.) The Draft EIR/EIS states that “[n]ew sources of nighttime lighting would be generated at the Brisbane LMF sites, increasing lighting in the immediate area that would also be visible from residences on San Bruno Mountain.” (Draft EIR/EIS, p. 3.15-87.) “The maintenance building and other facilities would be lit through the night, contributing to increases in nighttime light levels. Project features would provide lighting and building design intended to conform to the local design context. (AVQ-IAMF#1.) Fixed lighting sources at HSR facilities would be designed to direct light downward, minimizing light spillover ....” (Draft EIR/EIS, p. 3.15-140.)

While the Draft EIR/EIS (p. 3.15-40) states that the LMF would be “designed to direct light downward, minimizing light spillover” and “the lighting design would limit its



radiance,” the Draft EIR/EIS does not include any actual requirements to direct light downward, minimize light spillover, or limit the radiance of LMF nighttime lighting, let alone offer any performance standards in relation to light trespass, impacts on dark night sky, or radiance of nighttime lighting. Neither do IAMFs AVQ-IAMF#1 (Aesthetic Options) and AVQ-IAMF#2 (Aesthetic Review Process) or Mitigation Measure AVQ-MM#3 set enforceable performance standards.

For the reasons stated above, AVQ-IAMF#1 is an improperly deferred mitigation measure that lacks adequate performance standards. Further, AVQ-IAMF#1 relies on design guidelines set forth in the Authority’s Aesthetic Options for Non-Station Structures, which actually contain no mention of directing light downward, minimizing light spillover, or limiting the radiance of nighttime lighting. Accordingly, the Draft EIR/EIS’s conclusions regarding the impacts of nighttime lighting on residential viewers from San Bruno Mountain are unsupported by substantial evidence. Indeed, the Draft EIR/EIS does not analyze how AVQ-IAMF#1 would reduce impacts to less than significant, but rather merely observes that the increase in nighttime lighting from the LMF would “be consistent with the larger context that includes other existing nighttime sources, such as traffic on the US 101 and the southern-facing skyline of San Francisco.” (Draft EIR/EIS, pp. 3.15-140, 3.15-148.)

The Draft EIR/EIS also improperly equates the impacts of nighttime light pollution emanating from the LMF, which will only be one mile from residential viewers, with that from downtown San Francisco, which is eight miles away. As the Draft EIR/EIS mentions, the current area of the LMF “is currently undeveloped and therefore unlit.” (Draft EIR/EIS, p. 3.15-140.) The Draft EIR/EIS does not analyze the effect of the introduction of a large new structure, that is permanently lit all night, on the current views of downtown San Francisco. Rather, the Draft EIR/EIS improperly assumes the LMF would have no effect on this view because the LMF would just be another “nighttime source[]” of light. (Draft EIR/EIS, p. 3.15-140.) However, the more distant view of lighted downtown San Francisco *is* the view that would be impacted by new, permanent sources of light in the foreground. That both are sources of “nighttime light” does not mean that the LMF would not interfere with existing views of downtown San Francisco from San Bruno Mountain.

**5. *The aesthetics cumulative impact analysis is inadequate.***

The Draft EIR/EIS’s analysis of the Project’s cumulative aesthetic impacts notes that “[n]ew and enhanced recreational facilities around the Brisbane Lagoon and throughout the planned Brisbane Baylands development would bring new recreational viewers to the area, where they would experience views of the Brisbane LMF and the Caltrain right-of-way.” (Draft EIR/EIS, p. 3.18-75.) However, the Draft EIR/EIS concludes, nevertheless, that the cumulative impacts will be less than significant because of AVQ-IAMF#1. (*Ibid.*) For the same reasons discussed above, IAMF#1 is an improperly deferred mitigation measure that lacks performance standards, and the Draft EIR/EIS errs by relying on it in its conclusion that there will be no significant cumulative aesthetic impacts.

**M. Public Utilities and Energy Impacts**

***1. The Draft EIR/EIS incorrectly estimates water supply availability.***

An adequate environmental impact analysis for a proposed project must show that future water supplies are reasonably likely to be available, and if future water supplies cannot confidently be determined to be available, possible replacement sources and the impacts of using those sources must be evaluated. (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412.) The Draft EIR/EIS does not provide a legally adequate analysis of foreseeable impacts of supplying water to the Project, as is required by CEQA, because it utilizes incorrect calculations of water supply. (*Id.*, at p. 434.)

The Draft EIR/EIS uses incorrect water supply calculations and egregiously overestimates the water supply available for Project operations. The use of correct water supply numbers would demonstrate that the Project will have insufficient water supply available, a significant effect under CEQA. As a result of the incorrect methodology, the analyses in Impact PUE#8 (Continuous Permanent Impacts from Water Use) reach incorrect conclusions that impacts on water supply would be less than significant. Impact PUE#8 analyzes the Project's need for operational water supply.<sup>129</sup>

The CEQA conclusion for Impact PUE#8 states that the permanent increase in water use “would be 0.8 percent of the remaining water supply for a normal year in 2030, 0.9 percent for a single dry year in 2030, and 1.0 percent for multiple dry years in 2030. In 2040, the increase would be 1.3 percent of the remaining water supply for a normal year, 1.5 percent for a single dry year, and 1.7 percent for multiple dry years.” This statement, however, does not account for the fact that the various retail water agencies within San Mateo County, including the City of Brisbane each have a contractually allotted share of the County's total 184 million- gallons per day (“mgd”) wholesale supply. The Draft EIR/EIS fails to disclose that Brisbane's contracted water supply is 0.96 mgd, and could be reduced during water shortages, emergencies, or maintenance of the system.

A Water Supply Assessment (“WSA”) was prepared for the Baylands as part of the 2013 Brisbane Baylands Program EIR.<sup>130</sup> Table 5-2 of the WSA projects that City of Brisbane water demand, exclusive of any development within the Baylands or Sierra Point would be 1.06 mgd in the Year 2030. The WSA concluded that the City did not have adequate water supplies for future uses and implementation of water savings programs would be necessary even in the absence of Baylands development. To provide adequate

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<sup>129</sup> Details are provided in Metis' discussion of Impact PUE#8, explaining the misleading evaluation.

<sup>130</sup> CDM Smith, Brisbane Baylands Project Water Supply Assessment, May 24, 2013. Provided as Attachment Metis-G.

water supply for Baylands development, the WSA concluded that additional water supplies would be required.<sup>131</sup>

The Draft EIR/EIS concedes there will a permanent increase in water use during operation but improperly concludes the impact would be less than significant because its improper methodology led to its overestimation of available water from the City of Brisbane. The Draft EIR/EIS must therefore reanalyze water supply impacts using correct data, conclude that the water supply impact is significant, and identify feasible mitigation measures to lessen the impact.

Since water supplies available to serve the project are insufficient, the Draft EIR/EIS must also analyze whether other water sources exist and describe environmental consequences of tapping such resources if there is a realistic possibility that water supplies will have to be obtained from a source other than Brisbane. (See, e.g., *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 372-373.)

**2. *The Draft EIR/EIS does not identify the correct agency for approval of an increase in water allocation.***

Furthermore, the Draft EIR/EIS incorrectly implies the Authority must request water allocation from the San Francisco Public Utilities Commission (“SFPUC”). However, the individual jurisdictions are the water providers from which the Authority needs to request additional water allocation. The Project would receive water from each individual jurisdiction in which portions of the Project traverse, so the Draft EIR/EIS should have analyzed whether each individual jurisdiction has adequate water supply for the Project.

**3. *PUE-IAMF#4 is actually a deferred mitigation measure with no performance standards.***

As discussed above, CEQA requires an EIR to identify mitigation measures as such, and not to be moved to the project description to avoid disclosure of significant impacts. PUE-IAMF#4 (Utilities and Energy) is actually an improperly deferred mitigation measure because it seeks to identify, avoid, and minimize interruptions of utility service through a technical memorandum prepared after Project approval. (Draft EIR/EIS, p. 3.6-50; see also Appx. 2-E, p. 2-E-23.)

PUE-IAMF#4 requires the Project contractor to prepare a technical memorandum to verify the location of all underground utilities, confirm their findings with utility service providers prior to construction, and coordinate with the service providers “to minimize or avoid interruptions” which would include upgrades to existing power lines to connect the HSR system to existing substations. (Draft EIR/EIS, Appx. 2-E, p. 2-E-23.) The IAMF does not provide details regarding performance standards despite its requirement to document

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<sup>131</sup> See Metis discussion of waters supply impacts.

“how construction activities would be coordinated with service providers to minimize or avoid interruptions.” (Draft EIR/EIS, p. 3.6-51.)

**4. *Impact PUE#4 (Temporary Impacts from Construction of New Utility Infrastructure) analysis is inadequate***

The Draft EIR/EIS fails to provide analysis to substantiate the conclusion that impacts of constructing electrical infrastructure would be less than significant. The Impact PUE#4 analysis states that network upgrades would be implemented pursuant to the California Public Utilities Commission (“CPUC”) General Order 131-D, which regulates the planning and construction of electric generation. (Draft EIR/EIS, pp. 3.6-52 to -53.) However, the Draft EIR/EIS fails to analyze whether compliance with CPUC General Order 131-D would be sufficient to guarantee impacts would be less than significant.

Further, Impact PUE#4 only addresses electrical infrastructure and does not discuss Project impacts associated with water, wastewater, or other utility infrastructure.<sup>132</sup> The Draft EIR/EIS must discuss the availability and adequacy of existing water, wastewater, natural gas, and telecommunications infrastructure to serve the Brisbane LMF in order to determine what utility infrastructure improvements are needed, potential impacts of such infrastructure improvements, and whether temporary impacts from construction of new utility infrastructure would be significant.

**5. *Impact PUE#5 (Temporary Impacts from Water Use) fails to document construction water use estimates.***

The analysis of temporary impacts from water use is insufficient because it fails to explain how construction water demand was actually calculated. Appendix 3.6-C: Water Use Assessment states water would be required during construction for various activities and states that construction water use estimates were “based on the number of water trucks anticipated to be required during construction.” (Draft EIR/EIS, App. 3.6-C, p. 3.6-C-1.) However, no information is presented to explain how the Draft EIR/EIS estimated the number of water trucks needed during construction or how the gallons of water needed for either LMF listed in Table 2 of Appendix 3.6-C were calculated. There is no indication the Draft EIR/EIS considered the actual amount of excavation and grading required for the LMFs and number of water tanker truck trips required, as well as any special conditions associated with construction on the former Brisbane Landfill.<sup>133</sup>

**6. *Impact PUE#7 (Temporary Generation of Solid Waste and Hazardous Wastes) understates impacts by failing to disclose that the***

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<sup>132</sup> See Metis discussion regarding Impact PUE#4, stating the necessity of discussing the public utility infrastructure needs of the Brisbane LMF, a site with limited utility service and infrastructure that is known to be inadequate to serve future development.

<sup>133</sup> See Metis’ discussion regarding the lack of information included in Appendix 3.6-C that is necessary for adequate analysis of impacts from construction water use.

***East LMF would require removing a substantial quantity of solid waste from the former Brisbane Landfill.***

The analysis of solid waste generation during Project construction fails to disclose that a large portion of the East LMF overlies the former Brisbane Landfill, and that construction of the East LMF would require excavation and disposal of a substantial quantity of solid waste within that landfill. As a result, the Draft EIR/EIS understates the amount of excavated material from the East LMF that would require disposal in a permitted landfill. The discussion of non-hazardous wastes in Impact PUE#7 does not account for solid wastes excavated during construction of the East LMF some of which could be determined to be hazardous. Without determining the amount of solid waste that would be excavated from the landfill and describing those wastes, the Draft EIR/EIS cannot accurately determine the amount of excavated materials from the East LMF site that could be hauled to be disposed at a Class II or III landfill, or the amount that must be hauled to a more distant Class I landfill.

**7. *Impact PUE#10 analysis of stormwater drainage facilities impacts is inadequate.***

Impact PUE#10 (Permanent Impacts on Storm Drainage Facilities) incorrectly concludes that impacts on stormwater drainage facilities would be less than significant because it states that the Project would not require or result in the relocation or construction of new or expanded stormwater drainage facilities. (Draft EIR/EIS, p. 3.6-65.) The Draft EIR/EIS comes to its less than significant impact conclusion despite stating that Project will “cause permanent changes in drainage patterns from the excavation and placement of fill, widening of existing embankments, and new impervious surfaces.” (Draft EIR/EIS, p. 3.6-64.) The Draft EIR/EIS concedes, “[t]hese changes would affect stormwater runoff during rain events, including changes in runoff volume and rates and increased pollutant loading, compared to existing conditions.” (*Ibid.*)

Impact PUE#10 relies on HYD-IAMF#1, and HYD-IAMF#2 to reduce impacts; however, these are actually improperly deferred mitigation measures with no performance standards that also defer impact analysis. (See [Section VII.K.](#), *supra.*) Instead, impacts should be assessed pre-mitigation.

While some of the elements proposed in HYD-IAMF#1 may generally be appropriate mitigation measure features, they will likely not be as effective at mitigating impacts on a unique site like the Baylands, which consists of undeveloped land,<sup>134</sup> numerous wetland areas, and tidally influenced zones.<sup>135</sup> Moreover, the soil composition is a mixture of

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<sup>134</sup> Brisbane Baylands Draft EIR, Chapter 4.1 Land Use and Planning Policy, accessed at: [http://archive.brisbaneca.org/sites/default/files/4i\\_land-use.pdf](http://archive.brisbaneca.org/sites/default/files/4i_land-use.pdf).

<sup>135</sup> Brisbane Baylands Draft EIR, Chapter 4.G, stating “B&M identified 27 wetland areas, one tidally influenced drainage area (the interior drainage channel), and one tidal water body



different soils, marine sediment, and trash. Soils and groundwater are contaminated.<sup>136</sup> These constraints on storm drainage facilities are not adequately analyzed. For example, HYD-IAMF#1 states that on-site, low-impact development techniques would be used to retain and reduce runoff such as “constructed wetland systems, biofiltration and bioretention systems, wet ponds, organic mulch layers, planting soil beds, and [...] vegetated swales and grass filter strips....” (Draft EIR/EIS, Appx. 2-E, p. 2-E-20.) While these may be effective at a typical site, these may not be effective in the Baylands’ tidally-influenced areas such as the Brisbane Lagoon.

Additionally, HYD-IAMF#1 improperly defers analysis of potential stormwater capture devices as well as the location of where such devices would be implemented. This is improper deferral of substandard mitigation measures with no performance standards to determine whether these measures will be effective at reducing significant impacts. HYD-IAMF#2 similarly defers analysis of flood prevention measures until after Project approval and does not identify performance standards to ensure adequate mitigation. Thus, further development of site-specific, effective mitigation measures is required.

**8. *Impact PUE#12 fails to analyze whether the Project conflicts with or obstructs a state or local plan for renewable energy or energy efficiency.***

CEQA Guidelines Appendix G notes that energy environmental impacts may be significant if a project conflicts with or obstructs a state or local plan for renewable energy or energy efficiency. (Guidelines, Appendix G, § VI.) The discussion of Impact PUE#12 (Temporary Consumption of Energy during Construction) fails to identify applicable state or local plans regarding renewable energy or energy efficiency yet concludes that the Project’s construction would not conflict with or obstruct such plans. (Draft EIR/EIS, p. 3.6-70.) Additionally, the Impact PUE#12 analysis discusses adherence to the Authority’s Sustainability Policy to guide the Project’s IAMFs which would “minimize construction energy consumption,” but does not discuss the “specific sustainability requirements” that the Authority would include in the contract for design-build services. (Draft EIR/EIS, p. 3.6-70.) Impact PUE#12 further underestimates the amount of energy that would be consumed during construction of the East LMF by ignoring the need to haul solid waste excavated from the former Brisbane Landfill to another landfill for disposal.<sup>137</sup>

To be adequate, the Draft EIR/EIS must identify the applicable state and local plans, and the applicable Sustainability Policy requirements, and then conduct a proper analysis of

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(Brisbane Lagoon) within the Brisbane Baylands boundaries during wetland surveys.”

Available at: [http://archive.brisbaneca.org/sites/default/files/4g\\_hazards.pdf](http://archive.brisbaneca.org/sites/default/files/4g_hazards.pdf).

<sup>136</sup> *California High-Speed Rail San Francisco to San José Project Section Draft EIR/EIS* Section 3.8 Hydrology and Water Resources (pp. 3.8-34).

<sup>137</sup> See Metis section discussing the understatement of construction-related energy consumption analyzed in Impact PUE#12.

construction energy impacts to support its less-than-significant impact conclusion. The significance of construction energy impacts should be judged separately, and not be “offset” by assumed reductions in energy consumption during Project operations.

**9. *Public utilities cumulative impact analysis is inadequate.***

As discussed above, the Project’s direct impacts on water supply and stormwater drainage facilities are significant. The public utilities cumulative impact analysis in Draft EIR/EIS Section 3.18.6.5 takes a broad-brush regional approach to conclude that no public utilities impacts are significant. (Draft EIR/EIS, p. 3.18-37.) These conclusions are based on assumptions, not evidence. The analysis should be revised to provide location-specific, evidence-based analyses for Brisbane and for other localities where public utilities are actually provided. The Brisbane analysis should recognize that future development will place still further demands on water supply and stormwater drainage facilities, creating significant cumulative impacts, and that the Project’s contributions to these impacts are cumulatively considerable.

**N. *EMFs and Ultramagnetic Interference Impacts***

**1. *EMF/EMI-IAMF#1 is actually an improperly deferred mitigation measure.***

As discussed above, CEQA requires an EIR to identify mitigation measures as such, and not to be moved to the project description to avoid disclosure of significant impacts. EMF/EMI-IAMF#1 (Preventing Interference with Adjacent Railroads) is improperly included as a part of the project description. It is an improperly deferred mitigation measure because it seeks to identify, avoid, and minimize the potential electromagnetic field/electromagnetic (“EMF/EMI”) interference impacts. EMF/EMI-IAMF#1 should instead be discussed as a Draft EIR/EIS mitigation measure, and EMF/EMI impacts should be assessed pre-mitigation.

EMF/EMI-IAMF#1 requires the contractor to work with engineering departments of railroads that operate parallel to the Project “to apply standard design practices to prevent interference with the electronic equipment operated by these railroads.” (Draft EIR/EIS, Appx. 2-E, p. 2-E-11.) The “design practices” and “design provisions” need to be specifically described in the Draft EIR/EIS to properly analyze potential EMF/EMI impacts to more accurately determine a significance conclusion. Instead, the Draft EIR/EIS defers identification of these design standards by stating the Project will conform to the California High-Speed Train Project Design Criteria (“HSR Design Criteria Manual”) without discussing whether conformance and implementation of those design standards would be adequate to avoid EMF/EMI impacts.

**O. Socioeconomics and Communities Impacts**

**1. *SOCIO-IAMF-#1 is actually a deferred mitigation measure with no performance standards.***

As discussed above, CEQA requires an EIR to identify mitigation measures t as such, and not to be moved to the project description to avoid disclosure of significant impacts. SOCO-IAMF#1 (Construction Management Plan (“CMP”)) is actually a mitigation measure because it calls for the contractor to prepare a CMP to minimize impacts on low-income households and minority populations. It is also an improperly deferred mitigation measure because the CMP would be prepared after Project approval and because it includes no mitigation performance standards to be achieved.

**2. *Socioeconomics and communities impact analyses must address additional displacement, relocation, and acquisition impacts.***

The Socioeconomics and Communities section of the Draft EIR/EIS provides definitions of “displacements and relocation” that omits consideration of an essential government facility and a definition of “acquisition” that excludes temporary construction easements, severely inhibiting the sufficiency of its impact analysis. The current definition of “displacements and relocations” excludes government facilities; thus, the Draft EIR/EIS fails to disclose or evaluate the environmental effects of displacing the City of Brisbane’s existing corporation yard for construction of the East LMF.<sup>138</sup> Similarly, the Draft EIR/EIS’s definition of “acquisition” results in the failure to properly analyze impacts associated with obtaining a temporary construction easement for the corporation yard and Kinder Morgan Brisbane Terminal for construction of the East and West LMF, respectively.<sup>139</sup>

**3. *The Draft EIR/EIS fails to sufficiently recognize that temporary road closures and construction activities will physically divide Brisbane, a significant impact.***

An EIR should provide “a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences.” (Guidelines, § 15151.)

The Draft EIR/EIS’s impact discussions are insufficient because they fail to recognize and analyze that the Project will result in road closures and construction activities that would physically divide the City of Brisbane, which is considered a significant impact under CEQA. (See Guidelines, Appendix G, § XI(a).) Impact analyses of SOCIO#1

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<sup>138</sup> See Metis Figure-10.

<sup>139</sup> See Metis’ discussion regarding the Draft EIR/EIS’s inadequate analysis, and potential impacts associated with displacing the City’s corporation yard and the Kinder Morgan Brisbane Terminal.

(Temporary Disruption or Division of Established Communities from Project Construction) does not sufficiently recognize the specific community disruption and division impacts from the Project's disruptive construction activities in Brisbane.

The Draft EIR/EIS states it analyzed impacts to community cohesion by considering access and linkages among community facilities and local businesses that provide opportunities for residents. Despite the Draft EIR/EIS's conclusion that "[c]onstruction activities would temporarily disrupt communities and neighborhoods along the alignment through changes in circulation and access" (Draft EIR/EIS, p. 3.12-34), it fails to sufficiently recognize the specific significant impacts to Brisbane's community cohesion as a result of the Project.

The Draft EIR/EIS expects construction to occur over a 4.5-year period, with impacts from major construction activities lasting for several years, which includes the construction of the LMF. (Draft EIR/EIS, p. 3.12-34.) The communities within Brisbane would experience construction impacts for over 4.5 years as a result of construction fencing at as many as 40 at-grade crossings (Draft EIR/EIS, p. 3.12-62), barricades (Draft EIR/EIS, p. 3.12-34), and road closures (Draft EIR/EIS, Table 3.12-6, p. 3.12-35). The Draft EIR/EIS states that construction of the LMF at either location, would require the 1-3-month closure of the Tunnel Avenue overpass for the realignment of the grade separation, and the East LMF construction would also require the realignment of Tunnel Avenue. (See Draft EIR/EIS, Table 3.12-6, p. 3.12-35.) Because the City has indicated that the existing Tunnel Avenue bridge took 1-2 years to construct, it would likely take a similar amount of time to construct the Tunnel Avenue overpass proposed by the Project, causing road closures and construction impacts for a much longer duration than the estimated 1-3 months, during which time, the only access available between the area east of the Caltrain right-of-way and areas to the west would be through San Francisco or the City of South San Francisco.

Additionally, the Draft EIR/EIS does not describe any specifics whatsoever about Tunnel Avenue's closure to adequately assess the significance of the community disruption and division impact. The Draft EIR/EIS does not describe the length of Tunnel Avenue's closure or what portion of the street would actually be closed, nor does it provide any graphics showing any feasible alternative routes that would provide access. The Draft EIR/EIS also does not discuss options other than closing Tunnel Avenue or the feasibility of any alternative routes, even though it concludes "access would continue to be provided." (Draft EIR/EIS, p. 3.12-37.) Further, the Draft EIR/EIS does not discuss whether the closure would close Tunnel Avenue entirely or just a portion of the roadway. Impacts on dividing the Brisbane community are insufficiently discussed.

Notwithstanding the extent of closure, any closure would impair access to many commercial and industrial businesses along Tunnel Avenue and Bayshore Boulevard. (Draft EIR/EIS, p. 3.12-40.) Employees and patrons wishing to access those businesses would not be able to easily access them during the closure of Tunnel Avenue. If Tunnel Avenue is

closed from its intersection at Beatty Avenue southbound, there will be no access whatsoever to the uses south of Beatty Avenue.

Importantly, Brisbane’s largest source of tax revenue (according to the City, over \$1 million per year) derives from a business in this area that receives approximately thirty percent of its lumber supplies via rail.<sup>140</sup> Loss of Golden State Lumber’s existing laydown area, which the Draft EIR/EIS proposes to acquire for the East LMF, would require Tunnel Avenue to be blocked while product is unloaded from rail cars and moved immediately across the street to the business’ main yard. The Draft EIR/EIS does not address this issue. The Project would undoubtedly affect this business and could cause its relocation to another site where it would be more feasible to continue its operations. If this alternative site is located outside of Brisbane, the Project would impair Brisbane’s ability to collect substantial tax revenue.

Despite the Draft EIR/EIS’s conclusion that “[c]onstruction activities would temporarily disrupt communities and neighborhoods along the alignment through changes in circulation and access,” it does not adequately analyze the effects of the Tunnel Avenue closure and 4.5-year long construction of the LMF, requiring the formation of physical fencing and barricades, and simply concludes the impact will be less than significant.

Additionally, the Draft EIR/EIS improperly relies on transportation, and safety and security, IAMFs (TR-IAMF#2, which calls for construction transportation and safety management plans) to reduce Impact SOCIO#1. However, as discussed in those sections, these IAMFs are deferred mitigation measures with unspecified performance standards; the conclusions that IAMFs reduce Impact SOCIO#1 to a less than significant level are not supported by substantial evidence, and the Draft EIR/EIS does not do enough to analyze these impacts.<sup>141</sup>

**4. *The Draft EIR/EIS fails to sufficiently recognize that construction fencing, road alignments, and increased train frequency will permanently physically divide Brisbane, a significant impact.***

Additionally, the Draft EIR/EIS’s impact discussion is insufficient because it fails to recognize the Project will result in construction activities as well as an increase in train arrival/departure frequency that would physically divide the City of Brisbane. The physical division of communities is considered a significant impact under CEQA. (See Guidelines, Appendix G, § XI(a).) Impacts SOCIO#2 (Permanent Disruption or Division of Established Communities from Project Construction), SOCIO#3 (Permanent Disruption or Division of Established Communities from Project Operations), and SOCIO#5 (Permanent Impacts on

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<sup>140</sup> See Metis’ discussion of impacts to Golden State Lumber.

<sup>141</sup> Refer to Metis’ discussion regarding Impact SOCIO#1’s cursory, generalized analysis of impacts that concludes impacts would be less than significant based on deferred mitigation as described in TR-IAMF#2.



Children’s Health and Safety from Project Construction) do not sufficiently recognize the impacts from the Project’s disruptive construction activities and operations in Brisbane.

Impact SOCIO#2 (Permanent Disruption or Division of Established Communities from Project Construction) is not sufficiently analyzed because it does not take into consideration how the realignment of the Tunnel Avenue overpass, extension of Lagoon Road, and new southern connection of Tunnel Avenue to the intersection of Bayshore Boulevard and Valley Drive (Draft EIR/EIS, p. 3.12-48) would physically divide or disrupt communities within the City of Brisbane. Specifically, plans to construct the West LMF require relocation of the fire station; to reach destinations south of the fire station, “[f]ire trucks exiting the relocated fire station would only be able to turn northbound onto Bayshore Boulevard” and “make a U-turn at the signalized Bayshore Boulevard/Valley Drive intersection.” (Draft EIR/EIS, p. 3.12-48.) The Project’s required fire station relocation causes a physical divide between sites north and sites south of the fire station in need of emergency services. Relocating the fire station to a site allowing only northerly exits would disrupt established community interaction patterns to the detriment of residents south of the fire station, which is where most of the City’s population resides, since fire trucks’ response times will be severely extended.<sup>142</sup>

Also, Impact SOCIO#2’s analysis does not adequately discuss displacements and dislocations because it fails to analyze business displacements and because it fails to take into consideration the Brisbane Baylands’ plans for residential and commercial development of the area described in the Draft EIR/EIS as partially vacant.

While the Draft EIR/EIS section 3.12 and the Community Impact Technical Report states the Project would “require three business displacements,” it does not provide sufficient explanation of which businesses would be dislocated or how it came to its significant impact conclusion.<sup>143</sup>

Also, the Draft EIR/EIS relies on the existing vacancy around the Project site to determine the Project will not create “a new barrier or division of Brisbane. . . preventing any loss of community character, function, or cohesion” (Draft EIR/EIS, p. 3.12-51) despite the City’s plans to develop the Project site with much-needed housing. The Draft EIR/EIS insufficiently concludes that roadway realignments or closures would not disrupt access or divide a community since the Project would be located in an existing transportation corridor,

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<sup>142</sup> See Metis’ discussion of SOCIO#2 failure to disclose impacts associated with the relocation of the Brisbane fire station.

<sup>143</sup> Metis discusses the two industrial businesses and commercial nursery that would be dislocated by the Project, noting the Draft EIR/EIS does not analyze whether an alternative suitable location is available for this nursery or whether one of the industrial businesses, constructed in 1924, should be analyzed for potential cultural resource impacts. See the Metis discussion regarding how impacts to the third displaced business, which may be the Brisbane corporation yard, must be analyzed.

but does not provide a sufficient explanation of how that construction affects socioeconomic impact analysis and the plans for future development. Specifically, the Draft EIR/EIS must discuss why the placement of a 100+ acre LMF near the center of a planned community would not affect the cohesiveness of the Brisbane Baylands Specific Plan development.

Similarly, Impact SOCIO#3 (Permanent Disruption or Division of Established Communities from Project Operations) does not provide sufficient analysis of how the increased train frequency projected by the Project will present more frequent obstacles to community members traveling across the rail tracks, thereby weakening community cohesion. Specifically, the Draft EIR/EIS anticipates the Project will increase vehicle congestion and delay at intersections from increased traffic at the LMF (Draft EIR/EIS, p. 3.12-54) as well as increased gate-down time delays at at-grade rail crossings, which would affect nine high-frequency bus routes. (Draft EIR/EIS p. 3.12-56.) The Draft EIR/EIS recognizes that the increased delays could inconvenience community members and cause a change in their behaviors or how they interact with their community, suggesting people could choose to drive farther to grade-separated crossings or change where people shop in order to avoid using an at-grade crossing.<sup>144</sup> (Draft EIR/EIS, p. 3.12-56.)

Despite providing specific examples of these likely changes in community behavior and noting it “could lead to weakened cohesion between cities that cross the right-of-way,” the Draft EIR/EIS simply points to how the Project would provide bike and pedestrian facilities, assuming without evidence that people would utilize those facilities and they would provide a sufficient alternative to accomplish transportation goals. The Draft EIR/EIS weakly concludes that the communities will not be physically divided “because the project would operate within the existing Caltrain corridor that currently travels through these communities, and because access would be maintained or improved to neighborhoods, businesses, and community and public facilities.” (Draft EIR/EIS, p. 3.12-56.) The Authority must analyze community disruption impacts of the increase in train frequency anticipated by the Project in comparison with the frequency of use of the existing Caltrain corridor, which must be reflected in a recirculated Draft EIR/EIS.

**5. *The Draft EIR/EIS inadequately analyzes the potential for urban decay impacts.***

If a project’s economic effects cause changes to the physical environment, this is an indirect effect that must be analyzed in an EIR if significant. (Guidelines, §§ 15064(e); 15131(a).) Urban decay, or the extensive and widespread physical deterioration of

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<sup>144</sup> Notably, discussion of changes in community behavior is directly contradicted in another section of the Draft EIR/EIS, which states: “Established social engagement patterns within communities would not change from permanent changes to the transportation system. Therefore, the permanent transportation features associated with the project alternatives would not physically divide an established community.” (Draft EIR/EIS p. 3.12-49.)

properties or structures in an area caused by business closures and multiple long-term vacancies, is an example of such an indirect impact recognized under CEQA. (See *Joshua Tree Downtown Business Alliance v. County of San Bernardino* (2016) 1 Cal.App.5th 677, 685.)

In analyzing Impact SOCIO#8, regarding displacements and relocations of commercial and industrial businesses from project construction, the Draft EIR/EIS incorrectly concludes that “[n]o CEQA significance conclusions are required related to this specific impact.” (Draft EIR/EIS, p. 3.12-93.) When evidence suggests that urban decay could result from the Project, the lead agency must assess that impact, rather than “summarily dismissing the possibility” of urban decay as a social or economic effect that is outside the scope of CEQA. (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1207.)

The Draft EIR/EIS expects construction to occur over a 4.5-year period, with impacts from construction of the LMF lasting for several years. (Draft EIR/EIS, p. 3.12-34.) Despite concluding that construction of the LMF at either location and realignment of the Tunnel Avenue overpass would result in business displacements in Brisbane, the Draft EIR/EIS does not analyze the potential for urban decay in Brisbane at all. (Draft EIR/EIS, p. 3.12-70.) Because the Draft EIR/EIS anticipates the Project will displace as many as 202 commercial and industrial businesses solely along the San Francisco to San José Project Section, the potential for urban decay must be analyzed and reflected in a recirculated Draft EIR/EIS for this section as well as other sections of the Project.

**6. *The socioeconomics cumulative impact analysis is inadequate.***

The socioeconomics cumulative impact analysis is inadequate because it incorrectly assumes that the Project would not result in temporary or permanent division of communities. The analysis above indicates this is simply wrong, at least for Brisbane. The socioeconomics cumulative impact analysis should be revised to analyze the extent to which other cumulative projects in Brisbane would add to this significant Project impact. The cumulative community division impact is significant, and the Project’s contribution is cumulatively considerable.

**P. *Regional Growth Impacts***

**1. *The Draft EIR/EIS does not sufficiently consider the COVID-19 pandemic’s effect on the Project’s growth inducing and regional growth effects.***

CEQA requires an EIR to describe existing environmental conditions in the vicinity of a project, known as the “environmental setting.” (Guidelines, § 15125.) The environmental setting is the baseline for measuring the significance of the project’s environmental impacts. (Guidelines, §§ 15125, 15126.2(a).) The term “environment” includes natural and man-made conditions. (Guidelines, § 15360.)

The Draft EIR/EIS must consider the current environmental setting involving the global pandemic driven by the novel coronavirus that causes the COVID-19 disease. COVID-19 has significantly affected public transit not only across the country, but the world. The Centers for Disease Control and Prevention note that travel increases one's chances of getting and spreading COVID-19 and that "[s]taying home is the best way to protect yourself and others."<sup>145</sup>

The methodology used to determine growth-inducing and regional growth impacts must be revised to consider the effects of COVID-19 on the Project's current environment (Draft EIR/EIS, p. 3.17-10), analysis of operations-related employment (Draft EIR/EIS, p. 3.17-27), employment growth due to improved accessibility (Draft EIR/EIS, p. 3.17-28), and induced population growth (Draft EIR/EIS, pp. 3.17-28-30). It is likely that some effects of COVID-19 will continue for many years, and the Draft EIR/EIS must properly analyze how its foreseeable impacts would change the Project's growth inducing and regional growth effects.

For example, the Draft EIR/EIS does not contemplate how COVID-19's social distancing requirements changed employment, most notably the substantial increase in telecommuting. Because many more people will work from home in the future, it is reasonably foreseeable that the novel coronavirus' effects would impact Project's operations. Companies including Google and Facebook, both of which have campuses located near the proposed Project HSR line, have allowed their employees to telecommute until 2021.<sup>146</sup> The Draft EIR/EIS relies on ridership forecasts based on Mid-Range and High ridership projections, but must take into consideration a substantial decrease in ridership given the long-term effects of the COVID-19 pandemic, and consider "Low" ridership projections.

The Draft EIR/EIS must also consider COVID-19's effects on the economy, and particularly consider rising unemployment's effects on the public's future use of the HSR system, and the Draft EIR/EIS's overstated anticipated increases in office space and residential uses near the Project. All the projections in Section 3.17 Regional Growth must be revised to reflect reasonably foreseeable long-term effects of the COVID-19 pandemic.

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<sup>145</sup> Centers for Disease Control and Prevention, "Travel During the COVID-19 Pandemic," August 9, 2020, accessed at: <https://www.cdc.gov/coronavirus/2019-ncov/travelers/travel-during-covid19.html>.

<sup>146</sup> Streitfeld, David, "White-Collar Companies Race to Be Last to Return to the Office," New York Times, May 8, 2020, accessed at: <https://www.nytimes.com/2020/05/08/technology/coronavirus-work-from-home.html>.

**Q. Parks, Recreation, and Open Space**

**1. *PK-IAMF#1 is actually a deferred mitigation measure with no performance standards.***

PK-IAMF#1(Parks, Recreation, and Open Space) provides that prior to construction of the Project, the contractor would submit a technical memorandum identifying design features to “minimize impacts on parks and recreation,” which “*may include*” providing “safe and attractive” access for motorists, bicyclists, and pedestrians to existing park and recreation facilities, and designed “guideway, system, and station” features to enhance the surrounding communities. (Draft EIR/EIS, Appx. 2, p. E-23.)

This IAMF is an improperly deferred mitigation measure for loss of access to parks and recreation facilities caused by the Project. For example, the analysis of Impact PK-IAMF#6 regarding permanent acquisition of parks and open space provides that PK-IAMF#1 will maintain access to the Los Gatos Creek Trail and the Draft EIR/EIS therefore concludes that the permanent acquisition will “not change the use of the trail or diminish its capacity.” However, PK-IAMF#1 contains no tangible mitigation measures that ensure the required permanent acquisition of the trail will not result in a loss of access. (Draft EIR/EIS, Figures 3.14-13 and 3.14-14.) The Draft EIR/EIS also fails to state exactly how access to these trails will be maintained despite acquisition of a significant portion of the trails. Deferring such critical mitigation measure development until after Project approval, and simply assuming that access will be maintained due to a Project avoidance feature, violates CEQA.

**2. *Impact PK#5 and Impact PK#7 do not recognize site-specific significant impacts at Lagoon Fisherman’s Park.***

Impact PK#5 (Permanent Visual Changes That Could Create a Perceived Barrier to Access or Continued Use of Parks, Recreational Facilities, and Open-Space Resources) and Impact PK#7 (Permanent Changes from Noise and Vibration on Parks, Recreation, and Open-Space Resource Character and Use) do not recognize site-specific significant impacts at Lagoon Fisherman’s Park. The Draft EIR/EIS conclusion that the Project’s permanent changes would not result in any significant impacts to Lagoon Fisherman’s Park lacks substantial evidence and fails to recognize site-specific visual, noise, and vibration impacts to park users. Analysis in Impact PK#5 states that “the West Brisbane LMF would also be visible from some resources west of the alignment,” but does not analyze the impacts to the Lagoon, a resource to the *south* of the alignment. (Draft EIR/EIS, p. 3.14-110.) Nor does the Draft EIR/EIS address the visual impacts from the East LMF to users of the Lagoon. However, under the Draft EIR/EIS’s own methodology, the impacts to the Lagoon should have been analyzed. The Lagoon would be either 1,040 or 1,485 feet from the LMF depending on the Alternative selected, well within the RSA. (Draft EIR/EIS, Table 3.14-7.)



The Draft EIR/EIS Impact PK#5 analysis contains no additional analysis of visual impacts on at Lagoon Fisherman’s Park or any other park noted in Table 3.14-7. Rather, the Draft EIR/EIS states in a purely conclusory manner that the Project “would not create an actual or perceived barrier to use even though the user experience at certain resources could be altered.” (Draft EIR/EIS, p. 3.14-114.) The Draft EIR/EIS goes on to conclude, without any evidence, that “[a]lthough the Brisbane LMF, [and other structures] would be visually intrusive in some locations, the user experience would not be altered to the extent that an actual or perceived barrier to the use of parks, recreational facilities, or open-space resources would result from project operations.” (Draft EIR/EIS, p. 3.14-115.)

The above conclusion also relies in part on AVQ-IAMF#1. This IAMF is, in fact, an improperly deferred mitigation measure that lacks the required performance standards. The Draft EIR’s reliance on AVQ-IAMF#1 is in violation of CEQA.

Similarly, Impact PK#7 does not analyze the impact of noise and vibration on the Lagoon, despite the Lagoon being within the RSA. Indeed, the noise impacts caused by the operation of the LMF are not studied *at all* in Impact PK#7, despite acknowledgement that “[p]ermanent noise and vibration impacts could result from . . . operations at the Brisbane LMF.” (Draft EIR/EIS, p. 3.14-125.) For example, the Lagoon is not even included, and should have been included, in Table 3.14-9, “Operational Noise Impacts on Parks and Recreational Facilities.”

**3. *Impact PK#6 does not address the need to acquire land proposed to be open space or parks in the Brisbane Baylands development.***

Impact PK#6 (Permanent Acquisition of Parks, Recreation, and Open-Space Resources) addresses park land that must be acquired to construct the Project. (Draft EIR/EIS, p. 3.14-115.) However, no part of the Brisbane Baylands development is discussed. The Project reduces the land available for parks and open space and would preclude some of the most desirable potential open space and park areas within the Baylands. Removing Icehouse Hill for the West LMF eliminates that important open space and passive recreation site. Filling a large portion of Visitacion Creek precludes habitat restoration and creation of a creekside park. The orientation of Lagoon Road precludes habitat restoration and creation of a shoreline park. The Draft EIR/EIS fails to recognize these impacts. Several parks, recreation, and opens space mitigation measures are improperly deferred, with no performance standards.

PK-MM#1 (Trail and Park Access Memo), PK-MM#2 (Permanent Park Access Memo), and PK-MM#4 (Tamian Park Access Memo) are all improperly deferred. They call for the contractor to prepare technical memoranda after Project approval that describe specific mitigation measures, but no objective performance standards are presented to guide the selection of mitigation measures to demonstrate that impacts would be successfully mitigated.

**4. *The parks, recreation, and open space cumulative impact analysis is inadequate.***

The cumulative impact analysis in the Draft EIR/EIS notes that the Brisbane Baylands development includes 170 acres of “parks, plazas, linear parks, shared-use areas, and preservation of natural features . . . to meet the need created by that development.” (Draft EIR/EIS, p. 3.18-71.) However, this section fails to account for the fact that the Project will necessarily reduce the amount of land available for parks and open space areas in the Baylands development. Therefore, the cumulative impact of the Project will result in additional decreases of park and open space available on a per-person basis at the Baylands development. The Draft EIR/EIS fails to recognize its own impacts resulting from its reduction in available park and open space areas within new development.

Furthermore, the Draft EIR/EIS fails to account for the cumulative impacts on parks and recreational users from the operation of the support facilities, especially the LMF. The analysis on pages 3.18-71 to-72 is limited to “sources of noise during operations from Caltrain and HSR trains passbys and train horn noise.” No analysis of the cumulative impacts of non-train, support activities such as maintenance, is included. Importantly, impacts for the LMF are included in some fashion in Section 3.14, but this Draft EIR/EIS section fails to analyze the cumulative effect of these impacts.

**R. Environmental Justice**

**1. *The Draft EIR/EIS does not consider US EPA Guidance on NEPA Environmental Justice analysis.***

Presidential Executive Order 12898 and the accompanying Presidential Memorandum outline the federal government’s environmental justice (“EJ”) policy and call for analyzing environmental effects on minority populations and low-income populations when required by NEPA. The US EPA adopted a best practices document to guide agencies in implementing their NEPA compliance duties under Presidential Executive Order 12898 (“best practices document”).<sup>147</sup>

The best practices document discusses guiding principles and specific steps agencies should take when assessing a project’s EJ impacts. These include how the agency should define the affected environment and minority/low-income populations and how to assess EJ impacts. The Draft EIR/EIS should have utilized the best practices document to properly analyze EJ impacts.

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<sup>147</sup> US EPA, “Promising Practices for EJ Methodologies in NEPA Reviews,” Report of the Federal Interagency Working Group on Environmental Justice & NEPA Committee, March 2016, accessed at: [https://www.epa.gov/sites/production/files/2016-08/documents/nepa\\_promising\\_practices\\_document\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf).

2. *The Draft EIR/EIS utilizes deficient methodology to identify environmental justice communities.*

To assess the Project’s impacts on EJ, the Draft EIR/EIS purportedly reviewed construction and operations effects identified in each resource section, including details regarding the RSA, the magnitude of the effect, whether effects are adverse or beneficial, the duration of effects, and the geographic location of the effects under each project alternative relative to the identified minority populations and low-income populations within the EJ RSA. (Draft EIR/EIS, p. 5-11.)

However, this EJ assessment as described is inadequate because it is based on the Draft EIR/EIS’s insufficient resource impacts analysis that omits project- and site-specific details, which prevent full disclosure of significant impacts and mitigation measures. Thus, the EJ assessment is based on inadequate impact analyses to determine resource impacts in specific locations, and must be revised after adequately reassessing the resource impacts.<sup>148</sup> Specifically, Section 5.6.3.1, listing the resource topics determined to have no adverse effects or adverse effects would not affect minority and low-income populations, must be redrafted.

a) *The Authority must redefine the affected environment.*

The US EPA best practices document lists guiding principles and specific steps to assist agencies in defining the affected environment for EJ assessments. It suggests steps for defining the affected environment that include “identifying and describing any unique conditions” of the minority and low-income populations “that may be affected by the proposed action” which may include “human health vulnerabilities (e.g., heightened disease susceptibility, health disparities)” and “socioeconomic vulnerabilities” such as “disruptions to community mobility and access as a result of infrastructure development.”<sup>149</sup>

The Draft EIR/EIS overlooks this step and does not sufficiently identify and describe the human health vulnerabilities and socioeconomic vulnerabilities resulting from disruptions to community mobility and emergency access as a result of the Project. For example, the California Office of Environmental Health Hazard Assessment developed the “CalEnviroScreen” program that identifies communities most affected by pollution sources and that are especially vulnerable to pollution effects. As shown in Metis, Table Metis-1, the City falls within the 91<sup>st</sup> percentile for pollution burdens, “meaning Brisbane residents face a greater burden of exposure to various environmental pollution hazards than residents within 91% of the census tracts in California.”<sup>150</sup> The Draft EIR/EIS must analyze the

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<sup>148</sup> For specific comments describing the inadequacies of each Draft EIR/EIS’s impact analyses, please refer to the specific resource sections within this letter.

<sup>149</sup> US EPA, “Promising Practices for EJ Methodologies in NEPA Reviews,” p. 16.

<sup>150</sup> Metis, Table Metis-1.

Project's specific impacts to the low income and minority communities already experiencing disparate pollution effects within Brisbane.

Additionally, while the Draft EIR/EIS concedes the “primary vehicle access to and from the Brisbane Fire Station” will be relocated as a result of construction of the LMF, it concludes impacts would be less than significant with implementation of SS-MM#2, which would purportedly prohibit emergency access impacts and “would therefore not adversely affect minority populations and low-income populations.” (Draft EIR/EIS, p. 5-62.) The Draft EIR/EIS must analyze the specific impacts from slower fire emergency response times to the minority and low-income population that would experience severely delayed fire response times within the City of Brisbane.

b) *The Authority must revise the baseline characterization of the affected environment.*

The Draft EIR/EIS uses census tract low-income data and minority data from outdated sources, including the 2010-2014 American Community Survey (“ACS”) 5-Year Estimates for the reference community and the EJ RSA. (Draft EIR/EIS, p. 5-10.) Also, the data in the ACS are estimates based on a sample of the population, not the full population, which results in sampling error uncertainty.<sup>151</sup> In fact, the ACS census tract-level data have margins of error, on average, 75% larger than the previously-used long-form decennial census, replaced in 2010.<sup>152</sup> The margin of error in the ACS has practical implications on the accuracy of the data, which “are sometimes so imprecise that they are difficult to use.”<sup>153</sup> In fact, “the ACS margins of error are so large that for many variables at the census tract and block group scales the estimates fail to meet even the loosest standards of data quality.”<sup>154</sup>

The Draft EIR/EIS uses a reference community of the three counties within the Project area, and minority individuals make up 62.6% of the reference community. (Draft EIR/EIS, p. 5-15.) Table 5-5 further identifies RSA Demographic Characteristics based on the 2010-2014 ACS survey (Draft EIR/EIS, p. 5-17), which includes data on population density and the percentages of low-income, minority, persons over 65 years old, those with

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<sup>151</sup> See U.S. Census Bureau, ACS General Handbook, Understanding Error and Determining Statistical Significance, accessed at:

[https://www.census.gov/content/dam/Census/library/publications/2018/acs/acs\\_general\\_handbook\\_2018\\_ch07.pdf](https://www.census.gov/content/dam/Census/library/publications/2018/acs/acs_general_handbook_2018_ch07.pdf).

<sup>152</sup> Spielman, Seth E, David Folch, and Nicholas Nagle, “Patterns and Causes of Uncertainty in the American Community Survey,” U.S. National Library of Medicine, National Institutes of Health, Abstract, accessed at:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4232960/>

<sup>153</sup> *Ibid.*

<sup>154</sup> *Ibid.*

disability status, linguistically isolated households, and unemployed persons. (Draft EIR/EIS, Table 5-5, p. 5-17.)

For all the above-listed RSA characteristics, the Brisbane LMF demographic characteristics exceed those of the reference community, indicating the population near the LMF sites contains more low-income, minority, elderly, disabled, monolingual, and unemployed persons than average. This data shows the people near the LMF are highly susceptible to the Project's EJ impacts. The Draft EIR/EIS must rely on additional sources of data to provide a more accurate analysis of EJ impacts in Brisbane and other affected communities.

## VIII. INADEQUATE CUMULATIVE IMPACT ANALYSIS

### A. The Draft EIR/EIS's Cumulative Impact Analysis Does Not Comply with CEQA

CEQA requires an EIR to discuss cumulative impacts when a project will make a "cumulatively considerable" incremental contribution to a significant cumulative effect. (Guidelines, § 15130(a).) Cumulatively considerable means that "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects." (Guidelines, § 15065(a)(3).) When determining whether a project will have a cumulatively considerable contribution to a significant cumulative impact, an EIR must consider the collective effects of relevant projects and may not conclude that a relatively small project contribution is necessarily insignificant. (See *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718—719; *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025 [EIR must consider project-related impacts in addition, not in comparison, to existing conditions]; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98 [EIR must examine whether the project's incremental effect is significant in the context of existing cumulative conditions], disapproved on another ground in *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 112.)

#### 1. *The analysis is at such a high-level as to be meaningless.*

As many of our preceding comments indicate, the Draft EIR/EIS fails to provide and consider sufficient details about reasonably foreseeable development projects to meaningfully analyze existing and future cumulative conditions and the Project's contribution to those conditions. While the CEQA Guidelines permit an EIR's discussion of cumulative impacts to be less detailed than project-specific effects, an EIR cannot fail to include reasonably available data about cumulative impacts or data that can be reasonably produced by further study. (*Kings County, supra*, 221 Cal.App.3d 692, 729.) Here, the Draft EIR/EIS simply fails to explain which, if any, of the more than 338 future land use projects identified in Appendix 3.18-A were considered as part of the future cumulative scenario for



each resource area. Instead, the analysis makes vague, general statements suggesting some level of increased impact. As one example, the analysis of cumulative impacts from hazardous materials and wastes along the 49-mile route is less than two pages and includes just one brief paragraph discussing the generalized impacts of unspecified future projects, ultimately concluding that compliance with unspecified state and local regulatory requirements would avoid any hazardous materials impacts from any individual project. (Draft EIR/EIS, p. 3.18-56 to -57.) This is a patently insufficient analysis of potential cumulative impacts for a project-level EIR.

2. ***The lists of related projects identify only “potential significant and unavoidable impacts” of other projects, erroneously assuming less than significant project impacts can never combine to create significant cumulative impacts.***

Draft EIR/EIS Appendix 3.18-A provides information about non-transportation projects and plans with impacts that could combine with those of the Project to result in significant cumulative impacts. Appendix 3.18-B provides similar information about transportation projects considered in the cumulative impact analysis. The information is presented in tabular format. The only information about the potential environmental impacts of these projects appears in a column entitled “potential significant and unavoidable impacts.” To the extent the Draft EIR/EIS’s cumulative impact analysis only considers the potential significant and unavoidable impacts of related projects, it errs. There is no basis for assuming that only impacts deemed significant and unavoidable have the potential to combine with the Project’s impacts to create cumulatively significant impacts. Certainly, less than significant impacts or significant but mitigable impacts of an individual project can result in cumulatively significant impacts (pre-mitigation) when combined with the impacts of other projects. The Draft EIR/EIS must be revised to consider these types of impacts.

Another problem with the lists of “potential significant and unavoidable impacts” in Appendices 3.18-A and -B is that there does not appear to be any correlation between the impacts listed there and the analysis in Section 3.18. This is likely due, in part, to the vague, high-level approach the Authority has taken to cumulative impact analysis. The analysis should be carefully revised to describe and consider all potential cumulative impacts.

3. ***Cumulative impact analysis fails to capture potential impacts from the Baylands Development.***

The Notice of Preparation (“NOP”) of an EIR for the Brisbane Baylands Specific Plan was issued on February 24, 2020.<sup>155</sup> Despite the NOP coming out approximately five months before the Draft EIR/EIS, when assessing the potential contribution of Baylands Development to cumulative impacts, the Draft EIR/EIS only considers “the proposed changes to zoning and land use designations, consistent with the 2018 Brisbane General

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<sup>155</sup> Available at: <https://ceqanet.opr.ca.gov/2006022136/7>.

Plan Amendment.” (Draft EIR/EIS, p. 3.18-38) There is similarly no mention of the NOP in Appendix 3.18-A, Table 3, City of Brisbane Non-Transportation Plans and Projects List. Instead, the description of the Baylands Specific Plan relies on the outdated February 2011 version of the Specific Plan, which preceded Measure JJ.<sup>156</sup> This is a serious flaw in the Draft EIR/EIS and reveals that the Authority has ignored information critical to its analysis of cumulative impacts in Brisbane. The Draft EIR/EIS must be revised to account for development under the Specific Plan as described in the 2020 NOP.

As a result of this error, the Draft EIR/EIS’s cumulative impact analysis specifically mentions the Baylands Development only for cumulative impacts to biological resources; hydrology and water resources; parks, recreation, and open space; and aesthetic resources.<sup>157</sup> The Baylands NOP, by contrast, indicates that the Baylands Development would have potentially significant impacts to the following: land use and planning policy; socioeconomic effects; aesthetic resources; biological resources; cultural and tribal cultural resources; transportation; air quality; GHG emissions; energy resources; noise; geology, soils, and seismicity; hydrology and water quality; hazards and hazardous materials; public services and facilities; recreation; and utilities, service systems, and water supply. The Draft EIR/EIS must be revised to consider the potential cumulative impact of the Project and the Baylands Development on all these resources.

Given this mistake, it is likely that many more of the 338 projects listed in Appendices 3.18-A and -B have been significantly updated since the time they were added to the list. Appendices 3.18-A and -B also neglect to include a number of significant projects that will have impacts that could combine with those of the Project, as identified in the attached Metis letter. The Draft EIR/EIS should be revised to account for relevant updates to all reasonably foreseeable projects.

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<sup>156</sup> Even then, Appendix 3.18-A fails to mention the 2018 Program EIR for the prior version of the Specific Plan. While there have been significant changes to the Specific Plan since certification of that EIR, it contains valuable background information about the Baylands which the Authority should consider in its cumulative impact analysis. (See <https://www.brisbaneca.org/baylands-deir>; <https://www.brisbaneca.org/feir-documents>.)

<sup>157</sup> Confusingly, Appendix 3.18-A identifies a different set of “potential significant unavoidable impacts” for the Baylands: land use; parks, recreation, and open space; transportation; and public utilities. It is not clear why the cumulative impacts analysis does not, therefore, specifically address the cumulative impacts of the Baylands Development on land use, transportation, or public utilities.

**4. *Cumulative impact analysis assumes other cumulative projects would have in place “similar measures to minimize impacts” to the Project, or rely on compliance with existing plans, laws, and regulations to minimize impacts.***

Throughout the analysis of cumulative impacts, the Draft EIR/EIS irresponsibly assumes that all of the projects listed in Appendices 3.18-A and -B would be required to implement project features and mitigation measures similar to those of the Project to avoid impacts.

For example, the Draft EIR/EIS acknowledges that “[c]onstruction of cumulative projects throughout the cities in the [resource study area (‘RSA’)], such as the Geary BRT or the Capitol Expressway Light Rail Transit Extension Phase II, in concert with the project alternatives are most likely to cause cumulative impacts on children’s health and safety in the cumulative RSA.” (Draft EIR/EIS, p. 3.18-65 to -66.) The Draft EIR/EIS dismisses this concern, however, by concluding that “cumulative projects, in addition to the project alternatives, would be required to implement project features to avoid impacts, mitigation measures to reduce exposure of sensitive receptors to potential impacts, and adhere to regional and local regulations regarding air quality, noise, and hazardous materials.” (*Ibid.*) The Draft EIR/EIS includes no evidence to support its assumption that other projects will be required to implement impact-avoiding Project features and mitigation measures. It also provides no hint of what these measures might be or how they could be counted upon to reduce impacts. This is insufficient and violates CEQA.

Similarly, for cumulative impacts to biological resources, the Draft EIR/EIS repeatedly states that the Project would implement “an array of mitigation measures” and that other cumulative projects “would have in place similar measures to minimize impacts.” Notably, even if the other projects listed in Appendices 3.18-A and -B were to implement “similar measures” to those recommended in the Draft EIR/EIS for the Project, there is no evidence that such measures would reduce impacts given the inadequacy of the Project’s IAMFs and mitigation measures, as detailed in other sections of this letter.

Further, the Draft EIR/EIS fails to consider the likelihood that even if all of the projects listed in Appendices 3.18-A and -B result in individually insignificant impacts, the combined impact of these projects may be cumulatively significant. That inquiry is, of course, the fundamental one behind a cumulative impact analysis, and failure to acknowledge this renders the analysis inadequate.

Also, the cumulative impact analysis for other resource topics such as land use and cultural resources assume that future project compliance with existing general plans, or with existing laws or regulations, will prevent cumulative impacts from occurring. There is no basis for assuming that, for specific future projects, such compliance will always occur or always serve to prevent significant impacts.

The cumulative impact analyses for all resource topics should be comprehensively revised to disclose the actual cumulative impacts of reasonably foreseeable probable future projects, rather than using unwarranted assumptions to dismiss such impacts.

**5. *Cumulative impact analysis fails to consistently explain whether the Project's impacts are "cumulatively considerable."***

Only in the analysis of cumulative impacts to biological resources does the Draft EIR/EIS clearly conclude that the Project's incremental contribution to significant cumulative impacts is "cumulatively considerable" as required by CEQA. In all other instances, including transportation, air quality, noise and vibration, safety and security, and cultural resources, the analysis impermissibly stops at the first step of the two-part cumulative impact inquiry. In other words, the Draft EIR/EIS identifies a significant cumulative impact but does not analyze whether the Project's incremental contribution to that impact would be cumulatively considerable. The fact that the Project's contribution would be cumulatively considerable is only disclosed in the summary table at the end of Section 3.18.

As a result of this error, the Draft EIR/EIS does not evaluate whether there is feasible mitigation that could reduce the Project's incremental contribution to cumulatively significant impacts to transportation, air quality, noise and vibration, safety and security, and cultural resources. The Draft EIR/EIS must be revised to remedy this CEQA violation.

**6. *Cumulative impact analysis does not include even one "additional feasible mitigation measure" for cumulatively considerable impacts.***

The Draft EIR/EIS claims that "[i]f the incremental effect of the project alternatives is found to be cumulatively considerable, the analysis then describes additional feasible mitigation measures beyond those already identified, if available, to address the contribution of the project alternatives to a cumulative impact." (Draft EIR/EIS, p. 3.18-7.) This is false. In not one instance does the Draft EIR/EIS describe additional feasible mitigation measures to address the Project's cumulatively considerable contribution to a cumulative impact. Instead, in every instance where the analysis finds that the Project's impacts would be cumulatively considerable, the Draft EIR/EIS asserts, without explanation or citation to evidence, that no further mitigation is available. (See, e.g., Draft EIR/EIS, p. 3.18-24.)

For example, additional feasible noise mitigation measures that should have been considered in the cumulative impact analysis are identified in the Metis noise impact discussion.

**7. *Cumulative impact analyses for individual resource topics have additional inadequacies.***

In addition to these global flaws, cumulative impact analyses for individual resource topics have additional inadequacies. Some of these are reviewed in the comments presented

above for the individual resource topics, and additional deficiencies are identified in the Metis cumulative impact discussion.

## **IX. OTHER CEQA/NEPA CONSIDERATIONS**

### **A. The Draft EIR/EIS Should Include a Draft Mitigation Monitoring and Reporting Program**

The Draft EIR/EIS should have included a draft mitigation monitoring and reporting program (“MMRP”) to identify how mitigation measures will be monitored and enforced. (See Guidelines, § 15097.) This is especially important because so many mitigation measures defer the specifics of mitigation measures to future plans to be prepared after Project approval. The MMRP should also include monitoring and enforcement of all IAMFs, since so many of them function as mitigation measures and also defer specific impact-reducing actions to future plans. Additionally, including the draft MMRP would help resolve potential problems early in the EIR/EIS process to better ensure the measures’ effectiveness in reducing impacts to less than significant levels.

### **B. The Authority Must Retain, and May Not Destroy, All Project-Related Records**

In response to a California Public Records Act request, the Authority disclosed that its email system “follows a 90-day retention policy,” and as a result, it is “unlikely that [the Authority] will find any records” of emails going back several years. (See August 10, 2020 letter from Marie Hoffman to David Smith.) An appellate court has recently confirmed that “a lead agency may not destroy, but rather must retain writing [Public Resources Code] section 21167.6 mandates for inclusion in the record of proceedings,” including project-related emails, despite the existence of a document retention policy. (*Golden Door Properties, LLC v. Sup. Ct.* (2020) 52 Cal.App.5th 837,867.) The Authority’s existing practice of destroying emails after 90 days, thus, violates CEQA, and it must immediately cease destruction of all Project-related records.

## **X. THE DRAFT EIR/EIS MUST BE RECIRCULATED**

CEQA requires a lead agency recirculate an EIR when “significant new information” is added to the document after notice and opportunity for public review was provided. (Pub. Resources Code, § 21092.1; Guidelines, § 15088.5(a); *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1130.) “Significant new information” includes, for example, a disclosure showing that:

- A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.



- A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project’s proponents decline to adopt it.
- The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(Guidelines, § 15088.5(a).)

The existing Project Draft EIR/EIS must be discarded and completely redrafted because, among other reasons, (1) it omits project- and site-specific details, preventing full disclosure of significant impacts and mitigation measures; and (2) its reliance on IAMFs that are not part of the Project but rather inadequate mitigation measures also prevents full disclosure of significant impacts and mitigation measures.

Many of the Draft EIR/EIS impact analyses fail to provide a substantive discussion of impacts or understate the severity of the Project’s impacts. For example, the Draft EIR/EIS hazardous materials and waste impact analysis omits meaningful analysis of LMF construction impacts on hazardous materials and waste sites, or of proposed site-specific mitigation measures capable of reducing those impacts.

Also, the City has included in this letter and its exhibits and attachments extensive new information demonstrating new or more severe significant impacts, as well as new potentially feasible project alternatives and mitigation measures considerably different from others previously analyzed that would clearly lessen the environmental impacts of the proposed Project. This new information must be fully considered and analyzed in a completed rewritten and recirculated Draft EIR/EIS.

Finally, the NEPA-like structure of the document makes it fundamentally inadequate for CEQA disclosure purposes. It fails to clearly disclose facts and reasons supporting basic CEQA conclusions: why impacts are significant, and why mitigation measures are capable of reducing them to less than significant levels. This makes the Draft EIR/EIS “so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” (Guidelines, § 15088.5(a)(4).)

## **XI. LACK OF COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS**

The Draft EIR/EIS does not demonstrate regulatory compliance by the Authority in constructing and operating the Project. Foremost among the concerns, as further elaborated below, is the complete lack of any effort to identify and delineate regulated aquatic resources under California state law, failure to even recognize the existence of California’s recently enacted “State Wetland Definition and Procedures for Discharges of Dredge or Fill

Materials to Waters of the State,” and the Authority’s admission in the Draft EIR/EIS that it cannot ensure that the Project will not result in the illegal take of at least two species designated as “fully protected” under state law.

The Draft EIR/EIS must be rewritten to demonstrate that, to “the fullest extent possible,” CEQA review has been integrated with all related review and consultation requirements, so that all these procedures, “to the maximum extent feasible,” run concurrently rather than consecutively. (Pub. Resources. Code, § 21003(a); Guidelines, § 15124(d)(1)(C).) This directive is a “fundamental policy “of CEQA. (*Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 936 [EIR inadequate because it failed to identify environmentally sensitive habitat areas regulated under the California Coastal Act].)

**A. The Draft EIR/EIS Does Not Demonstrate Project Compliance with Laws Regulating Aquatic Resources**

**1. Federal Clean Water Act (“CWA”)**

Section 404 of the CWA prohibits the discharge of dredge or fill materials into waters of the United States without the issuance of a permit from USACE or the US EPA authorizing such discharge. (33 U.S.C. § 401 et seq.) Additionally, the definition of what is and is not a jurisdictional water of the United States has undergone significant judicial and regulatory evolution. Most recently, the US EPA adopted the “Navigable Waters Protection Rule” that became effective on June 22, 2020. That rule is subject to at least 10 litigation challenges. Additionally, several United States Supreme Court cases have caused great uncertainty as to the scope of regulation. (*E.g., Rapanos v. United States* (2006) 547 U.S. 715.)

The Authority obtained a preliminary jurisdictional determination (“PJD”) from the San Francisco District of USACE dated April 14, 2020, delineating aquatic resources that may be jurisdictional under the CWA and that may be impacted by the Project. However, the PJD was based primarily on fieldwork conducted in 2009 and 2010, over a decade ago. Not only has the landscape undoubtedly evolved in that period of time but, as noted above, the legal scope and definition of jurisdictional waters of the United States has undergone significant judicial and regulatory change.

Of particular note and concern is the prospect of filling the entirety of Visitation Creek in Brisbane to accommodate the proposed East LMF. Additionally, as addressed in the Metis letter, substantial potential wetlands acreage would be filled for the proposed West LMF.

Application for and issuance of a permit or permits for the Project under the CWA will be subject to analysis under NEPA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to jurisdictional waters of the United States and to

identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of a CWA Section 404 permit by USACE.

Additionally, the BIO Technical Report provides:

To comply with the CWA and to increase process efficiencies, the Authority, FRA, USACE, and USEPA developed the California High-Speed Train NEPA/404/408 Memorandum of Understanding (404/408 MOU) (FRA et al. 2010). The 404/408 MOU requires the agencies to work collaboratively to streamline the Section 404/Section 408 processes to the degree feasible, and to identify a preliminary least environmentally damaging practicable alternative (LEDPA), a requirement of the USEPA CWA 404(b)(1) Guidelines. Pursuant to the 404/408 MOU, in order to identify the preliminary LEDPA, the Authority must obtain concurrence from the USEPA and USACE at three “checkpoints” during preparation of an EIR/EIS. The three checkpoint processes, Checkpoints A (defining the Purpose and Need), B (Identifying the Range of Alternatives to be Studied in the Project EIR/EIS), and C (Identifying a Preliminary LEDPA, Preparing a USACE Section 408 Preliminary Determination Report, and Preparing a Draft Compensatory Mitigation Plan), are integrated with the NEPA process.

(BIO Technical Report, p. 7-2.)

The description above identifies “three checkpoints”: “Checkpoints A (defining the Purpose and Need), B (Identifying the Range of Alternatives to be Studied in the Project EIR/EIS), and C (Identifying a Preliminary LEDPA, Preparing a USACE Section 408 Preliminary Determination Report, and Preparing a Draft Compensatory Mitigation Plan) . . .” However, the first two of those checkpoints should have already occurred but are not discussed in the Draft EIR/EIS or elsewhere in the supporting record.

## ***2. Federal Rivers and Harbors Act of 1899 (“RHA”)***

RHA Section 10 requires authorization from USACE for the placement or construction of any structure in or over any navigable water. (33 U.S.C. § 403.) The Draft EIR/EIS (Impact BIO#19) identifies impacts to navigable waters subject to regulation under RHA Section 10. Application for and issuance of a permit or permits for the Project under the RHA will be subject to analysis under NEPA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to jurisdictional navigable waters and to identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of an RHA Section 10 permit by USACE.

3. *California Porter-Cologne Water Quality Control Act (“Porter-Cologne”)*

Porter-Cologne requires that any person “discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system” submit a report of waste discharge to the appropriate RWQCB. (Wat. Code, § 13260(a)(1).) “Waters of the State” under Porter-Cologne are defined as “any surface water or groundwater, including saline waters, within state boundaries.” (Wat. Code, § 13050(e).) Authorization for any such discharge into waters of the state takes the form of waste discharge requirements (“WDRs”) from the respective RWQCB.

As to the Project, the PJD is the only delineation of aquatic resources included in the record for the Draft EIR/EIS. However, the PJD delineates only potentially jurisdictional resources under *federal* law. There is no discussion of or attempts to delineate aquatic resources under California state law.

Incredibly, the BIO Technical Report for the Project attempts to summarily justify the failure to apply state law and delineate resources subject to state regulation as follows:

*Waters of the state* are broadly defined by the Porter-Cologne Water Quality Control Act (Cal. Water Code § 13050(e)) to mean any surface water or groundwater, including saline waters, within the boundaries of the state. Under this definition, isolated wetlands that may not be subject to regulations under federal law are considered waters of the state and regulated accordingly. The Authority has requested a preliminary jurisdictional determination (PJD) from USACE under Section 404 of the CWA for all aquatic resources, regardless of their potential to qualify as jurisdictional under the CWA. The request for a PJD means that the jurisdictional determination by USACE of waters of the U.S. mapped in the RSA is not being sought by the Authority. Therefore, under a PJD, all of the aquatic resources mapped in the RSA would be considered waters of the U.S. ***Because the mapped extent of such areas includes potential isolated waters, there would be no aquatic resources that would qualify only as waters of the state.***

(BIO Technical Report, p. 4-4, *emphasis* added.)

This approach misunderstands and/or misrepresents the legal difference between “waters of the United States” under the CWA and “waters of the State” under Porter-Cologne. The notion of an “isolated wetland” derives from the United States Supreme Court holding in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (2001) 531 U.S. 159 (“*SWANCC*”) in which the High Court disallowed the proffered basis under which federal agencies extended regulatory authority over aquatic resources isolated

from other federally regulated waters. No notion of “isolation” limits the reach of state regulators acting under state law.

However, the definition of “waters of the State” under Porter-Cologne is separate, distinct, and widely recognized as more inclusive than the federal definition of “waters of the United States.” “Waters of the State” is not limited to federal waters that are exempt from federal regulation due to isolation. Delineation of waters of the State involves separate and distinct criteria and professional judgment as compared to delineation of federal waters. To note that the Authority’s preliminary jurisdictional determination will not exclude isolated waters is not sufficient to claim that waters of the State have been accurately or adequately identified and included in the analysis.

The Draft EIR/EIS fails to identify waters of the State and thereby fails to identify impacts thereto and necessary mitigation. The issuance of WDRs in support of any proposed impacts to waters of the State must be evaluated under CEQA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to waters of the State and to identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of WDRs by a RWQCB or the SWRCB.

**4. California “State Wetland Definition and Procedures for Discharges of Dredge or Fill Materials to Waters of the State” (“State Waters Policy”)**

The SWRCB completed over a decade of work and negotiation with the regulated community and environmental non-governmental organizations (“NGOs”) with the adoption of the new State Waters Policy on April 2, 2019. The State Waters Policy did not become effective until May 28, 2020.

Nowhere in the entirety of the record for the Draft EIR/EIS does the Authority even acknowledge the existence of the State Waters Policy. Completely independent of the federal laws, delineation procedures, and judicial rulings presumably underlying the PJD, the State Waters Policy enacted an entirely new regime for processing proposed impacts to waters of the State. Notable departures from federal provisions include:

- A new and more expansive definition of “wetland;”
- Different parameters for consideration of project alternatives and identification of the “least environmentally damaging practicable alternative;” and
- Requirements for analysis of climate change impacts and resilience of any proposed mitigation.

As noted, the Draft EIR/EIS and its supporting record are not only inadequate with regard to implementation of and compliance with the State Waters Policy, it never even notes its existence.



**5. California Fish & Game Code Section 1600 et seq.**

The following prohibition is provided in California Fish & Game Code section 1602:

An entity shall not substantially diver or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

In order to lawfully conduct any such activity, the acting entity must obtain a Lake and Streambed Alteration Agreement (“LSAA”) from CDFW.

The Draft EIR/EIS and related record should at least recognize the so-called “Section 1600” regulatory regime under California state law. However, as already addressed above, there has been no effort whatsoever to delineate aquatic resources potentially impacted by the Project under state law. The issuance of a LSAA by CDFW is subject to compliance with CEQA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to protected state aquatic resources and to identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of an LSAA by CDFW.

**B. The Draft EIR/EIS Does Not Demonstrate Project Compliance with Laws Regulating Endangered Species**

**1. Federal Endangered Species Act (“FESA”)**

Under Section 7 of the FESA, federal agencies must “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical.” (16 U.S.C. § 1536(a)(2).) So called “critical habitat” are areas, both occupied and unoccupied, deemed essential to the conservation of the listed species.

Section 9 of the FESA prohibits the “take” of any listed species. (16 U.S.C. § 1538(a)(1)(B).) “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” (16 U.S.C. § 1532(19).) Implementing regulations for the FESA define “harass” as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering” and “harm” as “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding or sheltering.” (50 C.F.R. § 17.3.)

Federal agencies authorizing activities that may impact federally listed species must consult with USFWS and/or the National Marine Fisheries Service to ensure compliance with Section 7's protective mandates noted above.

The Draft EIR/EIS confirms impacts to numerous federally listed species and their habitat, including federally designated critical habitat. Authorization of any "take" under the FESA, whether under Section 7 or otherwise, is subject to compliance with NEPA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to federally listed species and designated critical habitat and to identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of authorization for the take of such species or prohibited "adverse modification" of designated critical habitat.

## 2. *California Endangered Species Act ("CESA")*

CESA prohibits the import, export, taking, possession, purchase, or sale of any endangered species, threatened species, or part or product of an endangered or threatened species. (Fish & G. Code, § 2080.) Further, CESA defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill." (*Id.*)

The Draft EIR/EIS confirms impacts to numerous species and their habitats protected under the provisions of CESA. Authorization of any "take" under CESA is subject to compliance with CEQA. The Draft EIR/EIS is wholly inadequate to provide sufficient detail for the proposed impacts to state protected species and to identify appropriate compensatory mitigation for such impacts sufficient to justify issuance of authorization for the take of such species.

## 3. *California "Fully Protected Species" Statutes ("FPS")*

The BIO Technical Report upon which the Biological and Aquatic Resources Impacts analysis of the Draft EIR/EIS is premised correctly states the absolute prohibition of any authorization of "take" of any species designated as "fully protected" under state law:

The California (Cal.) Fish and Game Code designates 37 fully protected species and prohibits the take or possession at any time of such species with certain limited exceptions. Fully protected species are described in Cal. Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). These protections state that "...no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected [bird], [mammal], [reptile or amphibian], [fish]."

(BIO Technical Report, p. 6-7.)

And to the degree there was any doubt to the absolute nature of the prohibition on the take of fully protected species, the California Supreme Court put such doubts to bed in

*Center for Biological Diversity v. California Department of Fish & Wildlife* (2015) 62 Cal.4th 204.

The Draft EIR/EIS and BIO Technical Report confirm that at least two fully protected species will be impacted by the Project: the San Francisco garter snake and the white-tailed kite. Astoundingly, notwithstanding full acknowledgement that California law absolutely prohibits any take, the BIO Technical Report makes clear that the take of each of these species is not only likely, but near certain.

As to the San Francisco garter snake:

#### **6.1.1.5 Permanent Conversion or Degradation of Habitat for and Direct Mortality of San Francisco Garter Snake**

Construction activities next to the SFO West-of-Bayshore property in the San Bruno to San Mateo Subsection would take place in or adjacent to habitat for San Francisco garter snake, a species listed as endangered under the FESA and CESA and designated as fully protected by CDFW. Such activities would convert or disturb a small amount of habitat and could result in the injury or mortality of individual garter snakes.

...

While pre-construction and construction actions to protect special-status species are part of the project, these actions would not prevent the conversion and temporary disturbance of habitat in the project footprint. Because San Francisco garter snakes use underground burrows, they are very difficult to detect; therefore, their absence from construction areas cannot be guaranteed. Earthmoving, excavation, and vehicle operation during construction could crush, entomb, or physically disturb individual snakes. Ground disturbance, noise, and vibration associated with these activities could disrupt the activities of individual snakes and may impair normal life cycle behaviors. The use of chemicals and hazardous substances during construction (e.g., oils, gasoline) may cause mortality if individuals enter aquatic habitat that has been contaminated by spills or other vehicle and equipment leaks. While many protections would be implemented, the potential for physical harm and mortality of individuals would not be eliminated.

(BIO Technical Report, pp. 6-7 to -8.)

And as to the white-tailed kite:

#### 6.1.1.8 Removal or Disturbance of Active White-Tailed Kite Nests

Construction activities in all subsections would take place in or adjacent to nesting habitat for white-tailed kite, a California fully protected species.

...

White-tailed kites often nest in or adjacent to urban development, and nest sites (i.e., dense-topped trees and shrubs near open fields or marsh that support prey populations [e.g., voles]) are abundant throughout the habitat study area.

...

While pre-construction actions to protect special-status species are part of the project, these actions would not prevent the conversion and temporary disturbance of habitat in the project footprint, nor would they necessarily eliminate the risk of injury, mortality, and disturbance of individual birds. Vegetation removal in nesting habitat for this species could crush eggs or kill nestlings in active nests. Construction-generated noise and vibration near active nests could cause adults to abandon eggs or recently hatched young if they perceive such disturbances as a threat.

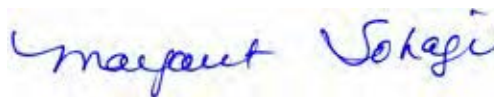
(BIO Technical Report, p. 6-10.)

No amount of analysis under CEQA or provision of mitigation or other consideration can allow or authorize the take of species fully protected under California law. And yet the record for the Draft EIR/EIS documents that such illegal take is almost a certainty.

## XII. CONCLUSION

The many legal deficiencies identified in this letter and the accompanying consultant reports can be remedied only by discarding and completely rewriting the Draft EIR/EIS to comply with CEQA requirements, particularly with respect to the proposed Brisbane LMF sites and potentially feasible geographic alternatives to that site. The rewritten Draft EIR/EIS must then be recirculated for additional public review, pursuant to CEQA Guidelines section 15088.5.

Very truly yours,



MARGARET MOORE SOHAGI  
THE SOHAGI LAW GROUP, PLC

cc: Governor Gavin Newsom  
State Senator Jerry Hill  
Assembly Speaker Pro Tempore Kevin Mullin  
Brisbane City Council  
Clay Holstine, City Manager  
John Swiecki, Community Development Director

**EXHIBITS**

- A. SLG, Exh. 1, Letter from Brian P. Kelly, HSR Chief Executive Officer to the Honorable Terry O’Connell, Mayor of the City of Brisbane, August 13, 2020**
- B. SLG, Exh. 2, Letters from the City of Brisbane**
  - 1. SLG, Exh. 2-A, August 25, 2010 City Letter to HSR Authority*
  - 2. SLG, Exh. 2-B, September 28, 2010 HSR Response to City*
  - 3. SLG, Exh. 2-C, October 5, 2010 City Response to HSR Authority*
  - 4. SLG, Exh. 2-D, June 9, 2016 City Comment Letter to HSR*
  - 5. SLG, Exh. 2-E, August 21, 2019 City Comment Letter to HSR*
- C. SLG, Exh. 3, Vartabedian, Ralph, “California’s scaled-back high-speed rail plan faces doubts amid financial crunch,” Los Angeles Times, September 8, 2020**





August 13, 2020

The Honorable Terry O'Connell  
Mayor  
City of Brisbane  
50 Park Place  
Brisbane, CA 94005

Dear Mayor O'Connell:

Thank you for your engagement with our staff over the years. I am writing today to provide an update on our program and to propose how we can move forward in a collaborative manner to continue to resolve the open questions around the high-speed rail program in Brisbane, and its effects on, and interface with, proposed development on the Brisbane Baylands site.

As you know, our agency has proposed a Light Maintenance Facility (LMF), one of three train maintenance facilities statewide, at the Brisbane Baylands on either the east or west side of the tracks. Last year, our Board of Directors identified the east side as the Preferred Alternative and that's been incorporated into the Draft EIR/EIS for the San Francisco to San Jose Project Section that was released for public review on July 10, 2020.

While we understand that the City of Brisbane would prefer that we locate the facility elsewhere, we have carefully and thoroughly reviewed numerous other options before settling on the locations in Brisbane. If you would like more information about the other options that were explored along the Peninsula, we would be happy to share that with you. Additionally, the City has also suggested that we look at a location around Gilroy and/or simply stop trains at San Jose instead of San Francisco. Those options either do not work from an operations standpoint or would not be consistent with what the voters of California approved in 2008.

However, I do want to use this opportunity to develop a path for how we can work together to address the concerns that we have heard from the City and the property owners at the Brisbane Baylands about the LMF.

The Honorable Terry O'Connell

August 13, 2020

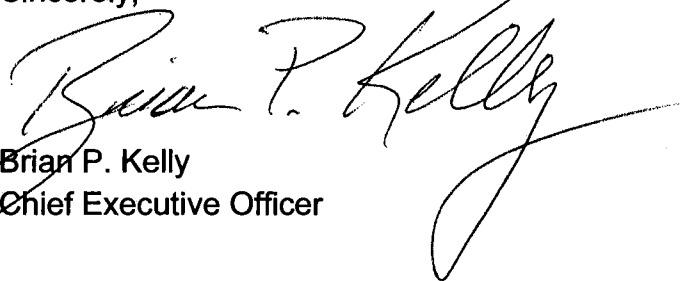
Page 2

The process of developing, designing, and ultimately constructing the LMF is a long one and the current Draft EIR/EIS is one, but not the only venue, where we can work to better align our interests. From previous discussions with you, the Council, and City staff, we see the following as areas where we have heard concerns that we can work together to resolve over time:

- Fiscal impact to the City's finances from a reduction in commercial development due to the LMF footprint and whether that would result in the remaining development being unable to break even from a City fiscal standpoint. Our team has reviewed the *Keyser Marston* assessment of fiscal impacts from the proposed Brisbane Baylands Development and can develop a sensitivity analysis based on that study to help understand the implications for the City's breakeven projections.
- Process for advancing design and interface planning work to continue to address the issues surrounding the placement of the LMF and associated infrastructure, and the surrounding development plans.
- Public roads including access to downtown Brisbane, Lagoon Road, Tunnel Avenue, and future Geneva Avenue extension.
- Construction methods and sequencing in light of conditions at the site including landfill, liquefiable soils, and sea level rise considerations.
- Open space and park considerations, shoreline access, and Bay Trail extension options.
- Modifications to Visitacion Creek.

We would like to propose that we develop a Memorandum of Understanding (MOU) that lays out the process(es) through which we can work together in a collaborative manner to develop the LMF and resolve these and other outstanding issues between our agencies.

Sincerely,



Brian P. Kelly

Chief Executive Officer



## CITY OF BRISBANE

50 Park Place  
Brisbane, California 94005-1310  
(415) 508-2100  
Fax (415) 467-4989

August 25, 2010

Robert Doty  
California High-Speed Rail Authority  
925 L Street Ste 1425  
Sacramento, CA 95814

Re: Supplemental AA Report- San Francisco to San Jose Section- August 2010

Dear Mr. Doty:

The City of Brisbane strenuously objects to the identification of the Brisbane site as the preferred (and apparently only) site under consideration for the Level 3 maintenance facility. The failure of HSRA to meaningfully engage the City in this important issue is also extremely troubling, and reflects either a failure of the HSRA's public outreach and participation program or bad faith on the part of HSRA in misrepresenting its intentions to the City. In ongoing discussions between City staff and the HSRA team, the City's concerns with a potential maintenance yard have been raised time and time again, and the HSRA team has verbally acknowledged these concerns and committed to work with the City on this sensitive issue. The City has been a good faith, active participant in the HSR technical and policy groups, despite the lack of any specific information forthcoming from the HSRA regarding the maintenance yard. This was underscored by the fact that the preliminary AA report dated April 10 makes no mention of the maintenance yard or alternatives under consideration, nor was this topic discussed in any of the TWG or policy working group meetings held subsequent to publication of the preliminary AA report.

As late as July 30, 2010, the HSRA team characterized the forthcoming Supplemental AA to be presented to the HSRA board on August 5 as containing no new information of consequence to the City of Brisbane, given that the at-grade, 4-track alignment through Brisbane was basically fixed. Unfortunately the HSRA team never extended the courtesy of notifying the City that the Addendum would include preliminary conclusions regarding the maintenance yard; the City discovered this only after the agenda materials were posted on-line.

In regard to maintenance yard, the City believes the August 10 Supplemental AA to be deficient in a number of ways. Page S-1 states that "modifications are being recommended to the alternatives and design options described in the Preliminary AA report based on *consulting with local cities and agencies* and additional engineering and environmental detail that has become available" (emphasis added). This is both factually inaccurate and misleading in regard to the City of Brisbane and the maintenance facility, and the document must be corrected accordingly. Neither Tables S-1 nor S-2 acknowledge that subsection 2A of the alignment traverses the City of Brisbane.



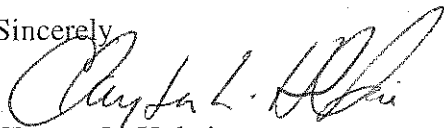
The Preliminary and Supplemental AA set forth criteria for alignment options based upon a set of defined goals including constructability, displacement, disruption of Caltrain service, minimized cost and community needs. These alignment options were further evaluated against a set of measures including design objectives compliance, land use, constructability, community impacts, natural resources, environmental quality, and other considerations. It is unclear if such a rigorous analysis to both define and evaluate maintenance yard alternatives was undertaken. No such analysis was included in the Preliminary AA. The discussion of maintenance yard alternatives in the Supplemental AA, limited to 3 paragraphs (a paragraph for each potential maintenance yard site), is cursory. The level of information is inadequate to evaluate the relative merits or drawbacks of the potential maintenance yard sites, and the lack of a meaningful analysis is unacceptable to the City of Brisbane. In contrast, the Preliminary AA included a detailed and extensive discussion of Alignment Alternatives (Sections 3.0) and an Evaluation of Alternatives (Section 4). Sections 3 and 4 of the supplemental AA should be rewritten to provide a similar meaningful analysis and discussion of potential maintenance yard facilities.

The premature conclusion to focus solely on the Brisbane site would also appear to violate HSRA's own procedures for siting maintenance facilities as set forth in Appendix M of the supplemental AA. These procedures (Section 3) call for an Alternatives Analysis that includes documentation of "the initial process of defining and evaluating alternative sites for maintenance facilities." Section 3, Step 2 specifically calls for public information meetings to be conducted to present initial alternative sites.

Lastly, the City has been informed by the HSRA team that additional sites beyond Brisbane will be carried forward in the project EIR. The Supplemental AA should be revised to reflect this clarification. The City remains highly concerned that the forthcoming EIR include a rigorous and detailed analysis of potential maintenance facilities, not a cursory and superficial review to validate a predetermined outcome.

The City looks forward to the HSRA responding in a responsible manner to address the City's concerns. Please contact John Swiecki, Interim Community Development Director at 415.508.2120 should you have any questions regarding this letter.

Sincerely,



Clayton L. Holstine  
City Manager

c: Brisbane City Council



September 28, 2010

Clayton Holstine  
City Manager  
City of Brisbane  
50 Park Place  
Brisbane, CA 94005

Dear Clay:

Thank you for your letter dated August 25th. I would like to address the issues that you raised in your letter and look forward to continuing to collaborate with you, the Brisbane Council and staff as the process moves forward. I would like to address your comments in the broad categories below:

#### **Communications Regarding the Maintenance Facility**

As part of the on-going environmental process, the Authority was obligated to disclose a possible maintenance facility location as part of the Supplemental Alternatives Analysis Report (SAAR) published in August, 2010. Over the last year and a half we have been working with the City of Brisbane and other agencies on identifying possible storage and maintenance facility locations. You, your Council and staff have always communicated clearly that a maintenance facility is in no way your preferred land use and activity for the Brisbane Baylands Planning Area. In the time that we have been discussing a possible maintenance facility with the City of Brisbane, we also analyzed sites at the Port of San Francisco and San Francisco International Airport. As a result of that preliminary analysis the Brisbane site was found to be, from an engineering and train operation perspective, the most viable option of the three. In the time before the publication of the SAAR, we should have contacted you and let you and your staff know how this information was going to be presented in the SAAR, to give you and your policymakers fair warning. We did not do that and for that I apologize. We will do our best to make sure that this does not happen again.

#### **Supplemental Alternatives Analysis Report (SAAR)**

In your letter you identified errors and deficiencies in the SAAR. It is our intention to publish an "Addendum / Errata" document that not only corrects mistakes but also elaborates on issues that require further explanation. Specifically we will address the following:

- We will update the Table S-1 and S-2 to reflect that subsection 2A traverses the City of Brisbane.
- We will update the document to reflect the meetings that we have held with Brisbane City staff, Council, UPC and other stakeholders to discuss the possible maintenance facility in Brisbane.
- On page two of your letter, you identify the need for additional elaboration of the comparison of alternative maintenance facility sites. We will provide a comparative analysis of the different



maintenance facility locations, following guidance from the technical memo “Alternatives Analysis for Sitting Maintenance Facilities”.

- Your letter also identified the interest by the City for the Authority to continue to evaluate additional alternatives either in San Francisco or elsewhere. The Authority will continue to look for other possible solutions for the storage and maintenance of high-speed train vehicles. Other options beyond the other two already identified (San Francisco International Airport and the Port of San Francisco) include different statewide operating practices where trains do not start or end their service in San Francisco or splitting the storage and maintenance functions in other locations throughout the system. While these solutions are not ideal from a long term operating perspective, they can and should be investigated as part of the on-going environmental and engineering work.

### **Public Meetings**

As noted in your letter, we will plan on holding a public information meeting on the potential Maintenance Facility in Brisbane. We will provide a presentation regarding the Alternatives Analysis process and how Brisbane was selected as the preferred site for the facility and what the characteristics of a modern storage and maintenance facility would be. Additionally we will provide maps showing where the facility could be placed and what some of the potential uses for the site could be beyond just the rail uses. It is our intention to hold this meeting in late October or early November.

### **Next Steps**

Our most immediate next step is to have the “Addendum / Errata” document published in mid-October of this year. In addition we are anticipating a revised operating plan that could result in a modification to the storage requirements for the yard and a smaller and possibly more acceptable foot print. Then the next major step is to have a Draft Environmental Impact Report / Environmental Impact Statement (EIR/EIS) for the San Francisco to San Jose section of the high-speed train project published in late December of 2010. This document will discuss the environmental issues associated with the high-speed train alignment and the potential maintenance facility in Brisbane and discussion of other potential options for maintaining trains at other locations. At that point, the City will have 45 days to comment on the document.

A Final EIR/EIS for the San Francisco to San Jose section of the high-speed train system will be published in July of 2011. This document will identify a “preferred” alternative for the system that could also include a maintenance facility discussion and decision. A Notice of Determination (NOD) by the Authority will be made in August of 2011 and the Record of Decision (ROD) by the Federal Railroad Administration in September of 2011. Only after the environmental process is complete (completion of the NOD and ROD) will the Authority be able to enter into agreements for property acquisition and/or construction of the project.



September 28, 2010  
Page 3

I look forward to our continued dialog about the high-speed train project and its relationship to the City of Brisbane. We appreciate your input to-date and hope to continue to have a productive relationship moving forward.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Doty".

Robert Doty  
Director  
Peninsula Rail Program

CC: Doc. Control



## CITY OF BRISBANE

50 Park Place  
Brisbane, California 94005-1310  
(415) 508-2100  
Fax (415) 467-4989

October 5, 2010

Robert Doty  
California High-Speed Rail Authority  
925 L Street Ste 1425  
Sacramento, CA 95814

Re: Response to September 28, 2010 Letter

Dear Mr. Doty:

Thank you for your response of September 28, 2010 to the City of Brisbane's letter of August 25, 2010. The City appreciates your commitment "to look for other possible solutions for the storage and maintenance of high speed rail vehicles" beyond the previously identified Brisbane site. The City further notes and appreciates the commitment set forth in the letter that the forthcoming draft EIR will identify and evaluate alternative sites.

The City of Brisbane opposes the designation of the Brisbane Baylands site as a potential maintenance/storage facility. The City and Baylands property owner are actively engaged in an extensive planning process to develop a specific plan for large scale future development of the site. A community preferred alternative reflecting the community's desire for public open space and sustainable transit-focused development providing additional services and community amenities to local residents has already been identified for study in the forthcoming EIR. The property owner is refining their original 2006 specific plan proposal. The railyard proposal is clearly incompatible with both the community's vision and property owner's goals for the site.

The City also questions the "preliminary analysis" that led to conclusion that the Brisbane site is the most viable option for a maintenance/storage facility from an engineering perspective. We believe this conclusion is premature at best, based on a cursory level of analysis that reflects a lack of understanding regarding the site and its unique constraints. The lack of site characterization and understanding could easily lead the HSRA into grossly underestimating the costs of mitigating and preparing the site for its proposed use. The City questions whether the preliminary analysis to date took into account the costs to the City of Brisbane of removing this prime future development site off the tax rolls. According to HSRA's October 2009 *Technical Memorandum-Alternatives Analysis for Siting Maintenance Facilities*, both capital costs and economic impacts to the local community are evaluation measures to be considered in evaluating alternatives.

Inasmuch as the EIR/EIS Notice of Preparation (NOP) published by the HSRA in January 2009 for the San Francisco to San Jose High Speed Train segment did not identify construction of a rail yard at the Brisbane Baylands as part of the project, the City's NOP response did not discuss

potential environmental issues associated with such a facility that need to be addressed in the forthcoming EIR. The potential maintenance/storage facility is an ongoing heavy industrial land use with different potential environmental impacts from those associated with the temporary construction and ongoing operation of high speed rail along the San Jose/San Francisco corridor. The EIR should fully identify and evaluate these land use impacts, as the City is doing for the specific plan land use proposals that are under consideration. The recommended list of topics to be addressed in the forthcoming EIR is attached, but a few of the potential environmental issues are highlighted for your consideration.


**Land Use Compatibility;** As noted above, the proposal is inconsistent with current development proposals for the site that are under active consideration by the City of Brisbane, and this potential impact should be analyzed in the forthcoming EIR. While the railyard proposal does not consume the entire Baylands Specific Plan site, the potential impacts of the railyard on the larger development as well as on community benefits that would have been achieved by the larger development must be analyzed. Compatibility of the project with regional land use policies and goals which promote smart growth and infill development along transit corridors and the Sustainable Community Strategy should also be evaluated. Potential blight impacts should also be analyzed, both in regard to the impact of the project on surrounding properties which are slated for redevelopment, as well as the potential impacts on the City of Brisbane Redevelopment Project area in which the site is located.

**Physical Site Issues:** The site is a former unregulated municipal landfill that has not been closed in compliance with Title 27. Landfill closure and remediation issues must be addressed in the forthcoming EIR. The site is subject to seismic activity and liquefaction, and these impacts must be analyzed. Due to underlying waste decomposition and surcharge of soils deposited on the site over time, the site is also subject to differential settlement and geotechnical issues would need to be addressed in the forthcoming EIR. The impacts of climate change and potential sea level rise should also be evaluated. Lastly, the site in question has very limited infrastructure, and the impacts associated with providing infrastructure to serve the facility must be analyzed.

**Operational Impacts:** Ongoing operations of a facility as proposed will result in a host of operational impacts, ranging from light and glare, noise, aesthetics, traffic, and public services. All these issues need to be addressed in the forthcoming EIR.

Please contact John Swiecki, Community Development Director at 415.508.2120 should you have any questions regarding this letter.

Sincerely,

  
W. Clarke Conway  
Mayor

c: Clay Holstine, City Manager

## **AESTHETICS**

The project would greatly change views to the site from many areas in Brisbane, San Bruno Mountain, US 101, Bayshore Boulevard, San Francisco, San Francisco Bay, and other surrounding locations. The EIR should address the visual changes that would result from development of the site as proposed. Impacts associated with lighting and glare must also be addressed.

## **AIR QUALITY**

Potential air quality impacts during construction and operation of the project shall be addressed in the EIR.

## **BIOLOGICAL RESOURCES**

The EIR should analyze the direct and indirect impacts of the proposed project on biological resources. Intertidal, estuarine wetlands and emergent freshwater wetland have been identified on the site. The EIR should verify the extent and amount of wetlands, and evaluate plans for wetlands restoration and creation and identify mitigation measures, as appropriate, to assist in their successful implementation.

## **GEOLOGY AND SOILS**

The project is in a seismically active area, and could be subject to significant ground shaking in the event of a major earthquake. Seismic risks should be addressed in the EIR and mitigation should be developed. The project site is characterized as having a high to very high potential for seismic related ground failure, such as liquefaction, and this issue, including mitigation measures to address this risk, should be developed in the EIR. Past landfilling operations on the site have involved on-going soil erosion control mitigation. Grading and earthwork for site development would have the potential for soil erosion impacts and mitigation should be developed in the EIR. The site lies within a former municipal landfill and is potentially subject to differential settlement which should be addressed in the forthcoming DEIR.

## **HAZARDS AND HAZARDOUS MATERIALS:**

The site is a formal municipal landfill under the jurisdiction of the Regional Water Quality Control Board. The EIR shall review existing information regarding potential presence of hazardous materials on the site, evaluate the adequacy of existing risk assessment data for purposes of completing CEQA review, identify potential impacts and propose mitigation measures, as appropriate.

## **HYDROLOGY AND WATER QUALITY:**

Water quality impairments have resulted from leachate emanating from the former landfill areas, from oily contaminants in water running off the former railroad site, and from other sources of water pollution. Water quality investigations have been conducted at the instigation of the Regional Water Quality Control Board, and monitoring, remediation and mitigation actions have been implemented, and are continuing. The EIR should assess any potential effects that implementation of the project would have on continuing efforts to bring the site into conformance with water quality standards and minimize future water pollution from sources on the site. Additionally, it is anticipated that the project would alter the drainage pattern on portions of the site. The impacts of grading and storm drain infrastructure on potential soil erosion runoff must be addressed.



The effectiveness of proposed drainage improvements system and its consistency and compatibility with Brisbane Storm Drainage Master Plan should be assessed in the EIR and mitigation measures developed as necessary. The DEIR shall evaluate any impacts of the project on groundwater flow and quality. Portions of the site may be subject to tsunami inundation, and it would be appropriate to evaluate this issue in the forthcoming DEIR.

**LAND USE COMPATIBILITY:**

The conformance of the project with the Brisbane General Plan and proposed land use scenarios under consideration pursuant to the Brisbane Baylands Specific Plan process shall be addressed in the EIR. Portions of the site lie within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC). The EIR shall evaluate the consistency of the project with applicable BCDC regulations and policies. Potential blighting impacts on proposed surrounding development and Brisbane Redevelopment Project Area #1 shall also be assessed.

**NOISE:**

The EIR should include a comprehensive noise impact assessment including mitigation measures as warranted. This analysis shall also address noise impacts associated with construction activity.

**POPULATION AND HOUSING:**

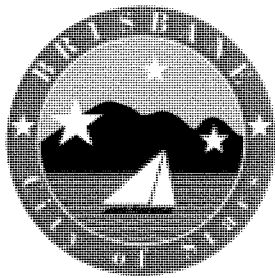
While the proposal does not include residential development, growth inducing potential associated with additional jobs shall be analyzed in the EIR.

**PUBLIC SERVICES AND INFRASTRUCTURE:**

The project will result in increased demand for public services such as fire and police protection, as well as the need for infrastructure such as water, sewer, electricity far beyond what currently exists at the site. These impacts shall be addressed in the forthcoming EIR.

**TRANSPORTATION/TRAFFIC:**

The project would generate new traffic, and could adversely affect the service levels of a number of intersections, and highway segments. The EIR should include a comprehensive traffic and transportation evaluation.



9 June 2016

Mark McLoughlin  
Director of Environmental Services  
Attn: SF to SJ Section EIR/EIS  
CA High Speed Rail Authority  
100 Paseo de San Antonio  
San Jose, CA 95113

Re: San Francisco to San Jose Section EIR/EIS NOP

Dear Mr. McLoughlin:

Thank you for the opportunity to review the above-referenced Notice of Preparation. The City of Brisbane's comments follow below, organized under the categories of HSR Construction, HSR Operations, and HSR Maintenance Yard.

#### HSR Construction

The forthcoming Draft EIR/EIS should specifically identify any proposed track configuration or elevation changes through Brisbane proposed as part of the project. The DEIR/DEIS should further identify proposed hours of construction as well as any potential impacts on the design, location, and operations of the existing Bayshore Caltrain Station. Construction-related impacts on the City of Brisbane as a whole pertaining to noise, vibration, air quality, dust, drainage, safety, and traffic, should be evaluated in the forthcoming DEIR/DEIS.

It is also the City's understanding that project construction will result in fencing of the entire rail alignment through Brisbane. Assuming this is the case, direct overland access from most of the City of Brisbane to San Francisco Bay would be eliminated. This impact should be analyzed in the forthcoming DEIR/DEIS, and mitigation measures incorporated into the project which re-establish community access to the Bay. The forthcoming DEIR/DEIS should further evaluate the biological impacts of eliminating overland access between upland habitat areas, including the San Bruno Mountains, and San Francisco Bay, and incorporate feasible measures to mitigate this impact.

#### High Speed Rail Operations

The impacts of HSR operations on the entire City of Brisbane pertaining to safety, noise, vibration, sea level rise, light and glare, aesthetics and land use compatibility must be analyzed in

the forthcoming EIR. Additionally, the impacts of HSR operations on biological resources associated with Brisbane Lagoon and adjacent wetlands should be evaluated. Since the HSR alignment runs adjacent to a Kinder-Morgan fuel tank farm, potential safety and risk of upset issues should be analyzed in the forthcoming DEIR/DEIS. HSR operations will also occur in close proximity to the historic Southern Pacific Railroad Roundhouse, which is listed on the National Register of Historic Places. The impacts of HSR operations, including vibration and other impacts, on the Roundhouse and other nearby potentially historic buildings (Machinery and Equipment Building) must be evaluated in the forthcoming DEIR/DEIS.

In regard to land use compatibility, the HSR alignment bisects an approximately 650-acre vacant site known as the Brisbane Baylands. The City is actively engaged in the planning and environmental process for the future development of this site, and the impacts of ongoing HSR operations on the future development of the Baylands must be evaluated. Specifically, potential land use compatibility, safety, noise, air quality, vibration, and aesthetic impacts must be evaluated and mitigated to the maximum extent feasible.

### Maintenance Yard

It is the City's understanding that the forthcoming DEIR/DEIS will evaluate two alternatives for locating a potential light maintenance facility on the Brisbane Baylands site. This evaluation should be organized such that the impacts of the maintenance yard are clearly identified, along with a separate analysis addressing the cumulative impacts of high speed rail operations plus maintenance facility operations. It is the City's expectation that the maintenance yard as a project component will be described in sufficient detail to allow for a meaningful environmental evaluation. Facility layout, scale, operational characteristics, hours of operations, utility demands, and estimated on-site employees are all components that should be clearly described in the project description to ensure that an adequate environmental analysis is undertaken.

The maintenance facility analysis should identify potential impacts on the entire City of Brisbane pertaining to noise, air quality, traffic, aesthetics, light and glare, and safety. Additionally, in preparing the Brisbane Baylands EIR, a number of site specific impacts were identified related to hazardous materials, geotechnical, seismic, sea level rise, biological resources, and traffic. We look forward to the upcoming DEIR/DEIS analyses of these issues. The forthcoming DEIR/DEIS should also address such issues as how development of the maintenance yard might affect future construction of the planned Geneva Avenue extension from Bayshore Boulevard to the 101 freeway. Horizontal and vertical design issues related to the former landfill located in the easterly portion of the HSRA study area should also be addressed.

The City would also emphasize land use compatibility as an issue of particular concern to be addressed in the forthcoming DEIR/DEIS. As noted previously, the City is reviewing planning applications for the Brisbane Baylands site. The forthcoming HSR DEIR/DEIS must identify how all of the maintenance yard alternatives impact all facets of the future development plans for the larger Brisbane Baylands site. Issues to be considered include but are not limited to provision of infrastructure, landfill closure and/or site remediation, circulation and broader issues related to land use compatibility, such as the configuration of lands remaining after development

of the maintenance yard and how the maintenance facility's operational characteristics will impact adjacent future land uses.

The City is also concerned that the DEIR/DEIS NOP does not clearly identify any non-Baylands alternative sites for a maintenance yard in the San Jose/San Francisco segment of HSR. CEQA requires that than EIR include a reasonable range of alternatives, and the City does not believe that limiting the maintenance yard alternatives solely to the Brisbane Baylands site represents a reasonable range of alternatives. We look forward to the forthcoming DEIR/DEIS evaluating alternative maintenance facility sites outside the limits of the Brisbane Baylands.

In addition to the comments above related to the forthcoming DEIR/DEIS, the City has other concerns related to the potential establishment of a maintenance yard on the Brisbane Baylands in lieu of private development as now under consideration. Existing private businesses on the Baylands generate substantial revenue to the City of Brisbane, and buildout of the Brisbane Baylands as a private development is anticipated to generate additional revenue to the City. Future site development is also anticipated to remediate the site, fund and/or construct required on- and off- site infrastructure improvements, and provide a variety of community benefits both on- and off-site. It is expected that the establishment of a maintenance facility as being considered will impact current revenue-producing operations on site, and diminish or eliminate the project's ability to achieve the anticipated benefits of future development as described above. If CAHSRA chooses to establish a maintenance facility on the Baylands, the City expects CAHSRA will offset these losses to the City of Brisbane and its residents.

Thank you for the opportunity to offer these comments, and we look forward to reviewing the DEIR/DEIS when available. Should you have any questions regarding this letter, please contact me at [jswiecki@ci.brisbane.ca.us](mailto:jswiecki@ci.brisbane.ca.us) or 415.508.2120.

Sincerely,



John A. Swiecki, AICP  
Community Development Director  
City of Brisbane

c: Clay Holstine, City Manager  
Ben Tripousis, CAHSRA Northern Regional Director



## CITY OF BRISBANE

50 Park Place  
Brisbane, California 94005-1310  
(415) 508-2100  
Fax (415) 467-4989

21 August 2019

Board of Directors  
California High-Speed Rail Authority  
770 L Street, Suite 620  
Sacramento, CA 95814

Re: San Francisco to San Jose – Preferred Alternative Light Maintenance Facility

Dear Boardmembers:

The City of Brisbane (“City”) is writing to express its opposition to the California High-Speed Rail Authority’s (“CHSRA”) identification of the Brisbane Baylands site (the “Baylands”) as the *only possible* location for the placement of a High Speed Rail (“HSR”) Light Maintenance Facility (“Maintenance Facility”) along the San Francisco to San Jose Project Section. Indeed, CHSRA identified the Baylands as the first and second preferred alternative. CHSRA’s identification of the Baylands as the only option is an abuse of discretion and improper for numerous reasons:

- a) *First*, it ignores the importance of the Baylands as a future site of substantial housing in the Bay Area, which is critically in need of additional housing. The Baylands is currently proposed for up to 2,200 residential units, which would be jeopardized by the siting of the Maintenance Facility on the Baylands.
- b) *Second*, it is fundamentally inconsistent with adopted local and regional planning goals and plans, including the Plan Bay Area, the Regional Transportation Plan/Sustainable Communities Strategy (“RTP/SCS”) governing the Bay Area. These inconsistencies undermine the State of California’s climate and sustainability goals.
- c) *Third*, it thwarts informed decisionmaking and consideration of environmental impacts under the California Environmental Quality Act (“CEQA”) process by *improperly predetermining the project* without meaningful consideration of alternatives. CHSRA’s approval will be nothing more than a post hoc rationalization.
- d) *Fourth*, it is clear that CHSRA staff has not performed reasonable due diligence on the Baylands and does not understand the practical difficulties, hazards and costs associated with development of a Maintenance Facility.
- e) *Fifth*, it constitutes unreasonable pre-condemnation activity that artificially diminishes the value of the Baylands in violation of state law.



## I. The Brisbane Baylands

The Brisbane Baylands is one of the largest infill sites in the Bay Area. Pursuant to a General Plan Amendment, as approved by citywide initiative on November 6, 2018, the Baylands is planned for the creation of (1) up to 2,200 residential units and (2) seven million square feet of non-residential development in an area rich with existing and planned transit. The City of Brisbane's citizens spoke clearly - the Baylands should be developed with appropriate residential and commercial development. Moreover, the owner of the Baylands, Universal Paragon Corporation ("UPC"), is committed to the redevelopment of the site for substantial residential and commercial uses.<sup>1</sup>

CHSRA's taking in excess of 100 acres for the Maintenance Facility, and the resultant land use incompatibility issues, jeopardize the entire Brisbane Baylands redevelopment project, and does so on the basis of patently erroneous facts and assumptions. As an example, we note that as a justification for selecting Alternative A, CHSRA concludes that 10 residential displacements and 211,261 square feet of commercial and industrial displacements will occur. Of course, this may be technically true based on current land uses, it completely disregards the real impact of CHSRA's preferred alternative, which is to thwart the will of the citizens of the City of Brisbane as manifest in General Plan Amendment at a cost of 2,200 residential units and seven million square feet of commercial development. (See CHSRA's July 18, 2019 presentation to the City of Brisbane City Council, PowerPoint slide 38.)

## II. CHSRA's "Preferred Alternative" Process

The process by which the Baylands was singled out as the *only site* meriting detailed study for a Maintenance Facility was opaque and conducted largely outside the public realm. Notwithstanding the City's consistent objections to the placement of any Maintenance Facility on the Baylands and its suggestion of more appropriate, alternative sites, CHSRA selection process was clearly predisposed to select the Baylands.<sup>2</sup> CHSRA staff purportedly analyzed other sites (Gilroy, the Port of San Francisco, and San Francisco International Airport). However, without meaningful discussion or disclosure, these alternative sites were summarily dismissed as "infeasible" for reasons which are not clearly defined in the record.<sup>3</sup> From the existing record, it appears that the "alternatives" were merely strawmen and that little, if any,

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<sup>1</sup> In January 2019, UPC delivered a letter of intent to the Brisbane City Council declaring its intent to revise the specific plan to conform with the citywide initiative (Measure JJ) with a range of 1,800-2,200 units.

<sup>2</sup> The City pointed out, for instance, that there are significant technical challenges associated with development of a Maintenance Facility on the site, including concerns regarding how providing track access from the main rail line to a maintenance facility would impact future critical infrastructure, most significantly the extension of Geneva Avenue over the Baylands. Geneva Avenue is a planned six-lane (plus two reserved lanes for Bus Rapid Transit) extension of that roadway from its current terminus, over the Baylands to a new connection with US 101. This extension is required due to both background traffic growth and traffic associated with new developments, and has been programmed in numerous regional plans, including the San Francisco/San Mateo Bi-County Transportation Study and in the RTP.

<sup>3</sup> To illustrate the clandestine nature of the process, all of the documents and reports related to the San Francisco to San Jose Project Section, including the Alternative Analysis relied upon by CHSRA to justify the Preferred Alternative, are not readily available on CHSRA's website. If one wishes to review the Alternative's Analysis, he or she must submit a Public Records Act request to CHSRA.



consideration was actually given to any of the alternative sites, or how those alternative sites would be better suited for the proposed Maintenance Facility.

a. The Preferred Alternative Would Thwart Construction of Substantial Housing

As discussed above, the Baylands has been designated for substantial redevelopment with up to 2,200 new residential housing units. It is well-settled that the Bay Area faces a deepening housing availability and affordability crisis.<sup>4</sup> The Association of Bay Area Governments (“ABAG”), the Bay Area’s regional metropolitan planning agency, recognizes that a “coordinated effort to increase housing production at all levels of affordability” is imperative to solving the housing crisis. Construction of the Maintenance Facility on the Baylands would be wholly antithetical to that effort. CHSRA’s failure to pay any credence to this significant impact is arbitrary and capricious, and made even more so by the fact that there are impediments to development of residential units on other alternative sites, the Port of San Francisco (no residential uses on tidelands properties) and San Francisco International Airport (airport safety and land use inconsistency issues). Thus, the Baylands stands alone among the alternatives as the *only alternative on the peninsula appropriate for thousands of units of housing*. The fact that the redevelopment planning process for the Baylands has been substantially completed makes CHSRA’s decision even more egregious.

b. The Preferred Alternative Violates CHSRA’s Own Business Plan

The selection of the Baylands as the location for the Maintenance Facility runs counter to CHSRA’s own legislatively-required 2018 Business Plan. The 2018 Business Plan expressly states that CHSRA is committed to building “a high-speed program with the fewest impacts and greatest benefits” and will develop a full range of “alternatives that will allow [CHSRA] to arrive at the best possible outcome for communities and natural resources.”<sup>5</sup> CHSRA is clearly not heeding the 2018 Business Plan in its unsupported insistence on the Baylands as the location for the Maintenance Facility.

c. The Preferred Alternative Is Inconsistent With Local and Regional Plans

CHSRA’s identification of the Baylands as the preferred site for the Maintenance Facility is also fundamentally inconsistent with governing regional and local planning documents. ABAG’s RTP/SCS (aka Plan Bay Area 2040), for instance, recognizes the site as a *Priority Development Area* (“PDA”). PDAs are areas that have been identified as appropriate for additional, compact development.<sup>6</sup> The “core strategy” of Plan Bay Area 2040 is to focus growth in PDAs such as the Baylands to achieve the plan’s growth, housing, transportation, and sustainability goals. Because the Baylands serves as an integral component to achieving the region’s sustainability, CHSRA’s recommendation is inconsistent with statewide and regional sustainability. It appears that no consideration was given to these important issues during the Preferred Alternative selection process.

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<sup>4</sup> See <https://abag.ca.gov/our-work/housing>.

<sup>5</sup> See [https://www.hsr.ca.gov/docs/about/business\\_plans/2018\\_BusinessPlan.pdf](https://www.hsr.ca.gov/docs/about/business_plans/2018_BusinessPlan.pdf).

<sup>6</sup> See [http://2040.planbayarea.org/cdn/ff/buje2Q801oUV3Vpib-FoJ6mkOfWC9S9sgrSgJrwFBgo/1510696833/public/2017-11/Final\\_Plan\\_Bay\\_Area\\_2040.pdf](http://2040.planbayarea.org/cdn/ff/buje2Q801oUV3Vpib-FoJ6mkOfWC9S9sgrSgJrwFBgo/1510696833/public/2017-11/Final_Plan_Bay_Area_2040.pdf).



Moreover, as the state’s Regional Housing Needs Assessment (“RHNA”) allocation requirements are inextricably intertwined with the RTP/SCS process, any action that precludes redevelopment of the Baylands with regional housing would not only be inconsistent with Plan Bay Area 2040, but would undermine RHNA. Government Code Section 65584.04 explains that regional planning and housing needs are integrated, and that any RHNA allocation by ABAG *must be* consistent with the development pattern in Plan Bay Area 2040 (the applicable RTP/SCS). The Government Code states, with respect to the California Legislature’s intent when adopting the RHNA allocation requirements, “that housing planning be coordinated and integrated with the regional transportation plan” and that the final “allocation plan shall allocate housing units within the region consistent with the development pattern included in the sustainable communities strategy” (See Plan Bay Area 2040). (Govt. Code § 65584.04(m).)

As discussed above, Plan Bay Area 2040 assumes buildout of the Baylands with significant development as a means toward achieving its sustainability and GHG reduction goals.<sup>7</sup> Any action by CHSRA that would preclude development of residential uses on the Baylands would obstruct implementation of both the state’s sustainability goals (through the RTP/SCS process) as well as its housing goals through RHNA. The Legislature’s direction with respect to sustainable regional planning and housing is clear – the two are fundamentally related and work together to promote sustainability and housing goals. CHSRA’s plan for development of the Baylands with the Maintenance Facility would eviscerate any possibility of meaningful residential development on the Baylands and would undermine years and costs devoted to regional sustainability and housing. It would also saddle the City of Brisbane with the impossible task of identifying new opportunities for residential development that would have been accommodated by the Baylands.

d. The Preferred Alternative Selection Process Violates CEQA

Given the process undertaken by the CHSRA, and its willful ignorance of the serious issues associated with siting the Maintenance Facility on the Baylands, the City must conclude that CHSRA has prematurely and inappropriately predetermined the selection of a maintenance facility location, a violation of CEQA. (*Cedar Fair, L.P. v. City of Santa Clara* (2011) 194 Cal.App.4th 1150, 1170 [predetermination occurs when an agency has committed itself to a project or *particular features*, so as to effectively preclude appropriate consideration of alternatives].) A public agency abuses its discretion when it commits to a particular course of action – such as identifying and pursuing its “preferred alternative” – and concluding that two other alternatives should be eliminated without first complying with CEQA. (See CHSRA’s July 18, 2019 presentation to the City of Brisbane City Council, PowerPoint slide 13.) The California Supreme Court held that the City of West Hollywood failed to comply with CEQA when it approved a funding agreement for an affordable housing project without first complying with CEQA and analyzing all alternatives. (*Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116.) Here, CHSRA has selected a preferred alternative which it admits has significant impacts without analyzing all of the alternatives equally and even handedly. In fact, in its presentation, CHSRA has already acknowledged that it has undertaken an alternatives analysis outside of the

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<sup>7</sup> See Plan Bay Area 2040 Final Supplemental Report, *Land Use Modeling Report*.



CEQA process and eliminated the San Francisco and San Francisco Airport locations. This clearly is in violation of CEQA as well as the National Environmental Policy Act (“NEPA”).

It stands to reason that either (1) no new alternatives will be considered in the EIR/EIS or (2) that any alternatives to be considered are merely strawmen, identified under the pretense of meaningful consideration but ultimately deemed infeasible. The CHSRA process violates CEQA. “When an environmental review occurs after approval of the project, it is likely to become a post hoc rationalization to support action already taken.” (*Laurel Heights Improvement Assn. v. Regents of University of California* (1998) 47 Cal.3d 376, 394.) CEQA demands meaningful consideration of alternatives that would lessen significant environmental impacts of a proposed project. Evasion of this requirement is a violation of CEQA and precludes informed decisionmaking and analysis of possible environmental impacts associated with the Preferred Alternative, including aesthetics, air quality, cultural and historic resources, hazards and hazardous substances, and traffic. See 14 Cal. Code Regs. §15002(a)(2)-(3).

Instead of unlawfully undertaking the selection process outside of the CEQA and NEPA context, CHSRA should have evaluated all four alternatives and a No Build alternative in an environmental document which is circulated for public review and comment.<sup>8</sup> The information from the various technical studies, and comments received on the CEQA Notice of Preparation and NEPA Notice of Intent will be incorporated into the draft environmental document which will include the Environmental Impact Report (“EIR”) and Environmental Impact Statement (“EIS”). The determination of the preferred alternative would then be made by CHSRA only after the public review of the environmental document and consideration of public comments. This process is not foreign to public agency decision making for large infrastructure projects, as it reflects the environmental review process currently being undertaken by the Transportation Corridor Agencies for the toll road alignment in Southern California.<sup>9</sup>

e. The Preferred Alternative Sabotages the City of Brisbane’s Efforts to Maintain and Enhance its Historic Entrance and Character

With little regard or no regard to its impact on the City of Brisbane, CHSRA’s Preferred Alternative relocates the historic entrance to the City to an industrial park behind an 80 foot tall overpass reminiscent of San Francisco’s old, oppressive and (thankfully) now demolished Embarcadero Freeway in order to preserve train access to the maintenance facility, proving that those who do not learn from history are doomed to repeat it.

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<sup>8</sup> The EIR is the focus of the environmental review process and, as we have explained, “the primary means” of achieving the state’s declared policy of taking “ ‘all action necessary to protect, rehabilitate, and enhance the environmental quality of the state.’ ” *City of Marina v. Bd. of Trustees of California State Univ.* (2006) 39 Cal. 4th 341, 348 (quoting *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392, and Pub. Res. Code, § 21000, subd. (a))

<sup>9</sup> See <http://getmovingoc.com/faq/#1507682935434-b6db2387-3c8a>.



f. CHSRA's Lack of Proper Diligence

The most recent CHSRA presentation to the Brisbane City Council regarding the proposed Preferred Alternative only heightened concerns that CHSRA staff has not performed reasonable due diligence in assessing the feasibility of the Baylands as a future site of a Maintenance Facility. To demonstrate the lack of investigation conducted by CHSRA, when questioned at the City Council hearing, CHSRA staff acknowledged that it was unaware that its Preferred Alternative would require the removal of an indeterminate amount of mixed waste (which may or may not include hazardous waste). CHSRA staff also has no idea as to amount of such waste, what the waste constituents might be, or how it might be properly disposed.

It should also be noted that the Baylands site is identified as an area with a very high susceptibility to liquefaction.<sup>10</sup> According to the developer of the Baylands, UPC, there are numerous engineering solutions available in the context of low-rise residential and commercial components of the future Baylands project, such as pilings and shoring improvements to ensure the building footings are capable of surviving a seismic event that results in liquefaction. It is unclear whether improvements could even be constructed to mitigate the risks to the proposed 100 acre Maintenance Facility. What is clear, however, is CHSRA did not address this concern in its July 18 presentation despite the fact that the issue has been raised for years. Similarly, sea level rise and tsunamis have been identified as significant concerns based on public reports and these have also gone unaddressed by CHSRA despite having been raised as concerns in public meetings.

CHSRA's lack of diligence is striking, and demonstrates the perfunctory, half-hearted investigation conducted by CHSRA's staff before formally identifying the Baylands as the preferred Maintenance Facility site. Without this important information, the Preferred Alternative recommendation is highly conclusory and fails to consider the on-the-ground issues that weigh strongly against constructing a Maintenance Facility on the Baylands.

g. Illegal Pre-Condemnation Activity

Finally, CHSRA's conduct constitutes unreasonable pre-condemnation activity. The Baylands site is not for sale to CHSRA and cannot be acquired without the exercise of eminent domain. CHSRA's conduct constitutes unreasonable pre-condemnation activity – diminishing the value of the Baylands – which creates condemnation blight and liability for inverse condemnation under *Klopping v. City of Whittier* (1972) 8 Cal. 3d 39, 52. The long-planned development of the Baylands cannot proceed in the face of the uncertainties created by CHSRA's marking the property for its own future use. Effectively preventing development of the Baylands to preserve it for a possible future project is an invalid taking. (*Jefferson Street Ventures LLC v. City of Indio* (2015) 236 Cal. App. 4th 1175, 1197 (2015) [development of portion of property prevented while freeway exit layout was being considered]; *People ex rel. Dept. of Transportation v. Diversified Properties Co.* (1993) 14 Cal. App. 4th 429, 442-443 [de facto taking occurred when property in the path of planned freeway was precluded from development to lower its ultimate cost of acquisition]). Because CHSRA's continuing its current

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<sup>10</sup> See June 2013 Brisbane Baylands Draft EIR.



course of action will destroy the value of the Baylands and result in massive liability to CHSRA, we urge CHSRA to reconsider its actions now.

### III. Conclusion

As outlined above, CHSRA's identification of the Baylands as the first and second best option for locating the proposed Maintenance Facility despite the recommendations' being contrary to state law, policy, geology and CHSRA's own business plan confirms that CHSRA came into the process with a predetermined outcome. Its abuse of discretion breaches the public trust and the process must be wholly discarded and a new, comprehensive, transparent and legally compliant process undertaken to identify and fairly evaluate all potential alternatives for the Maintenance Facility. Nothing less will restore public confidence in the process and anything less violates state law.

Thank you for the opportunity to comment on this matter. Please contact Clay Holstine, City Manager at [cholstine@brisbaneca.org](mailto:cholstine@brisbaneca.org) or 415.508.2110 if you have any questions about the City's comments.

Sincerely,



Madison Davis  
City of Brisbane, Mayor



Terry O'Connell  
City of Brisbane, Mayor Pro Tempore



W. Clarke Conway  
City of Brisbane, Councilmember



Karen Cunningham  
City of Brisbane, Councilmember



Cliff Lentz  
City of Brisbane, Councilmember

cc: Clay Holstine, City Manager  
Tom McMorrow, Interim City Attorney  
Boris Lipkin, Northern California Regional Director – CHSRA  
CHSRA Board of Directors Secretary



CALIFORNIA

# California's scaled-back high-speed rail plan faces doubts amid financial crunch



Los Angeles Times



Guests, including then Gov. Jerry Brown, sign a rail segment during a groundbreaking ceremony for a California bullet train station in Fresno on Jan. 6, 2015. (Los Angeles Times)

By RALPH VARTABEDIAN

SEP. 8, 2020 | 5 AM



It was just last year that Gov. Gavin Newsom said he would need to downsize California's ambitious bullet train project, because the state could afford only a limited system from Merced to Bakersfield.

But even the viability of that scaled-down \$20.4-billion plan is becoming uncertain as construction costs rise in the San Joaquin Valley, expected revenues are under pressure and land acquisition problems continue to mount.

The changing conditions have prompted the California High-Speed Rail Authority to launch a comprehensive reassessment of its plans, said Chief Executive Brian Kelly, who is facing tougher questions by state leaders, given the austere outlook.

“I just want the truth,” said Assembly Transportation Chairman Jim Frazier (D-Discovery Bay), a former general contractor who [has grown distrustful of the project's planning](#). “I want an independent analysis of what can be accomplished and how much it is going to cost.”

Contractors for the rail authority are filing massive change orders and delay claims, according to disclosures by the agency and internal documents obtained by The Times. Additional land is also needed, adding to costs.

At the same time, the bullet train's funding has taken several big hits. California's cap-and-trade greenhouse gas auction system has provided about \$3 billion to the rail project since 2015 and is counted on to provide at least \$500 million annually until 2030.

But as a result of COVID-19's economic impacts, the last two auctions shorted the project by \$140 million from what the authority had budgeted.

[The Trump administration last year terminated a \\$929-million grant](#), which is in legal dispute. But the money is still counted in the project budget.

Cumulatively, the increased costs and decreased revenues are saddling Newsom's plan with a potential fiscal hole of more than \$1 billion. At the same time, some valley

property owners [are growing increasingly frustrated](#), having waited for years to be compensated for their land and endured disruptions caused by construction.

The project will face a tough hurdle if weak revenues and rising costs drive a request for more money to just complete the San Joaquin Valley construction, Frazier said.

Frazier still supports the concept of high-speed rail but is blunt that the public “is getting less and it is costing more” and “there is a point of no return, obviously.”

The impacts of COVID-19 are forcing the rail authority’s reassessment, Kelly said. The money to execute the entire Los Angeles-to-San Francisco project was never in hand, and the state has incrementally managed the project, step by step, the agency’s CEO said.

The new assessment, he said, is examining four issues: revenues, costs, project scope and the schedule, resulting in a pause in finalizing the 2020 business plan. Any changes would be submitted to the rail authority board and then the governor, Kelly said.

“Challenges come,” he added. “It is part of life, the global pandemic.”

The Times asked the governor for an interview on [the problems facing his project](#). In response, Transportation Secretary David S. Kim said in a statement, “Gov. Newsom remains committed to building high-speed rail in California, starting with electrified track in the Central Valley.”

The governor’s plan was always at risk because of thin financial margins. Under his blueprint, the state could count on \$20.6 billion coming in by 2030 to pay for the 171-mile system. Trains are supposed to start running by 2028.

The revenue picture could brighten if and when the COVID-19 pandemic ends and an improving economy drives the need for more greenhouse gas permits. The rail authority

was once optimistic that an extra \$2.8 billion would flow out of the auctions, but only three of 21 auctions since 2015 were high enough to support those projections.

“There is a lot of uncertainty,” said Ross Brown, a greenhouse gas expert at the Legislative Analyst’s Office. Brown expects improved results in a November auction, but future-year revenues depend on a variety of factors, such as emissions technology and economic growth.

Bullet train supporters are also pinning their hopes on a Joe Biden presidential victory, combined with Democratic control of Congress. Biden, a longtime proponent of passenger trains, has called for a “rail revolution” and might support additional federal funding for the California project. But if elected, he’d face pressure from multiple interests on how to spend any stimulus money.

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The bigger risk facing Newsom’s blueprint falls on the cost side of the equation, which appears to be deteriorating.

The rail authority agreed in November 2019 to pay \$134 million for causing delays to a construction team led by Spanish firm Dragados. The claim was disclosed in rail authority documents but has not been previously reported.

In June, Tutor Perini, the firm leading construction in the Fresno County area, was paid more than \$400 million for delays and construction changes.

Kelly, the chief executive, said those payments will be covered by contingency funds built into the project's budget, but much of the contingency created only last year has been used up.

In addition, Tutor has a pending demand for an additional \$500 million, according to non-public correspondence from construction manager Garth Fernandez to Tutor Perini on July 1, which was obtained by The Times. Such demands are often settled for less, Kelly said.

Tutor's original contract was for \$1.02 billion, but has increased to a current value of \$2.2 billion, not including the pending claim, according to the correspondence.

The claims for both Dragados and Tutor Perini relate largely to acquiring land. The project was supposed to be "shovel ready" in 2009 when the Obama administration issued a \$2.2-billion federal grant from the Great Recession stimulus program, but in fact the state did not own a single square foot of property.

The rail authority estimated in June that it would need 2,353 parcels in the Central Valley, but had acquired only 1,664 — leaving 689 parcels still to be acquired.

By comparison, in June 2019, the rail authority thought it needed 1,843 parcels and had acquired 1,516 — short by 327. So, the authority needs to buy far more parcels today than it did a year ago when it was already far behind schedule.

In the last 12 months, the authority acquired only 148 parcels. Unless it accelerates its performance, it could take four years to get all of the property and only then could the rail authority commence construction — blowing federal deadlines. Kelly said the most recent quarter showed strong improvement and noted that the rail authority is being fully transparent by disclosing such details.



An internal planning document obtained by The Times shows that just in the Fresno area the project is contending with 52 “critical” problems that could delay the schedule.

“Every one of those drives the duration of the job,” said a key engineer who is not authorized to speak to the news media. “It isn’t getting any better.”

The effect of the problems is not just on the rail project, but on Central Valley land owners who face repeated demands for more of their land, delayed payments and uncertain futures.



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One contentious land take involved the Fresno Rescue Mission, the largest homeless shelter in the hard-hit Central Valley, which just recently resolved a 3-year-old legal dispute with the rail authority.

The church-based mission lost half of its 12 acres in downtown, far from the original commitment that it have the same acreage, Chief Executive Matt Dildine said. The settlement will still allow future growth, though some of the property it received in trade is under a freeway bridge, he said.

“I feel that they reneged on their promises,” Dildine said. “It is their interest to lowball you and bleed you. The rules are set up against people like us. I felt it was unfair.”

In July, Kelly met online for three hours with Dildane, several farmers, a banker and others in the Central Valley who complain about slow payments.

“I apologized to all of them for the experience they had with the authority,” Kelly said. But he said the authority has to follow state law, adding, “Nobody is getting stiffed.”

[John Diepersloot, a fruit grower](#), complained on the call that he is out \$2 million in direct costs for replacing lost irrigation systems, roads and agricultural production, causing a cash crunch four years after the state took a big chunk of his orchard. He worries his bankers will call his loans.

“Does Gov. Newsom know how this project is unfolding in the fields?” asked Mark Wasser, Diepersloot’s attorney.

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Ralph Vartabedian

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Ralph Vartabedian is a former national correspondent at the Los Angeles Times and became a special contributor in April 2020. He joined the newspaper in 1981 and has covered many technical subjects, including aerospace, auto safety, nuclear weapons and high speed rail. He has won two Loeb awards and was a Pulitzer finalist, among many other career recognitions.

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OPINION

**White people have gentrified Black Lives Matter. It's a problem**



## Metis Environmental Group

437 Alcatraz Avenue  
Oakland, CA 94609

### **Comments on the Draft Environmental Impact Report/Environmental Impact Statement for the California High-Speed Rail Project San Francisco to San José Project Section**

Metis Environmental Group has been retained by the City of Brisbane to review the Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for the California High-Speed Rail Project, San Francisco to San José Project Section (Project). While our review focused on the environmental effects that the Project would have within the City of Brisbane, we have also identified factual errors, missing information, and incomplete analyses in the Draft EIS/EIR that may apply throughout the Project's various resource study areas. Resumes for Metis personnel involved in reviewing the Draft EIR/EIS are attached along with resumes of technical specialists from the firms preparing technical analyses, as follows:

- Attachment Metis-A: Metis Environmental Group resumes
- Attachment Metis-B: Hexagon Transportation Consultants Transportation comments and resumes
- Attachment Metis-C: EKI Hazardous Materials and Wastes comments and resumes
- Attachment Metis-D: Entech Northwest Noise and Vibration comments and resumes
- Attachment Metis-E: Ten Over Studio Fire Station Site Design comments and resumes
- Attachment Metis-F: City of Brisbane, California High-Speed Rail Authority San Francisco – San Jose Draft EIR/EIS Brisbane Impacts Evaluation Technical Review Narrative
- Attachment Metis-G Brisbane Baylands Project Water Supply Assessment, May 24, 2013
- Attachment Metis-H: Page & Turnbull Memorandum

#### **INTRODUCTION**

The inherent difficulties of addressing site-specific conditions and impacts of individual Project components for a Project as large as High-Speed Rail construction and operations between San Francisco and San José are displayed throughout the document. While the large majority of the

Project would be undertaken within and immediately adjacent to the existing Caltrain right-of-way in a highly urbanized corridor that limits the extent of Project impacts over the majority of the San Francisco – San José corridor, the generalized environmental setting discussions and analyses presented in the Draft EIR/EIS are inadequate to address impacts for as large a Project “component” as the 100+ acre Brisbane light maintenance facility (LMF). Overall, the Draft EIR/EIS does not recognize or thoroughly analyze the LMF’s proposed location on a contaminated site formerly used as a municipal landfill and for heavy industrial uses, as well as the Project’s impacts on the Brisbane community.

The proposed Brisbane LMF and its related environmental impacts also need to be understood in the context of the disproportionate exposure Brisbane residents already have to environmental hazards. The California Office of Environmental Health Hazard Assessment (OEHHA) developed the “CalEnviroScreen” tool to help identify the California communities that are most affected by pollution sources and where people may be especially vulnerable to pollution’s effects. CalEnviroScreen ranks California’s census tracts based on potential exposures to pollutants, adverse environmental conditions, socioeconomic factors, and prevalence of certain health conditions. As shown in Table Metis-1, the City of Brisbane falls within the 91<sup>st</sup> percentile for overall pollution burden, meaning that Brisbane residents face a greater burden of exposure to various environmental pollution hazards than residents within 91% of the census tracts in California.

**Table Metis-1: City of Brisbane Pollution Burden, Statewide Ranking**

	<b>CalEnviroScreen 3.0 Percentile</b>
<b>Overall Pollution Burden</b>	91.45
<b>Diesel Particulate Emissions</b>	87.84
<b>Cleanup Sites</b>	95.77
<b>Groundwater Threats</b>	93.56
<b>Hazardous Waste</b>	93.13
<b>Impacted Water Bodies</b>	80.63

Source: <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>. Accessed 8-26-2020.

The 100+ acre LMF with its significant noise, biological resources impacts, and land use conflicts would introduce another environmentally burdensome land use into a community already burdened by railroad and freeway noise and pollution, soil and groundwater contamination from the former Southern Pacific railyard west of the Caltrain right-of-way, dumping of San Francisco’s trash from 1932 to 1967 in the Brisbane landfill east of Caltrain, and the environmental hazards and risks associated with the Kinder Morgan tank farm. The Draft EIR/EIS fails to recognize or address the need for site remediation (West LMF) and final landfill



closure in compliance with Title 27 (East LMF) as a prerequisite for construction of the Brisbane LMF. The Draft EIR/EIS also fails to recognize the burdens the LMF would place on the community by:

- Eliminating adequate emergency access to portions of the City by temporarily closing the Tunnel Avenue bridge for a 1-3 month period;
- Constructing the relocated Tunnel Avenue bridge so as to require relocation of the City's existing fire station, while proposing two infeasible locations for the relocated fire station;
- Designing the East LMF in a manner that would displace the City's existing corporation yard, preclude the planned Geneva Avenue extension from crossing over the Caltrain right-of-way, leaving the only option for this long-proposed multi-jurisdiction project to tunnel under the Caltrain right-of-way, substantially increasing its environmental impacts and cost;
- Removing the 186-foot high Icehouse Hill, which is an important biological habitat area and visual feature (West LMF); and
- Filling 980 linear feet of the existing Visitacion Creek for construction of the East LMF and proposing to relocate the creek to drain into the Brisbane Lagoon rather than retaining its natural flow into the San Francisco Bay (East LMF).

The following comments conclusively demonstrate the many deficiencies of the Draft EIR/EIS and identify the vast amount of information and many revisions that would be necessary to meet even the minimum requirements of CEQA.

These deficiencies can be remedied only by completely rewriting the Draft EIR/EIS to comply with CEQA requirements, including site-specific project-level analysis of the Brisbane LMF and the impacts the Project would have on the community. The rewritten Draft EIR/EIS must then be recirculated for additional public review pursuant to CEQA Guidelines section 15088.5.

After completing a thorough project-level analysis based on site-specific investigations of the Brisbane LMF sites and a CEQA-compliant analysis of potentially feasible alternative LMF sites, it will be clear that Brisbane is an undesirable and infeasible location for the LMF.

## **SUMMARY OF DRAFT EIR/EIS DEFICIENCIES**

If the Brisbane community is being asked by the Authority to take on the burdens of construction and 24/7 operation of the LMF, the community deserves no less than full disclosure of and the opportunity to provide comments on (1) all of what the Authority needs to do to construct and operate the LMF in Brisbane, (2) the environmental damage that would result, and (3) what will Authority intends to do to mitigate the adverse effects of the LMF on the community *before* the Project is approved.

The Draft EIR/EIS does not, however, fully describe the Project, resulting environmental impacts or the specific measures to be taken to address the Project's many significant impacts. Two key deficiencies – inadequate site-specific analysis of the LMF component of the Project and inadequate analysis of the Project's impacts on the Brisbane community – are a common theme throughout the Draft EIR/EIS.

As documented in this report and Attachments Metis-B through Metis-G, the Draft EIR/EIS contains numerous deficiencies that require substantial revisions and recirculation of the document.

1. ***Disjointed and Incomplete Description of the Project.*** The Draft EIR/EIS presents a disjointed and incomplete description of the Project that frustrates the document's ability to provide a thorough evaluation and limits the reader's ability to understand what is being proposed. The description of the project presented in the Draft EIR/EIS is neither complete nor accurate.

The Draft EIR/EIS tends to refer to the East and West Brisbane LMF sites being constructed within an "open space" or "undeveloped" area. The Baylands area within which the Brisbane LMF is proposed is, in fact, a contaminated site formerly used as a municipal landfill and for heavy industrial uses. Today, the Baylands consists of several industrial uses, a petroleum tank farm, lumber yard, solid waste management uses, and the former landfill.

The Draft EIR/EIS fails to address the "whole of the action" because it does not evaluate impacts associated with requirements for (1) closure of the former Brisbane landfill subject to the regulatory authority of the Regional Water Quality Control Board (East LMF) as well as site remediation of two operable units subject to the regulatory authority of the Department of Toxic Substances Control and the Regional Water Quality Control Board (West LMF), (2) relocation of Visitacion Creek<sup>1</sup>, and (3) acquisition of a water supply needed for the Brisbane LMF<sup>2</sup>.

2. ***No Reasonable Range of Alternatives.*** The Draft EIR/EIS fails to comply with CEQA requirements for evaluation of a reasonable range of alternatives to the Project.

The two alternatives presented in the Draft EIR/EIS are the same throughout the majority of the 49-mile project length from San Francisco to San José and differ only in relation to whether:

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<sup>1</sup> Relocation of Visitacion Creek is mentioned, but neither described nor analyzed in Impact BIO#19.

<sup>2</sup> The Draft EIR/EIS incorrectly concludes that a water supply is available for the Brisbane LMF without having analyzed the City of Brisbane's actual contracted water supply.

- The Brisbane LMF is placed to the west or the east of the Caltrain right-of-way in the Baylands subarea in the City of Brisbane;
- passing tracks are provided or not provided between San Mateo and Redwood City; and
- The approach to the Diridon Station in San José is not designed as a viaduct or is designed as a short or long viaduct.

In relation to the Brisbane LMF, the “Project” and “alternatives to the Project” are largely one and the same. The Draft EIR/EIS fails to evaluate potentially feasible alternatives for the LMF site.

3. ***Inadequate Evidence for Significance Conclusions and Deferred Mitigation.*** The Draft EIR/EIS presents improperly segmented and inadequate environmental analyses that fail to provide substantive discussion or that understate the severity of changes to the environment that would result from the Project. As a result, the Draft EIR/EIS presents significance conclusions that are not based on substantial evidence and understate the severity of the Project’s public safety, hazardous materials, noise, water supply, and other impacts.

In lieu of quantitative or qualitative analysis of Project impacts and clear identification of mitigation measures, the Draft EIR/EIS relies on lists of “Impact Avoidance and Minimization Features” (IAMFs) that improperly defer critical analyses and present ineffective measures to avoid significant impacts. Mitigation measures are presented that are improperly deferred.

The widespread use of Impact Avoidance and Mitigation Features defers preparation of critical environmental studies, analyses, and mitigation measures until after the Project has been approved. Subject only to the Authority’s review, the Draft EIR/EIS gives construction contractors the responsibility to prepare (and the Authority to approve) the equivalent of project-level environmental analyses and mitigation measures for the Brisbane LMF in the absence of public review and comment.

4. ***Inadequate Cumulative Impact Analysis.*** The discussion of cumulative impacts is incomplete, inaccurate, and violates CEQA requirements.
5. ***Inconsistency with Plans.*** The Brisbane LMF is inconsistent with the Brisbane General Plan and would impair the City of Brisbane’s ability to provide much-needed housing. Impacts associated with these inconsistencies are understated in the Draft EIR/EIS.
6. ***Flawed Project Design.*** The design of the Brisbane East and West LMFs ignores the site’s physical setting and would be incompatible with adjacent land uses.
7. ***Factual Errors.*** The Draft EIR/EIS contains factual errors that need to be corrected.

The Draft EIR/EIS states several times that it is intended to provide “project-level” analysis:

- The project-level environmental analysis conducted for this Draft EIR/EIS and described in this chapter also includes consideration of means to avoid, minimize, and mitigate potential adverse environmental impacts. (page 1-6)
- The project-level environmental review process and alternatives considered in this document are consistent with the decisions made during the Tier 1 review process. (page 2-4)
- The Authority and FRA advanced shared HSR and Caltrain use of the Caltrain corridor between San Francisco and San José for further study in a Tier 2 project-level EIR/EIS. (page 2-28)
- The project-level environmental analysis conducted for this Draft EIR/EIS and described in this chapter also includes consideration of means to avoid, minimize, and mitigate potential adverse environmental impacts. (page 3.1-2)

Thus, the public has the reasonable expectation that the Authority would meet CEQA’s mandate for full disclosure of the Project’s description, impacts, and mitigation, rather than deferring critical aspects of the Project’s description, environmental analysis (e.g., on-site geotechnical analysis), and mitigation until after the Project is approved.

## DETAILED COMMENTS

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***1. Disjointed and Incomplete Project Description. The Draft EIR/EIS presents a disjointed and incomplete description of the Project that frustrates the document’s ability to provide a thorough evaluation and the reader’s ability to understand what is being proposed. Critical gaps in the description of the Project inhibit meaningful analysis.***

The inclusion of a clear, cohesive, and comprehensive project description is critical to a thorough analysis of the Project’s environmental effects, to the ability of the public and local agencies to conduct a meaningful review, and to decisionmakers’ ability to make informed decisions. As documented below, the poorly constructed and incomplete description of the Project set forth in the Draft EIR/EIS has led to incomplete and erroneous environmental evaluations. The description of the Project presented in the Draft EIR/EIS must be rewritten to (1) facilitate needed revisions to Draft EIR/EIS environmental analyses and (2) provide the public, local agencies affected by the Project, and decisionmakers with a thorough understanding of what is being proposed along with a thorough evaluation of the Project’s environmental effects and the specific measures that are to be undertaken to avoid or minimize significant environmental effects. Recirculation of the Draft EIR/EIS is therefore needed.

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**The description of the Project presented in the Draft EIR/EIS is disjointed. Information critical to the readers' understanding of Project is difficult to find or missing.**

The title "Project Description" is nowhere to be found in the Table of Contents or in any of the sections that follow, leaving readers on their own to sift through more than 30 separate digital files for a description of what the Authority is proposing. After reviewing these files, readers find that the following chapters and sections all need to be read to gain as complete a description of what is being proposed as the Draft EIR/EIS provides:

- **Chapter 1, Purpose, Need, and Objectives**, provides a statement of objectives sought by the project, including discussion of need for the Project and its underlying purpose.
- **Chapter 2, Alternatives**, provides a graphic showing the location of the Project on a regional map. The precise physical boundaries for many (but not all) of the Project's components are presented in this chapter, which provides a description (albeit incomplete) of the Project's technical, economic, and environmental characteristics. Section 2.11 lists the large majority (but not all) of the approvals necessary to implement the Project and the agencies responsible for those approvals.

At the outset (page 2-1) of Chapter 2, Alternatives, the Draft EIR/EIS states that "Alternative A is the California Environmental Quality Act (CEQA) Proposed Project pursuant to CEQA Guidelines Section 15124 and the National Environmental Policy Act (NEPA) Preferred Alternative." However, the "CEQA Proposed Project" (Alternative A) is consistently referred to as an "alternative" throughout the various environmental analyses set forth in Chapter 3 of the Draft EIR/EIS, which analyzes Alternative A and Alternative B at an equal level of detail. Chapters 2 and 3 both acknowledge that the two Project Alternatives share the same attributes throughout the majority of the 49-mile linear Project and that differences between the alternatives are relatively minor. The Draft EIR/EIS evaluates even the largest difference between the two Project Alternatives—location of the Brisbane LMF to the west or east of the Caltrain right-of-way—as Project variants, rather than discussing the East LMF as the CEQA Project and the West LMF as an alternative *to* the CEQA Project.

Whatever terminology is actually used in the document to address different the approaches to "project" and "alternatives" taken by NEPA and CEQA, the descriptions of what is being proposed by the Authority and the analyses undertaken in the Draft EIR/EIS make clear that the "Project" being undertaken by the Authority is the provision of high-speed rail service between San José and San Francisco through blended service with Caltrain along that agency's existing right-of-way to stations in downtown San Francisco, Millbrae, and San José; improvements (and variants thereof) to allow for faster train service along the line, an LMF within the portion of the City of Brisbane known as the "Baylands" (including variants placing the LMF to the east or west of the existing rail line); station improvements; and additional infrastructure



improvements. Thus, the “alternatives” described in Chapter 2 and analyzed in Chapter 3 are so similar and are analyzed in such a manner as to actually be variants of the “project,” leaving no alternatives to the Project and violating CEQA requirements for identifying and analyzing a reasonable range of alternatives.

The Authority is proposing to modify the street pattern providing access to the City of Brisbane’s downtown area. However, these proposed roadway modifications are not discussed in Chapter 2 or elsewhere in the Draft EIR/EIS. The proposed reconfiguration of Brisbane streets can only be discerned in Draft EIR/EIS graphics such as Figure 2-32 (East Brisbane Light Maintenance Facility Layout) and Figure 2-43 (West Brisbane Light Maintenance Facility Layout).

- The Draft EIR/EIS fails to disclose that the proposed Brisbane LMF is intended to work together with a facility to be constructed in Gilroy. While Appendices to the Draft EIR/EIS recommend that both facilities be designed and provided with environmental clearance for Level III maintenance activities (quarterly inspections, including wheel truing), whichever facility ultimately provides Level III maintenance, the other location would still be required for Level I (daily inspections, pre-departure cleaning and testing) and level II (monthly inspection) activities (e.g., a Level III LMF in Gilroy with a smaller Level I facility in Brisbane). While previous studies undertaken by the Authority recommended environmental clearance for both the Brisbane and Gilroy facilities as LMF providing Level III maintenance, the Authority failed to do so, focusing on Brisbane as the sole northern California LMF. As discussed later in these comments, this was a critical omission in relation to Draft EIR/EIS alternatives analysis.
- **Section 3.6, Public Utilities and Energy**, informs the reader that construction of the West LMF would excavate approximately 432,000 cubic yards of soils that may be contaminated and require special disposal as hazardous waste. Readers specifically interested in hazardous materials issues would not, however, be informed about the excavation of these soils since this issue is not addressed in Section 3.10, Hazards Materials and Wastes.
  - A footnote to Table 3.6-14, Operational Water Use, informs the reader that stations along the high-speed rail line will be LEED® platinum.
- **Section 3.7, Biological Resources and Aquatic Resources**. Impact BIO#19 of Section 3.7, Biological and Aquatic Resources discloses that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands.” The Draft EIR/EIS provides no description of what is actually being proposed other than providing the acreage of habitat areas along the creek that would be impacted. Discussion of the Authority’s proposal to abandon Visitacion Creek and its easterly alignment draining into the San Francisco Bay in favor of realigning the creek to flow south and drain into the Brisbane Lagoon can only be found in the Authority’s May 2020 Preliminary Compensatory Mitigation Plan, which, along with other technical reports, was not made available to the

public on the Project's web page along with the Draft EIR/EIS and its appendices<sup>3</sup>. A thorough review of the Preliminary Compensatory Mitigation Plan reveals the Authority is actually considering two variants, neither of which is explicitly described or analyzed in the Draft EIR/EIS:

- Fill approximately 980 linear feet of the existing Visitacion Creek and construct a culvert under the widest point of the East LMF, or
  - Reroute Visitacion Creek from where it daylight just east of the Caltrain tracks to run south adjacent to the East LMF, discharging the creek into Brisbane Lagoon rather than San Francisco Bay.
- **Section 3.11, Safety and Security**, informs the reader that:
    - Construction of the Brisbane LMF (East or West) would require the Tunnel Avenue bridge crossing over the existing Caltrain right-of-way in Brisbane to be closed for 1 to 3 months while a new bridge crossing is constructed north of the existing crossing<sup>4</sup>;
    - The existing North County Fire Authority fire station that serves the City of Brisbane would be relocated to accommodate the realigned Tunnel Avenue, west of the bridge crossing; and
    - Tunnel Avenue would need to be closed for 1 to 3 months to provide for realignment around the East LMF<sup>5</sup>.
  - **Section 3.15, Aesthetics and Visual Quality**, informs the reader that the Brisbane LMF is proposed to be a 24-hour per day, 7 days per week operation requiring night lighting for worker safety and security.
  - **Section 3.19, Design Variant to Optimize Speed**, describes a design variant of Alternative A that would reduce the curvature in the rail alignment north and south of the San José Diridon Station. While Chapter 2 notes that the variant “would reduce the curvature in the alignment north of the San José Diridon Station between Julian Street and Santa Clara Street and from the south end of the station to San Carlos Street. The Diridon Design Variant would also modify the design of the San José Diridon Station platforms, providing for increased speeds of 40 mph, which is comparable to the design speeds provided by Alternative B,” the actual description of the alignments proposed in for this variant is presented in subsection 3.19.2.

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<sup>3</sup> Members of the public wishing to review technical reports had to request them from the Authority.

<sup>4</sup> While Chapter 2, Alternatives, describes relocation of the Tunnel Avenue bridge, it does not provide information regarding the length of time the bridge crossing would be closed to traffic.

<sup>5</sup> While Chapter 2, Alternatives, describes realignment of Tunnel Avenue for the East LMF, it does not provide information regarding the length of time Tunnel Avenue will be closed to traffic. Neither Chapter 2 nor Section 3.11 precisely indicate the portion of Tunnel Avenue that will be temporarily closed.

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**The Draft EIR/EIS fails to present a complete description of what the Authority is proposing, leaving critical information gaps that undermine the document’s ability to undertake a thorough and meaningful examination of the Project’s environmental impacts.**

Critical gaps in the Draft EIR/EIS description of the Project include a lack of information regarding (1) emergency and public access during the closure of the Tunnel Avenue bridge and Tunnel Avenue in the vicinity of the East and West Brisbane LMF sites; (2) location of East and West LMFs in relation to ongoing site remediation and Title 27 landfill closure plans, site grading, and construction activities; and (3) emergency access during LMF construction.

*The Draft EIR/EIS provides a vague and incomplete description of temporary road closures, rail access modifications, and emergency access availability.*

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The Draft EIR/EIS refers to the need to realign Tunnel Avenue to provide for construction of the East LMF as well as the need to relocate<sup>6</sup> the existing Tunnel Avenue bridge over the Caltrain right-of-way. While Draft EIR/EIS Chapter 2 is intended to serve as the CEQA project description, it does not refer to how long the proposed temporary closure of Tunnel Avenue for the East LMF or the temporary closure of the existing Tunnel Avenue bridge crossing for both the East and West LMFs would last.

On page 3.2-56, the Transportation section refers to a “temporary street closure to reconnect both ends of the realigned segment” of Tunnel Avenue but does not disclose the precise roadway segment that would be temporarily closed. Based on the wording provided on Draft EIR/EIS page 3.2-56, it can be surmised which segment of Tunnel Avenue is most likely to be subject to closure. At a minimum, it appears likely that Tunnel Avenue would be temporarily closed from its current intersection at Bayshore Boulevard to approximately the southerly property line of Golden State Lumber Company at 601 Tunnel Avenue, Brisbane. Thus, the portion of Tunnel Avenue south of Beatty Avenue would remain in place during construction of the realigned Tunnel Avenue, thereby providing continued access to existing businesses located along this segment of the roadway. If Tunnel Avenue south of Beatty Avenue would remain as a temporary 1,200-foot cul-de-sac during the time Tunnel Avenue is closed, the safety implications of leaving a large lumber yard (Golden State Lumber) at the end of such a lengthy cul-de-sac need to be examined in the Draft EIR/EIS.

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<sup>6</sup> The Draft EIR/EIS variously describes what is proposed for the Tunnel Avenue overcrossing of the existing Caltrain line as the bridge being “realigned” (see, for example, Table 3.12-6) or “reconstructed” (see, for example, page 2-77), and “relocated” (see, for example, Table 3.2-15). Because a new bridge crossing of the Caltrain line would be constructed approximately 400 feet north of the existing bridge, of the various terms used to describe what is proposed, “relocated” is the most more accurate term. It does not, however, appear that the Draft EIR/EIS specifically states that the existing Tunnel Avenue bridge would be demolished.

Existing businesses along Tunnel Avenue include facilities essential to the operations of the Recology solid waste management facility north of Beatty Avenue and Golden State Lumber, which is located on Tunnel Avenue. However, the Draft EIR/EIS does not specifically identify the northern and southern limits of the temporary bridge and roadway closures, deferring identification of the specific roadway locations being closed and emergency access routes during such closures to preparation of a Construction Transportation Plan by the construction contractor after the Project is approved (TR-IAMF#2).

The Draft EIR/EIS fails to disclose that the East LMF would displace the City's existing corporation yard for construction of the East LMF or that the Authority intends to secure a temporary construction easement over the entirety of the corporation yard for construction of the West LMF. Disruptions to Recology's ability to efficiently use all of its facilities throughout construction of the Brisbane LMF could adversely affect its ability to provide solid waste diversion services when access to its Tunnel Avenue facilities is disrupted. Increased response time for the North County Fire Authority to Golden State Lumber, which stores a large amount of flammable lumber and related products could have far reaching property damage consequences if emergency response is delayed due to road closures. Should an emergency requiring police or fire response to businesses along Beatty Avenue or Tunnel Avenue occur during the time Tunnel Avenue and the Tunnel Avenue bridge are temporarily closed, Brisbane Police and North County Fire Authority first responders would be required to travel north along Bayshore Boulevard into San Francisco, turn right on Blanken Avenue, turn right and then travel south along tunnel Avenue back into the City of Brisbane, delaying timely emergency response (see Figure Metis-10).

In order to adequately evaluate Project's impacts during construction on emergency access, it is imperative that the Draft EIR/EIS disclose and evaluate the emergency access routes that would be available during LMF construction and part of its description of the Project. The Draft EIR/EIS cannot simply assume that the construction contractor would be able to avoid significant impacts or develop feasible mitigation measures when preparing a "construction transportation plan" (IAMF-TR#2) following completion of the CEQA/NEPA review processes and Project approval or assume that a significant unavoidable impact would occur. Full disclosure of impacts on emergency response and mitigation for such impacts depends on a more complete description of the Project than the Draft EIR/EIS currently offers.

The Draft EIR/EIS must therefore (1) clearly delineate the specific segment(s) of Tunnel Avenue that would be subject to temporary closure; (2) disclose the length of time for such temporary road closures based on a site-specific understanding of the time needed to accommodate soil settlement at the relocated Tunnel Avenue bridge crossing; (3) identify the operational and emergency access routes that would be available to existing Tunnel Avenue businesses throughout construction of the East LMF; (4) provide a rewritten description of the Project that includes details regarding emergency access to Tunnel Avenue businesses throughout construction; and (5) provide the public, affected businesses, and the City of Brisbane with the

opportunity to review and comment on proposed emergency access to Tunnel Avenue business throughout construction as part of the CEQA/NEPA review processes, i.e., through recirculation of the Draft EIR/EIS once these Project features have been clarified and their impacts have been disclosed.

More disturbing is that **the 1 to 3 month or more closure of the Tunnel Avenue bridge would isolate the Sierra Point portion of the City of Brisbane, leaving the US 101 freeway as the only means of access to the existing 1,184,704 square feet of occupied office and hotel space, the Brisbane Marina, and the 325,858 square feet of office space currently under construction within Sierra Point.** Should an emergency requiring police or fire response to Sierra Point occur during the time Tunnel Avenue and the Tunnel Avenue bridge are temporarily closed, Brisbane Police Department and North County Fire Authority first responders would be required to travel south on Bayshore Boulevard past Sierra Point to the Oyster Point freeway interchange in the City of South San Francisco and then travel north on the freeway to the Sierra Point Parkway exit (see Figure Metis-11). Thus, the travel distance for first responders would be increased by nearly one mile, adding two full minutes to response time, assuming no freeway congestion. The result of closing the Tunnel Avenue bridge would be a serious hazard to public health and safety, especially when the US 101 freeway is congested.

Until the Draft EIR/EIS clearly delineates the emergency access routes to Sierra Point that would be available throughout construction and demonstrates the feasibility of such routes, the Draft EIR/EIS has no basis for evaluating and making consistency determinations for impacts related to road closures and emergency access during construction. The limited access to Sierra Point, combined with the circuitous route that would be required for fire and police first responders to Sierra Point during LMF construction-related road closures, could result in environmental and property damage, injury, and possible loss of life during emergencies.

The Draft EIR/EIS must therefore (1) delineate the emergency response routes that would be available for first responders to Sierra Point throughout LMF construction, and (2) provide the public, affected businesses within Sierra Point, the North County Fire Authority, and the City of Brisbane with the opportunity to review and comment on proposed emergency access to Sierra Point during construction of the LMF as part of the CEQA/NEPA review processes.

More disturbing still is that **the temporary closure of Tunnel Avenue and the Tunnel Avenue bridge could leave the existing 23.5-acre Kinder Morgan/SFPP LP/Brisbane Terminal site,<sup>7</sup> which stores jet fuel, gasoline, and petroleum products, without access to a public roadway**

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<sup>7</sup> The Kinder Morgan site is a 23.5-acre bulk petroleum storage facility and distribution terminal. The facility has 21 aboveground storage tanks, and five loading rack facilities, where transport trucks are filled with petroleum products for delivery throughout the Bay Area. The Kinder Morgan facility is critical to the Bay Area's fuel distribution system, providing aviation fuel to San Francisco International Airport and supplying fuel to retail service stations.



**during LMF construction (East LMF) or leave it at the end of a more than 3/4-mile long cul-de-sac (West LMF).** It is unclear how the Kinder Morgan site would be provided with access during the time that the Tunnel Avenue bridge and Tunnel Avenue are simultaneously closed. Although the Draft EIR does not provide a description of proposed temporary or permanent access to the Kinder Morgan tank farm, graphics are provided in the Draft EIR/EIS and are available on the Authority's website: (<https://mapsrnocal.org/sanfrancisco-sanjose/>).

Based on these graphics, it is unclear what provision for emergency access to the Kinder Morgan facility is proposed during construction of the East LMF and relocation of the Tunnel Avenue bridge. In fact, it is unclear whether the Authority even anticipates Kinder Morgan continuing tank farm operations during Project construction since a temporary construction easement is proposed over the entirety of the Kinder Morgan tank farm. Proposed emergency access to the Kinder Morgan tank farm during construction of the West LMF is equally unclear.

Based on the graphics provided in the Draft EIR/EIS, it also appears that no provision may have been made for access to the tank farm during the temporary closure of Tunnel Avenue and throughout construction of the new Tunnel Avenue bridge. Because of the flammable nature of fuels carried by tank trucks leaving the tank farm, it is essential that safe access for these trucks as well as other vehicles associated with Kinder Morgan operations be available throughout and following construction of the LMF. Because the Kinder Morgan tank farm stores large amounts of flammable and hazardous petroleum products, it is also essential that efficient roadway access to the facility be maintained and that City of Brisbane, North County Fire Authority, and hazardous materials first responders are able to provide swift emergency response to the tank farm at all times during and after construction of the LMF. Due to the nature of the materials stored at the Kinder Morgan tank farm, should emergency response be delayed due to road closures during LMF construction or inadequate long-term access, substantial environmental and property damage could result, along with injury and possible loss of life.

The Draft EIR/EIS must therefore (1) delineate operational and emergency response routes for first responders to the Kinder Morgan tank farm throughout and following construction and (2) provide the public, Kinder Morgan, City of Brisbane, North County Fire Authority, and San Mateo County hazardous materials authorities with the opportunity to review and comment on operational and emergency access to the tank farm as part of the CEQA/NEPA review processes.

Simply determining emergency access to be a significant and unavoidable impact in the absence of understanding (1) the specific locations where roadway bridges and roadways would need to be closed for 1 to 3 months, (2) what emergency access would be available during such closures, and (3) demonstrating that modifications to roadway and bridge designs as well as construction staging would not be able to avoid these closures is an insufficient and reckless way to address critical emergency access and response impacts.

*The Draft EIR/EIS does not provide a clear description of proposed temporary construction easements.*

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The lack of clear identification and discussion of temporary construction easements required for construction of the Brisbane LMF and Tunnel Avenue bridge relocation appears to indicate displacement of businesses and public facilities for which dislocation is not disclosed in the Draft EIR/EIS. For example, the Authority's website (<https://maphsrnorcal.org/sanfrancisco-sanjose/>) indicates that the entirety of the Kinder Morgan tank farm would be subject to a temporary construction easement for the East LMF. However, the Draft EIR/EIS provides no information regarding what effects that easement might have on the tank farm's operations during construction. Uninterrupted operation of Kinder Morgan tank farm is essential for delivery of jet fuel to the San Francisco International Airport and delivery of petroleum products including gasoline throughout the Bay Area. The same Authority web page also indicates that the entirety of the City of Brisbane's corporation yard would be subject to a temporary construction easement for both the West and East LMFs and that a new right-of-way for rail access to the East LMF would run through the center of Brisbane's corporation yard. The City's corporation yard is essential to maintenance of the City's infrastructure. Because no information is provided in the Draft EIR/EIS as to whether these facilities could continue to operate during and after LMF construction, the Draft EIR/EIS presents insufficient information upon which an inadequate discussion of displacement of businesses and public facilities could be based.

*The Draft EIR/EIS fails to acknowledge that the East LMF would remove Golden State Lumber's existing lay-down yard.*

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No mention is made in the Draft EIR/EIS that the East LMF would remove Golden State Lumber's existing lay-down area for off-loading and storing lumber shipped by rail by running its lead track to the East LMF diagonally across the middle of the yard on the west side of Tunnel Avenue. Loss of its lay-down area would require Golden State Lumber to block Tunnel Avenue while it is unloading lumber shipments from rail cars and substantially reduce the company's storage area. Because Golden State Lumber currently receives approximately 30 percent of its stock by rail, loss of their lay-down area could have a substantial adverse effect on the business and its ability to remain in its current location. Golden State Lumber is vital part to the City's economic health, contributing more than 20 percent of Brisbane's sales tax revenue.

*The description of the Project and its setting presented in the Draft EIR/EIS fail to provide sufficient information with which to undertake an adequate analysis of hazards and hazardous materials. The Draft EIR/EIS fails to acknowledge that site remediation for the Brisbane West LMF and Title 27 Landfill Closure would be required for the Brisbane East LMF prior to the start of any construction work. While the Draft EIR/EIS states that the East LMF would be constructed "on" the former Brisbane Landfill, it also fails to acknowledge that the East LMF*

*would require cutting into the former landfill and disposing of a large amount of waste, some portion of which could very likely be hazardous.*

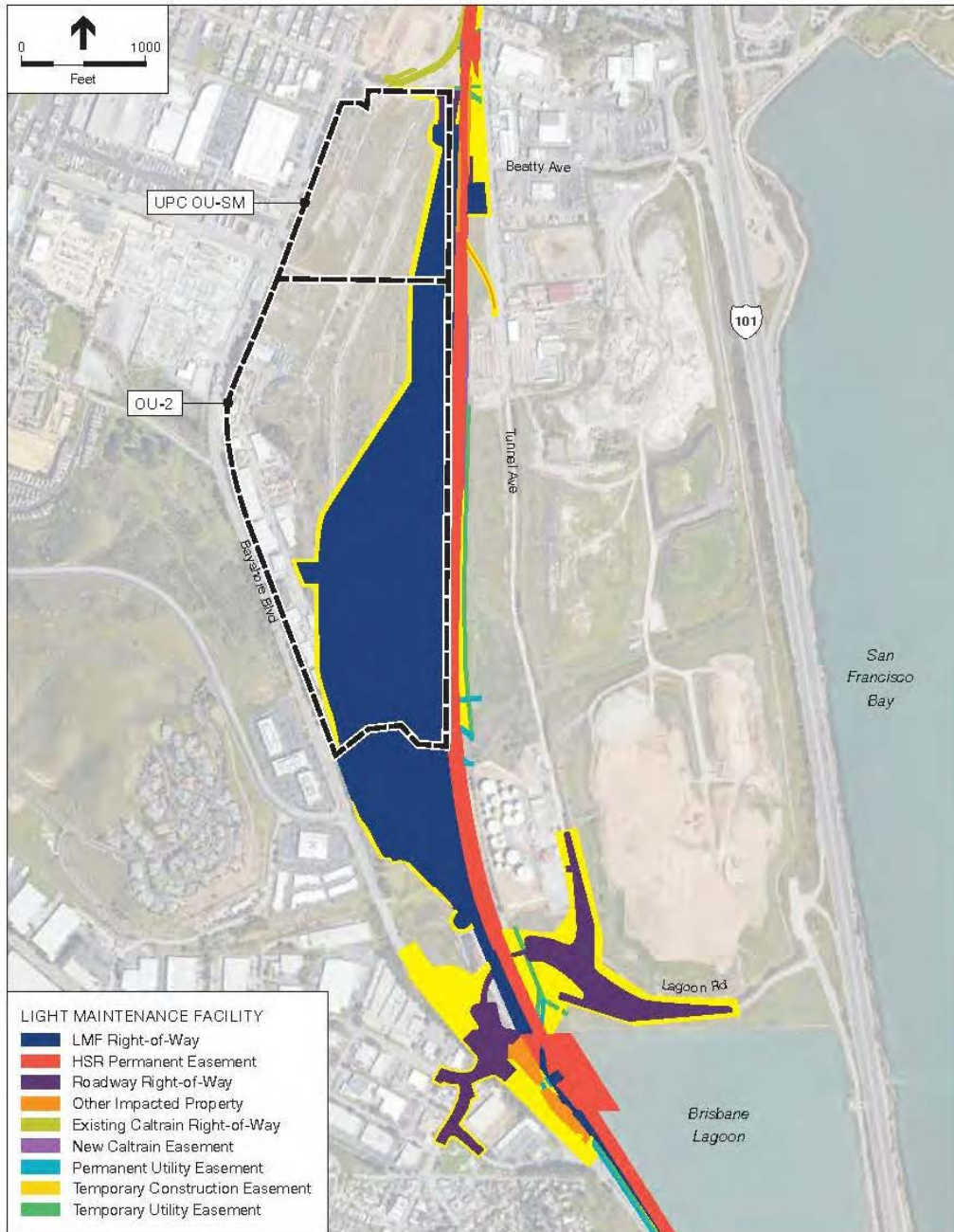
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The Draft EIR/EIS pays little, if any, attention to the location of the West and East LMFs within areas undergoing active site remediation and Title 27 landfill closure planning and regulatory review or the fact that site remediation (West LMF) and Title 27 landfill closure are prerequisites to LMF construction. While the document mentions that the West LMF may contain contaminated soils and that the East LMF would be built on a former landfill, the Draft EIR/EIS leaves critical information gaps in the description of the Project and its setting that inhibit meaningful analysis of hazardous materials, public health, odor, and air quality impacts.

Due to underlying groundwater and soils contamination issues associated with historical uses of the Baylands portion of the City of Brisbane, the westerly portion of the Baylands, including the West LMF site, requires remediation. For purposes of regulatory oversight pertaining to site contamination and remediation, the railyard is divided into two separate “Operable Units” referred to as (1) Operable Unit San Mateo (UPC-OU-SM), which is in the northwestern portion of the Baylands and is under the jurisdiction of the California Department of Toxic Substances Control (DTSC); and (2) Operable Unit 2 (OU-2), which is in the southwestern portion of the Baylands and is under the jurisdiction of the Regional Water Quality Control Board (RWQCB) (see Figures Metis-1 and Metis-2).

Of particular concern is that the site remediation planning, approval, and implementation process and related physical environmental effects are not included in the Draft EIR/EIS description of the Project, in evaluations of the Project’s hazards and hazardous materials, water quality, erosion, air quality, or land use impacts; or even as reasonably foreseeable cumulative projects although the Brisbane General Plan requires site remediation and Title 27 landfill closure as prerequisites for development of the proposed Baylands Specific Plan. Site remediation and Title 27 landfill closure need to be addressed as part of the construction impacts associated with the East and West LMF sites. Site remediation and Title 27 landfill closure of those portions of the Baylands not within the Brisbane LMF also need to be addressed as cumulative projects in Draft EIR/EIS Section 3.18, Cumulative Impacts.

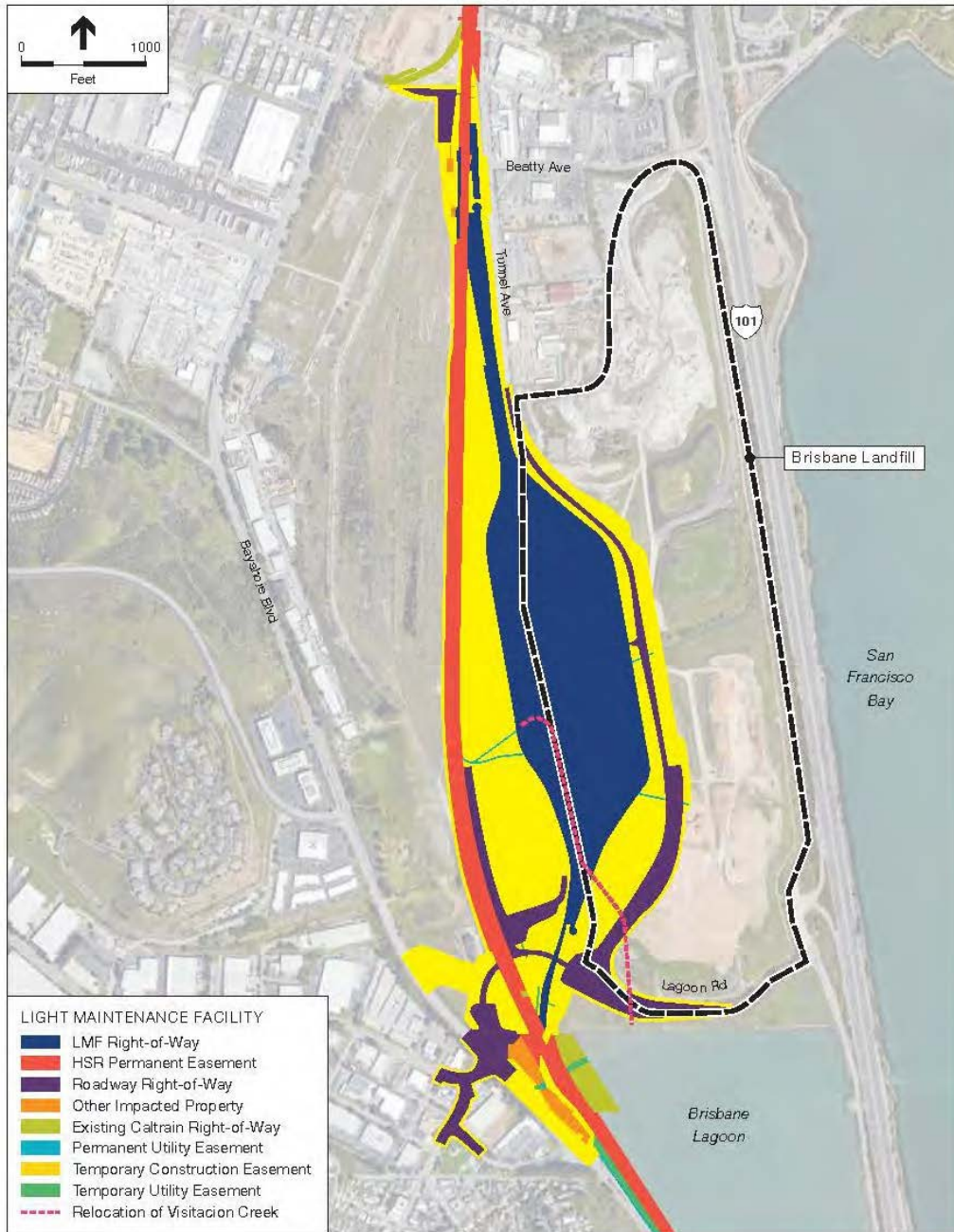
While Draft EIR/EIS Section 3.6, Public Utilities, discloses that that earthwork activities for construction of the West LMF would generate approximately 432,000 cubic yards of solid waste during earthwork activities that may be contaminated and require special disposal as hazardous waste, Draft EIR/EIS (Section 3.10, Hazardous Materials and Wastes) does not specifically address health and safety impacts associated with excavation, loading, and shipping approximately 27,000 truckloads of hazardous materials to an appropriate landfill. It also does not appear that the Draft EIR/EIS addresses the relationship of such proposed offsite hauling of hazardous materials to the remedial actions being proposed in ongoing remedial action plans for UPC-OU-SM and OU-2. Further, it is unclear whether emissions from required offsite truck hauling or from site remediation operations (West LMF) or Title 27 landfill closure (East LMF) have been addressed in the evaluation of construction mobile source air pollutant and GHG emissions.



**Figure Metis-1**

West Brisbane Light Maintenance Facility  
UPC OU-SM and OU-2 Location





**Figure Metis-2**

East Brisbane Light Maintenance Facility  
Brisbane Landfill Location



The timing for physical remediation of UPC-OU-SM and OU-2 is not known at this time. Because of the uncertainty created by the High-Speed Rail project (i.e., which portion of the Brisbane Baylands, if any, would ultimately be taken by the Authority for construction of the Brisbane LMF), it is entirely possible that the landowner would defer site remediation until such time as it is known whether the Authority would approve construction of either the West or East LMF and initiate site acquisition. The most likely scenario should the Authority approve construction of the West LMF would be that the landowner would defer remediation of the West LMF site, requiring the Authority to take responsibility and pay for remediation of the West LMF site. This possibility needs to be disclosed in the Draft EIR/EIS description of the Project (Chapter 2), analyses of Project costs, and in the relevant environmental analyses of Chapter 3.

The eastern portion of Brisbane Baylands contains the former Brisbane Landfill within which a large portion of the East LMF is located (see Figure Metis-2). The Draft EIR/EIS does not disclose that, from 1932 to 1967, the former Brisbane Landfill received waste streams composed primarily of domestic, industrial and naval shipyard waste, sewage, and rubble -- before classification of wastes as hazardous or nonhazardous; before segregation of waste streams; and before identification of landfills as Class I, II, or III<sup>8</sup>. References to the former Brisbane landfill in the Draft EIR/EIS as a "Class II" facility therefore need to be revised. In addition, the Draft EIR/EIS does not disclose that former landfill upon which much of the East LMF is proposed to be constructed consists of fill comprised of solid waste accepted by the landfill was placed on top of marine sediments to form land. "Soil has been placed on top of the solid waste to prevent contact with the waste. More than likely, soil was also placed on top of the solid waste during the operations of the landfill as 'daily cover' to prevent the materials from being blown into the community or the Bay."<sup>9</sup>

Planning is actively underway to determine necessary actions to properly close the landfill in compliance with the regulatory requirements set forth in Section 20260 of Title 27 of the California Code of Regulations (CCR). Title 27 landfill closure for the former Brisbane landfill is subject to the regulatory jurisdiction of the RWQCB and San Mateo County Environmental Health Services. Of concern is that the Draft EIR/EIS description of the Project:

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<sup>8</sup> City of Brisbane, *Final Brisbane Baylands Program EIR*, May 2018. As stated in the Final Program EIR for the Brisbane Baylands Response to Comment BBCAG-109: "Basically, fill comprised of solid waste accepted by the landfill was placed on top of (1906 San Francisco) earthquake rubble that was placed on top of marine sediments to form land. Soil has been placed on top of the solid waste to prevent contact with the waste. More than likely, soil was also placed on top of the solid waste during the operations of the landfill as 'daily cover' to prevent the materials from being blown into the community or the Bay."

<sup>9</sup> City of Brisbane, *Final Brisbane Baylands Program EIR*, May 2018, Response to Comment BBCAG-109.

- Does not specify that removal of a large portion of the waste material within the former landfill would be necessary;
- Fails to characterize or discuss the types of materials that are likely to be encountered within the landfill;
- Neglects to disclose that Title 27 final closure of those portions of the landfill within the East LMF would be required and subject to regulatory oversight, or that the remaining portions of the landfill outside of the LMF would also require Title 27 final closure;
- Fails to analyze whether partial closure for the former landfill for just the East LMF is possible or whether the Authority would be required to undertake Title 27 closure of the entire former landfill in order to construct the East LMF;
- Does not describe any current proposals for Title 27 closure of the former landfill; and
- Fails to address whether the proposed excavation and offsite hauling of over 2.0 million cubic yards of materials from the former landfill would leave sufficient soil for a landfill cover over the remaining portions of the landfill, provide sufficient cover material for use in remediation of UPC-OU-SM and OU-2, or provide sufficient soil for grading for subsequent Baylands site development.

Title 27 landfill closure planning, approval, and implementation process is not included in the Draft EIR/EIS description of the Project or in evaluations of the Project's hazards and hazardous materials, water quality, erosion, air quality, odor, biological resources, public health, or land use impacts. Required approvals from the RWQCB and San Mateo County Health System are not included in Draft EIR/EIS Section 2.11, Permits, nor is Title 27 landfill closure identified and analyzed as a cumulative project in Draft EIR/EIS Section 3.18, Cumulative Impacts.

The timing for installation of the required landfill cap and soil cover, leachate collection and methane collection system improvements is not known at this time and it is entirely possible that the landowner would defer Title 27 landfill closure until such time as it is known whether the Authority would approve construction of either the West or East LMF and initiate acquisition of land for the East LMF (if that site is ultimately approved), as well as wait until the responsible regulatory agencies determine whether partial closure of the landfill could occur or if the entire landfill needs to undergo final closure at the same time. The most likely scenario should the Authority approve construction of the East LMF would be that the landowner would defer Title 27 landfill closure actions within the East LMF, requiring the Authority to take responsibility and pay for Title 27 landfill closure of the East LMF site.

Critical information missing in the Draft EIR/EIS includes the following.

- While the Draft EIR/EIS provides a brief description of the types of contaminants found within soils underlying the West LMF, the document fails to disclose that the proposed West LMF site is within an active remediation site currently undergoing

regulatory review the California Department of Toxic Substances Control and the Regional Water Quality Control Board.

- The Draft EIR/EIS fails to provide adequate description of existing site contamination within the West LMF site, going so far as to defer preparation of even Phase I and Phase II environmental site assessments until *after* Project approval, while failing to recognize that the site was already undergoing active site remediation planning and regulatory review.
- No information is provided as to how the Authority intends to remediate existing site contamination or what risk-based cleanup standards would be followed.
- No information is provided regarding the health risks that construction workers and the public at large would face during construction of the West LMF due to existing site contamination or what actions are to be taken to protect the public and the environment.
- The document does not address how site remediation is to be undertaken and the environmental impacts of such remediation are not addressed.
- No information is provided in Draft EIR/EIS Section 3.10, Hazards Materials and Wastes, regarding the 432,000 cubic yards of contaminated soils that the Project would excavate and haul offsite. Thus, although Section 3.6, Public Utilities and Energy, analyzes the capacity of landfills to accept such contaminated waste from the West LMF site:
  - Section 3.10 undertakes no analysis regarding hazards associated with excavating, loading onto trucks, and hauling 27,000 truckloads<sup>10</sup> of contaminated soils for offsite disposal.
  - The Draft EIR/EIS fails to identify regulatory approvals required from the Department of Toxic Substances Control and the Regional Water Quality Control Board.
- As a result, the Draft EIR/EIS provides no analysis or substantial evidence that can support CEQA findings in relation to the environmental and public health hazards associated with required site remediation.
- While the Draft EIR/EIS discloses that the East LMF is proposed to be built on top of the former Brisbane landfill, a lack of details as to what specifically is proposed frustrates the ability of the Draft EIR/EIS to undertake meaningful analysis of the impacts associated with constructing the LMF on top of the landfill.

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<sup>10</sup> Based on a 16 cubic yard capacity of a dirt hauling truck. Source: The Silicon Valley Clean Water Final Integrated EIR for the Wastewater Conveyance System and Treatment Plant Reliability Improvement Project, CIP No. 6006.

- While the Draft EIR/EIS includes a site plan for the East LMF, that site plan is not overlaid onto the footprint of the landfill to allow readers to understand the spatial relationship between the East LMF and the waste within the former Brisbane landfill.
- Although the document identifies that excavations up to 65 feet in depth would be needed for LMF construction, it does not disclose that the Project would excavate through the landfill's soil cover and into solid waste buried in the landfill between 1932 and 1967, before classification of wastes as hazardous or nonhazardous and before segregation of waste streams.
- No attempt is made in the Draft EIR/EIS to characterize the solid waste that would be excavated from the former landfill. The document does not, therefore determine what portions of the wastes excavated from the former Brisbane landfill would be classified as non-hazardous waste that can be transported to a local Class II or III landfill and what portion would be classified as hazardous waste, requiring transport to a distant Class I landfill in Kings, Kern, or Imperial County.
- Because it does not disclose that solid wastes would be excavated from the landfill for disposal, the Draft EIR/EIS does not analyze the environmental and public health impacts associated with excavating, loading, and hauling of the approximately 2,082,800 cubic yards of soil and waste materials (approximately 130,175 truckloads) that the Draft EIR/EIS estimates will require offsite hauling.
  - Because a potentially large portion of the 2,082,800 cubic yards of materials being excavated and proposed to be hauled offsite from the East LMF site would be comprised of waste materials within the former landfill that may need to be hauled to a Class I landfill in Kings, Kern, or Imperial County, average trip lengths for 130,175 truckloads of material to be hauled offsite from the East LMF cannot be accurately determined. Due to the large number of truckloads and distance to Class I landfills, analysis of mobile source air quality impacts during construction could be seriously understated<sup>11</sup>.
- The Draft EIR/EIS does not disclose whether all solid waste is to be excavated from beneath the East LMF for a “clean closure” or whether an impermeable landfill cap would be constructed over the remaining solid waste with engineered fill above. Because the Draft EIR/EIS does not disclose whether any solid waste would remain, it does not address installation of new landfill gas

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<sup>11</sup> [https://www.waterboards.ca.gov/water\\_issues/programs/land\\_disposal/walist.html](https://www.waterboards.ca.gov/water_issues/programs/land_disposal/walist.html) identifies the only Class I landfills in California as Clean Harbors-Buttonwillow (Kern County), Chem Waste Management-Kettleman (Kings County), and Safety Kleen (Laidlaw) (Imperial County).

collection and monitoring systems, along with leachate collection and monitoring systems.

- The Draft EIR/EIS does not discuss the interface between the portion of the landfill within the East LMF and the remaining portions of the former landfill that the Authority would not acquire.
  - Because the East LMF would be constructed close to the grade of the existing Caltrain rail line, excavations for the LMF would require construction of a large manufactured new west-facing slope for the remaining portion of the landfill to the east.
  - The Draft EIR/EIS does not address whether this slope, which would physically be part of the remaining landfill, would be constructed within the High-Speed Rail Authority's property or on the adjacent property to the east.
  - The Draft EIR/EIS does not address design requirements for the slope, nor does the Draft EIR/EIS address how slope stability would be ensured during excavations of the landfill for the East LMF.
  - The Draft EIR/EIS fails to disclose whether any additional remedial work might be required.
- Finally, the document fails to disclose that construction of the East LMF site would be required to comply with California Code of Regulations Title 27 and that the required final landfill closure would be subject to the regulatory authority of the Regional Water Quality Control Board, Cal Recycle, and the San Mateo County Health System as the designated local enforcement agency.

Because of the lack of information provided to describe construction of the West LMF in relation to site remediation requirements or discussion of the East LMF in relation landfill closure requirements, the Draft EIR/EIS fails to address the environmental and public health impacts of constructing either the West or the East LMF. Instead, the Draft EIR/EIS defers preparation of a geotechnical report and fails to even mention (1) the need for characterization of contaminants and the wastes that would be excavated from the landfill, (2) preparation of human health risk assessments, (3) identification of actions to be taken to protect the environment and public health, or (4) requirements for regulatory oversight.

The Air Quality and Hazardous Materials and Wastes sections of the Draft EIR/EIS need to provide a thorough analysis of the health risks and public health and safety impacts associated with grading, excavation, and offsite hauling of hazardous materials from UPC-OU-SM and OU-2 and the solid wastes currently buried within the former Brisbane landfill which operated from 1932 to 1967, before the classification of wastes as hazardous or nonhazardous; before segregation of waste streams; and before the identification of landfills as Class I, II, or III. Valid



conclusions regarding odor impacts of the Project cannot be in the absence of knowing the extent to which waste materials within the former landfill might be exposed during grading operations for the East LMF.

Site grading information is also needed to support evaluation in the Draft EIR/EIS regarding feasibility of the proposed Geneva Avenue extension from Bayshore Boulevard to the US 101 freeway. An evaluation of plans and profiles prepared for the East and West LMFs indicate that the proposed Geneva Avenue extension is included in Project Plan views but is not included in Project profiles. Analysis of construction profiles by the firm of Biggs Cardosa determined that LMF design would not permit Geneva Avenue to cross over the Caltrain right-of-way as it would be modified by the Project, necessitating Geneva Avenue to cross under the Caltrain right-of-way, including costly excavation, remediation, and disposal of contaminated soils within the area west of the Caltrain right-of-way. Impacts associated with such excavation, remediation, and disposal represent indirect effects of the Project and need to be disclosed, evaluated, and mitigated in the Draft EIR/EIS.

While the Draft EIR/EIS Table 2-25 indicates that 1,463,700 cubic yards of soils would be hauled offsite for the West LMF and 2,082,800 cubic yards would be hauled offsite for the West LMF, the document does not seem to quantify the number of truckloads required to haul such a large amount of materials. Conservatively assuming a truck capacity of 16 cubic yards per load<sup>12</sup>, construction of the West LMF would require approximately 91,481 truckloads of material to be hauled offsite, while the East LMF would require approximately 130,175 truckloads of material to be hauled offsite. Conservatively further assuming offsite hauling operations would take a full year to complete, it is estimated that offsite hauling operations would entail 352 daily truck trips in and 352 daily truck trips out for the West LMF and 501 daily truck trips in and 501 daily truck trips out for the East LMF. It is unclear what assumptions were made for offsite hauling of materials in the Project's construction air quality and noise analyses or even whether offsite hauling was incorporated into construction impact analyses. It is clear, however, that the Project's construction traffic, air quality, and noise analyses need to address the substantial amount of daily truck traffic that construction of the Brisbane LMF would generate.

Without knowing the location and depths of excavations that would occur for the East LMF or the characterization of soils and waste materials that would be required to be hauled offsite from both the East and West LMF sites, the Draft EIR/EIS cannot realistically determine the extent to which such soils and materials can be hauled to nearby construction sites and landfills or would be required to be hauled to a distant Class I landfill. Also, statements in the Draft EIR/EIS regarding the total amount materials hauled offsite or the amount of soils that may be contaminated and required to be hauled to a facility that would accept contaminated soil cannot

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<sup>12</sup> Based on a 16 cubic yard capacity of a dirt hauling truck. Source: The Silicon Valley Clean Water Final Integrated EIR for the Wastewater Conveyance System and Treatment Plant Reliability Improvement Project, CIP No. 6006.

be substantiated. In the absence of such characterizations and information, valid conclusions regarding the significance of hazards and hazardous materials, air quality mobile emissions, and other construction impact analyses set forth in the Draft EIR/EIS cannot be made.

Because the Draft EIR/EIS fails to acknowledge site remediation and Title 27 landfill closure requirements, the following required approvals were omitted from the environmental review and consultation requirements of Section 2.11 and need to be added.

- Site remediation approvals for Remedial Action Plans and Remedial Development and Implementation Plans by DTSC and the RWQCB for Operable Units UPC-OU-SM and OU-2 (West LMF)
- Title 27 landfill closure approvals by RWQCB and San Mateo County Health Systems for the Brisbane East LMF

Information regarding site remediation for UPC-OU-SM and OU-2 as well as Title 27 landfill closure needs to be incorporated into the Draft EIR/EIS description of the Project so that related hazardous materials and wastes, water quality, erosion, air quality, odor, biological resources, public health, land use and other relevant impacts can be analyzed. Regulatory approval of remedial action plans (RAPs) and Remedial Design and Implementation Plans (RDIPs) by DTSC and the RWQCB needs to be added to the listing of required agency approvals in Draft EIR/EIS section 2.11 along with regulatory approval of Title 27 landfill closure plans by the RWQCB and San Mateo County Environmental Health Services. In addition, site remediation of operable units OU-SM and OU-2 and Title 27 final landfill closure need to be included in the listing of cumulative projects in Section 3.18. Site remediation of the western portion of the Baylands, including the West LMF site as well as Title 27 landfill closure also need to be included in relevant environmental analyses in Section 3.18.

*The Draft EIR/EIS fails to disclose whether State Lands Commission jurisdiction and requirements would affect or be affected by construction of the East LMF, Tunnel Avenue bridge relocation, and Lagoon Road realignment.*

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Draft EIR/EIS Section 2.11 needs to be revised to disclose any needed approvals from the State Lands Commission and to provide appropriate analysis of impacts to lands under the Commission's jurisdiction as was undertaken for impacts to lands and resources subject to Bay Conservation and Development Commission (BCDC) jurisdiction. In their March 20, 2020 response to the City of Brisbane's Notice of Preparation for the Baylands Specific Plan EIR, the State Lands Commission identified the following lands subject to the Commission's authority:

- Filled or partially filled and sold Board of Tideland Commissioners (BTLC) lots;
- Lands the State did not acquire, patented as Swamp and Overflow (S&O) Survey 28;
- Lands within Rancho Canada De Guadalupe Visitacion y Rodeo Viejo;

- Lands within Rancho Canada De Guadalupe y Rodeo Viejo; and
- Ungranted sovereign lands within the Guadalupe Canal (referred to in the High-Speed Rail Draft EIR/EIS as “Guadalupe Valley Creek”).

The Commission also noted that portions of the Brisbane Baylands “appear to occupy filled and unfilled tidelands and submerged lands sold into private ownership by the State by the BTLC. Pursuant to the Court’s holding in *City of Berkeley v. Superior Court*, 26 Cal. 3d 515, any such lands which remained submerged or subject to tidal action as of February 22, 1980, are subject to a Public Trust easement retained by the State. A lease from the Commission is not required for use of lands underlying the State’s Public Trust easement. However, it has been determined that any portion of the proposed Plan located within the Guadalupe Canal would require a lease from the Commission.” In addition, it appears that the proposed relocation of the Tunnel Avenue bridge and its roadway connection to Valley Drive, as well as the proposed relocation of the Brisbane Fire Station (West LMF), would encroach into habitats along Guadalupe Valley Creek that subject to State Lands Commission jurisdiction.

Thus, the Draft EIR/EIS must (1) analyze whether any portion of the Project within the Baylands area contains lands subject to State Lands Commission jurisdiction, (2) determine whether any portion of any of the improvements within or adjacent to the LMF sites, Tunnel Avenue bridge demolition and relocation, or Lagoon Road realignment would require a lease from the Commission, and (3) evaluate Project impacts on any lands or resources subject to the State Lands Commission jurisdiction.

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**To provide a clear, cohesive, and complete description of the proposed Project, Draft EIR/EIS Chapter 2, Alternatives, needs to be thoroughly revised.**

To provide a clear, cohesive, and complete description of the proposed Project, Draft EIR/EIS Chapter 2, Alternatives, needs to be thoroughly revised as described below.

- The title of Chapter 2 should be changed to “Description of the Proposed Project” and include all of the information cited above and elsewhere in this report that is needed to understand what the Authority is proposing. Including the project description required by CEQA Guidelines Section 15124 in a chapter entitled “alternatives” creates confusion for members of the public and local agencies that are likely more familiar with the CEQA terminology they encounter more frequently than NEPA terminology. In this case, it is easy for readers to confuse the “Alternatives” chapter identified in the Table of Contents with the CEQA requirements for alternatives to the project set forth in CEQA Guidelines Section 15126.6. For CEQA purposes, alternatives *to* the Project need to be clearly distinguished from variants *of* the Project. Thus, the Draft EIR/EIS needs to clarify for readers of the document that the NEPA alternatives evaluated in the document are the equivalent of variations of the Project.

- Inconsistencies and inaccurate descriptions of the Project in relation to the Tunnel Avenue overcrossing of the existing Caltrain line need to be resolved. A review of Chapter 2, indicates that Tunnel Avenue will be realigned and a “reconstructed Tunnel Avenue overpass would connect to Bayshore Boulevard at its intersection with Valley Drive (north of its existing connection) and would provide a roadway extension connecting Valley Drive to Old Country Road” as part of the description of the Brisbane East LMF (page 2-77). Twenty-one pages later (page 2-98), the reader is informed that the Brisbane West LMF would “require relocating the Tunnel Avenue overpass.” It is only by comparing Draft EIR/EIS Figure 2-32 (page 2-80) illustrating the West LMF to Draft EIR/EIS Figure 2-43 (page 2-100) illustrating the East LMF that reader can learn that the existing Tunnel Avenue bridge is proposed to be demolished and moved north 400 feet, where a new bridge crossing over the Caltrain rail line would be constructed.

In addition, whereas the description of the Brisbane East LMF states that reconstruction of the Tunnel Avenue bridge includes “a roadway extension connecting Valley Drive to Old Country Road,” no such description is provided for the Brisbane West LMF, leading readers to conclude that such an extension is not proposed for the West LMF. Only if the reader carefully compares Draft EIR/EIS Figures 2-32 and 2-43 will they learn that the West LMF alternative does, in fact, include a roadway extension connecting Valley Drive to Old Country Road.

Because so much of overall Project is the same for Alternative (Variant) A and Alternative (Variant) B, the reader’s understanding of what the Authority is proposing would be greatly enhanced by a thorough reorganization of Chapter 2 that would provide a clear, easy-to-find overview of what is being proposed by the Authority followed by comprehensive description of proposed operations and project components in a manner that would allow readers to understand the Project and differences between NEPA alternatives/CEQA variants A and B without having to flip back and forth over 20+ pages within Chapter 2. This could be achieved by describing each Project component in a comprehensive manner, including differences between NEPA alternatives/CEQA variants, before moving on to the next Project component.

For example, in relation to the proposed LMF, the two descriptions of the east and west facilities (currently separated by about 20 pages) discussions that describe the east and west facilities could be combined into a single subsection that describes each of the two site plans (west and east) and provides a single description of features that remain the same for both the west and east facilities (e.g., Tunnel Avenue bridge crossing relocation, relocated intersection at Bayshore Boulevard, roadway improvements west of Bayshore Boulevard). A similar type of comparison could be provided in Chapter 2 for proposed Project improvements and variants in the vicinity of the Diridon Station.

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**2. A Reasonable Range of Alternatives is not Provided. The Draft EIR/EIS fails to comply with CEQA requirements for evaluation of a reasonable range of alternatives to the Project.**

CEQA Guidelines Section 15126.6(a) requires an EIR to:

“... describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.”

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**The Draft EIR/EIS violates CEQA by limiting its analysis of potential LMF sites to those that were determined by the Authority to be “optimal” rather than sites that would be “potentially feasible.” As a result, the Draft EIR/EIS failed to address a reasonable range of alternatives when it did not evaluate potentially feasible LMF sites other than the West and East Brisbane sites.**

The Draft EIR/EIS fails to identify and address a reasonable range of potentially feasible alternatives to the Project that would avoid or substantially lessen any of the significant effects of the Project. Because the large majority of the Project occurs within and adjacent to the existing Caltrain right-of-way and at existing transit stations, the Project’s largest impacts occur at the 100+ acre Brisbane LMF. As a result, development and evaluation of potentially feasible alternatives to the proposed location and design of the Brisbane LMF would reduce or avoid many of the Project’s significant impacts, which the Draft EIR/EIS fails to do.

The Authority provided information on assumptions, operations, facilities site location criteria, facilities descriptions and other factors related to operations and maintenance facilities in the following document: Draft EIR-EIS, Appendix 2-F – Summary of Requirements for Operations and Maintenance Facilities.<sup>13</sup> The objective of the report was to evaluate the analysis criteria for

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<sup>13</sup> The Draft EIR/EIS references certain other Authority documents that apparently informed the selection of potential LMF sites; however, these documents were not incorporated into the Draft EIR/EIS and were not available on the Authority’s website. These documents include, but are not limited to: the April 2010 *Preliminary Alternatives Analysis Report for the San Francisco to San José Section* (“PAA”); the August 2010 *Supplemental Alternatives Analysis Report for the San Francisco to San José Section*; the 2019 *San Francisco to San José Project Section Checkpoint B Summary Report*; and the 2020 *Light Maintenance Facility Site Selection Evaluation: San Francisco to San*



optimal siting of facilities for heavy and light maintenance facilities for rolling stock, and for maintenance of infrastructure locations across the high-speed rail network. The report includes a set of requirements the Authority has established for those facilities, its size and location.

### **Authority's Assumptions**

The Authority provided several assumptions within Draft EIR-EIS Appendix 2-F pertaining to rolling stock, fleet size, maintenance level requirement, track lengths, purpose of tracks within facilities and the operational relationship between LMF facilities and end of segment stations. Those general assumptions are as follows:

- Rolling stock: Train sets would be operated and maintained in a configuration of 660-foot sets with the potential to operate in double trainset configuration of 1,320-foot total length sometime in the future.
- Fleet Size: Would be expected to grow from a small initial quantity of trainsets in early stage service offering, eventually increasing to 90 trainsets for the full Phase 1 service plan.
- Maintenance Facilities: Would be required to maintain rolling stock. Maintenance of rolling stock would follow a 5-level hierarchy of functions:
  - Level I - Daily inspections, pre-departure cleaning and testing
    - Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
    - Shop Tracks: None planned
  - Level II - Monthly inspections
    - Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
    - Shop tracks: Up to 2 each
  - Level III - Quarterly inspection, including wheel-truing
    - Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
    - Shop tracks: Up to 8 each
  - Level IV - Annual inspections, including underside/bogie inspection

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*José Project Section Memorandum.* To review these document, members of the public were required to specifically requests them from the Authority. The absence of these reports from the documents posted on the Authority's website frustrates public review and withholds valuable information from the public and decision makers.

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
- Shop tracks: Up to 10 each
- Level V – Overhaul, component change out, commissioning and decommissioning
  - Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
  - Shop tracks – Up to 10 each
- Any proposed facility would be designed to handle projected system growth through 2040;
- Track lengths are designed to accommodate two 660-foot trainsets each, plus additional capacity is estimated at 80% of total possible space in the yard for maneuverability of the equipment to and from yard to shop areas with some room for growth.
- Tracks are intended for storage of trainsets that are not in use for revenue service. The majority of tracks are to be used for middle-of-day or overnight layover of trainsets.
- Trainsets would need to make non-revenue trips between LMF and the origin or destination at the beginning or end of revenue service.
- Include additional tracks for trainsets that are currently undergoing maintenance base on LMF type with higher level of maintenance requiring additional tracks.
- Additional tracks in LMF set aside of maintenance of infrastructure equipment storage. Work trains, track and tie installation trains may be among the types of equipment stored on these tracks.

### **LMF Purpose**

The purpose of the LMF within the High-Speed Rail network is for dispatching newly inspected and serviced trains and crew to begin revenue service throughout the day in addition to providing daily, monthly, and quarterly maintenance of trainsets. An LMF is needed to support Level I, II, and III maintenance activities including cleaning and servicing activities between runs, pre-departure inspections and testing, and monthly inspection and maintenance activities.

For Level II and III facilities, daily service, and monthly and quarterly inspections and maintenance would utilize inside shop track with interior access and inspection pits for underside of wheel-truck assemblies (bogie) inspection. Level III functionality includes train wash and wheel defect detection facilities.

## Optimal LMF Configuration

The Authority's criteria for the "optimal" LMF site configuration can be summarized as:

- Yard tracks capable of holding two complete trainsets, plus two runaround/transfer tracks to move from one end of the facility to the other.
- For Level III LMFs, dedicated train wash tracks and wheel defect detection track.
- Direct main track access through double-ended yards leads.
- Grade-separated flyovers to access the main track opposite the LMF without affecting main track traffic.
- 60 mph interlockings with universal crossovers at the main tracks (on both ends, immediately adjacent to the main track turnouts).
- 1,700-foot transition tracks to reduce/increase speed to/from stop and to transition the automatic train control system.
- Estimated length of 7,500 feet (not including transition tracks) with a depth dependent on the number of tracks required at each facility.
- Estimated overall minimum footprint ranging from about 40 to 110 acres.

In addition to defining the "optimal" LMF configuration, Draft EIR-EIS Appendix 2-F identifies alternative configurations for an LMF that would be less than optimal, but nevertheless feasible. The less than optimal design for an LMF is described as:

- At-grade or "flat" interlockings.
- Single 60 mph crossovers at the main tracks (on both ends, immediately adjacent or within up to 3 miles of the main track turnouts).
- Turnout speeds in interlockings of less than 60 mph.
- Shorter transition track.
- Single-Ended Facilities. The Authority notes that a single-ended LMF could be considered on a case-by-case basis depending on the proposed location of the site relative to the nearest station and on the operational details of the service plan. (Draft EIR/EIS, V2, Appendix 2-F - Summary of Requirements for Operations and Maintenance Facilities, Page 18.)

For less than optimal configurations, the Authority identifies the following "work arounds."

- Additional deadhead miles or time in order to avoid delays to revenue trains by deadhead movements.

- Additional operating crews in order to expedite reverse movements in the facility and/or on the main track.
- Alternations to maintenance scheduling to accommodate the arrival of deadhead trains at non-peak hours of operation.
- Co-locate facilities such as an LMF and an MOIF (maintenance of infrastructure facility). As stated on page of Draft EIR/EIS Appendix 2-F, other facilities that “could be co-located with an LMF include an MOIF. Locating these facilities as an integral part of, or adjacent to, the LMF **could facilitate better coordination and utilization of operations systems and assets, while also potentially reducing the overall footprint required for the facilities.** Locating these facilities away from the LMF will not necessarily introduce negative impacts that could not be effectively managed/mitigated.” (emphasis added).

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**The Draft EIR/EIS fails to identify or evaluate potentially feasible alternatives to the Brisbane LMF site.**

The Draft EIR/EIS fails to identify or evaluate potentially feasible alternatives to the Brisbane LMF sites as required by CEQA Guidelines Section 15126.6(a). The Draft EIR/EIS improperly relies on Tier 1 environmental analyses that determined a limited set of alternatives LMF sites would not meet the gold-plated design and operational standards set by the Authority and rejected offsite alternatives not because they would be *infeasible*, but because they were believed to be *not as good or desirable as* the Baylands site. As noted in CEQA Guidelines Section 15126.6(a), “an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of *potentially* feasible alternatives” (emphasis added).

*The Authority improperly rejected alternative locations for the LMF, focusing solely on the Brisbane site.*

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**Facilities Site Location Criteria**

The Authority developed an operating plan based on a service design driven by ridership demand forecast. Based on this forecast, an operating plan was developed to define:

- The schedules and estimated number of trainsets required.
- Preliminary guidelines and criteria.
- Size and configuration of proposed facilities based on defining the capabilities and functional requirements.
- Size and configuration of facilities estimated based on capabilities and functional requirements necessary to support planned operation.
- Preliminary guidelines and criteria to identify suitable site alternatives.
- Feasibility of each site evaluated from operational, engineering, and environmental standpoint.

The Authority identified potential sites for the entire statewide high-speed rail network based on its criteria and recommended the following rolling stock facilities:

- Brisbane, LMF
- Gilroy, LMF
- Central Valley, LMF
- Antelope Valley, LMF
- Los Angeles, West Yard LMF
- Los Angeles, Montebello Yard LMF
- Anaheim, LMF

The Authority envisioned only one location in northern section route for a Level III LMF. The two potential locations identified in that section were Brisbane and Gilroy, both of which are identified in Table 1 and Table 2 of Draft EIR/EIS Appendix 2-F, portions of which are provided below.

**From Draft EIR/EIS Appendix 2-F, Table 1: Summary of HMF, LMFs**

Facility Location/ Type	No. Tracks	Level	YR 2025 Proj. Fleet of 19 Train Sets (TS)		YR 2034 Proj. Fleet of 19 Train Sets (TS)		YR 2059 Proj. Fleet of 19 Train Sets (TS)	
			Total TS	AM TS	Total TS	AM TS	Total TS	AM TS
<b>Brisbane LMF</b>	13 Yd 2 or 8 Shop	III (or I)	8-10	6-8	14-17	10-13	16-21	12-17
<b>Gilroy LMF</b>	10 Yd 8 or 2 Shop	I (or III)	8-10 (See Note)	6-8 (See Note)	13-15	10-14	13-17	12-16

Relevant notes and assumptions for this table presented in Appendix 2-F include:

1. “Number of trainsets (as single consists) at each facility is given as a range to allow for unknown availability of station tracks for overnight layover and storage of consists that have been outfitted with autonomous inspection and measurement equipment.
2. Number of morning starts (as single consists) from each facility differs from the number of trainsets stored at each facility due to allowances for hot standby trainsets, high-demand spares, and maintenance downtime.
3. **Maximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability.**” (emphasis added)



From Draft EIR/EIS Appendix 2-F, Table 2: HMF, LMF, MOI Locations

Proposed Facility	Miles (from SF Transbay)	Approximate location name	Comment
LMF	5.00	Brisbane	<ul style="list-style-type: none"> <li>• Level III facility to support train servicing and start up and close-down of service at San Francisco.</li> <li>• Corresponds to location of proposed LMF.</li> <li>• This site could also function as a Level I site on a smaller footprint to support service for the San Francisco terminals.</li> </ul>
LMF	60.00	Coyote (between San José and Morgan Hill)	<ul style="list-style-type: none"> <li>• Level I facility to support train servicing and start up and close-down of service at San José, Gilroy and Merced. Will need to clear a level III facility at this location based on the availability of the Brisbane site or the phasing requirements of the project.</li> <li>• Corresponds to the most likely of several alternative site already being considered for an LMF.</li> <li>• Co-location of this facility with the nearby MOIF is possible.</li> </ul>
MOIF	80.00	Just South of Gilroy Station	<ul style="list-style-type: none"> <li>• Corresponds to location of previously proposed MOIF.</li> <li>• Co-location of this facility with the nearby LMF is possible.</li> </ul>

Draft EIR/EIS Appendix 2-F specifies that maintenance facilities at Brisbane and Gilroy were “envisioned to work together” and that “[w]hichever location is finally determined for Level III activity” would need the other location to support lower level activities as a Level I facility. As stated in Table 1 and Table 2 of Draft EIR/EIS Appendix 2-F:

- “Maximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability.”
- The Brisbane LMF site “could also function as a level I site on a smaller footprint to support service for the San Francisco terminals.”
- A Coyote Valley Level I facility would “support train servicing and start up and close down of service at San José, Gilroy and Merced.” This site could also operate as a level III facility but would need environmental clearance for a level III facility at this location **based on the availability of the Brisbane site or the phasing requirements of the project.** (emphasis added)

The Authority’s own Draft EIR/EIS Appendix 2-F clearly demonstrates the Authority’s acknowledgement of the potential feasibility of:

- Locating a Level III facility in Gilroy and a Level I facility in Brisbane, or
- Locating a III Level in Brisbane and a Level I facility in Gilroy.

Despite this, the body of the Draft EIR/EIS make no mention of this possibility. At a minimum, the Draft EIR/EIS should have included and analyzed the alternative of Level I facility in Brisbane with a Level III facility in Gilroy as and additional NEPA alternative in the Draft EIR/EIS. The failure to do so also violated the CEQA Guidelines Section 15126.6(a) requirement to address a reasonable range of potentially feasible alternatives.

### Site Selection Criteria

The Authority's 2010 Supplemental Alternative Analysis, which is referenced on Draft EIR/EIS page 2-35 but not included as an appendix to the Draft EIR/EIS or made available on the Authority's website, evaluated potential LMF sites in accordance with the Authority's preliminary siting criteria for maintenance facilities. The 2010 Supplemental Alternative Analysis identified the following facility design and location criteria to meet the functional requirements for an LMF between San Francisco and San Jose:

- **Site Size** – The site shall be large enough to accommodate storage and maintenance operations. The Authority estimates *approximately* 100 acres.
- **Proximity to the Mainline Tracks** – LMF should be immediately adjacent to the mainline tracks, to minimize the length of the lead track.
- **Double-ended Lead Tracks** –The LMF should be a double-ended facility (i.e., capable of dispatching and receiving trains from both ends of the facility).

Ten years later, at its July 20, 2020 Online Open House, the Authority presented a fact sheet for the Northern California Light Maintenance Facility (Fact Sheet)<sup>14</sup> that shows the Authority's consideration of LMF sites was based on the following criteria:

- **Proximity:** Distance to San Francisco Terminal Station
- **Site Size:** Approximately 100 acres
- **Proximity to Mainline Tracks**
- **Double-ended Tracks:** Trains can enter and depart from both directions
- **Site Availability:** Avoid conflicts with built improvements

The requirements for (1) proximity to San Francisco Terminal and (2) Site Availability (Avoid conflicts with built improvements) are new and were not part of the Authority's 2010 SAA. The criterion to "avoid conflicts with built improvements," in particular, greatly reduces potential sites due to the highly developed urban setting of the San Francisco – San Jose segment. The Fact Sheet asserts that of all alternatives evaluated, only the West and East LMF options met this requirement. The "avoid conflicts with built improvements" criterion is also above and beyond

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<sup>14</sup> Available at: <https://www.meethsrnorcal.org/light-maintenance-facility.html?locale=en>

the requirements set forth in the Authority's 2010 Supplemental Alternative and the Summary of Requirements for Operations and Maintenance Facilities (Draft EIR/EIS Appendix F-2); it does not appear to occur in any document other than the LMF Fact Sheet, including the 2020 *Light Maintenance Facility Site Selection Evaluation: San Francisco to San José Project Section Memorandum* obtained by special request from the Authority.

The notion that the Brisbane LMF would "avoid conflicts with built improvements" is belied by the fact that its construction would require:

- Demolition and relocation of the existing Tunnel Avenue bridge, resulting in 1-3 months of unacceptable emergency response within a portion of the community;
- Demolition and realignment of both Tunnel Avenue and Lagoon Road, as well as realignment of City streets providing access to the community's downtown area;
- Demolition and relocation of the City's existing fire station;
- Excavation into the former Brisbane Landfill requiring disposal of an unknown amount of hazardous and non-hazardous waste placed in the landfill before operations ceased in 1967 (East LMF);
- Demolition and removal of the City's existing corporation yard (East LMF); and
- Demolition of the historic Machinery & Equipment building, along with demolition of the Mission Blue Nursery.

#### **Alternative Sites Identified by the Authority in the Draft EIR/EIS**

The Draft EIR/EIS identifies two sites in addition to Brisbane that apparently met its site criteria and engineering and design guidelines. A graphic representation of the four evaluated sites as well as their location is presented in Draft EIR/EIS Chapter 2, page 2-36, indicating the following sites were analyzed:

- Port of San Francisco (Piers 90-94)
- SFO
- West Brisbane
- East Brisbane

The Authority did not evaluate alternatives involving a maintenance facility in Gilroy, even though Draft EIR/EIS Appendix 2-F identifies the feasibility and desirability of doing so.

The Authority chose to proceed with further study of only the East and West LMF option in the Draft EIR/EIS. Justification for selection of East and West LMF was that both Brisbane sites provided adequate space, proximity to Caltrain mainline track and proximity to the San

Francisco terminal. The parameters identified by the Authority for rejecting the Port of San Francisco and SFO sites from further consideration included:

- **Port of San Francisco (Piers 90-94) Findings:** This site was removed from further study because the Authority claimed the site to be operationally deficient due to its size, distance from the mainline tracks, and the need for the facility to be stub-ended which the Authority stated would constrict operations. The Authority noted that acquiring the necessary right-of-way to build lead tracks would be too costly and that operations of trains along the required lead would be disruptive to neighboring properties. The site was therefore not carried forward for further study.
- **SFO Site Findings:** This site was removed from further study because the Authority claimed the site to be adequately sized but operationally deficient due to its distance from the mainline track and need to be stub-ended. The Authority additionally stated that the cost for the lead for the facility and modifications required to the US-101 Interchange were constraints.

The Authority's Reasons for Rejecting these Alternative LMF Sites were flawed.

The Authority's conclusions regarding various alternatives related to the criteria set forth for site size, proximity to the mainline, and double-ended lead tracks were flawed and inconsistent with the Authority's public criteria.

### Site Size

The Authority's size criterion states that the site needs to "be large enough to accommodate storage and maintenance operation." (Draft EIR/EIS, Chapter 2, page 2-35). The Authority *estimated* this site size to be approximately 100 acres; however, this criterion does not specifically state that the site *must be* 100 acres in order to be considered, only that it be large enough to support the proposed operation. Thus, sites less than 100 acres in size should not have been rejected without specific design analysis as to whether a less-than-100-acre site was "large enough to accommodate storage and maintenance operation."

Within the Summary of Requirements for Operations and Maintenance Facilities (Draft EIR/EIS, Appendix 2-F – Summary of Requirements for Operations Maintenance Facilities, page 21), the Authority estimated that the minimum footprint for an LMF ranged from about 40-110 acres, depending on the number of tracks required at the facility, the level of anticipated maintenance activities, the layout of the facility, and whether the facility would have an optimum or less than optimum layout. The faulty reasoning behind rejecting the Port of San Francisco and SFO sites is summarized below.

- **Port of San Francisco (Piers 90-94) Site.** The Authority withdrew this alternate site partially due to the size of the site but did not provide details as to how why the site would not be "large enough to accommodate storage and maintenance operation." The

site would have required the use of a stub-ended facility layout which the Authority conceptualized as shown in on page 36 of Chapter 2 – Alternatives. The general area for the body of the storage and maintenance shop tracks as shown in the Authority’s report is approximately 65 acres. A site utilizing a stub-ended layout arrangement would potentially allow for a smaller site footprint as it appears the Authority shows conceptually in the Draft EIR/EIS. Potential operational inefficiencies could have been offset due to the proximity to the 4<sup>th</sup> and King Street station (+/- 2.5 miles).

- **Proximity to the Mainline.** Both the Port of San Francisco (Piers 90-94) and the SFO site were eliminated partially due to their proximity to the mainline. Draft EIR/EIS Chapter 2 and the Summary of Requirements for Operations and Maintenance Facilities (Draft EIR/EIS, Appendix 2-F) discuss the criteria for the LMF’s proximity to the mainline. The Draft EIR/EIS specifies that the “LMF be immediately adjacent to the mainline tracks to minimize the length of the lead track.” The Summary of Requirement for Operations and Maintenance Facilities, however, discusses this criterion under both “optimal” and “less than optimal” configurations. Under optimal configurations, the proposed LMF would be directly adjacent to the main track. Under less than optimal configurations, other arrangements would not necessarily be rejected but could be evaluated.
- **Double-Ended Lead Track.** The Draft EIR/EIS’s preliminary siting criteria for double-ended track states that the LMF “should be a double-ended facility (i.e., capable of dispatching and receiving trains from both ends of the facility). Double-ended facilities increase operational flexibility and allow for efficient dispatch of track maintenance equipment in the event there is an issue with one of the lead tracks. A stub-ended track is a high-risk design and should be avoided when a double-ended facility is feasible.” Draft EIR/EIS, Chapter 2 – Alternatives, Page 2-35).

However, the Summary of Requirements for Operations and Maintenance Facilities discusses this criterion for optimal *and* less than optimal configurations. While the text of the Draft EIR/EIS, which is based on the 2010 SAA, and the Summary of Requirements for Operations and Maintenance Facilities documents both state that double-end lead tracks are optimum configurations, the Summary of Requirements for Operations and Maintenance Facilities provides for consideration of single-ended LMFs on a case-by-case basis depending on the proposed location of a site relative to the nearest station and on the operational details of the service plan. The document also provides workarounds for these conditions on Page 18.

In situations where stub-ended facilities are being considered, the Summary of Requirements for Operations and Maintenance Facilities indicated that the “operational and cost impacts of these less optimal configurations must be analyzed further in order to evaluate the trade-off of the additional yearly operating cost versus the increased capital construction cost and the potential increase in environmental impacts.” (Draft EIR/EIS, Appendix 2-F – Summary of Requirements for Operations and Maintenance Facilities, page 18).



Given the highly developed urban setting of the San Francisco to San Jose segment, the available sites which would meet this optimal criterion were inappropriately limited to the Brisbane options. The Authority failed to consider less than optimum *but potentially feasible* layouts for alternate sites that might require longer lead tracks or yards that were not adjacent to the mainline. No studies for potential work arounds from less optimal LMF configurations were completed as part of the Authority's Draft EIR/EIS. These potential layouts may be considered by the Authority to be less than optimum, but they are potentially feasible and should have been addressed in a reasonable range of potentially feasible alternatives as required by CEQA, and the potential for solutions to overcome the supposedly "less than optimal" qualities of these sites should have been studied.

Both designs for the Port of San Francisco (Piers 90-94) and SFO sites utilized a stub-ended facility. The Authority withdrew these alternate sites partially due to the need to utilize a stub-ended design facility concept instead of the more "optimal" double-ended facility. The Authority did not, however, evaluate the trade-off of a stub-ended facility layout vs. double-ended facility layout in these locations even though it found these types of arrangements to be potentially feasible. These potential layouts may be considered by the Authority to be less than optimum, but they are potentially feasible and should have been included in the Draft EIR/EIS as CEQA alternatives to the Project.

#### **Location of Level I and Level III Facilities**

The Authority envisioned a single LMF location within the northern section of the High-Speed Rail route. This LMF would have the ability to provide Level III maintenance activities. Two potential locations for a Level III LMF in the northern High-Speed Rail section were called out in Draft EIR/EIS, Appendix 2-F – Summary of Requirements for Operations Maintenance Facilities. While the Authority envisioned there to be only one location in the northern section of the route that would handle activities associated with a Level III facility, two potential locations were identified (Brisbane and Gilroy) with the intent that the two facilities work together with one as a Level I facility and the other as a Level III facility (Draft EIR/EIS, Appendix 2-F – Summary of Requirements for Operations and Maintenance Facilities, pp. 11-12).

Within the Summary Requirements Operations Maintenance Facilities report, the Authority determined that maximum maintenance levels at Brisbane could be lowered to Level I if the facility in Gilroy would be constructed with the Level III capacity. The Authority identified several LMF site alternatives in the vicinity of Gilroy with likely alternative sites in the vicinity of Morgan Hill. The site size requirements for a Level III LMF could be better suited to be placed in an area which was not within a highly developed urban area.

In violation of the CEQA Guidelines requirement to address a reasonable range of potentially feasible alternatives, the Draft EIR/EIS did not include any alternatives wherein a Level III LMF

would be located in the vicinity of Gilroy and a Level I facility located between San Francisco and San José. The change to a Level I facility within the San Francisco to San José segment would change the site size criteria used by the Authority to identify potential sites. Due to the reduced size requirements of a Level I LMF (+/- 40 acres), potentially feasible sites outside of Brisbane could have been identified and evaluated. Additionally, this concept would reduce the facility's impact within the highly developed and urbanized San Francisco to San José segment by locating the Level III LMF within an area that was sparsely developed. Further, a Level III LMF located in the vicinity of Gilroy could be co-located with other planned infrastructure such as the Maintenance-of-way Facilities, (MOWF) that is currently planned for that area, increasing operational efficiencies.

*The Draft EIR/EIS failed to analyze potentially feasible alternative LMF sites.*

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Based on site selection criteria included in the Supplemental Alternative Analysis and information gathered from the Summary of Requirements for Operations and Maintenance Facilities, it is clear that the following potentially feasible alternative sites which could accommodate a Level III LMF should have been analyzed in the Draft EIR/EIS. Each of these sites is illustrated in Attachment Metis-C Attachment Metis-C.

#### Bayview Industrial District – San Francisco

This potential site is located in the Bayview Industrial District of San Francisco and is generally bound by Napoleon Street on the North, Industrial Street on the South, US-101 to the west and I-280 and the Caltrain Corridor on the east.

The area identified as a potential alternative site is comprised of approximately 71 acres of existing industrial development zoned PDR-2, (Production, Distribution and Repair). The site has a historical mixed industrial and commercial use which at various times in the past was freight rail served. An LMF in this location would be consistent with the area's industrial land use designation and would be well buffered from residential areas. The site would be large enough to accommodate storage and maintenance operations for a Level III LMF, as well as for Level I maintenance activities in combination with a Level III LMF in the Gilroy area.

The site is in proximity to the mainline tracks and could be connected to the mainline tracks to allow both northbound and southbound traffic to enter the facility via dedicated lead tracks. Additionally, the site is located approximately 2.5 miles south of the 4<sup>th</sup> and King Caltrain Station, closer than the Brisbane site.

A Bayview Industrial District LMF would be a stub-ended but would be capable of dispatching and receiving trains from both directions on the mainline. Potential operational inefficiencies could be offset by the close proximity of proposed site relative to the nearest High-Speed Rail station.

### Newhall Yard – San José

This potential site is located in the area known as the Newhall Yard and is generally bound by Coleman Avenue to the north, Caltrain right-of-way to the south, Brokaw Road to the west and the I-880 freeway to the east.

This potentially feasible alternate site is comprised of approximately 47 acres of previously developed land zoned HI (Heavy Industrial). The site has a historical rail use, at one time being used by Union Pacific Railroad's predecessors as freight rail yard. An LMF in this location would be consistent with the designated land use and well buffered from residential areas. The site would be large enough to accommodate storage and maintenance operations for Level III LMF as well as Level I maintenance activities in combination with a Level III LMF in Gilroy.

The site is within proximity to the mainline tracks and could be connected to the mainline tracks to allow both northbound and southbound traffic to enter the facility via dedicated leads. Additionally, the site is located less than one mile north of the Diridon Caltrain Station.

### Coyote Valley – Santa Clara County

A large potentially feasible location for an LMF is located in the area known as Coyote Valley that is partially located within the City of San José and unincorporated Santa Clara County, approximately 15 miles south of the Diridon Caltrain Station. The area is generally bounded by Bailey Avenue to the northwest, Scheller Avenue to the southeast, Santa Teresa Boulevard to the southwest and the Caltrain right-of-way to the northeast.

This potentially feasible alternative site is comprised of +/- 633 acres of sparsely developed land zoned A (Agriculture). The site would be large enough to accommodate storage and maintenance operations for Level I or Level III maintenance activities and potentially for consolidation of multiple planned operations and maintenance facilities.

The site is within proximity to the mainline tracks and could be connected to the mainline tracks to allow both north-bound and south-bound traffic to enter the facility via dedicated leads.

### San Francisco – Gilroy LMF/MOWF Consolidation

The potentially feasible Gilroy site is generally bound by Southside Drive to the north, Bloomfield Ave to the south, Union Pacific right-of-way to the west, approximately 32 miles south of the Diridon Caltrain Station.

This potentially feasible alternative site is comprised of approximately 150 acres of sparsely developed land zoned A (Agriculture). The site would be large enough to accommodate storage and maintenance operations for Level III LMF, as well as Level I maintenance activities. The site would also potentially provide for consolidation of multiple planned operations and maintenance facilities within the area.

The site is within proximity to the mainline tracks and could be connected to the mainline tracks to allow both northbound and southbound traffic to enter the facility via dedicated leads.

As noted above, the Authority envisioned there to be only one location in the northern section of the route that would handle activities associated with a Level III LMF. The Authority identified two potential locations in their report, one at Brisbane and one at Gilroy, that would work together with one service as a Level III LMF and the other as a Level I maintenance facility.

The alternative proposed to consolidate these two sites to one located in Gilroy. The site is currently planned as a Maintenance of Way Facility. Co-locating these facilities could facilitate better coordination and utilization of operations systems as assets while also potentially reducing the overall footprint required for the facilities.

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**3. *Inadequate Analysis leads to a Lack of Evidence for Significance***  
***Conclusions. The Draft EIR/EIS presents improperly segmented and inadequate environmental analyses that fail to provide substantive discussion or that understate the severity of changes to the environment that would result from the Project. As a result, the Draft EIR/EIS presents significance conclusions that are not based on substantial evidence and understate the severity of the Project's public safety, hazardous materials, noise, water supply, and other impacts.***

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**Analytic models and methods developed prior to the spread of Covid-19 and the current global pandemic to determine projected high speed rail ridership and analyze the Project's vehicle miles traveled, traffic, air quality, and energy impacts might not reflect actual conditions in the post pandemic world.**

Media reports abound with forecasts and analyses of the long-term effects of Covid-19, social distancing, and shelter-in-place might have on the nation's economy and the "American way of life." While these forecasts and analyses make for interesting reading and thought-provoking discussion, there may also be a practical effect that needs to be considered as part of the Draft EIR/EIS: analytic models and methods developed prior to the spread of Covid-19 might not reflect the post-pandemic world. The travel demand assumptions developed before the current health crisis that underlie the models and analytical tools used in the Draft EIR/EIS to analyze transportation, air quality, greenhouse gas (GHG) emissions, and energy impacts may or may not be valid and might need adjustment, while other unforeseen outcomes could affect analysis of other environmental impacts.

Theoretical (and logical) arguments can be crafted that assert the long-term effect of the current health crisis would be to decrease overall per capita travel as easily as arguments could be crafted that the long-term effect would be to increase per capita vehicular travel while

decreasing per capita transit, or that while the current pandemic might have substantial short-term effects on travel patterns, long-term effects, if any, would be minor.

An internet review of articles based on a search for “long-term effects of Covid-19 on the economy” or “long-term effects of Covid-19 on transit” will turn up compelling arguments that (1) the current pandemic would lead to sweeping and permanent changes in American culture and economy, as well as compelling arguments that the post pandemic world will be recognizable (i.e., no fundamental changes in American culture and economy), but that existing trends may be exacerbated in different ways<sup>15</sup>. Regardless of whether the current pandemic leads to radical sweeping changes or simply exacerbates existing known trends, reasonable arguments could be made that the current health crisis *could* have a substantial effect on in travel demand.

A July 7, 2020, article by Liz Farmer of the Rockefeller Institute of Government<sup>15 (1)</sup> stated:

“In California, Bay Area Rapid Transit (BART) ridership, which average 414,000 per day, fell by more than 90 percent in May. Officials there noted they are budgeting a more than \$350 million drop in fare revenue over the next year, assuming ridership remains somewhere near 70 percent below normal. In Chicago, rail ridership on the Chicago Transit Authority (CTA) was down 88 percent in April and bus ridership was down by 71 percent from their usual combined 1.5 million daily riders. Commuter rail line ridership on Metra was down 97 percent from an average of 281,100 per day. The Regional Transportation Authority is estimating that the CTA and Metra combined will have more than \$850 million in revenue losses this year...

When will riders return? The longer and more severe the impacts of COVID-19, the longer it will likely take. Much depends on consumer confidence and the immediate outlook there is grim. According to an April survey of 25,000 United States residents conducted by IBM, more than 20 percent of regular transit riders said they wouldn't ride anymore. Another 28 percent said they planned to use public transit less often...

This fear of close quarters may mean more car commuters. Mobility data from Apple maps suggest car-riding has generally rebounded (and in some places has increased) while transit remains well below normal. And, safety concerns aside, COVID-19 is likely

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<sup>15</sup> See for example: (1) <https://rockinst.org/blog/covid-19-could-change-the-future-of-transit-funding/>  
(2) <https://www.moneycrashers.com/covid-pandemic-change-society-economy/>  
(3) <https://www.rand.org/blog/2020/04/covid-19-the-questions-ahead-for-future-travel-and.html>,  
(4) <https://www.bbc.com/future/article/20200629-which-lockdown-changes-are-here-to-stay>



to speed up the already growing trend of workers telecommuting. Facebook, Google, and Twitter have already said they will let their employees work from home long-term or permanently. This shift in the San Francisco Bay Area, says Nixon Peabody transit finance attorney Rudy Salo, doesn't bode well for BART's long-term ridership. "Could BART be down 90 percent permanently? Definitely not," says Salo, who consults with public transit systems. "Could it be down 20 percent? Possibly."

Increased use of online tools for general shopping (e.g., Amazon), grocery shopping (e.g., Instacart), home entertainment (e.g., Netflix), restaurant delivery (e.g., Grubhub), business meetings (e.g., Zoom, Microsoft Teams), and medical services (e.g., telephone- or video-conference appointments and medical advice) that have become much more prevalent during the pandemic, as well as the recognition that a far larger portion of the nation's workforce are able to work remotely from home, may continue to a far greater degree than pre-pandemic analytic models and methodologies account for.

Factors that may reduce long-term use of transit in comparison to pre-pandemic assumptions include:

- Increased numbers of people working at home as businesses discover cost savings resulting from a reduced need for office space and increased willingness and ability of employees to work at home or other remote locations closer to home.
- A reluctance to use forms of transit and air travel that require people to sit or stand shoulder to shoulder with others leading to increased use of personal vehicles, as well as Uber/Lyft, autonomous vehicles, and small shuttles, which in turn could lead to more cars on the road and potentially result in a greater acceptance of congestion during home-to-work trips as workers are not required to drive themselves and the trip to work becomes almost "personal time."
- Oil prices remaining relatively low due to decreased demand resulting from greater use of renewable energy and increased amount of in-home activities, leading to long-term relatively cheap gasoline prices and an increased willingness to drive to work and other activities, as well as to drive rather than fly for vacations.
- Revisions to building codes reducing occupancy loads, particularly within elevators, to provide for social distancing.

Because sufficient hard evidence is unavailable to support arguments that challenge the validity of models and analytical methods developed before the current pandemic to analyze transit ridership and related environmental effects in a post-pandemic world, as well as arguments to defend those models and analytical methods, the Draft EIR/EIS needs to consider the realistic possibility that the long-term transit ridership projections upon which its business plan is based and the resulting analyses of vehicle miles traveled (VMT), air quality, GHG, and other environmental issues might not be reflective of future conditions.

Therefore, the Draft EIR/EIS needs to recognize that its use of only “medium” and “high” ridership projections may or may not address the range of likely future outcomes of the current pandemic and that use of analytic models and methods developed and validated before the current pandemic may no longer be reflective of future conditions. As a result, it is incumbent upon the Draft EIR/EIS to analyze each of the environmental effects that ultimately rely on pre-pandemic transit ridership estimated (e.g., vehicle miles traveled, air quality, GHG, energy) based on a future “low” ridership scenario alongside the document’s current “medium” and “high” ridership scenarios.

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**The Draft EIR/EIS fails to adequately address the Project’s Transportation impacts (see also Attachment Metis-B: Hexagon Transportation Consultants Transportation comments and resumes).**

*The Draft EIR/EIS Transportation analysis is based on questionable methodologies.*

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The trip generation estimate for the Brisbane LMF used in the Draft EIR/EIS is faulty.

As stated on Draft EIR/EIS page 3.2-13, trip generation from the Brisbane LMF was based on trip rates identified in the Institute of Transportation Engineers *Trip Generation, 10<sup>th</sup> Edition* for a general light industrial use and assumes that “full employment of 150 employees would be required by 2040.” The Brisbane LMF is not, however, a typical “general light industrial” use. It is proposed as a 24-hour, 7-days-per-week operation, which the typical general light industrial use is not. Since the Authority is able to estimate the number of employees that will be working at the LMF, it must also have been capable of estimating the number of employees that would be working at the facility during any given shift, general times for shift changes, and operational details. This information would provide for a more realistic analysis of anticipated LMF traffic characteristics than analysis of traffic impacts from a generic light industrial plant employing 150 people could hope to achieve. Where Project information is or can reasonably be estimated, generalized assumptions should not be used as the basis for analyzing Project impacts.

While it may be argued that using the peak hour traffic generation of a generic light industrial plant employing 150 people yields a worst case traffic analysis, it must also be recognized that such analysis could result in understating related noise impacts by ignoring the fact that the proposed LMF would operate on a 24-hour basis and at least one shift change would occur during nighttime hours. At a minimum, the generic analysis set forth in the Draft EIR/EIS fails to inform the public of actual traffic conditions that the community could expect from 24-hour operations at the LMF. Instead, the Draft EIR/EIS informs the public about the traffic impacts of a generic industrial plant that is not actually being proposed. This is particularly important when considering that development of residential uses immediately adjacent to the West LMF site and in close proximity to the East LMF site as part of the Baylands development is

reasonably foreseeable, as is use of residential streets within the Baylands by LMF employees on a 24-hour basis.

The VTA traffic model used to analyze traffic impacts at intersections in the vicinity of the Brisbane LMF is incapable of accurately predicting intersection turning movements within Brisbane.

The VTA model used to forecast the increase in vehicular traffic at the study intersections along the corridor, including the intersections in and around Brisbane, is too coarse for the model to produce turning movements in Brisbane with reasonable accuracy at Brisbane intersections. Thus, to provide for an accurate analysis of Baylands area traffic for the upcoming Baylands Specific Plan EIR, the City has engaged a professional transportation planning firm to refine/improve the model's coarse transportation network, traffic analysis zones, and land use inputs to a level compliant with national industry standards. Only after model refinements and improvements are completed can the VTA model be used to accurately predict traffic volumes and intersection turning movements in the Brisbane area.

The Draft EIR/EIS does not state that its transportation analysis included such refinement/improvement of the VTA model or if the intersection turning movements produced by the model were manually adjusted (beyond the method of simply adding incremental traffic volumes from the model to traffic counts) to account and compensate for the lack of detailed network coding. Without such refinement/improvement of the VTA model, the results of the traffic modeling presented in the Draft EIR/EIS for the Brisbane area are unreliable. If the manual adjustments were made to traffic model runs beyond just adding the incremental model volumes to the counts, such post-processing of traffic model runs must be explained, and their appropriateness documented.

The socioeconomic datasets used to analyze traffic impacts are outdated and inaccurate.

As stated on Page 4-4 of the Draft EIR/EIS Transportation Technical Report, "The socioeconomic datasets used as inputs to prepare the forecasts are based on Projections 2013 (Association of Bay Area Governments [ABAG] 2013). These datasets are accepted by the Metropolitan Transportation Commission (MTC) to reflect regional model consistency for models used by the congestion management agencies and were used to develop the regional travel demand forecasts for Plan Bay Area 2040, the current RTP and sustainable communities strategy for the Bay Area (ABAG and MTC 2017)." However, Projections 2013 is now 7 years old and was replaced by Plan Bay Area Projections 2040 in November 2018. A further update of regional household and employment projections is currently being undertaken by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) for Plan Bay Area 2050.

ABAG's now outdated Projections 2013 land use data sets for 2015 and 2040 indicate that Baylands employment would only increase by 585 jobs, from 2,761 in 2015 to 3,346 in 2040 and that no residential development would occur within the Baylands. However, in August 2018, the Baylands City Council adopted General Plan amendment GP-1-18, permitting 1800 to 2200 residential dwelling units, 6.5 million square feet of office/commercial development, and an additional 500,000 square feet of hotel use within the Baylands. While Draft EIR/EIS page 3.2-14 states that Year 2040 traffic analysis "reflects future transportation conditions in 2040, including reasonably foreseeable land use changes and transportation network modifications," it does not appear that Baylands development of 1800 to 2200 residential dwelling units, 6.5 million square feet of office/commercial development, and an additional 500,000 square feet of hotel use has been incorporated into the Project's traffic analysis, even though Draft EIR/EIS Section 3.18 (Cumulative Impacts) specifically recognizes that level of Baylands development as a cumulative project. Instead, it appears that the Draft EIR/EIS substantially understated future Baylands development based on the outdated Projections 2013, resulting in severely underestimating Year 2040 plus Project traffic conditions in the Brisbane area.

The "Existing plus Project" methodology used in the Draft EIR/EIS is inappropriate since it analyzes a small subset of the Project and its impacts rather than addressing the entire Project.

As stated on page 3.2-13, "Existing plus Project" conditions include "transportation network modifications necessary to build the project (e.g., roadway closures, roadway modifications)" but do not include any high-speed rail service. Thus, analysis of "Existing plus Project" conditions does not consider the entirety of the Project, including traffic to and from high-speed rail stations and the LMF. Neither does the "Existing plus Project" analysis address all of the roadway intersections that would be affected by the Project. Only the intersections of Bayshore Boulevard/Old County Road and Bayshore Boulevard/Valley Drive in Brisbane, as well as intersections within the San José Diridon Station Approach Subsection, are analyzed "as these are the only areas where intersections would be affected by permanent roadway modifications." Other Brisbane locations, such as the Tunnel Avenue/Lagoon Road intersection and the three closely spaced intersections the Authority proposes to create in Brisbane by extending Visitacion Avenue should have been analyzed in an "Existing plus Project."

For a valid "Existing plus Project" analysis to be conducted, the Draft EIR/EIS needs to evaluate the impacts of the *entire* Project (all physical improvements proposed for the Project, as well as full operations) based on existing (2016) roadway and traffic conditions for all intersections and freeway interchanges evaluated for 2029 and 2040 conditions.

The Year 2029 No Project assumptions used for traffic analysis are confusing.

The Year 2029 No Project assumptions for traffic analysis described starting on page 3.2-13 are confusing. It is unclear whether the Draft EIR/EIS intends to analyze Year 2029 conditions or a

combination of (1) existing traffic and land use conditions, and (2) Year 2029 Project improvements and operations. While it makes sense that an analysis of Year 2029 would assume only two stations (4<sup>th</sup> & King, Diridon), the Draft EIR/EIS is unclear about what level of operations are assumed for the LMF. It is also unclear what assumptions were made for Year 2029 background traffic and land use. Whereas the description of Year 2040 conditions on page 3.2-14 includes “reasonably foreseeable land use changes” (and presumably the traffic generated by the changes), the description of Year 2029 conditions in the Draft EIR/EIS is silent on the inclusion of land use changes (and related traffic). Such information is necessary for the evaluation of traffic impacts in the vicinity of the LMF.

If, in fact, the Draft EIR/EIS intends to conduct a Year 2029 analysis, the analysis must include projected Year 2029 background traffic conditions and projected Year 2029 land use changes. Otherwise, the Draft EIR/EIS would not actually be conducting an analysis of Year 2029 conditions without and with the Project. It is unclear whether the Draft EIR/EIS intended to prepare a true analysis of Year 2029 conditions or an analysis of “Existing plus High-Speed Rail Opening Day 2029” conditions. Without clarification of the Draft EIR/EIS traffic study’s intent, the validity of the document’s findings cannot be determined.

The analysis of Project construction impacts is confusing.

The discussion on page 3.2-14 regarding analysis of construction impacts is confusing. On that page, the Draft EIR/EIS states:

“Because temporary street closures and relocations would occur during the construction phase, these are described qualitatively for the 2029 and 2040 Plus Project conditions in Section 3.2.6. The combined effects from construction and operations are described quantitatively in Section 3.2.6 for the 2029 and 2040 Plus Project conditions.”

If the temporary street closures and relocations that would occur during construction are only addressed qualitatively, how can the “combined effects from construction and operations” be described quantitatively? To provide a realistic evaluation of construction traffic impacts, quantitative analysis of construction traffic must not separate construction traffic generation from the temporary street closures and relocations that would occur during construction. This is particularly important since offsite hauling of materials excavated for the West and East LMF sites would require at least several hundred daily truck trips.



*Both Impact TR#2 (Temporary Congestion/Delay Consequences on Intersections from Temporary Road Closures, Relocations, and Modifications) and Impact TR#3 (Temporary Congestion/Delay Consequences on Major Roadways and Intersections from Construction Vehicles) fail to provide quantitative or qualitative analysis or other substantial evidence to support their conclusions while also deferring impact analysis and mitigation. By segregating analysis of Impacts TR#2 and TR#3, the Draft EIR understates the severity of the Project's construction traffic impacts.*

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Rather than undertake quantitative or qualitative analysis or provide substantial evidence, the Draft EIR/EIS provides only generic conclusions such as that the Project would “result in increased traffic congestion on roadways and intersections from lane or street closures, diversions in traffic from temporary detours, and other temporary disruptions to traffic” from the following anticipated changes to major roadways and intersections:

- Temporary full or partial roadway closures, with associated detours.
- Temporary lane closures with associated detours.
- Temporary damage to pavement conditions from construction traffic and rerouting.
- Temporary changes to traffic signal operations, timing, or phasing to accommodate project construction.
- Temporary lane width reductions and reduced speed limits.
- Temporary loss of or modifications to parking, bicycle facilities, or pedestrian facilities.

Within the San Francisco to South San Francisco Subsection, the Draft EIR/EIS states that “construction of stations, Brisbane LMF, platform modifications, installation of four-quadrant gates at at-grade crossings, track modifications, and passing track and associated structure modifications would require temporary construction easements (TCE), which would require the temporary closures of parking areas or roadway travel lanes, and the construction of overcrossings and interchanges.” Rather than identifying what specific impact(s) might occur as the result of these temporary roadway closures or evaluating their severity, the Draft EIR/EIS provides only the following generic conclusion without presenting evidence or analysis: “These activities would result in increased traffic congestion on roadways and intersections from lane or street closures, diversions in traffic from temporary detours, and other temporary disruptions to traffic.” Following this generic conclusion, the Draft EIR/EIS provides a comparison of Alternatives A and B, noting that they would have the same effects in the two locations where temporary road closures would be necessary: 4<sup>th</sup> & King Station and the Brisbane LMF.

Rather than present a complete description of the Project, analyze its impact, and provide substantial evidence supporting a significance conclusion, Impact TR#2 cites the following as its reason for deferring analysis: “Exact locations of temporary closures, changes, and disruptions

would be determined and minimized during the development of a construction transportation plan.” Yet, the Draft EIR/EIS does, in fact, state that the Tunnel Avenue bridge and Tunnel Avenue would both be temporarily closed during construction of the Brisbane LMF, providing sufficient information for analysis of impacts that the document unfortunately does not conduct. Thus, the Draft EIR/EIS fails to address Project impacts by deferring analysis and mitigation until *after* the Project is approved.

By deferring analysis of known temporary road closures in the vicinity of the Brisbane LMF, Impact TR#2 fails to recognize and mitigate the serious safety consequences that would result from temporary road closures, relocations, and modifications involved in construction of the Brisbane LMF, including deficient emergency access to the Sierra Point portion of the City of Brisbane and to the Kinder Morgan tank farm. Such deficient access during LMF construction-related road closures could result in environmental and property damage, injury, and possible loss of life during emergencies.

At a minimum, discussion of Impact TR#2 needs to clearly describe (1) the temporary roadway closures, changes, and disruptions that the Authority already knows would occur during construction of the Brisbane LMF; (2) the length of time roads would be closed; (3) alternative access available to the Sierra Point area, Kinder Morgan tank farm, and businesses along Tunnel Avenue during temporary closures; and (4) the adequacy of that temporary access. While such analysis would conclude that impacts are significant, the Draft EIR/EIS would not be required to conclude that emergency access impacts were unavoidable by adopting the following mitigation measure to address safety impacts caused by temporary roadway closures in the vicinity of the Brisbane LMF:

**TR-MM#\_\_\_: Temporary Road Access during Brisbane LMF Construction**

The Tunnel Avenue bridge relocation (East and West LMF) and Tunnel Avenue realignment (East LMF only) shall be designed and constructed so as to maintain access along Tunnel Avenue from Beatty Avenue to Bayshore Boulevard as well as access along Lagoon Road between Tunnel Avenue and Sierra Point Parkway open at all times throughout construction of the Brisbane LMF.

By deferring analysis and mitigation of temporary roadway closures, changes, and disruptions to the construction contractor as part of a construction transportation plan (TR-IAMF #2), the Draft EIR/EIS fails in its duty to provide a thorough analysis of the Project’s impacts and environmental consequences.

In lieu of quantitative or qualitative analysis of impacts, Impact TR#3 provides only a generic description of Project impacts, generalized IAMFs to be implemented after Project approval, and an incorrect CEQA conclusion. On page 3.2-58, the Draft EIR/EIS provides the following generic description of Project impacts:

- “Project components would “result in construction traffic, including heavy truck traffic entering and exiting construction sites to deliver materials, transport demolished or excavated materials, and move heavy construction equipment onto the construction site;”
- “Use of heavy equipment and delivery or removal of materials by trucks has the potential to add traffic, especially if movements occur during morning or evening peak periods;”
- “Construction traffic would also result from construction worker trips. Worker vehicles entering and leaving the job sites at the beginning and end of shifts have the potential to increase delays on roadways and at intersections;” and that
- “Construction traffic could lead to interference with local vehicle circulation and operational hazards.”

The discussion of Impact TR#3 undertakes neither quantitative or qualitative analysis to provide the public with an understanding of how much truck traffic might be generated at some of the larger construction sites such as the Brisbane LMF or Millbrae station, nor does the discussion undertake any analysis of the physical environmental effects that such heavy truck traffic might have.

As noted in Table 2-25, Project construction would require offsite hauling of 2,082,800 cubic yards of soils materials from the East LMF, 1,463,700 cubic yards of materials from construction of the West LMF (including 432,000 cubic yards of hazardous materials as disclosed in Section 3.6, Public Utilities), and 160,000 cubic yards of materials from construction of the Tunnel Avenue bridge relocation. Assuming 16 cubic yards of soil materials per truckload, approximately 130.175 truckloads would be required to offload soils from construction of the East LMF, 91,482 truckloads for off hauling of soil materials from the West LMF (including 36,000 truckloads of hazardous materials), and approximately 9,975 truckloads of materials from relocation of the Tunnel Avenue bridge. While the offsite hauling would occur over a period of weeks, or months or maybe years (the Draft EIR/EIS does not disclose how long excavations and offsite hauling of materials would take), Impact TR#3 fails to address the environmental effects, including operational hazards, that such truck hauling might have in combination with deliveries of equipment and materials, disposal of construction waste, and construction workers arriving and leaving the site in relation to the ability of the Brisbane Police Department and North County Fire Authority to provide acceptable response times to any emergency that might occur within the community.

The Draft EIR/EIS thus segments its generalized analyses of construction roadway closures (Impact TR#2) and construction traffic (Impact TR#3), and provides no analysis as to how the combination of Project-related roadway closures *and* Project-generated construction traffic would affect traffic or transit at the Caltrain Bayshore Station, along Bayshore Boulevard in the

vicinity of the Brisbane LMF, or at the Millbrae transit station. The Draft EIR/EIS also does not address the combined effects that roadway closures and added construction traffic would have on emergency response. Impact TR#3 also fails to address any environmental effects that the combination of equipment and materials deliveries; disposal of construction waste and offsite hauling of excavated material; and construction workers arriving, parking at, and leaving the site might have on the ability of transit users to access and use the Millbrae station during high-speed rail construction.

By segregating discussion of impacts related to construction road closures necessitated by the Project (Impact TR#2) from discussion of the amount of construction traffic that would be generated and resulting roadway congestion (Impact TR#3), the Draft EIR/EIS fails to address the temporary construction congestion/delay and transit consequences of the whole of the Project.

Following its segregated, generic, and incomplete analyses of Impacts TRA#2 and TRA#3, the Draft EIR/EIS defers the needed analysis of impacts in favor of future implementation of IAMFs, citing the following:

- “To reduce traffic conflicts caused by construction, the contractor would prepare a CTP (TR-IAMF#2). The CTP, which would be reviewed and approved by the Authority, would address, in detail, the activities to be carried out in each construction phase. The CTP would provide a traffic control plan that would identify when and where temporary closures and detours would occur, with the goal of maintaining traffic flow, especially during peak travel periods. The traffic control plan would be developed for each affected location and would include, at a minimum, signage to alert drivers to the construction zone, traffic control methods, traffic speed limitations, and alternative access and detour provisions during road closures. Any temporary closure or removal of parking areas or roadways during construction would be restored upon completion of construction. **Efforts would be made** to minimize their removal or shorten the length of time these facilities are inoperable **to the extent possible.**” (emphasis added)
- “All truck traffic, either for transporting excavated materials from the site or for transporting construction materials to the site, would use the designated truck routes in each city (TR-IAMF#7) **to the extent feasible.** As part of the CTP, truck routes would be established away from schools, childcare centers, and residences, or along the routes with the least effect to minimize operational hazards. A detailed construction access plan would be developed and implemented for the project prior to any construction activities. The construction access plan would be reviewed by local city, county, and transit agencies. The movement of heavy construction equipment such as cranes, bulldozers, and dump trucks to and from the site **would generally occur during off-peak hours on designated truck routes.** Once on-site, heavy construction equipment would remain until its use for that job is completed so that equipment is not moved repeatedly to and from the construction site over public streets.” (emphasis added)

- “Trips for construction workers **would generally occur outside of peak hours for roadway and freeway traffic.** The contractor would **limit the number of construction employees** arriving or departing the site between the hours of 7:00 a.m. and 8:30 a.m. and 4:30 p.m. and 6:00 p.m. (TR-IAMF#6). The contractor would also **limit construction material deliveries** between 7:00 a.m. and 9:00 a.m. and 4:00 p.m. and 6:00 p.m. on weekdays to reduce traffic conflicts generated by construction traffic.” (emphasis added)

In the absence of a qualitative or quantitative analysis of the combined environmental effects of Impacts TR#2 and TR#3 beyond generic statements and deferred mitigation that might or might not avoid significant impacts, the Draft EIR/EIS has no basis for determining impacts to be less than significant. In the absence of an understanding of the extent of the Project’s construction impacts and definitive performance standards, these measures defer Project impact analysis and mitigation while offering no assurance that any of the Project’s significant impacts would actually be avoided or reduced to less than significant. In addition, the use of phrases such as “to the extent feasible,” truck movements that “would generally occur during off-peak hours on designated truck routes” yet to be determined, and the contractor would limit the number to construction employees and construction material deliveries during peak am and pm weekday travel hours to some unknown degree provides no basis for determining that impacts would be less than significant.

Finally, the CEQA conclusions set forth for Impacts TR#2 and TR#3 rely on the additional assertion that under CEQA, “automobile delay is not a significant environmental impact.” However, as noted above, the discussion of Impacts TR#2 and TR#3 does not analyze whether traffic delays caused by the Project’s temporary construction roadway closures and construction traffic would either (1) hinder emergency access (safety impact), or (2) adversely affect the use of transit. Both types of impacts are, in fact, recognized by CEQA as significant physical environmental effects.

*The analysis of Impact TR#4 (Permanent Congestion/Delay Consequences on Intersections from Permanent Road Closures and Relocations) is incomplete.*

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**Impact TR#4 fails to analyze whether the Project’s proposed road relocations would be adequate to accommodate projected traffic.**

The discussion of Impact TR#4 analyzes only Existing Plus Project conditions but conducts no analysis whether the realigned Tunnel Avenue, relocated Tunnel Avenue bridge, or realigned streets providing access to Brisbane’s downtown area would be adequate to accommodate future traffic conditions. While the reader is informed that moving the intersection of Tunnel Avenue from the Bayshore Boulevard/Old County Road intersection to the Bayshore Boulevard/Valley Drive intersection would not, by itself, cause existing traffic to exceed Level of Service (LOS) D, the discussion provides no indication of what the actual effect of proposed roadway configurations would be or whether roadway modifications constructed by the



Authority would be adequate to accommodate future traffic volumes. Should any portion of the roadway realignments and bridge relocation proposed by the Authority prove inadequate to accommodate future traffic volumes, Brisbane taxpayers would be required to pay for necessary improvements to fix problems caused by the High-Speed Rail project.

Impact TR#4 fails to analyze the adequacy or long-term safety effects of realigning Brisbane streets providing access to its downtown area.

The Project proposes modifications of streets providing access to Brisbane's downtown area. However, the Draft EIR/EIS fails to analyze the adequacy or safety of their proposed roadway realignments. As shown in the figure below, the Authority proposes to extend Visitacion Avenue from its current terminus at Old County Road (Intersection 4) to a new unsignalized intersection with Valley Drive (Intersection 2) at Old County Road Intersection 2). The result would be closely spaced intersections with less than:

- 275 feet from the signalized Bayshore Boulevard/Valley Drive intersection #1<sup>16</sup> to the new unsignalized Visitacion Avenue/Valley Drive intersection #2;
- 225 feet from the new unsignalized Visitacion Avenue/Valley Drive intersection to the existing signalized Valley Drive/Park Place intersection #3; and;
- 440 feet from the new unsignalized Visitacion Avenue/Valley Drive intersection #2 to the new unsignalized Visitacion Avenue/Old County Road intersection #4.



By extending Visitacion Avenue to Valley Drive, the Project would mix traffic generated by existing downtown businesses, the Brisbane library and a large portion of Central Brisbane's residential area with traffic from the Crocker Business Park, the Brisbane City Hall, Brisbane Police Department, and Brisbane post office in a series of tightly spaced intersections. The Draft EIR/EIS fails to note that the proposed reconfiguration of Brisbane's streets in and around City Hall, Brisbane police headquarters, and downtown Brisbane would block access to an existing business on Valley Way, while removing parking from that business and two additional existing businesses on Park Place.

<sup>16</sup> "Intersection #s" refer to the intersection #s in the graphic to the right of the text.

As part of preparation and review of the City's Parkside Precise Plan, various options were evaluated for extending Visitacion Avenue through to intersect with Valley Drive, including the concept currently being proposed by the Authority. In December 20015, Hexagon Transportation Consultants reviewed these options and noted that the extension of Visitacion Avenue would result in three closely spaced intersections that would have operational issues. Members of the public subsequently rejected extending Visitacion Avenue through to Valley Drive.

Without disclosing or providing analysis of these proposed roadway modifications, Impact TR#4 nevertheless concludes:

"The changes to the geometry and capacity of intersections would realign and replace roadways and modify intersections but would not cause a degradation in operations of the roadway network. The project alternatives would not result in delays or reductions in peak-hour traffic operations from permanent road closures and relocations. Under CEQA, automobile delay is not a significant environmental impact."

While it is true that CEQA does not consider automobile delay to be a significant impact, safety and emergency response impacts arising from the closely spaced proposed by the Authority in the vicinity of Brisbane City Hall and its Police Department and downtown area would be considered significant impacts. Should the proposed modification of Brisbane streets, new closely spaced intersections, and shifting of traditional downtown area traffic patterns prove inadequate to accommodate future traffic volumes, unsafe, or detrimental to emergency response from the Brisbane police station, Brisbane taxpayers would be required to pay for necessary improvements to fix problems caused by the High-Speed Rail project.

In the absence of specific analysis of traffic and required turning movements along Bayshore Boulevard at Valley Drive, proposed new intersections, and the Valley Drive/Park Place intersection adjacent to the Brisbane Police Department located at 147 Valley Drive, as well as left turn queueing requirements in the area, the Draft EIR/EIS can make no valid determination for Impact TR#4 as to the significance of traffic, safety or emergency response impacts associated with the Authority's proposals to realign Brisbane's streets and move the community's traditional entry to its downtown area.

*The Draft EIR/EIS does not commit to mitigating traffic impacts.*

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On page 3.18-12, the Draft EIR/EIS states:

"Potential mitigation that could reduce congestion or delay at affected intersections or freeway segments has been identified in TR-MM#1: Potential Mitigation Measures Available to Address Traffic Delays (NEPA effects only). However, because traffic congestion/delay is not a CEQA impact and because implementation of mitigation

measures is not mandatory under NEPA, **this mitigation is not assumed to be implemented. Rather, implementation would be at the discretion of the lead agency.** Thus, assuming this mitigation is not implemented, the project alternatives would contribute to this cumulative effect. (emphasis added)

Because Mitigation Measure TR-MM#1 reflects IAMF TR-IAMF#12, it is questionable what, if anything would actually be done by the Project to address its traffic impacts on local communities. As they are written, TR-IAMF#12 and TR-IAMF#1 only address “permanent road closures and relocations, increased gate-down time at at-grade crossings, and vehicle flow to/from HSR stations” and provide various standard vehicle capacity enhancements such as signal retiming or additions, lane restriping, road/intersection widening and turn pocket additions/increases (including right-of-way acquisitions as needed), and contribution to regional/joint solutions to implement such enhancements; and measures (to the extent not already addressed by TR-IAMF#12) to encourage diversion of HSR station access trips from single-occupancy vehicles to other modes.” In the absence of any measurable performance standards, mitigation is vague, deferred, and unenforceable since as stated in Mitigation Measure TR-MM#1, these measures are “at the discretion of the lead agency,” the High-Speed Rail Authority.

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**The Draft EIR/EIS and its Noise and Vibration Technical Report are based on overly simplified methodologies and a lack of attention to local conditions, leading to questionable results and a generalized presentation of impacts that fails to fully disclose how communities along the High-Speed Rail route would be impacted.**

Although the Draft EIR/EIS and its Noise and Vibration technical report cite and quote FRA and FTA guidance, the lack of detail provided in the Project’s noise analysis and presentation of results does not correlate with FTA and FRA guidance regarding the level of detail needed for analysis and presentation of results. The Draft EIR/EIS and its technical report do not document how noise and vibration analyses undertaken for the Project actually followed FRA and FTA guidance methodology. No information is provided as to the rationale for relying on assumptions where FRA and FTA guidance call for more detailed information than was disclosed in the Draft EIR/EIS.

As a result, analysis of noise and vibration impacts is based on several unsupported assumptions leading to a poor and generalized presentation of impacts that does not permit members of the public to determine whether their homes would be impacted or affected cities to understand which local neighborhoods would be impacted.

As discussed below and in the more detailed noise and vibration comments provided by Entech Northwest (Attachment Metis-C), at a minimum, Draft EIR/EIS Section 3.4 and the Noise and Vibration Technical Report upon which it is based must be thoroughly revised to:

- Substantiate the assumptions used in their analysis;

- Comply with FTA and FRA guidance regarding the level of detail required for noise and vibration analyses and presentation of the results of that analysis; and
- Provide the public with sufficient information to understand the extent to which their homes might be impacted and cities along the route between San Francisco and San José with the ability to understand the impacts their constituents would face.

This information needs to be presented in terms of the state land use/ noise compatibility guidelines used commonly used by California cities in their local General Plans and in CEQA analyses for development projects throughout the state, rather than federal standards that are not commonly used by California cities.

Thus, the Draft EIR/EIS needs to (1) provide a correlation of the federal standards used in its noise analyses with the State's land use/ noise compatibility guidelines and the noise standards used by communities along the route and (2) analyze the consistency of Project-generated construction and operational noise with General Plan or noise ordinance noise standards of local agencies, which should be used as noise significance thresholds consistent with CEQA Guidelines Appendix G.

*The generalized noise analysis undertaken for the Draft EIR/EIS ignores the effects of Brisbane's terrain on noise propagation and attenuation and thereby understates the intrusiveness of Project-related high-speed rail and LMF-generated noise in the community.*

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There has long been a perception among Brisbane residents that noise is amplified in Brisbane compared to other communities. The Final Brisbane Baylands Program EIR (Section 2.9.2, Response to Comment BCC-412) analyzed this phenomenon and determined that the City's terrain did, in fact, have an effect on noise propagation in the community. First, the shape of Brisbane's terrain tends to act as a noise barrier for ground-based noise sources from outside of Brisbane into the community in all directions except toward the east across the Baylands. Thus, the hillsides around Brisbane act as noise barriers, blocking noise from US 101, Bayshore Boulevard, and other sources north and south of the City. This tends to reduce background sound levels and make other sounds such as train passbys and aircraft overflights much more noticeable than they might be in a more urbanized setting. This is a typical condition in suburban communities where noises generated at night are more noticeable than during the day and can be heard at greater distances, even if such noise is no louder at night than it was during the day. In Brisbane, however, the community's terrain blocks outside noise sources, the result of which is that noise generated within the community is more noticeable throughout the day and particularly so at night.

Second, the slopes on which most community members reside means that their homes, like seats in an amphitheater, have a "good view" of noise sources within the Baylands. As a result, noise generated within the Baylands will propagate better and attenuate less over distance than

in a typical flat community where buildings and rolling topography would intercept lines-of-sight between noise sources and sensitive receptors.

As a result, noise generated within the Brisbane LMF will propagate through the community and be more intrusive for Brisbane residents, particularly at night, than would typically occur in the more urban communities along the San Francisco to San José high-speed rail line. Unless the noise analysis prepared for the Draft EIR/EIS, specifically accounts for the topographic effects of noise within Brisbane, the impacts of noise Project-generated noise from high-speed rail trains and LMF operations on the community would be understated.

*The noise and vibration methodologies used in the Draft EIR/EIS and its Noise and Vibration Technical Report are simplistic and poorly described. The validity of the noise and vibration technical report's findings are therefore questionable.*

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As documented below and in Entech's detailed technical comments (Attachment Metis-C), Project impacts are not properly defined in the Draft EIR/EIS as the result of not following FTA and FRA guidance, overly simplified and unsupported assumptions used for impact analysis, and an unclear definition of the Project being analyzed.

While the Technical Report states that its analyses follow FTA and FRA guidance and include direct quotes from that guidance, the report does not document how it actually incorporates that guidance when applied to the Project noise sources, how assumptions were crafted when FTA and FRA guidance called for more detailed operational information than was provided in the Authority's description of the Project, and the level of detail for reporting noise analysis results.

For example, because neither the High-Speed Rail Authority nor Caltrain have yet selected the trainsets that will be used, the noise and vibration analysis presents assumptions and judgments to assess impacts. While assumptions and judgments are necessary since the specific trainsets that will be used cannot be known at this time, the Draft EIR/EIS fails to substantiate the reasonableness of the assumed noise and vibration characteristics of future Caltrain and HSR trainsets and provides no assurance that the trainsets ultimately put into service by Caltrain and the Authority would not generate noise or vibration impacts greater than those assumed in the Draft EIR/EIS analyses.

Further, the noise and vibration analyses appear to generalize the use of calculating relevant noise sources, including trainsets, horn noise, stations, maintenance yards, and traction power facilities through a series of unsubstantiated assumptions, which dilutes the detailed analysis required for impact assessment and prevents full disclosure of Project impacts to the public within the various communities along Project's route between San Francisco and San José.

The multiple elements involved in analyzing the Project's noise and vibration impacts include, but are not limited to, blended Caltrain and HSR service operations; Caltrain's phased



conversion from diesel to EMUs; speed variations based on the type of specific type(s) of EMU(s) that maybe in operation at a particular future design year; physical limitations present in certain areas along the route limiting train speed; differences in local conditions such as topography and density of development along the route and their effect on noise and vibration propagation; and changes in land use between existing, 2029, and 2040 land use patterns. Each of these parameters requires consideration.

Where local conditions or operating parameters are known, such as local topography and maximum train speeds along various portions of the route, actual conditions should be used as the basis for analysis rather than imposing a “one size fits all” assumption for the entirety of the route. Where a parameter cannot be known at this time and reasonable assumptions must be made, the rationale behind each assumption needs to be disclosed in the Draft EIR/EIS. When assumptions are employed in lieu of available information and the reasonableness of assumptions that must be made are not discussed in the Draft EIR/EIS as is the case, the results of such analyses cannot be validated nor can determinations of the significance of noise and vibration impacts be substantiated.

The definition of “No Project” and “Project” for future year analysis is unclear and may understate Project impacts.

Project impacts analyzed in the Noise and Vibration Technical Report should be analyzed based on the following:

- **Existing Conditions**
  - No Project: 2016 noise, vibration, and land use. Existing (2016) Caltrain operations.
- **Year 2029 Analysis**
  - No Project: projected 2029 background noise and vibration levels. Caltrain operations (25% diesel and 75% EMU) including increased number of trains at 79 mph. Projected year 2029 land use adjacent to the Caltrain right-of-way, stations, and LMF.
  - Project: projected 2029 background noise and vibration levels including Caltrain (fully electrified) operating at 79 mph *plus* HSR operating at 79 mph. Address impacts to projected 2029 land uses.
- **Year 2040 Analysis**
  - No Project: projected 2040 background noise and vibration levels. Caltrain operations (fully electrified) including increased number of trains at 79 mph for CEQA analysis. Projected year 2040 land use adjacent to the Caltrain right-of-way, stations, and LMF.

- Project Alternatives: projected 2040 background noise and vibration levels including Caltrain operations at 79 mph *plus* Caltrain EMUs increasing speeds to 110 mph and HSR EMUs operating at 110 mph due to the Project providing rail improvements. Address impacts to projected 2040 land uses.

The noise and vibration analysis assumes that 100% conversion to EMUs for Caltrain operations would result in the same level of impacts as those presented in the Caltrain PCEP Noise and Vibration Technical report. However, the noise and vibration analysis presented in the Peninsula Corridor Electrification Project Final Environmental Impact Report Volume I: Revised Draft EIR SCH #2013012079 December 2014 (PCEP EIR) only assumed speeds of EMUs at 79 mph and not 110 mph, even at full implementation. Because Caltrain EMUs would operate at a maximum speed of 79 mph in the absence of the high-speed rail Project improvements but would be able to operate at 110 mph due to Project improvements, increases in the *speed* of future Caltrain operations needs to be addressed as an impact of the High-Speed Rail project, while increases in the *number* of Caltrain operations would not be part of the Project since Caltrain already plans to increase the number of future operations even in the absence of high-speed rail service.

The increased speeds of future Caltrain EMU operations from 79 mph as addressed in the PCEP EIR to 110 mph once High-Speed Rail project improvements have been completed do not appear to be addressed in the Draft EIR/EIS as a Project impact. By including increased speed of Caltrain EMU operations as part of background noise conditions, the Draft EIR/EIS understates Project impacts since Caltrain would not operate at 110 mph except for the rail improvements proposed as of the Project analyzed in the Draft EIR/EIS. If, on the other hand, the Draft EIR/EIS assumes that Caltrain EMUs have the same noise and vibration characteristics operating at 79 mph as they would operating at 110 mph, substantial evidence in support of this counterintuitive assumption needs to be provided.

Because the Draft EIR/EIS (1) purports to analyze 2040 No Project and With Project conditions, (2) the Project's traffic analysis specifically states that 2040 conditions include all reasonably foreseeable future projects, and (3) proposed Baylands development as approved by the City in GP-1-18 is included as a cumulative project in Section 3.18, Cumulative Impacts, it does not make sense the Project's 2040 noise and vibration analysis fails to analyze impacts of the Project's 2040 rail and LMF operations on proposed residential uses within the Baylands adjacent to the LMF sites. Year 2040 analysis needs to address Project impacts on projected 2040 land uses throughout the Project corridor.

Because manufacturers have not yet been selected for HSR and Caltrain trainsets, assumptions used for the noise and vibration characteristics for these trainsets may be unreliable.

The Draft EIR/EIS fails to present evidence that the assumptions used for Caltrain and high-speed rail trainsets are representative of the noise- and vibration- generating characteristics of

current and likely future available trainsets along with assurance that the noise and vibration characteristics of the specific trainsets that are ultimately put into operation would not exceed the assumptions used to analyze noise and vibration impacts.

In the absence of site-specific geotechnical investigations along the proposed High-Speed Rail route, the results of Draft EIR/EIS vibration analyses may be understated.

FTA and FRA methodology is heavily dependent on formulas that require adjustments based on site-specific geotechnical and operating conditions. In the absence of (1) site-specific geotechnical investigations and enforceable commitments to the operating parameters assumed in the Draft EIR/EIS or (2) substantial evidence that the geotechnical document research and operating assumptions presented in the Draft EIR/EIS provide for a reasonable worst-case analysis, the Draft EIR/EIS may understate Project impacts.

The Draft EIR/EIS and its Noise and Vibration Technical Report present inconsistent description of train length and fails to disclose the potential for operating double trainset configurations, leading to inadequate analysis of operational noise.

There are inconsistencies in the computation of the number of cars, length of each car and the length of a trainset.

As stated on Noise and Vibration Technical Report page 4-12:

“For the purposes of this analysis, the HSR trains are assumed to have a length of 660 feet. The various train technologies under consideration would incorporate 8 to 14 cars, with the length of each car varying to yield a train length of 660 feet.”

However, the discussion of vibration methodology in the fifth paragraph of page 4-39 of the technical report refers to train length as “approximately 600” feet. In addition, Draft EIR-EIS Appendix 2-F states that train sets would be “operated and maintained in a configuration of 660-foot sets with the potential to operate in double trainset configuration of 1,320-foot total length sometime in the future.” Because accurate train length affects the predictive results of future impacts, the inconsistent description of trainset lengths could affect results of noise and vibration analyses. Therefore, a consistent train length must be used throughout all noise and vibration analyses. In addition, the failure of the Draft EIR/EIS to disclose or analyze the “potential to operate in double trainset configuration of 1,320-foot total length sometime in the future” results in an inadequate analysis of noise and vibration impacts. If the Authority wishes to be able to operate a “double trainset configuration of 1,320-foot total length,” the Draft EIR/EIS description of the project must disclose this potential and its noise and vibration analyses must address the impacts of such a double trainset.

The Draft EIR/EIS and its Noise and Vibration Technical Report rely on outdated noise monitoring and lack sufficient detail to determine whether there is an adequate number of monitoring sites identified to reflect existing noise and vibration levels at the time of the Notice of Preparation.

Noise and Vibration Technical Report page 4-9 states, “Analysts established the existing noise levels throughout the noise RSA through extensive field noise measurement programs. Wilson Ihrig conducted noise measurements in 2009, 2010, 2013, 2016, and 2017. A total of 75 measurements of ambient noise were taken in the noise RSA.” Within the vicinity of the Brisbane LMF, seven locations were monitored for noise, three of which were within the City of Brisbane:

- Tunnel Avenue, San Francisco on 5/26/2016
- 18 McDonald Avenue, Daly City on 5/26/2016
- 104 Main Street, Daly City on 5/26/2016
- 163 Mission Blue Drive, Brisbane on 5/26/2016
- 42 San Francisco Avenue, Brisbane on 5/31/2016
- 50 Joy Avenue, Brisbane on 11/3/2009
- 1300 Veterans Boulevard, South San Francisco on 3/9/2010

No information is presented as to why noise readings taken in 2009 and 2010 during a severe economic downturn would be representative of 2016 baseline conditions, nor is any information provided as to why noise monitoring was not undertaken within the Baylands to provide a basis for reporting Project impacts on adjacent planned residential uses. Also, it is unclear how the limited amount of noise monitoring taken within the City of Brisbane would be able to capture the community’s unique noise environment.

Noise and Vibration Technical Report Table 5-1 lists land use types but does not correlate them to FTA/FRA category types (i.e. 1, 2 or 3). Further, the technical report needs to indicate what the dominant source of noise was during the measurement and the distance from the Caltrain line to confirm whether there is adequate coverage of receivers identified within the screening distance presented. In the absence of this information, the reliability of the noise and vibration analysis evaluated for all affected land uses as per FTA and FRA guidance is questionable.

The mapping provided in Draft EIR/EIS Noise and Vibration Technical Report Figures 5-1 through 5-4 needs to be revised and presented at a scale that residents and cities along the route could use to determine the extent to which they might be impacted by Project-generated noise per FRA Guidance page 5-31. The figures provided in the Technical Report are only useful to show that all of the monitoring locations were adjacent to the alignment. However, it is difficult to discern which locations were how close to what design features or locations where tracks

were proposed to be shifted closer to sensitive receivers. It is also difficult to discern what existing and planned land uses were within the vicinity of these measurements. Further, the type of vibration or noise measurement is not depicted on these figures. As a result, it is impossible to discern from the figures whether measurements taken at any given location were conducted over a single day or several days, or whether vibration measurements were taken simultaneously with noise monitoring at a location. It is important that this information be disclosed since the existing noise environment may be under- or overstated in certain areas if adequate sampling of measurements were not taken.

The Draft EIR/EIS lacks detail as to how field monitoring data inputs were incorporated to apply project-specific vibration propagation characteristics into the analysis.

The noise and vibration analysis presented the measurement data that was included from other studies to establish existing noise and vibration levels. However, it does not appear that the field data were used as inputs to determine force density and transfer mobility of existing geology. The methodology described in the technical report discusses utilizing a detailed analysis approach for noise and vibration. However, it is unclear whether the final evaluation of impacts adapts measurements to adjust for soil conditions along the Project route and the current behavior of vibration impacts with site geometry. It is also unclear if there is sufficient information to document the surface fill compaction characteristics of the Baylands area within which the Brisbane LMF is proposed and other adjacent areas along the Project alignment to accurately estimate local vibration characteristics.

The Draft EIR/EIS lacks clarity regarding evaluation of noise levels between train passbys during the nighttime hours.

The analysis assumes that LMF noise would not contribute to the Project's noise impacts when added to noise from train operations to calculate average noise levels. Even if LMF operations would not increase daily or 8-hour average noise levels within Brisbane, LMF operations would generate noise audible to existing and future Brisbane residents on a 24/7 basis. LMF noise would be audible to much of the community during the day and throughout the night during times when there are no trains passing by. Therefore, evaluation of noise generated by the LMF needs to be undertaken to document the  $L_{max}$  and one-hour  $L_{eq}$  noise levels Brisbane's existing and planned residential neighborhoods would experience during the day and throughout the night, seven days per week. Simply saying that high-speed rail train noise will be loud enough that the community would not be impacted by noise from the LMF and not analyzing the Project's noise impacts as they would be experienced within Brisbane displays a callous disregard for the community that would be affected by Project-generated noise on a 24/7 basis.



The Draft EIR/EIS lacks clarity as to whether all noise sources were identified, and the associated methodology used for each analysis year.

FTA and FRA guidance requires that analysis of each noise source apply formulas outlined in the guidance to calculate the associated  $L_{dn}$  or  $L_{eq}$  based on land use type. All of these sources then need to be added together to obtain a total  $L_{dn}$  or  $L_{eq}$  value. Integrating different methodologies is also required to evaluate blended service between Caltrain and High-Speed Rail. Existing conditions may require FTA criteria only for diesel trains operating by Caltrain. In contrast, in 2029, No Project conditions may require use of both FTA and FRA methodology to account for Caltrain's 25%/75% conversion of diesel units to EMUs and for High-Speed Rail trains. Further, stationary sources are evaluated with FTA criteria, and High-Speed Rail is evaluated with FRA criteria. Information as to how the methodologies used to evaluate noise impacts in the Draft EIR/EIS adhere to and integrate FRA and FTA guidance is unclear.

In addition, the Draft EIR/EIS addresses the impacts for the Project's noise impacts separately and then reach significance conclusions for individual noise sources without reporting the Project's *total* noise impact. The Draft EIR/EIS does not provide a comprehensive analysis of the total noise impacts for the entirety of the Project. In addition, while using an assumed travel speed of 110 mph for the entirety of the route between San Francisco and San José could be considered a worst-case analysis, such an assumption oversimplifies the Project's impacts. While reasonable assumptions can and should be made where more detailed information is not available, the Authority does, in fact, know that there are portions of the San Francisco to San José route where 110 mph speeds cannot be achieved. If, in fact, 110 mph speeds cannot be achieved due to physical or other constraints, the Draft EIR/EIS should provide a more realistic and accurate noise evaluation identifying the Project's impacts based on known constraints, rather than overstating impacts by assuming train speeds that cannot be achieved.

The Draft EIR/EIS needs to provide a more extensive characterization of the existing environment that identifies where sensitive receptors are located directly adjacent to the tracks and areas, such as in Brisbane, where existing sensitive receptors may be further away but have a direct line-of-sight to Project noise sources and would be potentially affected.

The Draft EIR/EIS "one size fits all" methodology for noise and vibration analysis that ignores local conditions along the route results in (1) understating noise impacts in Brisbane where local conditions are conducive to noise propagation, (2) overstating noise impacts in areas where trains would not be able to operate at 110 mph creating unnecessary anxiety for residents and communities identified as being severely impacted that would not actually experience severe noise impacts, and (3) potentially inaccurate results in areas where site-specific geotechnical studies were not undertaken to address ground vibration characteristics.

*The presentation of impacts in the Draft EIR/EIS and its noise and vibration technical report is overly general, poorly described, and does not comply with FRA and FTA guidance regarding the detail needed for presenting results. The Draft EIR/EIS and its noise and vibration technical report lack readable mapping that disclose future noise conditions. As a result, the public is deprived of the opportunity to understand how the High-Speed Rail project would impact their homes and their communities.*

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The Project's noise and vibration analysis lacks sufficient detail to demonstrate that all affected land uses were evaluated or to provide an understanding of the extent to which various areas along the San Francisco to San José route would be affected by the Project.

The Noise and Vibration analysis does not provide sufficient detail to discern where areas of impact exist throughout the San Francisco to San José route. Neither the technical report nor the Draft EIR/EIS disclose this information in a manner where a resident that might be affected by the Project could determine whether their home would be impacted by Project-generated noise or vibration levels along with the relative severity of the impact.

The Noise and Vibration analysis does not clearly define existing clusters of residential and other land uses affected by the project. From the summary of the technical report's impact discussion, it can be determined that there are over 5,000 impacts. However, there is no detailed information provided in the Appendices or the Draft EIR/EIS as to what specific areas would be affected, the future noise and vibration levels residents and communities would experience, and the Project's contribution to future increased changes in noise and vibration levels by location. Further, the Noise and Vibration Technical Report mentions that the screening distance was extended to 2,500 feet. However, a majority of the ranges shown in the summary tables are less than 500 feet. The technical report needs to better identify what specific areas and land uses were evaluated beyond 500 feet.

The Draft EIR/EIS needs to include a table listing the information required by FRA guidance (Chapter 5.3.1 Assessment Procedure), which provides for the listing of affected land uses by FTA and FRA categories (1, 2 or 3) with receiver identification, the land use type, the number of the noise-sensitive site represented by the receiver, description of the location by address or adjacent cross street, the distance from the centerline of the track to the receiver, the Existing Noise Level and Predicted Noise Level, the change between and Existing and Future Predicted Noise Level, the applicable criteria and whether the Project creates an impact along with the severity of that impact.

In addition, Chapters 4 and 5 of FRA guidance describe how impacts should be presented. GIS tools should be used to depict a sufficient level of detail that provides residents and cities along the Project route with the ability to determine whether and to what extent their homes and communities would be affected by the Project. Mapping should be presented with aerial

photographs overlaid with land uses and Project alternatives. A scale of 1 inch (in) = 200 or 400 feet is appropriate for the accuracy needed in the noise assessment. The size of the base map should be sufficient to show distances of at least 1,000 feet from the centerline of the alignment and needs to be scalable for digital viewing.

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**The Draft EIR/EIS fails to adequately address the Project’s Public Utilities and Energy Impacts and uses faulty methodology to address available water supply for the Brisbane LMF.**

*Impact PUE#4, Temporary Impacts from Construction of New Utility Infrastructure, does not identify or address the impacts of the public utility infrastructure needed for the Project.*

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No analysis is provided to substantiate the conclusion that impacts of constructing electrical infrastructure would be less than significant.

After a general description of electrical infrastructure needed for the Project, Impact PUE#4 states, “All network upgrades would be implemented pursuant to CPUC General Order 131-D (Rules Relating to the Planning and Construction of Electric Generation, Transmission Power Distribution Line Facilities and Substations Located in California).” (Draft EIR/EIS, pp. 3.6-52-53) Without any analysis, the Draft EIR/EIS simply assumes that CPUC General Order 131-D is sufficient to guarantee that impacts would be less than significant. The PUC routinely conducts environmental analyses of electrical facilities that require implementation of mitigation measures to address significant impacts. At a minimum, the Draft EIR/EIS must provide an explanation of how General Order 131-D would reduce impacts of the specific electrical infrastructure need for the Brisbane LMF to less than significant.

Impact PUE#4 does not address water, wastewater, and other utility infrastructure needed for the Brisbane LMF.

Impact PUE#4 addresses only electrical infrastructure. While the Draft EIR/EIS provides existing setting information for water, wastewater, natural gas, telecommunications, and other utilities, no information or environmental analysis is provided regarding Project construction of water, wastewater, or other utility infrastructure. While it may make sense not to address construction of utility infrastructure for high-speed rail stations that are already served by public utilities, the failure to discuss the public utility infrastructure needs of the Brisbane LMF, which is proposed on a site with very limited utility service and infrastructure that is known to be inadequate to serve future development, is a critical omission. In the absence of any analysis of the availability and adequacy of existing water, wastewater, natural gas, and telecommunications infrastructure to serve the Brisbane LMF site, it is impossible to (1) determine what utility infrastructure improvements might be required; (2) analyze the impacts of constructing on-and off-site infrastructure improvements needed for the LMF; and (3) draw a valid conclusion regarding the significance of temporary impacts from construction of new utility infrastructure.

*The methodology used to address Impact PUE#5 (Temporary Impacts from Water Use) is confusing and fails to disclose how water use calculations were developed.*

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Neither the discussion included in the Draft EIR/EIS for Impact PUE#5 nor the water use assessment contained in Appendix 3.6-C provides information regarding how construction water demand was actually calculated. Appendix 3.6-C: Water Use Assessment states that water would be required during construction “to prepare concrete, increase the water content of soil to optimize compaction, clean equipment, control dust, and re-seed disturbed areas; and conduct drilling and other ground excavation activities,” and that “water use for construction of the project was estimated based on the number of water trucks anticipated to be required during construction.” (p. 3.6-C-1) However, while Table 2 of Appendix 3.6-C indicates that construction of the East LMF would require a total of 2.1 million gallons of water and that the West LMF would require a total of 2.0 million gallons of water, no information is presented in either the Draft EIR/EIS or Appendix 3.6-C to explain how those figures were actually calculated or whether water use calculations were based on the actual amount of excavation and grading required for the East and West LMFs, as well as any special conditions that might apply for construction within the former Brisbane Landfill.

Impact PUE#5 and Appendix 3.6-C fail to identify how much site grading of the West and East LMFs (or any other Project component) would require watering, how many water trucks would be needed to deliver water to the Project’s various construction sites including the LMF, or how total water use for construction was actually determined.

While Appendix 3.6-C states that water “would be supplied to construction work sites by water tanker truck,” only very generic information is provided for how many daily water tanker truck trips would be needed, which raises questions about whether water tanker truck trips were accounted for in transportation and mobile source air quality construction impact analyses. In the absence of such information and confirmation that water deliveries were, in fact, included in Project traffic and mobile source air quality construction impact analyses, the less than significant impacts conclusions set forth in the Draft EIR/EIS for transportation and air quality construction impacts cannot be substantiated.

*Impact PUE#7 (Temporary Generation of Solid Waste and Hazardous Wastes) understates impacts by failing to disclose that construction of the East LMF would require removing a substantial amount of solid waste from the former Brisbane landfill.*

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The analysis of solid waste generation during Project construction fails to disclose that a large portion of the East LMF overlies the former Brisbane Landfill and that construction of the East LMF would require excavation and disposal of a substantial quantity of solid waste within that landfill. As a result, the Draft EIR/EIS understates the amount of excavated material from the East LMF that would require disposal in a permitted landfill. In addition, the Draft EIR/EIS does not disclose that the former landfill received waste streams composed primarily of domestic, industrial and shipyard waste, sewage, and rubble from 1932 to 1967, prior to the classification of wastes as hazardous or non-hazardous, the segregation of waste streams, and

the identification of landfills as Class I, II, or III<sup>17</sup>. Thus, the discussion of non-hazardous wastes in Impact PUE#7 assumes that all construction and demolition debris requiring disposal would be generated by building demolition and does not account for solid wastes excavated during construction of the East LMF some of which could be determined to be hazardous.

Impact PUE#7 therefore fails to adequately address or analyze the amount of solid waste that would be generated by construction of the East LMF and require disposal. Without determining the amount of solid waste that would be excavated from the landfill and describing those wastes, the Draft EIR/EIS cannot determine the amount of excavated materials from the East LMF that could be hauled to disposed at a Class II or III landfill or the amount that must be hauled to a distant Class I landfill.

Without such analysis, the Draft EIR/EIS cannot substantiate its significance conclusion for Impact PUE#7. In addition, without determining the amount of excavated materials from the East LMF that could be hauled to and disposed at a Class II or III landfill or the amount that must be hauled to a distant Class I landfill, the validity of traffic and mobile source air quality construction impacts cannot be substantiated.

*Impact PUE#8 (Continuous Permanent Impacts from Water Use) provides an incomplete and misleading evaluation of available water supply leading to the false conclusion that an adequate water supply is available for the Brisbane LMF.*

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The analysis of available water supply presented in Impact PUE#8 is fatally flawed because it only addresses the total amount of water available on a wholesale basis from the San Francisco Public Utilities Commission (SFPUC) to retail water agencies (cities) throughout San Mateo County. Impact PUE#8 does not address the water supply contractually available to any individual water retail agency, such as the City of Brisbane. Thus, while the Draft EIR/EIS evaluates the 184 million gallons per day (mgd) available from the SFPUC to all of its wholesale customers in San Mateo County, it does not evaluate the 0.96 mgd contractually available to the City of Brisbane to serve its existing and future customers *plus* the proposed Brisbane LMF.

Draft EIR/EIS Table 3.16-14 states that the Brisbane LMF would consume 105,732.0 gallons of water per day (gpd). No source is identified for the information provided in the table, and the Draft EIR/EIS does not indicate how daily water consumption estimates were calculated. The City of Brisbane, which will be the retail water purveyor to the LMF does not adequate contracted supply to meet this additional demand.

Draft EIR/EIS Table 3.16-14 states that the daily water consumption at the Brisbane LMF would be 105,732.0 gallons and that the total Project-related increase in water consumption would be 132,523.7 gallons. No source is identified for the information provided in the table,

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<sup>17</sup> City of Brisbane, *Final Brisbane Baylands Program EIR*, May 2018.



and the Draft EIR/EIS does not indicate how these detailed daily water consumption estimates were calculated.

The CEQA conclusion for Impact PUE#8 states that the permanent increase in water use “would be 0.8 percent of the remaining water supply for a normal year in 2030, 0.9 percent for a single dry year in 2030, and 1.0 percent for multiple dry years in 2030. In 2040, the increase would be 1.3 percent of the remaining water supply for a normal year, 1.5 percent for a single dry year, and 1.7 percent for multiple dry years.”<sup>18</sup> This statement, however, does not account for the fact that the various retail water agencies within San Mateo County, including the City of Brisbane each have an contractually allotted share of the County’s total 184 mgd whole sale supply.

A specific review of the LMF’s water demands in comparison to the City of Brisbane’s contracted share of SFPUC wholesale water supply tells an entirely different story that needs to be, but is not, disclosed in the Draft EIR/EIS.

The Draft EIR/EIS fails to disclose that Brisbane’s contracted water supply is 0.96 mgd could be reduced during water shortages, emergencies, or maintenance of the system. The rules and procedures for such delivery are specified in a 2009 water supply agreement <sup>19</sup>.

A Water Supply Assessment was prepared for the Baylands as part of the 2013 Brisbane Baylands Program EIR<sup>20</sup>. Table 5-2 of the Water Supply Assessment projects that City of Brisbane water demand, exclusive of any development within the Baylands or Sierra Point would be 1.06 mgd in the Year 2030. The conclusion of the Water Supply Assessment was that the City did not have adequate water supplies for future uses and implementation of water savings programs would be necessary even in the absence of Baylands development. To provide adequate water supply for Baylands development, the Water Supply Assessment concluded that additional water supplies would be required.

The 105,732.0 gpd of water needed by the LMF represents 79.8 percent of the High-Speed Rail project’s total water demand and 11.0 percent of Brisbane’s citywide water consumption evaluated in the Brisbane Baylands Water Supply Assessment. By identifying the amount of water required for the LMF and other Project components as “minor” in relation to the total water wholesale demands of cities throughout San Mateo County the discussion and conclusions of Impact PUE#8 are misleading. Impact PUE#8 must be revised to address LMF water supply requirements in relation to the City of Brisbane’s available water supply. Doing so

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<sup>18</sup> Based on these calculations, the Draft EIR/EIS determined that adequate water is available for the Project, and impacts would be less than significant.

<sup>19</sup> City of Brisbane, *Brisbane Baylands Final Program EIR*, May 2018.

<sup>20</sup> CDM Smith, *Brisbane Baylands Project Water Supply Assessment*, May 24, 2013. Provided as Attachment Metis-G.

will clearly demonstrate that water supply demands from the LMF are not “minor” and that the Project’s impact is, in fact, significant. In the absence of an adequate water supply for the Brisbane LMF, Impact PUE#8 must be considered significant and unavoidable, requiring Draft EIR/EIS recirculation.

*Impact PUE#12 (Temporary Consumption of Energy during Construction) underestimates the amount of energy that would be consumed during construction of the East LMF by ignoring the need to haul solid waste excavated from the former Brisbane landfill to another landfill for disposal.*

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The Draft EIR/EIS states that 2,183,800 cubic yards of material would be cut to create the East LMF and that 2,082,800 cubic yards of this material would have to be hauled offsite. As noted elsewhere in these comments, the Draft EIR/EIS assessment may underestimate the volume of material that would have to be excavated to remove a large portion of the former Brisbane landfill to create the needed 100- to 110-acre flat pad at grade with the existing Caltrain tracks. In addition, the Draft EIR/EIS does not account for the fact that a large portion of the materials excavated from the former landfill requiring offsite hauling would consist of solid waste that must be disposed of at a sanitary landfill or that an unknown portion of these waste materials may need to be disposed of at a hazardous waste at one of the only three Class I landfills in the state, which are located in Kings, Kern, and Imperial counties.

Without determining the amount of solid waste that would be excavated from the landfill and characterizing those wastes, the Draft EIR/EIS cannot determine the amount of excavated materials from the East LMF that can be hauled to disposed at a Class III landfill or the amount that must be hauled to a distant Class I landfill. Thus, the construction-related energy consumption figures cited in Table 3.6-16 understate actual energy consumption during Project construction. Energy consumption during Project construction may also be understated if energy consumed by water trucks delivering water to construction sites is not included in the analysis of energy consumption during Project construction.

Before any significance conclusion for PUE#12 can be substantiated, analysis of the amount of materials that would be excavated from the former Brisbane landfill for the East LMF, including the amount of excavation that must be hauled and disposed of at either a Class III or Class I landfill, as well as analysis of water truck deliveries, must be undertaken so that Table 3.6-16 and related Draft EIR/EIS text can be revised.

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**Draft EIR/EIS Section 3.7, Biological and Aquatic Resources, uses flawed methodologies that fail to identify significant resources at the West and East LMF sites and does not adequately describe what the Project proposes along Visitacion Creek. As a result, the Draft EIR/EIS relies on future studies to determine the extent of impacts, as well as deferred mitigation.**

The Brisbane LMF, together with the bridge relocation, roadway realignments, and relocation of the Brisbane Fire Station proposed to accommodate the project encompasses more than 114 acres of ground disturbance in the City of Brisbane, representing the largest Project component outside of the existing Caltrain right-of-way. Construction and operational impacts of the Brisbane LMF facility would occur over an area of such a size and scale compared to the rest of the Project as to warrant site-specific investigation and analysis including onsite surveys to establish baseline conditions and substantiate evaluation of impacts. Because the Brisbane LMF and related project components possess wetlands and habitats which if lost would constitute significant impacts, the area needs to be analyzed through site-specific surveys and habitat maps based on direct observation rather than desk top analysis and modeling. In addition, definitive mitigation measures whose feasibility is demonstrated in the Draft EIR/EIS are needed along with disclosure and analysis of the impacts that would result from proposed mitigation measures. Where onsite mitigation is infeasible and acquisition of off-site land(s) is/are proposed as mitigation, the feasibility of acquiring lands within San Mateo County that possess similar habitat as that being impacted within the City of Brisbane needs to be evaluated and disclosed to the public in the Draft EIR/EIS. If the Brisbane community is being asked to take on the burdens of construction and 24/7 operation of the LMF, the community deserves no less than full disclosure of and the opportunity to provide comments on (1) all of what the Authority needs to do to construct and operate the LMF in Brisbane and (2) what will be done to mitigate the adverse effects of the LMF on the community *before* the Project is approved.

As demonstrated below, the Draft EIR/EIS fails to accomplish these tasks and as a result the LMF impacts and conclusions presented in the Biological and Aquatic Resources analysis are not substantiated and a new analysis of the LMF impacts is needed.

*The biological resources analysis provided in the Draft EIR/EIS is largely based on “desktop” review and minor modifications to outdated studies and, as a result, fails to present an adequate description of the biological and aquatic resources setting within the Brisbane LMF for use as substantiation of its conclusions.*

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On page 3.7-19, the Draft EIR/EIS states, “...most biological resource information is based on desktop analyses or unpublished field surveys conducted in 2009 and 2010. However, because the project footprint is almost entirely within the existing Caltrain right-of-way, most of the project footprint does not contain habitat for special-status species and that these areas “have “no potential to support special-status species.” This characterization is misleading in relation

to the proposed Brisbane LMF, which would (1) be located outside the Caltrain right-of-way and (2) destroy or remove sensitive natural communities and wetlands that are neither within nor immediately adjacent to the Caltrain right-of-way. The Draft EIR/EIS analysis of the biological resources is thus fundamentally flawed because it addresses an approximately 114-acre area in Brisbane with the broad-brush analytical methods appropriate to the much smaller areas of high-speed rail construction and operational disturbance occurring within and immediately adjacent to the Caltrain right-of-way.

With the exception of a preliminary jurisdictional delineation for wetlands, the discussion of existing biological resources that would be affected by the Brisbane LMF is largely based on data gathered during preparation of a 2013 Program EIR addressing development of the Brisbane Baylands that was not intended for use in a project-level environmental document. Because the 2013 Baylands Program EIR, covering much of the same footprint as the proposed LMF, recognized that surveys and baseline data were prepared during a period of severe drought, the Final Program EIR included a requirement for updated site-specific surveys to be undertaken *prior to approval of development* of the Baylands area within which the West and East LMF sites are proposed.

Consistent with the City of Brisbane's Baylands Program EIR's requirements, Metis Environmental Group biologists conducted a series of surveys in the Brisbane Baylands in 2019 and 2020 in anticipation of updating the baseline habitat maps that were previously presented in the 2013 Program EIR for the Brisbane Baylands. During this survey effort, Metis biologists noted that in the years since the 2013 Program EIR's initial biological resources analyses, wetland habitats and special status plant habitats have expanded in overall area and exhibit improved quality since the 2013 Program EIR was released owing to increased rainfall in subsequent years. This fact has not been noted in the Draft EIR/EIS primarily because the survey efforts within the LMF were insufficient and the desktop analysis and habitat modeling did not adequately capture existing conditions on the LMF's 100+ acre area of impact. Consequently, the EIR/EIS presents a baseline and analysis that understate the extent of wetlands, diversity of sensitive plant populations in grassland habitats on Icehouse Hill, and fails to identify and address significant impacts to sensitive plants within the LMF that were not previously identified in documents the EIR/EIS uses to establish its baseline. Figure Metis-3 depicts the habitats on Icehouse Hill, within the West LMF footprint that were not identified including Coast Iris (*Iris longipetala*), seasonal wetland and drainage habitat, and Arroyo Willow thickets. These resources would be destroyed as a result of grading and removal of Icehouse Hill for the West LMF and need to be acknowledged in the Draft EIR/EIS as significant impacts.

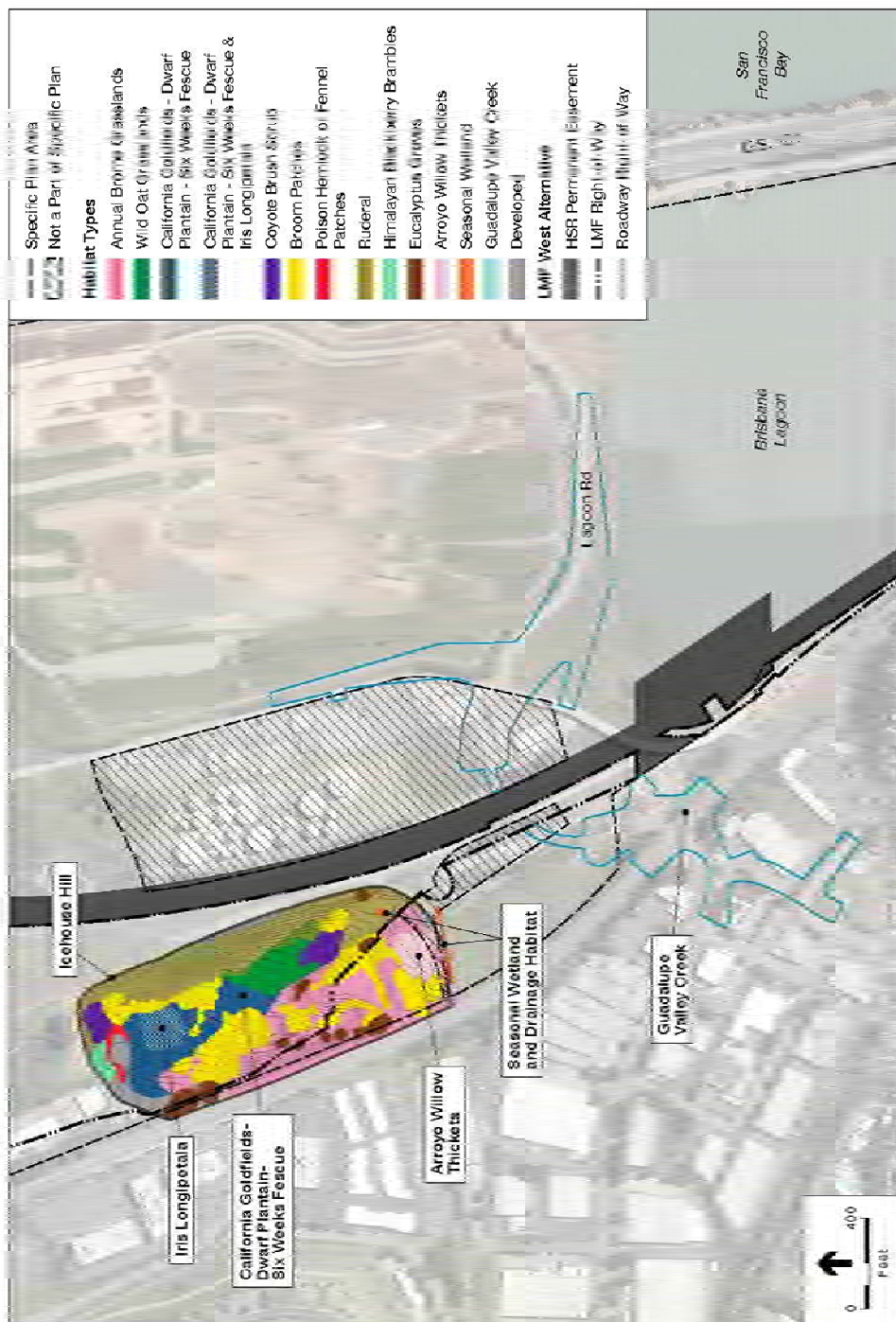


Figure Metis-3  
Icehouse Hill Habitat Not Addressed

8-13-20



*Presentation of the distribution of LMF wetlands is inaccurate and understates the potential for significant LMF wetland impacts.*

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Figure Metis-4, LMF Wetlands not Addressed, depicts the locations and boundaries of wetlands that Metis biologists mapped based on direct observations at the site during surveys conducted on March 27, April 3, May 10, June 13, June 28 and October 8, 2019 and on March 10, 2020. The wetlands mapped based on direct field observations show wetland boundaries that exceed the extent of the wetland boundaries addressed in the Draft EIR/EIS. Figure Metis-4 also graphically depicts the data point locations (a total of six points) disclosed in the Draft EIR/EIS and technical report that were used by the Authority to define wetland boundaries. Two of the data points used in the Draft EIR/EIS represent data taken in 2011, two from 2015 and two data points total from 2018<sup>21</sup>. For a more than 100-acre impact, it seems unreasonable to base wetland mapping on such a small number of data points that includes data dating back to 2011 when rainfall conditions and other factors contribute to variability in site conditions compared to current conditions.

The location of the Draft EIR/EIS data points (shown in Figure Metis-4) further illustrates that data was taken at limited locations within the West LMF north of Icehouse Hill, and the remainder of the conclusions in the wetland report and therefore in the Draft EIR/EIS are based on review of aerial photos with the result of underrepresenting wetlands. Use of aerial photos is a common approach to evaluating the presence of wetlands, but without data points that indicate the entirety of the LMF area has been surveyed, doubt is cast upon whether conclusions regarding significant wetlands impacts in the Draft EIR/EIS can be substantiated. Comparing the wetlands mapped by Metis biologists (based on direct observations in the field that covered the entire site in 2019 and 2020) to the analysis provided in the Draft EIR/EIS, it is clear that the disclosure of LMF wetlands in the Draft EIR/EIS does not capture wetlands at Icehouse Hill, understates the wetland areas north of Icehouse Hill, and does not capture wetlands near the proposed relocated fire station. A drainage just south of the proposed Tunnel Road relocation is also not included in the wetland maps found in the Draft EIR/EIS Biological and Aquatic Resources Technical Study, meaning that impacts to that drainage caused by the Tunnel Avenue bridge and roadway relocation as well as relocation of Visitacion Creek are not addressed.

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<sup>21</sup> Per the standard wetland delineation methodology, at each data point a three-point test is applied that accounts for vegetation, soils and hydrology and provides the underlying basis for determining if the area is a wetland or not.

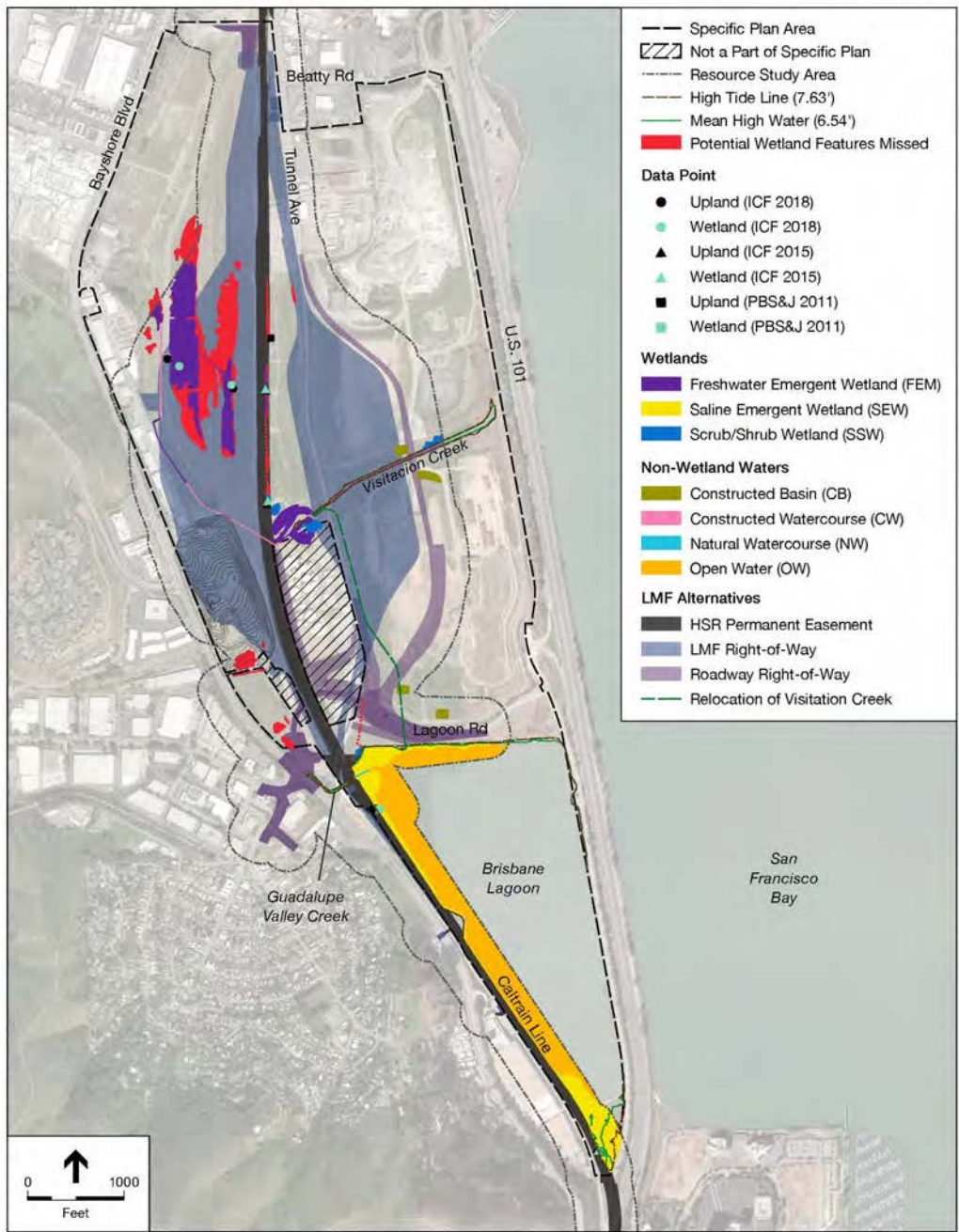


Figure Metis-4

8-18-20

LMF Wetlands Not Addressed

*Impacts to special status species cannot be confirmed since the Draft EIR/EIS defers site-specific and species-specific surveys until after the project is approved.*

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As stated on Draft EIR/EIS page 3.7-19, access was granted to the Brisbane LMF sites in November 2018 and January 2020 to verify and update (if necessary) the wetlands mapped during previous field surveys, referring the reader to Draft EIR/EIS Section 3.7.6.5<sup>22</sup>. “Access to this area was also granted in September 2019 to assess aquatic resources using the California Rapid Assessment Method. No presence-absence surveys for special-status plants or wildlife have been conducted. Therefore, these species are assumed potentially present in areas modeled as “habitat.” While assuming the potential presence of special-status plants and wildlife makes for a worst-case analysis appropriate to include in a programmatic analysis, by doing so, the project level analysis in the Draft EIR/EIS defers actual site surveys until after the Project has been approved, depriving the public of an understanding of the biological resources actually present within Brisbane that would be impacted by the Project. An environmental analysis which is based on desktop analysis combined with data from a 2013 Baylands Program EIR and other secondary sources but no site surveys casts doubt that the Draft EIR/EIS accurately captures the Baylands site’s biological setting or adequately evaluates the Project’s impacts.

Examples of where the Draft EIR/EIS defers surveys and biological resources analyses that should have been conducted for and discussed in the Draft EIR/EIS can be found in the following Mitigation Measures that call for surveys after the project has been approved:

- **BIO-MM#1 (Prepare and Implement a Restoration and Revegetation Plan) and BIO-MM#13 (Restore Temporary Riparian Habitat Impacts)**, which would necessitate evaluating temporary impacts to biological resources. By delaying the surveys and evaluations of temporary impacts until after the document is approved the EIR/EIS impact conclusions at the LMF cannot be substantiated.
- **BIO-MM#6 (Conduct Presence/Absence Pre-Construction Surveys for Special-Status Plant Species and Special-Status Plant Communities)**, which provides for site-specific surveys to occur after Project approval. Because site-specific surveys were not undertaken for upland species and habitats, this Mitigation Measure does not represent the pre-construction surveys typically undertaken to determine whether conditions have

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<sup>22</sup> Draft EIR/EIS Section 3.7.6.5 refers to wetland assessments including (1) surveys conducted for the Caltrain PCEP in 2013, (2) a field investigation of right-of-way and electrical safety zone areas in December 2014, (3) development of the initial delineation map book for the Caltrain wetland delineation on January 13, 2015 and revised the map in January 2016 following review by USACE. Subsequently, field investigations in 2018 to assess the Brisbane wetlands at the proposed LMF sites were conducted to verify land cover data and a total of two additional wetland data points were taken within the 100+ acre LMF site. No data was recorded in the vicinity of Icehouse Hill or the proposed Fire Station Relocation. In 2020 the USACE reviewed the Aquatic Resources Delineation Report for the project and undertook a site visit of both the East and West Brisbane LMF sites on January 30, 2020, resulting in the Preliminary Jurisdictional Determination certified on April 9, 2020.

changed subsequent to the initial site surveys undertaken for and disclosed to the public in a CEQA or NEPA environmental document.

- **BIO-MM#10 (Compensate for Impacts on Listed Plant Species)**, which necessitates site-specific surveys to determine the extent of impacts for species identified, in the absence of site surveys conducted to produce the EIR/EIS analysis which should have been the basis to identify specific locations of and extent of sensitive plants species, such as those present on Icehouse Hill in Brisbane.

*The Draft EIR/EIS lacks appropriate mapping of biological resources at the Brisbane LMF sites (including Visitation Creek), Tunnel Avenue bridge and roadway relocation, and within the footprint of the proposed relocation of the Brisbane fire station. As a result, impact conclusions are unsubstantiated and hinder the public's ability to understand the extent and degree of significant impacts to biological resources.*

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The Draft EIR/EIS does not include a map showing the wetland areas or the locations of Visitation Creek and Guadalupe Valley Creek in relation to the West and East LMF sites, Tunnel Avenue bridge and roadway relocation, or relocation of the Brisbane fire station. Mapping of these resources is needed in support of the analysis and to verify that conclusions set forth in the Draft EIR/EIS fully disclose the environmental effects that would occur due to the LMF construction and operation. The lack of such mapping hinders the Draft EIR/EIS' ability to correctly define the biological resources baseline, undertake adequate analysis of Project impacts, substantiate significance conclusions, and provide feasible mitigation measures.

The presentation of impacts to sensitive species habitats provided in tabular form summarizing impacts for the entirety of the High-Speed Rail project in the Draft EIR/EIS makes it impossible to verify whether significant impacts to biological resources in the LMF sites or any other specific location have been adequately documented and calculated. While the statement on page 3.7-19 that "because the project footprint is almost entirely within the existing Caltrain right-of-way, most of the project footprint does not contain habitat for special-status species" may be valid for the majority of Project area, it is incorrect in relation to the portion of the Project within Brisbane. Maps based on current field surveys of affected areas within Brisbane that accurately disclose the location and the extent of habitats that would be directly removed or adversely affected need to be included in the Draft EIR/EIS to support its biological and aquatic resources analyses and substantiate its significance conclusions.

*The Draft EIR/EIS fails to disclose the full extent of impacts to Visitacion Creek, including impacts of “relocating a portion of Visitacion Creek and filling several wetlands.” While not disclosed in the Draft EIR/EIS, the Authority’s May 2020 Preliminary Compensatory Mitigation Plan<sup>23</sup> (which is not posted on the Authority’s San Francisco - San José project website) includes a plan to relocate Visitacion Creek from its current west-to-east alignment draining into San Francisco Bay to a north-to-south alignment draining into the Brisbane Lagoon.*

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The Draft EIR/EIS (Impact BIO#19, page 3.7-71) states that the Project would “result in the conversion and degradation of aquatic resources by relocating a portion of Visitacion Creek and filling several wetlands” but fails to describe where or how the creek would be located or address any impacts of creek relocation.

Although not explicitly disclosed in the Draft EIR/EIS and its environmental analyses, since the Brisbane East LMF is being constructed on top of Visitacion Creek, it appears that the Authority plans to either:

- (1) Fill approximately 980 linear feet of the existing Visitacion Creek and construct a culvert under the widest point of the East LMF, or
- (2) Reroute Visitacion Creek from where it daylights just east of the Caltrain tracks and construct a new 2,300 linear foot open channel running south adjacent to the East LMF that discharges the creek into Brisbane Lagoon rather than San Francisco Bay.

Neither the Draft EIR/EIS nor the Biological and Aquatic Resources technical report disclose any information as to what is proposed in relation to Impact BIO#19’s disclosure of “relocating a portion of Visitacion Creek.” No information or analysis is provided in either of these documents as to what specific portion of Visitacion Creek would be relocated or where it would be relocated to. As a result, the Draft EIR/EIS fails to analyze impacts associated with relocating a portion of Visitacion Creek.

To discover what “relocating a portion of Visitacion Creek” involves, readers of the Draft EIR/EIS would have had to review an appendix to the Authority’s May 2020 Preliminary Compensatory Mitigation Plan, which provides the only description of creek relocation found in the numerous documents comprising the Draft EIR/EIS and its appendices and technical reports. However, when the Draft EIR/EIS was posted for public review on July 10, 2020, only the Draft EIR/EIS and its appendices were made available on the Project web page:

([https://hsr.ca.gov/programs/environmental/eis\\_eir/draft\\_san\\_francisco\\_san\\_jose.aspx](https://hsr.ca.gov/programs/environmental/eis_eir/draft_san_francisco_san_jose.aspx)).

Members of the public wishing to review Draft EIR/EIS technical reports needed to request them from the Authority.

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<sup>23</sup> California High Speed Rail Authority, *San Francisco to San José Project Section Preliminary Compensatory Mitigation Plan*, May 2020.

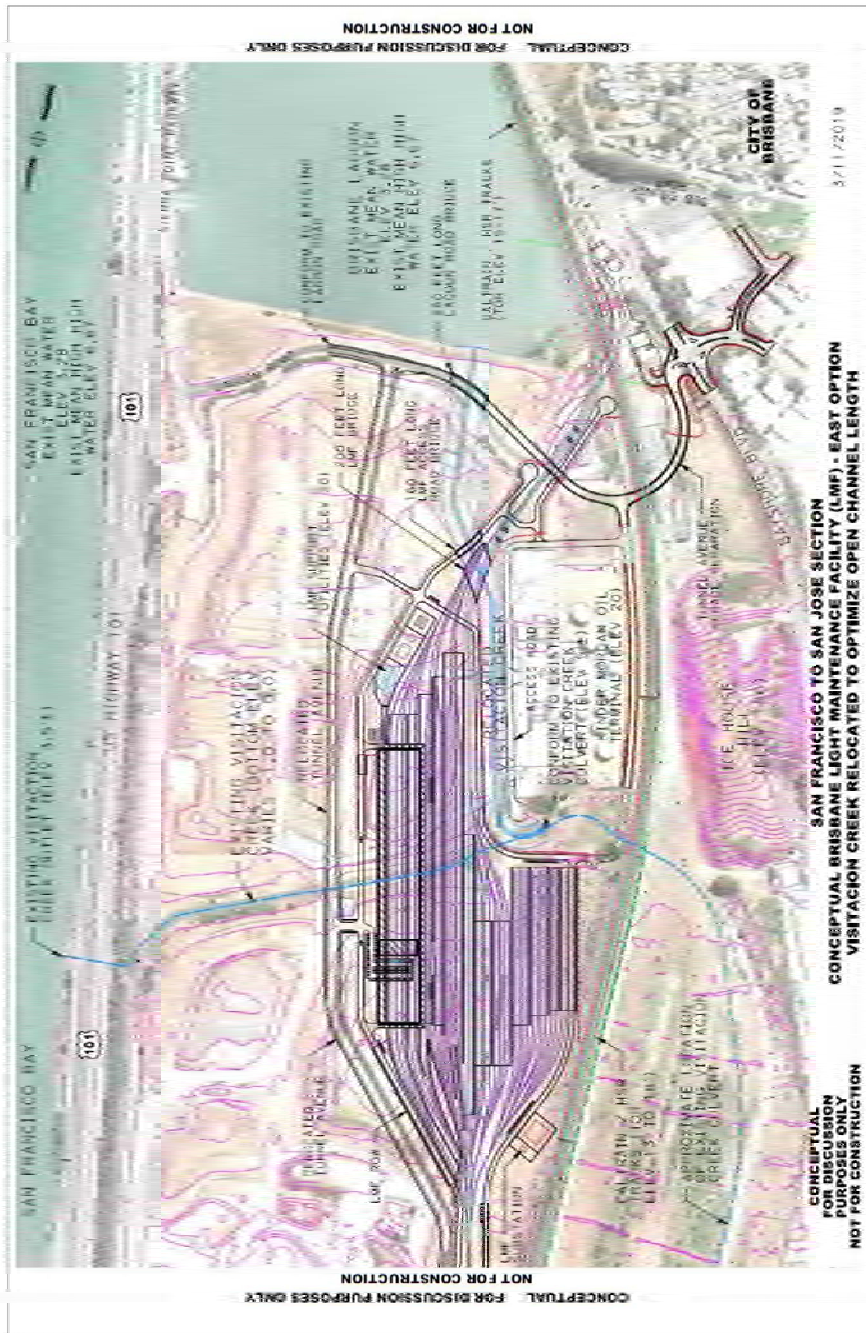


As stated on Preliminary Compensatory Mitigation Plan page 2-7, the Authority is seeking a BCDC permit for filling of Visitacion Creek, and “as part of that process, is exploring a potential Visitacion Creek/Bay resiliency mitigation concept to address some, or potentially all, of the mitigation needs for impacts at or adjacent to the proposed East Brisbane LMF.... (T)he concept proposes rerouting Visitacion Creek from where it daylight just east of the Caltrain tracks to the south rather than east to under U.S. Highway 101, and to terminate at the Brisbane Lagoon rather than at San Francisco Bay. The existing channel would still need to be filled; however, this approach would avoid culverting a channel under the widest point of the LMF.”

For analysis, the Draft EIR/EIS calculated the acreage of Visitacion Creek habitats that would be subject to “impact” for option (1) above. Tables 3.7-16 (Impacts on Special-Status Species Habitat within BCDC Jurisdiction by Project Alternative), 3.7-17, (Impacts on Special-Status Plant Communities within BCDC Jurisdiction by Project Alternative), 3.7-18 (Impacts on Aquatic Resources Considered Jurisdictional under Section 404 of the Clean Water Act and Regulated as Waters of the State that are within BCDC Jurisdiction by Project Alternative), and 3.7-19 (Impacts on Aquatic Resources Subject to Notification under California Fish and Game Code Section 1600 et seq. within BCDC Jurisdiction by Project Alternative) each quantify impacts to specific species in acres. However, because Table 3.7.16 identifies permanent and temporary impacts in columns labeled impacts to the “Bay” and “Shoreline Band,” the specific location of Project-related impacts and the total acreage of impacts to Visitacion Creek cannot be verified.

Other than the single statement in Impact BIO#19 that the Project would “result in the conversion and degradation of aquatic resources by relocating a portion of Visitacion Creek and filling several wetlands,” no description or analysis is provided in relation to relocating the creek. Thus, while impact BIO# 19 states that the Project would “result in the conversion and degradation of aquatic resources by relocating a portion of Visitacion Creek and filling several wetlands.” the Draft EIR/EIS fails to address impacts that would result from relocating the creek, including:

- Degradation of aquatic resources within the 1,100 linear feet of existing creek that would remain in place east of the LMF resulting from reducing or eliminating natural runoff from the creek’s watershed.
- Impacts associated with construction of the relocated channel, including impacts to habitats where the relocated creek outlet drains into the Brisbane Lagoon.
- Long-term impacts such as increased turbidity and velocity that could destroy habitats and create additional erosion at the creek’s new discharge location in the Lagoon.
- Potential for construction of the creek relocation efforts to disturb or cut into waste should the relocated creek channel encroach upon the boundary of the former landfill (see attached Figure from Appendix B to the Authority’s Preliminary Compensatory Mitigation Plan).



**Draft EIR/EIS Preliminary Compensatory Mitigation Plan Appendix B  
Exhibit 1 Visitacion Creek/Bay Resiliency Mitigation Concept**

Whether relocating a portion of Visitacion Creek is part of the Project (as described in Impact BIO#19) or an action being considered by the Authority for incorporation into Project mitigation as described in the Preliminary Compensatory Mitigation Plan, Impact BIO#19 must analyze and disclose the physical environmental impacts associated with filling a large portion of Visitacion Creek and (1) seeking off-site mitigation for the impacts or (2) “relocating a portion of Visitacion Creek” and moving its outlet from San Francisco Bay to the Brisbane Lagoon, the impacts of which also need to be evaluated and disclosed to the public.

In the absence of this information, the public is denied the ability to (1) understand what the Authority is proposing, (2) the environmental impacts that would result from the Project and its various options, and (3) the ability to provide informed comments on the information and analyses presented in the Draft EIR/EIS.

Public disclosure of this plan and its related environmental impacts constitutes substantial new information for which the Draft EIR/EIS needs to be revised and recirculated for public review.

Without fully disclosing what is planned for “relocating a portion of Visitacion Creek and filling several wetlands,” and without an analysis of impacts of that action beyond an acreage impact calculation, the Draft EIR/EIS impermissibly defers mitigation for impacts to Visitacion Creek.

Because the Draft EIR/EIS does not describe and cannot therefore analyze the environmental impacts associated with “relocating a portion of Visitacion Creek,” the Draft EIR/EIS defers mitigation. Mitigation Measure BIO-MM#8 (Prepare a Compensatory Mitigation Plan for Species and Species Habitat), which is intended to address impacts to Visitacion Creek, states in full:

“The Authority would prepare a compensatory mitigation plan (CMP)<sup>24</sup> that sets out the compensatory mitigation that would be provided to offset permanent and temporary impacts on federal and state-listed species and their habitat, fish and wildlife resources regulated under Section 1600 et seq. of the Cal. Fish and Game Code, and certain other special-status species. The CMP would include the following:

- A description of the species and habitat types for which compensatory mitigation is being provided
- A description of the methods used to identify and evaluate mitigation options. Mitigation options would include one or more of the following:

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<sup>24</sup> As noted above, at the time of the release of the Draft EIR/EIS for public review on July 10, 2020, the Authority had already prepared a Preliminary Compensatory Mitigation Program in May 2020, the existence of which was not disclosed in the Draft EIR/EIS.

- Purchase of mitigation credits from an agency-approved mitigation bank
- Protection of habitat through acquisition of fee-title or conservation easement and funding for long-term management of the habitat. Title to lands acquired in fee would be transferred to CDFW and conservation easements would be held by an entity approved in writing by the applicable regulatory agency. In circumstances where the Authority protects habitat through a conservation easement, the terms of the conservation easement would be subject to approval of the applicable regulatory agencies, and the conservation easement would identify applicable regulatory agencies as third party beneficiaries with a right of access to the easement areas.
- Payment to an existing in-lieu fee program
- A summary of the estimated direct permanent and temporary impacts on species and species habitat
- A description of the process that would be used to confirm impacts. Actual impacts on species and habitat could differ from estimates. Should this occur, adjustments would be made to the compensatory mitigation that would be provided. Adjustments to impact estimates and compensatory mitigation would occur in the following circumstances:
  - Impacts on species (typically measured as habitat loss) are reduced or increased as a result of changes in project design
  - Pre-construction site assessments indicate that habitat features are absent (e.g., because of errors in land cover mapping or land cover conversion)
  - The habitat is determined to be unoccupied based on negative species surveys
  - Impacts initially categorized as permanent qualify as temporary impacts
- An overview of the strategy for mitigating impacts on species. The overview would include the ratios to be applied to determine mitigation levels and the resulting mitigation totals.
- A description of habitat restoration or enhancement projects, if any, that would contribute to compensatory mitigation commitments.
- A description of the success criteria that would be used to evaluate the performance of habitat restoration or enhancement projects, and a description of the types of monitoring that would be used to verify that such criteria have been met.
- A description of the management actions that would be used to maintain the habitat on the mitigation sites, and the funding mechanisms for long-term management.
- A description of adaptive management approaches, if applicable, that would be used in the management of species habitat.
- A description of financial assurances that would be provided to demonstrate that the funding to implement mitigation is assured.”



As stated in CEQA Guidelines Section 15126.4 (B):

“Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures shall not be deferred until some future time. The specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project’s environmental review provided that the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated in the mitigation measure. Compliance with a regulatory permit or other similar process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards.”

Mitigation Measure BIO-MM#8 fails to meet the standards set forth in CEQA Guidelines Section 15126.4 (B) and therefore constitutes impermissibly deferred mitigation because the Mitigation Measure:

- Fails to include the “specific performance standards the mitigation will achieve.” BIO-MM#8 specifies the contents of the required Compensatory Mitigation Plan for Species and Species Habitat and does not establish any performance standard by which mitigation requirements could be measured.
- Fails to disclose off-site mitigation actions being considered by the Authority that could be “potentially incorporated in the mitigation measure.” The Authority’s Preliminary Compensatory Mitigation Plan describes on-site and off-site mitigation being considered by the Authority.

While Mitigation Measure BIO-MM#8 requires future preparation of a Compensatory Mitigation Plan that would identify and evaluate mitigation options, the Draft EIR/EIS fails to disclose that the Authority was already considering the following offsite mitigation programs in its Preliminary Compensatory Mitigation Plan:

- **In-lieu fee program.** The Preliminary Compensatory Mitigation Plan determined that there were no existing in-lieu fee programs with service areas overlapping the Project area but that a “limited number of unallocated mitigation credits for stream impacts” held by the National Fish and Wildlife Foundation and the Authority might provide a potential mitigation option through a new in-lieu fee program “if such unallocated credits could be used to compensate for project impacts (page 2-8)



- **Mitigation Bank.** The Preliminary Compensatory Mitigation Plan concludes that one mitigation bank is currently available for Project mitigation. The San Francisco Bay Wetland Mitigation Bank, which is “primarily used for tidal wetland and other waters (including tidal sloughs and other tidal open water areas)” was reported on January 2, 2019 to have 15.6 acres of wetland credit available, and 0.35 acre of tidal/other waters of the U.S. Contingent on approval by USACE. (page 2-8)
- **Offsite habitat protection, restoration, and enhancement.** Preliminary Compensatory Mitigation Plan Table 2 indicates potential off-site mitigation considered for Project mitigation includes protection, restoration and/or enhancement of habitats with the following “Potential Off-Site Permittee-Mitigation Partner” agencies: East Bay Regional Park District, Midpeninsula Regional Open Space District, Peninsula Open Space District, South Bay Salt Pond Restoration Program, San Francisquito Creek Joint Powers Authority, each of which has “confirmed that they are willing to discuss a partnership to implement mitigation projects.”

However, as stated on the Preliminary Compensatory Mitigation Plan page 2-9, the degree to which these partnerships would be needed is “contingent on whether the Authority is able to lead development of its own on-site PRM project for the realignment of Visitacion Creek. If the Visitacion Creek/Bay resiliency mitigation concept is implemented by the Authority, there would be a reduced need to identify off-site PRM with the identified partners.”

*The Draft EIR/EIS fails to adequately address impacts to sensitive Icehouse Hill and other habitats and sensitive species present at the West and East LMF sites.*

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The Draft EIR/EIS fails to identify the direct loss of sensitive plant species and the locally rare native substrate contiguous to the endangered species habitats preserved at San Bruno Mountain, a resource of Statewide importance. The Draft EIR/EIS Section 3.7, Biological and Aquatic Resources, does not depict the topography or acknowledge the mass of the 186-foot high Icehouse Hill that would be removed for construction of the West LMF. The Draft EIR/EIS describes and reaches conclusions regarding the biological sensitivity of Icehouse Hill without actually conducting surveys of the existing substrate and its conclusions are based largely on a 2013 Program EIR that specifically requires site-specific surveys prior to approval of development<sup>25</sup>.

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<sup>25</sup> It should be noted that the City of Brisbane has long acknowledged the importance of Icehouse Hill and its habitats. The City’s General Plan requires preservation of Icehouse as open space and provides for protection of Icehouse Hill habitats, permitting only passive recreation uses that ensure avoidance and protect butterfly larval host plants (*Viola pedunculata*, *Lupinus albifrons*, *L. formosus*, and *L. versicolor*).

The field surveys and direct observation that should have been undertaken for the Draft EIR/EIS would have also identified several rare plant populations and wetland plant communities on and adjacent to Icehouse Hill and enabled analysis of impacts and disclosed the extent to which these habitats would be adversely affected. For example, during field 2019 and 2020 surveys, Metis biologists documented an existing population of approximately 250 coast iris (*Iris longipetala*), a CNPS 4.2 species on the northeast slope of Icehouse Hill, and a large population of locally rare native ferns including California polypody, leather fern, and golden back fern. Loss of these plant populations, which were not previously identified and could not be detected during desk top analysis of the LMF, represent a significant impact that is not addressed in the Draft EIR/EIS.



Coast Iris Found on Icehouse Hill



Native fern-covered slope found on Icehouse Hill

Figure Metis-3 shows the location and distribution of habitats on and adjacent to Icehouse Hill not addressed in the Draft EIR/EIS that would be destroyed or permanently damaged as a result of proposed construction of the West LMF. This includes the significant impact to wetland arroyo willow thicket and seasonal wetland drainage located on the south slope of Icehouse Hill which would no longer receive runoff from the hill. Runoff from Icehouse Hill is what sustains the existing wetland habitats not documented in the Draft EIR/EIS that occur just outside and adjacent to the LMF area of impact and would mean these wetlands would be lost as the habitats cannot persist without the infusion of water draining from the hill.

The Draft EIR/EIS proposes mitigation of impacts to the sensitive habitat on Icehouse Hill through purchase of offsite properties without (1) evidence of the feasibility of such acquisition, (2) evidence that acquisition of offsite properties would, in fact, compensate for the loss of Icehouse Hill habitats (e.g., is there sufficient habitat similar to that which would be destroyed on Icehouse Hill to meet the required 5:1 mitigation ratio), (3) evaluation of the secondary effects of acquiring and managing offsite properties, and (4) discussion as to how such acquired lands would be managed to ensure mitigation would be achieved and maintained in perpetuity. Although Mitigation Measure BIO-MM#11 identifies properties for which San Bruno Mountain Watch desires acquisition, in the absence of answers to the above questions, and because there is no indication that the San Bruno Mountain Watch as a 501 3(c) entity can, in fact, accept

mitigation funds or would be willing to partner with the Authority for this purpose, the feasibility of mitigation for the loss of Icehouse Hill cannot be determined.

Draft EIR/EIS Section 3.7 fails to identify a significant impact associated with destruction of the native grass and flower fields which are sensitive plant communities found on Icehouse Hill. The habitat can be classified as best matching *Lasthenia californica* – *Plantago erecta* – *Vulpia microstachys* Herbaceous Alliance, California Goldfields-Dwarf Plantain-6 Weeks Fescue Flower Fields. The west LMF alternative would remove 100 percent of this habitat during grading and removal of Icehouse Hill (see Figure Metis-3). Significant impacts associated with the loss of sensitive plant species on Icehouse Hill need to be specifically acknowledged in the Draft EIR/EIS so that feasible mitigation can be provided and not deferred until after Project approval when the EIR/EIS mitigation measures specify that surveys would actually be conducted.

*Impacts associated with electrification, lighting and noise associated with 24-hour operations of the Brisbane LMF on adjacent habitats are not analyzed in the Draft EIR/EIS.*

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The Brisbane LMF sites are proposed along the Pacific Flyway, positioned in the transition between uplands and the wetland and estuarine habitats of the San Francisco Bay shoreline. Electrification and night lighting of the 100+ acre LMF could adversely affect avian night movement, which is a critical aspect of avian seasonal migration. The Draft EIR/EIS does not, however, address impacts to migratory birds and local wildlife species' movement that would occur as a result of LMF night lighting, 24-hour per day noise generation, and the impact of electrical wires for train movement within the LMF.

Whereas local wildlife in the vicinity of the Brisbane LMF sites may have adapted to noise generated by passing trains along the Caltrain right-of-way, 24-hour noise generation from the LMF across an area of 100+ acres could adversely affect the area's ecosystems by preventing sensitive wildlife species from traversing the site for local movement or migration, successfully occupying and/or reproducing in otherwise suitable habitat areas<sup>26</sup>.

In the absence of analysis of potential effects of LMF lighting, electrification, and 24-hour noise generation in the Draft EIR/EIS, a significance determination for LMF biological resources impacts on wildlife movement or impacts of LMF night lighting and noise generation on nocturnal species cannot be substantiated.

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<sup>26</sup> Drolet, A., C. Dussault and S.D. Cote. 2016. Simulated drilling noise affects the space use of a large terrestrial mammal. *Wildlife Biology* 22(6): 284-293 and Hammitt, W. E., D. N. Cole, and C. A. Monz. 2015. *Wildland Recreation: Ecology and Management*, Third Edition. John Wiley & Sons, Hoboken, NJ. Both sources are cited in comments provided by Hamilton Biological on the Partially Recirculated Draft EIR for the Rancho La Habra Specific Plan. In these comments, Mr. Hamilton states that even noise from "hikers and bikers who stay on trails can prevent sensitive wildlife species from successfully occupying and/or reproducing in otherwise suitable habitat areas."



*The Draft EIR/EIS fails to recognize the State Lands Commission as a Responsible Agency and fails to address impacts to biological resources subject to their jurisdiction.*

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The Draft EIR/EIS fails to recognize State Lands Commission jurisdiction and omits an analysis of impacts on lands subject to the Commission’s jurisdiction by the proposed relocation of Tunnel Road in the vicinity of the Rancho Canada de Guadalupe Visitation y Rodeo Canal and Ungranted sovereign lands within the Guadalupe Canal (referred to in the Draft EIR/EIS as Guadalupe Valley Creek) and submerged lots within the Brisbane Lagoon.

The Draft EIR/EIS also fails to address impacts to the tidally influenced Visitation Creek and Brisbane lagoon in relation to State Land Commission jurisdiction (only the BCDC’s jurisdiction is acknowledged). For example, having stated that habitat for green sturgeon exists in the Brisbane Lagoon and Visitation Creek, the document fails to analyze impacts to the sturgeon habitat that would result from constructing the East LMF on top of Visitation Creek and cutting off natural stormwater flow to the creek from its watershed area. The Draft EIR/EIS only notes in Table 3.7-12 that Project impacts would encompass 1.6 acres of permanent impacts and 0.3 acres of temporary impacts and 1.0 acres of permanent impacts and 0.2 acres of temporary impacts for the project. The specific location of these impact is not disclosed nor is the nature of the impacts (e.g., disturbance, removal).



Draft EIR/EIS Figure 3.11-12

The Draft EIR/EIS omits an analysis of Project-related impacts on such lands that would result from the proposed re-routing of Tunnel Road in the vicinity of the Rancho Canada de Guadalupe Visitacion y Rodeo Canal; and Ungranted sovereign lands within the Guadalupe Canal (referred to in the EIR/EIS as Guadalupe Valley Creek) as well as from relocation of the Brisbane fire station.

As shown in Draft EIR/EIS Figure 3.11-12 (East LMF) and Figure 3.11-13 (West LMF) to the right, construction of the relocated Tunnel Avenue bridge would encroach into Guadalupe Valley Creek, which is visible in the figures as the dark green vegetative area adjacent to the east side of Bayshore Boulevard. In addition, relocation of the Brisbane fire station for the West LMF would require the fire station's new driveway to cross the creek. The Draft EIR/EIS needs to but does not address these impacts.



Draft EIR/EIS Figure 3.11-13

*There are multiple inconsistencies between the summary of impacts included in the Draft EIR/EIS and the Biological and Aquatic Resources Technical Report.*

While the Draft EIR/EIS relies upon tabular summaries of impact acreage calculations to special status species and aquatic resources and does not map locations of the impacts, there are a number of inconsistencies between the impact tables in Draft EIR/EIS Section 3.7 and Biological and Aquatic Resources Technical Study Table 6-1, Effects on Special Status Species Habitat by Alternative. For example:



- The Draft EIR/EIS identifies impacts to Pacific Coast salmon habitat on page 3.7-11 as 5.3 acres and 4.0 acres for the West and East LMF, respectively. However, the technical study indicates 3.4 and 2.7 acres of impacts in its summary Table 6-1.
- Impacts to Congdon's tar plant are presented as 92.6 acres and 39.4 acres for the West and East LMF, respectively, in the Draft EIR/EIS, while the technical study indicates only 81.7 acres would be impacted.

In some cases, impacts to species habitats are addressed in the Draft EIR/EIS but not in the technical report. Impacts to habitat for the dusky-footed woodrat are indicated on page 3.7-11 as 0.8 acres for the West LMF and 2.7 acres for East LMF but this species is not addressed in the technical study bringing into question the source for this impact calculation. Similarly, impacts to Least Bell's vireo, yellow warbler, and tricolored blackbird are presented in the Draft EIR/EIS, but not included in the technical study which is supposed to be the technical basis for the significance conclusions.

Wetland impact totals in Draft EIR/EIS Table 3.7-14 show similar inconsistencies with the wetland impact calculations totals shown in Table 6-3 of the technical report. This is compounded by the fact that impact totals in Table 1 on page 2-3 of the Preliminary Compensatory Mitigation Plan show impact calculations that sometimes agree with Draft EIR/EIS impact totals, and sometimes agree with impact totals shown in the Biological and Aquatic Resources Technical Report. These discrepancies create doubt as to which impact acreages are correct.

*The Draft EIR/EIS does not disclose non-biological resources impacts associated with relocation of 2,300 linear feet of Visitation Creek including truck to transport of excavated materials potentially resulting in hundreds of potential truckloads per day in Brisbane that have not been analyzed in the EIR/EIS.*

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The summary information included in Draft EIR/EIS Table 3.7-20 on page 3.7-96, "Potential Nonbiological Resources Impacts of Compensatory Mitigation Implementation" is flawed because it is based on incorrect assumptions such as the statement, "Because these sites are in a rural environment, sensitive receptors are generally distant; consequently, human receptors would not be exposed to the generation of noise levels in excess of established standards or local noise ordinances." Air quality and transportation impacts of biological resources mitigation are similarly lacking in substantiation and based on incorrect assumptions because Visitation Creek is not located in a rural environment. Impacts associated with potentially cutting into trash associated with the former Brisbane Landfill are also not addressed.

A portion of Draft EIR/EIS Table 3.7-20 is re-presented below with yellow highlight indicating incorrect assumptions that undermine the conclusions and demonstrate that impacts and mitigation measures have either not been considered, adequately addressed, or fully disclosed in the Draft EIR/EIS.

On page 3.8-42, the Draft EIR/EIS describes the amount of grading required for construction of the East and West LMFs, stating,

“Beyond minor grading and earthwork associated with track shifts, both alternatives would require more substantial quantities of grading and earthwork to build the East or West Brisbane LMF.”

Within other Draft EIR/EIS sections, the document discloses that Project construction would require offsite hauling of 2,082,800 cubic yards of soils materials from the East LMF, 1,463,700 cubic yards of materials from construction of the West LMF (including 432,000 cubic yards of contaminated soils), and 160,000 cubic yards of materials from construction of the Tunnel Avenue bridge relocation. Not disclosed in the Draft EIR/EIS is the fact that a large portion of the materials excavated from the former landfill requiring offsite hauling would consist of solid waste that must be disposed of at a sanitary landfill or that an unknown portion of these waste materials may need to be hauled for disposal as a hazardous waste at a distant Class I landfill.

**Portion of Draft EIR/EIS Table 3.7-20 Potential Nonbiological Impacts of Compensatory Mitigation Implementation**

Resource Type	Potential for Impacts
Transportation	<p>No. During initial restoration of habitat areas, earthmoving equipment and other construction vehicles would be transported to the sites. These relatively few trips would not be anticipated to cause traffic congestion near or en route to and from the sites. After restoration, there would be intermittent transportation to and from the mitigation sites. These largely single-vehicle trips would be intermittent and would not be anticipated to cause traffic congestion near or en route to and from the sites.</p> <p><b>Comment:</b> This ignores the tens of thousands of truck trips that would be required to haul more that 1-2 million cubic yards of materials offsite site from LMF construction.</p>
Air quality and global climate change	<p>Yes. Exhaust from construction equipment and vehicles during management activities would contribute to emissions of criteria pollutants, TACs, DPM, and GHGs.</p> <p>Earthmoving, grading, and vegetation removal activities on the mitigation sites would result in fugitive dust during construction.</p> <p>Habitat restoration and revegetation would be undertaken on off-site mitigation sites in rural areas, and potential receptors sensitive to localized air impacts are anticipated to be distant from the sites. The establishment and management of these mitigation sites would not involve any materials or activities that may subject receptors to objectionable odors.</p> <p>Vehicle trips and the use of mowers and other machinery associated with the establishment and management of the mitigation sites would contribute to emissions of criteria pollutants, TACs, DPM, and GHGs. However, these activities would be temporary and short-term during construction, and intermittent afterward.</p> <p><b>Comment:</b> The Project area is highly urbanized. Where would “offsite mitigation sites in rural areas” be available within the Peninsula region containing similar habitat types as those that would be impacted by the Project?</p>

<p>Noise and vibration</p>	<p>No. Restoration activities may result in noise and vibration impacts from vehicles, heavy equipment, mowers, and other small machinery. These activities would occur in a limited capacity and for a short duration in comparison with the overall construction noise associated with the project as a whole. Because these sites are in a rural environment, sensitive receptors are generally distant; consequently, human receptors would not be exposed to the generation of noise levels in excess of established standards or local noise ordinances.</p> <p><b>Comment:</b> The Project area is highly urbanized. Where would “offsite mitigation sites in rural areas” be available within the Peninsula region containing similar habitat types as those that would be impacted by the Project?</p>
<p>Hazardous materials and wastes</p>	<p>No. The establishment and management of off-site mitigation lands, including operation of heavy equipment and use of herbicides, could result in a temporary increase in the transportation, use, and storage of hazardous materials.</p> <p>Demolition of existing structures is unlikely; however, if needed, such activities may result in a temporary increase in waste disposal. However, structures likely to be removed would be small and are not anticipated to contain large amounts of hazardous materials.</p> <p>Facilities and construction sites that use, store, generate, or dispose of hazardous materials or wastes and hazardous material/waste transporters are required through stringent regulations to maintain plans for warning, notification, evacuation, and site security. Routine transport, use, storage, and disposal of hazardous materials are governed by numerous laws, regulations, and ordinances, thereby reducing the risk of accidental spills or releases.</p> <p><b>Comment:</b> This discussion fails to address potential for encountering trash in the former Brisbane Landfill.</p>
<p>Safety and security</p>	<p>No. These mitigation sites would not be open to the public and there would be no safety and security issues related to their establishment and management.</p> <p><b>Comment:</b> This discussion fails to address the City’s open space plan for the Baylands that proposes a passive park and trails adjacent to Visitacion Creek.</p>
<p>Land use and development</p>	<p>No. These mitigation sites would not conflict with any applicable land use plans, policies, or regulations. As these sites are presently agricultural or range land, their protection from development to use for biological resource mitigation would not create new incompatible land uses.</p> <p><b>Comment:</b> The Project area is highly urbanized. Where would “offsite mitigation sites in rural areas” be available within the Peninsula region containing similar habitat types as those that would be impacted by the Project?</p>
<p>Parks, recreation, and open space</p>	<p>No. No impacts on parks and recreation would occur because these mitigation sites would not preclude the use of parks or recreation areas, acquire any current public open-space areas, create a barrier to the access of any park or recreation area, result in acquisition of a recreation resource, increase the use of existing neighborhood and regional parks, or result in the alteration of existing recreational facilities.</p> <p><b>Comment:</b> This discussion fails to address the City’s open space plan for the Baylands that proposes a passive park and trails adjacent to Visitacion Creek.</p>

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### **The discussion of Hydrology and Water Resources is incomplete and understates Project Impacts**

*Impact HYD#1 may understate the amount of grading and the nature of materials that would be excavated for construction of either the East of West LMF. As a result, the document understates Project impacts and assumes standard grading and erosion control practices would suffice.*

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Draft EIR/EIS Table 3.8-15 includes reference to temporary stream diversions along Visitacion Creek and Guadalupe Valley Creek, including diversions affecting wetland resources. Section 3.8 does not, however, describing or analyzing the environmental impacts of these temporary diversions, the Draft EIR/EIS assumes without explanation that standard practices, such as preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) after the Project is approved, would be adequate to avoid significant impacts. In the absence of a clear description and environmental analysis of proposed temporary diversions, disclosure of the hazardous nature of materials that would be excavated during LMF construction, and a description as to why subsequent preparation of a SWPPP would, in fact, avoid significant impacts associated with temporary stream diversions and excavation and offsite hauling of hazardous soils, the Draft EIR/EIS presents insufficient information to substantiate its conclusion that Impact HYD#1 would be less than significant.

*Impact HYD#2 (Permanent Impacts on Drainage Patterns and Stormwater Runoff) fails to adequately disclose drainage system impacts, including associated with relocation of Visitacion Creek.*

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The analysis of Impact HYD#2 focuses on quantification of earthwork quantities and aquatic resources rather than impacts on drainage patterns and increased runoff. In relation to impacts within the City of Brisbane, the Draft EIR/EIS discloses:

- The West LMF is “anticipated to result in more local changes in drainage patterns from earthwork and grading because the West Brisbane LMF and the passing track would require more earthwork than the East Brisbane LMF and MT3 track.... However, overall drainage patterns in the RSA would be maintained under both alternatives.” (page 3.8-47)
- Construction of the East Brisbane LMF under Alternative A “would require filling a portion of the Visitacion Creek wetlands, Visitacion Creek scrub/shrub wetlands, and culverting the portion of the Visitacion Creek channel within the project footprint to flow under the East Brisbane LMF along the existing creek alignment.” (page 3.8-47)
- “Placing Visitacion Creek into a culvert below the proposed East Brisbane LMF would not affect the tidal hydrology of Visitacion Creek or San Francisco Bay because the culvert would be designed to convey existing flows, drainage system discharges, and tidal influence. Furthermore, flows would not be detained, impounded, rerouted, or

otherwise affected in a manner that would preclude tidal influence of Visitacion Creek or result in substantial impacts on the hydrology of San Francisco Bay.” (page 3.8-47 and 48).

- 53.3 acres of impervious surfaces would be constructed for the East LMF, while 46.0 acres of impervious surfaces would be constructed for the West LMF, including along with the LMFs, Lagoon Road realignment and relocation of the Tunnel Avenue overpass (East and West LMFs). (Table 3.8-18)
- “Both project alternatives would require the construction of new drainage systems and the modification of existing drainage systems to prevent standing water on the impervious surfaces described in Table 3.8-18 and along the railbed. New drainage systems would be required for parking lots, such as those proposed at the East or West Brisbane LMF and other impervious surfaces, such as the Tunnel Avenue overpass under both alternatives and the Lagoon Road realignment under Alternative A. These drainage systems would be connected to existing local drainage systems, requiring the Authority to coordinate with owners of these drainage systems during the design phase.” (page 3.8-55)
- “Drainage systems to drain the impervious surfaces from the East and West Brisbane LMF, passing track under Alternative B, viaducts in the San José Diridon Station Approach Subsection under Alternative B, traction power stations, and other facilities in the Authority’s dedicated right-of-way, some of which are quantified in Table 3.8-18, must be designed according to the Authority’s Hydraulic and Hydrology Design Guidelines (Authority 2011). The goal of these guidelines is to protect the track and associated infrastructure and facilities from stormwater damage, eliminate nuisance stormwater run-on and runoff, expedite drainage flow, maintain drainage capacity, and provide maintenance and pedestrian access. The designs of all bridges, culverts, and drainage systems would be documented in a drainage report.” (page 3.8-55)

Missing from analyses of Impact HYD#2 is (1) a drainage study to quantify increased flows from the Project’s impervious surfaces, (2) analysis of the capacity of downstream drainage facilities to accept those flows, (3) a description of the on- and off-site facilities needed to convey runoff from Project facilities, (4) analysis of the impacts that would be result from construction of on-and off-site drainage improvements, and (5) mitigation measures for any significant impacts that might result from Project-induced changes to drainage patterns and stormwater runoff. Also missing from Impact HYD#2 is any discussion or analysis of the relocation of Visitacion Creek identified in Impact BIO#19, which states that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands.”

Instead, the Draft EIR/EIS defers analysis and mitigation of impacts along with (1) a decision as to whether Visitacion Creek would, in fact, be relocated and (2) any environmental analysis associated with relocation of the creek until after the Project is approved, thus depriving the



public with the opportunity to review and comment on the impacts of relocating Visitacion Creek. As stated in the CEQA Conclusion for Impact HYD#2:

“The stormwater management and treatment plan (HYD-IAMF#1) would evaluate the capacity of receiving stormwater drainage systems, determine improvements and/or upgrades required to maintain or improve existing drainage capacity, and specify BMPs for infiltration, retention, or detention from new and reconstructed impervious surfaces.”

HYD-IAMF#1 does not set clear performance standards for determining the adequacy of drainage systems to accommodate Project runoff or performance standards for the design of new drainage systems to be constructed by the Project, referring instead to Authority Technical Memorandum 2.6.5 *Hydraulics and Hydrology Guidelines*, which was not made available to the public as part of the Draft EIR/EIS documents posted on the Project’s web page. The Draft EIR/EIS also does not disclose who would be responsible for maintenance of facilities constructed by the Authority as part of the Project or whether facilities to be maintained by local agencies along the route would, in fact, meet the performance and design requirements of the agencies expected to maintain those facilities.

*Impact HYD#4 (Temporary Impacts on Surface Water Quality during Construction) fails to fully address impacts associated construction of the LMF.*

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Impact HYD#4 does not address impacts related to excavations into the former Brisbane Landfill and its buried waste (East LMF) or into contaminated soils within remediation Operable Units UPC-OU-SM and OU-2 (West LMF).

The Draft EIR/EIS states on page 3.8-60 that the “primary water quality pollutant associated with construction of the project alternatives would be sediment.” As a result, analysis of Impact HYD#4 focuses on grading activities and the total amount of soil that would be excavated for either LMF site. No mention is made, or analysis conducted, related to water quality hazards associated with excavations into the former Brisbane landfill and its buried wastes that have not been characterized as either hazardous or non-hazardous. Neither mentioned nor analyzed in Impact HYD#4 are the 432,000 of contaminated soils that are proposed to be excavated, loaded on trucks, and hauled offsite during construction of the West LMF. It is inappropriate to assume that BMPs adequate for non-hazardous soils would be adequate to address the water quality impacts of hazardous soils or wastes composed primarily of domestic, industrial and shipyard waste, sewage, and rubble buried in a landfill between 1932 and 1967 before classification of wastes as hazardous or nonhazardous and before segregation of waste streams.

In the absence of such analysis and substantial evidence that BMPs designed for non-hazardous soils would, in fact, avoid significant impacts during excavations of contaminated soils and uncharacterized solid wastes, the Draft EIR/EIS cannot substantiate its CEQA conclusion that Impact HYD#4 would be less than significant.

Impact HYD#4 does not address impacts related to relocation of Visitacion Creek.

While Impact BIO#19 states that the Project would be “relocating a portion of Visitacion Creek and filling several wetlands,” no discussion of construction impacts that would be associated with such relocation is provided in Impact HYD#4. Temporary impacts on surface water quality during construction that need to be analyzed include, but are not limited to:

- Turbidity within the Brisbane Lagoon during construction of the relocated creek’s outlet.
- Location of the relocated creek in relation to waste buried within the former Brisbane Landfill.
- Excavation and stockpiling of materials during creek relocation.

A thorough review of the Preliminary Compensatory Mitigation Plan reveals the Authority is actually considering two variants, neither of which is described or explicitly analyzed in the Draft EIR/EIS:

- Fill approximately 980 linear feet of the existing Visitacion Creek and construct a culvert under the widest point of the East LMF, or
- Reroute Visitacion Creek from where it daylights just east of the Caltrain tracks to run south adjacent to the East LMF, discharging the creek into Brisbane Lagoon rather than San Francisco Bay.

Whether relocating a portion of Visitacion Creek is part of the Project (as described in Impact BIO#19) or an action being considered by the Authority for incorporation into Project mitigation as described in the Preliminary Compensatory Mitigation Plan, Impact HYD#4 must analyze and disclose the physical environmental impacts associated with filling a large portion of Visitacion Creek and relocating the creek to flow into the Brisbane Lagoon rather than into the San Francisco Bay, the water quality impacts of which need to be disclosed to the public for their review and comment.

*The Draft EIR/EIS provides an inadequate discussion of projected sea level rise.*

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While the Draft EIR/EIS recognizes on page 3.8-104 that both the West and East LMFs would be vulnerable to sea level rise, no concrete action or plan is proposed to ensure that the Brisbane LMF once constructed would not need major additional improvements to protect it from rising sea levels and force the Brisbane community to endure additional construction impacts that could be avoided by an appropriate initial design of the LMF. Neither does the Draft EIR/EIS provide any analysis of the extent to which the Project’s alteration of drainage patterns might exacerbate inundation impacts.

Instead, the Draft EIR/EIS lists generalized strategies that might be pursued sometime in the future, stating on page 3.8-103:

“Potential sea level rise adaptation measures could include flood levees, seawalls, pumps, elevated tracks, and minor track realignment. Such improvements would optimally be placed closer to San Francisco Bay or along tidal channels, rather than directly along the blended Caltrain and HSR system, given the need to protect other developments that are closer to San Francisco Bay and would also be subject to flooding....” Where multiple public and private assets are at risk of flooding due to sea level rise, coordinated regional planning for improvements will result in the best outcomes. The Authority would coordinate with these cities, as well as other stakeholders in the RSA, such as Caltrans and San Mateo County, as necessary to develop feasible long-term adaptation strategies for sea level rise. Long-term structural adaptation measures would be designed, permitted, and built in compliance with requirements from regulatory agencies.”

Thus, the Draft EIR/EIS recognizes the vulnerability of both Brisbane LMF sites while deferring preparation of a drainage study and considering how best to protect the LMF until some unknown time in the future after the Project is approved and the LMF is constructed. By pursuing this approach, the Authority would deprive the public of a full disclosure of the Project’s drainage impacts and effectively shift costs for flood protection to the Brisbane community. By designing and constructing the Tunnel Avenue bridge relocation and Lagoon Road alignment adjacent to the Brisbane Lagoon, Lagoon Road would eventually need to be realigned to the north to avoid inundation from the lagoon due to sea level rise. Realigning Lagoon Road to avoid future sea level rise would necessitate redesign and reconstruction of the bridge constructed as part of the High-Speed Rail project.

In the absence of a commitment by the Authority to take responsibility for the design and costs for protecting Lagoon Road from future sea level rise, responsibility would fall on the Baylands development, as well as Brisbane existing and future taxpayers. If the citizens of Brisbane are being asked by the Authority to take on the burden of the LMF’s construction and operational impacts, the community should not also be expected to take on the financial burden of fixing an obvious Project design flaw such as not designing the Tunnel Avenue bridge and Lagoon Road to accommodate sea level rise.

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**The analysis of Geology, Soils, and Seismicity is based on desktop research that defers onsite geotechnical studies until after the Project is approved. While it is not necessary to determine the exact design parameters for each proposed structure, in the absence of onsite geotechnical investigations, generalized findings from desktop research might not be substantiated once needed onsite studies are completed, requiring redesign of Project facilities.**

*Impact GEO#1 (Construction on Unstable Soils) understates the potential for subsidence and defers analysis and mitigation of impacts.*

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The Draft EIR/EIS discounts the potential for ground subsidence as an existing condition within the vicinity of the East LMF, stating for example:

- “Subsidence can happen over large areas when it results from regional groundwater extraction or over small areas when it results from localized dewatering.” (page 3.9-26)
- “Regional ground subsidence is not an ongoing concern in the RSA because no significant regional groundwater extraction is occurring, and no ongoing regional subsidence has been documented.” (page 3.9-44)

However, as any Brisbane resident knows, Lagoon Road between Tunnel Avenue and Sierra Point Parkway is subject to subsidence, resulting in a “roller coaster-like” ride. Subsidence along Lagoon Road occurs because it is located over municipal wastes deposited prior to 1967 within the southerly edge of the former Brisbane landfill.

While Impact GEO#1 includes discussion of “soft soils,” the Draft EIR/EIS explicitly defers the site-specific geotechnical studies needed for a thorough analysis of Impact GEO#1, as stated on page 3.9-48:

“Construction of the Brisbane LMF under both project alternatives would occur on artificial fill that is likely underlain by Young Bay Mud. During construction, the design-build contractor would assess geotechnical conditions and, if necessary, employ ground improvement methods such as stone columns, cement deep-soil mixing, or jet grouting, or excavating and replacing soft soil with engineered fill.”

“Site conditions would be assessed prior to construction to determine the most appropriate engineering solutions, in accordance with relevant design guidelines and standards such as those developed by AREMA, FHWA, and Caltrans (GEO-IAMF#10).”

Without determining where unstable soils would be found or the severity of conditions that might be encountered other than listing Project components that might be affected in Table 3.9-12, the Draft EIR/EIS describes design solutions without evaluating their feasibility or substantiating their effectiveness as would be expected of a project-level EIR/EIS:

“Heavily loaded structures, such as bridges and communication radio towers, would be constructed with deep foundations that would transfer the structural loads to noncompressible soil layers. Excavations through soft soil would be benched or braced to keep the excavation stable.”

Brisbane’s experience constructing the existing Tunnel Avenue bridge was that the bridge embankment experienced fairly large short- and long-term settlement due to its proximity to the bay and the former Brisbane Landfill. Based on review of the Authority’s plans for the Tunnel Avenue bridge relocation by the firm of Biggs Cardosa, the City’s design engineer, it is reasonable to believe that the Lagoon Road approach to the relocated bridge and its embankments would be subject to similar settlement concerns requiring extended construction settlement periods (pers. comm. with Randy Brault, PE, Brisbane City Engineer, August 10, 2020).

In the absence of (1) evaluating where within the overall Project site construction on unstable soils would occur, (2) an understanding the severity of the conditions that Project construction would encounter, (3) establishing clear performance standards to be met by potential design solutions, and (4) determining whether feasible design solutions are, in fact, available, significance conclusions cannot be substantiated, including the significance of impacts with implementation of GEO-IAMF#1 and #10. If mitigation of impacts is to rely on adherence to relevant design guidelines and standards such as those developed by AREMA, FHWA, and Caltrans, the Draft EIR/EIS must discuss how and why those design guidelines and standards would ensure impacts would be less than significant within areas such as the Baylands that are subject to fairly large short- and long-term settlement due to its proximity to the bay and the former Brisbane Landfill.

*Impact GEO#2, Construction on Expansive Soils, understates the potential for subsidence and defers analysis and mitigation of impacts.*

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In lieu of analyzing impacts associated with expansive soils, Impact GEO#2 provides the following generic statement, “Construction of both project alternatives in all subsections would occur predominantly in areas with expansive soils. The project elements that are most susceptible to the effects of expansive soil are those that involve new structures in areas with expansive soil.” Rather than identify where expansive soils would be encountered or how severe expansive soil conditions might be, Table 3.9-13 “shows project elements that would involve new structures in areas with expansive soil.”

A review of the Project’s Geology, Soils, and Seismicity Technical Report reveals that no site-specific geotechnical studies were conducted in support of the Draft EIR/EIS. In fact, the Draft EIR/EIS explicitly defers addressing expansive soils impacts, stating page 3.9-50, “Prior to construction, the design-build contractor would prepare a CMP that would specify the details of how and where these techniques would be implemented to minimize or avoid exposure of



people or structures to impacts from expansive soil (GEO-IAMF#1). These project features would be implemented in accordance with relevant guidelines and standards such as those developed by AREMA, FHWA, and Caltrans (GEO-IAMF#10).”

In the absence of (1) evaluating where within the overall Project site construction on expansive soils would occur, (2) an understanding the severity of the conditions that Project construction would encounter, (3) establishing clear performance standards to be met by potential design solutions, and (4) determining whether feasible design solutions are, in fact, available, significance conclusions cannot be substantiated, including the significance of impacts with implementation of GEO-IAMF#1 and #10. If mitigation of impacts is to rely on adherence to relevant design guidelines and standards such as those developed by AREMA, FHWA, and Caltrans, the Draft EIR/EIS must discuss how and why those design guidelines and standards would ensure impacts would be less than significant.

*Impacts GEO#3 (Exposure of Concrete and Steel to Corrosive Soils), GEO#4 (Excavation and Grading Impacts on Soil Erosion), GEO#5 (Difficult Excavations due to Shallow Bedrock and Shallow Groundwater), and GEO#8 (Secondary Seismic Hazards during Construction) defer analysis and mitigation, providing an inadequate basis for significance determinations.*

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In lieu of analysis of impacts associated with corrosive soils, Impacts GEO#3, GEO#4, and GEO#5 provide only generic impacts statements similar to those provided in Impacts GEO#1 and GEO#2. The discussion of Impacts GEO#3, GEO#4, and GEO#5 is not based on site-specific geotechnical analysis and only indicates that certain Project components might be affected. The discussion of these impacts relies on deferred IAMFs to analyze and mitigate site-specific impacts that might be encountered by Project construction.

In the absence of (1) evaluating where within the overall Project site construction on corrosive soils would occur, (2) an understanding the severity of the conditions that Project construction would encounter, (3) establishing clear performance standards to be met by potential design solutions, and (4) determining whether feasible design solutions are, in fact, available, significance conclusions cannot be substantiated, including the significance of impacts with implementation of GEO-IAMF#1 and #10. If mitigation of impacts is to rely these IAMFs, the Draft EIR/EIS must discuss how and why those IAMFs would ensure impacts would be less than significant.

*Impact GEO#6 (Construction on Landfills) presents an incomplete and misleading evaluation of impacts.*

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In lieu of analysis of impacts associated with the proposed construction of the East LMF atop the former Brisbane landfill, Impact GEO#6 provides the following generic statement:

“Landfills pose hazards for construction associated with the release of flammable gases (e.g., methane) and the potential for ground settlement because of the compressibility of buried refuse and decomposition of organic materials. Construction of the East Brisbane LMF under Alternative A would require significant earthwork cut and fill to create a level surface for the workshop, yard, tracks, and supporting systems and utilities on the site of the former Brisbane Landfill.” (page 3.9-56)

While the Draft EIR/EIS acknowledges that “significant earthwork cut and fill,” would be required for LMF construction, it fails to disclose that the Project proposes to excavate and remove a substantial portion of the landfill. Whereas Draft EIR/EIS Table 2-25 indicates that 2,082,800 cubic yards of the 2,183,800 cubic yards of “excavated materials” at the East LMF site will need to be disposed of, Dr. Michelle King, the City of Brisbane’s expert consultant who has been reviewing proposed site remediation and landfill closure plans for the Brisbane Baylands, estimates that excavations needed for construction of the East LMF within the footprint of the former landfill may be substantially greater (see Attachment Metis-C). Clearly, public disclosure by the Authority of a grading plan indicating existing ground contour elevations, proposed elevations of the East LMF, approximately elevations of the top and bottom of waste materials within the landfill, and depths of cut and fill is needed to accurately determine excavation requirements for the East LMF and serve as the basis for subsequent environmental analyses.

Also, while the Draft EIR/EIS discloses that “significant earthwork cut and fill” is required for the East LMF necessitating disposal of a substantial amount of “materials,” nowhere in the document does the Authority disclose that the “materials” for disposal will largely be composed of domestic, industrial and shipyard waste, sewage, and rubble deposited in the former landfill prior to the classification of wastes as hazardous or nonhazardous and prior to the segregation of waste streams. Because the Draft EIR/EIS does not characterize the wastes that would be excavated from the former landfill, it cannot identify the amount of excavated clean soils that could be re-used within the Baylands, non-hazardous solid wastes that need to be hauled offsite to a Class II or III landfill, and the amount of soils and wastes that would be considered to be hazardous materials and must be hauled to a distant Class I landfill.

Impact GEO#6 also does not acknowledge the former Brisbane landfill site has active oversight by the RWQCB and would require final closure compliant with Title 27 as approved by the RWQCB, CalRecycle, and the San Mateo County Health System prior to construction of the East LMF. While Section 3.10 of the Draft EIR/EIS (Hazardous Materials and Wastes) acknowledges that the East Brisbane LMF would overlie the former Brisbane Landfill, the Draft EIR does not disclose the activities needed does Title 27-compliant landfill closure or the environmental impacts that would be associated with such final closure. The Draft EIR/EIS does not present the full regulatory closure process that would have to be implemented for construction of the East LMF.

The Draft EIR/EIS states on page 3.10-40, “Prior to construction, the Authority’s design-build contractor would be required to prepare a removal action plan (RAP) that would determine the requirements for removal, transportation and disposal of excavated materials, air monitoring, regulatory concerns, and worker health and safety.” The proposed “removal action plan” is inadequate since it only addresses construction measures and not the long-term protection of human health and the environment. Clean closure of the former landfill pursuant to 27 CCR § 21810 requires a closure plan with the following information:

- (1) A detailed implementation schedule for clean closure activities;
- (2) Characterization of the site conditions to define the extent and character of wastes present and the levels and extent of any soil contamination;
- (3) A description of the excavation and material management procedures to be followed; and
- (4) A description of health and safety procedures to be followed and specific measures to protect public health and safety during clean closure activities.

Along with deferring analysis of the hazards inherent in constructing the East LMF atop the former Brisbane landfill, the Draft EIR/EIS defers mitigation of those hazards, stating only:

“Structures founded on a landfill would be built using the latest California Building Code, requiring the contractor to account for ground settlement resulting from the compression or decomposition of landfill refuse (GEO-IAMF#10). Contractors **could** employ ground improvement such as preloading to reduce future ground settlement or using deep foundations systems such as piles to transfer the weight of a building to soil/rock below the refuse (GEO-IAMF#1).” (Draft EIR/EIS page 3.9-56) (emphasis added)

These measures are inadequate since they only address structures and do not address settlement of rail lines associated within the former landfill’s footprint. These measures are also inadequate since they do not address the potential impacts of excavating into the landfill.

In the absence of (1) a detailed analysis of the amount of soil and waste materials that would be removed from the former landfill; (2) geotechnical analysis of the stability of the pad that would be constructed to support the East LMF; (3) identification of feasible remedial measures required to avoid subsidence during LMF operations; and (4) a Title 27-compliant plan that includes specific capping requirements, long-term landfill gas monitoring requirements, drainage controls, and other measures that would need to be addressed under the oversight of the RWQCB and CalRecycle for any portion of the landfill left in place, along with (5) analysis of the environmental impacts associated with excavating into and building the LMF on the former landfill, any significance determination for Impact GEO#6 is not supported with substantial evidence.

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**Section 3.10, Hazardous Materials and Wastes, fails to adequately describe the regulatory setting of the East and West LMF sites, leading to inadequate impact analyses and questionable significant conclusions based on deferred, incomplete, and ineffective Impact Avoidance and Minimization Features.**

*Section 3.10 fails to recognize the proposed West LMF site is within an active remediation site currently undergoing regulatory review of site remediation plans by the California Department of Toxic Substances Control and the Regional Water Quality Control Board.*

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Due to underlying groundwater and soils contamination issues associated with historical uses, the western portion of the Brisbane Baylands within which the West LMF is proposed requires remediation and is currently subject to active oversight by the California Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). Two separate “Operable Units” have been delineated for preparation of site remediation plans: Operable Unit San Mateo (UPC-OU-SM), which is subject to DTSC regulatory oversight and Operable Unit 2 (OU-2), which is subject to RWQCB regulatory oversight (see Figures Metis-1 and Metis-2). While the Draft EIR/EIS includes a short description of existing soil contamination affecting the West LMF, it fails to recognize that DTSC and the RWQCB are currently reviewing Draft Final Feasibility Study/Remedial Action Plans for site remediation of both UPC-OU-SM and OU-2<sup>27</sup> and fails to address public health and safety risks, as well as environmental impacts associated with site remediation and subsequent construction of the West LMF.

The Draft EIR/EIS also fails to note that the proposed remediation of UPC-OU-1 and OU-2 calls for capping existing soils with a minimum of five feet of compacted clean fill material. Since the Draft EIR/EIS does not disclose where within the West LMF contaminated soils would be excavated, clarification is needed as to whether construction of the West LMF would require excavation of contaminated soils in addition to the 432,000 cubic yards currently identified in as requiring excavation and disposal from the West LMF.

The Draft EIR/EIS’ description of the Project, analysis of hazards and hazardous materials, and cumulative impact analyses related to construction of the West LMF need to be revised to be revised to address requirements and related impacts of remediation activities that would need to be completed prior to construction of the West LMF. In the absence of such disclosures and analysis, significance conclusions regarding hazards and hazardous waste impacts associated with the West LMF cannot be substantiated.

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<sup>27</sup> Geosyntec, 2020a. *Draft Final Feasibility Study/Remedial Action Plan (FS/RAP), Brisbane Baylands Operable Unit 2, Brisbane, California, 29 May 2020.*

Geosyntec, 2020b. *Draft Final Feasibility Study/Remedial Action Plan, San Mateo County Portion of Universal Paragon Corporation Operable Unit (UPC OU-SM), Brisbane, California, 9 June 2020.*

*The Draft EIR/EIS likely understates the amount of materials that will be excavated and hauled from the former Brisbane landfill to construct the East LMF. The Draft EIR/EIS also fails to determine whether excavated materials would be hazardous or non-hazardous and fails to evaluate environmental impacts of required landfill closure activities required by California Code of Regulations Title 27 subject to regulatory oversight by the RWQCB, CalRecycle, and the San Mateo County Health System. As a result, impacts associated with construction of the East LMF are not adequately addressed.*

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Within the former Brisbane landfill, upon which a large portion of the East LMF is proposed to be constructed, closure actions in compliance with the regulatory requirements set forth in Section 20260 of Title 27 of the California Code of Regulations (CCR) are required under the regulatory jurisdiction of the RWQCB, CalRecycle, and the San Mateo County Health System.

While Impact HMW#1 acknowledges that the East LMF would overlie the former Brisbane landfill and require excavations as deep as 65 feet within the landfill, the Draft EIR/EIS does not analyze the impacts of excavating into the primarily of domestic, industrial and shipyard waste; sewage; and rubble that were placed within the former landfill between 1932 and 1967 prior to the classification of wastes as hazardous or nonhazardous and prior to the segregation of waste streams. Neither does the Draft EIR/EIS evaluate environmental impacts associated with landfill closure actions required by applicable Title 27 requirements that are subject to regulatory review of the RWQCB, CalRecycle, and the Local Enforcement Agency (San Mateo County Environmental Health Services).

Construction of the East LMF would require significant earthwork cut and fill to create a level surface for the workshop, yard, tracks, and supporting systems and utilities within the former Brisbane Landfill. An estimated 2.2 million cubic yards of cut would be required, with excavation depths of 60 feet below ground surface into wastes previously disposed of in the landfill.

Whereas Draft EIR/EIS indicates on page 3.10-28 that 2.2 million cubic yards of cut would be required for construction of the East LMF, Dr. Michelle King, the City of Brisbane's expert consultant who has been reviewing remediation plans for the Brisbane Baylands, estimates that excavations needed for construction of the East LMF could be greater and include a substantial amount of waste materials previously placed within the former landfill (see page 3, Attachment Metis-C<sup>28</sup>). Thus, Impact HMW#1 fails to quantify or characterize the waste materials that would be excavated for construction of the East LMF.

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<sup>28</sup> As stated in the EKI report: "Thus, excavation of the East Brisbane LMF to track grade, not accounting for any over-excavation to install a landfill cap or to reach the project subgrade, would result in the generation of approximately 3,000,000 cy (75 acres with an average cut of 25 feet), approximately 50% more than that estimated in the Draft EIR. This quantity of soil equates to approximately 250,000 truckloads of material."



In the absence of (1) determining the amount of solid waste that would be excavated from the landfill and (2) characterizing those wastes, the Draft EIR/EIS cannot determine the amount of excavated materials from the East LMF that could be reused onsite (i.e., clean soils), hauled for disposal at a Class II or III landfill (i.e. non-hazardous wastes), or the amount of materials that must be hauled to a distant Class I landfill (i.e., contaminated soils and hazardous wastes).

Without such analysis, the Draft EIR/EIS cannot adequately analyze hazards and hazardous materials impacts associated with construction of the East LMF, nor can the document substantiate its significance conclusion for HMW#1. In addition, without determining the amount of excavated materials from the East LMF that can be hauled to and disposed at a Class II or III landfill and the amount that must be hauled to a distant Class I landfill, the validity of construction-related mobile source air quality and construction traffic impacts is questionable.

*CEQA conclusions for Impacts HMW#1, HMW#2, and HMW#10 are based on incomplete analyses, as well as deferred, incomplete, and ineffective Impact Avoidance and Minimization Features.*

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By deferring geotechnical investigations until after the Project is approved (**GEO-IAMF#1: Hazards**), the Draft EIR/EIS leaves unanswered several critical questions:

- Will all refuse within the footprint of the East LMF be excavated and removed, or will the East LMF be constructed on top of a yet-to-be-determined depth of wastes?
- How much subsidence would the East LMF be subject to?
- What is proposed to mitigate the impacts of subsidence within the East LMF? What extraordinary measures (e.g., pile driving of piers for building foundations down to bedrock which would also require specific noise and vibration analysis), if any might be required?
- What is proposed to ensure will the stability of adjacent landfill slopes throughout excavations and following LMF construction?
- Who would own the westerly landfill slope and provide financial assurances for the long-term safety of the slope and any other portion of the landfill for which the Authority ultimately completes Title 27 landfill closure, whether or not located on Authority property?
- What are the applicable requirements for capping and closure design for the landfill?
- What specific actions need to be taken to comply with those requirements for the East LMF and what are their environmental effects?
- Since the East LMF does not encompass the whole of the former Brisbane landfill, what are the challenges associated with the Authority undertaking landfill closure of only a

portion of the landfill? What effects would a partial landfill closure undertaken by the Authority for the East LMF have on Title 27 closure for the balance of the landfill by the landowner?

- What is the amount of excavated materials from the East LMF that can be reused onsite (i.e., clean soils), hauled for disposed at a Class II or III landfill (i.e., non-hazardous waste), and the amount that must be hauled to a distant Class I landfill (i.e., contaminated soils and hazardous wastes)?
- How severe are the environmental and public health hazards associated with excavation, offsite hauling of materials, construction of the East LMF?
- What mitigation measures are required to protect the environment and public health?

By deferring answers to these questions until after Project approval, the public is deprived of the opportunity to review and comment on whether impacts associated with the transport, use, storage, and disposal of hazardous materials and wastes during construction of the Brisbane LMF would be significant and if so, review and comment on the specific mitigation measures or performance standards that would be implemented to protect the environment and the public's health and safety.

The landfill gas monitoring proposed in GEO-IAMF#3 (Gas Monitoring) would be inadequate since the measure is designed for worker protection and active construction work and fails to address exposure to the nearby community, including future workers within the LMF and long-term requirements for landfill gas monitoring that would be needed at the East LMF.

**HMW-IAMF#1 (Property Acquisition Phase 1 and Phase 2 Environmental Site Assessments)** calls for Phase 1 and Phase 2 Environmental Site Assessments to be performed and remediation implemented as needed for the Project. While this generic measure may be appropriate for the majority of the Project area, it ignores the known contamination present within the Baylands as well as ongoing site remediation studies (West LMF) and landfill closure studies for the former Brisbane landfill (East LMF). The Draft EIR/EIS needs to disclose the specific actions the Authority will take to address known contamination at these sites, evaluate environmental impacts associated with hazards and hazardous materials present within the West and East LMF sites, and identified the mitigation measures needed to address LMF construction and regulatory requirements.

**HMW-IAMF#2 (Landfill)** indicates that measures would be put in place to monitor and measure methane for work within 1,000 feet of a landfill but ignores the fact that the East LMF would be constructed on an existing landfill, portions of which would remain in place underneath or adjacent to the LMF. HAZ-IAMF#2 is inadequate in that it does not analyzes impacts or address regulatory requirements for on-going post-closure methane monitoring, nor does it address other critical elements of landfill closure in compliance with CCR Title 27. The Draft EIR/EIS fails to evaluate the impacts of constructing the East LMF on the landfill,

including (1) documentation to remove portions of the landfill for construction of the LMF, (2) the remedial actions that would be required to be undertaken by the Authority for any remaining portions of the landfill such as the slopes of the landfill adjacent to the East LMF, (3) environmental impacts associated with landfill closure, and (4) required regulatory agency oversight.

**HMW-IAMF#4 (Undocumented Contamination)** indicates that a Construction Management Plan would be prepared following completion of the CEQA/NEPA public review processes and Project approval to identify procedures to address unknown contamination that could be encountered during construction. While this measure is appropriate for unknown contamination that may be encountered along and immediately adjacent to the High-Speed Rail alignment, it is insufficient for the East and West LMF sites where contamination is already documented and requires plans for site remediation and landfill closure, analysis of impacts associated with site remediation and landfill closure, and regulatory approvals of Remedial Action Plans and Remedial Development Implementation Plans (West LMF), as well as plans for Title 27 landfill closure (East LMF) to protect human health and the environment both during construction and in the long-term during Project operations. Referring to site remediation for the West LMF and Title 27 closure for the East LMF as addressing “undocumented contamination” deferring documentation of measures to address known onsite contamination and evaluating the impacts of those measures, as currently proposed by HMW-IAMF#4 deprives the public of critical information needed to review and provide informed comments on the Project.

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**The Project will result in unacceptable public safety impacts during and after construction of the Brisbane LMF, without offering adequate mitigation.**

*Construction of the relocated Tunnel Avenue bridge requires relocation of Brisbane's existing fire station. Neither of the relocation options addressed in the Draft EIR/EIS are feasible.*

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Section 3.11, Safety and Security, acknowledges that both the East and West LMF would require relocation of the Tunnel Avenue overpass along with relocating the southern terminus of Tunnel Avenue from the intersection of Bayshore Boulevard/Old County to the Bayshore Boulevard/Valley Drive intersection, which would, in turn, require relocation of the existing Brisbane Fire Station.

As shown in Draft EIR/EIS Figure 3.11-12, below, for the East LMF, the City's existing fire station is proposed to be relocated approximately 600 feet south of the existing fire station, with two driveways connecting to Bayshore Boulevard. The southerly driveway for the relocated fire station would connect to the east leg of the signalized Bayshore Boulevard/Old County Road intersection, providing full access to Bayshore Boulevard. A second northerly driveway would connect to Bayshore Boulevard approximately 400 feet north of Old County Road, providing a mid-block location with right-in, right-out only access to northbound Bayshore Boulevard.

The proposed relocation described in the Draft EIR/EIS is infeasible and unacceptable to the City and North County Fire Authority for several reasons<sup>29</sup>. The constraints of the site area remaining after demolition of the existing station require the relocated station to be placed with its apparatus bays facing parallel to Bayshore Boulevard instead of perpendicular, which would increase response times. Emergency vehicles leaving the station's apparatus bays would be required to travel down a long driveway before having to slow down to make a 90-degree turn to reach the Bayshore Boulevard/Old County Road intersection. Elimination of a short perpendicular access to Bayshore Boulevard in favor of a longer driveway parallel to Bayshore Boulevard would increase emergency response times from the station. Providing a pre-empt traffic control button at the relocated station to clear and stop traffic at the Bayshore Boulevard/Old County Road intersection would not address the relocated station's increased overall response time since a pre-empt traffic control button is already available at the existing station for its more direct access to Bayshore Boulevard.



Draft EIR/EIS Figure 3.11-12: Proposed Fire Station Relocation - East LMF

<sup>29</sup> Pers. comm. John Swiecki, City of Brisbane, September 4, 2020; North County Fire Authority comment letter, September 9, 2020.

The location proposed for relocation of the fire station is also very narrow, providing only 90 feet between Bayshore Boulevard and the existing Tunnel Avenue bridge. Because construction of the fire station would take approximately one year, demolition of the existing bridge could not be accomplished until construction of the relocated fire station was well underway immediately adjacent to the bridge. As discussed below, the currently proposed 1-3 month closure of the Tunnel Avenue bridge would have a severe impact on emergency response times. Extending that time period to permit demolition of the existing bridge prior to construction of the relocated fire station would only exacerbate an already unacceptable impact.

As shown in Draft EIR/EIS Figure 3.11-13, below, for the West LMF, the fire station is proposed to be relocated approximately 150 feet south of the existing fire station, with a single driveway for the relocated fire station connecting to Bayshore Boulevard at a mid-block location that provides right-in, right-out only access to northbound Bayshore Boulevard. As stated on page 3.11-54, fire trucks exiting the relocated fire station “would only be able to turn northbound onto Bayshore Boulevard. To reach destinations to the south of the existing fire station, fire trucks would have to make a U-turn at the signalized Bayshore Boulevard/Valley Drive intersection.” Not stated in the Draft EIR/EIS is that the single entrance to the fire station indicated in Draft EIR/EIS Figure 3.11-13 would require fire trucks returning to the station to stop on Bayshore Boulevard and back into and along the driveway to the station’s apparatus bays.

Rather than revise the proposed fire station relocation plan and to avoid this obviously infeasible and dangerous design, the Draft EIR/EIS offers Mitigation Measure SS-MM#2 deferring revisions to the Figure 3.11-13 to provide for:

“a new mid-block signalized intersection (i.e., signal only for the fire station driveway) at the secondary driveway on Bayshore Boulevard between signalized intersections at Valley Drive and Old County Drive. In addition, median modifications at the new mid-block intersection would provide a break in the raised median to allow fire truck movements and a short southbound left-turn pocket where inbound fire trucks could wait for the fire station signal to be triggered. The contractor would prepare all materials necessary for and obtain the approval of the City of Brisbane for the implementation of this improvement.”

The Draft EIR/EIS asserts this mitigation measure “would be effective in maintaining existing emergency vehicle response times for the Brisbane Fire Station under Alternative B. Implementing SS-MM#2 would not result in secondary impacts because the driveway access control modifications would be located within existing developed public rights-of-way.”





Draft EIR Figure 3.11-13: Proposed Fire Station Relocation – West LMF

Rather than proposing a mitigation measure to fix the fatally flawed fire station relocation plan illustrated in Draft EIR/EIS Figure 3.11-13, the Draft EIR/EIS should have revised the figure and accompanying text to reflect the relocation and access described in the text of Mitigation Measure SS-MM#2 to facilitate public review and comment on what was actually being proposed.

While Mitigation Measure SS-MM#2 would provide a signalized full turning movement onto Bayshore Boulevard, it would still have a fatally flawed design that is unacceptable to the North County Fire Authority for several reasons. The constraints of the available site area and location of its single access to Bayshore Boulevard require the placement of the relocated station with its apparatus bays facing parallel to Bayshore Boulevard instead of perpendicular, which as described above for the East LMF would increase response times by replacing a short perpendicular access to Bayshore Boulevard with a longer driveway parallel to Bayshore Boulevard requiring fire trucks to make a 90-degree turn before turning onto Bayshore Boulevard. The single access to Bayshore Boulevard retained in SS-MM#2 would also require fire trucks returning to the station to stop on Bayshore Boulevard and back into and along the driveway to the station's apparatus bays, which would be particularly problematic for fire trucks returning to the station southbound along Bayshore Boulevard.

Because the Project would displace the City's existing fire station and the Draft EIR/EIS provides no feasible relocation site, Impact S&S#3 (Permanent Impacts on Emergency Access and Response Times Caused by Construction) must be revised to thoroughly analyze the constraints to relocating Brisbane's existing fire station to the south and recirculate the Draft EIR/EIS to identify an offsite location to which the fire station would be located that is acceptable to the City of Brisbane and the North County Fire Authority and provide environmental analysis for relocation of the fire station to that site. Alternatively, the recirculated Draft EIR/EIS would need to conclude Impact S&S#3 would be significant and unavoidable. However, leaving a city with a fatally flawed fire station is a significant and unavoidable impact that could never be legitimately outweighed by Project benefits to allow for Project approval despite that significant unavoidable impact.

*The proposed closure of the Tunnel Avenue bridge would pose an extraordinary safety risk by preventing the Brisbane Police Department and North County Fire Authority from quickly responding to emergencies within the portion of the City east of Bayshore Boulevard and the Caltrain right-of-way.*

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The assessment of temporary emergency access on Draft EIR/EIS page 3.11-50 understates emergency access impacts during the time the Tunnel Avenue bridge and Tunnel Avenue would be closed.

Draft EIR/EIS page 3.11-50 describes emergency access delays during construction as follows:

“The realignment of the Tunnel Avenue overpass under both project alternatives would require closure of Tunnel Avenue for 1 month and would cause temporary delay for emergency vehicles because direct east-west access between US 101 at the Lagoon Road off-ramp and Bayshore Boulevard and central Brisbane would be blocked. For example, if there was an emergency incident on US 101 near the Lagoon Road off-ramp, emergency vehicles from the Brisbane Fire Station at 3445 Bayshore Boulevard would be delayed by having to use Bayshore Boulevard to travel north to the Beatty Avenue on-ramp or south to Oyster Point Boulevard in South San Francisco. Similarly, vehicles would also be delayed if traveling from US 101 into central Brisbane. The realignment of Tunnel Avenue with construction of the East Brisbane LMF would require temporary closure of Tunnel Avenue for between 1 and 3 months, which would not affect east-west connections between US 101 and Bayshore Boulevard but would temporarily hinder north-south travel to the industrial areas north of the proposed East Brisbane LMF.”

The Draft EIR/EIS incorrectly asserts that emergency vehicles responding to an accident US 101 near the Lagoon Road off-ramp would be able to “use Bayshore Boulevard to travel north to the Beatty Avenue on-ramp” and then south on the US 101 freeway. Because Beatty Avenue does not connect to Bayshore Boulevard into San Francisco, the actual route required for emergency response would be north on Bayshore Boulevard, turn right onto Blanken Avenue, right onto

Tunnel Avenue, and left onto Beatty Avenue to the US 101 southbound on-ramp, and then south on the freeway to the freeway offramp. Available emergency access routes between the existing Brisbane Fire Station and various locations in Brisbane are illustrated in Figures Metis-5 through Metis-9.

As illustrated in Figures Metis-5 through Metis-9, temporary closure of the Tunnel Avenue bridge would dramatically increase response times for Brisbane fire and police first responders.<sup>30</sup> In addition, if the Tunnel Avenue bridge and Tunnel Avenue between Lagoon Road and Beatty Avenue are closed simultaneously, *no* emergency or operational access would be available to the Kinder Morgan tank farm. As stated in the September 9, 2020 comment Draft EIR/EIS letters from the Brisbane Police Department and North County Fire Authority, the increased response times resulting from temporary closure of the Tunnel Avenue bridge and Tunnel Avenue would endanger public safety and are unacceptable.

The Draft EIR/EIS acknowledges that the “impact would be significant under CEQA for the project alternatives because temporary road closures associated with construction related to the Tunnel Avenue overpass (both alternatives), Tunnel Avenue realignment (Alternative A), and the passing track (Alternative B) would result in longer travel paths that could delay emergency vehicle response times... The project features would minimize increases in emergency response delays through coordination with local jurisdictions and procedures for implementing or maintaining emergency vehicle access during construction, but significant impacts would still occur. A mitigation measure to address this impact under Alternative B is identified in Section 3.11.9, CEQA Significance Conclusions. Section 3.11.7, Mitigation Measures, describes the measure in detail.”

None of the mitigation measures set forth in Draft EIR/EIS Section 3.11.7 address the public safety impacts that would result from the temporary closure of impacts of the Tunnel Avenue bridge and Tunnel Avenue. The only mitigation measures set forth in Section 3.11.7 are the following.

- SS-MM#1: Construction Traffic Management for Passing Track Section
- SS-MM#2: Modify Driveway Access Control for Relocated Brisbane Fire Station
- SS-MM#3: Install Emergency Vehicle Priority Treatments near HSR Stations
- SS-MM#4: Install Emergency Vehicle Priority Treatments Related to Increased Gate-Down Time Impacts

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<sup>30</sup> Brisbane police first responders would follow the same routes as first responders from the fire station, starting at the intersection of Bayshore Boulevard and Valley Drive.





Figure Metis-5

Emergency Access Routes – Brisbane Fire Station to Recology Entrance on Beatty Avenue



Figure Metis-6

Emergency Access Routes – Brisbane Fire Station to US 101 SB On/Off Ramps near Lagoon Road North via Bayshore Boulevard





Figure Metis-7

Emergency Access Routes – Brisbane Fire Station to Golden State Lumber



Figure Metis-8

Emergency Access Routes – Brisbane Fire Station to Kinder Morgan Brisbane Terminal





Figure Metis-9

Emergency Access Routes – Brisbane Fire Station to  
Sierra Point (Doubletree Hotel)

The mitigation offered in the Draft EIR/EIS – having the construction contractor determine available emergency access routes during the temporary closure of the Tunnel Avenue bridge and Tunnel Avenue *after* the Project is approved (SS-IAMF#1) – constitutes impermissibly deferred mitigation that deprives the public with the opportunity to review and comment on this critical public safety issue. Because the Draft EIR/EIS has not undertaken analysis of the extent of emergency response impacts in Brisbane due to temporary road closures and has not determined what alternative access routes might be available during closure of the Tunnel Avenue bridge and Tunnel Avenue (with the exception of an alternative route that would not actually exist), the City of Brisbane was forced to undertake the analysis that should have been completed in the Draft EIR/EIS. As shown in Figures Metis-5 through Metis-9, none of the emergency access routes that would be available during temporary closure of the Tunnel Avenue bridge and Tunnel Avenue would permit acceptable emergency response times.

The Draft EIR/EIS recognizes this significant impact and offers only deferred and ineffective SS-IAMF#1 that would require the Authority’s contractor to “prepare a construction safety transportation management plan that includes the contractor’s coordination efforts with local jurisdictions for maintaining emergency vehicle access during construction” and “specify the contractor’s procedures for implementing temporary road closures, including access to residences and businesses during construction, lane closures, signage, detour provisions, emergency vehicle access, and alternative access locations.”

The Draft EIR/EIS concludes that Impact S&S#1 (Temporary Impacts on Emergency Access and Response Times from Temporary Road Closures, Relocations, and Modifications) would be significant and unavoidable for the Tunnel Avenue relocation in Brisbane. Because there are no circumstances under which significant delays in emergency response times that would endanger property and lives could be considered acceptable, the only realistic solution would be for the Authority to redesign the construction and staging of the Tunnel Avenue bridge relocation and realignment of Tunnel Avenue to permit the bridge and full length of Tunnel Avenue between Beatty Avenue and Lagoon Road to remain open at all times during construction of the Brisbane LMF. Simply determining emergency access to be a significant and unavoidable impact in the absence of understanding (1) what emergency access would be available during such closures and (2) demonstrating that modifications to roadway and bridge designs as well as construction staging would not be able to avoid these closures is insufficient and dangerous. Therefore, the following mitigation measure needs to be implemented:

**TR-MM#\_\_\_: Temporary Road Access during Brisbane LMF Construction**

The Tunnel Avenue bridge relocation (East and West LMF) and Tunnel Avenue realignment (East LMF only) shall be designed and constructed so as to maintain access along Tunnel Avenue from Beatty Avenue to Bayshore Boulevard as well as access along Lagoon Road between Tunnel Avenue and Sierra Point Parkway open at all times throughout construction of the Brisbane LMF and related facilities.

**The analysis of impacts contained in Section 3.12, Socioeconomics and Communities, is incomplete and fails to address the Project’s significant impacts on the Brisbane community.**

*The definition of “displacements and relocations” needs to include displacement of governmental facilities. Also, “acquisition” needs to be defined so as to include both fee title purchase and temporary construction easements.*

The Draft EIR/EIS offers the following definitions at the outset of Section 3.12, Socioeconomics and Communities:

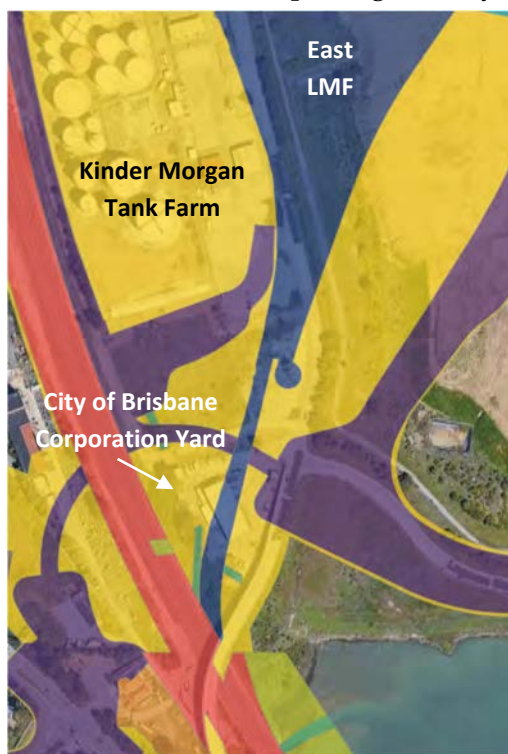
*Displacements* refers to the movement of people out of their residences, businesses, or nonprofit organizations as a result of acquisition of private property for a transportation or other government project. *Relocations* refers to the relocation of people into new homes, or commercial or industrial properties with assistance and benefits in accordance with federal and California laws as discussed in Section 3.12.2, Laws, Regulations, and Orders.

By defining “displacements and relocations” to exclude displacement of governmental facilities, the Draft EIR/EIS fails to disclose or evaluate the environmental effects of displacing the City of Brisbane’s existing corporation yard for construction of the East LMF. As illustrated in the Figure Metis-10, the rail line connecting northbound high-speed rail traffic to the East LMF will run through the middle of Brisbane’s existing corporation yard.

Also, the term “acquisition” needs to be defined so as to include both not just fee title purchase but also temporary construction easements. As shown in Figure Metis-10, a temporary construction easement would cover the entirety of the Kinder Morgan tank farm for construction of the East LMF. For construction of the West LMF, the entirety of the City’s corporation yard is shown within a temporary construction easement.

As a result of the definitions used in the Draft EIR/EIS, impacts associated with displacing the City’s corporation yard (East LMF) or disruptions to operations at the City’s corporation yard and Kinder Morgan tank farm (West LMF) are not disclosed.

Dislocation of the corporation yard or disruptions in City ability to maintain operations essential public works services during LMF construction could have far-reaching impacts on the



Metis-10: Displacement Impacts of the Brisbane LMF



Brisbane community that need to be but are not addressed in the Draft EIR/EIS. Disruptions in the ability of Kinder Morgan to continue full operations and site maintenance during LMF construction could have far-reaching impacts on jet fuel deliveries to San Francisco International Airport, as well as fuel deliveries to service stations throughout the Bay Area.

*The Draft DIR/EIS fails to disclose impacts to the operations of Golden State Lumber.*

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On page 3.12-12, the Draft EIR/EIS states:

“Partial acquisitions that would not result in displacement or relocation are not included in this analysis because they would consist of minor sliver acquisitions of parcels that are currently adjacent to the Caltrain corridor, which would not substantially affect communities and neighborhoods.”

This is not, however, the case in Brisbane where the East LMF would remove Golden State Lumber’s existing lay-down area for off-loading and storing lumber shipped by rail<sup>31</sup>. Loss of its lay-down area would require Golden State Lumber to block Tunnel Avenue while it unloads lumber shipments from rail cars. Because Golden State Lumber currently receives approximately 30 percent of its stock by rail, loss of their lay-down area could have a substantial adverse effect on the business and its ability to remain in its current location. Golden State Lumber is vital part to the City’s economic health, contributing more than 20 percent of Brisbane’s sales tax revenue.

*Impact SOCIO#1 provides only a cursory, generalized analysis of impacts that concludes impacts would be less than significant based on deferred mitigation in an IAMF. No analysis is provided demonstrating TR-IAMF#2 would, in fact, avoid significant impacts.*

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Impact SOCIO#1 describes where roadway closures would occur during Project construction and describes the types of impacts that would result. The Draft EIR/EIS does not, however, recognize that Project-related temporary roadway closures would affect different areas in different ways. The following generic analyses is provided to address Project impacts ranging from 2-4 weeks to one year or more from Mission Bay and 16th Street in San Francisco to Bird Avenue and Delmas Avenue in San José.

“Temporary road closures would disrupt communities and community interactions where access to some neighborhoods, businesses, or community facilities would be temporarily obstructed, especially for those with ingress and egress on roadway

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<sup>31</sup> As shown in the Authority’s plans for the East LMF (Exhibits TC2-MY-C010A and Exhibits TC2-MY-C010B) provided in Appendix B to Attachment Metis-F: City of Brisbane, California High-Speed Rail Authority San Francisco – San Jose Draft EIR/EIS Brisbane Impacts Evaluation Technical Review Narrative.

segments that are under construction. Residents and community members would be required to take short, temporary detours. The changes to circulation and access during construction would result in short-term inconvenience and increased travel times for pedestrians, bicyclists, motorists, and transit, which would affect established social engagement patterns within the communities.”

“Although access to some neighborhoods, businesses, and community and public facilities could temporarily be obstructed, especially for those with ingress and egress on roadway segments that are under construction, access would continue to be provided.”

While descriptions of proposed temporary road closures are provided for various segments of the Project, these descriptions do not analyze the functions of roadways planned for temporary closure, the amount of traffic they carry, or the availability of alternative routes and existing congestion along those routes. Yet, the Draft EIR/EIS asserts that temporary detours would be “short,” and that changes to circulation would only be an “inconvenience.”

While TR-IAMF#2 requires the construction management plan to include “provisions for 24-hour access by emergency vehicles,” no performance standards are included as to how well such temporary emergency access is to function. Thus, the construction contractor could argue that the unacceptably long emergency access illustrated in Figures Metis-5 through Metis-9 provide 24-emergency access and therefore comply with TR-IAMF#2. In the absence of analyzing the functions of roadways planned for temporary closure, the amount of traffic they carry, availability of alternative routes, and existing congestion along those routes, the Draft EIR/EIS has no basis for its assumption that TR-IAMF#2 would successfully avoid significant impacts or find a solution to the significant unavoidable impact Brisbane would face.

In relation to noise and vibration, the Draft EIR/EIS concedes that sensitive receptors would “experience temporary noise levels in exceedance of the FRA noise impact criteria for up to 2 years at any given location.” Nevertheless, without identifying whether these sensitive receptors would be subject only to daytime noise or to noise from nighttime construction activities, the Draft EIR/EIS asserts that subsequent preparation of a construction management plan would avoid significant construction noise and vibration impacts. It should be noted that the Draft EIR/EIS includes the following in relation to noise and vibration from pile-driving impacts.

Avoiding impact pile driving **where possible in vibration-sensitive areas** by requiring compliance with the FRA and FTA guidelines for **minimizing construction noise and vibration impacts** when work is conducted **within 1,000 feet of sensitive receptors**. (emphasis added)

As Brisbane residents and employees know, due to the community’s unique topographic setting, noise from impact pile driving carries much farther than 1,000 feet and the rhythmic pounding of pile driving activities can be a substantial annoyance even when impacts have

been “minimized.” Rather than relying on the construction contractor to determine where it is “possible” to avoid impact pile driving and what “minimizing” noise and vibration impacts mean, an enforceable mitigation measure with clear performance standards needs to be required by the Draft EIR/EIS for future construction.

Draft EIR/EIS page 3.12-43 states, “Construction activities for the East Brisbane LMF under Alternative A would be occur approximately 1,900 feet from the nearest residences, while construction activities for the West Brisbane LMF under Alternative B would occur 1,500 feet from residences. Sensitive receptors would experience these temporary construction noise impacts for up to 2 years at any given location.”

While the Draft EIR/EIS recognizes that the City of Brisbane approved a General Plan Amendment permitting 1,800 to 2,200 dwelling units within the Brisbane Baylands, which the Draft EIR/EIS also identifies as a probable future project, the statement on page 3.12-43 ignores these facts, as well as the fact that San Francisco has approved residential development along the west side of the Caltrain line just to the north of the proposed West LMF. As a result, the Draft EIR/EIS fails to disclose the likelihood that residential development within the Baylands and immediately to the north in San Francisco would be under construction and occupied by 2025 or 2026, placing the nearest residences closer to construction noise than the Draft EIR/EIS asserts.

On page 3.12-44, the Draft EIR/EIS states:

“Construction activities within this subsection would predominantly occur in the existing right-of-way, with the exception of the Brisbane LMF, which would be built on vacant lands in the Brisbane Baylands area. Construction of the Brisbane LMF would require construction staging, excavation, grading, clearing and grubbing, building construction, and trackwork over a period of approximately 1 year. Under Alternative A, the East Brisbane LMF would be built east of the existing Caltrain right-of-way and would require the realignment of Tunnel Avenue to the east of the LMF. Under Alternative B, the West Brisbane LMF would be built west of the existing Caltrain right-of-way.”

This and similar statements made in the Draft EIR/EIS and its technical report implies that vacant lands in the Brisbane Baylands area are in a development-ready condition. They are not. The Draft EIR/EIS understates the complexity of site construction within the Baylands, which is, in fact, a contaminated site that requires extensive site remediation prior to West LMF construction and substantial remedial work and Title 27 landfill closure for the East LMF. Before such remediation for the West LMF site could begin, the Authority would be required to prepare Remedial Action Plans and Remedial Development Implementation Plan to document the specific methods and applicable performance standards to bring the West LMF into a developable condition. Regulatory review, environmental documentation, and approval by the

Department of Toxic Substances Control and the Regional Water Quality Control Board would also be required. The Draft EIR/EIS therefore likely understates the length of time construction of the Brisbane LMF and its various improvements would take.

Whereas the Draft EIR/EIS refers to “excavation, grading, clearing and grubbing,” page 3.12-44 does not refer to the fact that the East LMF is proposed to be built on a former landfill for which final closure plans in compliance with CCR Title 27 have neither been prepared nor implemented. Excavation for construction of the East LMF would extend into the wastes within former landfill and require disposal at an offsite location. Since no site-specific waste characterization or geotechnical studies appear to have been undertaken for construction within the former landfill, the extent of required landfill closure activities and the time it would take to close the landfill prior to LMF construction is unknown.

The Draft EIR/EIS also presents an overly optimistic estimate of construction time for relocation of the Tunnel Avenue bridge and realignment of the Tunnel Avenue realignment. In comparison, construction of the existing Tunnel Avenue bridge took approximately 2 years due to soil conditions present within the Brisbane Baylands and the need for dynamic compaction of soils to achieve an adequate foundation for the bridge. There is no reason to believe that soil conditions at the site of the proposed new bridge crossing 400 feet north of the existing bridge would be substantially different than those of the existing Tunnel Avenue bridge. In addition, it is not known whether excavation of the former Brisbane landfill for construction of the East LMF and relocated Tunnel Avenue would remove all solid waste or if the East LMF and realigned Tunnel Avenue would be placed atop waste materials. Since site-specific geotechnical conditions for the East LMF, relocated Tunnel Avenue bridge foundations, and realigned Tunnel Avenue were not analyzed, actual relocation of the existing Tunnel Avenue bridge and realignment of Tunnel Avenue are likely to take longer than the estimated 1-3 months cited in the Draft EIR/EIS. As a result, the length of time between closure of the existing Tunnel Avenue bridge and the opening of the new bridge, including realignment of Tunnel Avenue and Lagoon Road approaches to the new bridge is likely to be longer than the 1 month cited on Draft EIR/EIS page 3.11-50.

Until more definitive information is developed, the length of time required for LMF construction cannot be reasonably estimated. In light of these unknowns and the lack of enforceable and effective measures to avoid impacts, the Draft EIR/EIS fails to substantiate its CEQA conclusions that Impact SOCIO#1 would be less than significant.

*Impact SOCIO#2 fails to fully disclose impacts associated with relocating the Brisbane fire station.*

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By stating that “the realignment of the Tunnel Avenue overpass would require reconfiguration of the Brisbane Fire Station,” Impact SOCIO#2 understates the Project’s actual impact. First, the Tunnel Avenue overpass is not proposed to be realigned. The existing bridge crossing will be

demolished with a new bridge being constructed 400 feet to the north. In addition, the fire station is not proposed to be reconfigured. As shown in Draft EIR/EIS Figures 3.11-12 and 3.11-13, the community's existing fire station is proposed to be demolished and a new station constructed to the south. However, as discussed in comments on Impact S&S#3, neither of the proposed relocation sites are feasible. Therefore, impacts related to the Brisbane fire station would be significant and in the absence of identifying an alternative offsite location for the station to be moved to and completing environmental analysis for moving the station to a new site, both Impact S&S#3 and Impact SOCIO#2 must be considered to be significant and unavoidable.

*Impact SOCIO#2 provides an incomplete and misleading discussion of displacements and dislocations.*

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Both Draft EIR/EIS Section 3.12 and Draft EIR/EIS Community Impact Technical Report TR-11 state that the Project would "require three business displacements" without disclosing any analysis leading to this conclusion. The Draft EIR/EIS does state elsewhere that two industrial businesses and a commercial nursery would be dislocated.

It appears that one of the industrial businesses that would be displaced by bridge and roadway relocations for the Brisbane LMF is the historic Machinery & Equipment building, which was constructed in 1924 that now houses the Machinery & Equipment, Inc. Impacts to the Machinery & Equipment building are not addressed but need to be as a cultural resources impact in the Draft EIR/EIS.

While both the Mission Blue Nursery and Machinery & Equipment, Inc. would be displaced, it is unclear what the third Brisbane business is that would be dislocated for construction of the LMF, although it appears that the third dislocation may be the City of Brisbane corporation yard. Construction of the East LMF would require running the rail line connecting the East LMF to the rail lines within the Caltrain right-of-way through the center of the City's corporation yard. If the City's corporation yard is not, in fact, the third business to be dislocated by LMF construction, the Draft EIR/EIS should disclose what that third business is and where it is located, as well as address displacement of the City's corporation yard. Because of its vital function in maintaining the community's infrastructure, it is critical that the City's corporation yard be able to remain functioning throughout LMF construction.

On page 3.12-12, the Draft EIR/EIS states:

"Partial acquisitions that would not result in displacement or relocation are not included in this analysis because they would consist of minor sliver acquisitions of parcels that are currently adjacent to the Caltrain corridor, which would not substantially affect communities and neighborhoods."



However, this is not the case in Brisbane where the East LMF requires partial acquisition from the Golden State Lumber company and the Kinder Morgan tank farm. Construction of the East LMF would eliminate Golden State Lumber's auxiliary laydown area on the south side of Tunnel Avenue. With the elimination of this laydown area, equipment for off-loading of lumber from railcars would be required to block Tunnel Avenue and immediately move product into its main yard since its laydown yard would no longer be available. The loss of its laydown area would substantially reduce the company's storage area and have adverse effects on both Tunnel Avenue and Golden State Lumber's operations, which are not addressed in the Draft EIR/EIS. The potential loss of Golden State Lumber, which currently generates approximately 20 percent of Brisbane's sales tax revenue would have a major economic effect on the City.

The East LMF would relocate the Kinder Morgan tank farm's current access point from Tunnel Avenue on the east side of the site to Lagoon Road on the south side of the site, and take the facility's northernmost building and a portion of another structure currently used for loading of fuel tankers, while relocating its access from Tunnel Avenue to Lagoon

Road. In addition to the partial take of the Kinder Morgan tank farm for the East LMF, the Authority indicates that the entirety of the tank farm would be subject to a temporary construction easement.<sup>32</sup>

Because of the tank farm's vital role in supplying jet fuel to San Francisco International Airport, as well as petroleum products to service stations throughout the Bay Area, Project-induced disruptions to Kinder Morgan's operations could have far-reaching consequences to the regional fuel supplies and could adversely affect tank farm operations and safety.

The partial acquisitions proposed for the Golden State Lumber and Kinder Morgan sites are clearly not "minor sliver" acquisitions. The Draft EIR/EIS needs to address the many potential adverse effects of partial acquisitions of these businesses' property.

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**Draft EIR/EIS Section 3.13, Station Planning, Land Use, and Development, presents an incomplete analysis that fails to disclose the full extent of Project impacts.**

*Section 3.13.5.1 incorrectly identifies existing land uses within and adjacent to the Brisbane LMF leading to the Draft EIR/EIS failing to analyze construction impacts associated with site remediation and landfill closure, along with a lack of recognition of the complexity of development within the Baylands.*

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Draft EIR/EIS Table 3.13-2 incorrectly identifies the predominant land uses adjacent to the East LMF site as "industrial, vacant, parks/open space." The "vacant, parks/open space" uses

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<sup>32</sup> <https://mapshsrnorcal.org/sanfrancisco-sanjose/>

within and adjacent to the East LMF are the former Brisbane Landfill. As a result of not identifying the location of the of the landfill within and adjacent to the East LMF, many of the analyses in the Draft EIR/EIS fail to address physical environmental effects associated with (1) excavating soil and solid waste materials from the landfill for construction of the East LMF, (2) capping and closing the portion of the landfill disturbed by East LMF construction, and (3) requires for long-term leachate collection and landfill gas collection systems.

On page 3.13-14, the Draft EIR/EIS states, “The primary land uses south of Visitacion Valley are industrial and vacant land in Brisbane.” The Brisbane Baylands within which the LMF is proposed is, in fact, a contaminated site, requiring extensive site remediation (West LMF) or landfill closure (East LMF) as a prerequisite for actual construction of the LMF. The Draft EIR does not address either the physical environmental effects or the costs of such remediation and landfill closure.

*The Draft EIR/EIS (Impact LU#5) fails to address the extent to which the Brisbane LMF would adversely affect planned land uses and undermines Brisbane’s commitment to providing housing within the Baylands that would assist in addressing the regional and statewide housing crisis.*

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The City of Brisbane has committed to assist the San Francisco Bay Area and the State of California address their long-standing housing crisis. As demonstrated above, however, the Draft EIR/EIS fails to recognize the adverse land use effects that would result from developing an incompatible 100+ acre LMF within the Baylands, which is one of, if not the largest transit-oriented development sites within the inner urban Bay Area. The Draft EIR/EIS fails to address the LMF’s impacts on Brisbane’s proposed mixed use transit-oriented development or mitigate its impacts on the planned development of the Baylands, effectively transferring responsibility for mitigating impacts generated by the High-Speed Rail project onto the adjacent planned housing and commercial uses that would be forced to endure those impacts.

Draft EIR/EIS Figure 3.13-6 illustrates the relationship between the Brisbane LMF and the Brisbane General Plan, while Page 3.13-21 mentions the Brisbane General Plan the land uses it currently permits for the Baylands within and adjacent to the West and East LMF sites as follows:

“For example, in the Brisbane area, while the majority of land adjacent to the railway is vacant, this vacant land is designated for planned development (residential permitted), which would allow for a combination of residential and commercial development and planned development (residential prohibited), which would only allow for commercial development.”

Inclusion of residential development within the Baylands was strongly supported by housing champions in the State Legislature, County officials, and numerous housing advocacy groups

who demanded that Brisbane rescind its longstanding policy prohibiting residential development within the Baylands and find a way that housing could be safely provided within the contaminated site. Because of the contaminated soils and groundwater within the western portion of the Baylands, the former landfill in the eastern portion of the site, Recology solid waste transfer facility to the north, and Kinder Morgan tank farm to the southwest, noise from the US 101 freeway and rail line, the Brisbane General Plan adopted in 1994 had prohibited residential development within the Baylands.

Despite the complexities involved in Baylands development, the site is transit-rich and a prime location for a mix of residential and employment-generating transit-oriented development. As a result, Plan Bay Area 2040, the region's sustainability communities strategy and blueprint for achieving a compact urban form, reducing dependency on automobile travel, and achieving SB32 greenhouse emissions goals includes the Baylands within a priority development area for mixed-use, transit-oriented residential/commercial development.

The Draft EIR/EIS explicitly recognizes the importance of the Baylands for transit-oriented development, stating:

- “Planned development is most relevant around station areas and the proposed Brisbane LMF sites because these are the areas where planned development would be most affected by the project alternatives.” (page 3.13-22)
- The City of Brisbane has “incorporated mixed use and TOD in their general plan to guide development and land uses in the Brisbane area,” (page 3.13-22)
- The (Baylands) area is identified as a priority development area in *Plan Bay Area 2040*. It is one of the largest undeveloped infill sites (660 acres) in the Bay Area and is proximate to transit, which makes it an attractive site for TOD infill development opportunities. (page 3.13-25)
- “In November 2018, the City of Brisbane and the city’s voters approved a General Plan Amendment that identifies the planned development of 1,800–2,200 dwelling units, up to 6.5 million square feet of commercial development, and 500,000 square feet for hotel development.” (page 3.13-25)
- “Increased density at the Baylands is supported by Plan Bay Area, which identifies the... Brisbane Baylands as a priority development area.” (page 3.13-61).

Following years of study and often acrimonious public hearings, General Plan Amendment GP-1-18 was crafted, adopted by the City Council, and approved by Brisbane voters to provide for development of 1,800 to 2,200 dwelling units along with 6.5 million s.f. of commercial office use and an additional 500,000 s.f. of hotel use. GP-1-18 represented an extraordinary solution whereby the City would be able to permit substantial housing in proximity to existing transit, doubling the small town’s population, while simultaneously addressing the Baylands many

complexities and development constraints. Thus, in addition to permitting the development identified above, GP-1-18 and the Baylands Program EIR also required the following.

- Detailed plans for Title 27 compliant closure of the landfill and Remedial Action Plans for UPC-OU-SM and OU-2 are to be approved by all appropriate regulatory agencies, **prior to** approval by the City of a specific plan for the Baylands.
- A specific schedule establishing the time frames by which (1) the landfill would be closed in full compliance with Title 27 and (2) remediation of UPC-OU-SM and OU-2 would be completed was required to be provided as part of any approval by the City of a specific plan for the Baylands.
- Residential development would be restricted to the northwestern portion of the Baylands and would be designed and remediated to accommodate ground level residential uses and ground level residential-supportive uses such as daycare, parks, schools, playgrounds, and medical facilities. This provision would ensure site remediation to the state's most stringent standard.
- A reliable water supply approved by the City of Brisbane would be secured such that the infrastructure needed to deliver water to the site would be constructed concurrent with infrastructure for the first increment of site development.
- Each increment of development is required to be provided with appropriate transportation related and other infrastructure, facilities, and site amenities as determined by the City. The Baylands development plan would thus solve the chronic lack of infrastructure that constrained Baylands development.
- Key habitat areas, including Icehouse Hill, the Brisbane Lagoon and adjacent habitat as identified in the City's 2001 Open Space Master Plan is to be preserved, enhanced, and protected. Thus, Visitacion Creek was required to be restored as were marsh lands along the north shore of the Brisbane Lagoon. Habitat restoration plans for this restoration are required to be prepared and approved concurrent with a specific plan for Baylands development.
- Development would be required to be designed to protect uses from the 100-year flood, including 100 years of projected sea level rise.

Proposed development of the Brisbane LMF threatens to undo this extraordinary solution for the development of housing by introducing an incompatible industrial use in close proximity to Baylands housing as illustrated in Figures Metis-11 and Metis-12 that would:

- Generate noise on a 24/7 basis. The Draft EIR/EIS does not analyze, disclose, or mitigate noise from the LMF. Instead, the document argues that impacts from high-speed rail train operations would be sufficiently loud that LMF noise averaged over a full day or 8-hour period would not be significant. The Draft EIR/EIS thus fails to address LMF noise generation throughout the day and night between train passbys.

- Design the relocated Tunnel Avenue bridge and realigned Lagoon Road so as to preclude the opportunity for marsh restoration and a passive park along the north side of the Brisbane Lagoon. Both the West and East LMFs retain the existing alignment of Lagoon Road and do not shift its alignment north as has been planned by the City since preparation of the Baylands Public Space Master Plan<sup>33</sup> in 2009.

As a result, Lagoon Road would be subject to inundation due to sea level rise. To project the roadway, it would need to be shifted to the north to align with the existing US 101 southbound freeway on- and off-ramps, which would require realignment of the Tunnel Avenue bridge as it is currently proposed. Unless the Authority would redesign the proposed bridge and Lagoon Road alignment, future Baylands residents and Brisbane taxpayers would be required to foot the bill for the Project's shortsighted design.

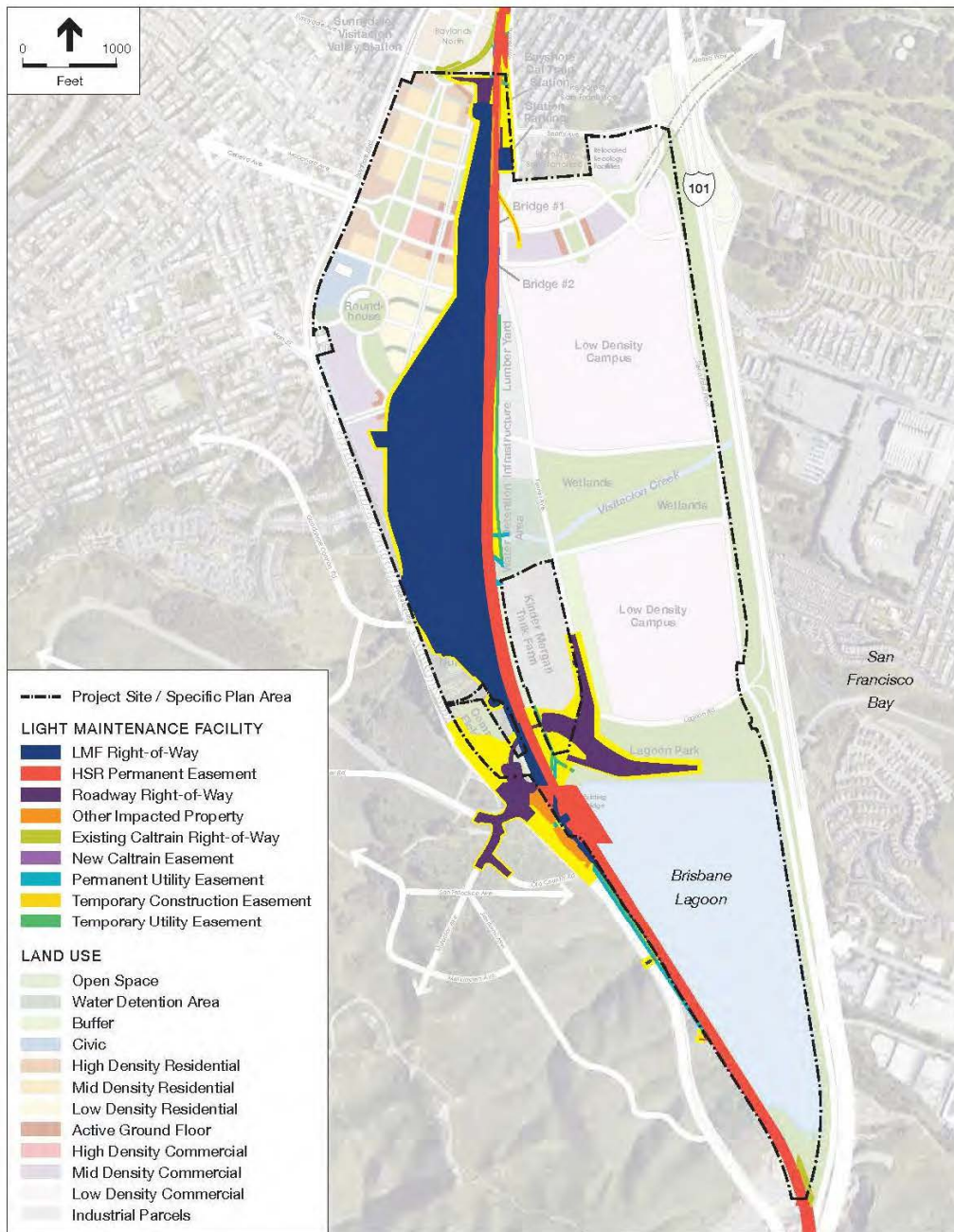
- Fill 980 linear feet of Visitacion Creek and preclude the opportunity for large-scale restoration of creek habitat, including trails along the creek (East LMF).
- Remove Icehouse Hill, destroying its habitat value along with opportunities for recreational trails and passive recreation (West LMF).

The loss of the site's primary open space and recreational amenities would jeopardize the ability for Baylands development to provide the required 25% of land area to be devoted to open space and open areas without a substantial loss of development capacity in addition to the development lost to the LMF itself. Because of the commitment made by the City to State legislators that 1,800 to 2,200 dwelling units would be permitted within the Baylands, reduction of the site's development capacity would likely be achieved by reducing the amount of commercial/office use within the Baylands that could, in turn, jeopardize the ability of Baylands development to pay for itself by generating sufficient revenue to the City to pay for the costs of City services to be Baylands "during all phases of development and upon final buildout."

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<sup>33</sup> The Dangermond Group, *Baylands Public Space Master Plan*, prepared for the City of Brisbane, May 2009.





**Figure Metis-11**

West Brisbane Light Maintenance Facility in Relation to Proposed Baylands Development



- The current design of the LMF would preclude the Geneva Avenue extension and bridge crossing of the Caltrain right-of-way proposed as part of a multi-jurisdictional bi-county San Francisco-San Mateo County transportation planning effort that includes the City of Brisbane. The LMF's current design would force the Geneva Avenue extension to tunnel under the Caltrain right-of-way, substantially increasing its costs and environmental impacts due to the need to excavate a substantial amount of contaminated soils. At the same time, the 100+ acres devoted to the LMF would not be contributing a fair share toward that bi-county transportation improvements.

While the Draft EIR/EIS acknowledges that the Baylands site is planned for “a transit-oriented variety of residential, employment- and revenue-generating uses; natural resource management; and public and semi-public facilities,” the document fails to address the extent to which the Project would impact Baylands development as described above. Instead, the Draft EIR/EIS limits its analysis to determining the acreage of various planned land uses that would be directly converted to LMF use. Draft EIR/EIS Tables 3.13-12 and 3.13-13 summarize this acreage analysis.

**Table 3.13-12 Planned Land Uses Permanently Converted by the Light Maintenance Facility**

Project Component	Planned Land Use Category (acres)							Total
	Residential	Commercial	Public Facilities	Parks/Open Space	Heavy Commercial	PD (residential permitted)	PD (residential prohibited)	
<b>Alternative A</b>								
East Brisbane LMF	0.3	1.7	1.4	<0.1	4.3	2.0	93.3	103.0
<b>Alternative B</b>								
West Brisbane LMF	0.3	1.6	1.5	<0.1	1.9	20.7	90.1 <sup>1</sup>	116.1

LMF = light maintenance facility

PD = planned development

<sup>1</sup> This acreage includes the area of Icehouse Hill.



**Table 3.13-13 Permanent Impacts of the Light Maintenance Facility on Brisbane Baylands Planned Development**

Land Use Designation	Planned Development (acres)	Development Potential with Alternative A			Development Potential with Alternative B		
		Impact (acres)	Remaining Acres	% Change	Impact (acres)	Remaining Acres	% Change
Planned development (residential prohibited)	485.5	93.3	392.2	- 19.2	90.1	395.4	- 18.6
Planned development (residential permitted)	102.0	2.0	100.0	- 2.0	20.7	81.3	- 20.3
<b>Total</b>	<b>587.5</b>	<b>95.3</b>	<b>492.2</b>	<b>- 16.2</b>	<b>110.8</b>	<b>476.7</b>	<b>- 18.9</b>

Sources: City of Brisbane 2018; Authority 2019a

Planned development acreages by land use type were based on the Brisbane 2018 General Plan Amendment.

It should be noted that although the “City of Brisbane” is cited as a source for Table 3.13-13, no City staff members were consulted in relation to the information presented in the table. Since General Plan Amendment GP-1-18 did not specify the acreage for which residential development would be permitted within the Baylands, it is unclear what specific document was utilized to prepare the acreage figures presented in Draft EIR/EIS Table 3.13-13.

### **The Draft EIR/EIS analysis of aesthetics and visual quality impacts is inaccurate and understates the Project’s impacts.**

*Impact AVQ#1 (Temporary Direct Impacts on Visual Quality and Scenic Vistas) understates the impact’s significance by failing to recognize the visibility of the Baylands and LMF sites from the community.*

Impact AVQ#1 presents a misleading and incomplete analysis of Project impacts based on the false premise that visibility of the Baylands area and the LMF sites is limited. As stated on page 3.15-93:

“Construction of either LMF in the Brisbane Landscape Unit would take place over a period of 2 to 3 years, extending from north of the existing Bayshore Caltrain Station to the Brisbane Lagoon. Heavy equipment would be used to create earthworks, approach tracks, and new roadways, including a new overcrossing for Tunnel Avenue. The few viewers in the immediate area of the LMF are industrial workers at the Recology facility and nearby lumberyard who tend to have low to moderately low viewer sensitivity. Caltrain travelers, with moderately low viewer sensitivity, would experience construction in the immediate vicinity of the Bayshore Caltrain Station, including partial

reconstruction of the station and new approach tracks and a rail flyover south of the station. The existing visual quality in the vicinity of the station is moderately low, similar to that described for KVP3, which is approximately 700 feet north of the station. Construction of the temporary rail flyover south of the station would reduce views from the station during construction, reducing the visual quality to low.” (emphasis added)

However, the Baylands area and LMF sites is highly visible from residences in Central Brisbane and McLaren Park. When viewed from the middle to upper elevations of Central Brisbane, the predominant visual character is that of a largely open land area with the San Francisco Bay and the hillsides of Alameda County beyond, as shown in Figures Metis-13 and Metis-14, below.



Figure Metis-13. View of the Baylands from Mission Blue Drive across the Baylands with San Francisco Bay and the hillsides of Alameda County visible in the background.





Figure Metis-14. View from McLaren Park across the Baylands toward San Francisco Bay.

Thus, construction activities for the Brisbane LMF would be visible to far more viewers than just industrial workers in the immediate vicinity and Caltrain travelers with low to moderately low viewer sensitivity. Views across the Baylands toward San Francisco Bay constitute an important scenic vista to the Brisbane community that needs to be acknowledged in the analysis of Impact AVQ#1. Because the CEQA conclusion for Impact AVQ#1 is based on incomplete and incorrect assumptions and analysis regarding the visibility of LMF construction sites and the sensitivity of viewers, the impact needs to be re-analyzed before a valid CEQA conclusion can be reached. In relation to the West LMF site, Impact AVQ#1 needs to be re-analyzed to address views of travelers along Bayshore Boulevard and Guadalupe Canyon Road who will witness the daily removal of the 186-foot high Icehouse Hill over an extended period of time.

*Impact AVQ#4 (Permanent Direct Impacts on Visual Quality – Brisbane Landscape Unit) understates the Project's impacts.*

While commercial viewers may have moderate sensitivity to changes in the visual quality of the Baylands, Brisbane residents have long demonstrated a high degree of sensitivity to changes in views of the Baylands. For example, in past years when soils processing operations were being undertaken on top of the former Brisbane Landfill, residents were keenly aware of changes in the height of soil piles on the landfill and City staff would receive complaints when residents viewing the Baylands believed they were exceeding allowable heights. Analysis of Impact AVQ#4 needs to be revised to recognize the high sensitivity Brisbane residents have for visual changes within the Baylands.

Impact AVQ#4 also needs to be revised to recognize the significant visual impact associated with removing Icehouse Hill to make room for the West LMF. Removing the most prominent natural feature within the Baylands would have a substantial negative visual effect and cannot be considered to be less than significant.



**Figure Metis-15 View of Icehouse Hill from the intersection of Guadalupe Canyon Road at Bayshore Boulevard. Icehouse Hill would be removed and replaced by the West LMF.**

Draft EIR/EIS Figure 3.15-22 (KVP 3 – Baseline and Simulation with HSR: Alternative A, Bayshore Boulevard to Brisbane Baylands) taken from a shuttered building across a visually offensive construction site does not provide a prototypical view of the Bayshore Caltrain station (see Figure Metis-16 for a different perspective of the Bayshore Caltrain station). Further, the notion that this building and the Schlage Lock property construction site from which Draft EIR/EIS Figure 3.15-22 was taken, would be a representative view of the Bayshore station in the Year 2029 is implausible and misleading. Nine years from now, development of the Schlage Lock site, from which the Draft EIR/EIS visual simulation of the Bayshore station was taken, would be largely completed, blocking views of the station from this location.





Draft EIR/EIS Figure 3.15-22: View of Bayshore Caltrain station from the Schlage Lock construction site.



Figure Metis-16: Bayshore Caltrain station, March 2020.

Analysis of Impact AVQ#4 and its visual simulations are also misleading in that they fail to acknowledge the development planned within the Baylands that would begin surrounding the

LMF sites by 20025-2026 and would be largely built out by the 2040 timeframe the Authority anticipates operating high-speed rail service between San Francisco and San José at full capacity. The statement on page 3.15-100 that the LMF “would be integrated into the surrounding commercial and industrial visual environment to the extent feasible” fails to acknowledge that the visual character of the land adjacent to the Brisbane LMF site will change substantially and the the visual enviornment into which the LMF must fit will be that of a high density, mixed-use, transit oriented development consisting of 1,800-2,200 dwelling units, 6.5 million square feet of commercial/office buildings, and an additional 500,000 square feet of hotel use. The Schalge Lock site, which is under construction to the north of the Bayshore Caltrain station, will consist of 1,679 dwelling units and up to 46,700 square feet of commercial building area<sup>34</sup>.

The analysis and conclusions for Impact AVQ#4 utilize the same erroneous assumptions as were used for Impact AVQ#3, namely that there are few viewers in the immediate vicinity of the LMF sites and the visual sensitivity of residents resding on the slopes of San Bruno Mountain would be no more than moderate. As was stated for Impact AVQ#3:

- Views across the Baylands and the LMF sites from Central Brisbane constitute an important scenic vista of views of San Francisco Bay and Alameda County hillsides that would be degraded by the LMF.
- Brisbane residents have long demonstrated a high degree of sensitivity toward visual changes within the Baylands.

As summarized in the portion of Table 3.15-25 presented below, the Draft EIR/EIS also fails to recognize the visual importance of Icehouse Hill and fails to address the significant visual impact of removing the hill for construction of the West LMF:

East LMF	West LMF
Track shifts and other modifications within and adjacent to existing railway facilities would conform to the existing character of the area. Although the East Brisbane LMF would decrease the visual quality for residential viewers on San Bruno Mountain, there would be no change in the visual quality for the landscape unit as a whole.	Similar to Alternative A. Although the West Brisbane LMF would decrease the visual quality for residential viewers on San Bruno Mountain, there would be no change in the visual quality for the landscape unit as a whole.

It is unclear what substantial evidence is presented in Draft EIR/EIS to substantiate the conclusion that “there would be no change in the visual quality for the landscape unit as a

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<sup>34</sup> Source: San Francisco Planning Department web site:  
[https://default.sfplanning.org/Citywide/visvalley\\_Schalge\\_Lock\\_FactSheet\\_2014-04-25.pdf#:~:text=SCHLAGE%20LOCK%20DEVELOPMENT%20PROJECT%20Schlage%20Lock%20opened%20its,industrial%20site%20that%20would%20sit%20empty%20for%20years](https://default.sfplanning.org/Citywide/visvalley_Schalge_Lock_FactSheet_2014-04-25.pdf#:~:text=SCHLAGE%20LOCK%20DEVELOPMENT%20PROJECT%20Schlage%20Lock%20opened%20its,industrial%20site%20that%20would%20sit%20empty%20for%20years). Accessed August 23, 2020.

whole.” The placement of a 100+ acre LMF and its 24/7 operations, including large-scale night lighting, within a high-density mixed-use transit orient development that Baylands is intended to be would be visually incongruous with the planned development of the site. The location of the LMF toward the center of the Baylands development would have the visual appearance of a “hole” within the Baylands community that is brightly lit at night. Also, the Draft EIR/EIS needs to acknowledge that the removal of Icehouse Hill, which is one of the key visual features of the Baylands and an important open space and biological habitat resource, would constitute a significant aesthetics and visual resources impact for which no mitigation is possible. The hill is highly visible to most Brisbane residents and screens views of the Baylands from motorists along Guadalupe Canyon Road and Bayshore Boulevard.

That the “Authority would solicit input from local jurisdictions and incorporate local aesthetic preferences into final design and construction of the LMF with regard to vegetative screening, the design of the realigned Tunnel Avenue overpass, and modifications to the Bayshore Station (AVQ-IAMF#1, AVQ-IAMF#2)<sup>35</sup>” constitutes deferred mitigation and addresses the architectural design of the LMF’s main building and the Tunnel Avenue bridge structure. While landscaping along the perimeter of the LMF sites may aid in screening views of the facility from up-close locations, landscaping would not screen views of the LMF by most Brisbane residents within the middle and upper slopes of San Bruno Mountain. Thus, Impact AVQ#4 needs to be identified as significant and unavoidable.

*The Draft EIR/EIS fails to recognize the significant nighttime lighting impacts that would be caused by the Brisbane LMF.*

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Because the Baylands lacks substantial existing development, only minimal nighttime lighting is present, limited to the areas around the existing industrial uses in the northern and southwestern portions of the site. This allows for substantial nighttime visibility across the Baylands, including nighttime views of the city lights of the East Bay, as seen from residences in the middle and higher elevations of Brisbane along with a relatively dark night sky. The existing lack of substantial nighttime lighting within the Baylands also allows views of the lights of San Francisco in the distance from vantage points to the south. The Draft EIR/EIS provides the following limited analysis of night lighting impacts that would result from Brisbane LMF operations:

“Fixed lighting sources at HSR facilities would be designed to direct light downward, minimizing light spillover, but the 24-hour operation of the LMF would require a minimum level of lighting for worker safety and security. While lighting would be introduced to a location that is currently undeveloped and therefore unlit, the lighting design would limit its radiance. When viewed by residential viewers with moderate

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<sup>35</sup> Draft EIR/EIS page 3.15-100.



viewer sensitivity located 1 mile from either LMF site, the light from the Brisbane LMF would be visible, but would be consistent with the larger context that includes other existing nighttime sources, such as traffic on US 101 and the southern-facing skyline of San Francisco.”

While Draft EIR/EIS page 3.15-40 states that the LMF would be “designed to direct light downward, minimizing light spillover” and “the lighting design would limit its radiance,” the Draft EIR/EIS does not include *any* actual requirements to direct light downward, minimize light spillover, or limit the radiance of LMF nighttime lighting, let alone offer any performance standards in relation to light trespass, impacts on dark night sky, or radiance of nighttime lighting. Neither do IAMFs AVQ-IAMF#1 (Aesthetic Options) and AVQ-IAMF#2 (Aesthetic Review Process) or Mitigation Measure AVQ-MM#3, all of which are presented in full below, set enforceable performance standards.

### **AVQ-MM#3: Incorporate Design Aesthetic Preferences into Final Design and Construction of Non-Station Structures**

Prior to construction (any ground-disturbing activity) the contractor would work with the Authority and local jurisdictions to incorporate the Authority-approved aesthetic preferences for non-station structures into final design and construction (refer to Authority 2014). A technical memorandum would be submitted to the Authority to document compliance.

This mitigation measure would be effective in minimizing the aesthetic and visual impacts of HSR infrastructure because the implementation of a context-sensitive design process and resulting design elements would enhance the visual landscape, integrating the appearance of the HSR infrastructure into that of the surrounding community, and reducing adverse visual impacts.

Implementation of this measure would not trigger secondary environmental impacts because it would not change the scope, scale, or location of construction activities beyond those that have been described as part of the project.

### **AVQ-IAMF#1: Aesthetic Options**

Prior to construction the contractor would document, through issue of a technical memorandum, how the Authority’s aesthetic guidelines have been employed to minimize visual impacts. The Authority seeks to balance providing a consistent, project-wide aesthetic with the local context for the numerous high-speed rail (HSR) non-station structures across the state. Examples of aesthetic options would be provided to local jurisdictions that can be applied to non-standard structures in the HSR system. Refer to *Aesthetic Options for Non-Station Structures* (Authority 2017).

## AVQ-IAMF#2: Aesthetic Review Process

Prior to construction, the contractor would document that the Authority's aesthetic review process has been followed to guide the development of non-station area structures. Documentation would be through issuance of a technical memorandum to the Authority. The Authority would identify key non-station structures recommended for aesthetic treatment, consult with local jurisdictions on how best to involve the community in the process, solicit input from local jurisdictions on their aesthetic preferences, and evaluate aesthetic preferences for potential cost, schedule, and operational impacts. The Authority would also evaluate compatibility with project-wide aesthetic goals, include recommended aesthetic approaches in the construction procurement documents, and work with the contractor and local jurisdictions to review designs and local aesthetic preferences and incorporate them into final design and construction. Refer to *Aesthetic Options for Non-Station Structures* (Authority 2017).

AVQ-IAMF#1 requires the construction contractor to comply with design guidelines set forth in the Authority's *Aesthetic Options for Non-Station Structures*, which is not included in Draft EIR/EIS appendices. The only way for members of the public to review this document and identify the specific guidelines with which compliance is required is to specifically request the document from the Authority. Mitigation Measure AVQ-MM#3 contains no performance standards or offer any concrete mitigation beyond the IAMFs. AVQ-IAMF#2 lays out a review process to be followed but includes no aesthetic guidelines or performance standards.

A copy of "Aesthetic Options for Non-Station Structures" was requested from the Authority and reviewed only to reveal that the document contained no mention of directing light downward, minimizing light spillover, or limiting the radiance of nighttime lighting. The only references to lighting in the document include:

- The Authority will bear 100% of the capital and O&M costs for "functional and safety lighting for Authority facilities." Cities could bear 100% of the O&M costs for lighting with roadway rights-of-way. (page 5)
- **Lighting** (page 12)
  - Where justifiable by potential views and public interaction, bridge and overpass aesthetics may be accentuated with lighting.
  - The pictures to the left show examples of bridges and overpasses from other high-speed rail systems, a pedestrian bridge, and lighting of a bridge.

The only picture addressing night lighting is this photograph of the Roosevelt Bridge in Stuart, Florida that includes up-lighting. Thus, while the Draft EIR/EIS states “lighting sources at HSR facilities would be designed to direct light downward, minimizing light spillover,” the Authority has no guidelines, standards, or requirements that would prevent light from being directed above a 90-degree angle. Thus, the Draft EIR/EIS has no basis for its claim that light trespass from a new large-scale source of night lighting in a relatively dark area that would be highly visible at night to a large portion of the Brisbane community would be less than significant.



Even if the Authority attempts to argue that the single statement in the Draft EIR/EIS is somehow enforceable in the absence of any IAMF or mitigation measure addressing nighttime lighting, “*minimizing*” light trespass is not the same as *preventing* light trespass and given the need for 24-hour lighting of the LMF for both security and nighttime work purposes, it can be expected that light trespass would occur. In addition, while the Draft EIR/EIS may be referring to the Authority’s *intent* that light be directed downward, the lack of any guidelines, performance standards, or requirements limiting the amount of light permitted above an angle of 90 degrees, which the International Dark Sky Association notes could adversely affect dark night sky in a community, the Draft EIR/EIS must determine that the LMF would have significant adverse effects in relation to light trespass and on Brisbane’s dark night sky. Thus, nighttime lighting impacts associated with the Brisbane LMF must be considered to be significant and unavoidable.

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### **The Draft EIR/EIR analysis of cultural resources impacts is inadequate.**

*The Draft EIR/EIS fails to recognize the potential for finding archaeological resources within the West LMF.*

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Rather than conducting field surveys to address the potential for adversely affecting unrecorded cultural resources during relocation of the existing Caltrain Bayshore station, relocation of the City’s fire station, or construction of the Brisbane LMF, the EIR/EIS instead relies on Impact CUL#1: Permanent Disturbance of Unknown Archaeological Resources. This approach results in an inadequate evaluation for the reasons stated below.

In August 2018, PaleoWest conducted archaeological monitoring of geotechnical coring taken at 146 locations west of the Bayshore Caltrain station by the firm of Geosyntec as part of hazardous waste characterization studies. Between November 2018 and February 2019, PaleoWest monitored excavation by Geosyntec of 566 additional geotechnical cores southwest of the Bayshore Caltrain station, many of which are within the proposed footprint of the West LMF.

Of the 712 core locations monitored by PaleoWest archaeological field staff, a total of 23 core locations yielded evidence of prehistoric archaeological deposits. Three included intact shell middens between depths of 1'10" below ground surface (BGS) and 6'8" BGS. Fifteen cores included deposits that appeared to be redeposited or displaced shell midden material between the ground surface and a depth of 5'6". Both intact and displaced shell midden deposits are considered by the City to be sensitive resources. An additional five cores produced what is described as "shell fragments" or "burned shell fragments" between 1'0" and 10'6" below ground surface. A total of 176 of these cores yielded historic-period artifacts, ranging from ceramic and glass fragments to industrial and structural debris.

In August 2020, Page & Turnbull prepared a technical memorandum to evaluate the findings of PaleoWest's monitoring and to make recommendations regarding the need for additional archaeological testing. Page & Turnbull concluded that "additional archaeological testing will be necessary in the vicinity of previously identified shell midden and intact native soil layers... to more clearly identify the horizontal extent and character of the deposits identified during monitoring of Geosyntec's cores," as well as to reliably determine the significance of these resources. Page & Turnbull concluded that a "program of intensive subsurface testing... would provide greater clarity on the nature and extent of subsurface archaeological remains."

Based on these findings, it is inappropriate for the Draft EIR/EIS to conclude that there are no known archaeological resources in the vicinity of the Bayshore Caltrain station or that construction work relocating the station or constructing the West Brisbane LMF would not impact sensitive cultural resources. The subsurface testing recommended by Page & Turnbull must therefore be undertaken by the High Speed Rail Authority before the any valid conclusions can be reached regarding the significance of cultural resource impacts related to relocation of the Bayshore Caltrain station or construction of the Brisbane West LMF.

*The Draft EIR/EIS fails to address its impact on the circa 1924 Machinery and Equipment building.*

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It appears that relocation of the Tunnel Avenue bridge would require demolition of the historic Machinery & Equipment building. Constructed in 1924 as a Pacific Fruit Express Ice Manufacturing Plant to supply ice to the trains of the Pacific Fruit Exchange going in and out of San Francisco, the Visitation Ice Manufacturing Plant was in operation between 1924 and 1955. Use of the building as an ice plant was discontinued in 1955. It currently houses Machinery & Equipment, Inc. and is known as the "Machinery & Equipment building."

Impact CUL#4 (Permanent Demolition, Destruction, Relocation, or Alteration of Built Resources or Setting) must therefore be revised to acknowledge the Project's impacts to this historic building and provide appropriate mitigation if its demolition cannot be avoided.

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**4. *Inadequate Cumulative Impact Analysis. The discussion of cumulative impacts is incomplete and inaccurate.***

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**The analysis of cumulative impacts tends to focus on transportation projects to the exclusion of non-transportation projects. The analysis of cumulative impacts does not, therefore, adequately address the cumulative effects of the Project in combination with past, present and reasonably foreseeable probable future transportation and non-transportation projects.**

CEQA Guidelines Section 15335 (b) states, “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” The cumulative impact analysis in Draft EIR/EIS Section 3.18 fails to meet this standard due to an incomplete listing of cumulative projects and a failure to recognize the ways in which less-than-significant and even minor impacts of individual projects can combine to create significant cumulative impacts.

Section 3.18 also fails to appropriately address the ways in which Project’s impacts, when added to the impacts of related past, present, and reasonably foreseeable probable future projects, could collectively result in significant impacts even if the incremental impacts of the High-Speed Rail project and other projects would each be less than significant. The Draft EIR/EIS also fails to analyze how the Project and its impacts might interact with other cumulative projects to generate localized cumulative impacts by tending to “average” cumulative impacts over the entire length of the Project and its resource study areas.

*The listing and analysis of cumulative project in Section 3.18 is incomplete.*

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The following projects need to be added:

- **Transportation Projects (Appendix 3.18-A)**
  - **San Francisco-San Mateo County Bi-County Transportation Study**, which was undertaken by the San Francisco County Transportation Authority (SFCTA) and the City/County Association of Governments of San Mateo County, along with the City of Brisbane, City/County of San Francisco, Peninsula Corridor Joint Powers Board (Caltrain), and others to assess the transportation improvements needed to support development of approximately 15,000 new housing units and over 14 million square feet of new employment uses proposed within the southeastern corner of San Francisco and the northeastern corner of San Mateo County. The final report for the Bi-County Study, which was prepared in 2013, recommended the following transportation improvements:



- US 101 Candlestick Interchange Re-Configuration
- Geneva Avenue Extension from Bayshore Boulevard to the US 101 freeway, including a bridge overcrossing of the existing Caltrain right-of-way
- Harney-Geneva Bus Rapid Transit Line
- T-Third Light Rail Extension (Segment “S”)
- Bayshore Station Re-Configuration
- Bicycle-Pedestrian Connections
- Area-Wide Traffic Calming Program

In 2019, the City of Brisbane began working with the other agencies involved in the Bi-County Transportation Study to update the land use and development assumptions used in the 2013 study and review the report’s recommendations to determine whether any revisions to the list of transportation improvements might be appropriate.

- **Non- Transportation Projects (Appendix 3.18-B)**
  - **Remedial Action Plans and Remedial Development Implementation Plans for UPC-OU-SM and OU-2**, consisting of characterization of onsite soil and groundwater contamination, human health risk assessments, development of risk-based clean up goals protective of the environment and public health, identification and selection of specific measures to remediate existing soils and groundwater contamination, and implementation measures, including required financial assurances.
  - **Title 27 landfill closure** identifying the actions to be taken to comply with the regulatory requirements set forth in Section 20260 of Title 27 of the California Code of Regulations (CCR), including installation of a landfill cap, leachate and landfill gas collection and monitoring system, and financial assurances.
  - **Bay Mud Import**, consisting of the import of bay mud excavated during construction of the Silicon Valley Clean Water Wastewater Conveyance System and Treatment Plant Reliability Improvement Project to the Brisbane Baylands (former landfill site), and relocation of 200,000 cubic yards of existing soil from the former landfill site to the former rail yard site immediately to the west (remediation operable unit UPC-OU-SM).
  - **Buildout of present and future projects within the Sierra Point area of Brisbane**, consisting of
    - 1,184,704 sq. ft. of office space, marina and two hotels that are built out and occupied
    - 325,858 sq. ft. of office space under construction

- 532,516 sq. ft. of office space entitled
- 700-room hotel planned

In addition, the description of the proposed Recology expansion set forth in Appendix 3.18-B is outdated and needs to be revised to reflect the following.

- The proposed 501 Tunnel Avenue Recology Facility Modernization Project would accommodate future consolidation of Recology's regional office operations, fleet maintenance operations and fleet storage, including those that currently exist at 900 7th Street and 250 Executive Park Boulevard in San Francisco, and distribute those uses in newly constructed facilities on the project site. The primary components of the proposed project include the construction of new buildings and facilities north of Beatty Avenue and project site modifications, which include demolition and repurposing of various existing buildings, facilities, and areas throughout the existing campus and establishing new surface parking facilities for fleet parking. Building square footage within the Recology site would increase by 146,600 square feet to a total of 1,492,000 square feet. The City and County of San Francisco is the lead agency for CEQA documentation of the Recology modernization project.

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**The Draft EIR/EIS needs to address the extent to which impacts of individual project would combine to generate a significant cumulative impact.**

That a series of less-than-significant impacts could combine to form a significant cumulative impact is foundational to analysis of cumulative impacts. The Draft EIR/EIS fails to adequately address cumulative impacts by (1) assuming that the impacts of cumulative projects will be less than significant for all impacts identified in the Draft EIR/EIS as being less than significant, (2) assuming that a series of less than significant impacts do not combine to result in a significant cumulative impact, and (3) failing to address the cumulative effects of impacts generated by cumulative transportation projects on non-transportation cumulative projects (i.e., planned developments). It is not enough to demonstrate that each project identified in Appendices 3.18-A and B would have a less than significant impact and then conclude that the resulting cumulative impact is less than significant. Interactions between projects and the combination of project-level impacts generated by multiple projects need to be analyzed. Conversely, if impacts of individual projects do not interact or combine, no significant cumulative impact would result, even if one or more individual projects might have a significant impact (e.g., construction impacts occurring at substantial distances from each other or occurring at different points in time). Examples of the incorrect methodologies used to evaluate cumulative projects include:

- **Temporary closure of and modification to some regionally significant roadways during construction, resulting in increased congestion on US 101 (page 3.18-8).** The Draft EIR/EIS includes only transportation projects and fails to address whether any non-transportation (i.e., land development) projects might also result in temporary

roadway closures or modification of regionally significant roadways. The analysis does not address how temporary roadway closures or modification of regionally significant roadways undertaken by individual transportation and land development projects might combine to generate significant cumulative impacts should multiple projects be under construction simultaneously in sufficient proximity to affect the same roadways or for a project to require closure of a roadway another project needs as an alternate route.

Instead of analyzing whether project-level impacts would combine to create a significant cumulative impact, the Draft EIR/EIS assumes without evidence that the design of all cumulative projects “would be consistent with regional and local land use plans and regulatory standards” that that each project would “incorporate traffic management plans and procedures for alternate routes during road closures.” Without evidence or reasoned analysis, the Draft EIR/EIS concludes that “the project alternatives in combination with the cumulative projects would result in a cumulative impact on local vehicle circulation from the traffic congestion and delays of existing transportation networks.” In the absence of evidence or reasoned analysis, this conclusion cannot be substantiated.

- **The “cumulative” traffic analysis provided in Section 3.18 does not appear to actually analyze cumulative traffic.** As stated on page 3.18-7, traffic volumes on area roadways “would increase because of the cumulative projects, including the planned developments listed in Volume 2, Appendix 3.18-A.” However, it is unclear whether these cumulative land use projects were, in fact actually analyzed. As noted in comments on the Draft EIR/EIS traffic impact analysis, the Draft EIR/EIS uses outdated socioeconomic projections that do not, for example, include Baylands development of 1,800 to 2,200 dwelling units, 6.5 million square feet of commercial office development and 500,000 square feet of hotel use and instead project only 585 new jobs within the Baylands with no housing. The extent to which all of the other cumulative projects listed in Appendix 3.18-A may have been included in the now outdated ABAG Projections 2013 upon which the Draft EIR/EIS traffic impact analysis was built is undocumented in the Draft EIR/EIS and is therefore unknown. Also, by not including the transportation projects listed in Appendix 3.18-B, the extent to which the cumulative future traffic generated by cumulative land use projects is analyzed on the future transportation system that would result from cumulative transportation projects cannot be known.

While the Draft EIR/EIS concludes that a significant cumulative traffic impact would result, it presents a convoluted and vague conclusion regarding the Project’s contribution to that cumulative impact.

“Potential mitigation that could reduce congestion or delay at affected intersections or freeway segments has been identified in TR-MM#1: Potential Mitigation Measures Available to Address Traffic Delays (NEPA effects only).

However, because traffic congestion/delay is not a CEQA impact and because implementation of mitigation measures is not mandatory under NEPA, this mitigation is not assumed to be implemented. Rather, implementation would be at the discretion of the lead agency. Thus, assuming this mitigation is not implemented, the project alternatives would contribute to this cumulative effect.

The Draft EIR/EIS does not commit the Authority to minimizing the traffic delays its Project causes. Because TR-MM#1 reflects TR-IAMF#12, it brings into question what, if anything would actually be done by the Project to address its traffic impacts on local communities. The Draft EIR/EIS needs to clearly commit to avoiding adverse effects on communities along its route wherever possible or minimizing and making communities whole for the adverse impacts they will experience. If local communities are being asked by the Authority to take on the burdens of its Project, the Authority should not ignore the Project's significant traffic effects and avoid providing mitigation even if CEQA might permit them to do so.

- **Simplistic analysis and cumulative impacts on bus service.** The Draft EIR/EIS bases its conclusion on cumulative bus service impacts on the highly generalized notion that since cumulative projects would increase traffic and traffic congestion, a cumulative impact on bus service would result. This argument fails since it does not consider cumulative transportation projects such as plans for bus rapid transit along Geneva Avenue and other measures included in Plan Bay Area 2040 to improve bus service within the Bay Area. The analysis of impacts on bus service relies on conclusory statements and sweeping generalizations, such as:
  - “The delays resulting from construction of either of the project alternatives, in combination with the increased traffic volumes from projected population growth, would temporarily increase intersection delay affecting bus transit performance.
  - “Recognizing the potential for transportation impacts that could result from concurrent construction projects, the Authority’s contractor would prepare a CTP (TR-IAMF#2).
  - “However, the construction staging and traffic resulting from the HSR project in combination with other cumulative projects would result in a cumulative impact on bus transit caused by the delays and degradation of existing transportation networks.
  - “Operation of the project alternatives and development projects would also increase intersection delay adjacent to at-grade crossings and near passenger rail stations resulting in permanent delays to high-frequency bus routes.

- “The Authority would implement mitigation that includes intersection improvements and bus transit prioritization equipment to reduce impacts on bus transit.
- “Although future transportation improvement projects as identified in RTPs (Volume 2, Appendix 3.18-B) would provide transportation benefits, the programmed transportation network capacity improvements would not be enough to meet long-term future demand and population growth.
- “Because the transportation network would not be expected to keep pace with demand, there would be a cumulative impact on bus service performance as a result of vehicle congestion.”

No evidence is provided in support of any of these statements that also assume cumulative impacts would equally affect each high-speed rail station area and all other portions of the 49-mile long project. The analysis and conclusions presented on page 3.18-9 are so generalized as provide the public with no real understanding of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable probable future projects.

- **Project Health Risk Assessment presented under Cumulative Impacts.** The Project’s Health Risk Assessment is provided in Draft EIR/EIS Section 3.18, Cumulative Impacts, rather than in Section 3.3, Air Quality and Greenhouse Gases, along with other analyses of Project-related air quality impacts. This may cause members of the public to erroneously conclude that the Draft EIR/EIS fails to address potentially significant health risks associated with large increases in toxic air contaminants and PM<sub>2.5</sub> occurring during site grading activities.

As stated on page 3.18-15, a “quantitative health risk assessment (HRA) has not been conducted to estimate future DPM-related health risks to nearby sensitive receptors resulting from cumulative land use development because construction and operations details are not available, and those projects would be responsible for analyzing their contributions. The cumulative HRA, therefore, focuses on ambient concentrations from stationary, rail, and roadway sources.

The Cumulative impacts analysis provides only a generalized analysis of construction-related health risks for the San Francisco to South San Francisco Segment. Because impacts resulting from site grading would be concentrated at the Brisbane LMF site, including excavation, grading, and offsite hauling move more than 1-2 million cubic yards of soil and LMF construction over a 2-3 year period, a site-specific health risk assessment should have been prepared for Brisbane LMF construction and operation, the results of which need to be disclosed in Draft EIR/EIS Section 3.3, Air Quality and Greenhouse Gases. For the Draft EIR/EIS cumulative impact analysis, the site-specific analysis health risk assessment should have been evaluated in combination with the Baylands project to determine how the two projects might interact in combination both



in terms of site grading and the location of future Baylands residential development in proximity to Project grading and excavation activities.

- **Failure to analyze the cumulative effects of increased noise on sensitive receptors.** As stated on page 3.18-25, “Volume 2, Appendix 3.18-B lists the transportation projects that would occur in the cumulative RSA. From a noise-generating perspective, these transportation projects can be categorized into three groups: rail and transit projects, roadway projects, and other projects”. The Draft EIR/EIS also states on that page, “[c]onstruction of some of the planned developments listed in Volume 2, Appendix 3.18-A could add localized noise increases from increased traffic and contribute to noise increases in the cumulative RSA.” As a result of this focus on cumulative noise *generation*, the cumulative impacts analysis makes the fatal error of not addressing the ways in which the Project would combine with other past, present, and reasonably foreseeable probable future projects to result in significant cumulative noise impacts on reasonably foreseeable planned development projects.

Most striking in Section 3.18 is that while the Draft EIR/EIS acknowledges the existence of the planned developments listed in Volume 2, Appendix 3.18-A, it does not acknowledge or analyze the impacts of increased noise levels on sensitive future receptors within those cumulative planned development projects. For example, while Project-level and cumulative-level analyze increases in noise generation as the result of the Brisbane LMF, the Draft EIR/EIS fails to address impacts of cumulative noise on the residential uses proposed as part of the Baylands Specific Plan, which is listed as a cumulative project in Appendix 3.18-A on page 3.18-A-4. In fact, the Draft EIR/EIS fails to disclose any of the noise impacts of the LMF other than stating the daily average  $L_{dn}$  contribution from the East Brisbane LMF at the nearest receptor would be 36 dBA (10 dBA or more below HSR operations noise) and that the daily average  $L_{dn}$  contribution from the West Brisbane LMF at the nearest receptor would be 40 dBA (also 10 dBA or more below HSR operations noise) (Noise and Vibration Technical Report Executive Summary page *x*) without noting that such sensitive receptors are currently located 1,500 to 1,900 feet from the LMF site, making it impossible to determine what impacts the LMF might have on Baylands residential development.

The Draft EIR/EIS thus fails to address the cumulative impact of Project-generated noise combining with cumulative projects listed in Appendix 3.18-A (e.g., Brisbane General Plan Baylands Specific) to result in a significant cumulative impact (Project construction and operational noise affecting sensitive receptors within the Baylands). This omission is a clear violation of CEQA and the duty of the Draft EIR/EIS to fully disclose impacts, including cumulative impacts resulting from the Project in combination with past, present, and reasonably foreseeable probable future projects.

While the Draft EIR/EIS identifies noise mitigation measures on page 3.18-26 that would reduce the Project’s impacts, those measures would not be applied to reduce the Project’s noise impacts on sensitive receptors within the Baylands since the Draft

EIR/EIS never acknowledges Project-generated noise as an impact to cumulative planned development projects such as the Baylands.

Thus, the Draft EIR/EIS needs to:

- o Document noise cumulative impacts from the Brisbane LMF and other cumulative transportation projects listed in Appendix 3.18-B on sensitive receptors within cumulative planned development project such as Baylands that are listed in Appendix 3.18-A; and
- o Apply the following mitigation measures to address significant impacts the LMF would cause to proposed residential land uses within the Baylands.

**NV-MM#\_\_\_: Construction Noise**

Construction of the Brisbane LMF shall comply with Brisbane Municipal Code Section 8.28.060, Construction Activities as follows. Except for work on tracks within the Caltrain corridor, which must occur within established work windows, construction shall be occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and 9:00 a.m. to 7:00 p.m. on weekends and holidays. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source, and the noise level outside the property plane of the LMF and Caltrain right-of-way shall not exceed 86 dBA.

**NV-MM#\_\_\_: LMF Operation Noise<sup>36</sup>**

Operational noise from the LMF shall not exceed the following noise level standards within any existing or planned residential or commercial property:

Residential	55 dBA (7:00 am – 7:00 pm)
	50 dBA (7:00 pm – 10:00 pm)
	45 dBA (10:00 pm – 7:00 am)
Commercial	65 dBA (7:00 am – 10:00 pm))
	56 dBA (10:00 pm - 7:00 am)

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<sup>36</sup> The noise standards set forth in this mitigation measure are based on City of Commerce Municipal Code Section 19.19.160. The City of Commerce has a large industrial base in close proximity to its residential neighborhoods. The BNSF railway operates the large-scale Commerce Intermodal Facility (Hobart Yard) on a 24/7 basis within the City. The 243-acre Hobart Yard is the largest rail yard of its kind in the U.S. These noise standards also follow a similar organization as that of Oakland Municipal Code Section 17.120.050

The LMF shall operate so as not to exceed the above noise levels, when measured on any other property by:

1. The noise standard specified above for the receiving land use for a cumulative period of more than thirty (30) minutes in any hour.
  2. The noise standard specified above for the receiving land use plus 5 dBA for a cumulative period of more than fifteen (15) minutes in any hour.
  3. The noise standard specified above for the receiving land use plus 10 dBA for a cumulative period of more than five (5) minutes in any hour.
  4. The noise standard specified above for the receiving land use plus 15 dBA for a cumulative period of more than one (1) minute in any hour.
  5. The noise standard specified above for the receiving land use plus 20 dBA for any period of time.
- **Oversimplified approach to noise analysis understates cumulative impacts.** Section 3.18 presents an over-simplified analysis of noise impacts leading to a conclusion on page 3.18-25 that is so general as to provide no value in assisting the public understand the cumulative noise impacts of the Project in combination with other projects:

“The planned rail and transit projects, including construction and operations of the HSR project, would be most likely to cause cumulative noise impacts because they would generate the most additional noise exposure at noise-sensitive receptors. Some roadway projects could also cause cumulative impacts where changes in traffic would occur near the cumulative RSA.”

The cumulative noise analysis thus fails to recognize that different cumulative projects will combine with the various components of the Project to create different types and severity of noise impacts in different areas. While it is not feasible or necessary to analyze every possible combination of cumulative effects, the Draft EIR/EIS should have, at a minimum, analyzed the cumulative effects of the Project and cumulative projects in areas that would likely experience the greatest cumulative impacts, such as the area in and around the Brisbane LMF, high-speed rail stations, and other locations where large-scale or multiple planned development and/or transportation cumulative projects listed in Appendices 3.18-A and 3.18-B were located adjacent to the High-Speed Rail project. In the absence of such analyses for noise and other impacts, Section 3.18 fails to meet applicable CEQA requirements for cumulative impacts analysis.

- **Understates the potential for cumulative biological impacts.** The Draft EIR/EIS analysis of cumulative biological impacts begins by understating the potential for significant cumulative impacts, including statements such as:

“Minor and localized impacts on these resources are expected to continue in the cumulative RSA but large-scale habitat loss is not expected because very little undeveloped land remains to be lost.”

“Most areas with high ecological integrity and that support these resources are already protected by local, state, and federal agencies. In other portions of the cumulative RSA (e.g., Lower and Upper Santa Clara Valleys, SR 152 corridor through Diablo Range, San Joaquin Valley), however, development pressures are expected to continue.”

Thus, the Draft EIR/EIS fails to recognize that it is precisely because the Peninsula region through which the Project is planned has been so urbanized that even minor losses of sensitive habitats could be cumulatively significant.

- **Analysis of cumulative biological resources impacts is based on inadequate Project analysis.** The Draft EIR/EIS analysis of cumulative impacts and the Project’s contribution to significant impacts is based on an inadequate analysis of the Project’s impacts on biological resources within Brisbane as stated in previous detailed comments. The cumulative analysis also fails to address the cumulative effects of the Project in combination with Baylands development by adversely affecting the ability of Baylands Specific Plan development to mitigate its biological resources impacts onsite. Specifically, the Project would reduce or eliminate the ability of Baylands Specific Plan development to mitigate its biological resources impacts onsite by:
  - Designing the relocated Tunnel Avenue bridge and realigned Lagoon to preclude restoration of marsh habitat along the north side of the Brisbane Lagoon; and.
  - Impacting Visitacion Creek to such an extent for the East LMF the Baylands development would be precluded from restoration of Visitacion Creek as mitigation for impacts west of the Caltrain rail line.
- **Cumulative hydrology and water resources impact discussion is based on assumptions rather than analysis.** Rather than actually analyzing cumulative hydrology and water resources cumulative impacts, the discussion starting on page 3.18-45 relies on an unanswered “if,”

“The project in combination with other cumulative projects would result in a cumulative impact on surface water hydrology if the combined effect alters the drainage pattern, resulting in substantial erosion and sedimentation or exceeding the capacity of existing or planned drainage systems.”

While this statement provides criteria for determining the significance of a cumulative impact, the discussion that follows does not analyze whether a significant cumulative impact would, in fact, occur. In relation to flooding, Section 3.18 lists other linear

projects and concludes without analyzing whether these or other cumulative land use projects might combine to create cumulative impacts or conducting any quantitative or even qualitative hydrologic analysis, “Construction of the HSR project in combination with other cumulative projects would contribute additional runoff during storm events from new impervious surfaces.” In the absence of any actual analysis, the Draft EIR/EIS is unable to determine whether the cumulative impact is significant, and if it is, whether the Project’s contribution is cumulatively considerable. The result is an inadequate analysis.

Interestingly, the Draft EIR/EIS discussion of hydrology impacts provides more discussion of cumulative HSR Project/Baylands cumulative biological resources impacts than did the cumulative biological resources analysis: “With build-out of both the Brisbane Baylands and the LMF, a majority of the existing aquatic resources in the vicinity of these developments would be filled or otherwise affected, triggering the need for compensatory mitigation due to a net loss in jurisdictional aquatic resources.” In comparison, the Draft EIR/EIS discussion of cumulative HSR Project/Baylands impacts is limited to, “Several of the cumulative development projects would also have direct impacts on aquatic resources. These include residential projects, such as development at the Brisbane Baylands site...”

Rather than analyze cumulative surface water quality impacts, the Draft EIR/EIS simply assumes that because each cumulative project would comply with applicable laws and regulations, none of the 366 non-transportation cumulative projects and 91 transportation cumulative projects would have a significant hydrology or water resource impact *and* that the none of the less-than-significant impacts of these 457 cumulative projects would combine to result in a significant cumulative impact. At a minimum, the Draft EIR/EIS must provide explanation as to why existing laws and regulations would be adequate to prevent *any* significant project or cumulative hydrology/water resource impact from these projects.

- **Understated cumulative land use impacts.** The Draft EIR/EIS (p. 3.18-70) concludes that there are no significant cumulative land use impacts because cumulative projects are generally included in general plans when in fact the several projects identified in Appendix 3.18-A are proposing amendments to the local General Plan. In addition, consistency with a general plan does not necessarily prevent land use conflicts between a proposed project and adjacent and uses.

While the Community Impact Assessment (Technical Report TR-11) identifies several conflicts that the proposed Brisbane LMF has with the Brisbane General, as demonstrated in the Table Metis-1, below, a large number of conflicts are not identified. In addition, because these conflicts result in physical environmental effects, CEQA requires that such conflicts be disclosed as significant environmental impacts for which



mitigation measures need to be proposed. Thus, cumulative impact analysis understates the Project's significant contribution to land use conflicts by asserting on page 3.18-69 that "[a]lthough the project alternatives would result in some localized changes in land use patterns near the East or West Brisbane LMF and at the Millbrae Station, the project alternatives would not lead to incompatible uses on a broad scale that would result in the substantial alteration of land use patterns within the cumulative [resource study area] RSA." However, as previously, the Brisbane LMF would, in fact, be incompatible, with adjacent and nearby planned land uses. The Draft EIR/EIS attempts to "average" impacts over the entirety of the Project and ignores how the Project and its impacts might interact with an adjacent cumulative project. This "averaging" of cumulative impacts is misleading since land use conflicts are highly localized.

The Draft EIR/EIS cumulative land use impact analysis must be revised to disclose the Project's significant cumulative impacts resulting from the interaction of the Project and its impacts with cumulative projects such as the Baylands Specific Plan in Brisbane and the Millbrae Station Area Specific Plan in Millbrae.

- **Unclear Resource Study Area (RSA) for Aesthetics cumulative impacts analysis.**

Section 3.18.6.14 defines the RSA for aesthetics and visual resources as the same as that identified in Section 3.15. However, because it is unclear what specific areas the RSA for Section 3.15 encompasses, the RSA for cumulative impacts is equally unclear. Section 3.15.4.1 initially defines the Resource Study Area for impacts on aesthetic and visual quality as "the San Francisco to San José viewshed (i.e., the area that potentially could have views of project components and the area potentially viewed from HSR trains in the Project Section)." However, Section 3.15.4.1 then backtracks by stating the RSA for direct and indirect impacts is a 0.25-mile radius from the project footprint in urbanized areas. However, "in areas where elevated or more expansive views are present or where there are prominent and regionally important visual and scenic features, such as mountain ridgelines, large iconic structures, or water features, middleground views (up to 3 miles from the project footprint) and background views (more than 3 miles from the project footprint) are discussed as contributing visual elements to the RSA. Background views, however, are not considered in depth because visual details become diminished beyond the middleground."

After stating that the RSA for aesthetics and visual resources as the same as that identified in Section 3.15, Section 3.18.6.14 changes the rules stating:

"Viewing distances along the project, which determines the cumulative RSA, vary by location. Because the project corridor is almost completely urbanized, the cumulative RSA is generally within 0.25 mile of the project alternatives' track centerlines. Many views within this distance are obscured by landscaping or buildings, limiting views to and from the alternatives. In some locations along the project corridor, viewing distances extend over wider areas from geographic conditions that permit longer views from elevated locations, primarily

residential areas on hillsides near the railway. In this area, the cumulative RSA expands to include areas within 0.5 mile of the alternatives' track centerlines."

Thus, unlike Section 3.15 which recognizes the viewshed for aesthetic analysis may extend up to three miles or more where the Project would be visible from that distance, the cumulative impact analysis limits cumulative viewshed analysis to only 0.5 miles. As a result, it appears that the Draft EIR/EIS *cumulative* aesthetics Resource Study Area is smaller area than the *Project's* Resource Study Area, which would be counter intuitive.

While the Draft EIR/EIS concedes that a significant cumulative aesthetics impact would result at the Baylands<sup>37</sup>, it then incorrectly asserts that the Project's contribution would not be considerable due to implementation of AVQ-IAMF#1 and AVQ-IAMF#2, neither of which offer any performance standards and appear to only address building and bridge architecture and perhaps landscape design. The conclusion on page 3.18-75 that the Project's contribution to a significant aesthetics impact is incorrect for the following reasons.

- Construction of the West LMF requires removal of the 186-foot high Icehouse Hill.
- Construction of the East LMF requires excavations up to 65 feet in depth into the former Brisbane Landfill, exposing the waste materials within the former landfill to public view for an undisclosed period of time.
- By removing Icehouse Hill during construction of the West LMF, filling in 980 linear feet of Visitacion Creek during construction of the East LMF, and relocated Tunnel Avenue bridge crossing to bring Lagoon Road back to its current alignment adjacent to the Brisbane Lagoon, the Project would:
  - Eliminate Icehouse Hill as a visual open space resources and remove the potential for recreational trails within that open space area.
  - Prevent habitat restoration and development of a shoreline park along the northern edge of the Brisbane Lagoon.
  - Severely restrict the potential for restoration of Visitacion Creek and a visual open space resource, particularly if the Authority chooses to implement the creek relocation plan set forth in its May 2020 Preliminary Compensatory Mitigation Plan.

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<sup>37</sup> As stated on page 3.18-74, "Construction of either of the project alternatives in combination with other cumulative projects would result a permanent construction-related cumulative impact on aesthetics and visual resources at the 4th and King Street Station, Brisbane Baylands, Millbrae Station, and the San José Diridon Station."

- Reduce the desirability of remaining open space areas within the Baylands planned development by generating noise at the LMF on a 24/7 basis.

Thus, the LMF would adversely affect the ability of Baylands development to attract recreational viewers to “[n]ew and enhanced recreational facilities around the Brisbane Lagoon and throughout the planned Brisbane Baylands development<sup>38</sup>.” That future Baylands residents and guests seeking new and enhanced recreational amenities would instead “experience views of the Brisbane LMF and the Caltrain right-of-way” only speaks to the substantial adverse contribution that the LMF would provide to the significant cumulative impact at the Baylands.

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**5. *Inconsistency with Plans. The Brisbane LMF is inconsistent with the Brisbane General Plan and would impair the City’s ability to provide much needed housing.***

*The Draft EIR/EIS fails to address the extent to which the Brisbane LMF conflicts with the Brisbane General Plan and thereby fails to disclose the significant environmental impacts that would result from those conflicts.*

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Draft EIR/EIS Section 3.13.4.5, Method for Determining Significance under CEQA, states that “the project would result in a significant impact on station planning, land use, and development if it would:

- Cause a substantial change in land use patterns by introducing incompatible land uses.
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulations adopted for the purpose of avoiding or mitigating an environmental impact.
- Induce substantial population growth in an area, beyond planned levels, either directly or indirectly.”

Although causing a significant environmental impact due to a conflict with a land use plan, policy, or regulations adopted for the purpose of avoiding or mitigating an environmental impact is acknowledged to be a significant CEQA impact, the Draft EIR/EIS fails to evaluate whether any of the Brisbane LMF’s General Plan conflicts identified in its Community Impact Assessment (Technical Report TR-11) would, in fact, have a significant environmental impact.

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<sup>38</sup> On page 3.18-75, the Draft EIR/EIS cumulative aesthetic impacts states “[n]ew and enhanced recreational facilities around the Brisbane Lagoon and throughout the planned Brisbane Baylands development would bring new recreational viewers to the area, where they would experience views of the Brisbane LMF and the Caltrain right-of-way.” (Draft EIR/EIS, p. 3.18-75.)

While the Community Impact Assessment identifies several conflicts that the proposed Brisbane LMF has with the Brisbane General, as demonstrated in the Table Metis-1 below, a large number of conflicts are not identified. In addition, because many of these conflicts result in physical environmental effects, CEQA requires that such conflicts be disclosed as significant environmental impacts for which mitigation measures need to be proposed. General Plan conflicts that should have been identified in the Draft EIR/EIS as significant impacts are indicated in the Table below in **bold text**.

**Table Metis-1: Consistency of the Proposed Brisbane LMF with the Brisbane General Plan**

General Plan Policy/Program	Draft EIR/EIS Analysis	Comments
<b>Transportation</b>		
<b>Policy C.2:</b> The level of service objective for principal and minor arterial streets within the City is LOS "D."	"LOS D or better is not achieved at all facilities studied in the City's jurisdiction requiring LOS D resulting in an inconsistency with the City's LOS policy."  "While the project includes features to implement LOS mitigations, they are not available for all affected intersections and the project will remain inconsistent."	The Authority's analysis provides a generic statement that fails to identify which specific intersection(s) would not meet General Plan standards or what mitigation measures are proposed. A review of the Project's traffic impact analysis revealed methodological issues that undermine the validity of Draft EIR/EIS findings as noted in previous comments.
<b>Policy C.3:</b> Design turning movements and traffic signal timing at intersections so as to avoid the queueing of vehicles at intersection from backing up and adversely affecting operations at another intersection. Design turning movements and traffic signal timing at freeway interchanges cause queueing of vehicles from the intersection onto the freeway mainline.	Not identified as inconsistent with the Brisbane General Plan.	The Authority's analysis provides a generic statement that fails to identify which specific intersection(s) would not meet General Plan standards or what mitigation measures are proposed. A review of the Projects traffic impact analysis reveals methodological issues that undermine the validity of Draft EIR/EIS findings as noted in previous comments.
<i>Program C.5.a:</i> Require the upgrade of Tunnel Avenue to current codes and safety standards.	Not identified as inconsistent with the Brisbane General Plan.	No commitments are made in the Draft EIR/EIS or IAMFs for the design of the relocated Tunnel Avenue bridge or Tunnel Road realignment. Because these are City-maintained roadways, all improvements constructed by the Authority must meet City design standards and be subject to approval of the Brisbane Public Works Director.
<b>Policy C.6:</b> Investigate and pursue alternative means of access to and egress from Sierra Point and investigate additional emergency access alternatives.	<b>Not identified as inconsistent with the Brisbane General Plan.</b>	<b>Rather than facilitating improved access to Sierra Point, the Project would eliminate direct emergency access via Sierra Point Parkway while the Tunnel Avenue bridge is closed during LMF construction.</b>
<b>Policy C.7:</b> Investigate and pursue traffic calming features for Visitacion Avenue, Old County Road and San Bruno Avenue to provide for greater	Not identified as inconsistent with the Brisbane General Plan.	Rather than providing for traffic calming, the Project would connect along Visitacion Avenue to Valley Drive, creating three closely spaced

General Plan Policy/Program	Draft EIR/EIS Analysis	Comments
pedestrian comfort and safety at street crossings.		intersections along Valley Drive. The potential for extending Visitacion Avenue through to Valley Drive was considered and soundly rejected as part of the City's approved Gateway Precise Plan.
<b>Policy C.44:</b> Consider potential effects on mobility and emergency evacuation in making land use decisions.	Not identified as inconsistent with the Brisbane General Plan.	As demonstrated in the Draft EIR/EIS and in comments on that document provided in this report, the Project would have significant unavoidable impacts on mobility and emergency access during LMF construction. Because the Project's conflicts with Policy C.44 relate to this acknowledged significant unavoidable Project impact, the Project's conflict with Policy C.44 needs to also be acknowledged as a significant Land Use impact.
<b>Noise and Vibration</b>		
<b>Municipal Code Section 8.28.060. Construction Activities.</b> Construction shall be allowed between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and 9:00 a.m. to 7:00 p.m. on weekends and holidays. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source, and the noise level outside the property plane of the project shall not exceed 86 dBA.	<p>"Project construction would occur at nighttime and on weekends outside the hours established in the code of ordinances."</p> <p>"The project would incorporate NV-IAMF#1: Noise and Vibration, to minimize noise impacts by requiring compliance with FRA guidelines for minimizing construction noise and vibration impacts when work is conducted within 1,000 feet of sensitive receptors. The Authority would implement NV-MM#1: Construction Noise Mitigation Measures, which would require the contractor to prepare a noise-monitoring program and noise control plan prior to construction to comply with the FRA construction noise limits wherever feasible. The monitoring program would describe the actions the contractor would use to reduce noise, such as installing temporary noise barriers, avoiding nighttime construction near residential areas, and using low-noise emission equipment."</p>	Proposed Project construction is clearly inconsistent with the City's Municipal Code. Because this conflict results in a physical environmental effect, the Project's conflict with Municipal Code Section 8.28.060 needs to be acknowledged as a significant Land Use impact.
<b>Policy 176:</b> Minimize the intrusion of unwarranted and intrusive on community life.	Not identified as inconsistent with the Brisbane General Plan.	The Brisbane LMF would generate intrusive noise within the Baylands residential areas. The Draft EIR/EIS neither addresses nor provides mitigation for Project impacts on Baylands residential areas. Because this conflict results in a physical environmental effect, the Project's



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		<b>conflict with Policy 176 needs to be acknowledged as a significant Land Use impact.</b>
<b>Policy 180:</b> Establish and enforce truck routes and times of operation for haul routes to minimize impacts on residential areas.	Not identified as inconsistent with the Brisbane General Plan.	The Draft EIR/EIS does not address proposed truck routes or times for hauling for the 91,482 truckloads required for construction of the West LMF or 130,175 truckloads required for construction of the East LMF (including 27,000 truckloads hauling hazardous materials).
<b>Program 184a:</b> Use the State Guidelines for land use compatibility to determine noise impacted uses.	Not identified as inconsistent with the Brisbane General Plan.	<b>Noise from the LMF would exceed State Guidelines for land use compatibility within Baylands residential areas. Because this conflict results in a physical environmental effect, the Project's conflict with Program 184a needs to be acknowledged as a significant Land Use impact.</b>
<b>Public Utilities and Energy</b>		
<b>Policy BL.1 B:</b> A reliable water supply approved by the City of Brisbane to support proposed uses within the Baylands shall be secured prior to site development.	Not identified as inconsistent with the Brisbane General Plan.	The Draft EIR/EIS incorrectly concludes that adequate water supply exists for the LMF based on analysis of the total amount of water available from SFPUC to agencies throughout San Mateo County, rather than on the City of Brisbane's contracted share of those supplies, which is not adequate serve LMF in addition to existing and approved development within Brisbane. Because the Project's conflict with Policy BL.1 B relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<b>Biological and Aquatic Resources</b>		
<b>Policy 82:</b> Encourage the preservation, conservation and restoration of open space to retain existing biotic communities, including rare and endangered species habitat, wetlands, watercourses and woodlands.	Not identified as inconsistent with the Brisbane General Plan.	Construction of the West LMF would remove all existing habitat areas on Icehouse Hill. The Project's proposed alignment of Lagoon Road would preclude restoration of marsh habitat along the northern edge of the Brisbane Lagoon. Because the Project's conflict with Policy 82 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<b>Policy BL.1 H:</b> Key habitat areas, including Icehouse Hill and Brisbane Lagoon and adjacent habitat as identified in the 2001 City Open Space	Not identified as inconsistent with the Brisbane General Plan.	Construction of the West LMF would remove all existing habitat areas on Icehouse Hill. The Project's proposed alignment of Lagoon Road would

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<b>Master Plan shall be preserved, enhanced, and protected.</b>		preclude restoration of marsh habitat along the northern edge of the Brisbane Lagoon. Because the Project's conflict with Policy BL.1 H relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<b>Policy BL.16: Enhance the natural landform and biotic values of Icehouse Hill and preserve its ability to visually screen the Tank Farm.</b>	Not identified as inconsistent with the Brisbane General Plan.	Construction of the West LMF would remove all existing habitat areas on Icehouse Hill. Because the Project's conflict with Policy BL.16 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<b>Policy BL.20: Dedicate land area for open space, recreational uses and wetlands restoration, especially around the Lagoon.</b>	Not identified as inconsistent with the Brisbane General Plan.	Construction of the West LMF would remove all existing habitat areas on Icehouse Hill. The Project's proposed alignment of Lagoon Road would preclude restoration of marsh habitat along the northern edge of the Brisbane Lagoon. Because the Project's conflict with Policy BL.20 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<b>Hydrology and Water Resources</b>		
<b>Policy BL.1 J:</b> Development shall be designed to protect uses from the 100-year flood, including 100 years of projected sea level rise as determined based on regulatory standards or guidelines in effect at the time of project construction, with the reference to guidelines and sea level rise projections approved by the Director of Public Works/City Engineer based on context-specific considerations of risk tolerance and adaptive capacity.	Not identified as inconsistent with the Brisbane General Plan.	The Brisbane LMF and the proposed alignment of Lagoon Road appear to have been designed without consideration of sea level rise.
<b>Hazards Materials and Wastes</b>		
<b>Policy 173:</b> The City shall not grant approval of a development project on a contaminated site unless a plan for remediation of the site has first been approved and adopted by all Federal, State and local agencies having jurisdiction over the remediation plan.	Not identified as inconsistent with the Brisbane General Plan.	The Draft EIR/EIS makes no mention of physical environmental effects associated with site remediation and landfill closure required for the West LMF or for Title 27 closure needed for the East LMF. The Authority apparently intends to approve the Project prior to developing remedial action plans and a Title 27 closure plan or securing required regulatory approvals. Because the Project's conflict with Policy 173 relates to a

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		physical environmental impact, this conflict should have been identified as a significant Land Use impact.
<p><b>Policy 174:</b> Include the remediation requirements of Federal, State and local agencies in the process of making determinations on land use designations and development applications.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>The Draft EIR/EIS makes no mention of physical environmental effects associated with site remediation and landfill closure required for the West LMF or for Title 27 closure needed for the East LMF. The Authority apparently intends to approve the Project prior to developing remedial action plans and a Title 27 closure plan or securing required regulatory approvals. Because the Project's conflict with Policy 174 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.</p>
<p><b>Policy 175:</b> Assure that any development otherwise permitted on lands filled with municipal waste is safe by implementing the following programs. <i>Program 175b:</i> Require evidence that scientific testing and verification has taken place to the satisfaction of regulatory agencies.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>The Draft EIR/EIS makes no mention of physical environmental effects associated with landfill closure required for Title 27 closure needed for the East LMF. Because the Project's conflict with Policy 175 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.</p>
<b>Safety and Security</b>		
<p><b>Policy 163:</b> Continue to ensure a three-minute emergency response average and a ten-minute average response to other calls for (police) service.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>The Project would eliminate direct emergency access to Sierra Point, the Kinder Morgan tank farm, and Golden State Lumber while the Tunnel Avenue bridge is closed during LMF construction, precluding police and fire first responders from achieving acceptable emergency response times when the Tunnel Avenue bridge and Tunnel Avenue are closed. Because the Project's conflict with Policy 163 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact.</p>
<b>Socioeconomics and Communities</b>		
<p><b>Policy 8:</b> Maintain and diversify the City's tax base, consistent with community character, in order to generate adequate revenues for City Government and sustain a healthy local economy.</p>	<p>"Alternatives A and B would both displace two industrial businesses and one commercial business in Brisbane. This would result in a reduction in the City's tax base under both project alternatives, which would reduce the City's property tax revenues. Project features and compliance with the Uniform Act would minimize the</p>	<p>The Draft EIR/EIS focuses on businesses that would be displaced and fails to address the economic effects of:</p> <ul style="list-style-type: none"> <li>• Removing 100+ acres needed for the LMF from the City's property tax roll;</li> <li>• Removing 100+ acres of land from Baylands development that would participate in fair share funding for</li> </ul>

General Plan Policy/Program	Draft EIR/EIS Analysis	Comments
	<p>impacts on commercial and industrial properties by offering relocation assistance. Project features would partially reconcile these impacts; however, some existing commercial and industrial properties would be permanently removed.”</p> <p>“The Authority would work with the City of Brisbane and developer of the Brisbane Baylands site to enhance the public benefits of HSR development to help meet the needs of the local communities. Numerous project features have been incorporated to minimize impacts on displacements. The Authority would comply with the Uniform Act to provide relocation assistance for businesses. Despite implementation of project features, the project would remain inconsistent.”</p>	<p>important regional transportation improvements such as the Geneva Avenue extension and Candlestick interchange, including the added costs for extending Geneva Avenue by forcing the roadway to tunnel under the Caltrain line;</p> <ul style="list-style-type: none"> <li>• Eliminating Golden State Lumber’s existing laydown yard and the potential subsequent impacts on Brisbane’s sales tax revenues; and</li> <li>• Displacing the City’s existing corporation yard.</li> </ul> <p>The vague promise of working with the City and Baylands developer to “enhance the public benefits of HSR development” is insufficient to achieve consistency with Brisbane General Plan Policy 8.</p>
<p><b>Policy LU.3:</b> Establish a mix of land uses that best serves the needs of the community.</p> <p><i>Program LU.3.a:</i> When evaluating land uses, consider whether a use would result in adverse impacts on existing and proposed land uses nearby, and whether those impacts can be mitigated.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>Construction and operation of the Brisbane LMF would result in numerous significant impacts on the community and on adjacent land uses within the Brisbane Baylands, while meeting no community needs.</p>
<p><b>Policy LU.5:</b> Establish a mix of uses with a diversified economic base to maintain and increase tax revenues and contribute to the City’s ability to provide services.</p>	<p>“The East or West Brisbane LMF options would be inconsistent with General Plan designations for residential and commercial development in the Brisbane Baylands thus reducing potential tax revenues to the City.”</p> <p>“The Authority would work with the City of Brisbane to enhance the public benefits of HSR development to help meet the needs of the local communities, including housing and job opportunities (LU-IAMF#1, LU-IAMF#2). While the project includes features to implement urban design guidelines to maximize compatible design, the project would reduce the amount of land available for TOD in the Brisbane priority development area.”</p>	<p>The Draft EIR/EIS focuses on businesses that would be displaced and fails to address the economic effects of:</p> <ul style="list-style-type: none"> <li>• Removing 100+ acres needed for the LMF from the City’s property tax roll;</li> <li>• Removing 100+ acres of land from Baylands development that would participate in fair share funding for important regional transportation improvements such as the Geneva Avenue extension and Candlestick interchange, including the added costs for extending Geneva Avenue by forcing the roadway to tunnel under the Caltrain line;</li> <li>• Eliminating Golden State Lumber’s existing laydown yard and the potential impacts on Brisbane’s sales tax revenues; and</li> <li>• Displacing the City’s existing corporation yard.</li> </ul> <p>The vague promise of working with the City and Baylands developer to “enhance the public benefits of HSR</p>

General Plan Policy/Program	Draft EIR/EIS Analysis	Comments
		development” is insufficient to achieve consistency with Brisbane General Plan Policy LU.5.
<p><b>Policy BL.1 E:</b> Baylands development shall be revenue positive to the City on an annual basis where all City costs (e.g., annual operating costs, maintenance and replacement of equipment, facilities, infrastructure, cultural resource and habitat protection and management etc.) are exceeded by project-generated revenues to the City (e.g., to the City’s General Fund, enterprise funds, special funds, etc.) during all phases of development and upon final buildout.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>By taking 100+ acres from the Baylands upland development area and removing them from the City’s property tax roll, the Brisbane LMF would adversely affect the Baylands development’s ability to achieve consistency with this policy.</p> <p>Construction of the LMF at the center of the Baylands would make for an inefficient land use pattern and increase per-unit costs for infrastructure, including fair share costs for the Geneva Avenue extension and Candlestick interchange, as well as per-unit costs for required parks and open space. The LMF’s 24/7 operation would generate significant noise impacts for which no mitigation is offered in the Draft EIR/EIS, and thereby transfers costs for noise mitigation to existing and future Brisbane taxpayers.</p> <p>By not fully addressing traffic impacts and ensuring the ongoing adequacy of proposed bridge and road improvements, the HSR project could also transfer costs for future roadway improvements onto existing and future Brisbane taxpayers.</p>
<b>Station Planning, Land Use, and Development</b>		
<p><b>Policy LU.3:</b> Establish a mix of land uses that best serves the needs of the community.</p> <p><i>Program LU3.a:</i> When evaluating land uses, consider whether a use would result in adverse impacts on existing and proposed land uses nearby, and whether those impacts can be mitigated.</p>	<p>“The East or West Brisbane LMF options would be inconsistent with General Plan designations for residential and commercial development in the Brisbane Baylands.”</p> <p>“The Authority would work with local governments to enhance the public benefits of HSR development so that they help meet the needs of the local communities, including housing and job opportunities (LU-IAMF#1, LU-IAMF#2). While the project includes features to implement urban design guidelines to maximize compatible design, the project would reduce the amount of land available for TOD in the Brisbane priority development area.”</p>	<p>Construction and operation of the Brisbane LMF would result in numerous significant impacts on the community and on adjacent land uses within the Brisbane Baylands, while meeting no community needs.</p>



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<p><b>Policy LU.5:</b> Establish a mix of uses with a diversified economic base to maintain and increase tax revenues and contribute to the City’s ability to provide services.</p>	<p>“The East or West Brisbane LMF options would be inconsistent with General Plan designations for residential and commercial development in the Brisbane Baylands, thus reducing tax revenues to the City.”</p> <p>“The Authority would work with local governments to enhance the public benefits of HSR development so that they help meet the needs of the local communities, including housing and job opportunities (LU-IAMF#1, LU-IAMF#2). While the project includes features to implement urban design guidelines to maximize compatible design, the project would reduce the amount of land available for TOD in the Brisbane priority development area.”</p>	<p>The Draft EIR/EIS focuses on businesses that would be displaced and fails to address the economic effects of:</p> <ul style="list-style-type: none"> <li>• Removing 100+ acres needed for the LMF from the City’s property tax roll;</li> <li>• Removing 100+ acres of land from Baylands development that would participate in fair share funding for important regional transportation improvements such as the Geneva Avenue extension and Candlestick interchange, including the added costs for extending Geneva Avenue by forcing the roadway to tunnel under the Caltrain line;</li> <li>• Eliminating Golden State Lumber’s existing laydown area and the subsequent impacts on Brisbane’s sales tax revenues; and</li> <li>• Displacing the City’s existing corporation yard.</li> </ul> <p>The vague promise of working with the City and Baylands developer to “enhance the public benefits of HSR development” is insufficient to achieve consistency with Brisbane General Plan Policy LU.5.</p>
<p><b>Parks, Recreation, and Open Space</b></p>		
<p><b>Policy BL.4:</b> Maximize opportunities for open space and recreational uses in any land use planning for this subarea (Baylands).</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>By removing 100+ acres from the upland portion of the Baylands, orienting Lagoon Road to preclude restoration of marsh habitat north of the lagoon, and removing Icehouse Hill (West LMF), the HSR Project would preclude maximizing opportunities for open space and recreational uses within the Baylands.</p>
<p><b>Policy BL.20:</b> Dedicate land area for open space, recreational uses, and wetlands restoration, especially around the Lagoon.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>By removing 100+ acres from the upland portion of the Baylands, orienting Lagoon Road to preclude restoration of marsh habitat north of the lagoon, and removing Icehouse Hill (West LMF), the HSR Project would preclude maximizing opportunities for open space and recreational uses within the Baylands.</p>
<p><b>Aesthetics and Visual Quality</b></p>		
<p><b>Policy LU 21:</b> Preserve open areas with biological value and/or significant topographic characteristics at the perimeter of the City to maintain Brisbane as separate and distinct from nearby communities.</p>	<p>“Both project alternatives would build a 100- to 110-acre LMF on land that is currently undeveloped, eliminating views of open space that provide an image of Brisbane as separate and distinct from nearby communities,</p>	<p><b>The Brisbane Baylands is a contaminated site formerly used as a municipal landfill and for heavy industrial uses. Policy LU 21 is not intended to apply to the entirety of the Baylands which the General Plan</b></p>

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	<p>creating a view of continuous development from central Brisbane to San Francisco.”</p> <p>“Prior to construction the contractor would document, through issue of a technical memorandum, how the Authority’s aesthetic guidelines have been employed to minimize visual impacts. The Authority seeks to balance providing a consistent, project-wide aesthetic with the local context for the numerous HSR non-station structures across the state. Examples of aesthetic options that can be applied to non-standard structures in the HSR system would be provided to local jurisdictions (AVQ-IAMF#1: Aesthetic Options). The Authority would also require its contractors to document that the Authority’s Aesthetic Design Review Process has been followed (AVQ-IAMF#2: Aesthetic Review Process).</p> <p>While the project includes these features to minimize visual impacts, they cannot keep the open space intact and the project would remain inconsistent.”</p>	<p>designed for urban residential and commercial/office development. Thus, the Draft EIR/EIS analysis mistakenly focuses on development within the Baylands and not on loss of open areas with biological value and/or significant topographic characteristics such as Icehouse Hill and Visitacion Creek.</p> <p>The Draft EIR/EIS analysis of loss of open space fails to acknowledge that construction of the West LMF would remove Icehouse Hill and its existing habitat areas, that impacts on Visitacion Creek would result from construction of the East LMF, and that the Project’s proposed alignment of Lagoon Road would preclude restoration of marsh habitat along the northern edge of the Brisbane Lagoon. AVQ-IAMF#1 and AVQ-IAMF#2 both address design of non-station structures. Entrusting the design of structures within the LMF such as the main maintenance structure or the electrical substation to the construction contractor, even if such design is based on the Authority’s guidelines would be of no value in achieving consistency with Policy LU 21, which calls for preserving areas with biological value and/or significant topographic characteristics (i.e., Icehouse Hill).</p> <p>Because the Project’s conflict with Policy LU 21 relates to a physical environmental impact, this conflict should have been identified as a significant Land Use impact</p>
<p><b>Policy BL.11:</b> Retain and enhance landscaping along Bayshore Boulevard to buffer traffic noise and enhance the visual appearance of land uses fronting of the roadway.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>Construction of the West LMF would remove Icehouse Hill and a substantial amount of existing landscaping along Bayshore Boulevard. Landscaping would likely also be removed during relocation of the existing Brisbane fire station. The Draft EIR/EIS makes no commitment to enhance the visual appearance of landscaping along Bayshore Boulevard or to comply with City requirements for landscaping.</p>
<p><b>Policy BL.16:</b> Enhance the natural landform and biotic values of Icehouse Hill and preserve its ability to visually screen the Tank Farm.</p>	<p>Not identified as inconsistent with the Brisbane General Plan.</p>	<p>Construction of the West LMF would remove Icehouse Hill and conflict with Policy BL.16. Because the Project’s conflict with Policy BL.16 relates to a</p>

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		<b>physical environmental impact, this conflict should have been identified as a significant Land Use impact.</b>
<b>Cultural Resources</b>		
<p><b>Policy 137:</b> Conserve pre-historic resources in accordance with State and Federal requirements.</p>	<p>“There is a potential for construction activities for either project alternative to encounter unknown archaeological resources or human remains.”</p> <p>“Through implementation of CUL-MM#1, the Authority would complete Phased Identification inventory for archaeological resources and utilize or further develop treatment plans for any identified resources that would be impaired by the project. Implementation of CUL-MM#2 would train construction crews to identify archaeological resources during construction activities, provide for construction monitoring by qualified professionals in areas of archaeological sensitivity, and establish procedures to stop work in the event of a discovery. Also, in accordance with CUL-MM#2, if human remains are encountered, the appropriate state and federal laws would be followed to determine whether the remains are affiliated with a Native American tribe; if so, such remains would be treated appropriately. In accordance with CUL-MM#3, in the event that an unknown archaeological resource is encountered and cannot be avoided, mitigation measures would be applied as stipulated by the MOA and ATP. With the implementation of CUL-MM#1, CUL-MM#2, and CUL-MM#3, the inconsistency would be reconciled, and the project would be consistent with these goals and policies.”</p>	<p>The Draft EIR/EIS only addresses “unknown archaeological resources or human remains.” Cultural resources testing of borings taken to characterize soils in the area west of the Caltrain line identified sensitive resources that might be affected by the West LMF or relocation of the existing Bayshore Caltrain station. The cultural resources expert analyzing soil samples recommended additional, more intensive borings and analysis to determine the distribution of resources within the area west of the Caltrain right-of-way.</p> <p>Thus, the mitigation measure CUL-MM#2 defers needed cultural resources testing, analysis, and a determination as to whether the Project would affect a known resource until after Project approval.</p>
<b>Regional Growth</b>		
<p><b>Policy 8:</b> Maintain and diversify the City’s tax base, consistent with community character, in order to generate adequate revenues for City Government and sustain a healthy local economy.</p>	<p>“Alternatives A and B would both displace two industrial businesses and one commercial business in Brisbane. This would result in a reduction in the City’s tax base under both project alternatives, which would reduce the City’s property tax revenues. Project features and compliance with the Uniform Act would minimize the impacts on commercial and industrial properties by offering relocation assistance. Project features would partially reconcile these impacts;</p>	<p>The Draft EIR/EIS focuses on businesses that would be displaced and fails to address the economic effects of:</p> <ul style="list-style-type: none"> <li>• Removing 100+ acres needed for the LMF from the City’s property tax roll;</li> <li>• Removing 100+ acres of land from Baylands development that would participate in fair share funding for important regional transportation improvements such as the Geneva Avenue extension and Candlestick</li> </ul>

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	<p>however, some existing commercial and industrial properties would be permanently removed.”</p> <p>“The Authority would work with the City of Brisbane and developer of the Brisbane Baylands site to enhance the public benefits of HSR development to help meet the needs of the local communities. Numerous project features have been incorporated to minimize impacts on displacements. The Authority would comply with the Uniform Act to provide relocation assistance for businesses. Despite implementation of project features, the project would remain inconsistent.”</p>	<p>interchange, including the added costs for extending Geneva Avenue by forcing the roadway to tunnel under the Caltrain line;</p> <ul style="list-style-type: none"> <li>• Eliminating Golden State Lumber’s existing laydown area and the potential impacts on Brisbane’s sales tax revenues; and</li> <li>• Displacing the City’s existing corporation yard.</li> </ul> <p>The vague promise of working with the City and Baylands developer to “enhance the public benefits of HSR development” is insufficient to achieve consistency with Brisbane General Plan Policy 8.</p>
<p><b>Policy LU.5:</b> Establish a mix of uses with a diversified economic base to maintain and increase tax revenues and contribute to the City’s ability to provide services.</p>	<p>“The East or West Brisbane LMF options would be inconsistent with General Plan designations for residential and commercial development in the Brisbane Baylands thus reducing potential tax revenues to the City.”</p> <p>“The Authority would work with the City of Brisbane to enhance the public benefits of HSR development to help meet the needs of the local communities, including housing and job opportunities (LU-IAMF#1, LU-IAMF#2). While the project includes features to implement urban design guidelines to maximize compatible design, the project would reduce the amount of land available for TOD in the Brisbane priority development area.”</p>	<p>The Draft EIR/EIS focuses on businesses that would be displaced and fails to address the economic effects of:</p> <ul style="list-style-type: none"> <li>• Removing 100+ acres needed for the LMF from the City’s property tax roll;</li> <li>• Removing 100+ acres of land from Baylands development that would participate in fair share funding for important regional transportation improvements such as the Geneva Avenue extension and Candlestick interchange, including the added costs for extending Geneva Avenue by forcing the roadway to tunnel under the Caltrain line;</li> <li>• Eliminating Golden State Lumber’s existing laydown area and the potential impacts on Brisbane’s sales tax revenues; and</li> <li>• Displacing the City’s existing corporation yard.</li> </ul> <p>The vague promise of working with the City and Baylands developer to “enhance the public benefits of HSR development” is insufficient to achieve consistency with Brisbane General Plan Policy LU.5.</p>

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**6. *Flawed Project Design. The design of the Brisbane East and West LMFs ignores the site's physical setting and the extent to which the LMF will be incompatible with adjacent land uses. As a result, the description of the Project is incomplete, and analyses of the Project's impacts are inadequate.***

Had an adequate analysis of the site-specific impacts associated with the flawed LMF design been undertaken, the Draft EIR/EIS would have disclosed the severe environmental consequences that would result from both the East and West LMF which render development of a light maintenance facility within Brisbane infeasible for the reasons enumerated below.

- Construction of the Brisbane LMF would necessitate demolition and relocation of the existing Tunnel Avenue bridge crossing over the Caltrain right-of-way, including a 1-3 month time period until the new bridge crossing could be opened. Emergency access and response times for the Brisbane Police and North County Fire Authority to those portions of the City east of the Caltrain right-of-way would be unacceptably long, placing properties and lives at risk. While the Draft EIR/EIS concludes that the impacts of this temporary road closure would be significant and unavoidable, there is simply no valid reason such an impact could ever be considered to be acceptable, thereby precluding the Authority's ability to approve the Project including the Brisbane LMF.

The new bridge would also require relocation of the existing fire station along Bayshore Boulevard. The Draft EIR/EIS proposes moving the station a few hundred feet to the south; however, neither of the two options cited in the Draft EIR/EIS for relocating the fire station would be feasible. Because there are no circumstances under which leaving a community with a fatally flawed fire station could ever be considered to be acceptable, thereby precluding the Authority's ability to approve the Project including the Brisbane LMF.

In addition, relocation of the existing Tunnel Avenue bridge crossing would require:

- Demolition of the historic Machinery & Equipment building along with dislocation of the Mission Blue Nursery, which is critical to ongoing habitat restoration efforts within the San Bruno Mountain State & County Park.
- Relocation of the City's existing corporation yard, which the Draft EIR/EIS appears to mistakenly identify as an industrial use (East LMF only).
- The East LMF would require excavations up to 65 feet deep into the former Brisbane Landfill. While the Draft EIR/EIS states that the East LMF would be constructed on the landfill, no analysis is presented addressing amount of excavated materials from the East LMF that could be reused onsite (i.e., clean soils), hauled for disposal at a Class III landfill (i.e. non-hazardous wastes), or the amount of materials that must be hauled to a distant Class I landfill (i.e., contaminated soils and hazardous wastes). Approximately 130,575 truckloads would be required to haul the approximately 2,082,800 cubic yards of



soil and waste materials needing offsite disposal from the East LMF. The Draft EIR/EIS fails to acknowledge that the Authority would be required to prepare Title 27 landfill closure plans, receive regulatory approval, and complete the final landfill closure prior to construction of the East LMF.

- Construction of the East LMF would require filling 980 linear feet of Visitacion Creek beneath the East LMF. Based on a review of the Draft EIR/EIS and the Authority’s “Preliminary Compensatory Mitigation Plan,” it appears that the Authority plans to either:
  - Fill approximately 980 linear feet of the existing Visitacion Creek and construct a culvert under the widest point of the East LMF, or
  - Reroute Visitacion Creek from where it daylights just east of the Caltrain tracks and construct a new 2,300 linear foot open channel running south adjacent to the East LMF that discharges the creek into Brisbane Lagoon rather than San Francisco Bay.

The likelihood of gaining regulatory approval for either of these concepts is questionable, considering that (1) less impacting alternatives are available in the form of LMF sites other than the Baylands that should have been investigated, but were not, as part of the Draft EIR/EIS and (2) relocating the creek would cut off natural stormwater runoff to the remaining 1,100 linear feet of Visitacion Creek east of the realigned Tunnel Avenue adversely affecting remaining habitats in that location and requiring additional mitigation.

- The proposed design of the East LMF with its “flyover” rail entry for southbound trains into the LMF would preclude the Geneva Avenue extension from building a bridge crossing over the Caltrain right-of-way, which has long been planned as part of a multi-jurisdictional transportation planning effort between San Francisco, San Mateo County, Brisbane, and others. As the East LMF is currently designed, the only way for Geneva Avenue to cross the Caltrain right-of-way would be to tunnel under the right-of way, which would require large-scale excavations into the contaminated soils within Operable Units UPC-OU-SM and OU-2, substantially increasing the costs and environmental impacts of this important transportation feature.
- Construction of the West LMF would require removal of Icehouse Hill. A total of approximately 1,463,700 cubic yards of soils would be hauled offsite for the West LMF (approximately 91,482 truckloads), including an estimate 432,000 cubic yards of contaminated soils (approximately 27,000 truckloads). The Draft EIR/EIS fails to acknowledge that the Authority would be required to prepare RAPs and RDIPs, receive regulatory approvals and remediate the site prior to construction of the West LMF.
- The Draft EIR/EIS erroneously concludes that adequate water supplies are available for the Brisbane LMF based on a review of the total amount of water available to San Mateo County from the SFPUC. An analysis of the City of Brisbane’s contracted allocation of

SFPUC water (980,000 gpd) reveals that the City does not have adequate water supply for the LMF in addition to its commitments to existing customers and approved developments. Thus, the Authority must secure and deliver an adequate water supply for the LMF.

- The LMF will generate severe impacts on development of much needed housing within the Baylands, which is identified in the Bay Area's sustainable communities strategy as a Priority Development Area due to its proximity to transit. The Draft EIR/EIS offers no mitigation for the noise, traffic, and other impacts the LMF would cause to housing within the Baylands, adversely affecting the City's ability to produce housing. By adopting General Plan amendment GP-1-18, the City of Brisbane committed to take on a disproportionate share of statewide and regional housing need, permitting 1,800 to 2,200 dwelling units to be constructed within the Baylands, which would approximately the City's population. The severe impacts the Brisbane LMF would have on the Baylands would compound the negative effects of the state's housing crisis on the availability and affordability of housing within the Bay Area.

*The design of the East LMF would prevent the Geneva Avenue extension from Bayshore Boulevard to the US 101 freeway proposed as part of the multi-jurisdictional San Francisco-San Mateo Bi-County Transportation Study from bridging over the Caltrain right-of-way s has long been planned. As it is currently designed, the Geneva Avenue extension would be required to tunnel under the Caltrain right-of-way, substantially adding to the Geneva extension's costs and environmental impacts.*

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A Project Study Report (PSR) was developed by the firm of Biggs Cardosa Associates for the City of Brisbane that was approved in January 2014 by Caltrans to reconstruct the existing US-101/Candlestick Point interchange with a new compact diamond interchange that would improve traffic operations and regional access to and from US-101. The interchange would also serve to support a number of planned developments adjacent to the interchange within the Brisbane and San Francisco, including the Baylands. The roadway would cross either under or over US-101 (depending on the build alternative) and connect with Harney Way on the east side of US-101 in San Francisco and would extend and connect to Geneva Avenue at Bayshore Boulevard on the west side of US-101. This extension is a separate project from the Interchange but is defined and mentioned within the PSR.

The Geneva Extension Project would connect US-101 and Harney Road to Geneva Avenue from its current eastern terminus at Bayshore Boulevard cross over the existing Caltrain rail corridor. This extension provides an important access point to residential neighborhoods and businesses the west of the Caltrain corridor, an important connection to the Caltrain Bayshore station for residents/development to the east of the Caltrain corridor, and an important regional east-west transit connection from US-101 to the I-280 freeway and BART. The Geneva Avenue extension is also a critical transportation feature for development of the Baylands and projects to the north in San Francisco.

As part of the Geneva Avenue Extension Project, Geneva Avenue would be constructed as a six-lane local roadway with Class II bike lanes and sidewalks in both directions. It also includes a wide median to support Bus Rapid Transit (BRT) service between San Francisco and Daly City through Brisbane. The agreed-upon alignment of Geneva Avenue would cross over the existing Caltrain railroad corridor via a new 1,143-foot-long, 148-foot wide, 9-span overhead structure. The anticipated construction cost only of the Geneva Ave Overhead in 2014 PSR was approximately \$60 million, excluding soft costs, annual escalation, construction management, and contingencies.

Additional studies reviewing the Geneva Avenue Extension were undertaken for the City of Brisbane in conjunction with San Mateo County Transportation Authority to review impacts and enhancements to the alignment and connections of the PSR defined project to consider BRT and Caltrain connectivity, accommodating direct and improved access to the Baylands Development, providing direct connection to Tunnel Avenue, and to accommodate proposed Recology modernization plans. The Geneva Avenue overhead bridge structure illustrated in Attachment Metis-C was defined in the approved 2014 PSR.

The Authority did, in fact, recognize the Geneva Avenue Extension as shown on the plan drawing in their report (see DWG MY-CO101 in Attachment Metis-F: Appendix B: B-15, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 14 of 49 for the East LMF and DWG MY-C0201 Appendix B: B-, V3-06, PEPD, Alternative B Book, B4, LMF Alignment Data Table 8 for the East LMF). However, the Draft EIR/EIS does not indicate or discuss impacts associated with this planned network improvement that is included as a cumulative project in Draft EIR/EIS Appendix 3.18-B and is a vital future connection for the City and its regional partners. Additionally, the geometry as shown on the aforementioned plan is not shown correctly with what was defined in the 2014 PSR or the proposed layout from the Baylands Specific Plan. It is clear that the rail design for the East and West LMFs proposed by the Authority would have significant impacts to the viability of the Geneva Avenue Extension Project.

*The Tunnel Avenue bridge relocation and Lagoon Road alignment proposed by the Authority are poorly designed.*

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The Authority is proposing relocating the access across the railroad corridor from the existing Tunnel Ave/Old County Road Intersection at Bayshore Boulevard approximately 190' to the northwest to the intersection with Valley Drive. The plan proposes constructing a new overhead structure to connect with and extend Lagoon Road towards the partial interchange along southbound US-101. The existing Tunnel Ave bridge would be demolished to accommodate necessary rail track improvements.

As stated in the Draft EIR/EIS, construction of the relocated Tunnel Avenue bridge would result in a 1-3 month temporary closure of the bridge before the relocated bridge crossing

would be opened. During this time, significant and unavoidable emergency response impacts would occur. It appears that the bridge closure is necessitated as a result of embankment construction needed to return Lagoon Road to its existing alignment.

Brisbane's experience with the existing Tunnel Avenue bridge was that the construction of the bridge embankment was subject to fairly large short and long-term settlement due to its proximity to San Francisco Bay and the former Brisbane Landfill (pers. comm. with Randy Brault, PE, Brisbane City Engineer, August 10, 2020). Based on review of the Authority's plans for the Tunnel Avenue bridge relocation by the firm of Biggs Cardosa, the City's design engineer, it is reasonable to believe that the Lagoon Road approach to the relocated bridge and its embankments would be subject to similar settlement concerns, which could require that the embankments have extended construction settlement periods, extending the duration of the closure. As previously noted, no site-specific geotechnical analysis was undertaken for the Brisbane LMF or proposed bridge relocation.

*The proposed geometric design for the Tunnel Avenue bridge relocation and Lagoon Road realignment is flawed.*

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As shown in Attachment Metis-C, Exhibits TC2-6-2.1A Tunnel Bridge Plan and TC2-6-2.1A Tunnel Bridge Profile, proposed geometric design for the Tunnel Avenue bridge relocation and Lagoon Road realignment have several design flaws in addition to the previously mentioned need for bridge closure, relocation of the City's fire station, displacement of the City's corporation yard, demolition of the historic Machinery & Equipment building, displacement of Mission Blue Nursery and, closely spaced intersections west of Bayshore Boulevard, including:

- The 95-foot curve radius on Tunnel Avenue approaching Bayshore Boulevard on a downhill slope is only suitable for design speed of 20 mph.
- Design of the Bayshore Boulevard/Valley Drive intersection would not be conducive to bicycle or pedestrian access across the intersection.
- Lagoon Road is proposed to approach the relocated bridge at a 5.51% grade, which would not be ADA compliant, even though the roadway is designed with sidewalks.
- Lagoon Road, which is now posted with a 40-mph speed limit is for only a 25-mph design speed, which could increase emergency response times.

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***7. Factual Errors. The Draft EIR/EIS and its technical appendices contain factual errors that need to be corrected.***

*References to the Brisbane General Plan are incorrect.*

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Page 3.2-6 refers to the "City of Brisbane General Plan (City of Brisbane 1994)" and the "City of Brisbane General Plan Updated (City of Brisbane 2020)," giving the impression that they are

two separate documents. They are not. The City's current General Plan was originally adopted in 1994 and has been periodically amended over the years. Most recently, General Plan Amendment GP-1-18 was adopted by the City Council in August 2018 and approved by Brisbane voters in November 2018; General Plan Amendment GP-1-19 was approved earlier this year, addressing City roadway performance standards and other issues related to General Plan consistency with the provisions of GP-1-18.

*The description of land uses within the Baylands is incorrect.*

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On page 3.12-18, the Draft EIR/EIS states, "Light industrial facilities and warehouses adjacent to the project alignment include San Francisco Recology, two lumber yards, a soil processing facility, and the San Francisco Products Pipeline Kinder Morgan Brisbane Terminal, which is a petroleum storage and distribution terminal." This information is repeated on page 5-3 of the Community Impact Technical Report. As of July 2020, one lumber yard, Golden State Lumber, was operating within the Brisbane Baylands, the soil processing facility had ceased operations, and there were light industrial uses operating adjacent to the sites of the West and East LMF.



**Attachment Metis-A**  
**Metis Environmental Group Resumes**



# Metis Environmental Group

437 Alcatraz Avenue  
Oakland, CA 94609

## Lloyd Zola

### EDUCATION

Bachelor of Arts, Urban Studies,  
1974

California State University, Los  
Angeles

### Professional Experience

As a consulting planner, Lloyd provides expertise in resolution of complex planning, environmental, and development issues; general plans and public policy formulation; public participation programs; environmental documentation; and the coordination of environmental, project design, and policy formulation and implementation.

Lloyd has been retained as an expert witness, assisting cities in defense of adult business ordinances, religious land use claims, hillside ordinances, and inverse condemnation.

Lloyd's planning expertise has evolved through the preparation of general plans, specific plans, commercial/industrial development projects, and related environmental documents as a private consultant, public agency planner, and private development company project manager. He has considerable experience in "environmental strategy," assisting in the coordination of development design with up-front environmental analysis and mitigation. Lloyd has a unique ability to organize and manage public participation programs and consensus building efforts, and is a trained mediator. He has managed environmental analyses for large-scale residential, commercial/industrial, recreation, and public works projects, as well as public community planning projects.

### Awards

- *Outstanding Planning Award – Small Jurisdiction:* Sixth Street Specific Plan. Awarded by the Inland Empire Section, American Planning Association.
- *Outstanding Planning Award – Small Jurisdiction:* Ojai General Plan Land Use and Circulation Elements. Awarded by the California Chapter, American Planning Association.
- *Outstanding Planning Award – Large Jurisdiction:* California Speedway and Speedway Business Park. Awarded by the Inland Empire Section, American Planning Association.
- *Outstanding Planning Award – Comprehensive Planning:* Calabasas General Plan. Awarded by the Los Angeles Section, American Planning Association.
- *Distinguished Leadership Award:* Awarded by the Inland Empire Section, American Planning Association.

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## **Work History**

### ***Metis Environmental Group***

***Oakland, California***

***Partner***

***2014 - Present***

Serving as project director or project manager of large, complex community and environmental planning projects. Responsible for development of environmental analyses and mitigation strategies; preparation of environmental evaluations and documentation pursuant to CEQA; Specific Plan and ordinance preparation; and assistance with local, regional, state, and federal permitting and entitlement processes.

### ***Environmental Science Associates***

***Los Angeles, California***

***Sr. Vice President, Community Development Practice Leader***

***2010 - 2014***

Responsible for organization development, strategic planning, and training for ESA's Community Development program; development of comprehensive plans for entire communities, coastal planning, and site planning for individual properties; environmental evaluations and documentation pursuant to CEQA, NEPA, and other agency regulations; entitlement processing; and assistance with local, regional, state, and federal permitting and entitlement processes.

### ***HDR, INC.***

***Riverside, California***

***West Region Director of Community Planning***

***2005 - 2010***

Responsible for management and preparation of planning and environmental documents for large, complex land development and infrastructure projects. Also responsible for organization development and strategic planning for HDR's Community Planning program throughout the western United States.

### ***LSA Associates, Inc.***

***Riverside, California***

***Principal/Associate/Project Manager***

***1994 - 2005***

Responsible for management and preparation of planning documents for complex planning programs, including multi-jurisdictional planning efforts, community-wide General Plan efforts, and site-specific development plans. Served as project manager of the award-winning Ojai General Plan Land Use and Circulation General Plan Elements.



Also served as project manager for the California Speedway and adjacent business park on the former site of the Kaiser steel mill in Fontana, California.

***Planning Network***

***Rancho Cucamonga, California***

***President,***

***1983 - 1994***

In addition to administrative responsibilities, responsible for overall project strategy and quality control, design and implementation of public participation programs, and presentations before administrative and legislative bodies. Directly prepared all or portions of planning documents and reports of unusual complexity, including General Plans, specific plans, and performance standards for new development. Served as project manager of general plans, specific plans, and environmental impact reports. Prepared hillside development guidelines for the cities of Lancaster, Hemet, and Calabasas as part of General Plan update programs. Served as project manager for the preparation of commercial/industrial specific plans covering several thousand acres of land in the cities of Ontario, Rancho Cucamonga, Chino, Palmdale, and Fontana.

***L. D. King Engineering***

***Ontario, California***

***Project Manager/Director of Planning***

***1980 - 1983***

Responsible for management and preparation of planning documents, including specific plans and environmental impact reports. As Director of Planning, supervised staff of six project managers, planners, and graphic technicians. Prepared analysis and provided expert testimony for the Quechan Tribe of the Fort Yuma Indian Reservation as part of the adjudication of water rights along the Colorado River, including determination of those lands within the reservation which were “practicably irrigable” (could be commercially farmed).

***Covington Technologies***

***Fullerton, California***

***Project Manager***

***1979 - 1980***

Responsible for securing entitlements for residential developments ranging in size from 10 to 1,280 acres, including specific plans, tentative and final tract maps, infrastructure improvement plans, and building permits. Supervised and administered the contracts of civil engineers and other consultants.

***Riverside County, California******Senior Planner/Planner II,******1976 - 1979***

Prepared and later supervised the preparation of area general plans as part of the County's overall general plan program. Prepared a manual for department use on the methodology for area general plan formulation. Responsible for review and recommendations on general plan amendments being processed by the County. Served as staff to the County Open Space Resources Committee whose responsibility was to review and make recommendations to the Board of Supervisors regarding the creation, enlargement, and cancellation of agricultural preserve contracts pursuant to the Williamson Act.

***San Joaquin County, California******Planner I******1975 - 1976***

Responsible for preparation of the Safety, Seismic Safety, and Scenic Highways elements of the County General Plan. Conducted detailed studies and provided land use recommendations for portions of the Land Use Element, which were later incorporated into the plan. Prepared analyses of proposed state legislation affecting agricultural land preservation.

***City of Concord, California******Junior Planner******1974-1975***

Prepared a citywide neighborhood analysis to be used for evaluating Community Development Block Grant requests. As part of this analysis, conducted a demographic and land use analysis of the City to identify residential, commercial, and industrial planning areas and their distinguishing characteristics.

**Community Planning Selected Experience**

**Building Industry Association of Southern, San Bernardino County General Plan Update Review, San Bernardino, CA.** The Baldy View Chapter of the Building Industry Association (Baldy View BIA) retained Lloyd to represent Baldy View BIA in review of the 2007 County of San Bernardino General Plan Update. Lloyd was responsible for reviewing proposed updated General Plan, Community Plans, and Development Code. Lloyd represented the Baldy View BIA at meetings with County planning and Supervisors' staffs to discuss concerns and solutions to potential problems in the General Plan update program. Through a series of meetings, suggested revisions, and





additional review, consensus was achieved concerning the General Plan update. Lloyd also represented the Baldy View BIA at the public hearings before the Planning Commission and Board of Supervisors.

**Colonies Partnership, The Colonies at San Antonio, Upland, California.** Lloyd was responsible for preparation of the Colonies at San Antonio Specific Plan, involving a multi-disciplinary team to plan and design the community. A key part of the design of the specific plan involved reuse of an abandoned surface mine and negotiations for mitigation of wetlands and waters of the United States that were present within the project site. Lloyd developed and implemented a strategy that demonstrated independent utility for Phase 1 development, facilitating development of Phase 1 and creating cash flow for the project while more complex planning and regulatory permit processing was undertaken for subsequent phases of development. Lloyd also prepared comprehensive zoning regulations for the specific plan area, and provided design guidelines for high-density mixed-use development within one of the specific plan's development areas. He was subsequently retained to develop design regulations and environmental documentation to prepare freeway-oriented LED changeable message board regulations and integrate those regulations into the project's sign program.

**City of Malibu, Local Coastal Program, Malibu, CA.** The City of Malibu retained Lloyd to provide technical input and represent the City as Coastal Commission staff prepared the Local Coastal Program for the City. Lloyd represented the City in meetings with Coastal Commission staff, undertook planning review of the Coastal Land Use Plan prepared by Coastal Commission staff, and advised City staff and elected officials regarding the proposed provisions of the Coastal Land Use Plan. As part of this effort, Lloyd also prepared substantial portions of the Coastal Local Implementation Plan (zoning ordinance), and worked with Coastal Commission staff to integrate City-prepared and Commission staff-prepared sections into a cohesive document.

**Ontario Mills, Ontario, CA.** Lloyd served as the project manager and primary author for Specific Plan and related Environmental Impact Report for development of the 1.0+ million square foot Ontario Mills mall at the junction of the I-10 and I-15 freeways. The Specific Plan involved coordination between the four property owner/developers involved in the development and their proposed land exchanges. Key project-related issues included traffic, road alignments, and coordination of proposed roadway improvements with the City of Rancho Cucamonga, whose city limits were immediately north of the mall.



**City of Pico Rivera, General Plan Update and EIR, Pico Rivera, CA.** Lloyd served as the project director for the 2014 update of the City's General Plan, having previously served as the project manager and primary author of the City's 1993 General Plan. A key feature of the update programs was extensive bilingual community outreach.

**San Bernardino County Commercial Solar Energy Generation Facilities Ordinance, San Bernardino County, CA.** Lloyd was retained by the County of San Bernardino to prepare an ordinance governing the development of commercial solar energy generation facilities in the County. Lloyd produced the ordinance, which contains detailed development standards to address substantial land use compatibility issues occurring under the County's previous ordinance, on a fast track schedule to meet the County's need to replace its previous emergency ordinance.

**City of San Dimas Hillside Development Regulations, San Dimas, California.** Lloyd was retained by the City of San Dimas to prepare hillside development regulations for the northern portion of the City, replacing existing hillside zoning requirements.

**City of Shafter General Plan Update and EIR, Shafter, CA.** Lloyd served as the project manager and primary author for the City's General Plan update and EIR. As part of this effort, Lloyd also supervised preparation of a Municipal Services Review in support of the City's request to LAFCO for a substantial increase in its sphere of influence and subsequent annexations. The EIR prepared for the General Plan addressed not only the impacts of the proposed General Plan update, but also the impacts of expanding the City's boundaries by approximately 50 percent, two large scale specific plans, and a proposed cancellation of agricultural preserve contracts covering approximately 1,000 acres within the proposed annexation area. As part of this effort, Lloyd assisted the City to develop a streamlined CEQA process that has successfully streamlined review of development projects consistent with the updated General Plan.

**City of Shafter Housing and Air Quality Elements, Shafter, CA.** Lloyd served as project manager for the successful update of the City's Housing Element, including securing the California Department of Housing and Community Development's concurrence with the updated element. Lloyd also prepared the City's required Air Quality Element, including securing approval of the element by the San Joaquin Valley Air Quality Protection District.

**City of Shafter Environmental Justice Element, SB 743 Implementation, and AB 617 Assistance, Shafter, CA.** Lloyd has been retained to prepare an Environmental Justice Element for the City to implement the provisions of SB 1000. As part of this effort, he developed goals, objectives, and policies related to providing meaningful opportunities for civic involvement by disadvantaged residents, promoting social equity in public policy decisions, maintaining a healthy community, and simultaneously addressing both



reduce the unique and compounded health risks the community's disadvantaged residents face, and at the same time increase residents' access to employment opportunities. Lloyd is currently engaged in developing environmental thresholds and methodologies for CEQA transportation impact analyses addressing vehicle miles travelled rather than traditional level of service congestion metrics. Lloyd also provided technical and strategy assistance to public officials in relation to the City's participation in a Community Emissions Reduction Program conducted by the San Joaquin Valley Air Quality Protection District for the Shafter community.

**Sixth Street Specific Plan, Norco, California.** Lloyd was retained to prepare a specific plan for the Sixth Street corridor. Sixth Street served as Norco's primary local business area, encompassing the majority of the City's equestrian-oriented businesses. As part of the specific plan, Lloyd developed special home occupation requirements to provide a broader range of permitted uses for remaining single-family homes within the commercial corridor.

**Summit at Rosena Specific Plan, Fontana, California.** Lloyd was retained to prepare a specific plan, including comprehensive development regulations for a 900+ unit planning community in the City of Fontana. He was also responsible for entitlement processing of the Specific Plan through approval by the Fontana City Council.

**Ventura Freeway Corridor Areawide Plan and EIR, Los Angeles County, CA.** Lloyd served as the project manager and primary author for a joint planning effort between Los Angeles County and the cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village; Las Virgenes Unified School District, Las Virgenes Municipal Water District; and the National Park Service. The purpose of this large-scale planning effort was to prepare Los Angeles County's community plan for the Santa Monica Mountains area, ensure compatible land use and consistent development standards throughout the area's incorporated and unincorporated areas, ensure coordination between planning by the five municipal entities and the Santa Monica Mountains National Recreation Area, and provide a firm basis for master planning efforts by the area's two largest special district service providers. As part of this effort, Lloyd undertook a substantial public outreach effort involving a policy committee made up of elected officials, a 30-member citizens committee, and a staff-level technical committee. Lloyd was subsequently retained by Los Angeles County to provide environmental documentation for the ridgeline protection ordinance that was prepared to implement the Areawide Plan.

**West Valley Logistics Center, Fontana, California.** Lloyd prepared a specific plan, including comprehensive development regulations for a 3.2 million square foot warehousing complex in the City of Fontana. The Logistics Center was proposed



adjacent to residential neighborhoods within unincorporated San Bernardino County. As a result, the Specific Plan included a truck routing plan, noise mitigation, and detailed environmental performance standards.

## CEQA Documentation Selected Experience

### Residential | Mixed-Use Communities | Industrial

**Brisbane Baylands, Brisbane CA.** Lloyd directed preparation of the Program Environmental Impact Report for the proposed development of the 733-acre site. The project was highly controversial, and would more than double the population and commercial/business park square footage of this small community south of San Francisco. Under Lloyd's direction, the Program EIR addressed a complex development proposal, including four development scenarios at an equal level of detail along with additional alternatives at a lesser level of detail, a proposed water transfer agreement between the City, Oakdale Irrigation District and two other agencies, remediation of a former rail yard and final closure of a former landfill in compliance with Title 27 requirements. In addition to the Program EIR, Lloyd assisted the City define the project's approval process and the relationship between the complex planning and environmental review processes. Lloyd also provided planning expertise to assist the City develop the General Plan amendment that was ultimately adopted and assisted the Planning Commission and City Council in their planning deliberations. Lloyd also conducted community outreach related to the EIR, including a series of four EIR presentation workshops and three presentations to various community groups. Subsequent to adoption of the Baylands General Plan amendment, Lloyd was retained to prepare needed General Plan amendments to address EIR mitigation measures and facilitate implementation of SB 743 requirements for CEQA analysis of vehicle miles travelled, rather than congestion metrics. He also prepared environmental documentation for these amendments. Subsequent to certification of the Final Program EIR, Lloyd prepared a follow-up General Plan Amendment and EIR Addendum to address roadway performance standards in compliance with SB 743. Lloyd also prepared an EIR Addendum to permit importation of bay mud soils for future use as a landfill cap.

**Rancho La Habra Specific Plan EIR, La Habra CA.** Lloyd served as the project manager and primary author for this EIR addressing the proposed conversion of an existing golf course to a planned residential community. In addition to the impacts of proposed site grading and development, the EIR addressed impacts and mitigation associated with the applicant's request for vacation of onsite deed restrictions originally provided as



mitigation for impacts to wetland areas caused by construction of the existing golf course.

**Transit Oriented Development EIRs for Downtown Inglewood, Fairview Heights, Westchester/Veterans, and Crenshaw/Imperial, Inglewood, CA.** Lloyd served as the Project Manager for an EIR addressing TOD plans for high density, mixed-use transit-oriented development adjacent to two stations being constructed along the new Metro line to the Los Angeles International Airport and a second EIR addressing TOD plans adjacent to two other Los Angeles Metro light rail stations. Each of the two EIRs address impacts of increased development density within two distinct planning areas, encompassing a total of 1,238 acres.

**Willowbrook Specific Plan EIR, Los Angeles, CA.** Lloyd provided senior review for the EIR addressing the County's proposed transit-oriented development adjacent to the Willowbrook/Rosa Parks Station along the Metro Blue and Green lines in the unincorporated Willowbrook community. The EIR also addressed proposed expansion of the Martin Luther King, Jr. Center for Public Health and the Charles R. Drew University of Medicine and Science. Lloyd was also tasked with resolving conflicts between proposed TOD features of proposed development plans with previous mitigation measures adopted for Phase 1 of the MLK Medical Center expansion.

**City of Glendora, Hillside Initiative Ordinance Analysis, Glendora, CA.** Under contract to the City, Lloyd undertook an evaluation of a proposed Initiative Ordinance. The evaluation included a summary matrix that lent itself to easy public distribution. Lloyd worked closely with the City Attorney's office and Glendora's Planning and Engineering staff to ensure that the report was factually accurate and non-biased. He presented the report to the City Council in a public session attended by over 200 citizens, and the report was distributed to citizens throughout the city.

### **Public Policy Documents**

**Pleasanton Climate Action Plan and General Plan Update EIR, Pleasanton, CA.** Lloyd provided senior leadership and directed preparation of an EIR to support a Climate Action Plan (CAP) and Housing Element update to reduce community-wide greenhouse gas emissions and help settle two separate lawsuits. Lloyd was responsible for ensuring consistent approaches to the CAP and CEQA documentation for the CAP and Housing Element, and was instrumental in defining the General Plan Amendment to increase housing availability as the common element that allowed the City to prepare a single EIR for both the CAP and Housing Element.

**Riverside County Integrated Project, Riverside County, CA.** Lloyd served as the environmental director for this large-scale planning and environmental documentation program, overseeing a \$5.0 million CEQA/NEPA documentation program. He was





responsible for overall direction and coordination of four related environmental documents, including preparation of an integrated environmental and planning database for Riverside County, the EIR for Riverside County's comprehensive General Plan update (for which he also served as project manager), an EIR/EIS for a multi-species habitat conservation plan (MSHCP) covering the western portion of the County (including incorporated cities), and CEQA/NEPA documents for two intra-county transportation corridors.

### **Public Facilities**

**City of Brisbane, New Brisbane Library IS-MND, Brisbane, CA, *Project Manager*.** Lloyd served as Project Manager for CEQA documentation for the City proposed new library. As part of this effort, Lloyd was responsible for coordination between the City's Public Works and Community Development Departments to ensure timely completion of the Initial Study – Mitigated Negative Declaration.

**City of Delano, Wastewater Treatment Plant MND, Delano, CA, *Project Manager*.** Lloyd assisted the City of Delano with the proposed expansion of its existing municipal wastewater treatment facility by preparing environmental documentation pursuant to the provisions of CEQA and NEPA. The City proposed to expand the capacity of its existing facility by approximately 8.8 million gallons per day to provide wastewater capacity for current and future residents until over a 20-year period.

**Coronado Lifeguard Public Safety Service Building EIR, Coronado, CA.** Subsequent to a court ruling that the City's Mitigated Negative Declaration was inadequate, Lloyd was retained to direct preparation of an EIR for the proposed construction of a Lifeguard Public Safety Service Building. The Lifeguard Services Building was the third and final component of a program of beach facilities improvements undertaken by the City of Coronado under its Beach Facilities Master Plan. The EIR was successfully prepared and certified without legal challenge.

### **Entertainment Venues Experience**

**Auto Club (formerly California) Speedway / Conversion of the Kaiser Fontana Steel Mill, Fontana, CA.** Lloyd served as the consultant project manager for planning, technical studies, and entitlement efforts for the development of the Auto Club Speedway, a two-mile super-speedway adjacent to the City of Fontana. The project involved redevelopment of the abandoned Kaiser Fontana steel mill. In this effort, he was responsible for ensuring the timely completion of project architectural and engineering design; as well as water, sewer, traffic, noise, and air quality technical studies. He also prepared and processed planned development documents for the speedway. The



project was awarded as an Outstanding Project by the Inland Empire Section of the American Planning Association for attention to the early identification and resolution of project issues, which resulted in completion of the design and entitlement process, including preparation of an EIR by San Bernardino County in less than 14 months. Following project approval, Lloyd supervised preparation of the traffic management plan for the 105,000 spectator capacity facility. In addition to entitlements for the speedway, Lloyd also prepared the specific plan to convert the mill's former warehouses into a modern business park, including redesign and environmental studies for reconfiguration to increase the capacity of the Etiwanda Avenue interchange on the I-10 freeway.

**Speedway Environmental and Feasibility Studies, Various Locations, *Project Manager*.** In addition to the Auto Club Speedway, Lloyd has been retained on several occasions to perform feasibility analysis for proposed speedway facilities, including projects for:

- The Mississippi Band of Choctaw Indians to conduct studies as to whether a speedway could be safely located within Tribal lands without creating significant noise impacts.
- The former owner of the Detroit Pistons to prepare noise and other feasibility studies for the proposed conversion of the Michigan State Fairgrounds horse racing track to auto racing.
- Penske Motorsports to assist in feasibility studies for a two-mile superspeedway in Aurora, Colorado, and southwest of Denver International Airport.

**Porsche Experience Driving Center, Carson, CA.** Lloyd supervised preparation of the EIR for the 53-acre Porsche Experience Driving Center project located on a former landfill in the City of Carson. The EIR addressed development and operation of the driver training facility, which includes two tracks, an acceleration/deceleration area, an off-road course, and ice/low-friction courses, along with a museum, restaurant, retail and office spaces, and a "human performance center." In addition to analyzing the impacts of the driver training facility, Lloyd's team evaluated the impacts of site remediation, including construction of a landfill cover and gas control systems.

## **Airport-Related Development Experience**

**Hofer Ranch (UPS West Coast Air Cargo Hub and Hofer Ranch Airport Business Park Specific Plans), Ontario, CA.** The Hofer Ranch is the last working ranch and vineyard in Ontario, California, located immediately south of Ontario International Airport. Development of the final portions of the ranch is encompassed in two development plans: UPS Air Cargo Hub and the Hofer Ranch Airport Business Park. The UPS Air Cargo Hub consists of 159 acres, and includes an aircraft apron for the loading and unloading of cargo aircraft, aircraft and vehicle fueling facilities, aircraft maintenance facilities,



and a 600,000 square foot package sorting facility. The Hofer Ranch Airport Business Park provides for development of 196 acres of mixed use industrial and commercial uses, including adaptive reuse of existing historic structures within the original ranch complex, which is listed in the National Register of Historic Places. A total of 1.9 million square feet of industrial/R&D use and 250,000 of commercial use are proposed. Lloyd served as the primary author of both development plan documents, and was responsible for securing required entitlements from the City of Ontario. For the UPS site, he prepared development regulations, design guidelines, and coordination of utility planning based on a site design prepared by UPS. For the Airport Business Park development, he was responsible for preparation of the land plan for the site and preparation of environmental documentation (Mitigated Negative Declaration), as well as for development regulations, design guidelines (including plans for adaptive reuse of the designated historic district), and coordination of utility planning.

**Mesa Gateway Development Plan, Mesa, AZ. *Community Outreach, Strategic Planning Advisor.*** Lloyd was responsible for designing and assisting in conducting community outreach for the Mesa Gateway Strategic Development Plan. Spurred by the realignment of Williams Air Force Base, the need for new airport facilities to supplement Sky Harbor Airport, the proposed expansion of Arizona State University, and closure of GM's Mesa Proving Grounds, the City of Mesa embarked on a program to create a regional employment center with a mix of jobs emphasizing the attraction of at least 100,000 high wage – high value jobs adjacent to the Phoenix Mesa Gateway Airport, emphasizing the integration of the airport and surrounding new urban center. In addition to designing the community outreach program and conducting several outreach sessions, Lloyd assisted in the development of strategic planning for the 32 square mile planning area.

**Sierra Army Depot Reuse Plan, Herlong, CA.** The reuse plan includes analysis of on-base and regional conditions, regional market conditions, and reuse opportunities for 4,338 acres of land offered to the community under the BRAC process. The plan sets forth land use, infrastructure, and community facilities plans for reuse of excessed portions of the Depot, which is located 60 miles north of Reno, Nevada. Included are plans for development and adaptive reuse of 20 acres of residential uses, 16 acres of commercial use and a 486-acre business park (4.2 million square feet of building area). The reuse plan also provides for use of Amedee Army Airfield as a civilian use facility, including development of airport-related and general industrial uses adjacent to the field. Lloyd served as the project manager and primary author of the reuse plan. In this effort, he prepared land use plans and development standards, and was also responsible for ensuring the timely completion of airport design and building reuse feasibility studies, as well as water, sewer, drainage and traffic studies.



## Selected Expert Witness Experience

### Planning and Environmental Issues

**Ace Properties v. San Diego.** Lloyd was retained by the City of San Diego to assist in a takings claim involving property within the Otay Mesa Community Plan area. He reviewed the City's existing citywide General Plan, existing and proposed community plans, and existing and proposed zoning for a site within the City along the Mexican border to determine its developability and the reasonableness of proposed regulations in relation to the site's development potential based on existing onsite environmental constraints. Lloyd provided deposition and trial testimony. The City prevailed in this case at trial.

**Arizona v. California.** Lloyd was retained by the Quechan Indian Nation to assist in adjudicating water rights along the Colorado River. He identified lands within the reservation that were "practicably irrigable" and, therefore, eligible for water rights under the Winters Doctrine. Following depositions and trial testimony before a Special Master of the United States Supreme Court, the Special Master determined that the tribe should be granted water rights for approximately 90 percent of the lands requested by the Quechan Nation. The full Supreme Court set aside the recommendation of the Special Master due to disputes over the legal boundaries of the reservation without ruling on the merits of the identification of practicably irrigable lands.

**Kawaoka v. Arroyo Grande.** The City of Arroyo Grande in a federal civil rights suit challenging the City's General Plan retained Lloyd. To assist the City, he prepared a declaration documenting Arroyo Grande's process for preparing and adopting its General Plan, focusing on the effects the process and provisions of the General Plan had on certain agricultural interests in the City. The City was awarded a summary judgment at the trial court, which was appealed. The Ninth District Court of Appeals cited Lloyd's declaration in its decision upholding the City's actions.

**Madero v. El Paso.** Lloyd was retained by the City of El Paso, Texas as an expert to assist the City in defense of a landowner's taking claim resulting from the City's denial of a plat map within a hillside area. Following depositions, the plaintiff and the City agreed to a settlement.

**Metropolitan Water District of Southern California v. Campus Crusade for Christ.** Lloyd was retained by the Metropolitan Water District of Southern California to assist in a condemnation suit involving MWD's Inland Feeder Line. Lloyd was tasked with determining the development potential of the subject property based on applicable environmental conditions, development regulations, infrastructure availability, and economic climate and a more than 13-year-old valuation date. The District and Campus Crusade reached a settlement in the case.



**NJD v. Glendora, NJD v. San Dimas.** Lloyd was retained by the cities of Glendora and San Dimas to assist in their defense of separate actions undertaken first against San Dimas, and later against Glendora claiming inverse condemnation following denials by each city of separate proposed hillside developments on each side of the cities' common boundary. The plaintiff also challenged each City's hillside development regulations. Depositions were taken in both cases, and both cities' ordinances and project denials were upheld at trial.

**Polygon v. Glendale.** Lloyd was retained by the City of Glendale in an inverse condemnation suit involving denial of a proposed hillside development and a challenge to the City's hillside development regulations. Depositions were taken. As part of settlement discussions, Lloyd prepared an environmental review of the applicant's proposed reduced density alternative.

**Riverbend Ranch v. County of Madera.** Lloyd was retained by Madera County in an inverse condemnation suit involving the application of flood protection standards and EIR mitigation measures to a proposed golf course project. Depositions were taken, and a settlement was eventually reached.

**San Francisco Bay Area Renters Federation v. Lafayette.** Lloyd was retained by the City of Lafayette to assist in its defense of a Housing Accountability Act claim. Lloyd was charged with researching and analyzing land use issues related to alleged discrimination in the review of a proposed multi-family development project.

**Seaside v. Sand City.** Lloyd was retained by the City of Sand City to assist in litigation regarding requirements for addressing impacts of development within Sand City upon streets within the City of Seaside. Depositions were taken, and the case was settled between the parties.

**Serena v. Carpinteria.** Lloyd was retained by the City of Carpinteria in an inverse condemnation suit involving adoption of General Plan and local coastal program provisions for the Carpinteria Bluffs area. Depositions were taken, and the City's actions were upheld at trial.

## **Adult Business**

**3540 East Foothill Boulevard v. Pasadena.** Lloyd assisted the City of Pasadena in defending its adult business ordinance. As part of this effort, Lloyd undertook field review to confirm the availability of sites for adult business use as determined by City staff. In addition, he reviewed the public record regarding preparation of the East Pasadena Specific Plan to determine whether the Draft Specific Plan was in effect at the time application was submitted for an adult business at 3540 Foothill Boulevard, and if not, whether the Specific Plan could have been adopted in its present form at that time. The determination that the length of time taken to prepare and adopt the





plan, and that significant additional CEQA work was needed prior to plan adoption was an important part of the City successfully gaining a summary judgment, since the draft Specific Plan proposed placing the plaintiff's a zone that would permit an adult business, whereas the site's existing zoning prohibited adult business use. The City prevailed at the trial court and at the US Ninth Circuit Court of Appeals.

**Alameda Books v. Los Angeles.** Lloyd was retained by the City of Los Angeles in an action challenging the constitutionality of its adult use ordinance. As part of this effort, he undertook research regarding existing studies on the secondary effects of adult businesses at the time of ordinance adoption, as well as research as to how varying types of adult businesses differed from each other. His analyses were reviewed by the US Supreme Court in support of the City's successful argument that the case should be remanded back to the original trial court. He also conducted field review of over 5,000 sites meeting the locational criteria of the City's ordinance to confirm the City's mapping of sensitive uses, and to determine the inventory of sites that would meet the provisions of City ordinance and also meet the availability criteria established in *Topanga Press*. Lloyd analyzed the effect that the City's requirements for separation between adult businesses would have, and prepared a report on his findings. Lloyd also provided deposition testimony.

**City of Chula Vista v. Bay & E, Inc.** Lloyd was retained by the City of Chula Vista to assist in a zoning enforcement action undertaken by the City, which contended that the Eye Candy cabaret was operating in violation of the City's zoning ordinance. Issues to which Lloyd provided expert testimony included the location and number of sites available for adult business use within the City, the role of specific plans in the community's zoning scheme, definitions of what constituted a residentially zoned property, interpretation of specific development standards and distancing requirements, and the development feasibility of proposed transit-oriented development on the site of an existing parking facility at the San Diego Trolley's E Street station. The City prevailed at trial, and the cabaret was ordered to shut down.

**Diamond v. Taft.** Lloyd was retained by the City of Taft in an action challenging the constitutionality of its adult business ordinance. As part of this effort, Lloyd identified the sites within the City that would meet the requirements of Taft's ordinance, and also meet *Topanga Press* criteria. To do this, Lloyd undertook field review to identify the location of sensitive uses under the City's current, as well as previous ordinances, and conducted an analysis of the differences in the number of available sites pursuant to these ordinances. In addition, Lloyd undertook an analysis of the location of sensitive uses surrounding the plaintiff's proposed adult use site. Lloyd photographed each of the sites he determined to be available for adult business use, and prepared a report on his findings. The report was entered into evidence, and he provided testimony at trial. The court ruled that the City's ordinance was Constitutional. The



Ninth District Court of Appeals heard an appeal in February 2000 and upheld the trial court ruling.

**Gibboney v. Colton.** Lloyd was retained by the City of Colton in an action challenging the constitutionality of its adult business ordinance. Lloyd identified the sites within the City that would meet the requirements of Colton's ordinance, and also meet *Topanga Press* criteria. To do this, Lloyd undertook field review to identify the location of sensitive uses under the City's adult business ordinance. Lloyd prepared a report on his findings. A settlement between the City and Plaintiff was reached.

**Isbell v. San Diego.** Lloyd was retained by the City of San Diego in an action challenging the constitutionality of its adult entertainment ordinance. As part of this effort, he undertook field review of over 2,000 sites potentially meeting the locational criteria of the City's ordinance to update the identification of sensitive uses, and to determine which sites would also meet *Topanga Press* criteria. Lloyd analyzed the effect that the City's requirements for separation between adult businesses would have. A formal report was prepared, and Lloyd provided trial testimony. The trial court ruled San Diego's ordinance to be unconstitutional as applied to the plaintiff's property.

**Lim v. Long Beach.** Lloyd was retained by the City of Long Beach in an action challenging the constitutionality of its adult use ordinance. As part of this effort, he undertook field review of sites meeting the locational criteria of the City's ordinance and updated identification of sensitive uses to determine which sites would also meet *Topanga Press* criteria. Lloyd analyzed the effect of City requirements for separation between adult businesses. His expert report was entered into evidence at trial, and he also provided trial testimony. Trial was completed, and the court ruled in the City's favor. The Ninth District Court of Appeals heard an appeal in February 2000, and the case was remanded to the trial court in regard to the issue of "long-term" leases. A settlement was subsequently reached.

**Adult Business Ordinance Preparation Experience.** Lloyd has assisted the following communities update their adult business ordinance by developing locational criteria and evaluating the number of sites that would be available for different locational criteria alternatives, including evaluation of *Topanga* criteria: Cities of Chula Vista, Glendora, Hemet, Napa, Rialto, Ventura, and Westminster; San Bernardino County.

### **Religious Land Use and Institutionalized Persons Act (RLUIPA)**

**Congregation Etz Chaim v. Los Angeles.** Lloyd was retained by the City of Los Angeles to assist in defending a suit brought by the Congregation challenging the denial of their proposed conditional use permit. Lloyd prepared a report reviewing alternative sites with appropriate zoning that would not require discretionary approval from the City,



and that would also meet the specific religious requirements of the Congregation's membership (e.g., walking distance of Congregation members, first floor entry, ability to separate men and women).

**Grace Church of North County v. San Diego.** Lloyd was retained by the City of San Diego to assist in a suit brought by Grace Church, which claimed that the time limitation placed on a conditional use permit approved by the City for operation of the church constituted a "substantial burden" under RLUIPA. Lloyd prepared a report reviewing the need for protecting the City's industrial employment base and the rationale behind requiring conditional use permits for churches in industrial zones, the appropriateness of the City's zoning regulations as applied to churches and comparable assembly uses, the appropriateness of the time limitations places on the church's conditional use permit, and whether Grace Church's conditional use permit approval was substantially different than permits approved for other churches and non-industrial uses within Rancho Bernardo's industrially zoned areas in the past 10 years. Lloyd provided testimony in deposition.

**International Church of the Foursquare Gospel (Faith Fellowship) v. San Leandro.** Lloyd was retained by the City of San Leandro to assist in defending a suit brought by the International Church of the Foursquare Gospel challenging the denial of their proposed conditional use permit. Lloyd prepared a report reviewing recently approved revisions to City zoning requirements for places of worship within the City, including the need for protecting the City's industrial employment base, the rationale behind requiring conditional use permits for churches in industrial zones, and the appropriateness of the City's zoning regulations as applied to churches and comparable assembly uses, the availability of properly zoned locations for churches in the City. Lloyd provided testimony in deposition.

**West Valley Christian Center v. City of Los Angeles.** At the request of the Los Angeles City Attorney's office, Lloyd reviewed the staff reports and public hearing records of the proposed conditional use permit for the West Valley Christian Center in relation to the utility of studies prepared by the applicant and reasonableness of the County's findings and conclusions in relation to the proposed permit. I also undertook research to identify land, buildings and spaces within multi-tenant buildings other than the site selected by the West Valley Christian Center that would have been available at the time of their property search.



# Metis Environmental Group

437 Alcatraz Avenue  
Oakland, CA 94609

## Patricia Berryhill

Principal

### Professional Experience

#### EDUCATION

Bachelor of Science, Natural  
Resources Management  
University of California, Berkeley

As an established environmental professional with more than 20 years assisting clients with project planning, environmental analysis, and regulatory permitting, Patricia delivers diverse consulting support to transportation and land development projects, including contract management and management of consultant team members. Patricia's portfolio of work includes supporting large infrastructure programs and projects in transportation, as well as supporting land use planning and development projects including PDAs and Specific Plans for Bay Area clients. Patricia applies knowledge of the environmental and regulatory process to the project delivery process in terms of establishing project schedules and anticipating costs (including mitigation costs) and developing early strategies for demonstrating that projects can in fact attain approvals and permits. She supports clients in determining and establishing working relationships with Caltrans District 4 and the Metropolitan Transportation Commission for local municipalities.

#### Project Experience

**Redwood City Inner Harbor Specific Plan, Redwood City, CA.** Patricia managed the environmental team in an innovative approach to a Specific Plan process for the Inner Harbor portion of Redwood City by integrating environmental considerations, including vulnerability to sea level rise into the planning process at the outset of the planning process. The effort involved identifying environmental constraints and opportunities so that the design of project alternatives and the selection of the preferred alternative would recognize the environmental opportunities and constraints present within the Inner Harbor. As part of this effort, Patricia managed the development of sea level rise adaptation and regulatory permitting strategies that were integrated into project area land use alternatives and the preferred land use plan. Patricia was responsible for presentation of environmental conditions and their related planning implications to the public and the project's Task Force.

**Brisbane Baylands, Brisbane, CA.** Patricia is currently serving as Project Manager for preparation of the Brisbane Baylands EIR, addressing the impacts of proposed development of a 733-acre brownfield site. The project would more than double the population and commercial/ business park square footage of the City of Brisbane. Under Patricia's management, the EIR addresses a complex development proposal for the Baylands, analyzing four development scenarios at an equal level of detail, along with additional alternatives at a lesser level of detail. The project analyzed in

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the EIR also includes a proposed water transfer agreement between the City and three other agencies, as well as construction of an onsite recycled water facility. The site consists of a former rail yard and landfill, requiring extensive remediation and a landfill closure plan, the impacts of both of which are also addressed in the Draft EIR that was released in June 2013. Patricia is responsible for overall contract management and interface with the City of Brisbane, as well as managing the project's team of subconsultants.

**Environmental On-Call Caltrans District 4.** Patricia led a team of biologists and planners to support Caltrans District 4 environmental staff over a nine-year period while operating her own environmental consulting firm as sole proprietor. Project issues included developing protocols and processes for implementing the NEPA delegation process internally. Additional tasks included developing environmental documents, conducting regulatory agency consultation, oversight of subcontractors, contract management, and invoicing according to State of California standards.

**Seismic Retrofit of Aerial Stations and Structures – BART System-wide Program, Oakland and San Francisco, California.** In the role of deputy Project Manager (sub-contracted to Carter and Burgess), Patricia led the environmental planning effort to address approximately 22 miles of discrete stations and aerial stations proposed for seismic retrofit. Because the project was partially funded by FHWA through the Caltrans Local Assistance Program, Patricia was tasked with coordinating field visits, PES form development and managing the work of a multi-disciplinary team of sub-consultants. The project approvals were obtained and the project was constructed.

**Presidio Parkway (Doyle Drive Project), San Francisco, California.** As part of the design-build team implementing the Doyle Drive project, Patricia developed the permitting and environmental compliance component approach to this first of its kind public-private partnership project in the California. During the P3 pursuit phase, Patricia worked to support the designers and contractors to define a project that minimized environmental permitting and maintained existing commitments made by the project owner and stakeholder team during the previous project phases.

**Caltrain San Bruno Station Grade Separation Project, San Bruno, California.** Patricia developed the strategy and implemented the environmental planning and permitting tasks for this multi-million dollar grade separation project within the Caltrain corridor. The project included a grade separation over four local streets and a new elevated station. The project had been initiated more than 10 years prior to Patricia's involvement, and had experienced multiple project managers and engineering team leaders directing the project at different times. Patricia picked up the pieces, determined what information produced over the previous 10 years still applied that could assist moving the project forward, and created an approach for addressing new requirements and studies that needed updating within a very short timeline. As a





result of her efforts, the project's planning and environmental process was successfully completed.

**San Onofre to Las Pulgas Double-Tracking Project, San Diego, CA.** For this approximately 8.2 mile long double-track project, Patricia managed the environmental component of the overall project including development of the strategy and approach to environmental compliance under both NEPA and CEQA, agency coordination and permitting, development of the mitigation agreement, presentations to the client's program leadership and State and Federal agency staffs.

**Alameda County Congestion Management Agency (ACWMA), I-580 HOV Lane Project, Alameda County, CA.** Patricia developed and directed Endangered Species Act compliance on this CMIA-funded project. She established a methodology for integrating the engineering design with the endangered species compliance documentation that resulted in praise from both the client and USFWS. She scheduled and led agency meetings in the field and in Sacramento on behalf do the ACCMA and Caltrans, and attained approvals for project approach resulted in timely processing and approval from Caltrans staff and federal agencies.



# Julia King

## EDUCATION

Bachelor of Science, Botany  
University of California at Davis

## Professional Experience

Julia King is a senior botanist and wetland scientist with 17 years of professional experience in biological consulting, specializing in field investigations to determine the presence of wetlands and special-status plants and animals. She has expertise in the flora and fauna of California, including terrestrial, freshwater aquatic, and estuarine environments. Julia has experience in the Sacramento Valley, San Joaquin Valley, San Francisco Bay Area, and San Diego and Los Angeles areas. She has led special-status species investigations in a broad range of habitats including vernal pool, alkali sink, chaparral, valley and foothill grassland, and riparian soil associations. She is a highly trained and experienced wetland scientist, and her expertise includes delineation of wetlands, Clean Water Act Section 404 and Section 401 permitting, mitigation planning, and the creation, restoration, and monitoring of wetland and riparian habitats. She has performed wetland delineations on sites up to 15,000 acres, and has prepared Individual and Nationwide Permit applications for development and infrastructure projects.

### Project Experience

**Stanford University Steelhead Habitat Enhancement Program, Palo Alto, CA.** Julia coordinated the production of a series of regulatory agency mitigation monitoring reports for post-construction conditions, riparian survivorship monitoring, project effectiveness, and California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement (SAA) compliance. Julia analyzed field data to provide survival results for riparian mitigation sites, and prepared graphics, photography, and tables for report inclusion. Julia conducted written peer review evaluations for sub consultant report material, consolidated data from Stanford sources, and prepared text for mitigation monitoring reports to fulfill agency requirements.

**CalAmerican Coastal Waters Project, Marina, CA.** Julia led special-status plant surveys of 500+ acres of coastal dune habitat north of Marina State Beach using GPS to map State and Federally listed species. Julia coordinated the production of special-status species maps for both plants and animals to be used in the planning process to assist in the placement of project infrastructure. Constraints were identified within the project area and as a result the avoidance of special-status species was accomplished.

**Sempervirens Fund Plot Study, Santa Cruz Mountains, CA.** Julia led plot sampling for redwood forest habitat evaluation to document understory vegetation for the establishment of baseline conditions. Julia conducted botanical surveys in secondary



redwood forest documenting species present and percent cover. The project involved identification of micro habitat classifications for mapping purposes to be used in comparison to future conditions after prescriptive timber thinning to promote “old growth” conditions. Through ground evaluation of vegetation, Julia created habitat maps and corresponding text describing the vegetation in the study area, which could be referred to in future habitat studies.

**Carmel River Lagoon Water Augmentation Project, Carmel, CA.** Julia led habitat assessment and mapping exercises for the early planning phases, including site selection for water percolation test ponds, for the Carmel Area Wastewater District (CAWD). Julia conducted field surveys and mapped the existing habitats located to the south of the CAWD facility, linking signatures on aerial photographs to vegetation types observed on the ground. Julia prepared written recommendations and aerial maps with habitat designations to CAWD, for the placement of their proposed water percolation test pond, in order to avoid wetlands and special-status species such as red-legged frog.

**San Onofre-Los Pulgas Double Tracking Project - Habitat Mapping, Wetland Delineation and Regulatory Permit Applications, Oceanside, CA.** Julia directed field studies for a six-mile stretch of rail line along San Onofre State Beach to support mapping of habitats along the right-of-way, and directed the preparation of a wetland delineation report to be submitted to the Corps of Engineers. The project proposed widening the existing rail corridor to accommodate a second track. Julia worked with GIS staff to map vegetation along the rail line, identifying habitats that could support special-status plants and animals. Julia also worked with engineers early in project design to identify highly sensitive wetland resources to be avoided. Julia gathered, interpreted, and analyzed project impacts in relationship to waters and wetlands and prepared Corps 404 Individual Permit and Regional Water Quality Control Board (RWQCB) 401 Permits.

**I-405 HOV Lane Project - Habitat Mapping, Wetland Delineation and Regulatory Permit Applications, West Los Angeles, CA.** Julia directed field work on a 10-mile stretch of I-405 to gather data for the preparation of a Corps wetland delineation. The project consists of the widening the I-405 for the installation of a high occupancy vehicle lane over Sepulveda Pass. Julia worked with GIS staff to map wetlands and waters of the U.S. along the project alignment, prepared a wetland delineation report, and the associated Corps 404 Nationwide Permit, CDFW SAA, and RWQCB 401 Permits for submittal to regional agencies. Julia coordinated wetland verification with each of the regulatory agencies.

**Guenoc Winery Expansion Project, Middletown, CA – Lead Wetland Scientist.** Julia conducted wetland delineation field work with a team of scientists on a 3,000 acre site where vineyard expansion and golf course construction was proposed by the privately owned Guenoc Winery. Julia prepared a wetland delineation report, developing a sub-basin analysis to meet the newly imposed Rapanos requirements. Julia prepared permit applications for impacts associated with project development for submittal to the Corps, RWQCB and CDFW.



*Santa Margarita Ranch Vineyard Expansion Project, Santa Margarita, CA.* Julia conducted wetland delineation fieldwork with a team of scientists across 15,000 acres of grassland and oak woodland. Julia developed a mitigation and monitoring plan for impacts to onsite wetlands, and she subsequently monitored vegetation establishment within wetland mitigation areas over a five-year period. Julia prepared monitoring reports with management recommendations and strategies to improve wetland establishment at the mitigation site for use by the Ranch and submittal to the regulatory agencies,

**Attachment Metis-B**

**Hexagon Transportation Consultants  
Transportation Comments and Resumes**





## Memorandum

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**Date:** August 25, 2020  
**To:** Mr. David Smith, Manatt, Phelps & Phillips, LLP  
**From:** At van den Hout, Katie Riutta  
**Subject:** High-Speed Rail Draft EIR/EIS Review on Behalf of The City of Brisbane

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### Introduction

The peer review presented within this memo is mainly focused on the *Transportation Technical Report* (dated December 2019) prepared for the *San Francisco to San Jose Project Section Draft Environmental Impact Report/Environmental Impact Statement*, prepared by the California High-Speed Rail Authority, dated July 2020. Other chapters of the Draft EIR/EIS, documents, and maps included in the peer review include:

Chapter 2: Alternatives  
Chapter 3, Section 3.2: Transportation  
Chapter 3, Section 3.11: Safety and Security  
Chapter 8: Preferred Alternative  
Appendix 2-E: Impact Avoidance and Minimization Features (IAMF)  
<https://mapsrnorcal.org/SanFrancisco-SanJose/>

### Project Background

The HSR Draft EIR/EIS identifies two project alignment alternatives, the East, and the West Light Maintenance Facility (LMF). HSR Authority has identified the East LMF to be the preferred alternative. The two alignments are described below and shown on Figures HTC-1 and HTC-2.

#### East Brisbane Light Maintenance Facility

This alignment would include a blended system that would share the existing at-grade Caltrain right-of-way within the City of Brisbane. The East Brisbane LMF would be built on approximately 100 acres, east of the Caltrain corridor. HSR trains would access the LMF via an aerial flyover at the north end or an at-grade track at the south end. The LMF would include 17 yard tracks, a maintenance building, and a 400-space surface parking lot. Tunnel Avenue would be moved east of the LMF.

#### West Brisbane Light Maintenance Facility

This alignment would also include a blended system that would share the existing at-grade Caltrain right-of-way within the City of Brisbane. The West Brisbane LMF would be built on approximately 110 acres west of the Caltrain corridor. HSR trains would access the LMF via aerial flyover in both the northbound and southbound directions. The existing tracks would be shifted to the west. The LMF would also include 17 yard tracks, a maintenance building, and a 400-space surface parking lot.



Source: <https://mapsnorcal.org/SanFrancisco-SanJose/>

**Figure HTC-1**  
**High-Speed Rail East LMF Alignment**



Source: <https://mapsnorcal.org/SanFrancisco-SanJose/>

**Figure HTC-2**  
**High-Speed Rail West LMF Alignment**

## Review of Transportation Technical Report

The following sections summarize the review of the transportation analysis presented in the Transportation Technical Report and all other relevant information presented in the HSR Draft EIR/EIS. The review is based on Hexagon’s knowledge and experience conducting transportation analyses, the *Brisbane Baylands Draft EIR* (June 2013), *City of Brisbane General Plan* (updated January 2020), and *Plan Bay Area 2040* (July 2017).

Comments/questions/findings on specific sections will be discussed following the section.

## Study Scenarios, Methodologies, and Measures of Effectiveness

### Study Scenarios

The analysis of the HSR project was conducted for the following scenarios:

**Existing conditions** – 2016 conditions

**Existing Plus Project conditions** – includes all transportation network modifications necessary to construct the project; however, the project would not provide rail service under existing conditions. The evaluation is only conducted for the intersections of Bayshore Boulevard/Old County Road and Bayshore Boulevard/Valley Drive since these are the only intersections that would be affected by the permanent roadway modifications in Brisbane.

**2029 No Project conditions** – reflects future transportation conditions in 2029 for the 4th and King Street Station area only.

**2029 Plus Project conditions** – potential effects of the project on 2029 baseline conditions in the 4th and King Street Station area.

**2040 No Project conditions** – year 2040 transportation conditions, including foreseeable land use changes and transportation network modifications, not including the HSR project.

**2040 Plus Project conditions** – full potential effects of the project on 2040 baseline conditions; anticipated 2040 ridership and all transportation network modifications necessary to construct the project are reflected in this scenario.

### Traffic Volume Projections

Traffic volumes and LMF projections used in the analysis were derived from various sources:

*Existing conditions traffic counts.* Existing traffic volumes at study intersections in the Brisbane LMF area were based on traffic counts conducted in 2016, as shown in Appendix A.

**Comment:** Traffic counts for the intersection at Bayshore Boulevard and Industrial Way are not included in Appendix A.

*LMF trip generation.* Vehicle trip generation for the proposed Brisbane LMF was based on trip rates identified in *Trip Generation* (2012) published by the Institute of Transportation Engineers (ITE). Trip generation was based on rates published for “General Light Industrial” (Land Use Code 110) for an estimated 150 employees at the proposed facility.



**Comment:** General Light Industrial land uses tend to have traditional work hours where employees arrive and leave during the typical AM and PM peak hours. It is assumed that the Brisbane LMF employees would work in shifts and commutes would not necessarily take place during the typical AM and PM peak hours. Therefore, ITE trip generation rates for the LMF may not provide accurate peak-hour trip estimates. Hexagon recommends that the HSR Authority provide a detailed operations plan for the LMF to estimate the number of daily and peak hour trips. The operations plan should indicate shift hours, the number of employees working each shift, and the times that employees are expected to arrive to start their shift and leave when their shift ends.

*VMT forecasts.* The Ridership and Revenue Model was used to forecast annual VMT for San Francisco County and San Mateo County under 2040 No Project and Plus Project conditions.

*Future 2040 traffic volumes.* 2040 No Project traffic volumes were based on the incremental growth in vehicle trips as forecast by the VTA travel demand model. Vehicular trips generated by the Brisbane LMF were manually added to the 2040 No Project volumes based on distribution data derived from the VTA model to estimate the project-related traffic volumes.

**Comment:** While adding the increment of traffic between the base year and the future year, forecasted by the model, to the traffic counts is an often used and accepted method to develop future turning movements at intersections, it is unclear which base year model was used. Ideally, the base year model should be the same as the year when the traffic counts were conducted. This should be clarified.

**Comment:** The VTA model was used to forecast the increase in vehicular traffic at the study intersections along the corridor, including the intersections in and around Brisbane. The Draft EIR/EIS does not mention if the transportation network and the traffic analysis zones in the Brisbane area were refined so that more accurate traffic assignments can be forecasted with the model. The network and zone system of the VTA model is too coarse in Brisbane for the model to produce turning movements with reasonable accuracy at the study intersections. If the intersection turning movements produced by the model were manually adjusted (beyond the method of adding the incremental model volumes to the counts) to account and compensate for the lack of detailed network coding, the process and the results of adjusting the intersection volumes should be explained and documented.

Page 4-4 of the Transportation Technical Report states: The socioeconomic datasets used as inputs to prepare the forecasts are based on *Projections 2013* (Association of Bay Area Governments [ABAG] 2013). These datasets are accepted by the Metropolitan Transportation Commission (MTC) to reflect regional model consistency for models used by the congestion management agencies and were used to develop the regional travel demand forecasts for *Plan Bay Area 2040*, the current RTP and sustainable communities strategy for the Bay Area (ABAG and MTC 2017).

**Comment:** The Draft EIR/EIS does not mention if the land use data projections used in the VTA forecasting model were reviewed to include reasonably foreseeable development plans. While the HSR documentation does not provide summaries of the land use assumptions for the model's Traffic Analysis Zones (TAZ's), it is believed that the land use growth for areas in the City of Brisbane is severely underestimated. This presumption is based on (1) the relatively small change in vehicular traffic and delay between existing and 2040 No-Project traffic conditions at the study intersections in the vicinity of the Brisbane LMF and (2) Hexagon's review of the VTA 2015 and 2040 ABAG *Projections 2013* land use assumptions for the area surrounding the proposed LMF.



The fact that the level of service and vehicular delay at the study intersections in Brisbane are projected not to change much between Existing and 2040 No-Project conditions suggests that the model forecast assumes modest growth in development in Brisbane over the next 20 to 25 years. While the land use and socio-economic data for the TAZ's are not documented in the Draft EIR/EIS, Hexagon's review of what we believe are the official ABAG's *Projections 2013* land use data sets for 2015 and 2040, indicates that for the Baylands area, which is represented by TAZ 1636 in the VTA model, the number of jobs would only increase by 585, from 2,761 in 2015 to 3,346 in 2040. The year 2040 land use projections for the Baylands does not assume any residential development. The Baylands development project is projected to construct approximately 100-200 dwelling units by the 2025 or 2026. Construction of additional residential units in the Baylands will continue, with some office/commercial development also constructed and occupied west of the Caltrain line by 2029. By 2040 the traffic forecasts of the Draft EIR/EIS should include "all reasonably foreseeable projects" which includes the Baylands development. The 2040 No Project baseline should include buildout of the Baylands with 2,200 dwelling units and 6.5 million square feet of commercial/office use and 500,000 square feet of hotel use. Assuming a ratio of 3 jobs per 1,000 square feet, the Baylands development would generate over 20,000 new jobs by the year 2040, which is substantially more than the increase of 585 jobs assumed in the model's traffic projections. As a result, the 2040 No Project and plus Project traffic conditions are significantly underestimated. The Draft EIR/EIS should include the Baylands development in the 2029 and 2040 traffic forecasts and reanalyze future traffic conditions in and around Brisbane.

### **Roadway, Freeways, and Intersection Analyses Methods**

The analyses presented in the Transportation Technical Report for roadways, freeways, and intersections are based on delay and Level of Service (LOS), based on the *Highway Capacity Manual* (HCM) (Transportation Research Board 2010). Traffic conditions evaluation methods and significance thresholds were identified by the HSR Authority.

#### **Freeway Segments**

Freeway segments that would serve 100 or more project trips during at least one peak hour were included in the study. HSR Authority determined correctly that no freeway segments within the City of Brisbane would serve 100 or more project-generated vehicle trips during the peak hour, so freeway segment impacts were not studied.

#### **Intersections**

Intersections of roadways classified as collector or above that would be physically modified by the project or would serve 50 or more project trips during at least one peak hour were included in the study. Intersection level of service analysis presented in the Transportation Technical Report was based on the 2010 HCM. Synchro, SimTraffic, or VISSIM software packages were utilized to calculate the intersection levels of service. Project effects on intersections were identified as LOS E or F conditions and an average traffic delay increase of 4 seconds or more over No Project conditions for signalized intersections.

**Comment:** The HSR impact criteria differ from adopted City of Brisbane level of service analysis impact criteria. *The Brisbane General Plan (Chapter VI Circulation Element, Policy C.2)* states that the level of service objective for principal and minor arterial streets within the City is LOS D. There is no mention of an average traffic delay increase of 4 seconds.

**Comment:** Page 4.N-5 of the *Brisbane Baylands Draft EIR* states that study intersections were selected based on proximity to the project site, their location on key access roads, and the likelihood that each location would be adversely affected the Project-related trips. Hexagon

recommends that the Bayshore Boulevard/San Bruno Avenue intersection be included in the study. This intersection may be impacted by project generated trips.

**Comment:** *The Brisbane General Plan (Chapter VI Circulation Element, Program C.1.d)* states that new development projects that would generate 50 or more peak hour trips at any intersection along Bayshore Boulevard, Geneva Avenue, or US 101 should comply with the design plan developed pursuant to Program C.1.c and provide physical improvements or pay a traffic impact fee. Once these implementation programs are complete, HSR should comply with this section of the General Plan.

### Other Analyses

Other analyses include:

- Effects on emergency vehicle response time.
- Effects on transit facilities and operations, including bus service and passenger rail service, by project construction and operations.
- Effects on nonmotorized transportation facilities, including pedestrian and bicycle, by project construction and operations.

### Project Effects Analyses

Analyses included in the evaluation of the HSR project include a VMT analysis and intersection level of service analysis (total of 14 intersections under Existing conditions and 15 intersections under 2040 conditions located in the Brisbane LMF area). The VMT analysis and 2040 No Project conditions intersection level of service analysis are discussed below. The 2040 Plus Project intersection level of service analysis, and other analyses described above, are discussed in the following sections under each of the HSR alignments.

### Vehicle Miles Traveled

Vehicle miles traveled (VMT) projections, presented on page 5-1 of the Transportation Technical Report, include annual existing (2016) and future (2029 and 2040) VMT projections for San Mateo County.

**Comment:** The VMT values in the analysis show the annual VMT with and without the project for the three Bay Area counties. It would be more informative to better understand the effect of the project on the reduction in VMT to present *daily* VMT per job and/or daily VMT per population. The large annual VMT values provided by themselves are meaningless for the average reader.

**Comment:** The narrative below Table 5-1 states that under project conditions, vehicle trips around the stations would increase because of the addition of passengers and HSR workers traveling to station areas. A portion of the trips generated by HSR would divert vehicle trips from airports and other intercity travel hubs and shift vehicle trips to train trips. This diversion of trips, even with the addition of new trips at the stations and LMF, would result in a VMT reduction. While we agree that the project would result in a reduction of countywide VMT, it should be acknowledged that the VMT in areas around the stations and the LMF would increase, causing the air quality around those areas to deteriorate.

### No Project Conditions Intersection Levels of Service

The existing intersection level of service results (Transportation Technical Report Table 5-3) show that one study intersection within the Brisbane LMF area currently (2016 traffic conditions) operates at LOS E or F during one of the peak hours.

Under 2040 No Project conditions, four study intersections within the Brisbane LMF area are projected to operate at LOS E or F during at least one of the peak hours (Transportation Technical Report Table 5-11).

**Finding:** The existing and 2040 No Project conditions level of service results were compared to the intersection level of service results for existing (2007 traffic conditions) and 2030 No Project (With Geneva Extension) conditions presented in the *Brisbane Baylands Draft EIR* Tables 4.N-25, 4.N-26, 4.N-29, and 4.N-30. The comparison is presented in Table HTC-1 below.

While it can be expected that traffic forecasts produce different results between the HSR Draft EIR/EIS and the Baylands Draft EIR because the forecasts were developed with different tools and input assumptions, the differences in future traffic operations (2030 for the Baylands Draft EIR and 2040 for the HSR Draft EIR/EIS) are substantial. The Baylands Draft EIR reported a worse level of service for ten intersections under 2030 No Project conditions during at least one peak hour compared to 2040 HSR No Project conditions. This suggests that the Baylands Draft EIR assumes more land use development projects in the larger Brisbane area resulting in higher traffic volumes compared to the development projects and projected traffic volumes presented in the HSR Draft EIR/EIS.

**Comment:** An explanation should be provided why the future traffic conditions in the Brisbane area for the 2040 No Project scenario (i.e., without the Baylands development) reported in the HSR Draft EIR/EIS are so much better compared to 2030 No Project traffic conditions (i.e., without the Baylands development) presented in the Baylands Draft EIR.

**Table HTC-1**  
**No Project Level of Service Comparisons**

	Intersection	Peak Hour	Existing Conditions		Future No Project Conditions	
			HSR	Baylands	2040 HSR	2030 Baylands
MF1	Bayshore Boulevard/US 101 SB Off-Ramp	AM	F	-	F	-
		PM	E	-	F	-
MF2	Bayshore Boulevard/Tunnel Avenue	AM	A	C	B	F
		PM	A	B	B	E
MF3	Bayshore Boulevard/Blanken Avenue	AM	B	A	B	D
		PM	B	B	C	D
MF4	Bayshore Boulevard/Visitacion Avenue	AM	B	-	C	-
		PM	B	-	C	-
MF5	Bayshore Boulevard/Geneva Avenue	AM	C	C	D	E
		PM	C	C	E	F
MF6	Bayshore Boulevard/Guadalupe Canyon Parkway	AM	B	B	C	B
		PM	B	B	C	D
MF7	Bayshore Boulevard/Valley Drive	AM	B	B	B	B
		PM	B	B	B	D
MF8	Bayshore Boulevard/Old County Road	AM	C	C	C	C
		PM	C	C	D	F
MF9	Tunnel Avenue/Blanken Avenue	AM	B	A	B	B
		PM	A	A	A	C
MF10	Harney Way/Thomas Mellon Circle	AM	B	A	F	C
		PM	B	A	F	C
MF11	Alanna Way/Beatty Road/US 101 SB Ramps	AM	B	B	This existing intersection is replaced by MF15	
		PM	A	A		
MF12	Tunnel Avenue/Lagoon Road	AM	A	A	B	F
		PM	A	A	B	F
MF13	Sierra Point Parkway/Lagoon Road	AM	A	A	A	F
		PM	A	B	B	F
MF14	Bayshore Boulevard/Industrial Way	AM	A	-	A	-
		PM	A	-	A	-
MF15	Gevena Extension/US 101 SB Ramps	AM	-	-	C	F
		PM	-	-	D	F
MF16	Gevena Extension/US 101 NB Ramps	AM	-	-	D	-
		PM	-	-	F	-

Sources

HSR = San Francisco to San Jose Project Section Transportation Technical Report, December 2019. Existing conditions reference 2016 volumes.

Baylands = Brisbane Baylands Draft EIR, June 2013. Existing conditions reference 2007 volumes.

## East Brisbane LMF

With the East LMF, the proposed high-speed rail tracks would share a blended system with the existing at-grade Caltrain right-of-way within the City of Brisbane. The East LMF would be built on approximately 100 acres east of the Caltrain corridor. HSR trains would access the LMF via an aerial flyover at the north end or an at-grade track at the south end. The LMF would include 17 yard tracks, a maintenance building, and a 400-space surface parking lot. The Bayshore Caltrain Station would be reconstructed approximately 0.2 mile south of the existing station. Changes to the Transportation System would be as follows:

- Tunnel Avenue would be realigned east of the LMF
- The Tunnel Avenue overpass would be relocated, and the new southern connection would be at the intersection of Bayshore Boulevard and Valley Drive
- Lagoon Road would be extended west to the new Tunnel Avenue overpass

**Comment:** The relocation of the Tunnel Avenue overpass and the new southern connection to Valley Drive would result in secondary changes to the transportation system that were not described in the Draft EIR/EIS. The HSR Authority’s online interactive map shows that Visitacion Avenue would be extended from Old County Road to Valley Drive, resulting in new intersections at Visitacion Avenue and Valley Drive and at Visitacion Avenue and Old County Road. The changes to the transportation system west of the relocated Tunnel Avenue overpass should be detailed in the Draft EIR/EIS.

## Transportation Impacts

A level of service analysis for Existing Plus Project conditions was conducted for the two intersections affected by the Tunnel Avenue overpass relocation (Transportation Technical Report Table 5-14). The results show that under Existing Plus Project conditions, the Bayshore Boulevard/Valley Drive intersection would operate at LOS C during both peak hours and the Bayshore Boulevard/Old County Road intersection would operate at LOS A during both peak hours.

Under 2040 Plus Project conditions, four intersections would operate at LOS E or F and two intersections would have a project effect (Transportation Technical Report Table 5-16). The following intersections would have a project effect under 2040 Plus Project conditions:

- MF10. Harney Way/Thomas Mellon Circle – LOS F, PM peak hour
- MF16. Geneva Extension/US 101 NB Ramps – LOS F, PM peak hour

While California is no longer using automobile delay as a measure of transportation impacts under CEQA, the project effects on LOS would be significant under NEPA. The Draft EIR/EIS provides the following potential mitigation measures (TR-MM#1) to address the project effects: various standard vehicle capacity enhancements such as signal retiming or additions, lane restriping, road/intersection widening and turn pocket additions/increases (including right-of-way acquisitions as needed), and contribution to regional/joint solutions to implement such enhancements. As stated on page 3.2-96 of the Draft EIR/EIS, “the Authority will determine whether to implement mitigation strategies identified in TR-MM#1, which are available to address NEPA effects related to vehicle congestion or delay”.

**Comment:** The Draft EIR/EIS provides LOS outputs in the Transportation Technical Report Appendices. However, geometry assumptions are not provided for intersections that were analyzed



with VISSIM or SimTraffic, including the two intersections with project effects. These assumptions should be provided in the Draft EIR/EIS.

**Comment:** Specific mitigation measures should be described for each affected intersection. Since we were unable to replicate the LOS results, possible mitigation measures, such as widening Alana Way or Harney Way and/or adding turn lanes at the affected intersections, should be investigated by the Authority.

**Comment:** The Transportation Technical Report Table 5-16 states that “in the 2040 scenarios, the southern leg of the existing US 101 Northbound Ramp/Harney Way intersection is removed”. However, the Draft EIR/EIS does not describe how the existing traffic to and from the south leg will be redistributed and what affect the redistribution of that traffic would have on the transportation system. This effect should be explained and analyzed.

**Comment:** With the relocation of the Tunnel Avenue overpass, Tunnel Avenue would connect to Valley Drive, whereas it currently connects to Old County Road. The eastbound through and westbound through vehicles that currently cross Bayshore Boulevard at Old County Road to Tunnel Avenue should be maintained. The Draft EIR/EIS maintains these traffic movements by re-distributing these trips onto Bayshore Boulevard between Old County Road and Valley Drive. However, the assumptions made in redistributing the traffic affected by the relocation of Tunnel Road are too simplistic and in fact, unrealistic. Future traffic volumes at the Bayshore Boulevard/Old County Road/Tunnel Avenue intersection show zero vehicles westbound and ten vehicles eastbound traveling across Bayshore Boulevard between Tunnel Road and Valley Drive. The redistribution of traffic between Tunnel Avenue and Valley Drive assumed in the Draft EIR/EIS would not be the most direct route. Instead, the trips should be redistributed so that the eastbound through and westbound through trips would cross Bayshore Boulevard at Valley Drive to Tunnel Avenue and vice versa. The redistribution of traffic at this intersection should be revised and the operational analysis updated based on realistic behavior of route choice by motorists.

**Comment:** The relocation of Tunnel Avenue and the extension of Visitacion Avenue would result in new intersections at Visitacion Avenue and Valley Drive and at Visitacion Avenue and Old County Road. The short distance between the Park Place/Valley Drive, Visitacion Avenue/Valley Drive, and Bayshore Boulevard/Valley Drive intersections would be problematic for traffic flow. The extension of Visitacion Avenue would also result in trip redistribution between the downtown area and the area near the City Hall and Police Department. In addition, the extension of Visitacion Avenue would block access to one business and remove parking for three businesses in the area. HSR Authority needs to perform a level of service analysis, queuing analysis, and study the effects on emergency response at the affected intersections west of the proposed Tunnel Avenue relocation.

### **Geneva Avenue Extension Design Impacts**

The Draft EIR/EIS Table 3.2-12 includes the Geneva Extension as a future transportation change under 2040 conditions. However, the Draft EIR/EIS does not study the project’s impact on the Geneva Avenue extension design. As proposed in the *Plan Bay Area 2040 Final Supplemental Report Appendix A*, the Geneva Avenue extension would be a six-lane arterial from the Bayshore Boulevard/Geneva Avenue intersection to the planned US 101/Candlestick Point interchange. The extension would be grade separated at the Caltrain tracks and Tunnel Avenue.

**Comment:** HSR Authority needs to study the feasibility of the planned Geneva Avenue extension with the proposed additional right-of-way for the East LMF. It is anticipated that the High-Speed Rail project would not accommodate the Geneva Avenue overpass extension. Therefore, the Geneva

Avenue extension would be impacted by the HSR project. Extending Geneva Avenue from Bayshore Boulevard to US 101 is for Geneva Avenue to cross under the Caltrain line. This would require extensive excavation of contaminated soil within the western portion of the Baylands.

### **Bayshore Boulevard Impacts**

The Draft EIR/EIS studied nine intersections along Bayshore Boulevard within the East Brisbane LMF area. None of the intersections would have project impacts under 2040 Plus Project conditions (Transportation Technical Report Table 5-16). However, the roadway could expect temporary or permanent impacts from construction and impacts on emergency response times and bicycle, pedestrian, and transit facilities. These impacts are discussed in the sections below.

### **Construction Impacts**

Temporary parking area, lane and roadway closures would be necessary during the construction of the East LMF and modification of the Bayshore Caltrain Station. Based on the Transportation Technical Report Table 5-19, the construction of each major transportation modification (Tunnel Avenue realignment, Tunnel Avenue overpass, and Lagoon Road extension) would take 1 to 3 months and would “result in temporary lane closures or periodic nighttime and weekend roadway closures” (Transportation Technical Report page 5-86). Page 5-87 of the Transportation Technical Report states that construction of the Tunnel Avenue overpass “would require closure of Tunnel Avenue for 1 month”. Temporary lane closures may be required at the Bayshore Boulevard/Old County Road and Bayshore Boulevard/Valley Drive intersections during construction of the Tunnel Avenue overpass. Construction of the Brisbane LMF would be expected to take 2 to 3 years. Construction would occur “midday during the week between morning and afternoon rush hours” (Transportation Technical Report page 5-28). Property access would be maintained during temporary roadway closures.

Construction impacts would include “increased traffic congestion on roadways and intersections from lane or street closures, diversions in traffic from temporary detours, and other temporary disruptions to traffic”. Page 5-28 of the Transportation Technical Report lists the following impacts that could also occur: temporary damage to pavement conditions, temporary changes to traffic signal timing, temporary lane width reductions, temporary reduced speed limits, or temporary changes to or loss of parking, bicycle facilities, or pedestrian facilities.

As stated on page 5-29 of the Transportation Technical Report, construction traffic would include “heavy truck traffic entering and exiting construction sites to deliver materials, transport demolished or excavated materials, and move heavy construction equipment onto the construction site. Use of heavy equipment and delivery or removal of materials by trucks has the potential to add traffic, especially if movements occur during morning or evening peak hours. Construction traffic would also result from construction worker trips. Worker vehicles entering and leaving the job sites at the beginning and end of shifts have the potential to increase delays on roadways and at intersections. Construction traffic could lead to interference with local vehicle circulation and operational hazards.”

Temporary construction related impacts would be addressed with the implementation of a construction transportation plan (CTP, TR-IAMF#2). Page 5-29 of the Transportation Technical Report states that “the CTP would provide a traffic control plan that would identify when and where temporary closures and detours would occur, with the goal of maintaining traffic flow, especially during peak travel periods. The traffic control plan would be developed for each affected location and would include, at a minimum, signage to alert drivers to the construction zone, traffic control methods, traffic speed limitations, and alternative access and detour provisions during road closures.” “As part of the CTP, truck routes would be established away from schools, day care

centers, and residences, or along the routes with the least effect to minimize operational hazards. A detailed construction access plan would be developed and implemented for the project prior to beginning any construction activities. The construction access plan would be reviewed by local city, county, and transit agencies. The movement of heavy construction equipment such as cranes, bulldozers, and dump trucks to and from the site would generally occur during off-peak hours on designated truck routes” (Transportation Technical Report page 5-30).

**Comment:** Based on the Draft EIR/EIS Table 2-25, the East Brisbane LMF would reuse 17% and the Tunnel Avenue overpass would reuse 54% of excavated materials suitable for embankment construction. The HSR Authority should include an analysis of the number of truck loads, based on the volume of excavated materials to be hauled, on study intersection impacts and traffic delays. The EIR should also describe the duration of the hauling of material, the number of trucks per day, planned truck routes, and time periods during the day when hauling trucks are allowed.

### **Emergency Response Times**

The realignment of the Tunnel Avenue overpass would require the relocation of the Brisbane Fire Station. Page 5-89 of the Transportation Technical Report states that “the Brisbane Fire Station would be relocated approximately 600 feet to the south of the existing fire station, with two driveways connecting to Bayshore Boulevard. The southerly driveway for the relocated fire station would connect to the east leg of the signalized Bayshore Boulevard/Old County Road intersection (Figure 5-32), providing full access to Bayshore Boulevard that is equivalent to the existing level of access provided at the signalized Bayshore Boulevard/Valley Drive intersection. A second northerly driveway would connect to Bayshore Boulevard at the existing station’s secondary driveway approximately 400 feet north of Old County Road. This secondary driveway is a mid-block location that provides right-in, right-out access to northbound Bayshore Boulevard.”

Construction of the major transportation modifications identified in the Transportation Technical Report Table 5-19 “would result in temporary lane closures or periodic nighttime and weekend road closures. These temporary closures would result in increases in travel time, delay, and limited access of emergency response vehicles.” Page 5-87 of the Transportation Technical Report states that “the realignment of the Tunnel Avenue overpass for both alternatives, would require closure of Tunnel Avenue for 1 month. This closure of Tunnel Avenue would affect emergency access and response of the Brisbane Fire Station located at 3445 Bayshore Boulevard, near the southern terminus of Tunnel Avenue. Temporary road closures and lane closures at these locations would cause temporary delays.” As stated on page 3.11-50 of the Draft EIR/EIS, “direct east-west access between US 101 at the Lagoon Road off-ramp and Bayshore Boulevard and central Brisbane would be blocked. For example, if there was an emergency incident on US 101 near the Lagoon Road off-ramp, emergency vehicles from the Brisbane Fire Station at 3445 Bayshore Boulevard would be delayed by having to use Bayshore Boulevard to travel north to the Beatty Avenue on-ramp or south to Oyster Point Boulevard in South San Francisco. Similarly, vehicles would also be delayed if traveling from US 101 into central Brisbane. The realignment of Tunnel Avenue with construction of the East Brisbane LMF would require temporary closure of Tunnel Avenue for between 1 and 3 months, which would not affect east-west connections between US 101 and Bayshore Boulevard but would temporarily hinder north-south travel to the industrial areas north of the proposed East Brisbane LMF.” The impact to emergency response times would be significant under CEQA.

Page 5-88 of the Transportation Technical Report states that “prior to construction, the [Authority’s] contractor would prepare a construction safety transportation management plan that includes the contractor’s coordination efforts with local jurisdictions for maintaining emergency vehicle access during construction (SS-IAMF#1). The plan would also specify the contractor’s procedures for

implementing temporary road closures, including access to residences and businesses during construction, lane closures, signage, detour provisions, emergency vehicle access, and alternative access locations”. A construction transportation plan (CTP, TR-IAMF#2) also would be prepared to “identify when and where temporary roadway closures and detours would occur.” Page 3.11-51 of the Draft EIR/EIS states that “the project features would minimize increases in emergency response delays through coordination with local jurisdictions and procedures for implementing or maintaining emergency vehicle access during construction, but significant impacts would still occur.” Therefore, the impacts would be significant and unavoidable under CEQA.

Emergency vehicles could also expect permanent delays due to project generated traffic from the Brisbane East LMF. As stated on page 5-94 of the Transportation Technical Report, “the nearest fire stations to the LMF sites are the Brisbane Fire Station located at 3455 Bayshore Boulevard and San Francisco Station 44 at 1298 Girard Street. The LMFs would not cause adverse effects to study intersections along Bayshore Boulevard or Geneva Avenue, which are primary access routes for these two fire stations. As such, the added traffic generated by LMF operations would not result in increases greater than 30 seconds for fire station/first responder emergency response times.”

**Comment:** The closure of Tunnel Avenue would eliminate access to the Kinder Morgan tank farm and restrict emergency access to the tank farm, lumber yard, and other Brisbane businesses along Tunnel Avenue. The construction safety transportation management plan would describe alternate access; however, this should be provided in the Draft EIR/EIS. Hexagon recommends a study be conducted, in collaboration with the Brisbane Fire Department, to evaluate the effects of the HSR alignment on Fire Department service areas and emergency response time during construction and identify the best possible mitigation measures to meet the Department’s best practice response time.

### **Bicycle, Pedestrian, and Transit Impacts**

Construction activities would result in temporary closures of pedestrian and bicycle facilities. These temporary closures would coincide with temporary roadway lane or road closures. Page 5-117 of the Transportation Technical Report states that the relocation of the Bayshore Caltrain Station “may require temporary pedestrian and bicycle access modifications for both project alternatives”. To minimize effects on bicycle and pedestrian facilities, the contractor would prepare construction management plans to maintain pedestrian access (TR-IAMF#4), maintain bicycle access (TR-IAMF#5), and maintain pedestrian and bicycle safety (TR-IAMF#12) throughout construction.

**Finding:** Page 3.2-88 of the Draft EIR/EIS states that “to maintain pedestrian and bicycle access, project design plans include specifications for vehicle lanes, passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls (TR-IAMF#12). These features address how pedestrian and bicycle accessibility would be provided and maintained across the HSR corridor, to and from stations, and on station property. Local access programs, such as Safe Routes to Schools, would be maintained or enhanced”. This complies with Brisbane’s General Plan Policy C.27. The Draft EIR/EIS also states that “all reconstructed roadways would replace all bicycle and pedestrian facilities upon completion of construction. All new and replaced facilities would be designed with specifications for passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls”. This complies with Brisbane’s General Plan Policy C.30 and Policy C.35.

Page 3.2-74 of the Draft EIR/EIS states that construction of the Brisbane LMF “may require the temporary closure of parking areas, bus stops, or roadway travel lanes. Roadway closures would only occur periodically at night or on weekends, as necessary, which would reduce the potential

effect on transit service when it is heaviest during the day on weekdays. Bus stops would be temporarily relocated to nearby locations so that service would not be disrupted.” Page 3.2-75 of the Draft EIR/EIS lists the following impacts that could also occur: temporary closure and relocation of bus stops, temporary rerouting of bus lines, temporary closure of parking to accommodate relocated bus facilities, and temporary closure and relocation of sidewalks, crosswalks, and curb ramps used to access bus stops. The Draft EIR/EIS also states that “construction-related activities would lead to temporary delays of buses because of changes in vehicle circulation and increased travel time.” These impacts would be significant under CEQA.

Page 3.2-75 of the Draft EIR/EIS states that “implementation of a CMP and CTP would include methods to maintain bus transit operations and access, thereby reducing impacts on the performance of bus transit facilities; however, material decreases in the performance of certain bus routes would still occur. No mitigation measures are available to address this impact”. Therefore, the impacts would be significant and unavoidable under CEQA.

**Comment:** Brisbane’s General Plan Policy C.1 emphasizes mobility for Brisbane residents and businesses. Construction of the HSR project would impact Brisbane’s already limited transit service. Based on the HSR alignment, the project would be expected to affect the Brisbane-Crocker Park BART/Caltrain Shuttle, the Brisbane-Bayshore Caltrain Shuttle, and SamTrans Routes 292 and 397. Page 3.2-75 of the Draft EIR/EIS states that “increased travel times and modified access along affected bus routes could cause bus patrons to shift to another bus route or cause a temporary reduction in bus ridership for the duration of construction”. Therefore, the impacts to bus transit could increase single-occupant vehicle trips as people opt out of using transit. This would not comply with Brisbane’s General Plan Policy C.38. Thus, HSR Authority should coordinate with San Mateo County’s Transportation Demand Management Agency and SamTrans to address the project impacts.

**Comment:** Brisbane’s General Plan describes the proposed expansion of the Bayshore Caltrain Station into a multi-modal station as part of the Baylands development. The Draft EIR/EIS should consider any HSR impacts to this development and its future transit connections.

### **Transportation Impact Avoidance and Minimization Features**

HSR Authority plans to implement programmatic impact avoidance and minimization features (IAMF) during project design and construction to avoid or minimize impacts (Draft EIR/EIS Appendix 2-E). The IAMFs include a construction safety transportation management plan (SS-IAMF#1) and a construction transportation plan (CTP, TR-IAMF#2). The construction safety transportation management plan would describe how the contractor would coordinate with local jurisdictions and how they would implement the temporary road closures. The CTP would be prepared with the local jurisdiction and would provide details regarding the construction activities during different phases. The goal of the CTP would be to minimize the effects of construction activities on the roadways.

**Comment:** TR-IAMF#6 states that construction material deliveries and construction employee trips would be limited during the peak hours. This should be expanded to include all construction-related traffic, including, but not limited to, trucks transporting demolished or excavated materials and construction equipment.



## West Brisbane LMF

With the West LMF, the proposed high-speed rail tracks would share a blended system with the existing at-grade Caltrain right-of-way within the City of Brisbane. The West LMF would be built on approximately 110 acres west of the Caltrain corridor. HSR trains would access the LMF via aerial flyover in both the northbound and southbound directions. The existing tracks would be shifted to the west. The LMF would include 17 yard tracks, a maintenance building, and a 400-space surface parking lot. The Bayshore Caltrain Station would be reconstructed approximately 0.2 mile south of the existing station. Changes to the Transportation System would be as follows:

- The Tunnel Avenue overpass would be relocated, and the new southern connection would be at the intersection of Bayshore Boulevard and Valley Drive
- Lagoon Road would be extended west to the new Tunnel Avenue overpass

**Comment:** The comment regarding the explanation of changes to the Transportation System west of the relocated Tunnel Avenue overpass also applies to the West LMF.

### Transportation Impacts

A level of service analysis for Existing Plus Project conditions was conducted for the two intersections affected by the Tunnel Avenue overpass relocation (Transportation Technical Report Table 5-14). The results are the same as with the East LMF.

Under 2040 Plus Project conditions, the same four intersections would operate at LOS E or F and the same two intersections would have a project effect as with the East LMF (Transportation Technical Report Table 5-16). The Draft EIR/EIS provides the same potential mitigation measures (TR-MM#1) to address the NEPA effects as the with the East LMF.

**Comment:** The comments regarding the transportation impacts to the East LMF also apply to the West LMF.

### Geneva Avenue Extension Design Impacts

The Draft EIR/EIS includes the Geneva Extension as a future transportation change under 2040 conditions. However, the Draft EIR/EIS does not study the project's impact on the Geneva Avenue extension design.

**Comment:** HSR Authority needs to study the feasibility of the planned Geneva Avenue extension with the proposed additional right-of-way for the West LMF. It is anticipated that the West LMF would be more problematic than the East LMF in accommodating the Geneva Avenue extension due to the additional right-of-way west of the Caltrain tracks. Therefore, the extension would be impacted by the project and mitigation would be required.

### Bayshore Boulevard Impacts

The Draft EIR/EIS studied nine intersections along Bayshore Boulevard within the West Brisbane LMF area. None of the intersections would have project impacts under 2040 Plus Project conditions (Transportation Technical Report Table 5-16). However, the roadway could expect temporary or permanent impacts from construction and impacts on emergency response times and bicycle, pedestrian, and transit facilities. These impacts are discussed in the sections below.

### **Construction Impacts**

Construction of the West LMF would require the same temporary closures as the East LMF during the construction of the project, with one exception. Tunnel Avenue would not be realigned for the West LMF (Transportation Technical Report Table 5-19). The same construction timelines would be expected as the East LMF. Temporary closures and construction traffic would have the same impacts and would be addressed in the same way as the East LMF.

**Comment:** Based on the Draft EIR/EIS Table 2-25, the West Brisbane LMF would reuse 79% and the Tunnel Avenue overpass would reuse 54% of excavated materials suitable for embankment construction. Hexagon recommends that HSR Authority includes an analysis of the number of truck loads, based on the volume of excavated materials to be hauled, on study intersection impacts and traffic delays. The Draft EIR/EIS should also describe the duration of the hauling of material, the number of trucks per day, planned truck routes, and time periods during the day when hauling trucks are allowed.

### **Emergency Response Times**

The realignment of the Tunnel Avenue overpass would require the relocation of the Brisbane Fire Station. Page 5-89 of the Transportation Technical Report states that “the Brisbane Fire Station would be relocated approximately 150 feet to the south of the existing fire station, with a single driveway for the relocated fire station connecting to Bayshore Boulevard via the existing station’s secondary driveway (Figure 5-33). This secondary driveway is a mid-block location that provides right-in, right-out access to northbound Bayshore Boulevard. Fire trucks exiting the relocated fire station would only be able to turn northbound onto Bayshore Boulevard. To reach destinations south of the existing fire station, fire trucks would have to make a U-turn at the signalized Bayshore Boulevard/Valley Drive intersection. During congested conditions, fire trucks required to make this U-turn under Alternative B would experience additional delays compared to existing conditions.” This impact would be significant under CEQA.

To mitigate the impact to the Brisbane Fire Station, a modified driveway access control plan would be developed (SS-MM#2). Page 3.11-83 of the Draft EIR/EIS states that “the modified driveway access control plan would provide for the installation of a new mid-block signalized intersection (i.e., signal only for the fire station driveway) at the secondary driveway on Bayshore Boulevard between signalized intersections at Valley Drive and Old County Drive. In addition, median modifications at the new mid-block intersection would provide a break in the raised median to allow fire truck movements and a short southbound left-turn pocket where inbound fire trucks could wait for the fire station signal to be triggered. The contractor would prepare all materials necessary for and obtain the approval of the City of Brisbane for the implementation of this improvement. This mitigation measure would be effective in maintaining existing emergency vehicle response times for the Brisbane Fire Station.”

Emergency vehicles could expect the same permanent delays (up to 30 seconds) as the East LMF due to project generated traffic. Travel time in and around construction areas would also have a significant impact on emergency response time due to the Tunnel Avenue overpass relocation. Similar to the East LMF, these impacts would be minimized with a construction safety transportation management plan (SS-IAMF#1) and a construction transportation plan (CTP, TR-IAMF#2). However, significant impacts would still occur. Therefore, the impacts would be significant and unavoidable under CEQA.

**Comment:** The closure of Tunnel Avenue would eliminate access to the Kinder Morgan tank farm and restrict emergency access to the tank farm, lumber yard, and other Brisbane businesses along Tunnel Avenue. The construction safety transportation management plan would describe alternate access; however, this should be provided in the Draft EIR/EIS. Hexagon recommends a study be conducted, in collaboration with the Brisbane Fire Department, to evaluate the effects of the HSR alignment on Fire Department service areas and emergency response time during construction and identify the best possible mitigation measures to meet the Department’s best practice response time.

### **Bicycle, Pedestrian, and Transit Impacts**

Bicycle, pedestrian, and transit impacts and mitigations would be the same as the East LMF.

**Comment:** The comments regarding bicycle, pedestrian, and transit impacts to the East LMF also apply to the West LMF.

### **Transportation Impact Avoidance and Minimization Features**

HSR Authority plans to implement the same programmatic impact avoidance and minimization features (IAMF) as with the East LMF.

## **Summary of Comments and Recommendations**

Below is a summary of the comments and recommendations on the peer review of the HSR Draft EIR/EIS.

**Existing Conditions Traffic Counts Comment:** Traffic counts for the intersection at Bayshore Boulevard and Industrial Way are not included in Appendix A.

**LMF Trip Generation Comment:** General Light Industrial land uses tend to have traditional work hours where employees arrive and leave during the typical AM and PM peak hours. It is assumed that the Brisbane LMF employees would work in shifts and commutes would not necessarily take place during the typical AM and PM peak hours. Therefore, ITE trip generation rates for the LMF may not provide accurate peak-hour trip estimates. Hexagon recommends that the HSR Authority provide a detailed operations plan for the LMF to estimate the number of daily and peak hour trips. The operations plan should indicate shift hours, the number of employees working each shift, and the times that employees are expected to arrive to start their shift and leave when their shift ends.

**Future 2040 Traffic Volumes Comment:** While adding the increment of traffic between the base year and the future year, forecasted by the model, to the traffic count is an often used and accepted method to develop future turning movements at intersections, it is unclear which base year model was used. Ideally, the base year model should be the same as the year when the traffic counts were conducted. This should be clarified.

**Future 2040 Traffic Volumes Comment:** The VTA model was used to forecast the increase in vehicular traffic at the study intersections along the corridor, including at the intersections in Brisbane. The Draft EIR/EIS does not mention if the transportation network and the traffic analysis zones in the Brisbane area were refined so that more accurate traffic assignments can be forecasted with the model. The network and zone system of the VTA model is too coarse in Brisbane to produce turning movements with reasonable accuracy at the study intersections. If the intersection turning movements produced by the model were manually adjusted (beyond the method of adding the incremental model volumes to the counts) to account and compensate for the

lack of detailed network coding, the process and the results of adjusting the intersection volumes should be explained and documented.

**Future 2040 Traffic Volumes Comment:** The Draft EIR/EIS does not mention if the land use data projections used in the VTA forecasting model were reviewed to include reasonably foreseeable development plans. While the HSR documentation does not provide summaries of the land use assumptions for the model's Traffic Analysis Zones (TAZ's), it is believed that the land use growth for areas in the City of Brisbane is severely underestimated. This presumption is based on (1) the relatively small change in vehicular delay between existing and 2040 traffic conditions at the study intersections in the vicinity of the Brisbane LMF and (2) Hexagon's review of the VTA 2015 and 2040 ABAG *Projections 2013* land use assumptions for the area surrounding the proposed LMF. The level of service and vehicular delay at the study intersections in Brisbane are projected not to change much between Existing and 2040 No-Project conditions. This suggests that the model forecast assumes modest growth in development in Brisbane over the next 20 to 25 years. While the land use data for the TAZ's are not documented in the Draft EIR/EIS, Hexagon's review of what we believe are the official ABAG's *Projections 2013* land use data sets for 2015 and 2040, indicates that for the Baylands area, which is represented by TAZ 1636 in the VTA model, the number of jobs would only increase by 585, from 2,761 in 2015 to 3,346 in 2040. The year 2040 land use projections for the Baylands does not assume any residential development. The Baylands development project is projected to construct approximately 100-200 dwelling units by the 2025 or 2026. Construction of additional residential units in the Baylands will continue, with some office/commercial development also constructed and occupied west of the Caltrain line by 2029. By 2040 the traffic forecasts of the Draft EIR/EIS should include "all reasonably foreseeable projects" which includes the Baylands development. The 2040 No Project baseline should include buildout of the Baylands with 2,200 dwelling units and 6.5 million square feet of commercial/office use and 500,000 square feet of hotel use. Assuming a ratio of 3 jobs per 1,000 square feet, the Baylands development would generate over 20,000 new jobs by the year 2040, which is substantially more than the increase of 585 jobs assumed in the model's traffic projections. As a result, the 2040 No Project and plus Project traffic conditions are significantly underestimated. The Draft EIR/EIS should include the Baylands development in the 2029 and 2040 traffic forecasts and reanalyze future traffic conditions in and around Brisbane.

**Intersection Analysis Comment:** Impact criteria differs from adopted City of Brisbane level of service analysis impact criteria. *The Brisbane General Plan (Chapter VI Circulation Element, Policy C.2)* states that the level of service objective for principal and minor arterial streets within the City is LOS D. There is no mention of an average traffic delay increase of 4 seconds.

**Intersection Analysis Comment:** The Brisbane Baylands Draft EIR selected intersections based on proximity to the project site, their location on key access roads, and the likelihood that each location would be adversely affected the Project-related trips. Hexagon recommends that the Bayshore Boulevard/San Bruno Avenue intersection be included in the study. This intersection may be impacted by project generated trips.

**Intersection Analysis Comment:** *The Brisbane General Plan (Chapter VI Circulation Element, Program C.1.d)* states that new development projects that would generate 50 or more peak hour trips at any intersection along Bayshore Boulevard, Geneva Avenue, or US 101 should comply with the design plan developed pursuant to Program C.1.c and provide physical improvements or pay a traffic impact fee. Once these implementation programs are complete, HSR should comply with this section of the General Plan.

**Vehicle Miles Travelled Comment:** Vehicle miles traveled (VMT) projections, presented on page 5-1 of the Transportation Technical Report, include annual existing (2016) and future (2029 and 2040) VMT projections for San Mateo County. The VMT values in the analysis show the annual VMT with and without the project for the three Bay Area counties. It would be more informative to better understand the effect of the project on the reduction in VMT to present *daily* VMT per job and/or daily VMT per population. The large annual VMT values provided by themselves are meaningless for the average reader.

**Vehicle Miles Travelled Comment:** The narrative below Table 5-1 of page 5-1 of the Transportation Technical Report states that under project conditions, vehicle trips around the stations would increase because of the addition of passengers and HSR workers traveling to station areas. A portion of the trips generated by HSR would divert vehicle trips from airports and other intercity travel hubs and shift vehicle trips to train trips. This diversion of trips, even with the addition of new trips at the stations and LMF, would result in a VMT reduction. While we agree that the project would result in a reduction of countywide VMT, it should be acknowledged that the VMT in areas around the stations and the LMF would increase, causing the air quality in those areas to deteriorate.

**No Project Conditions Level of Service Finding:** The existing and 2040 No Project conditions level of service results were compared to the intersection level of service results for existing (2007 traffic conditions) and 2030 No Project (With Geneva Extension) conditions presented in the Brisbane Baylands Draft EIR. While it can be expected that traffic forecasts produce different results between HSR Draft EIR/EIS and the Baylands Draft EIR because the forecasts were developed with different tools and input assumptions, the differences in future traffic operations (2030 for the Baylands Draft EIR and 2040 for the HSR Draft EIR/EIS) are substantial. The Baylands Draft EIR reported a worse level of service for ten intersections under 2030 No Project conditions during at least one peak hour compared to 2040 No Project HSR conditions. An explanation should be provided why the future 2040 No Project traffic conditions in Brisbane reported in the HSR Draft EIR/EIS are so much better compared to 2030 No Project traffic conditions presented in the Baylands Draft EIR.

**Changes to Transportation System Comment:** The relocation of the Tunnel Avenue overpass and the new southern connection to Valley Drive would result in secondary changes to the transportation system that were not described in the Draft EIR/EIS. The HSR Authority's online interactive map shows that Visitacion Avenue would be extended from Old County Road to Valley Drive, resulting in new intersections at Visitacion Avenue and Valley Drive and at Visitacion Avenue and Old County Road. The changes to the transportation system west of the relocated Tunnel Avenue overpass should be detailed in the Draft EIR/EIS.

**Transportation Impacts Comment:** The Draft EIR/EIS provides LOS outputs in the Transportation Technical Report Appendices. However, geometry assumptions were not provided for intersections that were analyzed with VISSIM or SimTraffic, including the two intersections with project effects. These assumptions should be provided in the Draft EIR/EIS.

**Transportation Impacts Comment:** Specific mitigation measures should be described for each affected intersection. Since the LOS results are unable to be replicated, possible mitigation measures, such as widening Alana Way or Harney Way and/or adding turn lanes at the affected intersections, should be investigated by the Authority.



**Transportation Impacts Comment:** The Transportation Technical Report Table 5-16 states that “in the 2040 scenarios, the southern leg of the existing US 101 Northbound Ramp/Harney Way intersection is removed”. However, the Draft EIR/EIS does not describe how the existing traffic to and from the south leg will be redistributed and what affect the redistribution of that traffic would have on the transportation system. This effect should be explained and analyzed.

**Transportation Impacts Comment:** With the relocation of the Tunnel Avenue overpass, Tunnel Avenue would connect to Valley Drive, whereas it currently connects to Old County Road. The eastbound through and westbound through vehicles that currently cross Bayshore Boulevard at Old County Road to Tunnel Avenue should be maintained. The Draft EIR/EIS maintains these traffic movements by re-distributing these trips onto Bayshore Boulevard between Old County Road and Valley Drive. However, the assumptions made in redistributing the traffic affected by the relocation of Tunnel Road are too simplistic and in fact, unrealistic. Future traffic volumes at the Bayshore Boulevard/Old County Road/Tunnel Avenue intersection show zero vehicles westbound and ten vehicles eastbound traveling across Bayshore Boulevard between Tunnel Road and Valley Drive. The redistribution of traffic between Tunnel Avenue and Valley Drive assumed in the Draft EIR/EIS would not be the most direct route. Instead, the trips should be redistributed so that the eastbound through and westbound through trips would cross Bayshore Boulevard at Valley Drive to Tunnel Avenue and vice versa. The redistribution of traffic at this intersection should be revised and the operational analysis updated based on realistic behavior of route choice by motorists.

**Transportation Impacts Comment:** The short distance between the Park Place/Valley Drive, Visitacion Avenue/Valley Drive, and Bayshore Boulevard/Valley Drive intersections would be problematic for traffic flow. The extension of Visitacion Avenue would also result in trip redistribution between the downtown area and the area near the City Hall and Police Department. In addition, the extension of Visitacion Avenue would block access to one business and remove parking for three businesses in the area. HSR Authority needs to perform a level of service analysis, queuing analysis, and study the effects on emergency response at the affected intersections west of the proposed Tunnel Avenue relocation.

**Geneva Avenue Extension Design Comment:** HSR Authority needs to study the feasibility of the planned Geneva Avenue extension with the proposed additional right-of-way for both the East and West LMF. It is anticipated that the High-Speed Rail project would not accommodate the Geneva Avenue extension. It is also anticipated that the West LMF would be more problematic than the East LMF in accommodating the Geneva Avenue extension due to the additional right-of-way west of the Caltrain tracks. Therefore, the extension would be impacted by the project and mitigation would be required.

**Construction Impacts Comment:** Based on Table 2-25, the East LMF would reuse 17%, the West LMF would reuse 79% and the Tunnel Avenue overpass would reuse 54% of excavated materials suitable for embankment construction. Hexagon recommends that HSR Authority includes an analysis of the number of truck loads, based on the volume of excavated materials to be hauled, on study intersection impacts and traffic delays. The EIR should also describe the duration of the hauling of material, the number of trucks per day, planned truck routes, and time periods during the day when hauling trucks are allowed.

**Emergency Response Times Comment:** The closure of Tunnel Avenue would eliminate access to the Kinder Morgan tank farm and restrict emergency access to the tank farm, lumber yard, and other Brisbane businesses along Tunnel Avenue. The construction safety transportation management plan would describe alternate access; however, this should be provided in the Draft

EIR/EIS. Hexagon recommends a study be conducted, in collaboration with the Brisbane Fire Department, to evaluate the effects of the HSR alignment on Fire Department service areas and emergency response time during construction and identify the best possible mitigation measures to meet the Department's best practice response time.

**Bicycle, Pedestrian, and Transit Finding:** Page 3.2-88 of the Draft EIR/EIS states that “to maintain pedestrian and bicycle access, project design plans include specifications for vehicle lanes, passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls (TR-IAMF#12). These features address how pedestrian and bicycle accessibility would be provided and maintained across the HSR corridor, to and from stations, and on station property. Local access programs, such as Safe Routes to Schools, would be maintained or enhanced”. This complies with Brisbane's General Plan Policy C.27. The Draft EIR/EIS also states that “all reconstructed roadways would replace all bicycle and pedestrian facilities upon completion of construction. All new and replaced facilities would be designed with specifications for passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls”. This complies with Brisbane's General Plan Policy C.30 and Policy C.35.

**Bicycle, Pedestrian, and Transit Comment:** Brisbane's General Plan Policy C.1 emphasizes mobility for Brisbane residents and businesses. Construction of the HSR project would impact Brisbane's already limited transit service. Based on the HSR alignment, the project would be expected to affect the Brisbane-Crocker Park BART/Caltrain Shuttle, the Brisbane-Bayshore Caltrain Shuttle, and SamTrans Routes 292 and 397. Page 3.2-75 of the Draft EIR/EIS states that “increased travel times and modified access along affected bus routes could cause bus patrons to shift to another bus route or cause a temporary reduction in bus ridership for the duration of construction”. Therefore, the impacts to bus transit could increase single-occupant vehicle trips as people opt out of using transit. This would not comply with Brisbane's General Plan Policy C.38. Thus, HSR Authority should coordinate with San Mateo County's Transportation Demand Management Agency and SamTrans to address the project impacts.

**Bicycle, Pedestrian, and Transit Comment:** Brisbane's General Plan describes the proposed expansion of the Bayshore Caltrain Station into a multi-modal station as part of the Baylands development. The Draft EIR/EIS should consider any HSR impacts to this development and its future transit connections.

**Transportation Impact Avoidance and Minimization Features Comment:** TR-IAMF#6 states that construction material deliveries and construction employee trips would be limited during the peak hours. This should be expanded to include all construction-related traffic, including, but not limited to, trucks transporting demolished or excavated materials and construction equipment.

## At van den Hout, Vice President & Principal Associate

### Education

**Bachelor of Science in Traffic Engineering and Transportation Planning**, Nationale Verkeersacademie, Tilburg, The Netherlands

### Experience

Mr. van den Hout is one of the founding partners of Hexagon Transportation Consultants, Inc. Mr. van den Hout has over twenty-five years of experience in transportation planning and traffic engineering with the emphasis on travel demand forecasting. Throughout his career, Mr. van den Hout has acquired extensive experience with multi-modal travel forecasting models. He is particularly familiar with the models from the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area, Santa Clara County (VTA), Contra Costa County and Alameda County. Mr. van den Hout is familiar with all major travel demand forecasting software packages such as EMME/2, CUBE /VOYAGER, TRANPLAN, TransCAD, and MINUTP. Mr. van den Hout has managed and prepared a variety of site traffic impact studies, transportation planning projects and traffic engineering studies for both public and private clients. These studies include analyses for various land uses developments including residential and mixed-use projects, school studies and office developments in the Bay Area region.



### Representative Projects

#### ***Travel Demand Model Development Projects:***

- City of San Jose Model Update – Model Refinement and Validation
- Sunnyvale Citywide Model – Model Refinement and Validation
- Gilroy Citywide Model – Model Refinement and Validation
- San Mateo Countywide Model—San Mateo, California. Model development
- San Francisco International Airport Surface Transportation Air Passenger Model—San Francisco, California. Trip Generation/distribution model development, mode choice calibration, model validation

#### ***Travel Demand Model Applications***

- SVRT Phases I and II BART Extension to San Jose- Santa Clara County
- Gilroy General Plan Update
- Palo Alto Comprehensive Plan Update
- Morgan Hill General Plan Update
- Lathrop River Islands Internal Roadway Design
- City of San Jose Strategy Plan Update
- Silicon Valley Rapid Transit Corridor MIS / EIS – Development of ridership and traffic forecast for the MIS, EIS, and EIR- Santa Clara County, California
- North San Jose Area Development Policy Update – Development of multi-modal travel forecasts for several large development concepts in North San Jose
- Santa Clara County Model—Santa Clara County, California. Travel forecasts for the Highway 85 widening and U.S. 101/Route 85 Interchange Projects, development of year 2020 land use and demographic forecast
- Tri-Valley Subarea Model—Alameda and Contra Costa Counties, California. I-580/I-680 Interchange Project, Tassajara Valley EIR, Tri-Valley Transportation Plan
- Alameda Countywide Model—Alameda County, California. Travel forecasts and analysis for the Alameda County Transportation Plan, I-880 Intermodal Corridor Study, I-880 Cypress Replacement Project, Castro Valley Arterial Study

  
***Environmental / Traffic Impact Studies***

- City of Daly City – Serra Bowl Mixed Use Development
- City of Daly City – Christopher Court Residential Development
- City of San Bruno – Mills Park Mixed Use Development
- City of San Bruno – 111 San Bruno Avenue Mixed Use Development
- City of Millbrae – 1100 El Camino Real Mixed Use Development
- Mountain View – 2580 California Avenue Mixed Use Development
- City Center San Ramon Traffic Analysis
- BART SVBX and SVSX Traffic Impact Analysis
- McCarthy Ranch TIA
- Dougherty Valley Traffic Impact Studies and Intersection Design Projects
- Gale Ranch Phase 3 Traffic Study/Roadway Improvement Phasing Study
- McCarthy Ranch General Plan Amendment EIR

  
***School Access and Circulation Studies***

- Gale Ranch 4 Elementary School Traffic Impact and Circulation Study
- Gale Ranch Elementary School Traffic Analysis (Dougherty Valley – Contra Costa County)
- Gale Ranch Middle School Circulation and Operational Analysis (Dougherty Valley – Contra Costa County)
- Alamo Creek Elementary School Traffic Analysis (Alamo Creek – Contra Costa County)
- School and Traffic – Comprehensive Data Collection and Analysis at 15 public schools (Santa Clara County)

  
***Selected Publications/Presentations***

- “Implementation of Highway Capacity Manual Based Volume Delay Functions in a Regional Traffic Assignment Process,” presented at the TRB Annual Meeting, Washington, D.C.
- “Utilizing a Gateway Constrained Methodology to Better Forecast Traffic Volumes,” presented at the I.T.E. Conference, Denver, Colorado. (Co-Author)
- “Building a Path-Based Fare Matrix Using EMME/2 and TRANPATH,” presented at the International EMME/2 Conference, Montreal, Canada
- “Travel Demand Forecasting Models in the San Francisco Bay Area,” presented at the First European EMME/2 Users Conference in London, England.
- “Air Quality Impact Analysis Using the EMME/2 Network Calculator,” presented at the International EMME/2 Conference in Pasadena, California.



## Gary K. Black, AICP, President

### Education

**Master of City Planning in Urban Transportation**, University of California at Berkeley

**Bachelor of Arts in Geography**, University of California at Los Angeles

### Professional Associations

**American Institute of Certified Planners**

**Institute of Transportation Engineers**

### Experience

Since 1982, Mr. Black has directed a number of transportation planning, traffic engineering, parking, and transit studies. He has prepared transportation plans for the Cities of San Jose, Palo Alto, San Mateo, and San Carlos, and areawide plans for reuse of the Bay Meadows racetrack site in San Mateo, the Cargill salt ponds site in Redwood City, and many parts of San Jose (North San Jose, Downtown, Edenvale, and Evergreen). He has prepared traffic studies for new development in most cities within the Bay Area. He also has prepared numerous parking studies, including downtown parking studies for San Carlos, San Mateo, Gilroy, and San Jose.

### Representative Projects

#### • Areawide Transportation Plans:

**Circulation Elements** for General Plans in San Mateo, Sunnyvale, Cupertino, Gilroy, and Palo Alto.

**Bay Meadows** – Hexagon prepared the transportation plan for redevelopment of the Bay Meadows Race Track in San Mateo into a mixed-use, transit orientated development.

**Sunnyvale** – Hexagon prepared specific plans for the Peery Park, Lawrence Station, and El Camino Real areas of Sunnyvale. The plans were developed to support increased density of development, more diverse land uses, and buildout of the bicycle and pedestrian networks. The studies included travel demand model forecasts and estimates of vehicle miles traveled.

**North San Jose** – Hexagon developed a revised development policy for North San Jose that included a long-range forecast of traffic conditions and development of a long list of necessary transportation improvements – both roads and transit. The policy resulted in the adoption of an impact fee to fund transportation improvements.

**Santa Clara** – Hexagon has done transportation planning for two specific plan areas. These were developed to support housing development in industrial areas to create a better jobs-housing balance. The studies were completed with travel demand models and calculated the change in vehicle miles traveled.

#### • Campus Studies:

**Foothill College** –The campus is served by one ring road that is accessed through a single intersection. Hexagon staff recommended that the ring road be made one-way. Other recommendations were also made for better signage and lighting around the ring road.

**City College** – Hexagon staff was hired to measure parking demand and to determine the amount of new parking needed. Hexagon staff conducted parking occupancy surveys. Student parking in neighborhoods was estimated by comparing overnight occupancy to occupancy at typical student peak times.







**IBM Campus** - Hexagon staff was hired to address various problems occurring on the internal roads. Many recommendations came out of the study, including modifying speed limits, narrowing streets, channelizing pedestrian crossings, adding signals, and modifying intersection geometries to improve sight distance.

- **Site Traffic Analyses:**

For offices, hotels, restaurants, residential subdivisions, apartments, schools, warehouses, industrial complexes, and mixed-use developments in San Jose, Santa Clara, Sunnyvale, Milpitas, Los Gatos, Fremont, Monterey, Palo Alto, Menlo Park, Redwood City, San Carlos, San Mateo, Los Altos, Santa Rosa, Napa, Hayward, Bakersfield, Richmond, Concord, and Cupertino, California. These included estimation of future trip generation, impacts on adjacent intersections, and site-specific pedestrian and auto circulation issues such as driveway and crosswalk locations.



- **Impact Fee Studies:**

Mr. Black has directed numerous transportation impact fee studies. The purpose of the studies is to identify future transportation deficiencies, improvements to address the deficiencies, and costs to implement the improvements. Impact fee studies were completed for San Mateo, Palo Alto, Sunnyvale, San Jose, Santa Clara, and Gilroy.



- **Parking Studies:**

**San Carlos** – Staff believed that the available parking spaces were utilized to such an extent that any future development could not be accommodated. It was determined that future development could be accommodated only by planning a parking structure. A suitable site was identified, and a three-level parking structure was designed (one level underground and two levels above). To help the financial feasibility of the parking structure, it was designed to have two levels of housing above.

**San Mateo** – Due to recent and projected growth, many downtown merchants believed that more parking facilities were needed. Surveys revealed that the existing parking situation was adequate, although during peak times customers sometimes had to settle for less desirable spaces because the prime spaces were taken by employees. The study was able to show that a relatively modest increase in downtown parking meter rates combined with a small property assessment could finance an additional parking structure.



- **Major Developments:**

**Valley Fair** – Valley Fair is a 1.2 million square foot regional mall that was proposed for enlargement by approximately 300,000 square feet.

**Santana Row** – This project transformed a 1960's era shopping center into a mixed-use "Main Street" style shopping, entertainment and residential center.

**Oakridge Mall** – The proposed expansion consisted of the addition of 85,000 square feet of movie theater space plus additional retail and restaurant space.

**Evergreen Specific Plan** - The plan called for the construction of over 4,000 dwelling units on about 600 acres. Hexagon staff analyzed both on-site and off-site traffic impacts of the plan and developed the circulation element of the EIR.



## Gicela Del Rio, T.E., Senior Associate

### Education

**Bachelor of Science in Civil Engineering**, San Jose State University,  
San Jose, California

### Professional Associations

**American Society of Civil Engineers**

**Institute of Transportation Engineers**

**Transportation and Development Institute of ASCE**

**Registered Professional Traffic Engineer in the State of California (TR 2708)**

**Registered Engineer-in-Training in the State of California**



### Experience

Since June 1999, Mrs. Del Rio has assisted with and managed a variety of traffic engineering and transportation planning projects for both the public and private sector. These projects include the preparation of scopes of work, site traffic analyses, traffic simulation and operation studies, signal design, roadway closures, parking studies, and a variety of school projects.

- **On-Call City Traffic Engineer** – Mrs. Del Rio also spent 10 months working for the City of San Mateo Public Works Department as a contract employee in the capacity of City Traffic Engineer, which involved a variety of traffic engineering issues such as daily interaction with the public, responding to the public's concerns in a timely manner, traffic control warrant analyses, assisting in the review of traffic signal plans, supervising installation of new signs and curb painting/pavement legends throughout the City, organization of soft and hard copies of City documents, development of schedules and procedures for common tasks, managing City resources and personnel, applying for (and obtaining) State Grants for local transportation improvement projects, supervising and directing other employees, and training the new City Traffic Engineer assistant.

### Representative Projects

- **Site Traffic Impact Analyses/EIRs/Traffic Feasibility Studies** for a wide range of land uses in various jurisdictions in and around the San Francisco Bay Area and Northern California. These analyses include estimation of project trip generation and assignment, intersection level of service calculations, intersection impacts and recommended mitigation measures, mitigation cost estimates, traffic reassignment (due to roadway changes), freeway segment level-of-service analysis, site access and circulation review, signal warrant analysis, and intersection operational analysis. Some representative projects include: San Carlos General Plan Traffic Study, Traffic Mitigation Fee Report, San Carlos Citywide Traffic Study, East San Carlos Specific Plan Study, Palo Alto Medical Foundation EIR (hospital), and Caltrain Transit Village (mixed-use) (San Carlos); Downtown Operation Analysis, Westgate Mall Expansion, and San Jose Market Center EIR (retail) (San Jose), Las Animas Business Park (Gilroy); Creekbridge Residential Subdivision (Hollister); Cielo Grande Feasibility Study (residential) (Gonzales); and the Vasona Corridor LRT Expansion traffic study (Santa Clara County).
- **School Projects** for the analysis of various new schools, relocation/expansion of existing schools, and parking and circulation analyses for schools in the Cities East Palo Alto, San Jose, Mountain View, Sunnyvale, Atherton, Belmont, San Mateo, Cupertino, Redwood City, and Menlo Park. These projects include tasks as conducting trip generation surveys for the analysis of the school to attendance at meetings with the public and/or City officials in the process of project approval. Some representative projects include: East Palo Alto Adult School Annex, Myrtle Street School, and East Palo Alto Phoenix Academy Traffic Studies (East Palo Alto); ACE Charter Middle School Traffic Study, Santa Teresa and Silver Creek High Schools Stadium Lighting Project Traffic Studies (San Jose); Parking and Circulation Study for the Expansion of St. Francis High School (Mountain View); Challenger School Traffic Site Circulation Study and Cupertino Middle School Expansion (Sunnyvale); Menlo-Atherton High School Stadium Lighting Project Traffic Study (Atherton); Carlmont High School Stadium Lighting Project

Traffic Study (Belmont); St. Matthew's Episcopal Day School Master Plan (San Mateo); Lawson Middle School Expansion (Cupertino), Rocketship School (Morgan Hill), Sequoia High School Operations Analysis (Redwood City), and Menlo Park Charter High School (Menlo Park).

- **Silicon Valley Rapid Transit Corridor Traffic Analysis** for the proposed extension of the Bay Area Rapid Transit (BART) rail line to the South Bay. The analysis was performed utilizing traffic forecasts also produced by Hexagon and included the evaluation of the effects of the proposed stations on the immediate and surrounding transportation system. The traffic analyses included intersection and freeway analysis, evaluation of parking demand, and site access and on-site circulation evaluation for the proposed BART Stations in the Cities of Milpitas, San Jose, and Santa Clara. Other related projects include the traffic analysis of the proposed BART maintenance yards and the off-site parking facilities that would serve the projected additional bus lines needed to serve the proposed BART Stations.
- **Traffic Simulation Analyses** used to evaluate operations of existing and future traffic conditions with and without the implementation of proposed physical changes to the roadway network. These studies include use of the Synchro/SimTraffic microscopic traffic simulation software package. Most of these studies included the evaluation of future traffic conditions as a result of planned physical changes to the roadway network. Representative projects include: US101/Dunne and US101/Tennant interchange simulation (Morgan Hill), SR1/SR92/Main Street Simulation (Half Moon Bay), SR237 at Town Center Drive and Hillview Drive intersections (Milpitas), Downtown San Carlos Improvements and US 101/Holly Street Interchange PSR (San Carlos), Apple Campus Construction Traffic Simulation (Cupertino), Lions Creek Trail/Christopher High School Simulation Analysis (Gilroy), and SR237/Mathilda Interchange Simulation (Sunnyvale).
- **Site Access Studies** for schools and office parks. The analyses included evaluation of the existing access routes and vehicular queues formed at site driveways, and the development of a new access route to eliminate queues on the adjacent streets. Other projects included determining the number of access points and type of control required to serve the traffic generation at an office campus if the office campus was to be gated.
- **Signal Design** assistance in the design of various traffic signals in the City of San Jose as well as preparation of utility plans.
- **Road Closure Studies** in Milpitas, San Mateo, San Carlos, and San Jose. Roadway closure and lane configuration change studies mainly consisted of reassigning existing and future traffic to project traffic conditions as the result of road closures and/or lane configuration changes, comparing traffic conditions pre and post the proposed roadway changes. Representative projects include the analysis of complete roadway closures (The Great Mall Redevelopment TIA in Milpitas), The analysis of various roadway closure alternatives in order to find the alternative that would yield the best and safest traffic conditions in the study area (US 101 southbound ramps at Poplar Avenue in San Mateo), and the reassignment of existing and future as a result of the proposed elimination of movements at intersections in the Downtown area in an effort to reroute vehicular traffic and provide a more pedestrian-friendly environment (the Caltrain Transit Village TIA in San Carlos).
- **Areawide Transportation Plans** including Circulation Elements for General Plans, General Plan traffic studies, Citywide traffic studies, General Plan Amendments, and Urban Service Area Amendments. Representative projects include the Circulation Element for the City of Hollister General Plan; the Citywide traffic study for the City of San Carlos; the General Plan traffic study for the Cities of San Carlos, Morgan Hill, and Gilroy; the General Plan Amendments traffic study for the City of Morgan Hill; and the North Gilroy Neighborhood Districts Urban Service Area Amendment in the City of Gilroy. These projects involved estimating and analyzing the traffic conditions that would occur from buildout of General Plan conditions or known development sites within the city. Intersection levels of service were calculated and recommendations were made for possible transportation network improvements.





## Katie Riutta, Planner

### Education

**Bachelor of Science – Statistics**, Michigan Technological University, Houghton, Michigan

### Professional Associations

**Member, American Planning Association**

**Member, Institute of Transportation Engineers**



### Experience

Since joining Hexagon in 2018, Ms. Riutta has participated in a variety of traffic engineering and transportation planning projects throughout the Bay Area. These projects include Transportation Impact Analyses (TIA), High-Speed Rail EIR/EIS peer review, transportation demand management (TDM) plans, and parking studies.

Ms. Riutta has experience with Traffix and Synchro software and primarily utilizes the Highway Capacity Manual (HCM) methodology to evaluate intersection operations and analyze project impacts. Ms. Riutta is proficient with ArcGIS.



### Representative Projects

- **HSR EIR/EIS Peer Review** on behalf of the City of Morgan Hill, California. The peer review included right-of-way and construction impacts to the transportation system, property access, and pedestrian, bicycle, and transit services in Morgan Hill.
  - **Traffic Impact Analyses** for area-wide plans, offices, apartments, day care centers, and multiple-use developments throughout the Bay Area. These analyses include part or all of the following: project trip generation and assignment, intersection level of service calculations using Traffix or Synchro, freeway segment level of service analysis, site access and circulation review, signal warrant analysis, intersection operational analysis, and recommendations for mitigation measures. Representative projects include:
    - Moffett Park Specific Plan Update (Ongoing) – Sunnyvale, CA
    - Intuitive Surgical Campus Expansion Office/R&D TIA (Ongoing) – Sunnyvale, CA
    - Concar Passage Mixed-Use Development TA (Ongoing) – San Mateo, CA
    - 7 Magic Flowers Day Care Development TA (Ongoing) – San Jose, CA
  - **Transportation Demand Management (TDM) Plans** for residential, office, and industrial projects. TDM plans incorporate services, incentives, facilities, and actions that help reduce single-occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems based the project's size and location. Representative projects include:
    - 1162 El Camino Real Residential Development – Menlo Park, CA
    - 901 Shasta Street Office/Industrial Development – Redwood City, CA
    - 6293-6299 San Ignacio Avenue Office Development (Ongoing) – San Jose, CA
  - **Parking Studies** for an assisted living facility in Newark, California, five community centers in San Mateo, California, and a billiard parlor in Sunnyvale, California. These studies included conducting surveys of existing parking demand and calculations of required parking supply for the proposed projects.
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## Michelle Hunt, Vice President & Principal Associate

### Education

**Bachelor of Science in Industrial Engineering and Operations Research,**  
University of California, Berkeley

### Professional Associations

**Institute of Transportation Engineers**

### Experience

Since 1990, Ms. Hunt has participated in a variety of traffic engineering and transportation planning projects for both the public and private sectors. These projects include transportation analyses for environmental impacts reports, site traffic analyses, traffic simulation studies, transit corridor studies, parking studies, freeway operation analyses, signal timing studies, and travel demand management plans.

Additionally, Ms. Hunt has extensive experience in the application of traffic simulation software such as CORSIM, SYNCHRO, and SimTraffic.

### Representative Projects

- **Area Wide Transportation Studies**—East Palo Alto Mobility Study; Santa Clara County Circulation and Mobility Planning Project; Atherton Civic Center Master Plan; Ravenswood/4 Corners TOD Specific Plan, East Palo Alto; Evergreen East Hills Development Policy, San Jose; Station Park Green Specific Plan; San Mateo; Reid-Hillview Airport Master Plan, San Jose.
- **Transportation Analyses for Environmental Impact Reports**—Palo Alto Golf Course Reconfiguration; eleven General Plan Amendments, including the Downtown Strategy Plan, San Jose; Holly Street Grade Separation, San Carlos; Ralston Avenue Grade Separation, Belmont; and San Jose 2020 General Plan Update.
- **Traffic Impact Analyses**— Oxford Academy, East Palo Alto; Bay Road Medical Clinic, East Palo Alto; 2020 Bay Road Office Development, East Palo Alto; The Primary School, East Palo Alto; University Plaza Phase II, East Palo Alto; EPACenter Arts, East Palo Alto; Six Rocketship Charter Elementary School Sites in San Jose and Redwood City; 1690 Broadway hotel, Redwood City; Sobrato Phase I Office Development on Pear Avenue, Mountain View; Calvano Phase I Office Development at 1001 North Shoreline Boulevard, Mountain View; KIPP Charter Middle School, San Jose; Design Tech High School, Redwood City; ACE Charter Middle School, San Jose; San Jose Branch Library Improvement Projects; Yahoo Office Campus, Santa Clara; Palo Alto Recycling Center and Household Hazardous Waste Drop-Off Facility; Palo Alto Library Plan Projects; YMCA, Palo Alto; Carden Academy, Santa Clara; National Hispanic University, San Jose; San Jose Branch Library Improvement Projects; Monarch Village Apartments, Santa Cruz; Ocean View Plaza, Monterey; Arboleda Subdivision Peer Review, King City; Monterey Public Services Center; San Jose Water Company mixed-use development, San Jose; 1295 El Camino Real Office/Retail Development, Menlo Park; Beltramo Mixed-Use Development, Menlo Park; 638-640 Oak Grove Avenue Office Building, Menlo Park; 145 El Camino Real Office/Retail Development, Menlo Park; The GAP— Corporate Office Project, San Bruno; Gateway Office Project, South San Francisco; Fifth Avenue Railroad Grade Separation, Redwood City; Century Plaza Expansion, South San Francisco; Boccardo Residential Development, Campbell; Proposed Giants Ballpark in Santa Clara and San Jose; Chevron Service Station, Cupertino; mixed office/residential development, Belmont; Johnson Sports Park, Alameda County.
- **Feasibility Analyses and Peer Review**—Donohoe and University Office Development, East Palo Alto; University Circle, East Palo Alto; Commonwealth Corporate Center, Menlo Park; 1095 W. El Camino





Real, Sunnyvale; 556 El Camino Real, Burlingame; Arboleda Specific Plan, King City; Mills Ranch Specific Plan, King City.

- **Signal Timing Studies**—Winchester Boulevard and Lark Avenue, Los Gatos; Bridgepointe Parkway, San Mateo; Eleventh Street, Tracy; Piilani Highway, Maui, Hawaii; Alma Plaza Redevelopment, Palo Alto, California; SR 87 interchanges at Taylor and Skyport Drives, San Jose; Mercado Development (King and Story Roads), San Jose; Waterford Project on Capitol Expressway, San Jose; Almaden Plaza Way at Route 85/ Almaden Expressway, San Jose; El Camino Real, Menlo Park.
- **Traffic Simulation Studies**— Delmas Avenue/San Fernando Street with Light Rail Signal Preemption, San Jose; SR 87 Interchanges at Taylor and Skyport Drives, Honolulu International Airport Traffic and Parking Study, Honolulu, Hawaii; US 101/Blossom Hill Road and US 101/Hellyer Avenue Interchange Reconstruction Projects, San Jose; Highway 68, Pebble Beach; Highway 1, Monterey County; Wolfe Road Widening Project, Sunnyvale; Downtown Development Plan Traffic Operations Analysis, San Jose; Blossom Hill Road Traffic Operations Analysis, San Jose; Third/Fourth Street Conversion Study, San Jose; San Jose; I-80/I-580 Buchanan Street Interchange Reconstruction Project, Alameda; Lamorinda Areawide Traffic Study, Contra Costa County; BART Parking Garage Study, Concord; Pyramid Way and McCarran Boulevard, Sparks, Nevada; Los Alamos National Laboratory Evacuation/Transportation Plan, Los Alamos, New Mexico; and First Hawaiian Bank Tower, Downtown Honolulu, Hawaii.
- **Parking Studies**—1690 Broadway hotel, Redwood City; Hilton Garden Inn, Mountain View; Shashi hotel, Mountain View; Valley Medical Center, San Jose; Chick-fil-A, Mountain View; The Village at Corte Madera; San Jose Arena; and Silicon Graphics, Mountain View.
- **Transit Corridor Study of Light Rail Transit Alternatives**—Capitol and Tasman Corridors, Santa Clara County.
- **Freeway Operations Analysis**—I-80/Pyramid Way Interchange Reconstruction Project, Sparks, Nevada; I-80/Business 80 and SR 160, Sacramento; I-80, Contra Costa and Alameda Counties; I-580/I-680 Interchange, Alameda County; and I-238/I-580 Widening and Truckway Project, Alameda County.
- **Travel Demand Management Plans**—Greystar III and IV residential projects, Redwood City; 1690 Broadway hotel, Redwood City; Commonwealth Corporate Center, Menlo Park; Munchery food processing facility, South San Francisco, CA; 363 Delmas Avenue residential project, downtown San Jose; West Maude Avenue office development, Sunnyvale; 1205 El Camino Real, Sunnyvale; 3200 Scott Boulevard office development, Santa Clara; and Shashi hotel, Mountain View.

**Attachment Metis-C**

# **EKI Environment and Water**

**Hazardous Materials  
Comments and Resumes**

PRIVILEGED & CONFIDENTIAL  
ATTORNEY-CLIENT COMMUNICATION  
ATTORNEY WORK PRODUCT

25 August 2020

David Smith, Esq.  
Manatt, Phelps & Phillips, LLP  
695 Town Center Drive, 14<sup>th</sup> Floor  
Costa Mesa, California, 92626

Subject: **Review of High-Speed Rail, San Francisco to San Jose Section, Draft Environmental Impact Report/Environmental Impact Statement**  
(EKI C00079.00)

Dear Mr. Smith:

EKI Environment & Water, Inc. ("EKI") has reviewed California High-Speed Rail Authority's *San Francisco to San Jose Section, Draft Environmental Impact Report/Environmental Impact Statement*, dated July 2020 ("Draft EIR"). This document provides EKI's comments on the Draft EIR associated with soil remediation issues.

## **BACKGROUND**

EKI understands that Draft EIR proposes two options for a 100- to 110-acre light maintenance facility ("LMF") at the Brisbane Baylands site. Under Alternative A, the LMF would be located on the east side of the Caltrain railroad tracks, within the existing footprint of the Baylands Soil Processing facility which is also a landfill known as the Brisbane Landfill, a landfill that has not been closed (Figure EKI-1). Under Alternative B, the LMF would be located on the west side of the Caltrain railroad tracks and occupies a large portion of Operable Unit ("OU") 2 of the Brisbane Baylands site and a small portion of the San Mateo County Operable Unit ("OU-SM") (Figure EKI-2).

Both alternatives would result in the LMF being located within the Brisbane Baylands, which are active remediation sites. More specifically, OU-SM and OU-2, located west of the railroad tracks, are being remediated under the oversight of the Department of Toxic Substances Control ("DTSC") and the Regional Water Quality Control Board San Francisco Bay Region ("Water Board"), respectively. These sites area also identified as the Brisbane Baylands, Southern Pacific Railroad, and/or Tuntex Site on the State's Geotracker and Envirostor websites. The east side of the Caltrain railroad tracks at the Brisbane Baylands is a landfill that is undergoing active groundwater monitoring and the landfill needs to be closed under the California Code of Regulations ("CCR") Title 27, which stipulates Water Board and CalRecycle requirements. Thus, Draft EIR needs to adequately address the environmental conditions of these locations. Further discussion and specific comments are provided below.

## COMMENTS

### **General Comment on LMF on East Side of Tracks**

The description of the East Brisbane Light Maintenance Facility (p. 2-77) does not acknowledge the fact that the 100-acre facility would be located at an existing landfill site that has active oversight by the Water Board and would require closure by the Water Board and CalRecycle prior to construction of the LMF. Rather, the description focuses on nearby track modifications and realignments but does not indicate that millions of cubic yards of landfill would have to be excavated to achieve the grade of the railroad tracks. While Section 3.10 of the Draft EIR (Hazardous Materials and Wastes), acknowledges that the East Brisbane LMF would overlie the former Brisbane Landfill, the Draft EIR never presents the full regulatory closure process that would have to be implemented as part of the project (see comments on Impact HAZ#10).

The description of the landfill in Section 3.10.5.2 (Sites with Potential Environmental Concerns) states that the East Brisbane LMF overlies the former Brisbane Class II Landfill<sup>1</sup> and Section 3.10.5.10 further describes the landfill as follows:

The landfill actively received waste from 1932 to 1967. Some methane gas is still being generated from decomposing material within the landfill and is periodically treated through pumping and flaring (City of Brisbane 2013). The San Francisco Bay Regional Water Quality Control Board has been performing semiannual groundwater, surface water, seep, and leachate monitoring for the landfill since 2005 as required by Cal. Code Regs., Title 27. The groundwater monitoring well network for the Brisbane Landfill consists of 22 monitoring stations with 13 shallow monitoring wells, 7 deep monitoring wells, and 2 shallow interior leachate wells. The most recent monitoring has shown low concentrations of VOCs detected above reporting limits.

As described below in the specific comments, the Draft EIR does not adequately evaluate the requirements and impacts of excavating the Brisbane Landfill to construct the East Brisbane LMF.

### **General Comment LMF on West Side of Tracks**

The description of the West Brisbane Light Maintenance Facility (p. 2-98) does not acknowledge the fact that the 110-acre facility would largely be located at an existing remediation site that has active oversight by the Water Board and the DTSC, and construction of the LMF would require planning and oversight by those agencies. In Section 3.10.5 (Affected Environment), the Draft EIR states that the West Brisbane LMF was a freight yard, “which assembled trains and maintained steam locomotives, operated between 1907 and the 1980s. This site has remained largely vacant since the facility was dismantled in the 1980s.” In Section 3.10.5.2 (Sites with Potential Environmental Concerns), the Draft EIR states the following: “At the site of the proposed West Brisbane LMF, investigations at the former

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<sup>1</sup> Technically, the Brisbane Landfill is not classified as the landfill was constructed and operated before landfill classifications existed.

Bayshore freight yard revealed that the groundwater is contaminated with halogenated organic solvents and the soil is contaminated with chromium, copper, zinc, lead, arsenic, and petroleum hydrocarbons.”

As described below in the specific comments, the Draft EIR fails to recognize that the redevelopment of OU-SM and OU-2 for the West Brisbane LMF would require the submittal of formal Remedial Action Plans, which address both temporary construction impacts and the long-term protection of human health and the environment, to the DTSC and Water Board, each with its own separate public processes and oversight, for approval.

### **Estimated Earthwork Volumes are Likely Underestimated and Soil Disposal Costs are Not Included for the East Brisbane LMF**

On p. 3.10-29, the Draft EIR states, “construction of the Brisbane LMF would require excavation and earthwork on the site of a former class II landfill” and “Potential contaminants that could be disturbed by excavation in the former landfill under Alternative A include heavy metals, VOCs (including methane), semi-VOCs, petroleum hydrocarbons, PCBs, pesticides, and asbestos products.” Table 2-25 provides estimated earthwork volumes; the assumptions to estimate the volumes are not provided. For the East Brisbane LMF, the Draft EIR indicates that 2,183,800 cubic yards (“cy”) of material would be cut to create the LMF and that 2,082,800 cy of this material would have to be disposed of. This assessment seems to underestimate the volume of material that would have to be excavated to lower the LMF to track grade (or even deeper to accommodate a landfill cap if landfill contents still remain in place) and does not account for the fact that a portion of the landfill contents may have to be disposed of as a hazardous waste.

Approximately 75% of the East Brisbane LMF footprint is located within the footprint of the landfill (Figure EKI-1). The current elevation of the landfill is highly variable, but on average is approximately at an elevation of 40 feet and the current Caltrain track alignment are approximately at an elevation of 15 feet. Thus, excavation of the East Brisbane LMF to track grade, not accounting for any over-excavation to install a landfill cap or to reach the project subgrade, would result in the generation of approximately 3,000,000 cy (75 acres with an average cut of 25 feet), approximately 50% more than that estimated in the Draft EIR. This quantity of soil equates to approximately 250,000 truckloads of material. The air quality assessment in Section 3.3 should account for these quantities of transportation and off-site disposal. Moreover, the project costs do not appear to account for the fact that the characterization of the landfill contents is not known and soil disposal costs are not included; at a minimum the material would likely have to be disposed of at a Class II landfill but some will likely require disposal at a Class I hazardous waste landfill.

Assuming 80% of the excavated soil and landfill contents would require disposal at a Class II landfill and 20% of the soil at a Class I hazardous waste landfill (and proportionally scaling up the quantities and cost estimates provided in Geosyntec, 2020a for OU-2 ), the total cost of soil excavation and disposal of 3,000,000 cy of landfill material and associated soil would be on the order of \$625,000,000.<sup>2</sup> Appendix

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<sup>2</sup> The estimated value is based on the off-site disposal of 3,000,000 bank cubic yards and using the assumptions presented in Geosyntec 2020a and 2020b (i.e., a bulking factor of 1.2 bulk cubic yards per bank cubic yard, a soil excavation and handling cost of \$15 per bulk cubic yard, a soil density of 1.5 tons per bulk cubic yard, disposal



6-A of the Draft EIR does not include any costs for Item 40.03: “Hazardous material, contaminated soil removal/mitigation, groundwater treatments.” The total cost of “Sitework” for the entire project under Alternative A is shown as \$2,029,000,000 (Table 6-1 of Draft EIR), but review of the detailed costs included in Appendix 6-A do not include the soil remediation costs for the Brisbane landfill (Item 40.03). In addition, the estimated cost of the construction of the East Brisbane LMF (\$395,000,000; Item 30.02.010 on p. 31 of Appendix 6-A) is less than the estimated disposal cost (i.e., \$625,000,000); thus, the potential cost for the disposal of excess soil from the project was clearly not included in the lump sum estimated cost of the construction of East Brisbane LMF or it was grossly underestimated. Taken together, the cost evaluation presented in the Draft EIR is deficient with respect to the cost of constructing the East Brisbane LMF because it is missing the cost for disposal of the excess soil from the project (including disposal costs in the estimate, the total “Sitework” cost should be on the order of \$2,650,000,000).

### **Estimated Disposal Costs are Not Included for the West Brisbane LMF**

Table 2-25 provides estimated earthwork volumes; the assumptions used to estimate these volumes are not provided. For the West Brisbane LMF, the Draft EIR indicates that 1,463,700 cy of excavated material would have to be disposed of. Similar to the analysis for the East Brisbane LMF, Appendix 6-A of the Draft EIR does not include costs for the disposal of excess soil from the project. While the majority of this material would likely be derived from Ice House Hill, a portion of it would be from regrading activities within OU-2 and OU-SM of the Brisbane Baylands Southern Pacific Railroad/Tuntex site, both of which are known to be significantly impacted with metals in shallow soil (Geosyntec, 2020a and 2020b). Section 3.10 (Hazardous Materials and Waste) does not evaluate or address these costs or impacts, but Section 3.6 (Public Utilities and Energy) states on p. 3.6-59 that for construction of the West Brisbane LMF, “the Authority estimated that approximately 432,000 cubic yards of the solid waste generated during earthwork activities may be contaminated and require special disposal as hazardous waste.” Using the assumptions presented in Geosyntec (2020a and 2020b) for the excavation and disposal of hazardous waste at the Brisbane Baylands, the estimated cost to excavate and dispose of the 432,000 cy of soil as a hazardous waste for the construction of the West Brisbane LMF would be \$144,000,000. These costs were not included or evaluated in the Draft EIR.

### **Section 3.6, Public Utilities and Energy Incorrectly Evaluates the Waste that Would be Generated from the Construction of the East Brisbane LMF.**

Section 3.6 (Public Utilities and Energy) on p. 3.6-59 incorrectly states, “It is anticipated that Alternative A would not generate substantial quantities of hazardous waste during construction grading and excavation because construction of Alternative A would not involve excavation and grading of identified areas of contaminated soil.” However, construction of the East Brisbane LMF includes excavation on the order of 3,000,000 cy of landfill materials. While the actual contents of the Brisbane landfill are not known, the Brisbane landfill operated from 1932 to 1967, prior to the classification of landfills, and therefore a wide range of chemical constituents were likely disposed of at the landfill. As stated on p.

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costs of \$90 per ton for disposal at a Class II Landfill and \$170 per ton for disposal and that approximately 80% of the excess soil would require disposal at a Class II landfill and that 20% of the excess soil would require disposal at a Class I hazardous waste landfill) and has been rounded to three significant figures.

3.10-29 of the Draft EIR, “Potential contaminants that could be disturbed by excavation in the former landfill under Alternative A include heavy metals, VOCs (including methane), semi-VOCs, petroleum hydrocarbons, PCBs, pesticides, and asbestos products.” Both Sections 3.6 and 3.10 of the Draft EIR do not fully evaluate the impact of excavating significant portions of the Brisbane Landfill to construct the East Brisbane LMF.

### **Impact HMW#1 Does Not Identify or Evaluate the Impacts of the Transportation and Disposal of 2.2 Million Cubic Yards of Material**

Impact HMW#1 correctly acknowledges that “waste generation may also include soil or groundwater contaminated by petroleum hydrocarbons, pesticides, herbicides, asbestos, heavy metals or other hazardous materials, and demolition materials that contain asbestos or lead.” It further states:

Construction at the East Brisbane LMF under Alternative A would require significant earthwork cut and fill to create a level surface for the workshop, yard, tracks, and supporting systems and utilities on the site of the former Brisbane Landfill. An estimated 2.2 million cubic yards of cut would be required, with excavation depths of 60 feet below ground surface (Authority 2019c).

The analysis in the Draft EIR indicates that the impact from the transport, use, storage, and disposal of hazardous materials and wastes during construction would be less than significant under CEQA and NEPA for both the east and west LMFs because the project incorporates Impact Avoidance and Minimization Features (“IAMFs;” IAMF#s 6, 7, 8, and 10). The Draft EIR indicates that the IAMFs would avoid or minimize impacts associated with the release of hazardous materials and wastes transported, used, or stored during project construction, which could result in contamination of air, soil, surface water, or groundwater. While hazardous soil can be loaded, transported, and disposed of in a safe manner, it is not appropriate to mitigate the impacts through IAMFs; the Draft EIR does not evaluate the impacts of sheer quantity of soil being excavated for this project (2.2 million cubic yards or more as discussed above). Therefore, a conclusion cannot be made regarding the significance of this impact.

### **Impact HMW#2 Fails to Address the Fact that the Environmental Concerns at the Sites Known to be Located within the Proposed East and West Brisbane LMFs are not Temporary Impacts**

The Draft EIR identifies that the East and West Brisbane LMFs would be located on “high-risk” sites, namely the Brisbane Landfill and the Brisbane Baylands/Southern Pacific Railroad/Tuntex sites, respectively. These sites are undergoing investigation and remediation under the oversight of the Water Board and DTSC. The Draft EIR considers the impacts from construction on these sites to be temporary impacts that can be avoided or minimized through application of the IAMFs to “characterize contamination before it is disturbed and manage it if disturbance is deemed necessary for project construction (HMW-IAMF#1).” The Draft EIR further states, “By limiting soil disturbance, migration of and exposure to contaminants would be reduced to the immediate vicinity of the exposed surface. Engineering controls (HMW-IAMF#3) would be put in place to minimize the migration of and exposure to the contaminants.” This logic fails to recognize that development at these sites would require formal Remedial Action Plans (for OU-SM and OU-2 at the West Brisbane LMF) and the preparation and implementation of a landfill closure plan (for the East Brisbane LMF) to address both the temporary construction impacts and the long-term protection of human health and the environment consistent

with the planned land use. Construction of either the East or West Brisbane LMFs is not feasible without a formal remedy in place that has gone through its own separate public process under the oversight, and approval of, the applicable regulatory agency (i.e., DTSC, Water Board, and CalRecycle); the Construction Management Plan or “CMP” as described in the IAMFs is not such a plan. Impact HMW#2 has not been adequately evaluated with respect to the existing environmental conditions, the long-term protection of human health and the environment, and the required regulatory agency oversight process; therefore, a conclusion cannot be made regarding the significance of this impact.

### **Impact HMW#10 Fails to Address the Fact that the Impacts at Brisbane Landfill are not Temporary Impacts**

As with Impact HMW#2, the Draft EIR only evaluates the construction-related impacts, such as the release of flammable gases (e.g., methane) and the potential to encounter contaminated materials, which may require remediation and on-site management, transport, and disposal of hazardous materials. As indicated previously, the Draft EIR states on p. 3.10-39:

Construction of the East Brisbane LMF under Alternative A would require significant earthwork cut and fill to create a level surface for the workshop, yard, tracks, and supporting systems and utilities on the site of the former Brisbane Landfill. An estimated 2.2 million cubic yards of cut would be required, with excavation depths of 60 feet below ground surface.

The Draft EIR correctly identifies mitigation measures that would be appropriately implemented during excavation and construction activities. However, the Draft EIR further states on p. 3.10-40, “Prior to construction, the Authority’s design-build contractor would be required to prepare a removal action plan (RAP) that would determine the requirements for removal, transportation and disposal of excavated materials, air monitoring, regulatory concerns, and worker health and safety.” This “RAP” is not a typical regulatory-agency required remediation document since it only address construction measures and not the long-term protection of human health and the environment. This “RAP” would need to consider that the landfill would need to be properly closed under CCR Title 27.

More specifically, for the portions of the landfill that would be clean closed, 27 CCR §21810, requires a closure plan with the following information:

- (1) a detailed implementation schedule for clean closure activities;
- (2) a characterization of the site conditions to define the extent and character of wastes present and the levels and extent of any soil contamination;
- (3) a description of the excavation and material management procedures to be followed;
- (4) a description of health and safety procedures to be followed and specific measures to protect public health and safety during clean closure activities.

After clean closure activities are completed, a verification report would need to be prepared that confirms waste and residual contaminated soils have been removed and includes the following information, as appropriate:

- (1) if the plan for clean closure was part of a remedial action, a description of any post-closure maintenance activities needed to comply with the implementation of the remedial action plan. In such cases the unit will not be deemed clean closed until completion of the corrective action.

- (2) if all solid waste and contaminated soils are not removed, closure and post-closure maintenance plans and a financial assurances mechanism for closure and post-closure maintenance. Such a unit shall not be regarded as having been clean closed.

For portions of the landfill remaining in place, CCR Title 27 includes specific capping requirements, landfill gas collection system, long-term landfill gas monitoring requirements, drainage controls, and other measures that would need to be addressed under the oversight of the Water Board and CalRecycle as part of the construction of the East Brisbane LMF. Moreover, because a portion of the landfill would presumably be closed by the Authority and the remaining portion of the landfill would be the responsibility of the current owner of the Brisbane Landfill, it is not clear if or how the landfill closure would actually be designed and implemented by these two different entities.

The Draft EIR includes the preparation of a “RAP” that is not included in the IAMFs; however, as described, the “RAP” is not the appropriate or complete documentation that would be needed for the project. Overall, the Draft EIR fails to identify and address long-term landfill closure requirements that are not temporary construction impacts and would need to be performed under regulatory agency oversight. Given that the Draft EIR does not discuss or evaluate the landfill closure process and requirements, there is no basis to make a significance determination regarding construction of the East Brisbane LMF on the Brisbane Landfill.

### **Several of the Issues Identified in the Project Impact Avoidance and Minimization Features Should Actually Be Fully Evaluated in the Draft EIR**

Appendix 2-E presents the Project IAMFs for the LMFs that should have been evaluated more thoroughly in the Draft EIR because existing information can be used to perform the technical assessments. Examples of the inappropriate use of IAMFs are as follows:

GEO-IAMF#1: Hazards: The Draft EIR delays the performance of a geotechnical investigation until the design phase of the project. The East Brisbane LMF would be constructed on a landfill which could have significant subsidence if landfill contents are left in place. In addition, a geotechnical evaluation is needed to address the surrounding slopes of the landfill that would remain in place to allow for the appropriate capping and closure design. A geotechnical investigation should have been performed in advance of the preparation of the Draft EIR so the conditions at the East Brisbane LMF could be evaluated appropriately with respect to subsidence and slope stability.

GEO-IAMF#3: Gas Monitoring: The Draft EIR indicates that a CMP would be prepared that would include gas monitoring related to gas migration for historic or active landfills. The monitoring discussed in GEO-IAMF#3 is associated with worker protection and the active construction work, but does not address potential exposures to the nearby community nor does it address the long-term requirements for landfill gas monitoring that would be needed at the East Brisbane LMF.

HMW-IAMF#1: Property Acquisition Phase 1 and Phase 2 Environmental Site Assessments: This IAMF indicates that Phase I and Phase 2 Environmental Site Assessments would be performed and remediation implemented as needed for the project. As stated numerous times in these comments, the Draft EIR does not address the remediation efforts and regulatory oversight that would be required to develop the LMFs; HMW-IAMF#1 is not appropriate and is insufficient for these known remediation sites. Given the level of documentation known about these remediation sites, the actions and

regulatory process that would need to be taken to address the known contamination at these sites should have been specifically described and evaluated in the Draft EIR.

HMW-IAMF#2: Landfill: This IAMF indicates that measures would be put in place to monitor and measure methane for work within 1,000 feet of a landfill; this IAMF completely misses the point that the East Brisbane LMF would be constructed on an existing landfill and portions of the landfill would remain in place on or adjacent to the LMF. HAZ-IAMF#2 does not include the long-term requirements for on-going post-closure methane monitoring, nor does it describe the other critical elements of landfill closure. More specifically, the Draft EIR should include a full evaluation of the impacts of constructing the East Brisbane LMF on the landfill, including the required regulatory agency oversight and documentation to remove portions of the landfill for construction of the LMF as well as the remedial actions that would be put in place for any remaining portions of the landfill such as the slopes of the landfill that would remain in place, adjacent to the East Brisbane LMF. The requirements associated with the landfill closure are extensive and cannot properly be captured by an IAMF.

HMW-IAMF#4: Undocumented Contamination: This IAMF indicates that a CMP would be prepared to provide procedures to address unknown contamination that could be encountered during construction. While this measure is appropriate for unknown contamination that may be encountered along the High-Speed Rail alignment, it does not indicate that the East Brisbane and West Brisbane LMFs require Remedial Action Plans that address both construction impacts and long-term protection of human health and the environment. The Draft EIR needs to consider the known, documented contamination and the regulatory oversight required to remediate and redevelop these sites; it is not appropriate to include these requirements as an IAMF.

## CONCLUSIONS

Overall, the impacts of construction of the East and West Brisbane LMFs were not fully assessed and evaluated in the Draft EIR. The Draft EIR:

- does not identify the impacts associated with the fact that both proposed LMFs are located on active remediation sites;
- does not evaluate the regulatory process to remediate and develop on these active remediation sites; and
- does not include the costs to dispose of the significant quantities of soil that would be generated from construction of the LMFs.

Please do not hesitate to contact us if you have any questions about EKI's review of the Draft EIR.

Very truly yours,

EKI ENVIRONMENT & WATER, INC.



Michelle K. King, Ph.D.  
President



## **Attachments**

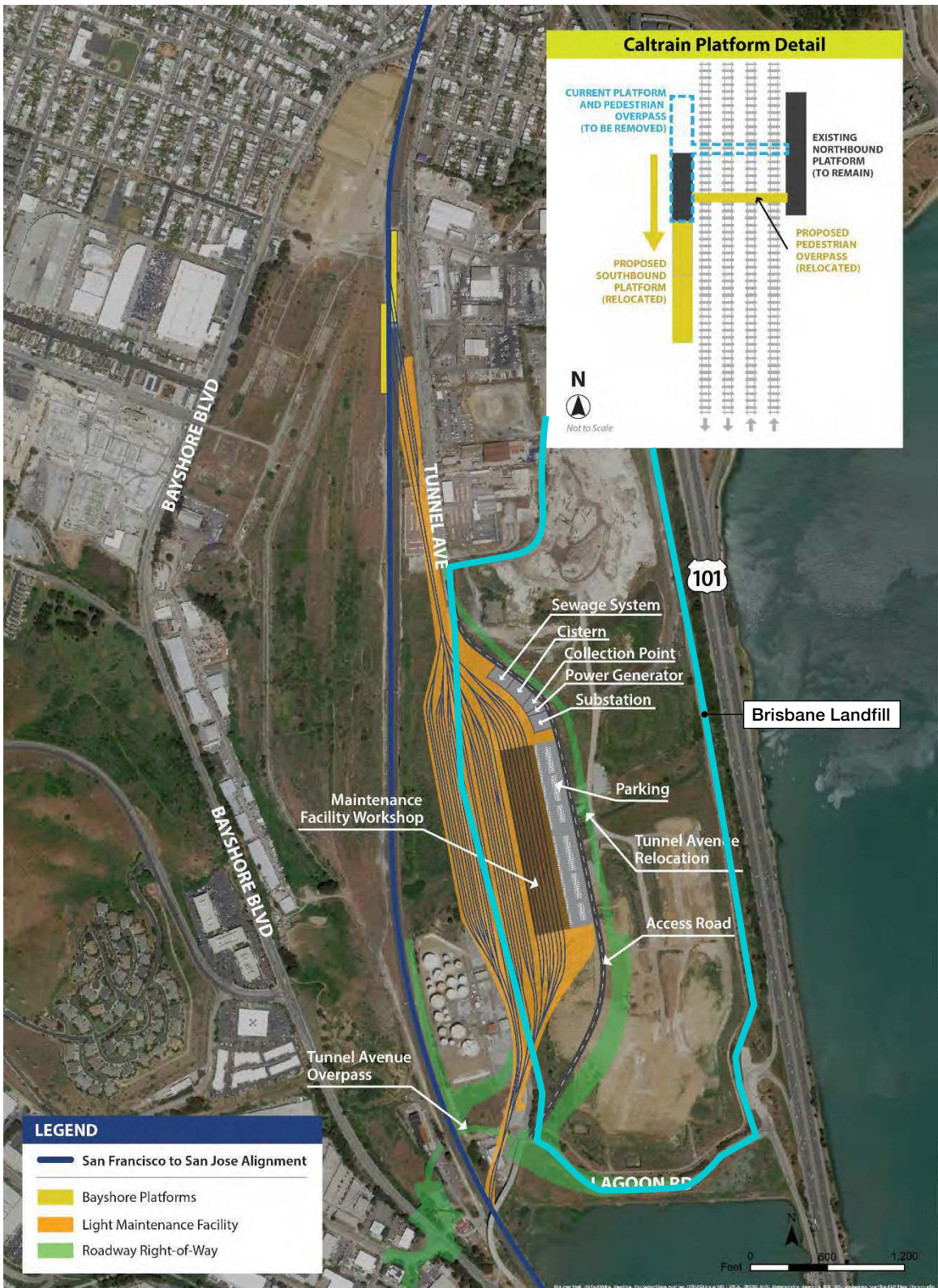
Figure EKI-1: East Brisbane Light Maintenance Facility, Brisbane Landfill Location

Figure EKI-2: West Brisbane Light Maintenance Facility, UPC OU-SM and OU-2 Location

## **References**

Geosyntec, 2020a. *Draft Final Feasibility Study/Remedial Action Plan (FS/RAP), Brisbane Baylands Operable Unit 2, Brisbane, California*, 29 May 2020.

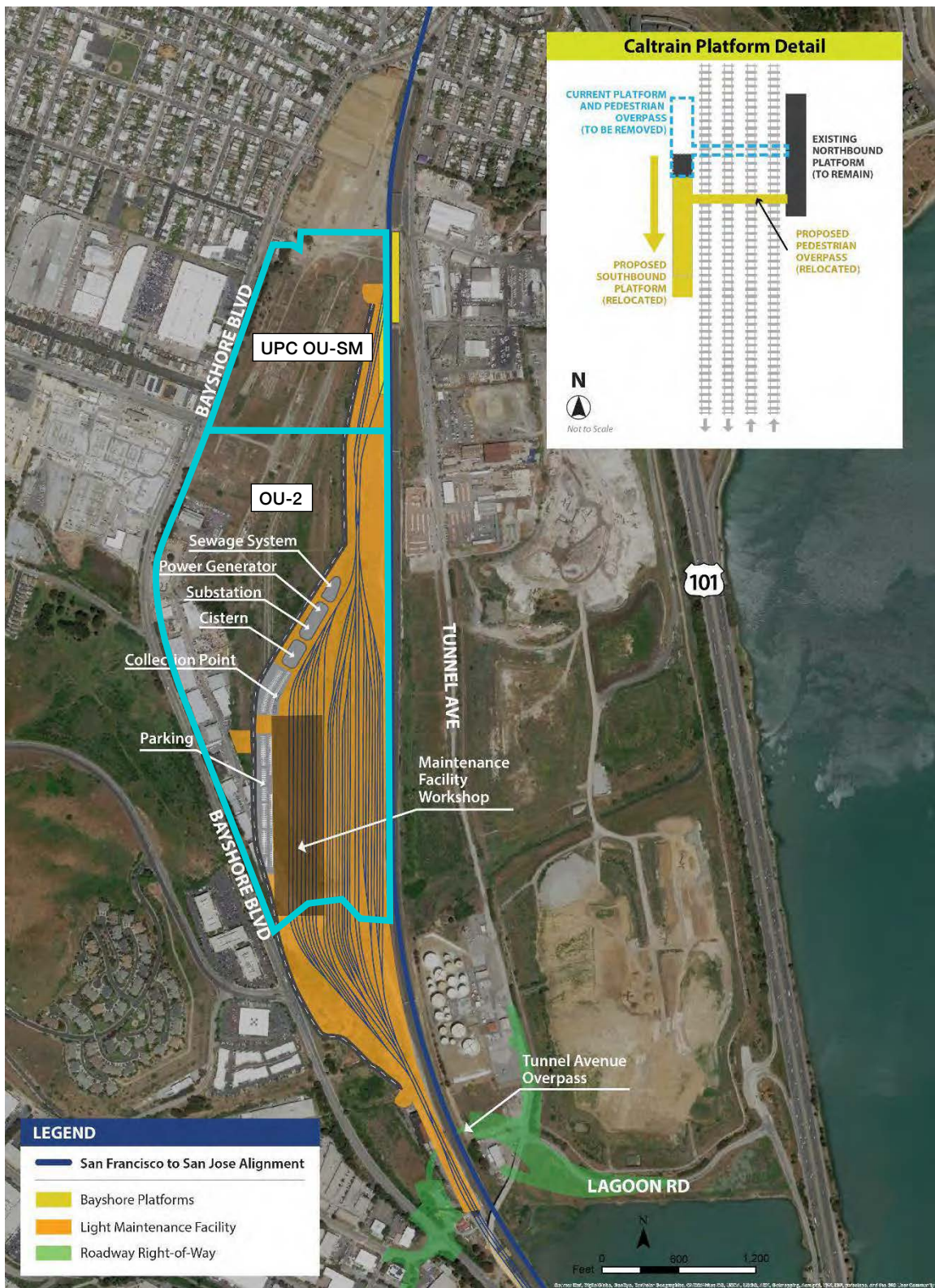
Geosyntec, 2020b. *Draft Final Feasibility Study/Remedial Action Plan, San Mateo County Portion of Universal Paragon Corporation Operable Unit (UPC OU-SM), Brisbane, California*, 9 June 2020.



**Figure EKI-1**

East Brisbane Light Maintenance Facility  
Brisbane Landfill Location





**Figure EKI-2**

West Brisbane Light Maintenance Facility  
UPC OU-SM and OU-2 Location

## Michelle Kriegman King, PhD President/Environmental Engineer/Chemist

Dr. King has over thirty-four years of experience and a background in environmental chemistry, geological engineering, and environmental engineering.

She specializes in working with clients and regulatory agencies to facilitate risk-based remedial actions for redevelopment of contaminated properties and former military bases, transfer of environmental cleanup responsibility at military bases, overseeing and performing human health risk assessments, performance of site assessments including vapor intrusion assessments, and evaluation of the fate and mobility of organic and inorganic chemicals in soil and aqueous environments. She also directs investigations of the vadose zone and aquifers containing volatile organic compounds (VOCs) and metals, evaluations of groundwater treatment systems, and assessments of the potential for chemical transformations. Dr. King plays a key role in evaluating chemical and physical data from the field and identifying the processes that potentially control the fate of the chemicals of concern in environmental systems.

### Relevant Experience

- **Evaluating and Addressing Lead-Impacted Soil in Park.** *East Bay, CA.* Currently, Dr. King is assisting the client to evaluate and address lead-impacted soil at a bay-front park that was historically used for disposal of battery casings. Dr. King developed a plan to assess the adequacy of the cap that was put in place more than 30 years ago and is overseeing the evaluation of potential remedial alternatives to repair the cap, including associated cost estimates. Dr. King also oversees EKI's stormwater monitoring and management activities at the park.
- **Acquisition, Advocacy, and Remediation Planning for PCB Site.** *East Bay, CA.* Dr. King is the principal-in-charge overseeing the environmental aspects of the acquisition and remediation planning for a 24-acre property impacted with polychlorinated biphenyls (PCBs) and VOCs. The project has required extensive coordination and advocacy with U.S. Environmental Protection Agency (U.S. EPA) Region 9 for Toxic Substances Control Act compliance and the California Department of Toxic Substances Control (DTSC) to develop a



#### Education

- Ph.D., Environmental Engineering, Stanford University, 1993
- M.S., Environmental Engineering, Stanford University, 1987
- B.S.E., Geological Engineering, Princeton University, 1985

#### Registrations/Certifications

- 40 Hour HAZWOPER Training Course
- Eight-hour Health and Safety Training Course for Supervisors

#### Affiliations

- Center for Creative Land Recycling (CCLR), Board Member
- Women in the Environment, Mentor

remediation plan that allows for the construction of a large warehouse and distribution center. Significant project challenges include the presence of single-family homes adjacent to the property, remediation of PCBs and lead from a historic structure planned for preservation, hot-spot excavations to be performed in tents, and implementation of a robust, health-protective air monitoring program due to the site location in an underserved community.

- **Remediation, Advocacy, and Assessments of Brownfield Redevelopments.** Dr. King is currently working on several Brownfield redevelopment projects in California to direct environmental due diligence followed by oversight of the site characterization, identification of chemicals of concern, estimation of human health risks, and development of proposed remedial actions or risk management measures that are appropriate and consistent with the planned future use of the specific sites. As part of these projects, Dr. King presents the technical arguments to the responsible party and the regulatory agencies to support an approach that will address identified environmental concerns in a cost-effective manner and within the timing and phasing of planned redevelopment. Many of these projects have required the performance of vapor intrusion assessments and evaluation of mitigation options.
- **Environmental Program Management for Development of Former Airfield.** *Northern California.* Program Manager. Dr. King is currently EKI's program manager for environmental activities associated with the reuse of approximately 1,000 acres at a former federal airfield. Dr. King oversaw the preparation of the Environmental Issues Management Plan (EIMP), which provides a framework to manage environmental concerns during design and construction for the reuse of the property. Dr. King serves as a liaison to communicate environmental issues among the key stakeholders, including the client, the regulatory agencies, NASA, the design team, and the general contractor. Dr. King also oversees EKI's technical approach and deliverables on the project. Primary environmental concerns include residual petroleum hydrocarbons and VOCs in soil, soil gas, and groundwater as well as PCBs and lead on the Hangar 1 structure. As part of this project, Dr. King has overseen the vapor intrusion assessment and planning for the vapor intrusion mitigation system as part of the retrofit and restoration of a large hangar.
- **Advocacy for Property Owners at Superfund Site.** *Northern California.* At a Superfund Site in Northern California, Dr. King represents a group of property owners that own approximately 85 percent of the commercial property within the footprint of the Superfund Site. Her role is to provide technical advocacy with regard to issues such as vapor intrusion assessment, monitoring, and mitigation and evaluation of alternate groundwater remedial actions. Dr. King, in conjunction with the owners and outside counsel, were successful at having U.S. EPA Region 9 modify the vapor intrusion remedy to address the property owner's interests. Separate from the owners' group, Dr. King also represents several of the commercial property owners at the Superfund Site and she has overseen vapor intrusion assessments and mitigation.
- **Complex Remediation of Groundwater and Soil for Repurposing of Former Industrial Site.** *San Francisco Bay Area, CA.* On behalf of a Brownfields developer, Dr. King managed the preparation of the human health risk assessment, feasibility study, and remedial action plan (FS/RAP) at an 86-acre, near-bay site with more than 100 years of industrial activity that resulted in the release of pyrite cinders and associated acid and metals leaching to soil and groundwater, VOCs in soil and groundwater, PCBs in soil, and thiocarbamate pesticides in groundwater. The FS/RAP was the first in California to specifically address contingencies for potential future sea level rise as part



of the remedy. Additionally, because the future land use at this site has not yet been defined, the FS/RAP provides a “menu” of potential remedial actions depending on the planned future land use, which is particularly significant for the vapor intrusion pathway. Dr. King oversaw the preparation and implementation of an accelerated PCB removal that was performed in consultation with U.S. EPA. In addition to significant technical challenges associated with the complex geochemistry at the site, Dr. King must consider and balance the interests of multiple stakeholders, including the client, the responsible party, DTSC, an active community group, and the insurer.

- **Remediation of Contaminated Groundwater under Single-Family Homes.** At a residential site impacted with benzene, methyl tert butyl ether (MTBE), and other petroleum hydrocarbons and fuel oxygenates in shallow groundwater, Dr. King oversaw the evaluation of potential human health risks and remediation options. The project faces unique challenges because the source area is located underneath single-family homes, and the fine-grained soils limit the effectiveness of common remediation technologies. A dual-phase extraction (DPE) system was installed at the site to remediate the source area and mitigate off-site migration of the chemicals of concern. In addition, sub-slab soil gas sampling was routinely performed to assess the vapor intrusion pathway. More recently, Dr. King has overseen the technical arguments to close the site under California’s Underground Storage Tank Low-Threat Closure Policy.
- **Advocacy for Safe Cleanup Levels in Former Asphalt Plant. Northern California.** Dr. King provided expert services on behalf of a property owner regarding the appropriate petroleum hydrocarbon cleanup levels to apply at a former asphalt plant site in Northern California. The facility started operations in the 1960s. The most recent tenant is responsible for the remediation; however, the cleanup implemented by the tenant is not consistent with unrestricted commercial or industrial land use. Dr. King advocated for cleanup levels that consider protection of human health and the environment.
- **Remediation in Historic Army Base – Project Management of Transfer of Cleanup Responsibilities. San Francisco, CA. Project Manager.** Dr. King supported the client in its negotiations with the U.S. Army for the transfer of \$100 million and cleanup responsibilities to the Trust. These negotiations included extensive side-bar discussions to obtain buy-in from key stakeholders, including the National Park Service, U.S. EPA Region 9, DTSC, and California Regional Water Quality Control Board (RWQCB) staff. As Project Manager, she oversaw the preparation of an alternative remedial action document and a series of detailed engineering cost estimates that were used as the basis of negotiations.
- **Remediation in Historic Army Base – Document Preparation and Contingency Planning. San Francisco, CA. Project Manager.** In addition to managing site investigations and the preparation of various engineering documents (e.g., feasibility studies, remedial action plans) for submittal to the DTSC, she also managed the development of a contingency plan to address contamination that may be encountered during construction or other subgrade activities. Dr. King oversaw the development of a land use control management report for the client to implement long-term risk management measures.
- **Remediation in Historic Army Base – Mitigation of Contamination from Closed Petroleum Tanks. San Francisco, CA. Project Manager.** Dr. King oversaw the development (a) of a database to

compile closure documentation for more than 400 petroleum tank sites and (b) a site-wide approach to address potential residual contamination along fuel distribution system pipelines that formerly extended more than 10 miles throughout the [Presidio] army base. Dr. King worked with the DTSC and a potential tenant to address vapor intrusion issues at a historical building.

- **Reuse Planning and Environmental Advocacy at Naval Site. Northern California.** Dr. King assisted a Northern California city with reuse planning and environmental advocacy associated with a 5,200-acre Navy site, which is designated a National Priorities List (NPL) site. As part of this project, Dr. King oversaw the preparation of the hazardous materials chapter of the Environmental Impact Report (EIR) for the city's reuse plan. She has prepared comment letters on the Navy's proposed cleanup plans and is participating in discussions with the Navy, U.S. EPA Region 9, DTSC, and the RWQCB regarding the adequacy of investigation and cleanup at the 430-acre "bunker city" site that is impacted by arsenic as well as other sites, including munitions disposal areas and firing ranges.
- **Risk Assessment for Former Mercury Mine in Residential Neighborhood. Northern California.** Dr. King oversaw the performance of a risk assessment and development of risk-based action levels at a former mercury mine that was active between 1890 and 1960. The mercury mine and associated tailings piles were located at a park in a residential neighborhood in Northern California. Dr. King evaluated available information on bioavailability of mercury to support the risk assessment and to advocate for a higher action level for mercury.
- **Evaluation of Remedial Actions and Preparation of Risk Mitigation at Former Aerospace Facility for Planned Reuse.** Dr. King evaluated the proposed remedial actions at a former aerospace facility impacted with chlorinated solvents relative to the planned reuse as a commercial office space, residential, and public open space. Dr. King evaluated the incremental costs to remediate the site in a manner consistent with the planned re-use. Dr. King was deposed as part of arbitration on this project regarding cost allocation. She also oversaw preparation of a risk management plan to identify mitigation measures for protection of human health during and after construction. The risk mitigation measures included procedures to address unknown contamination encountered during construction, protocols for designing utilities, foundations, and other below-grade structures, and a sub-slab depressurization system to prevent vapor intrusion of VOCs to indoor air.
- **Environmental Evaluation for Transfer of Cleanup Responsibility at Former Navy Site. Alaska.** Dr. King assisted a native-owned corporation with the evaluation of environmental conditions and transfer of cleanup responsibility at a former naval air facility in Alaska, an NPL site. As part of this work, Dr. King developed and advocated a risk-based cleanup approach consistent with planned residential and commercial/industrial reuse, including discussions with U.S. EPA Region 10.
- **Remediation of Former Manufactured Gas Plant Property. San Francisco, CA.** At a former manufactured gas plant property undergoing redevelopment, Dr. King managed the site remediation under the City and County of San Francisco's (CCSF) Maher Ordinance. A primary aspect of the development was the excavation and off-site disposal of approximately 100,000 cubic yards of soil. Dr. King oversaw negotiations with the CCSF and landfills to allow for soil characterization prior to excavation, thereby streamlining the excavation and disposal

- **Remediation of Former Army Field to Recreational Area.** *San Francisco, CA.* Dr. King managed the evaluation and review of environmental investigations and the remedial action selection process performed by the U.S. Army for a field at the Presidio of San Francisco. As part of this project, she has negotiated with the Army, DTSC, and U.S. EPA Region 9 to implement remedial actions that were consistent with the restoration of the field to wetlands. This area is now a major attraction and recreational area used by thousands of residents and visitors annually.
- **Risk Management Plans and Site Management Plans for Redevelopments.** *San Francisco Bay Area, CA.* At several sites in the San Francisco Bay Area undergoing redevelopment, Dr. King has managed and written site-specific risk management plans (RMPs) or site management plans (SMPs) that provide a framework to manage risks to human health and the environment due to chemicals in the soil and groundwater to be implemented as a core element of redevelopment work. She has worked closely with the DTSC and the RWQCB staff and local agencies on these projects, ultimately resulting in a more streamlined review process. Implementation of these plans allows remediation to occur concurrently and cost-effectively with construction. The plans also typically include protocols for long-term management of residual chemicals on-site post-construction.
- **Site-Specific Risk Assessments for Properties with Impacted Groundwater and Soil.** Dr. King has performed and evaluated risk assessments for properties containing petroleum hydrocarbons, chlorinated solvents, PCBs and metals in soil and groundwater. She has worked closely with RWQCB and DTSC staff regarding exposure pathway analysis, exposure assumptions, and calculation of remedial goals as part of many site-specific risk assessments.
- **Remediation of Groundwater and Soil adjacent to Creek.** *Northern California.* At a manufacturing facility in Northern California, Dr. King provided project oversight for the preparation of an interim remedial action plan for a solvent release site adjacent to a creek. She managed the remedial design and construction of the groundwater extraction and treatment system, which has effectively curtailed further migration of VOCs into the creek. A dual-phase extraction system was installed to reduce VOC concentrations in soil and groundwater in the identified source area.
- **Chemical Analysis of Landfill.** Project Scientist. Dr. King investigated the geology and groundwater chemistry of an industrial landfill containing sugar processing residues. By using the chemical equilibrium model, HYDRAQL, and chemical fingerprinting techniques, she demonstrated that the landfill had not impacted groundwater.
- **Analysis of Fate and Transport of VOCs to Determine Origin.** Project Scientist. At several sites, Dr. King has analyzed the fate and transport of VOCs in the vadose zone using the computer code, VLEACH. She has also used VLEACH to determine potential impacts of VOCs to groundwater. In one case, Dr. King used VLEACH to show that the VOCs detected in the vadose zone originated from an off-site groundwater source, rather than an on-site source.
- **Doctoral Thesis on Transformation of Pyrite and Ferrous Iron Bearing Minerals to Halogenated Organic Compounds.** *Stanford, CA.* Doctoral Student. For her doctoral thesis, Dr. King evaluated the ability of pyrite and ferrous iron bearing minerals to transform halogenated organic compounds. This research involved extensive laboratory analyses using gas chromatography, ion chromatography, and liquid scintillation counting to identify the transformation products of the

VOCs. Additionally, the near-surface technique of x-ray photoelectron spectroscopy was used to evaluate the reaction products on the mineral surfaces.

- **Evaluating Arsenic Release in Hydroelectric Lake. New Zealand.** Fulbright Scholar. As a Fulbright Scholar in New Zealand, Dr. King assessed the seasonal fate of arsenic in a hydroelectric lake that was contaminated by runoff from a geothermal field and geothermal power station effluent. Field and laboratory testing indicated that arsenic (III), the more toxic form of arsenic, was released from the sediments to the lake when the lake was stratified in the summer months. From her laboratory testing, she published protocols for the storage of natural water samples containing metals such as iron and arsenic.

## Presentations and Publications

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Moes, M. J, M. K. King and T. W. Kalinowski, 2012, Engineering Evaluation of Including Sub-Slab Liners in Active Vapor Intrusion Mitigation Systems, *Air & Waste Management Association Vapor Intrusion Conference Proceedings*, 3-4 October 2012.

Moes, M. J, M. K. King, C. A. Cuadrado, and T. W. Kalinowski, 2012, Quantitative Review of EPA's Proposed Vapor Intrusion Attenuation Factor for Exterior Soil Gas, and the Potential Impact on Brownfield Development, *Air & Waste Management Association Vapor Intrusion Conference Proceedings*, 3-4 October 2012.

Kriegman-King, M. R. and Reinhard, M., 1994, Transformation of Carbon Tetrachloride by Pyrite in Aqueous Systems: *Environ. Sci. Technol.*, v. 28, p. 692–700.

Kriegman-King, M. R. and Reinhard, M. 1994, *Abiotic Transformation of Carbon Tetrachloride at Mineral Surfaces*: EPA Report 600/SR-94/018 for R.S. Kerr Environmental Research Laboratory, Ada, Oklahoma.

Kriegman-King, M. R. and Reinhard, M., 1992, Transformation of Carbon Tetrachloride in the Presence of Sulfide, Biotite and Vermiculite: *Environ. Sci. Technol.*, v. 26, p. 2198–2206.

Kriegman-King, M. R. and Reinhard, M., 1991, Reduction of Hexachloroethane and Carbon Tetrachloride at Surfaces of Biotite, Vermiculite, Pyrite and Marcasite, in Baker, R., ed., *Organic Substances and Sediments in Water*, v. 2, Processes and Analytical: Lewis Publishers, Inc., Chelsea, MI, p. 349–364.

Aggett, J. and Kriegman, M. R., 1988, The Extent of Formation of Arsenic (III) in Sediment Interstitial Waters and its Release to Hypolimnetic Waters in Lake Ohakuri, *Water Res.*, v. 22, p. 407–411.

Aggett, J. and Kriegman, M. R., 1987, Preservation of Arsenic (III) and Arsenic (V) Samples in Natural Waters, *Analyst*, v. 112, p. 153–157.

King, M. K., October 2018, Practical Guide to the HERO Notes for Property Redevelopment, California Land Recycling Conference, Carson, CA.

King, M. K., Wuelfing, K., December 2016, Vapor Intrusion Assessment and Mitigation: A Corporate Approach to Addressing the Legacy of Silicon Valley: California Industrial Hygiene Council Seminar, San Diego, CA.

King, M. K., October 2014, Vapor Intrusion Coming to a Property Near You: 2014 Environmental Law Conference at Yosemite, Fish Camp, CA.

King, M. K., July 2014, Vapor Intrusion: Regulators and the Regulated Community, Bar Association of San Francisco Meeting, San Francisco, CA.

King, M. K., April 2011, Brownfields Development for Sensitive Uses: Key Elements to Allow for Long-Term Success: U.S. EPA's Brownfields 2011 Conference, Philadelphia, PA.

King, M. K., November 2009, Contingency Planning for Sea Level Rise in Feasibility Study/Remedial Action Plan: U.S. EPA's Brownfields 2009 Conference, New Orleans, LA.

King, M. K., January 2009, The Public Health Service Hospital at the Presidio of San Francisco: Where Landfills and Steep Slopes Meet Native Plant Restoration and Steep Slopes: National Brownfields Associations California Chapter Meeting, Sacramento, CA.

Kriegman-King, M. R. and Reinhard, M., March 28 –April 2, 1993, Reduction of Carbon Tetrachloride by Pyrite: Amer. Chem. Society Meeting, Denver, CO.

Kriegman-King, M. R. and Reinhard, M., April 5–10, 1992, Abiotic transformation of carbon tetrachloride in the presence of sulfide and mineral surfaces: Amer. Chem. Soc. Mtg., San Francisco, CA.

Kriegman, M. R., Curtis, G. P., and Reinhard, M., April 22–27, 1990, Transformations of carbon tetrachloride and hexachloroethane induced by natural sediments and minerals under anaerobic conditions: Amer. Chem. Soc. Mtg., Boston, MA.

Kriegman, M. R. and Reinhard, M., Sept. 10–15, 1989, Electron transfer reactions of haloaliphatic compounds and ferrous iron bearing minerals: Amer. Chem. Soc. Mtg., Miami, FL.



**Attachment Metis-D**

**Entech Northwest**

**Noise and Vibration**  
**Comments and Resumes**

**ENTECH NORTHWEST COMMENTS ON THE  
HIGH-SPEED RAIL SAN JOSE - SAN FRANCISCO DRAFT EIR/EIS NOISE AND VIBRATION TECHNICAL ANALYSIS**

Discipline	Comm ID #	REF DOCUMENT	PAGE NUMBER	REVIEW COMMENT
Noise & Vibration	NV0			
Noise & Vibration	NV1	Noise & Vibration Report	1 Introduction Page 1-1	The description of the two alternatives being analyzed should be summarized. Without the proper presentation of the scope of what is being analyzed in the Noise & Vibration Technical Report the reader is not able to ascertain whether all associated noise sources from the proposed project have been considered and evaluated. If the discussion of the overall HSR alignment is relevant, surely the description of what is being analyzed needs to be presented.
Noise & Vibration	NV2	Noise & Vibration Report	Section 1.1 Page 1-1	There is a background discussion presented for the HSR program which mentions operating speeds of up to 220 mph and train volume of 200 weekday trains. Clearly define why the San Francisco to San Jose Project Section (or other sections) will have limited speeds of 110 mph and fewer train passbys than other sections of the HSR line. Speeds have an influence on the level of noise and vibration impacts experienced along the corridor. For public disclosure, state what operational constraints limit this operating condition. The noise and vibration study needs to make a clear correlation between what is being analyzed operationally so if changes occur during acquisition of trains it is apparent whether noise and vibration impacts are accurately analyzed.
Noise & Vibration	NV3	Noise & Vibration Report	Section 1.1 Organization of this Technical Report Page 1-1	In the absence of a separate Appendix that provides the detailed noise and vibration calculations, mapping, and results, the reader is not able to confirm that the approach presented in the Noise & Vibration Technical Report follows FRA and FTA guidelines. These guidances are clear on the relevance of relating land use proximity to the proposed project. Omission of presenting the detailed information of the assumptions, calculations and associated mapping casts doubt on the thoroughness of the evaluation of impacts on surrounding land use. Further, no supporting quantitative documentation is provided to ascertain the severity of impacts, the assumptions that were used to develop the calculations and the basis for drawing the conclusions presented. The information is presented at a cursory level. A resident is not able to discern how their particular residence would be affected by the project or the relative change in noise and vibration levels that would be experienced for an individual land use.

Discipline	Comm ID #	REF DOCUMENT		REVIEW COMMENT
Noise & Vibration	NV4	Noise & Vibration Report	Section 2	<p>General comment. The noise and vibration analysis methodology presented in the report states that different methodology was used based on the types of trains utilized for the blended track. Assessing noise and vibration impacts is heavily dependent upon correlating the location of noise sources from the proposed project with identifying effected land uses. The mapping provided is at a cursory level that does not provide a measurable scale to disclose distances of land uses to proposed project effects. Further, the blended track triggers the need for two separate types of analyses that change how noise is evaluated at various land uses. FRA and FTA provide specific screening methodologies with each type of methodology to adequately assess impacts. Without the required measurable scaled mapping, it is difficult to discern whether all affected land uses have been evaluated for impacts. Clearly distinguish on the mapping which improvements are occurring as part of the Caltrain modernization program and what additional improvements will occur with HSR. A visual presentation at a scale that associates project improvements with land uses will assist the public in understanding the project changes on the existing environment. Indicate common design features between the alternatives on the associated mapping to correlate to the description of the common features. This level of disclosure is required per FRA guidance section 4.2.4 page 4-12, which states " Obtain scaled mapping and aerial photographs showing the project location and alternatives. A scale of 1 inch (in) = 200 or 400 ft is appropriate for the accuracy needed in the noise assessment. The size of the base map should be sufficient to show distances of at least 1,000 ft from the center of the alignment." The level of analysis detail of where the two methodologies were applied visually is not transparent in the document. This lack of disclosure of presenting the which leads to unreliability of the conclusions drawn in the report.</p>

Discipline	Comm ID #	REF DOCUMENT		REVIEW COMMENT
Noise & Vibration	NV5	Noise & Vibration Report	Section 3.1.3.2 Page 3 1	<p>The text states the US EPA noise standard may not apply to HSR trainsets and that the analysis will use a trainset similar to the European TSI standard used in Europe. The selection of the type of trainset and whether it can meet US EPA standards has a significant influence on the evaluation of impacts. US EPA establishes noise standards for trainsets to reduce impacts on nearby residences to protect the public health and welfare. Selection of a trainset that does not meet the US EPA noise standard would not be in compliance with US EPA standard. Documentation needs to be shown that confirms that HSR is exempt from complying with this noise standard. Further, as the selection of the HSR trainset has not been made, a commitment needs to be made on the performance standards that will be utilized when purchasing trainsets to ensure that what has been evaluated in the Noise &amp; Vibration Technical Report is an accurate assessment of impacts. Without specific performance measures that HSR commits to, the opportunity is left open for the selection of trainsets that will have impacts greater than what is disclosed. It is unreasonable to assume that the US will not have a noise standard for high speed trainsets, so existing US standards can be ignored. The Noise &amp; Vibration report needs to be updated to state why the selection of the trainset is reasonable for this analysis, how the European Standard compares to the EPA standard and why it is a reasonable standard to use for the study. Does the European standard provide stricter or more lenient noise standards? What performance measures can be provided to guide the acquisition of trainsets to meet the evaluation criteria analyzed in this report?</p>

Discipline	Comm ID #	REF DOCUMENT		REVIEW COMMENT
Noise & Vibration	NV6	Noise & Vibration Report	Section 3.1.3.3 Page 3-2	<p>The HSR would add additional horn noise with the project area. FTA and FRA guidances has identified horns and bells can generate high noise levels for nearby residents and are often sources of complaints. The Noise &amp; Vibration Report does not address how this horn noise will be mitigated. As a viable mitigation option, both FRA and FTA guidance state that "The final environmental document should discuss the main considerations in adopting the quiet zone including: the engineering feasibility, receptiveness of the local public authority, consultation with the railroad, preliminary cost estimates, and evidence of the planning and interagency coordination that has occurred to date." The Noise &amp; Vibration study lacks a discussion to address how horn noise will be mitigated. The Noise &amp; Vibration report should discuss what mitigation options have been presented to mitigate horn noise. Are quiet zones being incorporated as part of the IAMF measures? Are project design features being implemented to fast-track the use of quiet zones by the time the project is in operation to reduce noise levels? Does the analysis demonstrate the achievable noise level below the FRA standard with quiet zones? What areas of the project should implement quiet zones? Answers to these questions must be implemented in the Noise &amp; Vibration analysis to complete the detailed noise and vibration analysis. FTA and FRA guidance requires that if impacts are found mitigation measures must be evaluated. The Noise &amp; Vibration analysis of impacts and mitigation measures are incomplete in following established guidance procedures for evaluation.</p>
Noise & Vibration	NV7	Noise & Vibration Report	Section 3.1.5 Page 3-3	<p>The Noise &amp; Vibration Report presents the discussion of FHWA noise regulations as though a particular portion of the project will alter a state highway. It is misleading to present regulatory requirements that either are not applicable or not address in the analysis of impacts. An explanation needs to be provided to explain what analysis correlates to the discussion presented on FHWA Noise regulations? What highway is being impacted from the HSR? According to the project description provided, no state highways will be affected, however, the report needs to explain why these regulations are being presented.</p>



Discipline	Comm ID #	REF DOCUMENT		REVIEW COMMENT
Noise & Vibration	NV8	Noise & Vibration Report	Section 3.3 page 3-5 Paragraph 2, 5 sentence	Local policies and ordinances are presented in the Noise & Vibration report but it states that they are not applicable to HSR. Although these policies are not specifically apply to HSR, it does not absolve the HSR Noise & Vibration analysis from developing specific standards for the proposed project that apply to construction and operation of the project. Per FTA and FRA guidance chapter 7, project specific construction criteria should be developed to take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The construction analysis in the Noise & Vibration report fails to present what coordination was performed with the local cities to develop noise thresholds on an hourly basis and what mitigation measures will be implemented to reduce noise and vibration levels. In the absence of these standards, land uses will sustain high noise and vibration levels during construction without any tangible enforcement measures to mitigate them. Establishing thresholds would allow cities to utilize the disclosure of impacts from future projects to discern whether the existing or future land use would experience an unacceptable noise level that is incompatible with the existing noise environment. Coordination with the local cities to define these allowable increases and acceptable nighttime construction noise levels thresholds should occur per FRA and FTA guidance. Disclose what the local noise level criteria will be for the project area and how the project will evaluate compliance with these standards. FRA and FTA provide operational noise and vibration standards which are utilize in lieu of local standards and policies to express the increase over baseline levels and whether the increase in noise and vibration is significant. Significant increase should be mitigated to be consistent with local planning policies.
Noise & Vibration	NV9	Noise & Vibration Report	Section 4.1.2 page 4-3	The Noise & Vibration report shows inconsistencies in defining screening distances. Accurately identifying screening distances and all applicable land uses within the study area is critical to disclosing impacts from all noise sources. The proposed project has several types of noise sources that can be heard at greater distances than those directly adjacent to the rail line depending upon the type of existing environment. The Noise & Vibration report states the project area is a quiet suburban area. However, land uses within the San Francisco to South San Francisco Substation are located in an urban environment. The proper definition of the area should be corrected noted. The FRA and FTA have specific screening distances based on the type of noise source. If the screening distances is not properly established affected land uses may not be evaluated for impacts.
Noise & Vibration	NV10	Noise & Vibration Report	Section 4.1.2 page 4-3	What is defined as non-revenue trains? It is important to clarify the classification of trains because the FRA and FTA analysis has provided specific methodology for the train type. It is not clear if non-revenue trains were evaluated in the noise and vibration analysis.

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Noise & Vibration	NV11	Noise & Vibration Report	Section 4.1.2 page 4-3	Define whether there are a total of 144 revenue trains that are the expected per day at full build out. Tables in the other sections of the document (i.e. Table 5.5) show more than 144 trains between the HSR and Caltrain. Add a footnote to table 5.5, to clarify whether the total number of trains would not exceed a maximum of 144 or if HSR retains the option to increase above 144. Clarify the total number of train passbys that were actually analyzed. The train volume increases the noise and vibration levels within the project area. In the absence of this data, it is not clear whether all train volume was evaluated.
Noise & Vibration	NV12	Noise & Vibration Report	Section 4.1.3.2 page 4-3	Add a discussion identifying all of the noise sources that will be evaluated for the HSR project. Disclose to the public what methodologies between FTA and FRA guidance were utilized for the blended service, what noise descriptor will be used to present impacts, define what noise values will be added together to obtain a 24 hr. community noise level (Ldn) vs. which sources will show maximum noise levels for daytime and nighttime noise levels. It is difficult to discern, what noise levels will be experienced in-between train passbys, particularly in relation to LMF-generated noise. The methodology section needs to provide a correlation between the methodology, assumptions, approaches used by the analyst for this specific project. Describe what modifications were made from the standard methodology presented by FRA when design parameters are not available, what adjustments are made for speed, geology and propagation, track roughness and special trackwork and provide references that support these modifications. It is difficult to discern if the current analysis omitted critical assumptions that would play a factor in underestimating impacts.

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Noise & Vibration	NV13	Noise & Vibration Report	Section 4.1.3.2 page 4-6	<p>Based on the analysis year, the characteristics of operational conditions change. It is not clear whether all variables were included in the noise and vibration analysis for each analysis year, therefore provide the chance that impacts are understated. Clarify the noise and vibration criteria that was used to analyze the various noise sources of the project for each project year. Clearly define how the analysis used both FTA and FRA guidance for the Caltrain fleet. It should be disclosed how the Caltrain diesel trains were evaluated as part of the future project condition in 2029. What criteria was used to evaluate noise impacts from Caltrain EMU train passbys? Distinguish between the two types of EMU being used within the corridor. Later in the report in Table 5.5, it appears that there are two types of EMUs: HSR vs. Caltrain. It appears that EMU trains for the Caltrain do not apply to the FRA or FTA methodology. It is not clear from the methodology discussion how the distinction was made between the two types of trains. Also discuss how the maintenance yards were evaluated when high speed rail trains are not in operation. During the nighttime hours there will be periods where the maintenance yard will be the dominant noise source when train traffic subsides. Based on FTA guidance, noise levels for yards should be presented in Leq(h). Providing this maximum hourly Leq(h) will disclose to residence the maximum noise levels that will be generated when train traffic is not the dominant source. Although, noise levels from the maintenance yard will not persist at this level for a full a 24-hr period, the increase over ambient levels at nighttime would need to be disclosed to determine if significant increases occur.</p>

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Noise & Vibration	NV14	Noise & Vibration Report	Section 4.1.3.2 page 4-6	Relative noise project impacts are a component of the FRA and FTA evaluation of impacts. The report fails to provide a presentation of these impacts for each land use. Provide an explanation of how the analysis will utilize the relative noise criteria to evaluate impacts. This approach should also state how this will assist local cities in understanding how HSR will change noise levels and whether these noise levels will bring existing noise levels to unacceptable levels in relation to the State's noise compatibility guidelines used by most cities. Existing noise (generated by Caltrain) would change due to HSR project permitting Caltrain operations to occur at higher speeds due to track improvements needed for HST operations; therefore, the relative form of noise criteria must be used. The write up in this section provides a direct reference from FRA guidance, however, it should be disclosed how the analyst utilized the criteria to determine the existing and future project noise levels when evaluating the various design features of the project. The method used to determine the allowable increase in cumulative noise levels using Figure 4-3 and Figure 4-4 should be disclosed. Also describe what project noise sources will be included in deriving the project noise level. Further the explain whether other noise sources, such as horn noise, traffic increases, stationary facilities will be included in developing the total project noise level to determine the relative noise level increase. How will nighttime noise level be addressed to determine whether residences will have higher hourly increase in noise levels when the trains are not passing by and the maintenance yard is in operation?
Noise & Vibration	NV15	Noise & Vibration Report	Section 4.1.4 page 4-9	Provide scaled mapping that clearly shows the noise measurement locations along the alignment. Disclose how a particular noise measurement represents a particular cluster of land uses where impacts would be evaluated. Define what would be a sufficient number of monitoring locations to represent the various land uses within each community of the subsections. Specify the dominant noise sources during the noise measurement and how these measurements are still appropriate to represent the existing environment during the Notice of Preparation (2016). Also include all future and proposed land developments within the screening distances selected. The Noise & Vibration Report fails to disclose all affected land use impacts and whether the characterization of the existing environment is a representative baseline to evaluate project increases. It is unclear what the relative change in noise and vibration levels are for each affected land use, therefore the analysis is incomplete.
Noise & Vibration	NV16	Noise & Vibration Report	Section 4.1.5 page 4-11	Describe what assumptions were made to provide a conservative construction scenario to present impacts. The Noise & Vibration Report is unclear whether the impacts presented could be exceeded and how impacts will be mitigated to reduce unacceptable levels.

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Noise & Vibration	NV17	Noise & Vibration Report	Section 4.1.5.2 page 4-11	<p>The noise and vibration analysis fails to present the complete evaluation of how the FTA and FRA methodologies were applied to address all of the operational changes for each analysis year. The Noise &amp; Vibration report conclusions may underestimate the relative change in noise and vibration levels because assumptions might have been made that are not representative of planned operating conditions. Discuss what will be evaluated in each of the analysis years and the volume of train passby in a separate section. This section of the report should discuss the components on how noise from HSR will be evaluated. Table 4.4 shows inconsistent operational parameters for the HSR project. As stated earlier, the analysis should look at the relative change in noise level. Comparing projected noise levels between no build and build is not the recommended approach by FRA but is needed for analysis of CEQA impacts in relation to noise/land use compatibility. FRA states that the difference between existing and the with project condition should be compared. The with project conditions should include all sources of noise to determine the increase over existing. Make a clear distinction as to what is included in the with project condition and explain what sources of project noise are included in each analysis year. Are the comparisons being made only for train passbys? The noise and vibration measurements capture all sources of noise that contributed to the existing environment. Predictions for the future project condition should include all noise sources for the disclosure of all impacts. The project appears to receive some benefit in noise reduction in converting the remaining Caltrain trains to 100% EMU; however, Caltrain conversion to 100% EMU should not be included as part of the HSR project since it was previously addressed as part of Caltrain modernization in the PCEP EIR. Since the HSR project would allow for Caltrain speeds to increase, which may result in an increase in noise and vibration, impacts of such increase Caltrain speeds should be addressed as HSR impacts. The noise and vibration conclusions presented in the report are not reliable without the demonstration that a complete analysis was performed.</p>
Noise & Vibration	NV18	Noise & Vibration Report	Section 4.1.5.2 page 4-12	<p>Provide the specific operating constraints (track design or other engineering descriptions) that limits the speed of the EMU trains to a maximum speed of 110 mph. This needs to be disclosed to discern whether the analysis is evaluating a maximum condition. Reference the engineering drawings/specifications that set these parameters. In the absence of typing operational constraints with the analysis, there is no assurance that the conclusions presented are representative of the proposed project.</p>



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Noise & Vibration	NV19	Noise & Vibration Report	Section 4.1.5.2 page 4-13	Simplify the discussion at the top of this page. What is presented is not specific as to how the methodology applies to the proposed project. Introduce the equation that was utilized to evaluate noise from HSR trains, what data inputs were utilized from table 5.2 in the FRA guidance. State that aerodynamic noise was not included for speeds over 150 mph per guidance. Since the specific type of HSR EMU train has not been selected, discuss what assumptions were used and where they were obtained to defined total car length and number of cars. Check consistency between train length and car length. If each car is 84 feet for an eight-car train the total train length is 672 feet not 660 feet. Link assumptions to design drawings or documentation that these are maximum design conditions based on track design. Disclose whether noise levels presented are worst-case/conservative conditions. In the absence of tying operational constraints with the analysis, there is no assurance that the conclusions presented are representative of the proposed project.
Noise & Vibration	NV20	Noise & Vibration Report	Section 4.1.5.2 page 4-13	Why did the analysis vary speeds in the subsections of the project area? Wouldn't the maximum train speed provide the worst-case noise impacts? Are their particular sections within the subsections that limit train speed? If there are no physical constraints limiting speeds to those assumed in the report, the analysis might be underestimating impacts in areas where the train speed could exceed what was evaluated. Also verify footnote for this table. In section 6, there is not a listing for Authority 2019. The source should site the design plans or some reference document that shows these design speeds.
Noise & Vibration	NV21	Noise & Vibration Report	Section 4.1.5.2 page 4-15	Discuss the adjustments and associated formulas used to account for elevated, attenuation effects, noise barriers and special trackwork at the bottom of this page. Provide an input table that connects design features with noise formula inputs to affected receiver locations. The disclosure of this information will enhance the reliability of the conclusions presented. The FTA and FRA methodology presents several types of formulas and adjustments to account for variables within a projects features and it is unclear what specifically was used. Presenting this information in a clear, easy to follow format is needed to demonstrate how the guidance was applied to the project and demonstrates that a complete analysis was performed to disclose impacts.

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Noise & Vibration	NV22	Noise & Vibration Report	Section 4.1.5.2 page 4-16	Discuss how does the tunnel, elevated track and two track versus four track sections affect noise levels. If the track is elevated, how does it change the results of figure 4-6? The FTA states that are elevated tracks close to buildings have an effect on vibration. The Noise and Vibration Study mentions elevated but it is not clear where these occur for the project. Further, since the analysis mentions that ballast and tie track was assumed for the entire alignment, how were tunnels along the alignment addressed? FTA provides adjustments to the vibration formulas based on tunnel type. It is unclear whether the analysis provided the level of detail to account for specific adjustments identified by FTA and FRA that would affect noise and vibration levels. The oversimplification of ignoring required adjustments may underestimate impacts.
Noise & Vibration	NV23	Noise & Vibration Report	Section 4.1.5.2 page 4-16	Explain the relevance of Figure 4-6. It is an over simplification of how noise is decreased with distance; however, the key assumptions of adjustments to the project design are not accounted for which are critical to vibration levels. How is it helpful in analyzing project impacts? There are several FRA adjustments that need to be accounted for to represent the project design. Further, the HSR is only one component of the Ldn in the project area. Disclose all adjustments and inputs made to predict results. Without this information what is presented in the report appears to be understating impacts.
Noise & Vibration	NV24	Noise & Vibration Report	Section 4.1.5.2 page 4-17	The discussion on other rail traffic does not provide information on the methodology. The information presented is only operational conditions. Provide a discussion of how the noise from Caltrain train passbys were conducted. Provide assumptions to the formulas used to assess impacts from the EMU. Reference the discussion in the Caltrain PCEP Noise and Vibration report on assumptions. This document states that the proposed multi-level car train will have comparable dimensions to the existing Caltrain gallery car, possibly up to 90 ft length. As of the date of the Caltrain study there is no prototype of the proposed EMU. Discuss if there have been any updates of suitable trains to purchase and how was the noise evaluated without this data. Provide detail assumptions and methodology that was used to predict noise levels. Also the Caltrain study only analyzed maximum speeds of 79 mph. Disclose how the assessment of noise impacts will account for increased speeds of up to 110mph. There appears to be inconsistencies on how the methodology was applied for Caltrain trains based on the analysis year, operation assumptions, lack of train prototype. In the absence of how the analyst accounted for assumptions for an undefined train type and how the increase in speed from 79 to 110 mph would produce the same vibration impacts, creates doubt on whether impacts were completely evaluated. Therefore the analysis fails short of disclosing project impacts.

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Noise & Vibration	NV25	Noise & Vibration Report	Section 4.1.5.2 page 4-17	For freight operations which operate at night, was there an analysis done near the Baylands site to determine the maximum noise level along with the maintenance facility operations and the increase over existing nighttime levels to disclose impacts within the City of Brisbane? If the Ldn captures the nighttime increase from all noise sources, provide an explanation as to whether residences will experience noticeable increases at night from train and maintenance facility operations. Disclosure all of the noise sources that are apart of maintenance facility operations. The noise and vibration analysis provides an oversimplification of impacts of noise sources that would be the dominant noise source without train traffic because it assumes that train noise will always dominant, while in reality, maintenance activities operate 24-hours each day. The analysis does not describe the change in noise level over ambient conditions during the night time hours. Therefore, the noise and vibration analysis is inadequate in presenting all project impacts.
Noise & Vibration	NV26	Noise & Vibration Report	Section 4.1.5.2 page 4-19	The horn noise discussion provides an oversimplification of the methodology that was used and the associated impacts. In the absence of a detail description of the horn noise analysis and the results of the FRA horn noise model, the results have no basis for the conclusions presented. Explain how on-axis horn noise was derived. Explain how it was determined that the Caltrain horn noise is consistent with the minimum horn source level allowable by FRA regulations. How were ATOR heights determine for HSR and freight trains? FRA guidance shows a different height. Provide the results of the horn noise model in chapter 5. Chapter 4 section for horn noise should only provide the methodology used to calculate horn noise. Horn noise was apart of the existing noise baseline from measurements. How is horn noise factored into the Ldn noise level for future project impacts at affected receiver locations? Does the analysis on horn noise include all locations where horns operate (i.e. stations, at-grade crossings, etc.)?
Noise & Vibration	NV27	Noise & Vibration Report	Section 4.1.5.2 page 4-22	Explain and present the inputs used for station and maintenance noise in a table and/or an appendix to show assumptions. Discuss how a conservative worse-case scenario was developed based on a 24-hour operating schedule for the light maintenance facility. Determine the maximum hourly and Ldn values and compare them to existing noise levels for disclosure to the City of Brisbane. Determine the net increase in noise levels from the project when the train traffic tappers off at night. The noise and vibration analysis does not appear to provide a total Ldn value for all combined noise sources. The cursory level presentation of impacts in the results appears to only present the train noise. The text states that due to the trains being the dominant source of noise, the other noise sources are insignificant. However, the analysis is incomplete and should follow FTA and FRA guidance by addition the total project Ldn together at each land use to disclose impacts. The noise and vibration analysis needs to be updated to reflect this combined noise level for each analysis year.

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Noise & Vibration	NV28	Noise & Vibration Report	Section 4.1.5.2 page 4-23	Identify all of the receiver locations where Traction Power Facility noise would occur and the distances from these receivers in table form. Include in the table all existing and proposed receivers in the City of Brisbane including the Baylands Development, which needs to be recognized in the report's analysis. The noise and vibration analysis omits the evaluation of noise impacts on the Baylands Development. The TPF will be located near residential land uses that will have a direct line of sight of the facility. Disclose impacts that these residential land uses will experience for completeness.
Noise & Vibration	NV29	Noise & Vibration Report	Section 4.2.2 page 4-29	The analysis of Caltrain EMU lacks the supporting documentation to demonstrate that the noise and vibration analysis represents project impacts accurately. The text presents that the Caltrain EMUs do not fall within the FTA range of train options; however, it is unclear how the impacts presented would be reliable without an appropriate methodology of evaluation. Disclose information to the following questions to disclose how an undefined trainset was adequately evaluated to present impacts. What screening distance was used for existing diesel and future EMU Caltrain trains? Was the FTA procedure used to determine impacts? It is difficult to determine if all affected residential communities, both planned and developed, were included in the screening distance that identified affected land uses. For EMU trains what procedure was used to evaluate EMU as no prototype is available? Caltrain Noise and Vibration report states that the vibration would be identical to the diesel trains. What evidence supports that vibration levels would be equivalent? Caltrain trains increase in speed with the project. How is the increase in vibration accounted for?
Noise & Vibration	NV30	Noise & Vibration Report	Section 4.2.3.2 page 4-30	The FRA and FTA guidance states that airborne noise is usually the dominant problem from guideways at-grade. The report does not provide an analysis of airborne noise. Conclusions are being drawn in paragraph three without substantiated evidence or a reference to a source document. Provide evidence that ground-borne noise and not airborne noise for the project should be evaluated only. Provide a discussion of the geological conditions that support negligible airborne noise. Are there other sensitive receivers in Category 2 or 3 that would be sensitive to airborne noise? In the absence of supporting documentation that eliminates the need to analyze airborne noise, the noise and vibration analysis is incomplete and may underestimate impacts at nearby land uses.

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Noise & Vibration	NV31	Noise & Vibration Report	Section 4.2.3.2 page 4-31	<p>The FRA and FTA analysis presents guidance on how to evaluate increases above existing noise environment. However, the noise and vibration methodology description presents erroneous information that convolutes the methodology discussion. The unclear presentation of the methodology and the lack of detailed calculations and results by each land use limits the reliability of evaluating project increases as required for NEPA and CEQA. Present the selection of the applicable criteria used for assessing noise for the proposed project. It is not necessary to present a discussion on the infrequently use of trains in the rail corridor when the project exceeds 12 trains per day. Develop the discussion to be more specific to how FRA criteria was used to evaluate the HSR project. Discuss what components of the HSR project require reviewing whether existing vibration levels exceed or do not exceed the 72 VdB threshold at a particular residential land use, how project vibration levels increase and how shifting the existing tracks would affect the approach to evaluating impacts. Discuss what instances along the alignment was the criteria driven by increased train passbys vs. tracks being shifted.</p>
Noise & Vibration	NV32	Noise & Vibration Report	Section 4.2.4 page 4-35	<p>The noise and vibration analysis is utilizing monitoring data from a different study. There is no definitive evidence that the monitoring locations used were selected based on the effect land uses. Without correlating the soils report with the location of the vibration measurement locations, the validity of the selected sites can not be confirmed whether transfer mobility characteristics obtain are relevant to a particular land use. Transfer Mobility is a critical component in predicting how future vibration levels based on soil conditions. Disclose supporting documentation of how the soils report was utilized to determine the specific measurement locations for vibration. Describe what criteria was used to select these testing locations. This information would provide more reliance on the use of field data from other project purposes.</p>
Noise & Vibration	NV33	Noise & Vibration Report	Section 4.2.5.2 page 4-37	<p>Why was the Pendolino train selected as the most represented HSR train? Was this train selection based on defined design parameters? If so, what are the parameters that govern selecting this train type to predict maximum FDL levels? The variable of not having a defined HSR train selected can greatly affect the type of vibration levels expected in the project area. Further, there is a potential that a trainset would ultimately be selected and put into use that is not similar to what has been evaluated. In the absence of a commitment from HSR that the type of trainset to be put into service will meet the assumptions presented in the noise and vibration study, there is no reliance that noise and vibration impacts evaluated are applicable to the actual project.</p>



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Noise & Vibration	NV34	Noise & Vibration Report	Section 4.2.5.2 page 4-37	Paragraph 2 states that the reference speed for the Pendolino train is 150 mph. What features of the Pendolino train are similar to the design parameters the will be used to select a HSR train? There are other HSR trains listed in the FRA guidance that have higher FDLs than the Pendolino train. It is difficult to discern why this train was selected or a reference speed of 150 mph is appropriate for the San Francisco to San Jose segment. Disclose selection criteria so it is clear what HSR would commit to upon selection of the HSR trainset and that the analysis presented in the report is valid.
Noise & Vibration	NV35	Noise & Vibration Report	Section 4.2.5.2 page 4-37	Paragraph 2 that the FDL for Caltrain was provided at a reference speed of 50 mph. The maximum speed for the Caltrain is 79 mph. Was the field measurement data used to adjust for speed? It is difficult to discern the assumptions and basis for the FDL data. Therefore, it is unclear whether the calculations used to predicted vibration impacts from the proposed project are based on a conservative assumption or are valid for analysis of the project. Without clearly defined parameters used for equipment selection, there is the potential that future HSR operations would exceed the impacts that were analyzed if the actual trains used do not meet the assumption used for analysis. Disclose how the analysis was developed to provide a conservative case for evaluating impacts. Without establishing a conservative assumption for the analysis of Caltrain, the noise and vibration study may underestimate impacts.

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Noise & Vibration	NV36	Noise & Vibration Report	Section 4.2.5.2 page 4-37	<p>Paragraph 2 states that Caltrain FDL and HSR FDL are similar below 31.5 Hz, while above 100 Hz Caltrain FDL peaks which would result in a higher vibration level. It is difficult to discern if the FDL for the HSR train was adjusted by field measurements or if a factor of 5 VdB was applied to account for track wear. The text references Figure 4-11, but it does not state if this information was based on field data or FTA guidance. Per FRA guidance, force density is inferred from measurements of transfer mobility and train vibration at the same site. It is important to disclose the basis for calculating FDL for all train passbys to determine if vibration levels presented are conservative or understated. It appears that Figure 9-5 of the FRA guidance was used to develop the graph for the Pendolino train for Figure 4-11 in the report. If this is the case, this information does not correlate to the field measurements that influence how vibration propagations through the existing geology. It appears the FDL information was developed for Caltrain existing trains since the speed is based on 50mph. However, it appears that the Caltrain FDL is under estimated (not based on 79 mph max speed) and the HSR data presented is not specific to our project. Disclose the methodology, assumptions and conclusions to how the FDL was developed. It is difficult to discern whether vibration impacts are accurately reported. There is a possibility that Caltrain vibration impacts are understated and HSR vibration impacts are unreliable because it does not take into account field measured transfer mobility. In the absence of performance standards that commit the type of trainset selected, assumptions made for speed, force density and propagation effects are not connected to the proposed project, therefore underestimating impacts.</p>
Noise & Vibration	NV37	Noise & Vibration Report	Section 4.2.5.2 page 4-37	<p>Comment NV32 applies also to the evaluation of the FDL of EMUs for Caltrain. It is assumed that future EMUs will have the same vibration as the existing diesel trains. Provide information to substantiate that this assumption is conservative. The FDL appears to be based on a lower speed in this study. The Caltrain study shows a maximum speed of 79 mph that was used to evaluate impacts. It is difficult to discern whether impacts are understated with the change in FDL information that was provided for the existing diesel trains. Further, Caltrain will operation trains at a maximum speed of 110mph. Disclose how this was accounted for in the analysis. The validity of the noise and vibration analysis is dependent upon making assumptions that represent the actual conditions of the project. Variance from these assumptions upon equipment purchase makes the conclusions invalidate and noise and vibration impacts are unknown.</p>

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Noise & Vibration	NV38	Noise & Vibration Report	Section 4.2.5.2 page 4-37	The last sentence states that the FDL spectra was adjusted for speed using the formula listed. However, the speeds do not appear to be adjust to the speeds of 110 for HSR or 79mph and 100 mph for Caltrain. Update the discussion and analysis to present maximum speed information. The noise and vibration analysis appears to make an oversimplification of how speeds will affect project impacts. Without supporting documentation that demonstrates that assuming existing diesel EMUs are equivalent to electric EMUs regardless of speed changes, the noise and vibration analysis does no assess all impacts from the proposed project.
Noise & Vibration	NV39	Noise & Vibration Report	Section 4.2.5.2 page 4-39	There are inconsistencies in train length. Fifth paragraph shows 600 feet but 660 feet was mentioned on page 4-13. Double check assumptions that are used and update calculations and discussions where appropriate. Please note comment NV19 presented earlier in this comment log. Accurate train length affects the predictive results of future impacts. The noise and vibration analysis should be updated to correct inconsistencies so full impacts can be disclosed.
Noise & Vibration	NV40	Noise & Vibration Report	Section 4.2.5.2 page 4-41	Provide a section discussing the approach to mitigating increases in operational and vibration noise over existing conditions. In the absence of presenting this project-specific approach, the noise and vibration analysis lacks the completeness to access impacts on the existing environment with established FTA and FRA criteria. The noise and vibration analysis lacks sufficient detail to disclose project impacts.
Noise & Vibration	NV41	Noise & Vibration Report	Section 5.1.1 page 5-1	It is difficult to discern the areas that were evaluated for impacts and the types of land uses associated with these locations. Disclose the clusters that were used to group areas where measurements were not taken with a nearby measurement. Present a discussion by subsection of the receivers that were evaluated, the location identified by cluster and associated measurement location, existing dominate noise source and associated mapping to a scale that corresponds to the description of a particular cluster/receiver location. Per FRA guidance, GIS tools should be used to depict the appropriate level of detail to disclose areas of evaluation. In the absence of presenting the information in accordance to FTA and FRA guidance, the noise and vibration analysis is not clear whether all affected land uses were evaluated for impacts.

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Noise & Vibration	NV42	Noise & Vibration Report	Section 5.1.1 page 5-2 through 5-5	Update all mapping as discussed in comment NV41 to a scale that residents and cities along the route could use to determine the extent to which they might be impacted. See FRA Guidance for information on the level of detail required to be presented ( see page 5-31 of guidance). The figures provided are only useful to show that all of the monitoring locations were adjacent to the alignment. However, it is difficult to discern what general locations were next to design features or where tracks shifted closer to receivers. It is unclear whether these measurements are near all affected existing and proposed land uses in the area. Further, the type of vibration or noise measurement is not depicted on the map. Various measurements were conducted over several days while some vibration measurements were taken simultaneously at one location. However, the map does not provide this level of detail. Update accordingly. It is important to disclose this information as the existing noise environment may be under or overstated in certain areas if an adequate sampling of measurements were not taken. In the absence of linking clusters to associated receivers and land uses, the noise and vibration is incomplete in following FRA and FTA guidance in assessing impacts at affected land uses.
Noise & Vibration	NV42	Noise & Vibration Report	Section 5.1.1 page 5-6	The summary of the existing land uses affected by the project are presented at such a high level until it is not clear by subsection if all affected land uses were identified, as discussed earlier in comment NV41. Disclose the level of detail previously discussed so it can be determine whether all existing and proposed developments have been assessed for future impacts and how the existing noise environment will change. In the absence of providing each land use that was evaluated, the reliability that the noise and vibration analysis evaluated all affected land uses as per FTA and FRA guidance is questionable.
Noise & Vibration	NV43	Noise & Vibration Report	Section 5.1.1 page 5-6	Table 5-1 lists land use types but does not correlate the FTA / FRA category type (i.e. 1, 2 or 3) to the associated measurement. Further, it should be indicated what the dominate source of noise was during the measurement and the distance from the trains to confirm whether there is adequate coverage of receivers identified within the screening distance presented. In the absence of this information, the reliability of the noise and vibration analysis evaluated all affected land uses as per FTA and FRA guidance is questionable. Further, FTA and FRA criteria can not be applied to evaluate impacts.

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Noise & Vibration	NV44	Noise & Vibration Report	Section 5.1.1 page 5-7	It is not clear for the subsection San Francisco to South San Francisco whether adjacent measurements are representative of the Baylands area and applicable to its development. Disclose if measurements were performed in this area and what are the associated noise levels. It appears that the Ldn noise level at 50 Joy Avenue, Brisbane, CA is high (74Ldn) with the loudest hourly Leq value being 64 Leq. In the absence of this information, the noise and vibration analysis omits a specific area of land uses affected by the project. The disclosure of noise and vibration impacts is incomplete.
Noise & Vibration	NV45	Noise & Vibration Report	Section 5.1.1 page 5-7	Confirm that the measurement data presented is still representative of baeline noise levels in 2016, the date of the Notice of Preparation. The noise and vibration data is over 10 years old. In the absence of explaining why 10 year old data is still representative of baseline conditions limits the reliability of the field data used in the study to evaluate relative impacts.
Noise & Vibration	NV46	Noise & Vibration Report	Section 5.1.1 page 5-9	Provide a more extensive discussion of the characterization of the existing environment that discusses which receivers are directly adjacent to the tracks and have a direct line of site but are further away. Explain the variation in the ranges of the noise levels and where are the highest noise levels are experienced. In the absence of this information, it is unclear whether the geographic features of the project area have been accounted for. Land uses that are not adjacent to the project area that have unobstructed views to the project may experience significant noise impacts. The noise and vibration analysis is incomplete without a discussion of these land uses and their predicted levels.



**Education**

B.S Civil Engineering, 1992

**Years Experience**

27

**Years with the Firm**

25

**Value Added to Team**

- Expertise in applying FTA, FHWA guidelines to evaluate noise, air quality, GHG, energy impacts
- Worked on a variety of transit-oriented development projects
- Transit specific project experience through existing on-call SANDAG environmental compliance contract

**Michelle A. Jones****Principal Noise Analyst**

Ms. Jones has over twenty-five years of diversified experience performing and managing noise impact analyses in support of CEQA/NEPA documentation for transit projects for SANDAG, Sound Transit, Riverside Transit Agency, and LA Metro. Ms. Jones brings an understanding of how to perform and manage air quality, GHG, noise/vibration studies that are compliant with applicable FTA and FHWA modeling and analysis development.

**Project Experience*****LA Metro On-Call Environmental Compliance Contract (2012 to present)*****LA Metro Harbor Transitway Bus Station, Mitigation Verification Study Los Angeles, CA**

Ms. Jones, the Principal Engineer, lead the environmental study on the LA Metro Harbor Transitway Bus Station. This study was completed to document the abatement achieved from the mitigation measures recommended for the bus station platform located between the northbound and southbound travel lanes

of Interstate 110 in the City of Los Angeles. Ms. Jones was responsible for managing the development of a work plan created to outline the approach taken to document the effectiveness of the mitigation measures. The work plan consisted of the methodology used to perform the environmental verification study. Ms. Jones supervised the field survey of the proposed project to identify and characterize the existing environment. Ms. Jones supervised the development of the technical memorandum and presented the results of the study and ensured the timely submittal of the memo.

**LA Metro Blue Line Crossover Project**

Ms. Jones, Project Manager, prepared a noise memorandum to support CEQA and NEPA environmental clearance. The noise memo determined the potential noise impacts from the construction and operation of new track crossovers, bungalows, and pedestrian gates at nearby sensitive noise receivers. Existing measurements were taken to identify current noise levels over a long-term (24-hour) and short-term (15-minutes) period, at a reference distance of 50 feet from the edge of the nearest rail track to obtain train pass by sound levels. Construction impacts were also assessed to determine. A qualitative analysis was performed to determine the potential short-term impacts from the construction of the bungalow and the pedestrian gates using noise propagation formulas

**LA Metro Green and Gold Line Pilot Study**

Ms. Jones, Project Manager, lead the environmental study to evaluate abatement options at freeway stations as part of a pilot feasibility study. The noise abatement study determined the existing noise environment at each station ranked the stations based on the highest noise level, and assess the array of noise abatement options that were cost-effective in providing the greatest reduction in noise levels at each of the patron platforms.

***SANDAG On-Call Environmental Contract (2009 to present)*****Batiquitos Double Track Project**

Entech is performing the noise and vibration analysis for the Batiquitos Lagoon Double-Track Project (Project) located at the border between the City of Carlsbad and the City of Encinitas along the 351-mile Los Angeles-San Diego-San Luis Obispo (LOSSAN) rail corridor which serves as a vital link for passenger and freight movements in the San Diego region. The project proposed to increase the reliability, operational flexibility, and capacity of the LOSSAN rail corridor to add passenger and freight rail service to meet future transportation demands. Entech prepared the noise and vibration technical report is for the San Diego Association of Governments (SANDAG) to assess the potential noise and vibration impacts from construction and operation of the project and to identify mitigation measures and design considerations necessary for compliance with local, state, and federal regulations of noise and vibration for rail systems.

**Sorrento to Miramar Curve Straightening and Double Track Project San Diego, CA**

As the Principal Engineer, Ms. Jones was responsible for managing the delivery of the updated environmental impact study and final development for the assessment of future impacts to support the design team. Ms. Jones lead the effort to develop a technical, environmental impact report that included an analysis of the potential impacts generated from the operational and construction of the proposed project. Potential impacts generated from the operation and construction of the proposed project were analyzed utilizing FTA guidance for environmental impacts. Michelle developed the methodology that was used to assess future impacts near sensitive habitats and receivers. Future predicted environmental impacts were compared to applicable federal, state, and local standards to assess impacts and mitigation measures.

**Springs/Peñasquitos Transit Center, San Diego, CA**

Ms. Jones was responsible for managing the delivery of the environmental impact analysis to support the development of the Sabre Springs/Peñasquitos Transit Center project. She was responsible for developing the work plan for the project, which outlined the methodology and appropriate level of analysis required to demonstrate compliance with CEQA and NEPA requirements. Ms. Jones lead the effort in conducting environmental surveys in the Project study area to identify locations of sensitive receivers, identifying other nearby projects undergoing simultaneous construction, comparing effects with land use compatibility standards and applicable standards, and assigning level of significance in accordance with CEQA environmental checklist and other regulatory requirements.

**Anaheim Regional Transportation Intermodal Center (ARTIC) Anaheim, CA**

Ms. Jones was responsible for managing the delivery of an environmental impact report to support the development of the Anaheim Regional Transportation Intermodal Center project. She was responsible for developing the work plan to execute the work in accordance with NEPA and CEQA requirements to expedite approval of the environmental impact report. Michelle was responsible for defining the selection of sensitive receptors, field survey preparations to assess the existing project area, developing the methodology used to analyze environmental impacts generated from the construction and operation of the proposed project, and determining potential environmental impacts in accordance with applicable requirements and standards. She reviewed predictive modeling results and calculations performed to estimate potential environmental impacts for the relocation of the existing transit center and the final technical, environmental impact report summarizing the results of the studies.

**Caltrans District 11 On-call Noise Contract, San Diego, CA**

Since 2003 to present, Ms. Jones has provided Caltrans District 11 with noise support under three multiple-year On-call Noise Agreements in partnership with Parsons. Task orders under these contracts included preparing several noise analyses to support Caltrans' noise group, including conducting field measurements, performing TNM modeling to analyze traffic impacts and abatement measures, developing discipline reports following the Caltrans Environmental Procedures Manual. Ms. Jones has been successful in expediting the review and approval of the technical analysis and noise abatement measures for multiple projects throughout the District 11.

**Attachment Metis-E**

# **Ten Over Studio**

**Proposed Fire Station Relocation Design  
Comments and Resumes**



# DRAFT ANALYSIS AND REVIEW OF BRISBANE FIRE STATION IMPACTS

## CALIFORNIA HIGH SPEED RAIL AUTHORITY

### SAN FRANCISCO TO SAN JOSE PROJECT SECTION

#### DRAFT EIR/EIS

September 5, 2020

#### **SECTION 1 – IDENTIFYING THE EXISTING OPERATIONS AND OVERALL SIZE OF THE EXISTING FIRE STATION NO. 81**

##### **EXISTING FIRE STATION BUILDING**

This is an one company fire station with staffing of four firefighters for the North County Fire Authority, which serves the City of Brisbane. The existing Brisbane Fire Station 81 is located at Bayshore Blvd and the Valley Drive intersection. The one story, 7,700 SF station has two drive through apparatus bays, with 18 turnout gear lockers, a clean-up sink, washer and dryer for house laundry, and a hose storage rack to accommodate one complement of synthetic hose along the sides of the bays.

The apparatus bays have direct tailpipe exhaust using the Plymo Vent system. There are 12 pieces of exercise equipment that are located on the apparatus bay floor as well.

There are separate spaces for medical storage, janitor closet, and the shop. There is a pre-empt traffic signal button in the apparatus bays to control the traffic signal at Valley Drive. Battery charging is placed in several locations throughout the station. There is no SCBA compressor, engineer lockers, or a turnout washer.

In the firefighter living quarters there is a combined dayroom, dining and kitchen, six firefighter bunk rooms, and three gender neutral restrooms. There are two beds and one desk in each bunk room. There are 18 personnel wardrobe lockers along the hallway immediately outside the bunk rooms for personal gear and uniforms.

There is a separate Dayroom that accommodates 5 recliners with a TV and bookcase. The dining room table accommodates 5 chairs and a kitchen with one range and one refrigerator. There is one small storage closet.

The administrative offices include two private offices and an open work area for firefighters that are along an open hallway. There is an existing secured reception vestibule with an ADA compliant restroom and a training classroom that can seat 12 people comfortably. There is no separate space for file cabinets, mailboxes, a copier/printer, or office supplies storage.

##### **EXISTING FIRE STATION SITE**

The site is approximately 94,000 SF with ample visitor and personnel parking along the street side of the site. The front apron of the station directly aligns the Apparatus Bays with the Valley Drive intersection making response times very efficient. There is a short depth rear apron at the backside of the Apparatus Bays.

Since the apparatus bays store 4 vehicles in addition to the fitness equipment, the fire department does not have drive through access in this facility. There are two ways to access the rear of the site. There is a private road that connects from Bayshore Blvd just north of the Old County Road intersection. There is also a secured drive from the fire station parking lot



There is a patio space immediately adjacent to the kitchen space and another fenced area with the existing emergency generator. There are a number of antennas and dishes mounted on the roof at the rear of the station. There is no on-site fueling.

The Fire Authority is using the land to the south of the existing station as a training facility. The training area has (2) two-story metal containers and (1) one story metal container for search and rescue, hose, ladder, and forceable entry training. There is also a fire training command trailer, a metal container for police, and a metal container for public works being stored on the property as well.

## **SECTION 2 – DEFINING THE OPERATIONAL NEEDS AND OVERALL SIZE OF THE REPLACEMENT FIRE STATION NO. 81**

The City of Brisbane and the North County Fire Authority have analyzed the current operational requirements at the existing station to help determine the size of the replacement fire station. The City and Fire Authority is taking a “like for like” replacement strategy for the design of the new station, which would result in a replacement station sized at 7,700 SF. However, the new facility must meet all of the current building codes, the California Essential Services Act, the American with Disabilities Act, NFPA, and OSHA requirements. Once all of these code and regulatory factors are taken into account, ***the replacement station will need to be approximately 8,600 to 9,000 SF.***

We have developed the ***Exhibit TOS -3*** to demonstrate the basic and potential layout of the replacement fire station

### **APPARATUS BAYS**

The existing apparatus bays are drive through and the new apparatus bays should be as well. To fit all of the existing fire engines in the new bays with proper safety clearances on all sides of each vehicle, we have determined that the apparatus bays should be approximately 40'-0" wide x 70'-0" long, which equates to a space of approximately 1,400 SF. The following are the existing fire apparatus that are currently in active use at Station 81.

- Front Line, Type 1 Engine. 10'-0" wide x 10'-1" high x 29'-6" long
- Reserve, Type 1 Engine. 10'-0" wide x 9'-0" high x 28'-0" long
- Brush Rig, Type 6. 9'-6" wide x 8'-0" high x 25'-0" long
- OES State, Type 1 Engine.

Fire personnel conduct daily engine and equipment checks at the beginning of each shift. It is important to have safe working space in between the parked apparatus. Fire personnel open all compartment doors on each side of the engines to unload stored equipment to check that each tool is in good working order. The daily engine checks can be checked within the apparatus bays or on the front or rear aprons.

### **APPARATUS SUPPORT SPACES**

There are a number of new suppression support spaces to accommodate the existing fire suppression operations. Current building codes, NFPA and OSHA requirements no longer allow some of these specialized functions to be within the apparatus bays and must be in separated rooms.

### **TURNOUT ROOM**

Per NFPA requirements, a separate and dedicated turnout room is required to store the fire personnel turnout gear, that is currently stored along the side of the apparatus bays. Storage within the apparatus bays is no longer a viable or code compliant solution. The capacity for turnout gear lockers aligns with the number of assigned personnel. Station 81 has the capacity to have six assigned personnel on duty per shift. There are three shifts (A, B, and C), so the number of turnout lockers needed is 18.





Turnout gear is PPE for fire personnel, which includes two sets pairs of pants and jackets along with boots and a helmet. There is also gear bags that are stored for each firefighter in case they are called away to serve an emergency that are outside of the North County Fire Authority's district.

The dedicated space is required to be continuously and mechanically ventilated to meet NFPA. The new turnout room will accommodate 18 turnout lockers and will be approximately 180 SF. This is a new space to meet current code requirements. The placement of this specific space should be immediately adjacent to the apparatus bays.

#### **CLEAN UP ROOM**

Per OSHA requirements, a separate and dedicated clean-up room is required to provide proper decontamination of personnel and fire equipment upon return from each call out and incident. This space will have a shower for the decontamination cleaning firefighter personnel and large items. An emergency eye wash could be included in this room near the shower component

A two compartment clean up sink with double drainboards will be provided with hands free faucets. The hands free operations can be achieved by an automatic sensor at the plumbing fixture and/or with foot pedals. This is a new space should be approximately 120 SF to meet current code requirements and best practices for "hot zones"

Dedicated restrooms with showers could be added at or immediately adjacent to the Clean Up Room to provide a space where fire personnel can completely decontamination after an emergency call before heading back into the firefighter living quarters and administrative spaces. This strategy will reduce the possible transmission of contaminates and viruses throughout the station.

#### **SHOP**

The existing shop space seems to be undersized and a recommendation to increase the size of the shop would allow the fire personnel to improve on their work efficiencies within that space. A new and slightly larger space with room to store a tool chest, have a longer length of workbench for projects, and for the checking and maintaining of tools.

As fire personnel conduct daily equipment checks at the beginning of each shift, the shop space is utilized to work on regular maintenance and minor repairs to the equipment such as axes, chain saws, and other firefighting tools.

This is a new space should be approximately 120 SF to meet best practices.

#### **MEDICAL STORAGE**

The existing Medical Storage room seems to be about the right size, though a bit tight. The recommendation to increase the size of the medical storage slightly to allow fire personnel space to work more efficiency within the room. This is a new and slightly larger space.

This is a new space should be approximately 100 SF to meet best practices.

#### **FIREFIGHTER LIVING AND SLEEPING QUARTERS**

The number of new living spaces will match the existing number, though the overall SF of these spaces will increase to meet the current building codes.



### **KITCHEN, DINING AND DAYROOM**

We recommend providing a combined and open concept for the kitchen, dining and dayroom. These spaces will be sized to accommodate a one company station with six personnel. There will be six chairs in the dayroom and at the dining room table. We anticipate providing one range with an overhead vent hood, one large sink, one dishwasher, and two refrigerators. There should be counter space for a microwave, coffee maker, and other small appliances.

Upper and base cabinetry to store dry goods, supplies, utensils, plates, glassware, pots, and pans for cooking, cleaning, and eating. A connection to an outdoor patio is desired to match the existing facility.

It is anticipated that this new combined space should be approximately 250 to 300 SF to meet best practices and ADA compliance

### **FIREFIGHTER BUNK ROOMS**

We recommend providing six gender neutral bunk rooms with two beds, three lockers and one desk. These new spaces will replace the existing six bunk rooms. The existing wardrobe lockers currently are located in the hallway at the existing station. We recommend pulling these lockers into the bunk rooms to keep the hallways clear as the hallway is the response path to the apparatus bays.

These bunk rooms need to be placed on an exterior wall to accommodate a window that will be used as the secondary means of egress to meet the building code requirements for sleeping rooms. The walls in between each sleeping room will be ½ hour rated per the building code for an R-2 occupancy.

Each new bunk room should be approximately 168 SF to meet best practices. To meet ADA requirements, we will design one of the bunk rooms to have the additional clearances needed to meet the Americans with Disabilities Act.

### **FIREFIGHTER RESTROOMS**

We recommend providing three gender neutral restrooms with one sink, one toilet and one shower. These new restroom spaces will replace the existing three restrooms.

Each new restroom should be approximately 80 SF to 120 SF to meet best practices. To meet ADA requirements, we will design one of the restrooms to have the additional clearances needed to meet the Americans with Disabilities Act.

### **LAUNDRY AND JANITOR ROOM**

We recommend a separate janitor mop sink with storage for cleaning supplies and tools along with space for a residential grade washer and dryer.

This is a new space should be approximately 120 SF to meet best practices.

### **EXERCISE ROOM**

We recommend a separate and dedicated exercise room with proper ventilation for the users. Overhead fans and operable doors may be incorporated into the design of the exercise room to promote air movement. There are 12 existing pieces of exercise equipment, which will need to be moved to the new facility. The FD has identified that there are rowing machines, treadmills, elliptical, stair stepper, and weights.

This is a new space should be approximately 400 SF to provide safe space in between each piece of equipment.



## ADMINISTRATION OFFICES

The number of new administrative spaces remains the same as the existing facility, though we believe the overall SF of these spaces will increase to meet the current building codes.

### **ENTRY VESTIBULE AND RECEPTION AREA**

There is a dedicated and secured entry vestibule to welcome and control access visitors at the existing station. The new entry vestibule should be placed to welcome visitors and connect to a new reception area. The design could incorporate the firefighter work area to function as the reception for the station. We recommend providing a combined and reception and firefighter work area for space efficiency.

This is a new combined space should be approximately 200 SF to be ADA compliant.

### **CAPTAIN'S OFFICE**

We recommend providing one shared office space for 3 captains (one captain per shift). Each captain would get their own desk within this space. As there is only one captain on duty per shift, this would be an efficient space solution instead of building each captain their own office. There are currently 2 offices.

This is a new shared office space should be approximately 200 to 250 SF

### **FIREFIGHTER'S WORK AREA**

We recommend providing an open work area for the firefighters to accommodate 3 people. This area could be open to or immediately adjacent to the entry vestibule. It is best that this space not be within circulation space like the existing station.

A small library space can be created here for fire personnel use. This is a new firefighter work area should be approximately 100 SF

### **WORK ROOM**

The copier/printer and offices supply storage currently line the existing hallway in the administrative area. In the new station, we recommend that a dedicated work room be created to eliminate the need to place storage in hallway spaces. By pulling these items into a dedicated space, it keeps the response path to the apparatus bays clear of potential interference.

This is a new work room space should be approximately 80 to 100 SF

### **FILE ROOM**

File cabinets currently line the existing hallway in the administrative area. In the new station, we recommend that a dedicated file room be created to eliminate the need to place storage in hallway spaces. By pulling these file cabinets into a dedicated space, it keeps the response path to the apparatus bays clear of potential interference.

This is a new work room space should be approximately 80 SF

### **TRAINING CLASSROOM**

We recommend providing a new classroom that accommodates 12 people for meetings and training. The room would include audio visual display, communication infrastructure, and storage for training materials, such as those to teach CPR to community members once a month.

This is a new work room space should be approximately 450 to 500 SF



### **ADA COMPLIANT RESTROOMS**

We recommend including two ADA compliant, gender neutral restrooms within the administration area, for visitor use. This restroom will service the Training Room and Offices.

This is a new restroom space should be approximately 80 SF

### **MECHANICAL SPACES**

Dedicated electrical, mechanical and IT rooms will be included in the replacement station.

#### **ELECTRICAL ROOM**

The size of the electrical room will depend on the electrical loads and requirements for UPS for the fire alerting system and computer servers. The current building code will require that this facility be solar ready, which will increase the size of the main switchgear and add another electrical panel.

This is a new space should be approximately 100 SF to meet best practices.

#### **MECHANICAL ROOM**

The size of the mechanical room will depend on the number and size of water heaters. This is based on the hot water demand and location of the plumbing sources. Mechanical units may be roof mounted and not require interior space.

This is a new space should be approximately 100 SF to meet best practices.

#### **IT ROOM**

The size of the IT room will depend on the number and size of computer racks. This is based on the number of computer servers, audio visual devices, fire alerting system, and radio equipment. The fire alarm

This is a new space should be approximately 100 SF to meet best practices.

#### **FIRE RISER ROOM**

The fire riser and fire alarm panel will be housed in this space. This is a new space should be approximately 64 SF to meet code requirements.

### **SITE IMPROVEMENTS**

At a minimum, the site improvements at the replacement station, should include visitor parking and secured parking for fire personnel. This will include ADA compliant parking spaces for visitors with a code compliant pathway to the front door of the fire station. EV charging stations at dedicated parking spaces are required by the planning ordinances for public facilities. Personnel parking should accommodate 8 parking spaces at a minimum to accommodate fire personnel parking and shift change.

New concrete front and rear aprons will be sized for everyday use and emergency staging. The depth of the aprons should be a minimum of 40 feet in length to accommodate the longest engine in the District's fleet.

Site circulation should promote positioning of the Apparatus Bays to directly access Bayshore Blvd to minimize response times. The site should accommodate entry into the apparatus bays from the rear entry upon return from an emergency. There should be space for an exterior patio adjacent to the firefighter living areas, a covered trash enclosure, and a ground mounted hose drying rack at the rear of the station.

An emergency generator with a belly tank should provide a minimum of 24 hours of emergency back-up power at full capacity.



A 30 to 40 feet high antenna tower may be required if the location and height of the building is positioned in such a way as to limit the line of sight from other City and Fire Authority antennas for radio communications

There is a small training facility on the south end of the existing property. We recommend that the existing metal containers that form the training grounds and props be placed on the replacement fire station site to accommodate routine in service training, such as search and rescue, hose, ladder, and forceable entry to name a few.

**The City of Brisbane and the North County Fire Authority would like the selected site for the new Brisbane Fire Station 81 to accommodate all of the building and site operations and spaces identified above.**

### **SECTION 3 - SITE ANALYSIS APPROACH**

The design team used the “like for like” replacement strategy to identify and define the operational needs and overall size of the replacement of Brisbane Fire Station No. 81.

The replacement station could be a one story fire station that has two drive through apparatus bays with apparatus support spaces, firefighter living quarters, and administrative offices as described in Section 2 for the City of Brisbane and the North County Fire Authority.

We have developed the *Exhibits TOS -1 and TOS-2* to demonstrate all of the site impacts and constraints.

### **SITE ALTERNATIVE A – EAST LMF ALIGNMENT**

The design team reviewed Site Alternative A and have the following analysis to offer:

#### **SITE CONSTRAINT IMPACTS**

The proposed site has several site constraints that limit the ideal placement and orientation of the apparatus bays. The site is very narrow and constrained by the proximity of Tunnel Road.

The setback requirements of the existing and new railway lines limit the placement of the station and all the other site improvement needed to support fire operations at this station, such as the training functions and the orientation of the drive through apparatus bays.

Site Alternative A is not a viable site for the development of the replacement fire station.

#### **RESPONSE TIME IMPACT**

Site Alternative A is not an ideal site for the Replacement Fire Station No. 81. The constraints of available site area requires the placement of the new station with the apparatus bays facing parallel to Bayshore Blvd instead of perpendicular. The North County Fire Authority will not be able to maintain or improve the existing response times if the replacement station is located at Site Alternative A.

A parallel street orientation of the apparatus bays will increase response times. Emergency vehicles must leave the apparatus bays and travel down the front apron and a long driveway before having to slow down to make a 90 degree turn to reach the Bayshore Blvd and Old County Road intersection. A new pre-empt traffic control button should be installed and used at the station to clear and stop traffic at the Bayshore Blvd and Old County Road intersection, however this would not improve the overall response times.





There would be a **severe impact** to the Fire Authority's average response time of 6 minutes and 59 seconds to 90% of their emergency calls.

#### **TUNNEL ROAD IMPACT**

This site alternative requires the removal of the existing Tunnel Avenue overpass to gain the site area needed to place the new replacement station onto the site. While the Tunnel Avenue overpass is under construction, Station No. 81 will need to use alternative routes to reach the northeast section of the North County Fire Authority's, City of Brisbane service area. This will **severely impact** response times to this section of the City.

#### **NOISE IMPACTS**

The proximity of the station replacement to existing and new active railway lines will **severely impact** the ability of firefighters to sleep while on duty at night. Even if the station has triple pane windows, increased wall thicknesses, uses continuous insulation at the exterior walls, and other acoustical solutions, there will still be ground vibration and noise impacts from the railway lines.

#### **OPERATIONAL IMPACTS**

The setback requirements of the existing and new railway lines limit the optimal orientation and placement of the replacement station and all the other site improvement needed to support fire operations at this station, such as the training functions and the orientation of the drive through apparatus bays.

#### **TURN-OUT TIME IMPACTS**

Turn-out time is measured from the time the emergency call is received at the station until the fire engine starts rolling out the fire station. If the replacement station is a one story building, the impact to turnout time should be minimal. However, if the replacement station needs to be a two story building to better fit on the site, then there will be an impact to the turn-out time as well as increased safety concerns. Fire personnel will be using stairs or a fire pole if a two story solution is used.

#### **FLOOD PLAIN IMPACTS**

The proposed site is situated near the Brisbane Lagoon. Further due diligence and investigation is needed to evaluate if there are flood plain impacts.

#### **TEMPORARY FACILITIES IMPACTS**

The proposed site is very narrow and is constrained by Tunnel Road on the east side of the site. The construction of the new Tunnel Road overpass may be required to increase the site area available for the development of the replacement fire station.

New temporary facilities for the fire station at a site unknown would be necessary if the construction of the overpass take place ahead of when the replacement station can begin or complete construction.

#### **HAZARDOUS MATERIALS IMPACTS**

Further due diligence and investigation is needed to evaluate if there are hazardous materials impacts. We can visually observe various piles of waste materials on the proposed site. The contents of the piles and the sources of these piles of debris are unknown.



### **BAYLANDS PLANNED DEVELOPMENT IMPACTS**

The North County Fire Authority has mentioned that in the future, with the build out of the Baylands Planned Development, the number of calls for service will increase with the new commercial uses. It is anticipated that a ladder truck and unit will be required in the future. This will require the addition of a third apparatus bay as well as more space in the apparatus support functions and the firefighter living and sleeping quarters. Adding a new ladder company will require the addition of four fire personnel at a minimum.

### **SITE ALTERNATIVE B – WEST LMF ALIGNMENT**

The design team reviewed Site Alternative B and have the following analysis to offer:

#### **SITE CONSTRAINT IMPACTS**

The proposed site has several site constraints that limit the ideal placement and orientation of the apparatus bays. The presence of the Guadalupe Canal and top of bank limits the available site area for ideal placement of the replacement fire station and severely limits site opportunities for all building and site operational goals.

The setback requirements of the existing and new railway lines limit the placement of the station and all the other site improvement needed to support fire operations at this station, such as the training functions and the orientation of the drive through apparatus bays.

Site Alternative B is not a viable site for the development of the replacement fire station.

#### **RESPONSE TIME IMPACT**

Site Alternative B is not an ideal site for the Replacement Fire Station No. 81. The constraints of the available site area requires the placement of the new station with the apparatus bays facing parallel to Bayshore Blvd instead of perpendicular.

A parallel street orientation of the apparatus bays will increase response times. Emergency vehicles must leave the apparatus bays and travel down a long driveway before having to slow down to make a 90 degree turn at the new mid-block driveway cut along Bayshore Blvd, in between Valley Drive and Old County Road. This driveway location will only allow a northern right hand turn from the driveway as there is no traffic signal at this location and an existing median that prevents left hand turns to allow emergency response vehicles to travel south.

A new mid-block keep clear zone and flashing traffic light must be installed to allow the emergency vehicle to safely exit from the new driveway location and the existing median must be updated to allow a left hand turn and access to the south. A pre-empt traffic control button can be installed and used at the station to clear and stop traffic along Bayshore Blvd, however this would not increase or improve the overall response times.

Without the ability to turn left from the new driveway location, the emergency response vehicle would need to travel north and then make a U turn at Valley Drive in order to travel south.

There would be a **greater and more severe impact** to the Fire Authority average response time of 6 minutes and 59 seconds to 90% of their emergency calls than Site Alternative A.

### **TUNNEL ROAD IMPACT**

This site alternative does not require the removal of the existing Tunnel Avenue overpass to gain the site area needed to place the new replacement station. While the Tunnel Avenue overpass is under construction, Station No. 81 will need to use alternative routes to reach the northeast section of the North County Fire Authority's service area within the City of Brisbane. This will **severely impact** response times.

With Site Alternative B, the impact and location of the new Tunnel Avenue overpass interchange is that it severely limits the available site area for the station to have a rear apron and a path for the emergency response vehicles to drive through into the apparatus bays from the northern end of the proposed site

### **NOISE IMPACTS**

The noise impact with the replacement station's proximity to existing and new active railway lines is the same as Site Alternative A. The ability of firefighters to sleep while on duty at night will be severely impacted even if the station has triple pane windows, increased wall thicknesses, use of continuous insulation at exterior walls and other acoustical solutions to limit the noise impacts.

### **OPERATIONAL IMPACTS**

The setback requirements of the existing and new railway lines limit the placement of the station and all the other site improvement needed to support fire operations at this station, such as the training functions and the orientation of the drive through apparatus bays.

### **TURN-OUT TIME IMPACTS**

Turn-out time is measured from the time the emergency call is received at the station until the fire engine starts rolling out the fire station. If the replacement station is a one story building, the impact to turnout time should be minimal. However, if the replacement station needs to be a two story building to better fit on the site, then there will be an impact to the turn-out time as well as increased safety concerns. Fire personnel will be using stairs or a fire pole if a two story solution is used.

### **WATERWAYS AND FLOOD PLAIN IMPACTS**

The proposed site is situated near the Brisbane Lagoon and closer to the Guadalupe Canal. Further due diligence and investigation is needed to evaluate if there are waterway impacts from the canal. The Guadalupe Canal is under the jurisdiction of the Army Corp of Engineers. There may be flood plain impacts as well due to the site's proximity to the Brisbane Lagoon.

### **TEMPORARY FACILITIES IMPACTS**

The proposed site is narrow and is constrained by Tunnel Road on the east side of the site. The construction of the new Tunnel Road overpass may be required to increase the site area available for the development of the replacement fire station.

New temporary facilities for the fire station at a site unknown would be necessary if the construction of the overpass take place ahead of when the replacement station can begin or complete construction.

### **HAZARDOUS MATERIALS IMPACTS**

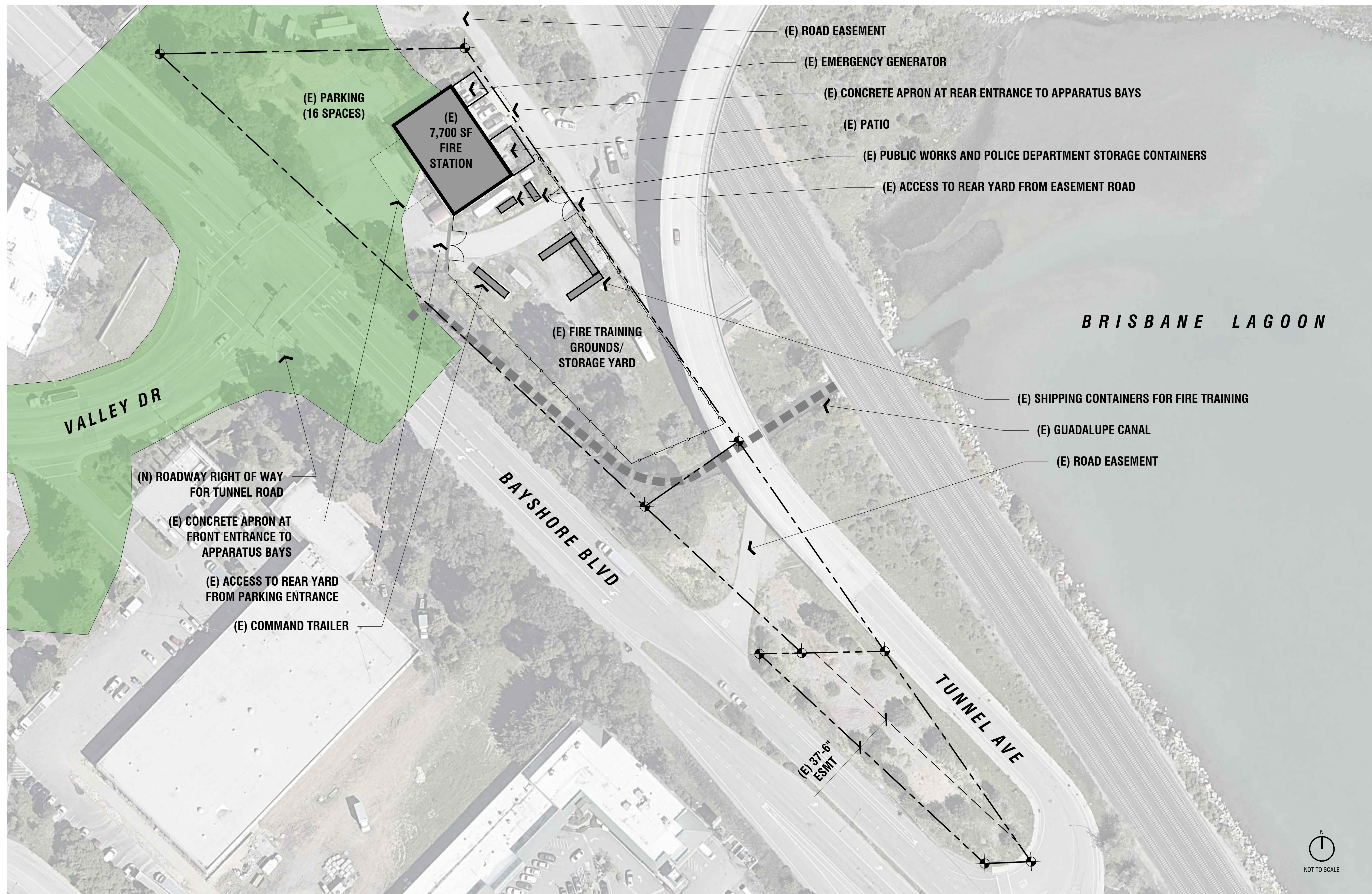
Further due diligence and investigation is needed to evaluate if there are hazardous materials impacts. We can visually observe various piles of waste materials on the proposed site. The contents of the piles and the sources of these piles of debris are unknown.



### **BAYLANDS PLANNED DEVELOPMENT IMPACTS**

The North County Fire Authority has mentioned that in the future, with the build out of the Baylands Planned Development, the number of calls for service will increase with the new commercial uses. It is anticipated that a ladder truck and unit will be required in the future. This will require the addition of a third apparatus bay as well as more space in the apparatus support functions and the firefighter living and sleeping quarters. Adding a new ladder company will require the addition of four fire personnel at a minimum.





**EXISTING SITE  
FEASIBILITY STUDY**

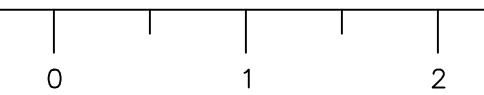
CALIFORNIA

**SHEET TOS-1**

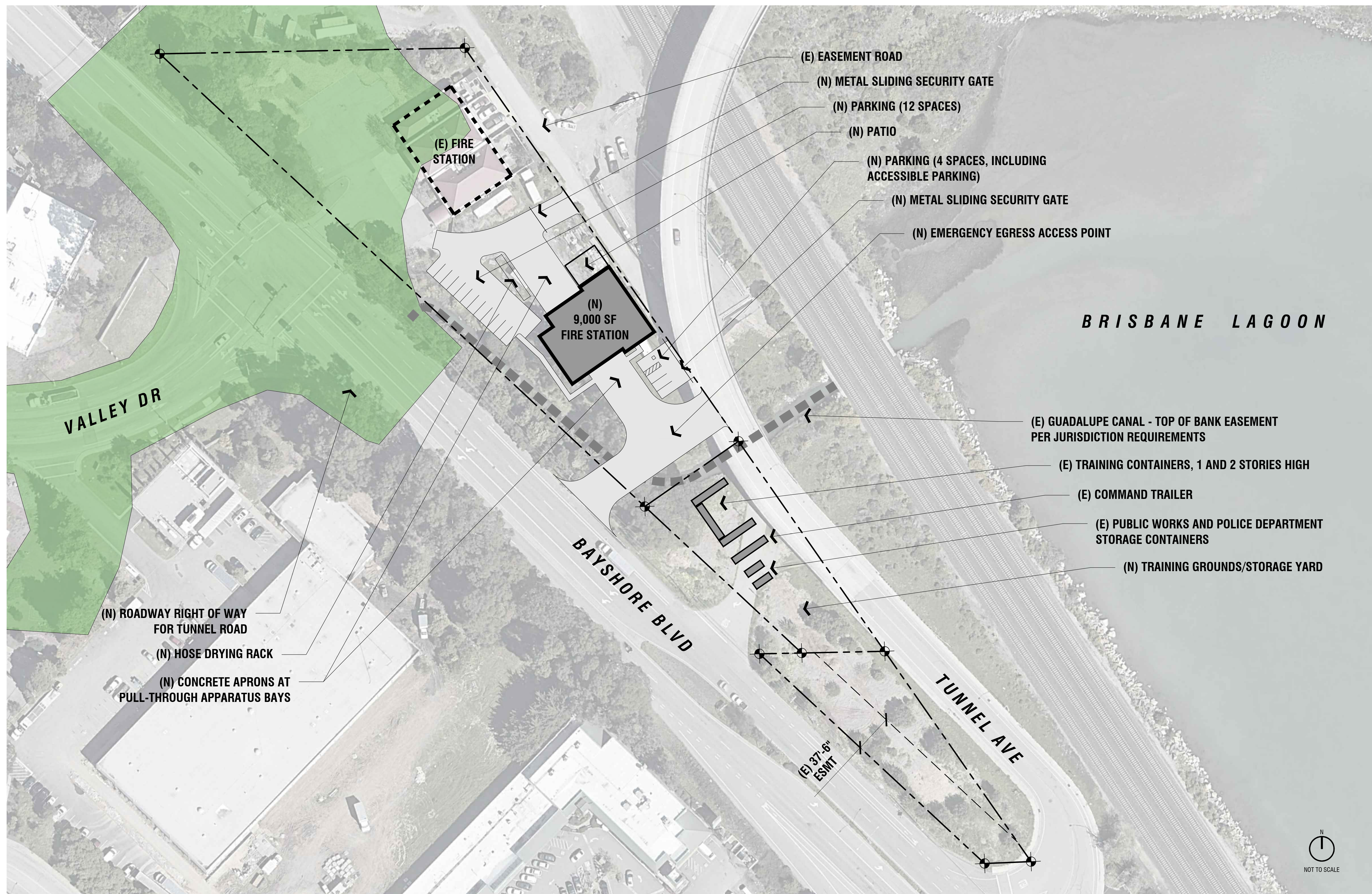
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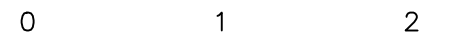

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS







ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS



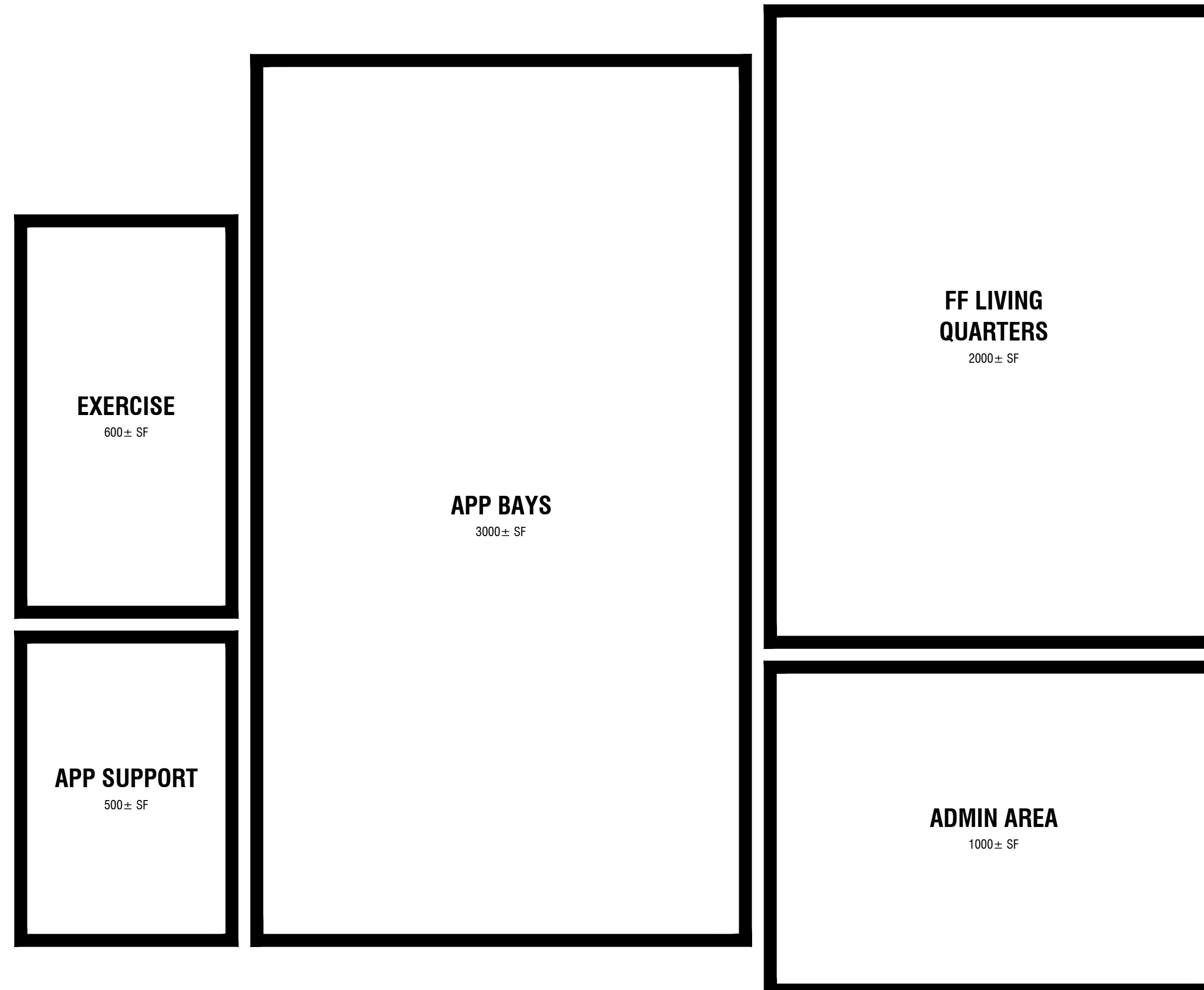
**SITE FEASIBILITY  
STUDY**

**SHEET TOS-2**

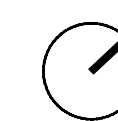
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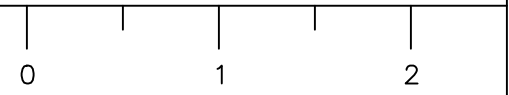




**1 FLOOR PLAN STUDY**



ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS



**FLOOR PLAN  
STUDY**

**SHEET TOS-3**

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**10**

**TEN OVER  
STUDIO, INC**

**STATEMENT OF  
QUALIFICATIONS  
FOR  
BRISBANE  
FIRE STATION  
FEASIBILITY  
STUDY**



# ABOUT TEN OVER STUDIO

## TEN OVER IS A STATE OF BEING.

TEN OVER reflects our firm's philosophy and our goal of giving 110% in everything we do. It is our continual goal to exceed the expectations of our clients, community, colleagues, and ourselves.

Our mission is simple: **To leave the world better than we found it.**

We've made the commitment to use our business as a force for good. In 2017, we became a Certified B Corp – uncommon in our industry.

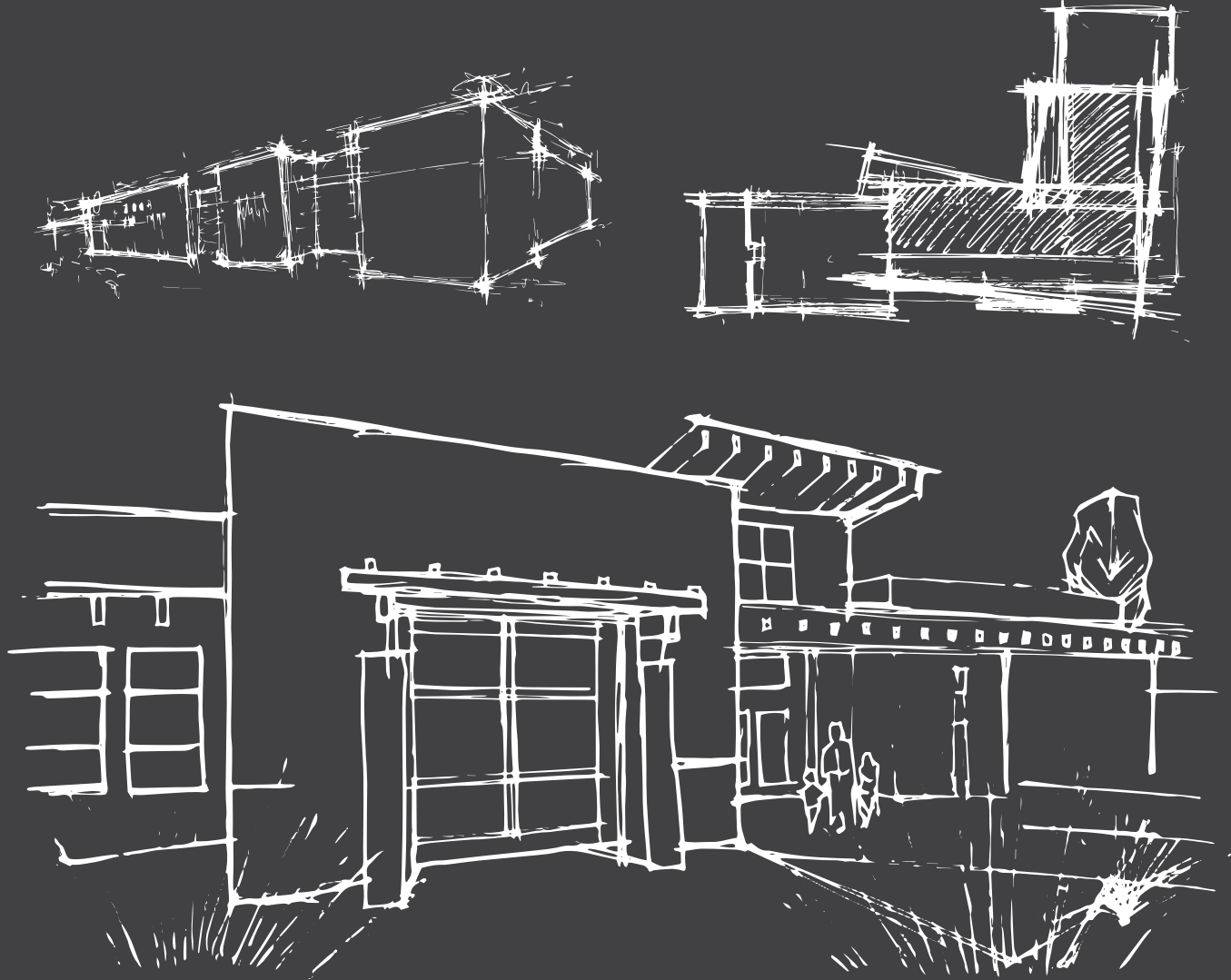
Why, you ask? Because business as usual doesn't align with our mission. We can do better. We value wild places with clean air & clear water. We treasure the vibrant built spaces where people come together to live, work and play. And we seek out passionate communities working for the common good. Just like you.

Certified



Corporation

COMPANIES WITH B CORPORATION CERTIFICATIONS SIGN A "DECLARATION OF INTERDEPENDENCE" ACKNOWLEDGING THEIR RESPONSIBILITY TO THEIR EMPLOYEES, COMMUNITIES, THE ENVIRONMENT AND TO FUTURE GENERATIONS.





## **TYPE OF OWNERSHIP**

B Corp & S Corp

## **SIZE OF FIRM**

30

## **YEARS IN BUSINESS**

Since 2014

## **LOCATION**

75 E. Santa Clara Ste 600

San Jose, CA 95113

-

539 Marsh Street

San Luis Obispo, CA 93401

-

805.541.1010

info@tenoverstudio.com

## **DESCRIPTION OF THE FIRM**

### **TEN OVER STUDIO, INC.**

TEN OVER reflects our firm's philosophy and refers to our goal of putting forth 110% effort towards everything we do. It is our continual goal to exceed the expectations of our clients, contractors, consultants, community and ourselves.

From programming and master planning to design and construction, TEN OVER STUDIO has the experience and expertise that result in successful public facilities. We understand our role as stewards of public funds and provide solutions for our clients that maximize the project budget while maintaining the highest levels of quality.

TEN OVER STUDIO was formed in 2014 and currently employs 30 design professionals including seven licensed architects, one licensed landscape architect, and three LEED accredited professionals.

## **VALUES**

TEN OVER reflects our firm's philosophy and our goal of giving 110% in everything we do. We strive to lead by example, go the extra mile, take responsibility and do the right thing, even when no one is looking.

Just like our first responder clients, we believe in "we before me." We know working as a team improves everything we do. We go out of our way to help others succeed; we understand that listening, humility and empathy are some of our greatest tools.

## **TEN OVER STUDIO IS DIFFERENT**

We are architects, landscape architects and interior designers whose passion is to think outside the box. When we design, we offer thoughtful, honest solutions with an emphasis on sustainability; those qualities come through in our work.

## LIST OF BASIC SERVICES

Project Management  
Architectural Design  
Interior Design  
Landscape Architecture  
Feasibility Studies  
Architectural Programming  
Project Budgeting  
Master Planning  
Strategic Planning  
Specification Writing  
Sustainable Design  
LEED Documentation  
3D Visualization/Media

## TEN OVER TREADS LIGHTLY

By utilizing common materials in uncommon ways, our spaces surprise and inspire. As a Certified B Corp, we use our business as a force for good, reinforcing our mission to leave the world a better place than we found it.

*B Corporations are for-profit companies certified every two years to meet rigorous standards of social and environmental performance, accountability, and transparency.*

## QUALIFICATIONS

The TEN OVER STUDIO team has over 40 years of experience working for municipalities and public agencies throughout the State of California. We have direct experience with a wide range and variety of on-call and public sector projects ranging from feasibility studies to

the design and implementation of large scale facilities. Our team has direct experience with public facilities including community spaces, municipal corporation yards, maintenance facilities, administrative offices, and public safety facilities.

# CALEXICO FIRE HEADQUARTERS STATION

**LOCATION:** CALEXICO, CA

**CLIENT:** CITY OF CALEXICO

**SIZE:** 9,006 SF

**SCOPE:** ARCHITECTURE, INTERIOR DESIGN, LANDSCAPE, 3D VISUALIZATION

**COMPLETION:** IN CONSTRUCTION

**CONSTRUCTION COST:** \$6.7 MILLION

**ARCHITECT OF RECORD:** TEN OVER STUDIO

TEN OVER STUDIO worked closely with the City Fire Design Committee through an in-depth process to replace the existing Fire Headquarters Station 1 facility, which did not meet the operational space requirements for staffing and essential equipment, nor the CA Essential Services Act.

The project includes careful demolition and seismic separation of the existing fire station from the existing police station. This includes placement and installation of a new radio tower, antennas communication and power services and infrastructure.

Our design includes three drive-through apparatus bays, living and sleeping quarters for eight personnel, and administrative offices. The station apparatus bays are designed to be used as a cooling center during periods of extreme heat, such as the summer months.

The high-efficiency systems and building envelope will help reduce utility costs. Ultimately, this durable and low-maintenance facility will house the fire department comfortably for the next 50 years.





# EMERYVILLE FIRE STATION 35 AND EOC

**CLIENT:** CITY OF EMERYVILLE  
**SIZE:** 8,300 SF  
**SCOPE:** CAMPUS MASTER PLANNING, PROJECT MANAGEMENT, SCHEMATIC DESIGN THROUGH CONSTRUCTION ADMINISTRATION  
**COMPLETION:** ONGOING  
**CONSTRUCTION COST:** \$4.2 MILLION  
**ARCHITECT OF RECORD:** TEN OVER STUDIO

This project includes a renovation and seismic strengthening of the existing 10,872 SF Fire Station 35 includes a new exercise room, shop, turnout room, SCBA, EMS and Administrative Offices. The existing fire station was built in 1950 and seismically upgraded and renovated in 1996. The facility is owned by the City of Emeryville and operated by the County of Alameda.

A new standalone 5,000 SF Emergency Operations Center with a management policy room, space for finance and logistics, dispatch room and emergency cache storage. The EOC will have a separate electrical service, mechanical and emergency power systems. The renovation incorporates the upgrade of the electrical, mechanical, and emergency power systems for the fire station. Construction must be implemented in eight months to get the fire station and EOC to full operation.

Candice is the project manager and lead designer on the EOC upgrades and fire station renovations.





# MINETA SAN JOSE INTERNATIONAL AIRPORT ARFF FACILITY

**CLIENT:** CITY OF SAN JOSE

**SIZE:** 18,180 SF

**SCOPE:** ARCHITECTURE, LANDSCAPE ARCHITECTURE,  
MEDIA, LEED

**COMPLETION:** IN PROGRESS

**CONSTRUCTION COST:** \$20 MILLION

**ARCHITECT OF RECORD:** TEN OVER STUDIO

The Aircraft Rescue and Fire Fighting (ARFF) Facility at the Mineta San Jose International Airport is a 18,180 sf, one-company replacement station. Currently in design, the final design-build project will include administrative offices, firefighter living and sleeping quarters, fitness room and specialized spaces for aviation rescue and firefighting response at the airport. There are 4 ARFF bays and 1 fire engine bay with a turnout room, clean-up, medical, SCBA, workshop, and foam storage. Immediately adjacent to the apparatus bays and looking out onto the airfield is the watch room.

As Public Safety Designer and Architect of Record, TEN OVER STUDIO will actively manage the project through the design and construction process to ensure the landside and airside programmatic requirements are met. The ARFF station will be LEED certified at the silver level and a Zero Net Energy project.





# PALO ALTO FIRE STATIONS 3 AND 4 FEASIBILITY STUDY\*

**LOCATION:** PALO ALTO, CA  
**CLIENT:** PALO ALTO FIRE DEPARTMENT  
**SCOPE:** REPLACEMENT NEEDS STUDY  
**COMPLETION:** 2005

Candice was the project manager in charge of preparing the feasibility study for the replacement of two existing and structurally unsound fire stations located in established residential areas. The study consisted of full programming/space needs, component diagrams, site plan concept, alternatives, opinions of probable cost, and presentations to the community and the Architectural Review Board.

Candice also prepared an analysis of sustainable strategies that could be incorporated into each fire station to meet the City's green goals.

Candice Wong was the project architect in charge of the needs assessment study and Jim Duffy was the project architect in charge of design on Stations No. 3 and No. 4 while they were both at RRM Design Group.

This study was completed on time and on budget.

*\*Experience of Jim Duffy and Candice Wong prior to forming TEN OVER STUDIO.*





# SAN JOSE FIRE STATION 34\*

**LOCATION:** SAN JOSE, CA  
**CLIENT:** CITY OF SAN JOSE  
**SIZE:** 12,000 SF  
**SCOPE:** MASTER PROGRAM DEVELOPMENT, PROJECT  
MANAGEMENT, ARCHITECTURE, SUSTAINABLE DESIGN, INTERIOR  
DESIGN  
**COMPLETION:** 2007  
**CONSTRUCTION COST:** \$5.3 MILLION

Station 34 was sited to mitigate existing response time issues in an industrial portion of the East side which is cut off by multiple freeways. This station accommodates an engine company and truck company. Due to a tight urban site, the station is a two-story building with three apparatus bays, support, administration and firefighter living quarters on the first floor and sleeping quarters and bathrooms on the second floor.

The project was completed while Jim Duffy and Candice Wong co-managed the Public Safety Studio at RRM; Jim was the Design Architect and Project Manager; Candice was the City's Advisor on architectural program compliance with the Fire Bond Program.

*\*Experience of Jim Duffy and Candice Wong prior to forming TEN OVER STUDIO.*







# SAN JOSE FIRE STATION 35\*

**LOCATION:** SAN JOSE, CA

**CLIENT:** CITY OF SAN JOSE

**SIZE:** 12,500 SF

**SCOPE:** MASTER PROGRAM DEVELOPMENT, PROJECT MANAGEMENT, ARCHITECTURE, SUSTAINABLE DESIGN, LEED DOCUMENTATION AND CERTIFICATION, INTERIOR DESIGN

**COMPLETION:** IN PROGRESS

**CONSTRUCTION COST:** \$4.9 MILLION

Jim Duffy was the lead designer, project manager and architect for this new 12,400SF, two-company, three-apparatus bay battalion station. The two-story station design is based on the prototype battalion station from the Fire Facilities Program that Candice and Jim developed for the San Jose Fire Department. The design team worked together with the City to achieve USGBC LEED Silver certification, exceeding the City's certification requirements.

The Station was built on the corner of an existing community center which remained fully operational throughout construction.

*\*Experience of Jim Duffy and Candice Wong prior to forming TEN OVER STUDIO.*



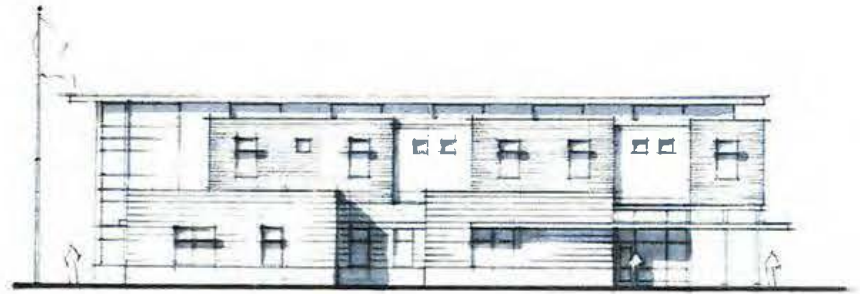


# SAN JOSE FIRE DEPARTMENT FIRE FACILITIES PROGRAM

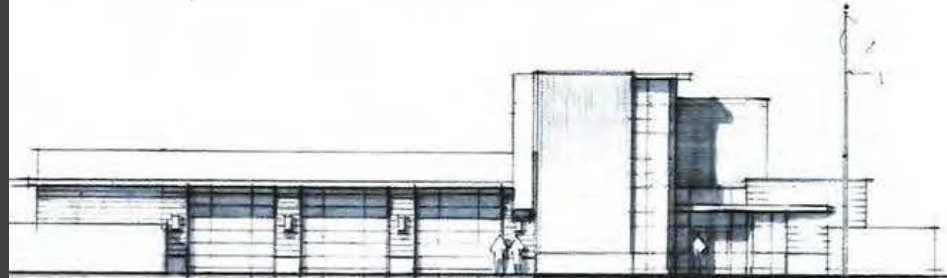
**LOCATION:** SAN JOSE, CA  
**CLIENT:** SAN JOSE FIRE DEPARTMENT  
**SIZE:** 5,000 SF  
**SCOPE:** PROJECT MANAGEMENT, BOND PROGRAM  
**COMPLETION:** 2006

Candice Wong was the project manager in charge of preparing the San Jose Fire Facilities Program. The City wanted a strategic plan and operational procedures for all of the new fire station built under the Fire Bond. Candice worked with the Fire Department to identify the operational criteria to guide the development of three prototype fire stations. The programming process included workshops with many City staff members, visits to existing facilities, and discussions with San Jose Fire Department leadership. The program focused on operational practices, methods for obtaining better operational efficiencies and creating flexibility in the space planning to allow for future changes in operating procedures and increases in service levels.

*\*Experience of Candice Wong prior to forming TEN OVER STUDIO.*



WEST ELEVATION



NORTH ELEVATION

10/00/04





# SAN JOSE FIRE TRAINING CENTER RELOCATION STUDY

**LOCATION:** SAN JOSE, CA  
**CLIENT:** CITY OF SAN JOSE  
**SIZE:** 85,208 SF; 6.5 ACRES  
**SCOPE:** FEASIBILITY STUDY, NEEDS ASSESSMENT,  
PROGRAMMING, PROJECT BUDGET  
**COMPLETION:** 2020  
**CONSTRUCTION COST:** \$31.5 MILLION  
**ARCHITECT OF RECORD:** GROUP 4 ARCHITECTURE  
**ESSENTIAL SERVICE CONSULTANT:** TEN OVER STUDIO

TEN OVER STUDIO worked with the City of San Jose and Group 4 to analyze strategies for the relocation of their Fire Department Training Center to the Central Services Yard. The new Fire Department Training Center will occupy approximately 6.5 acres of the 22 acres at the Central Services Yard.

TEN OVER worked with the City team to validate the preliminary program and prepare a high-level development scheme to accommodate the fire training needs. The project will include a Fire Training Building for fire training administration, the fire academy and in-service personnel training. A 6-story fire training tower and support spaces will be designed for both Class A and Class B training props and scenarios.

New on-site parking will accommodate the new Fire Training Center. Space to store EMS essential equipment, training materials, and site training props is a high priority.



# SAN JOSE FIRE TRAINING CENTER & EOC

**LOCATION:** SAN JOSE, CA  
**CLIENT:** CITY OF SAN JOSE  
**SIZE:** 85,208 SF; 6.5 ACRES  
**SCOPE:** ARCHITECTURE  
**COMPLETION:** 2022  
**CONSTRUCTION COST:** \$50.1 MILLION  
**ARCHITECT OF RECORD:** TEN OVER STUDIO

After completing the feasibility study, needs assessment, and program budget for the new Fire Department Training Center, the TEN OVER STUDIO team was retained to move forward with design. The project includes designing a new 2-story fire training building, 6-story fire training tower, training grounds, and Emergency Operations Center.

A new 6-story fire training building and tower will feature a number of training props, mobile units and metal storage containers.

Site improvements will include utility infrastructure, covered storage for trailers and equipment, parking, fencing, gates and landscaping.







The fire training building will be used for fire training classrooms; fire training, EMS, recruit, data systems, and office emergency management administrative offices. An existing warehouse will be renovated for apparatus and equipment storage, offices for the BOS and the fitness center.



# SAN LUIS OBISPO FACILITIES MASTER PLAN UPDATE

**LOCATION:** 12 SITES

**CLIENT:** CITY OF SAN LUIS OBISPO

**SIZE:** 250,000 SF

**SCOPE:** PROJECT MANAGEMENT, FACILITIES MASTER PLAN, CAPITAL IMPROVEMENT PROGRAM DEVELOPMENT

**COMPLETION:** 2018

**CONSTRUCTION COST:** \$94 MILLION

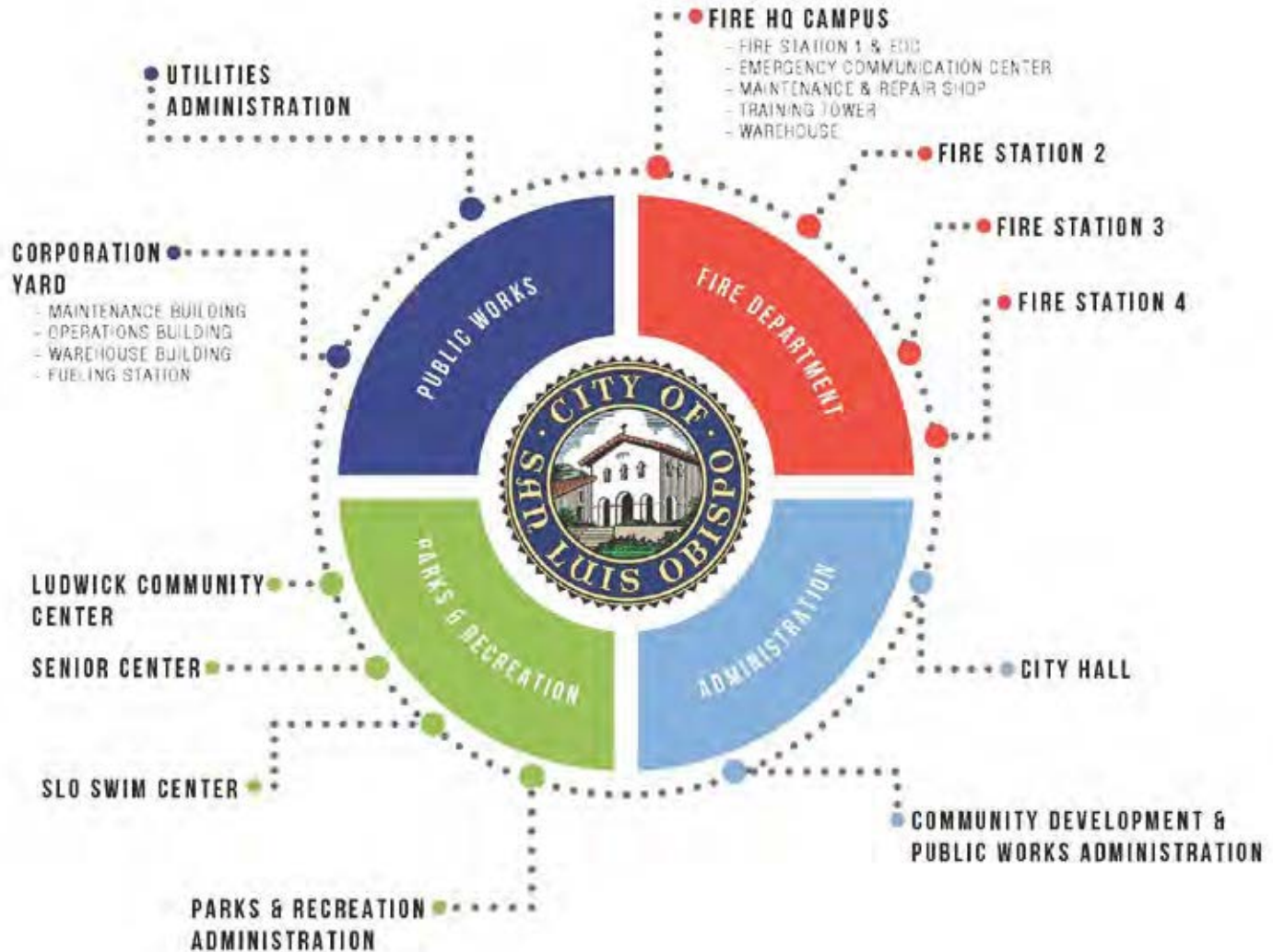
**ARCHITECT OF RECORD:** TEN OVER STUDIO

The City of San Luis Obispo's Facilities Master Plan was issued in 1988. The City owns over 221,000 SF of building space for municipal, public safety, community and maintenance functions. The City hired Ten Over Studio to update their existing facilities master plan to better guide capital improvements, maintenance, renovations, expansions and/or replacement of these facilities.

The Master Plan update will help the City better understand if their facilities have outlived their original purpose and what each facility might require to continue to serve staff and the citizens of San Luis Obispo. The Master Plan update includes needs assessment and programming for four existing fire stations.

Candice is the Assessment and Master Planning Architect. She worked with the City to develop the project budgets, timelines and capital improvement plan for all of the facilities in the Master Plan Update.









## JIM DUFFY

PRESIDENT, AIA, NCARB, LEED AP  
JIMD@TENOVERSTUDIO.COM

Jim draws on over 25 years of experience within a wide variety of projects ranging from civic and public safety to commercial and retail developments to large scale master planning and design. His extensive experience on civic and public safety projects throughout California make him a natural leader for technical public projects. Jim's educational background and experience in master planning along with his technical architectural experience and refined design sense make him a valuable resource in the early stages of public safety projects.

As a LEED accredited professional, his knowledge of and commitment to sustainable design is drawn upon at each level of planning, design and construction to ensure the most environmentally-friendly options are considered.

Jim excels in quality assurance and quality control checks both throughout conceptual design scenarios, identifying where theory conflicts with practice and practicality, as well as on project drawings and specifications throughout the project. His attention to detail is an extreme attribute, especially in large-scale public safety projects.



*"I would like to enthusiastically recommend Jim Duffy as a strong choice for architectural consulting services. Jim not only has the technical qualifications, but also has demonstrated the communication, leadership and management skills necessary to succeed in all that he endeavors. The City of San Jose has had the pleasure of working with Jim through the design and construction of several fire stations over the years and we have many firefighters pleased that he responded to their needs."*

DEEDEE FLAUDING  
PROGRAM MANAGER, CITY OF SAN JOSE  
(RETIRED)



## CANDICE M. WONG

PRINCIPAL, LEED AP BD+C

CANDICEW@TENOVERSTUDIO.COM

Candice is a public safety design specialist: She has dedicated the past 23 years of her career to helping law enforcement personnel and first responders live and work in operations-driven, cohesive, comfortable facilities. Just talk to Candice for a minute, and you'll understand her passion for public safety. It's not just her job – it's her way of life. From working through a strategic plan, needs assessment or program to designing a renovation, upgrade, or new facility, through to construction administration, Candice is a leader on how to marry good design, strong technical documents and sustainable solutions.

Clients appreciate that Candice keeps their goals front and center as she integrates their program requirements with the technical drawings and specifications. She is known for her strong technical skills, having worked in all phases and various roles of architecture and project management.

Part of creating a 50-75-year facility – a key component of public safety design – is using durable and low maintenance materials and solutions. Candice brings her extensive knowledge of sustainable design strategies to every component of a project. She has completed dozens of LEED®-certified public safety projects, focusing on lower operating and utility costs.

Candice shares her expertise through published articles and speaking engagements. At the Station Design Conference, Candice leads the Law Enforcement Preconference team, sharing insights on the latest in innovations in police stations and public safety facilities.



*“Ten Over Studio was our public safety consultant on two feasibility studies for the City of San Jose. They prepared site feasibility studies and provided programmatic validation services for the Fire Training Center Relocation project. Additionally, Ten Over Studio assisted with public safety review on the City’s Police Training Center and Academy Relocation. Ten Over Studio is currently working with the City of San Jose as the lead public safety designer and Architect of Record for the Mineta International Airport ARFF Facility. We are happy to be working with an experienced and effective architectural firm on our mission-critical projects for the City of San Jose.”*

DOMENIC ONORATO,  
ARCHITECTURAL PROJECT MANAGER,  
CITY OF SAN JOSE

## KARL LUNDEEN

PUBLIC SAFETY PROJECT MANAGER  
KARLL@TENOVERSTUDIO.COM

Karl graduated from Cal Poly with a degree in Architecture and a minor in Construction Management. His varied background, with experience in commercial and residential design and over ten years of woodworking and construction experience, gives him a unique understanding and approach to all aspects of the design and construction process.

Clients value Karl's easy-going demeanor and concise communication style. Karl listens carefully during conversations and integrates what he learns into his relationships and projects. A team player, Karl seeks timely, efficient and effective solutions: he enjoys finding ways to bring together seemingly unrelated components or ideas into a cohesive whole.



*“We appreciate how the Ten Over Studio team has transformed our design committee’s operational needs and wish list into an award-winning design. They continue to exceed our expectations, meet our timelines and stay within budget. We appreciate their in-depth understanding and experience with firehouse architecture and personalized service.”*

FIRE CHIEF DIEGO FAVILA  
CITY OF CALEXICO

## WILLIAM RUOFF

PROJECT ARCHITECT, AIA  
WILLR@TENOVERSTUDIO.COM

Bringing together his passion for architecture, landscape architecture, engineering, and environmental design, William understands the importance of collaboration and teamwork to create innovative solutions for his clients. His multi-faceted background provides a unique perspective on any project

William believes architecture must combine not only aesthetic and functional goals but also the poetics of the site and the surrounding cultural influences to create a solution that not only works for the clients, but also helps the community as a whole.

With his extensive background in public sector and non-profit work, William understands how projects affect budget, community and the clients' interests. He brings his strong work ethic and background to every project, making him a valuable part of the team.



*“The staff at Ten Over went to great lengths to understand our needs prior to assessing the condition of our facilities. This “getting to know your needs first” approach was spectacular. Not only did it inform the subsequent (and thorough) assessment of our facilities, but it also established a credible, trusting relationship between the Ten Over staff and all levels of the Fire Department.”*

FIRE CHIEF GARRETT OLSON,  
CITY OF SAN LUIS OBISPO (RETIRED)

## CAITLIN MILICH

PROJECT DESIGNER

CAITLINM@TENOVERSTUDIO.COM

Caitlin is a designer who understands what it means to respect the impact the designed environment has on its users. She appreciates the level of detail that is necessary in the design and development of essential service facilities and how that design impacts those people who serve their community. As a team member, Caitlin enjoys diving into the details of code research and participating in meetings with stakeholders, clients and consultants.



*“Ten Over Studio is more than providing the document the City requested, Ten Over Studio is providing the services and planning tool the City needs to successfully manage public facilities into the future. This plan will guide the maintenance, improvement and replacement strategies for the City for the next 20 years.”*

MATT HORN  
PUBLIC WORKS OPERATIONS MANAGER



## REFERENCES

### **MATT HORN**

Public Works Operations Manager  
City of San Luis Obispo  
(805) 781-7191  
mhorn@slocity.org

#### Projects:

- City of San Luis Obispo On-Call Architectural Services
- City of San Luis Obispo Downtown Master Plan
- City of San Luis Obispo Mechanical Renovation Projects
- City of San Luis Obispo City Hall Tenant Improvements
- City of San Luis Obispo Facilities Master Plan Update

### **DOMENIC ORONATO**

Architectural Project Manager  
City of San Jose  
(408) 535-8407  
domenic.onorato@sanjoseca.gov

#### Projects:

- City of San Jose Essential Services On-Call Architectural Services
- Mineta San Jose International Airport ARFF Facility
- San Jose Fire Training Center Feasibility Study
- San Jose Fire Training Center and Emergency Operations Center
- San Jose Police Training Center Feasibility Study

### **DIEGO FAVILA**

Fire Chief, City of Calexico  
(760) 768-2150  
dfavila@calexico.ca.gov

#### Projects:

- Calexico Fire Headquarters Station Program and Conceptual Design
- Calexico Fire Headquarters Station

### **JEFF WONG**

Capital Planning & Project Manager  
County of Marin  
415.473.6277, jewong@marincounty.org

#### Project:

- Marin County Sheriff Emergency Operations Facility



OUR MISSION

# TO LEAVE THE WORLD BETTER THAN WE FOUND IT

OUR VALUES

## DESIGN LIKE YOU GIVE A DAMN

Average is unacceptable. Question the status quo, push boundaries and make a positive impact.



### “WE” BEFORE “ME”

Working as a team improves everything we do. Go out of your way to help others succeed and understand that listening, humility and empathy are some of our greatest tools.



### 110% ... ALWAYS

Lead by example, go the extra mile, take responsibility and do the right thing, even when no one is looking.



### KEEP IT REAL

Be fearlessly authentic with yourself, your work and your relationships.



### SUSTAINABILITY ISN'T A CHECKBOX

It's a way of thinking and acting. It guides every decision we make in order to maximize the resources of our clients, team, community and planet.



### GIVE BACK

Get involved, volunteer your time and build community connections.



### ENJOY THE RIDE

Celebrate the success and learn from failures. Enjoy the journey as much as the destination.

**SAN LUIS OBISPO, CA**

**SAN JOSE, CA**

**BEND, OR**

[info@tenoverstudio.com](mailto:info@tenoverstudio.com)

[tenoverstudio.com](http://tenoverstudio.com)

805.541.1010



**@PUBLICSAFETYARCHITECT**  
**@TENOVERSTUDIO**



**@PUBSAFETYARCH**



**@TENOVERSTUDIO**



**@TEN-OVER-STUDIO**

# Attachment Metis-F

California High-Speed Rail Authority  
San Francisco – San Jose Draft EIR/EIS

## Brisbane LMF Evaluation and Alternatives Review



**City of Brisbane Department of Public Works**

**September 8, 2020**

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## 1. Introduction

In 2012, Caltrain and the California High Speed Rail Authority (Authority) entered into an agreement to operate as a blended regional commuter and state High-Speed Rail system (HSR). Under the agreement, Caltrain and the Authority agreed to share the tracks and maintain the corridor as primarily a two-track railroad. Following the 2012 agreement, Caltrain initiated improvements to the existing corridor, achieving environmental clearance and commenced construction on improvements under a program known as Caltrain Modernization (“CalMod”). The CalMod program includes a key component to electrify the corridor from Caltrain’s 4th and King Street Station in San Francisco to the Tamien Station in San Jose. These improvements are currently under construction as part of Caltrain’s program.

The Authority is currently completing its environmental review process for the required infrastructure which will be needed for high-speed rail service to be added to this shared corridor. The Authority issued a draft EIR/EIS in July 2020 to evaluate the impacts and benefits of introducing high-speed rail within the project section. Two alternatives, Alternatives A and B, along with a no-build option are being evaluated in the Draft EIR/EIS.

Alternatives A and B for the project section would generally operate within the existing Caltrain right-of-way between the 4th & King Street station in San Francisco and Diridon Station in San Jose via a blended system. Both alternatives share key features generally including:

- Caltrain and Authority operating trains on shared tracks and would operate a blended timetable for both commuter and intercity service.
- High-speed trains would use the same tracks and infrastructure as Caltrain and utilize infrastructure as part of the electrification currently under construction as part of the CalMod program.
- Alignment improvements would be completed to create higher speed capabilities within the corridor for both systems.
- Installation of corridor safety, train control and communications improvements would be completed.
- Existing Caltrain served stations would be modified.
- A Light Maintenance Facility (“LMF”) would be constructed within the project segment.
- High-speed stations would be planned at 4<sup>th</sup> & King Street in San Francisco, Millbrae, and Diridon in San Jose with the eventual plan to connect to the Salesforce Transit Center.
- High-speed rail would not prohibit the Caltrain’s future growth plans.

The primary difference between Alternate A and B are generally as follows:

- No additional passing tracks are proposed under Alternate A, whereas Alternate B provides for additional passing tracks between the cities of San Mateo and Redwood City. These improvements would require the relocation of San Carlos Caltrain Station.
- No viaduct to Diridon Station is proposed under Alternate A, whereas Alternate B proposes both a short and long viaduct options to Diridon.
- An LMF east of Caltrain corridor in City of Brisbane is proposed under Alternate A whereas Alternate B proposes the LMF west of the Caltrain corridor in City of Brisbane.

The initial operations for high speed rail service would include 2 trains per peak hours per direction for a total of 4 trains per peak hour with an initial operating speed of 79 mph. Full operations will raise service levels to up to 4 trains per peak hour per direction for a total of 8 trains per peak hour with a full operations speed of 110 mph.

## 1.1 Background

The Draft Environmental Impact Report/Environmental Impact Statement (“Draft EIR/EIS”), was originally made available for a minimum 45-day public review beginning on July 10, 2020 pursuant to CEQA and NEPA. The City of Brisbane, California (“City”) is currently reviewing and preparing comments on the San Francisco to San Jose Project Section Draft EIR/EIS.

The City and its legal and technical consultant team have conducted a peer review of the Draft EIR/EIS and its technical appendices, its construction and project design documents. The focus of the peer review is to determine the feasibility and impacts of the project alternatives, including alternatives to the proposed LMF, project grade separations and proposed grade crossings as well as the impacts of the projected project design and construction of the light maintenance facility, Tunnel Avenue structure replacement (also referred as the Lagoon Road Extension), road improvements, grade crossings and grade separations to City impacted facilities, businesses, projects, services and roadways. The planned LMF under alternative A and B would both have serious impacts to the community. Ideally, the planned LMF would be relocated from the area so as not to impact the City.

## 2. Document Review

This technical review narrative is based on examination of the documents which were made available as part of the Draft EIR/EIS on July 10, 2020. Additionally, any applicable information available to the public, related to the project segments and the overall HSR program, including technical reports, was reviewed as well.

Given the large quantity of documents made available as part of the Draft EIR/EIS and the limited time window available for review and comment, this examination was focused on those documents which refer to the LMF, its requirements, operation and the Authority’s review of alternative sites.

The table below provides a comprehensive list of the documents which contained relevant information that was used in this report. In sections where information was taken from specific reports, that report name, pertinent to the section, will appear in italics, i.e. (*Draft\_EIRS\_FJ\_V1-08\_CH\_2\_Alternatives*). Callouts to specific pages will appear in bold italics and will be included as an Appendix to this document i.e. (**Appendix B: B-1 – Draft EIR-EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18**).

TC1 Table 1 - Document Summary

No.	Document Name	Date	Author
1	<i>Draft EIR/EIS, V1-03, Fact Sheet</i>	July 2020	CHSRA
2	<i>Draft EIR/EIS, V1-07, CH 1 - Purpose Need Objectives</i>	July 2020	CHSRA
3	<i>Draft EIR/EIS, V1-08, CH 2 - Alternatives</i>	July 2020	CHSRA
4	<i>Draft EIR/EIS, V1-32, CH 8 – Preferred Alternative</i>	July 2020	CHSRA

No.	Document Name	Date	Author
5	<i>Draft EIR/EIS, V2-03, APP 2-A - Roadway Crossings Modifications Closures</i>	July 2020	CHSRA
6	<i>Draft EIR/EIS, V2-04, APP 2-B - Railroad Crossings</i>	July 2020	CHSRA
7	<i>Draft EIR/EIS, V2-05, APP 2-C - Operations Service Plan Summary</i>	July 2020	CHSRA
8	<i>Draft EIR/EIS, V2-06, APP 2-D - Applicable Design Standards</i>	July 2020	CHSRA
9	<i>Draft EIR/EIS, V2-08, APP 2-F - Summary Requirements Operations Maintenance Facilities</i>	July 2020	CHSRA
10	<i>Draft EIR/EIS, V3-03 PEPD, Alternative A Book A1 – Composite Plan, Profile, Typical Sections</i>	July 2020	CHSRA
11	<i>Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4 - Structures Roadway LMF Alignment Data Table</i>	July 2020	CHSRA
12	<i>Draft EIR/EIS, V3-07 PEPD, Alternative B Book B1 – Composite Plan, Profile, Typical Sections</i>	July 2020	CHSRA
13	<i>Draft EIR/EIS, V3-09 PEPD Alternative B Book B3 -Stations, Structures, and Roadway</i>	July 2020	CHSRA
14	<i>Draft EIR/EIS, V3-10 PEPD, Alternative B - Book B4 LMF Alignment Data Table</i>	July 2020	CHSRA
15	<i>Summary Description of Requirements and Guidelines for: Heavy Maintenance Facility (HMF), Terminal Layup/Storage &amp; Maintenance Facilities &amp; Right-of-way Maintenance Facilities TM 5.3</i>	Aug 2009	CHSRA
16	<i>CHSRA Factsheet LMF NorCal</i>	-	CHSRA
17	<i>TM 2.1.8 Turnouts and Yard Tracks RO</i>	July 2009	

### 3. Summary of Requirements for Operations and Maintenance Facilities

The Authority provided information on assumptions, operations, facilities site location criteria, facilities descriptions and other factors related to operations and maintenance facilities in the following document: ***Draft EIR-EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities.***

The objective of the report is to evaluate the analysis criteria for the optimal siting of facilities for heavy and light maintenance facilities for rolling stock, and for maintenance of infrastructure locations across the high-speed rail network. The report includes a set of requirements the Authority has established for those facilities, its size and location.

### **3.1 LMF Design Criteria**

#### **A. Authority's Assumptions**

The Authority provided several assumptions within the report pertaining to rolling stock, fleet size, maintenance level requirement, track lengths, purpose of tracks within facilities and the operational relationship between LMF facilities and end of segment stations. Those general assumptions are as follows:

- Rolling stock: Train sets would be operated and maintained in a configuration of 660-foot sets with the potential to operate in double trainset configuration of 1,320-foot total length sometime in the future.
- Fleet Size: Would be expected to grow from a small initial quantity of trainsets in early stage service offering, eventually increasing to 90 trainsets for the full Phase 1 service plan.
- Maintenance Facilities: Will be required to maintain rolling stock. Maintenance of rolling stock to follow a 5-level hierarchy of functions:

##### **Level I – Daily inspections, pre-departure cleaning and testing**

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
- Shop Tracks: None planned

##### **Level II – Monthly inspections**

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
- Shop tracks: Up to 2 each

##### **Level III – Quarterly inspection, including wheel-truing**

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
- Shop tracks: Up to 8 each

##### **Level IV – Annual inspections, including underside/bogie inspection**

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.
- Shop tracks: Up to 10 each

##### **Level V – Overhaul, component change out, commissioning and decommissioning**

- Storage, inspection daily cleaning and toilet servicing tracks - Quantity would depend on service design.

- Shop tracks – Up to 10 each
- Any proposed facility designed to handle projected system growth to the year 2040;
- Track lengths are designed to accommodate two 660-foot trainsets each, plus additional capacity is estimated at 80% of total possible space in the yard for maneuverability of the equipment to and from yard to shop areas with some room for growth.
- Tracks are intended for storage of trainsets that are not in use for revenue service. The majority of track are to be used for middle-of-day or overnight layover of trainsets.
- Trainsets will need to make non-revenue trips between LMF and the origin or destination at the beginning or end of revenue service.
- Include additional tracks for trainsets that are currently undergoing maintenance base on LMF type with higher level of maintenance requiring additional tracks.
- Additional tracks in LMF set aside of maintenance of infrastructure equipment storage. Work trains, track and tie installation trains may be among the types of equipment stored on these tracks.

## **B. LMF Purpose**

The LMF would be utilized within the HSR network for dispatching newly inspected and serviced trains and crew to begin revenue service throughout the day in addition to providing daily, monthly, and quarterly maintenance of trainsets. They would be sized to support level I, II, III maintenance activities including cleaning and servicing activities between runs, pre-departure inspections and testing, and monthly inspection and maintenance activities.

For Level II and III facilities, daily service, and monthly and quarterly inspections and maintenance will utilize inside shop track with interior access and inspection pits for underside of wheel-truck assemblies (bogie) inspection. Level III functionality includes train wash and wheel defect detection facilities.

## **C. Optimal LMF Configuration**

- Yard tracks capable of holding two complete trainsets, plus two runaround/transfer tracks to move from one end of the facility to the other.
- For Level III LMF's, dedicated train wash tracks and wheel defect detection track.
- Direct main track access through double-ended yards leads.
- Grade-separated flyovers to access the main track opposite the LMF without affecting main track traffic.
- 60 MPH interlockings with universal crossovers at the main tracks (on both ends, immediately adjacent to the main track turnouts).
- 1,700-foot transition tracks to reduce/increase speed to/from stop and to transition the automatic train control system.
- Estimated length of 7,500 feet (not including transition tracks) with a depth dependent on the number of tracks required at each facility.
- Estimated overall minimum footprint ranging from about 40 to 110 acres.



#### D. Less Optimal LMF Configuration

- At-grade or “flat” interlockings.
- Single 60 MPH crossovers at the main tracks (on both ends, immediately adjacent or within up to 3 miles of the main track turnouts).
- Turnout speeds in interlockings of less than 60 MPH.
- Shorter transition track.
- Single-Ended Facilities. (Authority notes that a single-ended LMF could be considered on a case-by-case basis depending on the proposed location of a site relative to the nearest station and on the operational details of the service plan.) **Appendix B: B-1 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18.**

#### E. Potential Work Arounds to Less Optimal LMF Configurations

- Additional deadhead miles or time in order to avoid delays to revenue trains by deadhead movements.
- Additional operating crews in order to expedite reverse movements in the facility and/or on the main track.
- Alternations to maintenance scheduling to accommodate the arrival of deadhead trains at non-peak hours of operation.
- Co-locate facilities such as an LMF and MOWF. **Appendix B: B-1 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18.**

#### F. Facilities Site Location Criteria

The Authority developed an operating plan based on a service design driven by ridership demand forecast. Based on this forecast, an operating plan was developed to define:

- The schedules and estimated number of trainsets required.
- Preliminary guidelines and criteria prepared by the Authority.
- Size and configuration of proposed facilities based on defining the capabilities and functional requirements.
- Size and configuration of facilities estimated based on capabilities and functional requirements necessary to support planned operation.
- Authority used preliminary guidelines and criteria to identify suitable site alternatives.
- Feasibility of each site evaluated from operational, engineering, and environmental standpoint.
- Authority determined potential sites based on its criteria and carried forward options it believed were viable. The Authority recommended the following rolling stock facilities:
  - Brisbane, LMF
  - Gilroy, LMF

- Central Valley, LMF
- Antelope Valley, LMF
- Los Angeles, West Yard LMF
- Los Angeles, Montebello Yard LMF
- Anaheim, LMF
- Authority envisioned only one location in northern section route for a level III LMF. The two potential locations identified in that section were Brisbane and Gilroy.
- The LMF’s at Brisbane and Gilroy are envisioned to work together. Whichever location is finally determined for level III activity would still require the other location to support lower level activities. Appendix B-2: (B-2 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 11).
- Recommendation to clear both locations as level III capable LMF locations from an environmental perspective.

TC1 Table 2 – HMF, LMF and MOI Locations

(From Page 2, Table 2 – Summary of HMF/LMFs - Draft EIR/EIS Appendix 2-F: Summary of Requirements for Operations and Maintenance Facilities)

<i>Proposed Facility</i>	<i>Miles (to Transbay)</i>	<i>Location Name</i>	<i>Comment</i>
<b>LMF</b>	5.00	<i>Brisbane</i>	<ul style="list-style-type: none"> <li>• <i>Level III facility to support train servicing and start up and close-down of service at San Francisco</i></li> <li>• <i>Corresponds to location of proposed LMF.</i></li> <li>• <i><u>This site could also function as a Level I site on a smaller footprint to support service for the San Francisco Terminals</u></i></li> </ul>
<b>LMF</b>	60.00	<i>Coyote (between San Jose and Morgan Hill)</i>	<ul style="list-style-type: none"> <li>• <i>Level I facility to support train servicing and start up and close-down of service at San Jose. Gilroy and Merced. Will need to clear a level III facility at this location based on the availability of the Brisbane site or the phasing requirements of the project.</i></li> <li>• <i>Corresponds to the most likely of several alternative site already being considered for an LMF.</i></li> <li>• <i>Co-location of this facility with the nearby MOIF is possible.</i></li> </ul>

Proposed Facility	Miles (to Transbay)	Location Name	Comment
<b>MOIF</b>	80.00	Just South of Gilroy Station	<ul style="list-style-type: none"> <li>Corresponds to location of previously proposed MOIF.</li> <li>Co-location of this facility with the nearby LMF is possible.</li> </ul>

### G. Summary of Operations Sizing for LMF

TC1 Table 3 – Summary of Regional LMF’s

(From Table 1 – Summary of HMF/LMFs - Draft EIR/EIS Appendix 2-F: Summary of Requirements for Operations and Maintenance Facilities)

Facility Location/ Type	No. Tracks	Level	YR 2025 Proj. Fleet of 19 Train Sets (TS)		YR 2034 Proj. Fleet of 19 Train Sets (TS)		YR 2059 Proj. Fleet of 19 Train Sets (TS)	
			Total TS	AM TS	Total TS	AM TS	Total TS	AM TS
<b>Brisbane LMF</b>	13 Yd 2 or 8 Shop	III (or I)	8-10	6-8	14-17	10-13	16-21	12-17
<b>Gilroy LMF</b>	10 Yd 8 or 2 Shop	I (or III)	8-10 (See Note)	6-8 (See Note)	13-15	10-14	13-17	12-16

Notes and assumptions regarding information in table:

- Number of trainsets (as single consists) at each facility is given as a range to allow for unknown availability of station tracks for overnight layover and storage of consists that have been outfitted with autonomous inspection and measurement equipment.
- Number of morning starts (as single consists) from each facility differs from the number of trainsets stored at each facility due to allowances for hot standby trainsets, high-demand spares, and maintenance downtime.
- Maximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability.

### H. Technical Design Criteria

Applicable design standards can be found in the following document: (Draft EIR/EIS V2-06, Appendix 2-D - Applicable Design Standards). Technical design criteria specific to the track location within an LMF is covered under the Authority’s technical memo: (TM 2.1.8 Turnouts and Yard Tracks R0).

TC1 Table 4 – Summary of Pertinent Track Design Criteria

From CHSRA Technical Manual: *(TM 2.1.8 Turnouts and Yard Tracks R0)*

Design Criteria	Requirements	Reference document
Min. Radius (Connection Track)	2,500' (Desirable)	CHSRA TM 2.1.8, Sec. 6.1.1
	900' (Minimum)	CHSRA TM 2.1.8, Sec. 6.1.1
	500' (Exceptional)	CHSRA TM 2.1.8, Sec. 6.1.1
Min. Radius (Yard/Maintenance Track)	950' (Desirable)	CHSRA TM 2.1.8, Sec. 6.1.2
	620' (Minimum)	CHSRA TM 2.1.8, Sec. 6.1.2
	500' (Exceptional)	CHSRA TM 2.1.8, Sec. 6.1.2
Track Storage Usable Length	1,450' (Desirable)	CHSRA TM 2.1.8, Sec. 6.1.3
	1,400' (Minimum)	CHSRA TM 2.1.8, Sec. 6.1.3
	1,375' (Exceptional)	CHSRA TM 2.1.8, Sec. 6.1.3
Min. Track Centers For Servicing	Alternating spacing of 30' and 22' (Desirable)	CHSRA TM 2.1.8, Sec. 6.1.3
	Alternating spacing of 28' and 20' (Minimum)	CHSRA TM 2.1.8, Sec. 6.1.3
	Alternating spacing of 28' and 20' (Exceptional)	CHSRA TM 2.1.8, Sec. 6.1.3
Min. Track Centers No Servicing	15' (Desirable)	CHSRA TM 2.1.8, Sec. 6.1.3
	15' (Minimum)	CHSRA TM 2.1.8, Sec. 6.1.3
	14' (Exceptional)	CHSRA TM 2.1.8, Sec. 6.1.3
Yard Turnouts	No. 11 (Minimum)	CHSRA TM 2.1.8, Sec. 6.2.3
	No. 9 (Exceptional)	CHSRA TM 2.1.8, Sec. 6.2.3
Space Between Turnouts	75' (Desirable)	CHSRA TM 2.1.8, Sec. 6.2.4

### 3.2 Site Selection Criteria

The Supplemental Alternative Analysis (**Appendix B: B-3 - Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 35**) evaluated potential LMF sites in accordance with the Authority’s preliminary siting criteria for maintenance facilities. This described the facility design and location criteria to meet the functional requirements for an LMF between San Francisco and San Jose, including:

- **Site Size** – The site shall be large enough to accommodate storage and maintenance operations. Authority states approximately 100 acres.
- **Proximity to the Mainline Tracks** – LMF should be immediately adjacent to the mainline tracks, to minimize the length of the lead track.
- **Double-ended Lead Tracks** –The LMF should be a double-ended facility (i.e., capable of dispatching and receiving trains from both ends of the facility).

In addition to the SSA information provided in the Draft EIR/EIS, the Authority published a fact sheet for the Northern California Light Maintenance Facility (**Appendix B: B-4 - CHSRA Factsheet for NorCal LMF**) which provided information for feasibility criteria for siting maintenance facility. This fact sheet indicating the Authority had considered 4 separate sites for criteria including:

- **Proximity:** Distance to San Francisco Terminal Station
- **Site Size:** Approximately 100 acres
- **Proximity to Mainline Tracks**
- **Double-ended Tracks:** Trains can enter and depart from both directions)
- **Site Availability:** Avoid conflicts with built improvements)

The site criteria included in the LMF fact sheet adds additional requirements for proximity to San Francisco Terminal and Site Availability (Avoid conflicts with built improvements). The criteria to “avoid conflicts with built improvement” greatly reduces the potential sites due to the highly developed urban setting within the project segment. Only the West and East LMF options would meet this requirement of all alternatives evaluated. This requirement was above and beyond the requirements set forth in the SAA and the Summary Requirements for Operations and Maintenance Facilities and does not appear to occur in any other document besides the LMF fact sheet.

A total of 4 sites were identified that meet site criteria and engineering and design guidelines established through the Authority’s Technical Memoranda. A graphical representation of the 4 evaluated sites as well as their location within the segment is presented in **Appendix B: B-5 - Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 36**. The sites that were analyzed include:

- Port of San Francisco (Piers 90-94)
- SFO
- West Brisbane
- East Brisbane

The Authority chose to proceed with the East and West LMF option for further study. Justification for selection of East and West LMF was that both sites provided adequate space, proximity to Caltrain mainline track and proximity to San Francisco terminal. The parameters under which alternate sites were not considered is as follows:

- **Port of San Francisco (Piers 90-94) Findings:** Removed from further study because the Authority claims the site to be operationally deficient because of its size, distance from the mainline tracks, and the need for the facility to be stub-ended which the Authority states would constrict operations. The Authority notes that acquiring the necessary right-of-way to build lead tracks would be too costly and that operations of trains along the required lead would be disruptive to neighboring properties. The site was therefore not carried forward for further study.
- **SFO Site Findings** – Removed from further study because the Authority claims the site to be adequately sized but operationally deficient because of its distance from the mainline track and need to be stub-ended. Authority additionally states that the cost for the lead for the facility and modifications required to the US-101 Interchange were constraints.



### 3.3 Adherence to Criteria and Requirements

This section questions the Authority’s conclusions of the various alternatives related to the criteria set forth for site size, proximity to the mainline and double-ended lead tracks. It also questions various aspects outside of the criteria stated in the SAA which the Authority had considered but did not evaluate further or were dismissed without a clear explanation.

#### A. Authority’s Preliminary Siting Criteria for Maintenance Facilities

##### 1) Site Size

The language within the SAA related to size criteria is that “The site be large enough to accommodate storage and maintenance operation.” (**Appendix B: B-3 - Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 35**). The authority approximates this site size to be approximately 100 acres. This criterion does not specifically state that the site must be 100 acres in order to be considered but rather that it be large enough to support the proposed operation.

Within the Summary of Requirements for Operations and Maintenance Facilities (**Appendix B: B-6 - Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 21**), the Authority estimated a minimum footprint of an LMF ranging from about 40-110 acres dependent on the number of track required at each facility. This would also be dependent on the level of anticipated maintenance activities and the layout of the facility i.e. optimum vs. less optimum LMF layouts.

**Port of San Francisco (Piers 90-94) Site** – The Authority withdrew this alternate site partially due to the size of the site but did not provide any further details on how it reached this conclusion. The site would have required the use of a stub-ended facility layout which the Authority conceptualized as shown in **Appendix B: B-5 - Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 36**. The general area of the body of the storage and maintenance shop tracks as shown in the Authority’s report is approximately 65 acres.

A site utilizing a stub-ended layout arrangement would potentially allow for a smaller site footprint as we believe the Authority showed conceptually in the Appendix. Potential operational inefficiencies could be offset due to the proximity to the 4<sup>th</sup> and King Street station (+/- 2.5 miles).

##### 2) Proximity to the Mainline

Both the Port of San Francisco (Piers 90-94) and the SFO site were eliminated partially due to its proximity to the mainline. The SAA and the Summary of Requirement for Operations and Maintenance Facilities discuss the criteria for the LMF’s proximity to the mainline. The SAA specifies that the “LMF be immediately adjacent to the mainline tracks to minimize the length of the lead track.”

The Summary of Requirement for Operations and Maintenance Facilities discusses this criterion under an optimal and less than optimal configurations. Under optimal configurations, the proposed LMF would be directly adjacent to the main track. Under less than optimal configurations, other arrangements could be evaluated.

Given the highly developed urban setting of the project segment, the available sites which would meet this criterion are limited to only the East and West Brisbane options. The Authority would not consider less than optimum layouts for alternate sites which required longer lead tracks or yards which were not adjacent to the mainline. These potential layouts may be considered by the Authority to be less than optimum, but they are certainly feasible and should have been studied further. No studies for

potential work arounds from less optimal LMF configurations were completed as part of the Authority's Draft EIR/EIS.

### 3) Double-Ended Lead Track

The Authority's preliminary siting criteria within the SAA for double-ended track states that "The LMF should be a double-ended facility (i.e., capable of dispatching and receiving trains from both ends of the facility). Double-ended facilities increase operational flexibility and allow for efficient dispatch of track maintenance equipment in the event there is an issue with one of the lead tracks. A stub-ended track is a high-risk design and should be avoided when a double-ended facility is feasible." (**Appendix B: B-3 - Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 35**).

The Summary of Requirement for Operations and Maintenance Facilities discusses this criterion for optimal and less than optimal configurations. While the SAA and the Summary of Requirement for Operations and Maintenance Facilities documents are consistent that double-end lead track are optimum configurations, the Summary of Requirement for Operations and Maintenance Facilities considers the use of single-ended LMF's on a case-by-case basis depending on the proposed location of a site relative to the nearest station and on the operational details of the service plane. It goes on to discuss workarounds to these conditions and are generally discussed in section 3.1 above and in **Appendix B: B-1 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18**.

In situations where stub-ended facilities are being considered, the Summary of Requirement for Operations and Maintenance Facilities indicated that "The operational and cost impacts of these less optimal configurations must be analyzed further in order to evaluate the trade-off of the additional yearly operating cost versus the increased capital construction cost and the potential increase in environmental impacts." (**Appendix B: B-1 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18**).

Both the Port of San Francisco (Piers 90-94) and SFO sites utilized a stub-ended facility which would not meet the double-ended lead track siting criteria. The Authority withdrew these alternate sites partially due to the need to utilize a stub-ended design facility concept. The Authority did not evaluate the trade-off of a stub-ended facility layout vs. double-ended facility layout in these locations even though it found these types of arrangements to be potentially feasible. These potential layouts may be considered by the Authority to be less than optimum, but they are certainly feasible and should have been studied further. No studies for potential work arounds from less optimal LMF configurations were completed as part of the Authority's Draft EIR/EIS.

## **B. Adherence to Requirements Outside the SAA**

### 1) Location of Level I and level III Facilities

The Authority envisioned there to be only one location in the northern section of the route that will handle activities associated with a level III facility. The Authority identified two potential locations in their report, one at Brisbane and one at Gilroy however the Authority envisioned the two facilities together (**Appendix B: B-7 - Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 11-12**).

Within the report, the Authority determined that maximum maintenance levels at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capacity. The Authority identified several LMF site alternatives in the vicinity of Gilroy with likely alternative sites in the vicinity of Morgan Hill.

The site size requirements for a Level III LMF could be better suited to be placed in an area which was not a highly developed urban area. Placing a Level I LMF in the San Francisco to San Jose segment would reduce the LMF's footprint and therefore the number of feasible sites could be greater.

The Authority studied no Alternatives where the Level III LMF could be in the vicinity of Gilroy and where a Level I LMF could be located in the segment between San Francisco and San Jose. Reversing the roles of the two planned LMF's could potentially open additional site alternatives withing the project segments as the site requirements for a Level I LMF would be reduced.

## 4. Brisbane Site Analysis

This analysis provides an overview of the East and West LMF options and evaluates impacts to the City.

### 4.1 LMF East Option – Brisbane

The East LMF Alternative is located east of Caltrain's existing ROW and west of US-101 and is shown in *Appendix B: B-8 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 16*.

At the northern connection of the proposed LMF, southbound trains would exit the southbound main track on to the west transition track and over Caltrain's right-of-way via a fly-over to access the proposed LMF from the north. Northbound trains leaving the proposed LMF would do so at grade via the east transition track onto the northbound main track.

On the south connection of the proposed LMF, both northbound and southbound trains would enter the facility at grade. Northbound trains arriving at the proposed LMF would enter directly utilizing either the west or the east transition track. Southbound trains departing the proposed LMF would depart via the west transition track initially on to northbound main track briefly before crossing-over to south-bound main track.

The proposed LMF is generally comprised of areas and track dedicated to storage/servicing, shop tracks for more complex maintenance task and refuge tracks. Between various shown uses, the proposed LMF shows a total of 31 tracks.

#### A. Description of Track Infrastructure

The storage and servicing yard include a total of 20 tracks. A total of 13 tracks (Y-1 to Y-10 and Y-11 to Y-13) are shown as storage, inspection, daily cleaning, and toilet servicing. These tracks generally have a raised platform between every other track. Tracks Y-10 and Y-11 are separated by the east and west transitions tracks. Track Y-13 to Y-17 are shown as a number of uses including interchange, switching, extraordinary, train washer and automatic wheel inspection. Additionally, there is a runaround track between the general storage/inspection area and the shop tracks.

The maintenance shop is comprised of 8 tracks total. These tracks are shown as pit, flat track/lift & truck/bogie track, and a wheel truing track. Additionally, 3 tracks, 2 on the north end of the proposed LMF and 1 on the south end of the LMF are shown as refuge tracks.

#### B. Site Grading Design Vertical Observations

Earthwork required for construction of the proposed LMF and realignment of Tunnel Avenue overpass would be extensive. Per Table 2-25 Estimated Earthwork Volumes by Alternative (Cubic Yard), the *Draft EIR-EIS, V1, Chapter 2 – Alternatives* shows a total of 2,082,800 CY of materials to be disposed

of from the East LMF and 160,000 CY of materials to be disposed of from the Tunnel Avenue Overpass. A general summary of site grading design vertical observations for the north, middle and south end of the proposed LMP are as follows:

- **North Cross Section of Proposed LMF** - See Cross Section D, DWG MY-CO102 (**Appendix B: B-9 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 17**). The cross section in this location generally shows an average cut of  $\pm 29.11'$  from existing ground to a proposed top-of-rail elevation of 20.00'. The cross section at this location is  $\pm 1,395'$  in width. The top-of-rail for Tracks Y-1 to Y-10 is generally at existing grade while the top-of-rail for tracks east of Y-10 is below existing grade ranging from  $\pm 5.00'$  at the East Transition Track to  $\pm 45.42'$  at track S-8.
- **Middle Cross Section of Proposed LMF** - See Cross Section E, DWG MY-CO105 (**Appendix B: B-10 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 18**). The cross section in this location generally shows an average cut of  $\pm 1.00'$  from existing ground to a proposed top-of-rail elevation of 20.00'. The cross section at this location is  $\pm 1,475'$  in width. The top-of-rail for Tracks Y-1 to Y-9 is generally  $\pm 2'$  above existing grade while the top-of-rail for tracks east of Y-10 is below existing grade ranging from  $\pm 2.5'$  at the East Transition Track to  $\pm 7.00'$  at track S-8.
- **South Cross Section of Proposed LMF** – See Section F, DWG MY-C106 (**Appendix B: B-11 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 19**). The cross section in this location generally shows an average cut of  $\pm 17.00'$  from existing ground to a proposed top-of-rail elevation of 20.00'. The cross section at this location is  $\pm 1,179'$  in width. The top-of-rail for Tracks Y-4 to Y-14 is generally  $\pm 2.50'$  above existing grade while the top-of-rail for tracks east of Y-15 is below existing grade ranging from  $\pm 7.00'$  at the Y-15 Track to  $\pm 36.25'$  at track S-8.

## 4.2 LMF West Option – Brisbane

The West LMF Alternative is located west of Caltrain's existing ROW and east of Bayshore Blvd and is shown in **Appendix B: B-12 - Draft EIR/EIS, V3-10, PEPD, Alternative B Book, B4, LMF Alignment Data Table, Pages 8 & 10**.

At the northern connection of the proposed LMF, southbound trains would enter directly from the southbound main track at grade into the proposed LMF via the west transition track. Northbound trains leaving the propose LMF would transition over Caltrain's right-of-way via a fly-over to the northbound main.

On the south connection of the proposed LMF, both northbound and southbound trains would enter the facility at grade utilizing a dedicated facility lead. Northbound trains into the proposed LMF on the northbound main track would briefly crossover to the southbound main track before entering the proposed LMF via the east transition track via flat interlockings. Southbound outbound traffic would exit the proposed LMF on the west transition track directly to the southbound main track.

The proposed LMF is generally comprised of areas and track dedicated to storage/servicing, shop tracks for more complex maintenance task and refuge tracks. Between various shown uses, the proposed LMF shows a total of 32 tracks.

## A. Description of Track Infrastructure

The storage and servicing yard include a total of 20 tracks. A total of 13 tracks (Y-1 to Y-8 and Y-9 to Y-13) are shown as storage, inspection, daily cleaning, and toilet servicing. These tracks generally have a raised platform between every other track. Tracks Y-8 and Y-9 are separated by the east and west transitions tracks. Track Y-14 to Y-17 are shown as a number of uses including interchange, switching, extraordinary, train washer and automatic wheel inspection. Additionally, there is a runaround track between the general storage/inspection area and the shop tracks.

The maintenance shop is comprised of 8 tracks total. These tracks are shown as pit, flat track/lift & truck/bogie track, and a wheel truing track. Additionally, 3 tracks, 2 on the north end of the proposed LMF and 1 on the south end of the LMF are shown as refuge tracks.

## B. Site Grading Design Vertical Observations

Earthwork required for construction of the proposed LMF and realignment of Tunnel Avenue overpass would be extensive. Per table 2-25 Estimated Earthwork Volumes by Alternative (Cubic Yard), the *Draft EIRS FJ\_V1-08\_CH\_2\_Alternatives* shows a total of 1,463,700 CY of materials to be disposed of from the East LMF and 160,000 CY of materials to be disposed of from the Tunnel Avenue Overpass. A general summary of site grading design vertical observations are as follows:

- **North Cross Section** - See Section D, DWG MY-CO204 (**Appendix B: B-13 Draft EIR/EIS, V3-10, PEPP, Alternative B Book, B4, LMF Alignment Data Table, Page 11**). The cross section in this location generally shows an average fill of  $\pm 16.51'$  from existing ground to a proposed top-of-rail elevation of 27.00'. The cross section at this location is  $\pm 775'$  in width. The top-of-rail for all Tracks is generally  $\pm 17.5'$  above existing grade.
- **Middle Cross Section** - See Section E, DWG MY-CO205 (**Appendix B: B-14 - Draft EIR/EIS, V3-10, PEPP, Alternative B Book, B4, LMF Alignment Data Table, Page 12**). The cross section in this location generally shows an average fill of  $\pm 16.70'$  from existing ground to a proposed top-of-rail elevation of 27.00'. The cross section at this location is  $\pm 1,150'$  in width. The top-of-rail for all Tracks is generally  $\pm 17.5'$  above existing grade.
- **South Cross Section** - See Section F, DWG MY-CO205 (**Appendix B: B-14 - Draft EIR/EIS, V3-10, PEPP, Alternative B Book, B4, LMF Alignment Data Table, Page 12**). The cross section in this location generally shows an average cut of  $\pm 61.90'$  from existing ground to a proposed top-of-rail elevation of 27.00'. The cross section at this location is  $\pm 790'$  in width. The top-of-rail for all Tracks is generally  $\pm 88.84'$  below existing grade and ranges from  $\pm 39.34'$  to  $\pm 97.08'$  below existing grade.

## 4.3 Reduction in LMF Service Level

The Authority envisioned a single LMF location within the northern section of the HSR route. This LMF would have the ability to complete level III maintenance activities. Two potential locations for a level III LMF in the northern HSR section were called out in the Authority's report (**Appendix B: B-7 - Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 11-12**). One of those potential locations was Brisbane and the second location was Gilroy. The Authority envisioned these two facilities to work together operationally. Further, it was anticipated that only one of those facilities would need to be capable of performing level III maintenance activities, the other would only need to operate at a level I capacity.



The Authority indicated in its report that the maintenance activity level of an LMF in Brisbane could be lowered to level I maintenance activities if an LMF in Gilroy was built to complete Level III maintenance activities. The Authority identified several LMF site alternatives in the vicinity of Gilroy and in the vicinity of Morgan per the report and recommended that environmental clearing be complete for a level III LMF at both locations.

However, the Authority studied no Alternatives where a Level I LMF could be located within the San Francisco to San Jose project segment and supported by a Level III LMF in the vicinity of Gilroy.

The change to a Level I LMF within the project segment would change the site size criteria used by the Authority to identify potential sites. Due to the reduced size requirements of a Level I LMF (+/- 40 acres) additional sites outside of the City could have been identified and evaluated. Additionally, this concept would limit the impact within the highly developed and urbanized project segment by locating the Level III LMF to an area which is sparsely developed. Further, a level III LMF located in the vicinity of Gilroy could be co-located with other planned infrastructure such as the Maintenance of-way Facilities, (MOWF) that is currently planned.

## 5. Brisbane Site Impacts

### 5.1 Geneva Ave Extension

#### A. Geneva Extension Project

A Project Study Report (PSR) was developed by Biggs Cardosa Associates (BCA) for the City and was approved in January 2014 by Caltrans to reconstruct the existing US-101/Candlestick Point Interchange with a new compact diamond interchange, which would improve traffic operations and regional access to and from US-101. The interchange would also serve to support a number of planned developments adjacent to the interchange within the City and San Francisco, including the Baylands Development. The roadway would cross either under or over US-101 (depending on the build alternative) and connect with Harney Way on the east side of US-101 in San Francisco and would extend and connect to Geneva Avenue at Bayshore Boulevard on the west side of US-101. This extension is a separate project from the Interchange but is defined and mentioned within the PSR. The Geneva Extension Project will connect US-101 and Harney Road to Geneva Ave from its current eastern terminus at Bayshore Boulevard across the current Caltrain rail corridor. This extension will provide an important access point to developments and businesses to the west of the Caltrain corridor, an important connection to the Caltrain Bayshore station for residents/development to the east of the Caltrain corridor and an important regional east-west transit connection from US-101 to I-280 and BART.

As part of the Geneva Avenue Extension Project, Geneva Avenue would be constructed as a six-lane local roadway with Class II bike lanes and sidewalks in both directions. It also includes a wide median to support the potential for Bus Rapid Transit Service between San Francisco and Daly City through Brisbane. The alignment of Geneva Avenue would cross over the existing Caltrain railroad corridor through Geneva Avenue Overhead, a new 1,143-foot-long, 148-foot wide, 9-span overhead structure. The anticipated construction cost only of the Geneva Ave Overhead in 2014 PSR was approximately \$60M, excluding soft costs, annual escalation, construction management, and contingencies.

Additional studies reviewing the Geneva Ave Extension were done for the City of Brisbane in conjunction with San Mateo County Transportation Authority to review impacts and enhancements to the alignment and connections of the PSR defined project to consider BRT and Caltrain connectivity,

accommodating direct and improved access to the Baylands Development, providing direct connection to Tunnel Avenue, and to accommodate proposed Recology modernization plans. The overhead structure reviewed and shown herein is the one that was defined in the approved 2014 PSR and does not include any revisions as part of any future studies. The PSR reviewed two (2) alternatives for the Candlestick Point Interchange. For this study, Alternative 1 will only be considered as the Interchange is sufficiently far enough from these proposed improvements and the overall impacts to the interchange project will be similar for either alternative.

The Authority considered the Geneva Ave Extension as shown on the plan in their report. See DWG MY-CO101 (**Appendix B: B-15 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 14 of 49**) for Alternative A and DWG MY-CO201 (**Appendix B: B-16 - Draft EIR/EIS, V3-06, PEPD, Alternative B Book, B4, LMF Alignment Data Table 8**) for Alternative B. However, the Draft EIR/EIS does not indicate nor discuss the project impacts associated with this planned network improvement and vital future connection for the City and its regional partners. Additionally, the geometry as shown on the aforementioned plan is not shown correctly with what was defined in the 2014 PSR nor the proposed layout from the Baylands Plan. A corrected plan is provided in TC2-MY-CO101A, and TC2-MY-CO101B showing the Geneva Avenue Overhead from the 2014 PSR. Based on this revised plan and profile, it is clear that the alternatives proposed by the Authority have significant impacts to the viability of the City's planned project as it was defined.

Since the Geneva Avenue Extension Project and overhead structure were not properly reviewed and analyzed as part of the HSR EIR/EIS, the project team briefly reviewed some alternatives and the future feasibility, constructability and cost related impacts associated that the HSR EIR/EIS proposed alternatives would have on the proposed Geneva Avenue Extension.

## **B. Geneva Ave Extension Project Options**

Optional profiles were studied to determine the feasibility of accommodating the Geneva Avenue Extension in correlation with the proposed alternatives within the HSR EIR/EIS. There are several major constraints considered with the review of these alternatives, including vertical clearance; constructability; ingress and egress issues for services, businesses, and developments; and effective conforms to existing facilities.

### **1) Geneva Ave Overhead**

This alternative would require raising the current profile of the Geneva Ave Overhead to provide adequate clearance over the Transition Track Structure Flyovers that are being proposed as part of the Draft EIR/EIS for each alternative. The Transition Track flyover structure would require raising the current proposed Geneva Ave profile between 20' to 30'.

Following is a summary of impacts of raising the structure for each HSR Alternative.

#### **ALTERNATIVE A**

Refer to **Appendix A: TC2 - 6-1.1A Plan and TC2 - 6-1.1A Profile**.

##### *Visual Impact*

The raising of the structure by approximately 25' would create additional visual impacts to the City.

##### *Geometric Impacts*

- Length of Structure - Because of the profile increase and due to settlement issues related to the landfill and site geology for large extensive fills, this would likely require extending

the structure length considerably. It is estimated that this may increase the overall structure length by 1000 – 1200 feet.

- Column Locations – Because of the increased height of the structure, the columns and the resulting foundations will likely be more robust than originally envisioned. It appears that the columns can be positioned within the Caltrain, HSR and street corridors with some minor realignment of the street layouts. However, construction of the foundations of these columns may pose some constructability issues or adversely affect the operations of the track and road facilities during construction depending on the size of the overhead foundations and the required horizontal construction clearances that will be required. There may be limited opportunities for providing shooflies and detours during construction depending on construction schedules related to the various affected projects. Adjusting the span lengths to mitigate the constructability concerns will increase the structure depths and will further exacerbate any issues with conforms and ingress/egress points. The increased structure depth may eliminate feasibility of making the conform work at Bayshore Blvd.
- Conforms – Based on maintaining the practical span lengths as proposed in the PSR, it appears that the higher profiles depending on potential structure depths across the increased railroad corridors may be able to conform to Bayshore Boulevard. However, it results in less than optimal vertical curves at the conforms to the intersection. It will also significantly impact planned ingress and egress points along Geneva Ave Extension in this revised configuration.
- Baylands Development (West Side) Ingress/Egress – The PSR looked at connecting to proposed one-way street couplets of 1<sup>st</sup> and 2<sup>nd</sup> Ave with 3<sup>rd</sup> Ave crossing underneath the overhead structure. Based on the updated Baylands plan, it appears that all three streets were relocated and could be accessed on to Geneva Ave Extension close to or at grade. The raised overhead would eliminate the possibility of crossing at grade and it is likely that all the streets would have to go underneath and not connect to Geneva Ave Extension without significant impacts and/or modifications to the development. Based on the current position, 1<sup>st</sup> and 2<sup>nd</sup> Ave may not have sufficient vertical clearance to go underneath without modifications to the profile and grade revisions. Access to the development on this side would be greatly impacted and will create significant traffic consequences as a result.
- Baylands Development (East Side)/Recology Ingress/Egress – The PSR provided for a single access point for the businesses and development between the Candlestick Point Interchange and the Geneva Ave Overhead. This was an important access for both Baylands and Recology. The access would have to be shifted closer by approximately 300' to the interchange to remain at grade. The closer proximity poses some challenges to the ingress to the Baylands Development as this would reduce merge and lane crossing distances to required left turn access to this development. This may not be as significant an issue as the development requirements may be reduced because of the loss of development area on this alternative to this side. However, the reduced distance to the interchange is close to the Caltrans required limits and would only work in conjunction with this tight interchange configuration.

### *Constructability*

- As defined previously, the larger columns and footings may create some constructability issues. It will also require access across the railroad corridors during construction. Street and railroad layouts should accommodate potential for future column and foundation placement considering that there will be limited shoofly and roadway staging opportunities.
- Falsework over the operating railroad corridors will be challenging. There may be some possibility of placing falsework over the existing Caltrain because of the improved vertical clearance. The challenges will be falsework over the flyover, existing access track and refuge tracks. Precast superstructure members can be used here but that may have some additional impacts to structure depths and profile that will need to be evaluated.

### *Project Cost Related Impacts*

- Increased Structure Length
- More Robust Columns and Foundations
- Construction Costs to resolve the added Constructability Issues
- Construction Staging and Detours

It is anticipated that the increase in structure cost may be up to an additional \$70M for the increased 1100' of structure. These costs are assumptions based on increased structure construction costs only for the Geneva Ave Extension Project and do not include soft costs, shoofly and staging requirements, contingency, and escalation.

## **ALTERNATIVE B**

Refer to **Appendix A: TC2 - 6-1.1B Plan and TC2 - 6-1.1B Profile.**

### *Visual Impact*

The raising of the structure by approximately 25' would create additional visual impacts to the City.

### *Geometric Impacts*

- Length of Structure - Because of the profile and increase due to settlement issues related to the landfill and site geology for large extensive fills, this would likely require extending the structure length considerably. It is estimated that this may increase the overall structure length by 1000 – 1200 feet.
- Column Locations – Because of the increased height of the structure, the columns and the resulting foundation will likely be more robust than originally envisioned. It appears that the columns can be positioned within the Caltrain, HSR and street corridors with some realignment of the HSR Access Road. However, construction of the foundations of these columns may pose some constructability issues or adversely affect the operations of the track and road facilities during construction depending on the size of the overhead foundations and the required horizontal construction clearances that will be required. There may be limited opportunities for providing shooflies during construction depending on construction schedules related to the various affected projects. Adjusting the span lengths to mitigate the constructability concerns will increase the structure depths and will further exacerbate any issues with conforms and ingress/egress points.

- **Conforms** – Based on maintaining the practical span lengths as proposed in the PSR, it appears that the higher profiles depending on potential structure depths across the increased railroad corridors may be able to conform to Bayshore Boulevard, it results in less than optimal vertical curves at the conforms to the intersection. However, it will significantly impact planned ingress and egress points along Geneva Ave Extension. The increased structure depth may eliminate feasibility of making the conform work at Bayshore Blvd.
- **Baylands Development (West Side) Ingress/Egress** – The PSR looked at connecting to proposed one-way street couplets of 1<sup>st</sup> and 2<sup>nd</sup> Ave with 3<sup>rd</sup> Ave crossing underneath the overhead structure. Based on the updated Baylands plan, it appears that all three streets were relocated and could be accessed on to Geneva Ave Extension close to or at grade. The raised overhead would eliminate the possibility of crossing at grade and it is likely that all the streets would have to go underneath and not connect to Geneva Ave Extension without significant impacts and/or modifications to the grading of the remaining development. Access to the development on this side would be greatly impacted but the size of the future development will also reduce so this will need to be reviewed.
- **Baylands Development (East Side)/Recology Ingress/Egress** – The PSR provided for a single access point for the businesses and development between the Candlestick Point Interchange and the Geneva Ave Overhead. This was an important access for both Baylands and Recology. The access would have to be shifted closer by approximately 200' to the interchange to remain at grade. The closer proximity poses some challenges to the ingress to the Baylands Development as this would reduce merge and lane crossing distances to required left turn access to this development. Access to the development on this side would be greatly impacted and will create significant traffic consequences as a result. Additionally, the reduced distance to the interchange is close to the Caltrans required limits and would only work in conjunction with this tight interchange configuration.

#### *Constructability*

- As defined previously, the larger columns and footings may create some constructability issues. It will also require access across the railroad corridors during construction. Street and railroad layouts should accommodate potential for future column and foundation placement considering that there will be limited shoofly and roadway staging opportunities.
- Falsework over the operating railroad corridors will be challenging. There may be some possibility of placing falsework over the existing Caltrain because of the improved vertical clearance. The challenges will be falsework over the flyover, access track, and refuge tracks. Precast superstructure members can be used here but that may have some additional impacts to structure depths and profile that will need to be evaluated.

#### *Project Cost Related Impacts*

- Increased Structure Length
- More Robust Columns and Foundations
- Construction Costs to resolve the added Constructability Issues



- Construction Staging and Detours

It is anticipated that the increase in structure cost may be up to an additional \$65M for the increased 1100' of structure. These costs are assumptions based on increased structure construction costs only for the Geneva Ave Extension Project and do not include soft costs, shoofly and staging requirements, contingency, and escalation.

## 2) Geneva Avenue Underpass

This alternative would require lowering the current profile of the Geneva Ave Extension to below the Caltrain railroad corridor and the Transition Track Structure Flyovers that are being proposed as part of the Draft EIR/EIS for each alternative. This alternative would be practically more feasible, but there are a number of challenges with this alternative.

Following is a summary of impacts of raising the structure for each HSR Alternative

### **ALTERNATIVE A and B**

Refer to **Appendix A: TC2 - 6-1.2A Plan and TC2 - 6-1.2A Profile** for Alternative A and **Appendix A: TC2 - 6-1.2B Plan and TC2 - 6-1.2B Profile** for Alternative B.

#### *Visual Impact*

There would be a reduction in the overall visual impacts to the City because of the profile of the extension being depressed. However, the net visual impact would still be created by the flyover structure being proposed by the HSR. There would be significant security concerns with pedestrians traversing in the depressed section.

#### *Geometric Impacts*

- Length of Structure – The overall length of structure would be similar to the overhead structure presented in the PSR with possibly a slight reduction in the overall length of the structure.
- Conforms – Based on reductions in the length of structure, the existing conforms as defined in the PSR should only be slightly impacted and should not be an issue. As a result, it should not impact or similarly impact the planned ingress and egress points along Geneva Ave Extension.
- Baylands Development (West Side) Ingress/Egress – The PSR looked at connecting to proposed one-way street couplets of 1<sup>st</sup> and 2<sup>nd</sup> Ave with 3<sup>rd</sup> Ave crossing underneath the overhead structure. Based on the updated Baylands plan, it appears that all three streets were relocated and could be accessed on to Geneva Ave Extension close to or at grade in this revised configuration. The underpass will not affect or only slightly affect this plan.
- Baylands Development (East Side)/Recology Ingress/Egress – The PSR provided for a single access point for the businesses and development between the Candlestick Point Interchange and the Geneva Ave Overhead. This was an important access for both Baylands and Recology. The underpass will not affect or only slightly affect this plan. However, there will need to be an added structure to accommodate Tunnel Ave crossing over the Underpass. This structure can be combined with the Access Road for some economy of scale and staging.

### *Constructability*

- Excavation and construction within landfill material. There are issues that will need to be addressed including settlement concerns, hard driving conditions, hazardous materials, cross contamination, etc. that are part of construction within the landfill.
- High ground water poses a number of constructability concerns. Ground water cutoff will be necessary as the ground water may be contaminated within the landfill. Storage and removal of the water will also need to be addressed.
- Buoyancy - Because this structure would be fairly wide and deep, there would be a need to resist any and all of the large hydrostatic uplift forces. Based on this, the underpass structure will likely require a fairly robust foundation system that will also have issues with placement through landfill and high ground water.
- Impacts of underground construction to the railroad corridors –
  - Transition Track - Because of the large fills associated with the Transition Access Track, there would be large vertical forces that the crossing of the proposed underpass structure would be required to support. It would be recommended to extend the structure length of this structure or add a new structure over the proposed Geneva Ave Extension to reduce these impacts and also to improve constructability.
  - Caltrain RR Corridor – The underpass will need to construct underneath the existing and expanded Caltrain corridor. As potential for shooflies may be extremely limited, it may also be beneficial to construct the structures for Caltrain, access tracks and refuge tracks as well unless they can temporarily be shut down as part of the future construction of the underpass to reduce the potential constructability and operation issues that may result in order to construct the Geneva Ave UP. This would require setting the horizontal layout of Geneva Ave Extension.
  - Positive Retaining Walls - Supporting the heavy train loads with the underpass walls at the deepest section will require positive wall design and detailing to reduce potential of adverse settlement. This may necessitate the use of tie-backs or strutted wall systems. These systems can be costly and pose constructability issues. At certain locations, it may be difficult. Caltrain may also not allow tied back walls within their corridor or directly adjacent to it for either the temporary and/or permanent case due to concerns with potential settlement. Strutted walls would create additional constructability impacts for equipment and placement.
- Impacts to the Roadways – The underground construction will require placement of additional roadway crossings for Tunnel Ave and the Access Road. Based on the alignment these structures can be combined for Alternative A. It is likely that the access road will need to be temporarily closed to accommodate Tunnel Ave staging during construction. For Alternative B they will be separate structures. If Tunnel Ave needs to be staged, it will have impacts to the Golden State Lumber operations and other businesses along Tunnel Ave.

### *Project Cost Related Impacts*

- Construction Costs to resolve the added Constructability Issues
- Increased cost of structure construction for depressed section - \$60M

- Pump Stations - \$4M
- Additional Structures required for the following transportation elements:
  - Tunnel Ave Crossing + HSR Access Road - \$8M
  - Existing Access Tracks and Refuge Track Structures - \$5M
  - West Transition Track if the structure is not extended – \$6M
  - Caltrain Track Corridor – \$12M
- Construction Staging and Detours

It is anticipated that the increase in structure cost may be up to an additional \$100M for the increased cost of the depressed structure and additional structures. These costs are assumptions based on increased structure construction costs only for the Geneva Ave Extension Project and do not include soft costs, shoofly and staging requirements, contingency, and escalation.

### C. Golden State Lumber

The Authority has maintained connection to the track which serves Golden State lumber. While there appears to be no impact to the serviceability of this track, the auxiliary laydown area which Golden State Lumber uses on the south side of Tunnel Ave will be eliminated by the proposed LMF. With the elimination of this laydown area, equipment for off-loading of any railcars from this track will be required to cross Tunnel Ave with equipment and inbound product which would significantly impact Tunnel Ave. To eliminate this impact a potential alternate location for the rail off-loading has been proposed. This location has the capacity to receive 2 rail cars and provides an approximate 2-acre new laydown area to replace the area eliminated by the LMF. See **Appendix A: TC1-A7 – Brisbane – Golden State Lumber Relocation Exhibit**.

## 5.2 Lagoon Road Realignment

The Authority is proposing relocating the access across the railroad corridor from the existing Tunnel Ave/Old County Road Intersection at Bayshore Boulevard approximately 190'+/- to the northwest to the intersection with Valley Drive. The plan proposes constructing a new overhead structure to connect with and extend Lagoon Road towards the partial interchange at US-101. The existing Tunnel Ave Overhead would be demolished to accommodate necessary rail track improvements.

There are a number of impacts to the City that are part of this proposed plan for either alternative, including impacts to Tunnel Ave, the City Corporation Yard, City Fire Station No. 81, and to the City's regional access network

The Authority indicated the Lagoon Rd Extension as shown on the plan in their report. See DWG MY-C0107 (**Appendix B: B-17 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 20 of 49**) for Alternative A and DWG MY-C0206 (**Appendix B: B-18 - Draft EIR/EIS, V3-06, PEPD, Alternative B Book, B4, Structure Roadway LMF Alignment Date Table, Page 13 of 39**) for Alternative B. Refer to **Appendix A: TC2-6-2.1A Plan and TC2-6-2.1A Profile** for Alternative A and **Appendix A: TC2-6-2.1B Plan and TC2-6-2.1B Profile** for Alternative B.

### A. Alternative A

Following is a summary of the impacts associated with Alternative A on the City of Brisbane of the extension and realignment of Lagoon Road:

- Relocation of Tunnel Ave and temporary loss of connection
- Revised access to Kinder Morgan from new access road from Lagoon Road Overhead
- Demolition and Relocation of the City Corporation yard
- Relocation and Demolition of City Fire Station
- Construction of Old County Rd Extension

1) Temporary Loss of Tunnel Avenue Overhead.

It appears that Tunnel Ave Overhead will be cut-off as a result of the embankment construction of the Lagoon Road Extension. The Authority assumes that the access will be discontinued over Tunnel Ave for approximately 3 months before the Lagoon Rd Overhead can be opened.

As the construction of the embankment of Tunnel Ave was subject to fairly large short and long-term settlement considerations due to the proximity to the bay and the associated landfill, it is fairly reasonable to believe that the Lagoon Rd Overhead and embankments will be subject to similar concerns. These may require that the embankments have extended construction settlement periods and may extend the duration of the closure. Regardless, the cut in the connection would have impacts to emergency response services access and times particularly to the Kinder Morgan facility and the Sierra Point business park that should be reviewed.

2) Public Works Corporation Yard

As the east and west transition tracks exit the south entry to the proposed LMF facility, the City Public Works Corporation Yard on Tunnel Ave would be displaced.

3) City Fire Station

The intersection at Valley Drive and Bayshore Boulevard is the current access to the existing Fire Station No. 81. The new Lagoon Road Extension will eliminate access and impact some of the existing fire station buildings. As a result, it is proposed to be relocated south on Bayshore Blvd near existing Tunnel Ave road intersection. Since the new fire station needs to be relocated prior to construction of the Lagoon Rd Extension and the new fire station cannot be built until Tunnel Ave Overhead is demolished, there is an obvious timing issue. This will require that a temporary fire station be constructed between the roadway improvement stages. This may be several years. This will have some impacts to the emergency service response from this fire station during this period. The fire station relocation is being reviewed in another study.

4) Geometric Issues

A review of the proposed geometry. Refer to **Appendix A: TC2-6-2.1A Plan and TC2-6-2.1A Profile.**

- Since this will replace the Tunnel Ave Overhead as a connection to the Bay Trail, consideration of Bicycle and Pedestrian accessibility is important
  - 5.29% longitudinal slope will not be compliant with ADA requirements. There is sidewalk attached to roadway.
  - Pork chop island design at the intersection of Bayshore Blvd/Valley Rd is not bicycle and pedestrian friendly.
- The design speed is defined as 25 mph per the design. This design speed is unreasonably low for a minor arterial street. It is currently posted at 40 mph. The sight distance at the

proposed access road on top the profile appears to meet Caltrans standard for 25MPH or 35MH design speed.

- The 95' curve radius at Curve #4 is only suitable for design speed of 20MPH.
- The 200' intersection spacing between Bayshore Blvd and Old County Rd may be too short for effective signal operation on both intersections. A left turn lane to Old County Road may be necessary. This proximity of these intersections and Park Place will be reviewed under separate report by Traffic Consultant

## **B. Alternative B**

Following is a summary of the impacts associated with Alternative B on the City of Brisbane of the extension and realignment of Lagoon Road:

- Extension and realignment of Lagoon Road
- Revised access to Kinder Morgan
- Revise access to City Corporation yard
- Relocation and Demolition of City Fire Station
- Construction of Old County Rd Extension

### 1) Temporary Loss of Tunnel Avenue Overhead

It appears that Tunnel Ave Overhead will be cut-off as a result of the embankment construction from the construction of the Lagoon Road Extension. The Authority assumes that the access will be discontinued over Tunnel Ave for approximately 3 months before the Lagoon Rd Overhead can be opened. This will also affect ingress and egress to the City Corporation Yard and Kinder Morgan which will be eliminated due to the embankment construction.

As the construction of the embankment of Tunnel Ave was subject to fairly large short and long-term settlement considerations due to the proximity to the bay and the associated landfill, it is fairly reasonable to believe that the Lagoon Rd Overhead and embankments will be subject to similar concerns. These may require that the embankments have extended construction settlement periods and may extend the duration of the closure. Regardless, the cut in the connection would have impacts to emergency response services access and times particularly to the Kinder Morgan facility and the Sierra Point business Park that should be reviewed.

### 2) City Fire Station

The intersection at Valley Drive and Bayshore Boulevard is the current access to the existing Fire Station No. 81. The new Lagoon Road Extension will provide access to a reconstructed Fire Station in the same location and impact some of the existing fire station buildings. Since the new fire station needs to be relocated prior to construction of the Lagoon Rd Extension and the new fire station cannot be built until Lagoon Road Improvements are completed, this will require that a temporary fire station be constructed. This will have some impacts to the emergency service response from this fire station during this period. The fire station relocation is being reviewed in another study.



### 3) Geometric Issues

A review of the proposed geometry is as follows:

- Since this will replace the Tunnel Ave Overhead as a connection to the Bay Trail, consideration of Bicycle and Pedestrian accessibility is important
  - 5.51% longitudinal slope will not be compliant with ADA requirements. There is sidewalk attached to roadway.
  - Pork chop island design at the intersection of Bayshore Blvd/Valley Rd is not bicycle and pedestrian friendly.
- The design speed is defined as 25 mph per the design. This design speed is unreasonably low for a minor arterial street. It is currently posted at 40 mph.
- The 95' curve radius at Curve #4 is only suitable for design speed of 20MPH.
- The 200' intersection spacing between Bayshore Blvd and Old County Rd may be too short for effective signal operation on both intersections. A left turn lane to Old County Road may be necessary. This proximity of these intersections and Park Place will be reviewed under separate report by Traffic Consultant

## 6. Alternatives Analysis

Based on site selection criteria included in the SSA and information gathered from the Summary of Requirements for Operations and Maintenance Facilities, we have identified and evaluated several potential alternative sites which could accommodate an LMF. For each alternative location, we have completed high-level layouts to verify that that proposed alternate LMF site could meet the Authority's requirements.

### 6.1 Bayview Industrial District – San Francisco

This potential site is located in the Bayview Industrial District within the City of San Francisco and is generally bound by Napoleon Street on the North, Industrial Street on the South, US-101 to the west and I280 & the Caltrain Corridor on the east. See **Appendix A: TC1-A3 - Bayview Industrial Area - LMF Alternative 1.**

The area identified as a potential alternate site is comprised of approximately 71 acres of currently developed parcels zoned PDR-2, (Production, Distribution and Repair). The site has a historical mixed industrial and commercial use which at various times in the past was freight rail served. An LMF in this location would be consistent with the designated land use and would be well buffered from nearby residential areas. The site would be large enough to accommodate storage and maintenance operations for Level I-III maintenance activities.

The site is within proximity to the mainline tracks. The proposed site could be connected to the mainline tracks to allow northbound and southbound traffic to enter the facility via dedicated lead tracks. Additionally, the site is located approximately 2.5 miles south of the 4<sup>th</sup> and King Caltrain Station.

The LMF would be a stub-ended but would be capable of dispatching and receiving trains from both directions on the mainline. Potential operational inefficiencies could be offset by the close proximity of proposed site relative to the nearest HSR station.

## 6.2 Newhall Yard – San Jose

The potential site is located in the area known as the Newhall Yard and is generally bound by Coleman Ave to the North, Caltrain right-of-way to the south, Brokaw Road to the West and I-880 to the east. See **Appendix A: TC1-A4 - Newhall Yard - LMF Alternative 2.**

The area identified as a potential alternate site is comprised of approximately 47 acres of previously developed land zoned HI (Heavy Industrial). The site has a historical rail use, at one time being used by Union Pacific Railroad's predecessors as a freight rail yard. An LMF in this location would be consistent with the designated land use and would be well buffered from nearby residential areas. The site would be large enough to accommodate storage and maintenance operations for Level I-III maintenance activities.

The site is within proximity to the mainline tracks. The proposed site could be connected to the mainline tracks to allow northbound and southbound traffic to enter the facility via dedicated leads. Additionally, the site is located less than a mile north of the Diridon Caltrain Station.

## 6.3 Coyote Valley – Santa Clara County

The potential area identified is located in the area known as Coyote Valley and is partially located on parcels within the City of San Jose and County of Santa Clara. It is generally bound by Bailey Ave to the northwest, Scheller Ave. to the southeast, Santa Teresa Blvd. to the southwest and Caltrain right-of-way to the northeast. See **Appendix A: TC1-A5 - Coyote Valley - LMF Alternative 3.**

The area identified as a potential alternate site is comprised of +/- 633 acres of sparsely developed land zoned A (Agriculture). An LMF in this location would require a land use change. The site would be large enough to accommodate storage and maintenance operations for Level I-III maintenance activities and potentially for consolidation of multiple planned operations and maintenance facilities within the area.

The site is within proximity to the mainline tracks. The proposed site could be connected to the mainline tracks to allow north-bound and south-bound traffic to enter the facility via dedicated leads. Additionally, the site is located approximately 15 miles south of the Diridon Caltrain Station.

## 6.4 San Francisco – Gilroy LMF/MOWF Consolidation

The potential site is located just south of Gilroy and is generally bound by Southside Drive to the North, Bloomfield Ave to the south, Union Pacific right-of-way to the west. See **Appendix A: TC1-A6 - San Francisco-Gilroy LMF-MOWF Consolidation - LMF Alternative 4.**

The area identified as a potential alternate site is comprised of approximately 150 acres of sparsely developed land zoned A (Agriculture). An LMF in this location would require a land use change. The site would be large enough to accommodate storage and maintenance operations for Level I-III maintenance activities and potentially for consolidation of multiple planned operations and maintenance facilities within the area.

The site is within proximity to the mainline tracks. The proposed site could be connected to the mainline tracks to allow northbound and southbound traffic to enter the facility via dedicated leads. Additionally, the site is located approximately 32 mi south of the Diridon Caltrain Station.

The Authority envisioned there to be only one location in the northern section of the route that will handle activities associated with a level III facility. The Authority identified two potential locations in their report, one at Brisbane and one at Gilroy however the Authority envisioned the two facilities working together.

The alternative proposed to consolidate these two sites to one located in Gilroy. The site is currently planned as a Maintenance of Way Facility. Co-locating these facilities could facilitate better coordination and utilization of operations systems as assets while also potentially reducing the overall footprint required for the facilities.

## 7. Recommendations

The following are a list of key recommendations:

1. **Site Selection:** Evaluate the potentially feasible alternate sites identified in this report.
2. **Site Selection:** Consolidate the planned LMF's in the region to areas more easily developable with less impacts such as Coyote Valley or Gilroy. Potentially co-locate with other maintenance-of-way facilities planned in the vicinity of Gilroy.
3. **Site Selection:** Evaluate reducing the level of service for the LMF within the project segment to level 1 and reevaluate potential sites outside of Brisbane for reduced site size criteria. Locate a level III LMF in the vicinity of Gilroy to operationally work together with a level I LMF within the project segment.
4. **Site Selection:** Evaluate reducing the level of service at the proposed Brisbane LMF (Both east and West) to that of a level I LMF. Locate level III LMF in the vicinity of Gilroy.
5. **Geneva Avenue Extension:** Evaluate alternative LMF rail access design to mitigate impacts to the proposed Geneva Avenue Extension overpass.
6. **Brisbane East LMF:** Evaluate relocation and impacts to the City Corporation Yard.
7. **Brisbane (East and West) LMF:** Condense layout to the smallest footprint possible, tighten track spacing, tighter curves, eliminate tracks.
8. **Brisbane (East and West) LMF:** Evaluate stub ended or partially sub-ended concept for West and East options to reduce facility size.
9. **Brisbane (East and West) LMF:** Evaluate modification of the Tunnel Avenue bridge to allow Tunnel Ave and Lagoon Rd access to remain throughout construction.
10. **Brisbane (East and West) LMF:** Evaluate Fire Station removal and reconstruction.
11. **Brisbane (East and West) LMF:** Evaluate a relocation option for Golden State Lumber.

## List of Appendices

### Appendix A: Figures

1. TC1-A1 - West Transition Track at Geneva, Alternative 1
2. TC1-A2 - West Transition Track at Geneva, Alternative 2
3. TC1-A3 - Bayview Industrial Area - LMF Alternative 1
4. TC1-A4 - Newhall Yard - LMF Alternative 2
5. TC1-A5 - Coyote Valley - LMF Alternative 3
6. TC1-A6 - San Francisco-Gilroy LMF-MOWF Consolidation - LMF Alternative 4
7. TC2-6-1.1A PP

8. TC2-6-1.1B PP
9. TC2-6-1.2A PP
10. TC2-6-1.2B PP
11. TC2-6-2.1A Plan
12. TC2-6-2.1B Plan
13. TC2-MY-C0101A – Geneva
14. TC2-MY-C0201B - Geneva

**Appendix B: Draft EIR/EIS Source References**

1. B1 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 18
2. B2 – Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 11
3. B3 – Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 35
4. B4 – CHSRA Factsheet for NorCal LMF
5. B5 – Draft EIR/EIS, V1, Chapter 2 – Alternatives, Page 36
6. B6 - Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 21
7. B7 - Draft EIR/EIS, V2, Appendix 2-F – Summary Requirements Operations Maintenance Facilities, Page 11-12
8. B8 – Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 16
9. B9 – Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMP Alignment Date Table, Page 17
10. B10 – Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMP Alignment Date Table, Page 18
11. B11 – B-11 - Draft EIR/EIS, V3-06, PEPD, Alternative A Book, A4, Structure Roadway LMF Alignment Date Table, Page 19
12. B12 – Draft EIR/EIS, V3-10, PEPD, Alternative B Book, B4, LMF Alignment Data Table, Pages 8 & 10
13. B-13 Draft EIR/EIS, V3-10, PEPD, Alternative B Book, B4, LMF Alignment Data Table, Page 11
14. B-14 - Draft EIR/EIS, V3-10, PEPD, Alternative B Book, B4, LMF Alignment Data Table, Page 12
15. B-15 - Draft\_EIRS\_FJ\_V3-06, PEPD, Alternative\_A, Book\_A4\_Structures\_Roadway\_LMF, Alignment\_Data\_Table, Page 14 of 49
16. B-16 - Draft\_EIRS\_FJ\_V3-10\_PEPD\_Alternative\_B\_Book\_B4\_LMF\_Alignment\_Data\_Table 8
17. B-17 - Draft\_EIRS\_FJ\_V3-06\_PEPD\_Alternative\_A\_Book\_A4\_Structures\_Roadway\_LMF, Alignment\_Data\_Table, Page 20 of 49

18. B-18 - Draft\_EIRS\_FJ\_V3-10\_PEPD\_Alternative\_B\_Book\_B4\_LMF\_Alignment\_Data\_Table,  
Page 13 of 39



# **Appendix A**

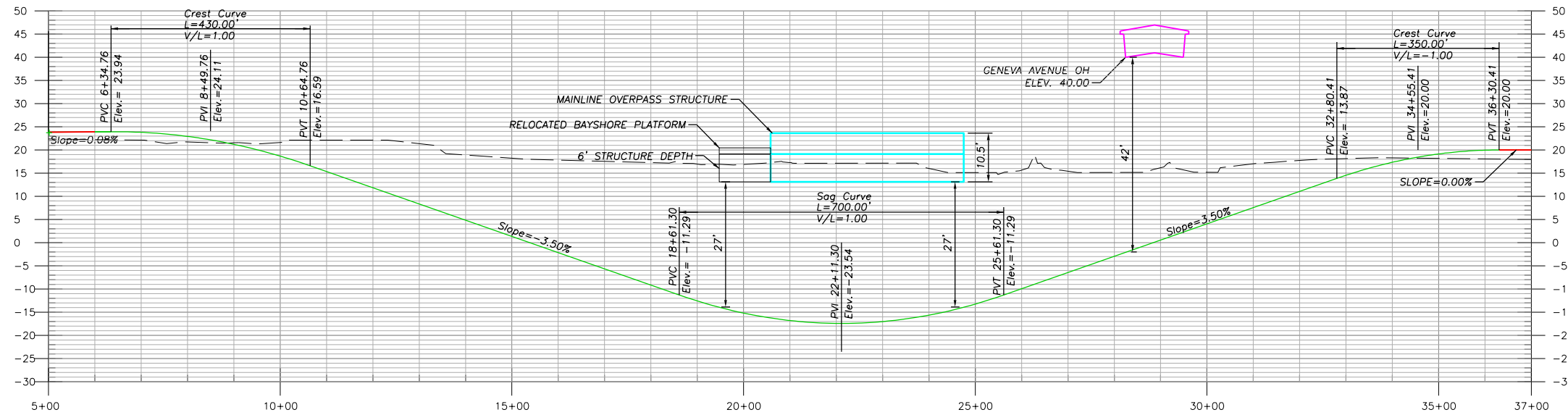
## **Figures**

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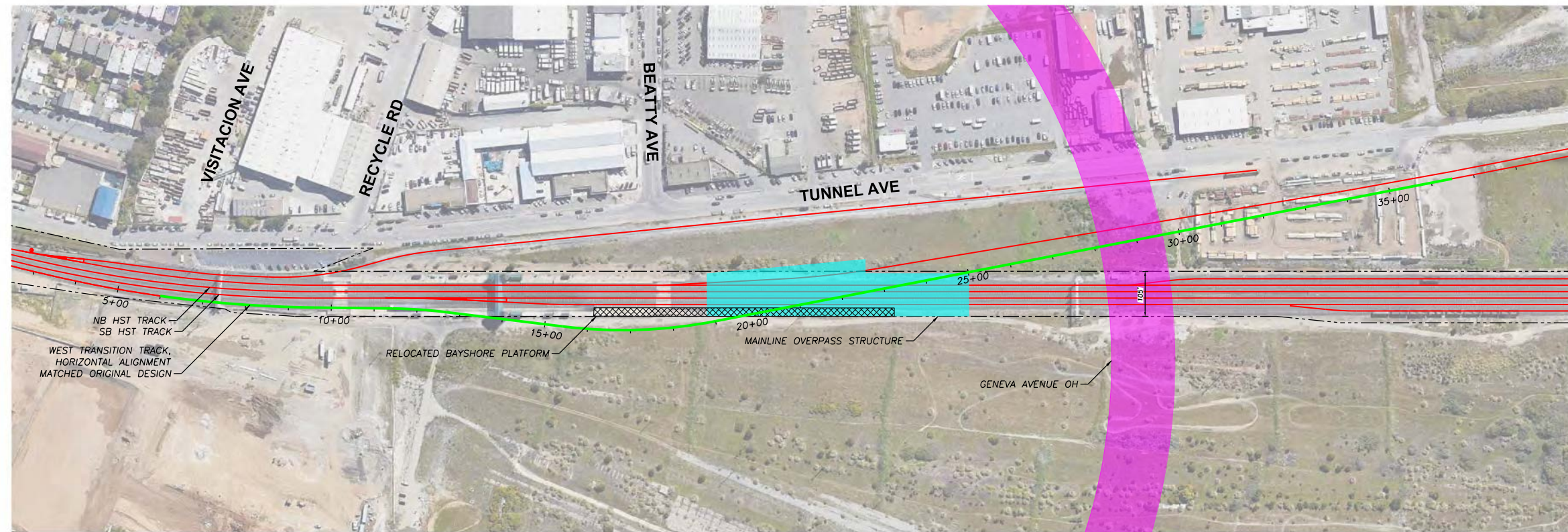
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**LEGENDS:**

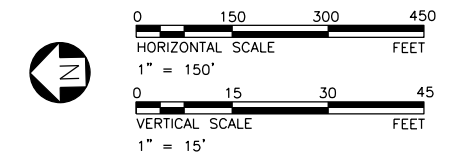
- EXISTING TRACK —
- PROPOSED TRACK —
- BAYSHORE PLATFORM
- GENEVA AVE OVERHEAD
- MAINLINE OVERPASS STRUCTURE
- RIGHT OF WAY



**WEST TRANSITION TRACK ALTERNATIVE 1 - PROFILE**



**WEST TRANSITION TRACK ALTERNATIVE 1 - PLAN**



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0, 1, 2

DEPARTMENT OF PUBLIC WORKS  
BRISBANE, CALIFORNIA

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 PROJ. ENGR.: \_\_\_\_\_  
 DATE: 2020-08-25  
 SCALE: AS NOTED  
 SHEET NO. 1 OF 1 SHEETS

MR RANDY BREULT  
 DIRECTOR OF PUBLIC WORKS

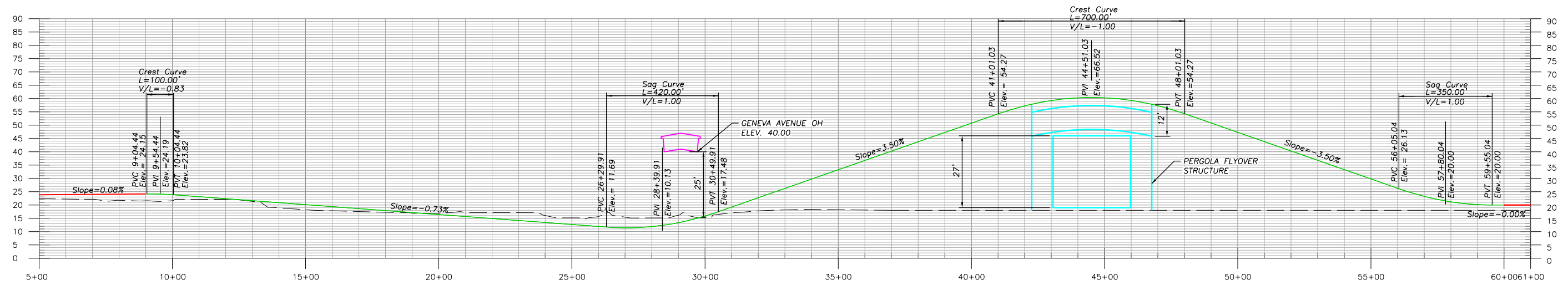
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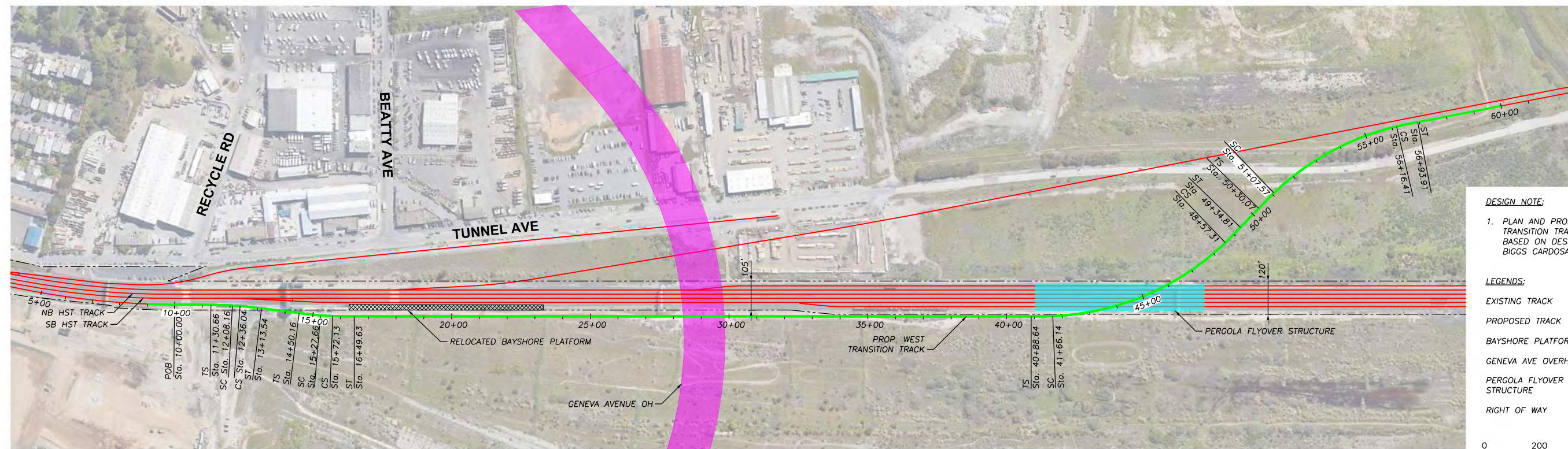
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A1 – WEST TRANSITION  
 TRACK AT GENEVA  
 –ALTERNATIVE 1





**WEST TRANSITION TRACK ALTERNATIVE 2 - PROFILE**



**WEST TRANSITION TRACK ALTERNATIVE 2 - PLAN**

**DESIGN NOTE:**  
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- EXISTING TRACK —
  - PROPOSED TRACK —
  - BAYSHORE PLATFORM
  - GENEVA AVE OVERHEAD
  - PERGOLA FLYOVER STRUCTURE
  - RIGHT OF WAY

0 200 400 600  
 HORIZONTAL SCALE  
 1" = 200'

0 20 40 60  
 VERTICAL SCALE  
 1" = 20'



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 BRISBANE, CALIFORNIA

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MR RANDY BREULT  
 DIRECTOR OF PUBLIC WORKS

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A2 – WEST TRANSITION  
 TRACK AT GENEVA  
 –ALTERNATIVE 2

BRISBANE

CALIFORNIA

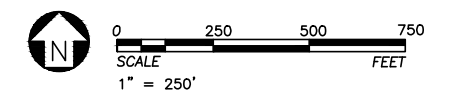
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- LEGENDS FOR ZONING DISTRICTS:**
- PDR-2 PDR PRODUCTION, DISTRIBUTION, AND REPAIR
  - M-2 HEAVY INDUSTRIAL
  - RH-1 RESIDENTIAL-HOUSE, ONE FAMILY
  - RH-2 RESIDENTIAL-HOUSE, TWO FAMILY
  - P PUBLIC
  - NCD NEIGHBORHOOD COMMERCIAL SHOPPING CENTER

- LEGENDS FOR PROPOSED ALTERNATE LMF:**
- LMF LIMITS
  - ACCESS AND MAINLINE CONNECTING TRACKS
  - MAINTENANCE SHOP TRACKS
  - STORAGE, INSPECTION AND SERVICING TRACK
  - PARKING, STORAGE, SUPPORT AREAS
  - CALTRAIN RIGHT OF WAY
  - PROPERTY LINE



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2

**A3 - ALTERNATE LMF LOCATION  
BAYVIEW INDUSTRIAL AREA  
SAN FRANCISCO, CALIFORNIA**

BRISBANE CALIFORNIA

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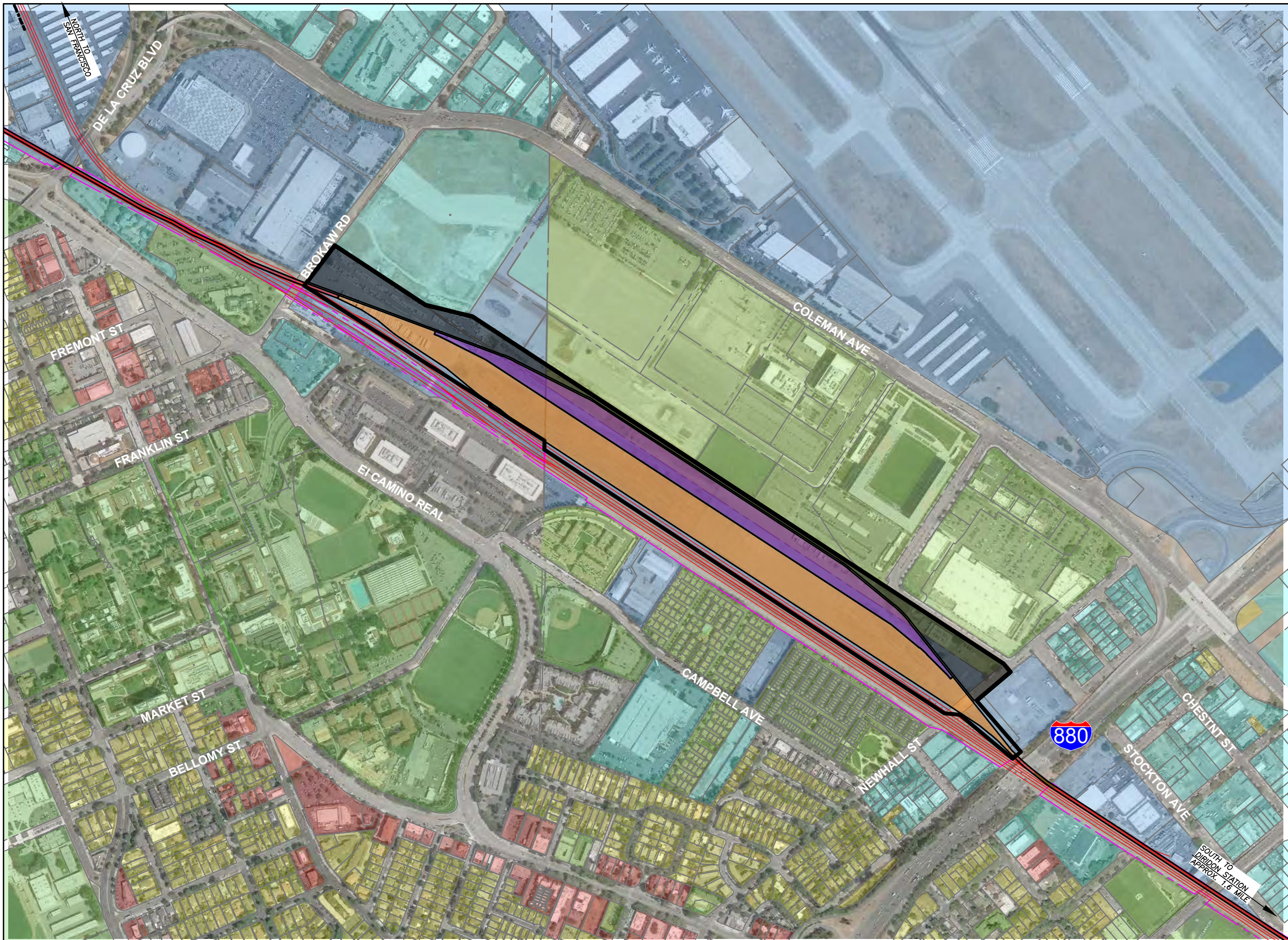
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MR RANDY BREULT  
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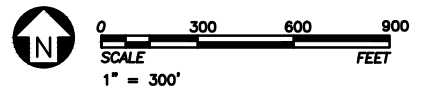
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- LEGENDS FOR ZONING DISTRICTS:**
- HI HEAVY INDUSTRIAL
  - LI LIGHT INDUSTRIAL
  - R RESIDENTIAL
  - CO/DC COMMERCIAL
  - A(PD) PLANNED/PUBLIC DEVELOPMENT

- LEGENDS FOR PROPOSED ALTERNATE LMF:**
- LMF LIMITS
  - ACCESS AND MAINLINE CONNECTING TRACKS
  - MAINTENANCE SHOP TRACKS
  - STORAGE, INSPECTION AND SERVICING TRACK
  - PARKING, STORAGE, SUPPORT AREAS
  - RAILROAD RIGHT OF WAY
  - PROPERTY LINE



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

**A4 – ALTERNATE LMF LOCATION  
NEWHALL YARD  
SAN JOSE, CALIFORNIA**

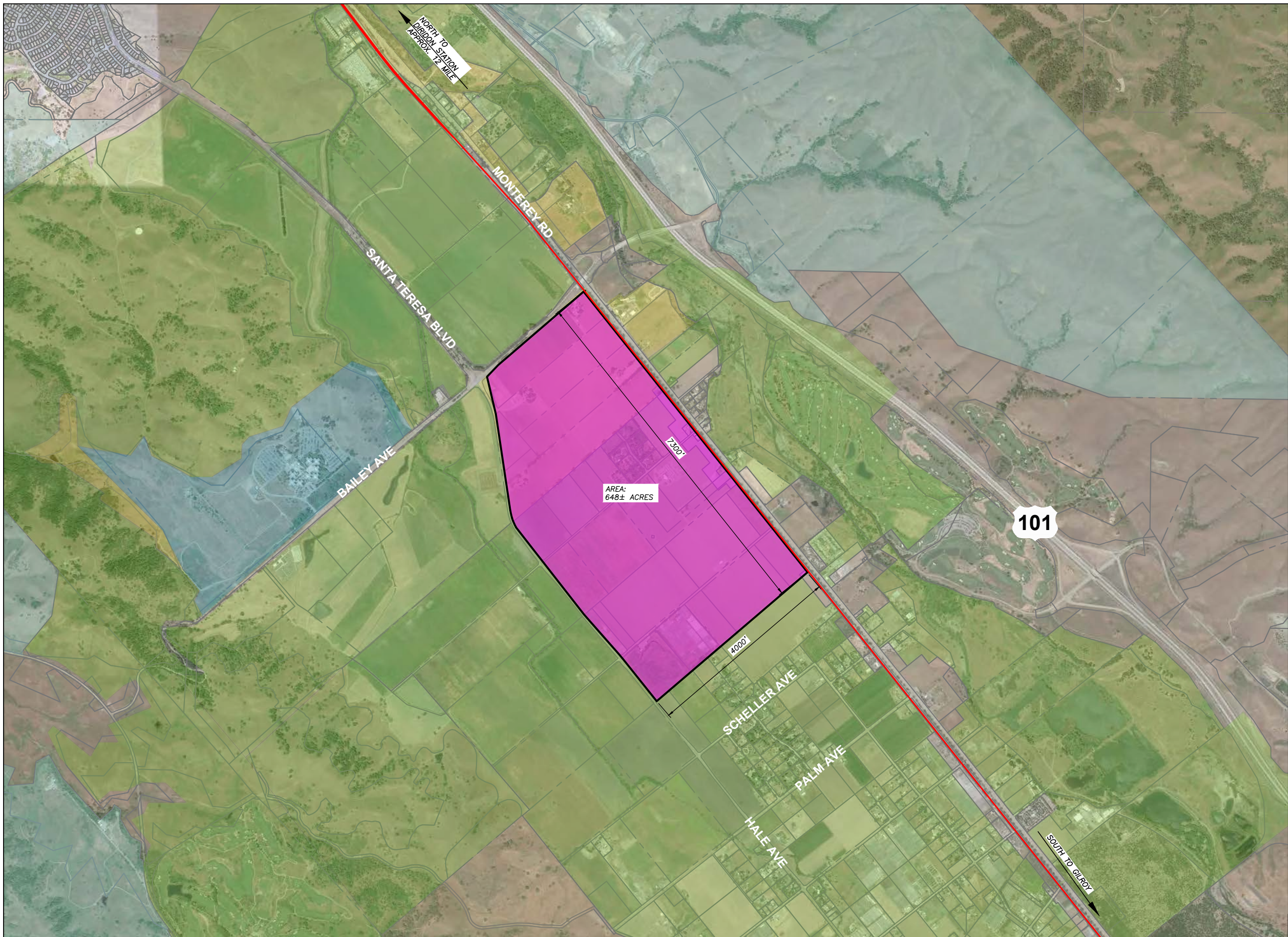
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LEGENDS FOR ZONING DISTRICTS:

- HS HILLSIDE
- A AGRICULTURE
- AR AGRICULTURE RANCHLANDS
- R RESIDENTIAL

LEGENDS FOR PROPOSED ALTERNATE LMF:

- LMF LIMITS
- PROPERTY LINE



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DEPARTMENT OF PUBLIC WORKS  
BRISBANE, CALIFORNIA

A5 – ALTERNATE LMF LOCATION  
COYOTE VALLEY  
SAN JOSE, CALIFORNIA

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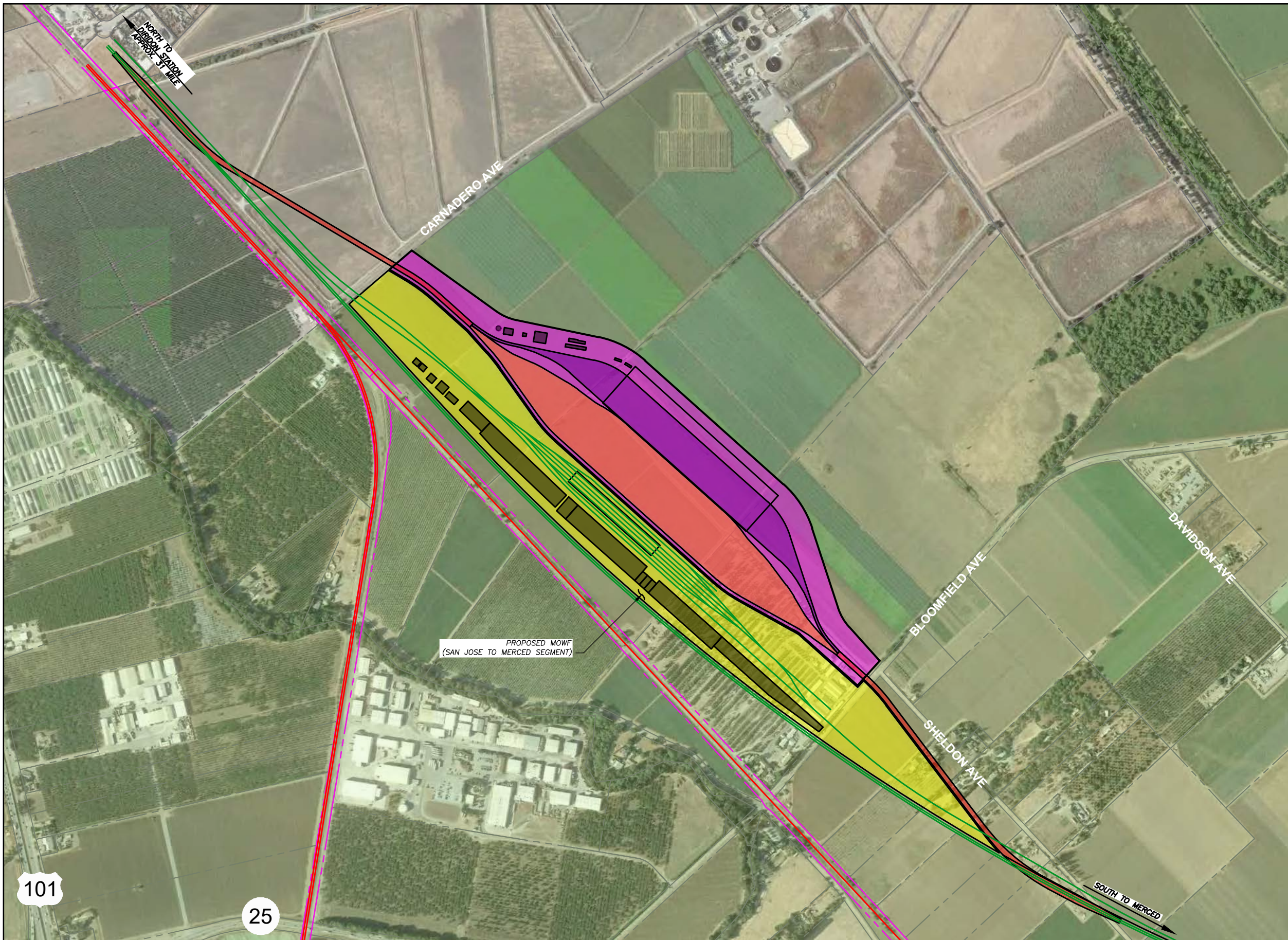


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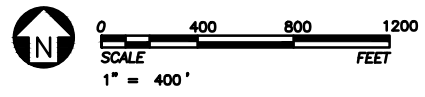


- LEGENDS FOR ZONING DISTRICTS:**
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- LEGENDS FOR PROPOSED ALTERNATE LMF:**
- LMF LIMITS
  - MOWF LIMITS
  - MAINTENANCE SHOP TRACKS
  - STORAGE, INSPECTION AND SERVICING TRACK
  - PARKING, STORAGE, SUPPORT AREAS
  - RAILROAD RIGHT OF WAY
  - PROPERTY LINE

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PROPOSED MOWF  
(SAN JOSE TO MERCED SEGMENT)



**A6-LMF & MOWF CONSOLIDATION  
GILROY MOWF FACILITY  
SAN FRANCISCO, CALIFORNIA**

BRISBANE CALIFORNIA

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BRISBANE, CALIFORNIA**

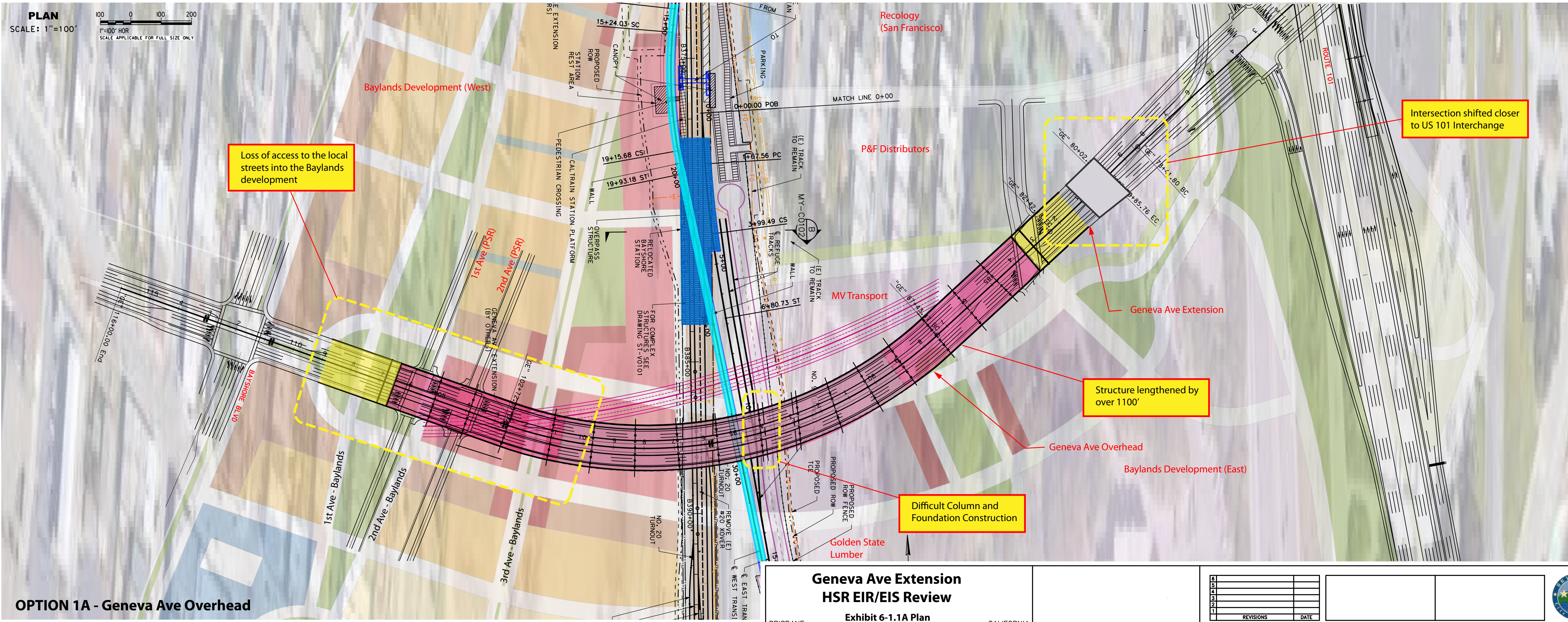
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MR RANDY BREULT  
DIRECTOR OF PUBLIC WORKS

FILE NO. \_\_\_\_\_



**PLAN**  
 SCALE: 1"=100'  
 1"=100' HOR  
 SCALE APPLICABLE FOR FULL SIZE ONLY



Loss of access to the local streets into the Baylands development

Intersection shifted closer to US 101 Interchange

Structure lengthened by over 1100'

Difficult Column and Foundation Construction

- Road Embankment or Retained Fill
- New Roadway Structure
- New Track Fill or Structured Ballast
- New Rail Structure

**OPTION 1A - Geneva Ave Overhead**

**Geneva Ave Extension  
 HSR EIR/EIS Review**  
 Exhibit 6-1.1A Plan  
 BRISBANE CALIFORNIA

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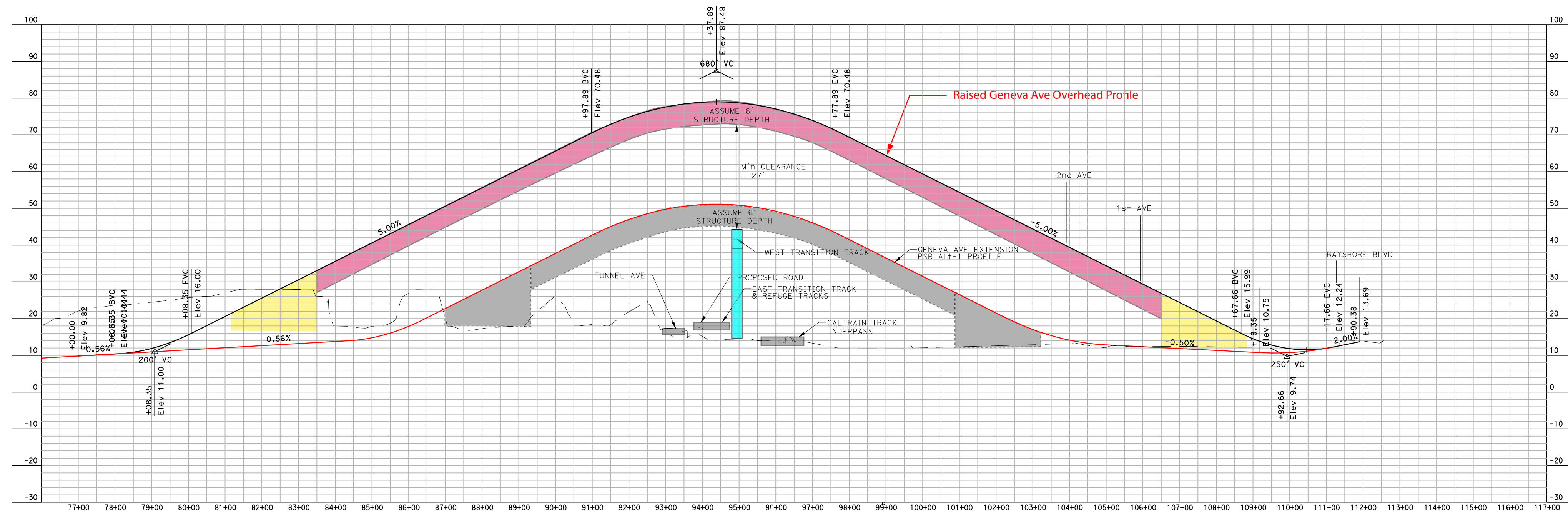



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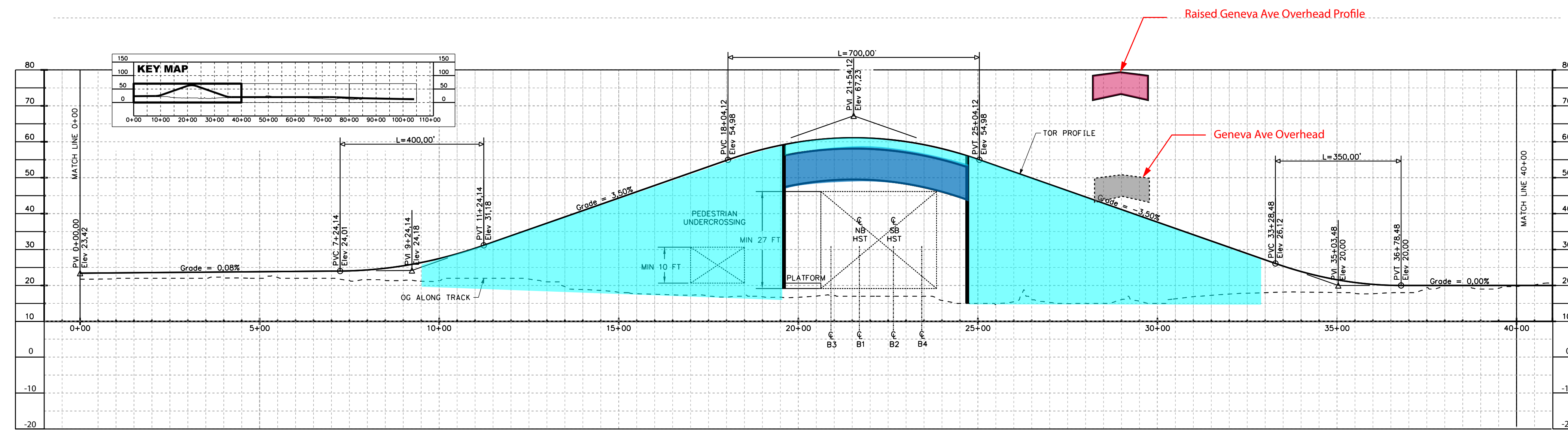
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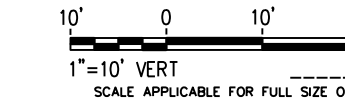


PROFILE GE LINE  
HSR - ALT A

**OPTION 1A - Geneva Ave Overhead**



**WEST TRANSITION TRACK PROFILE**  
SCALE: 1"=100' HOR, 1"=10' VERT



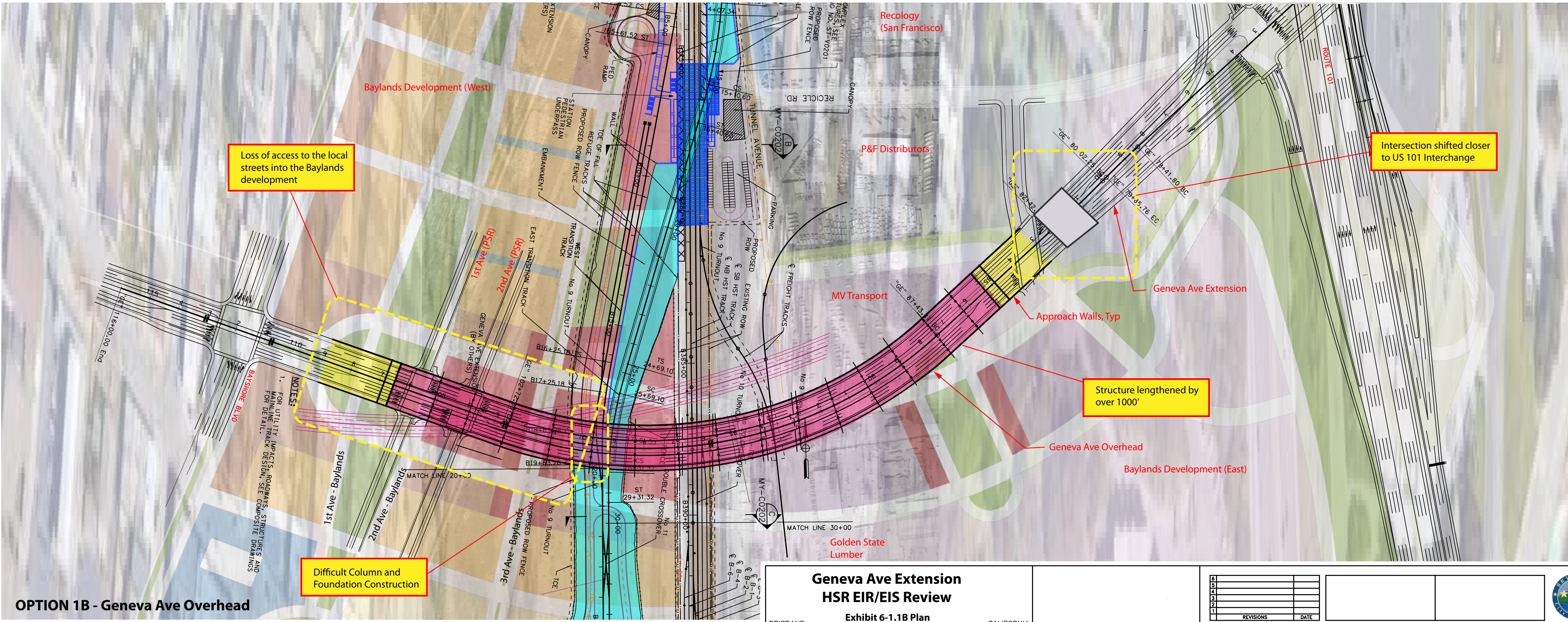
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Loss of access to the local streets into the Baylands development

Intersection shifted closer to US 101 Interchange

Structure lengthened by over 1000'

Difficult Column and Foundation Construction

- Road Embankment or Retained Fill
- New Roadway Structure
- New Track Fill or Structured Ballast
- New Rail Structure

**OPTION 1B - Geneva Ave Overhead**

**Geneva Ave Extension  
HSR EIR/EIS Review**

Exhibit 6-1.1B Plan

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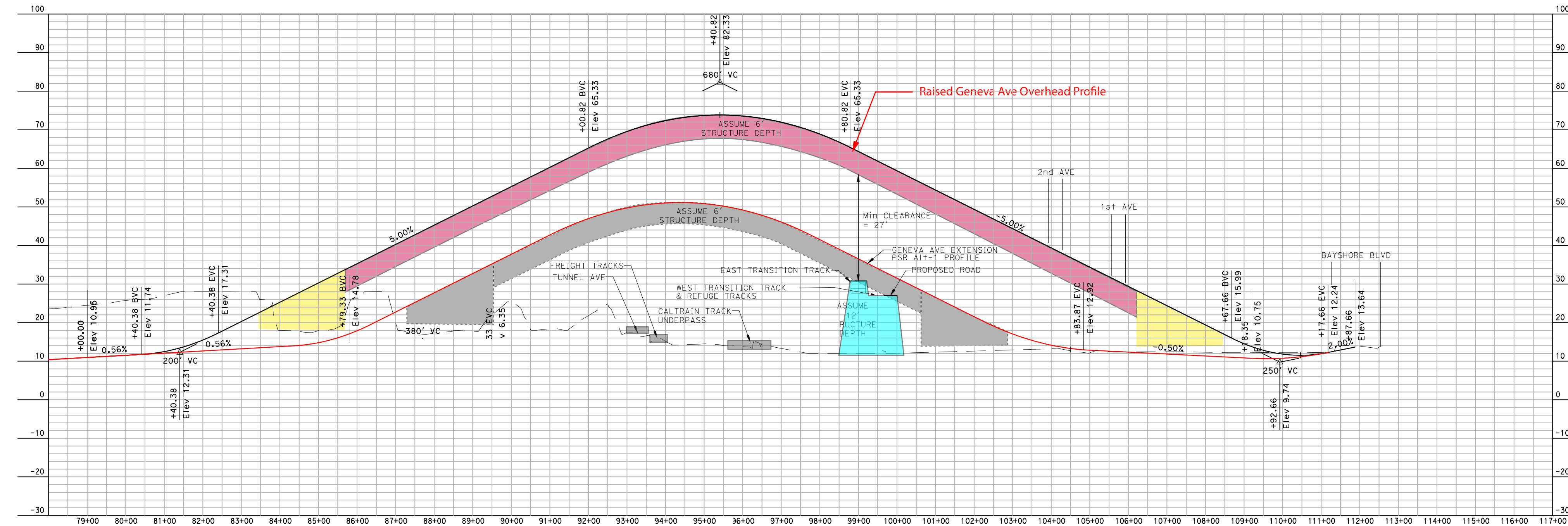
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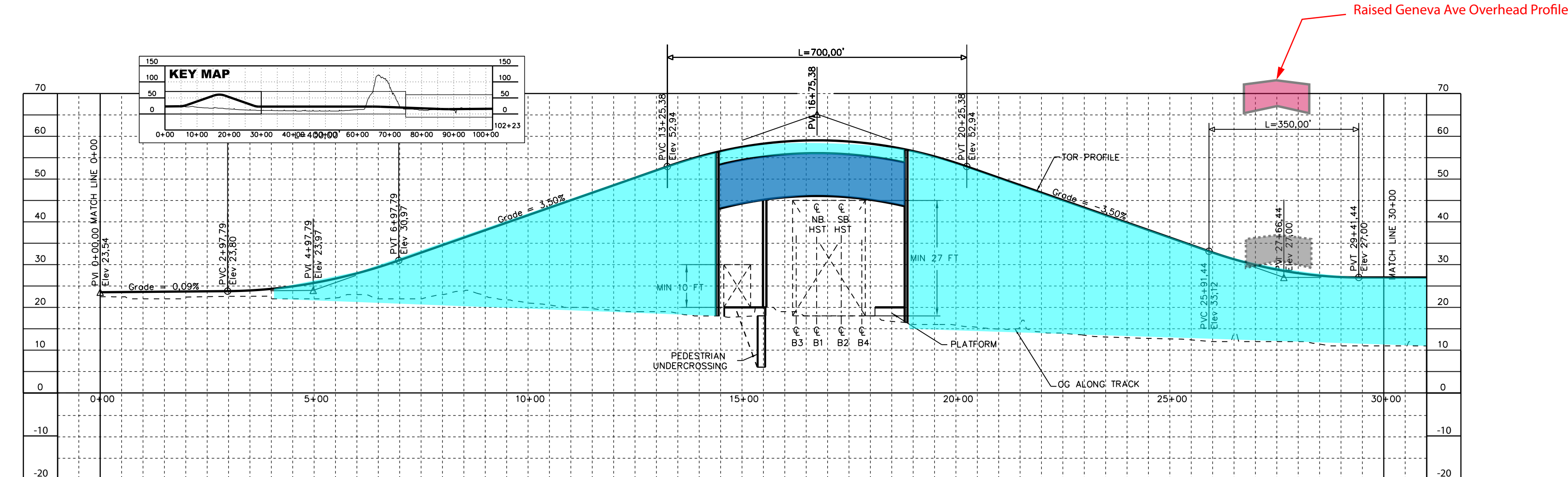




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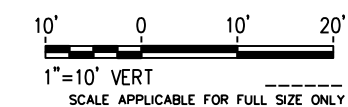
HSR - ALT B

OPTION 1B - Geneva Ave Overhead



EAST TRANSITION TRACK PROFILE

SCALE: 1"=100' HOR, 1"=10' VERT



**Geneva Ave Extension**  
**HSR EIR/EIS Review**  
 Exhibit 6-1.1B Profile  
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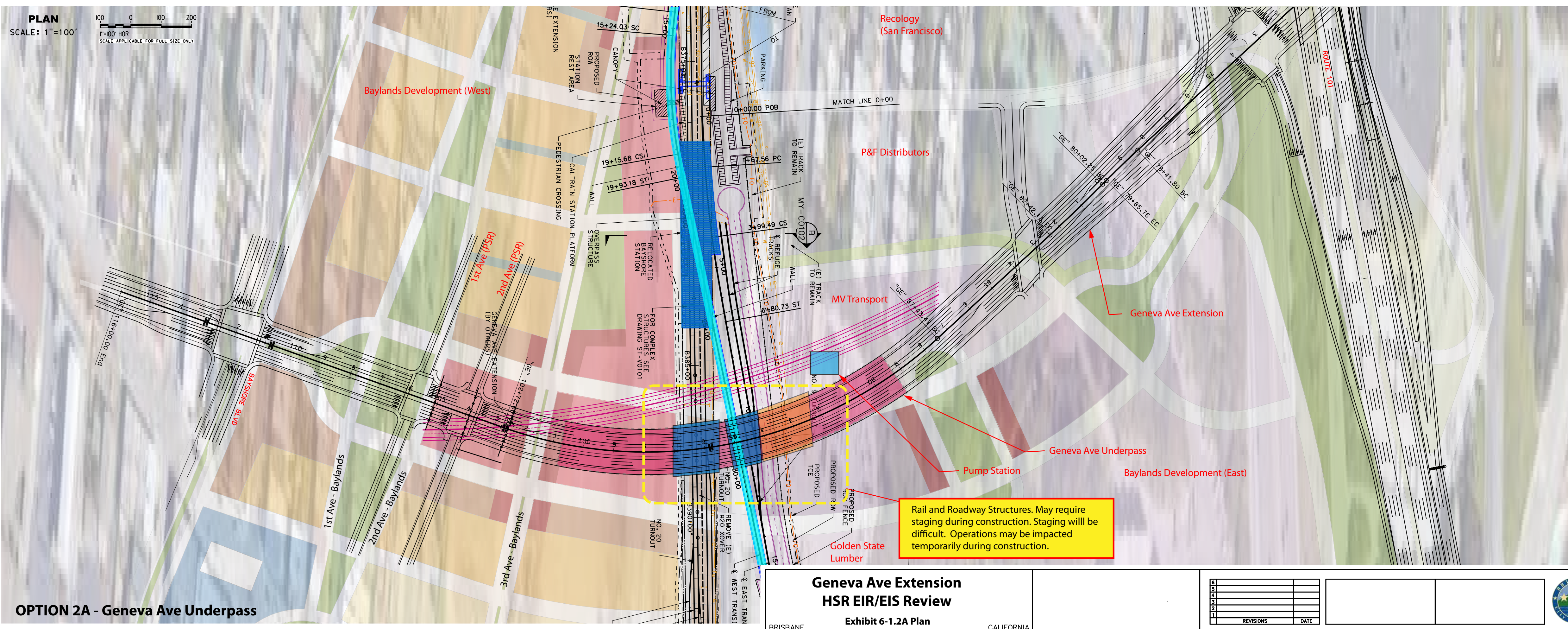
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**PLAN**  
SCALE: 1"=100'  
1"=100' HOR  
SCALE APPLICABLE FOR FULL SIZE ONLY



- Road Embankment or Retained Fill
- New Roadway Structure
- New Track Fill or Structured Ballast
- New Rail Structure

Rail and Roadway Structures. May require staging during construction. Staging will be difficult. Operations may be impacted temporarily during construction.

**OPTION 2A - Geneva Ave Underpass**

**Geneva Ave Extension  
HSR EIR/EIS Review**

Exhibit 6-1.2A Plan

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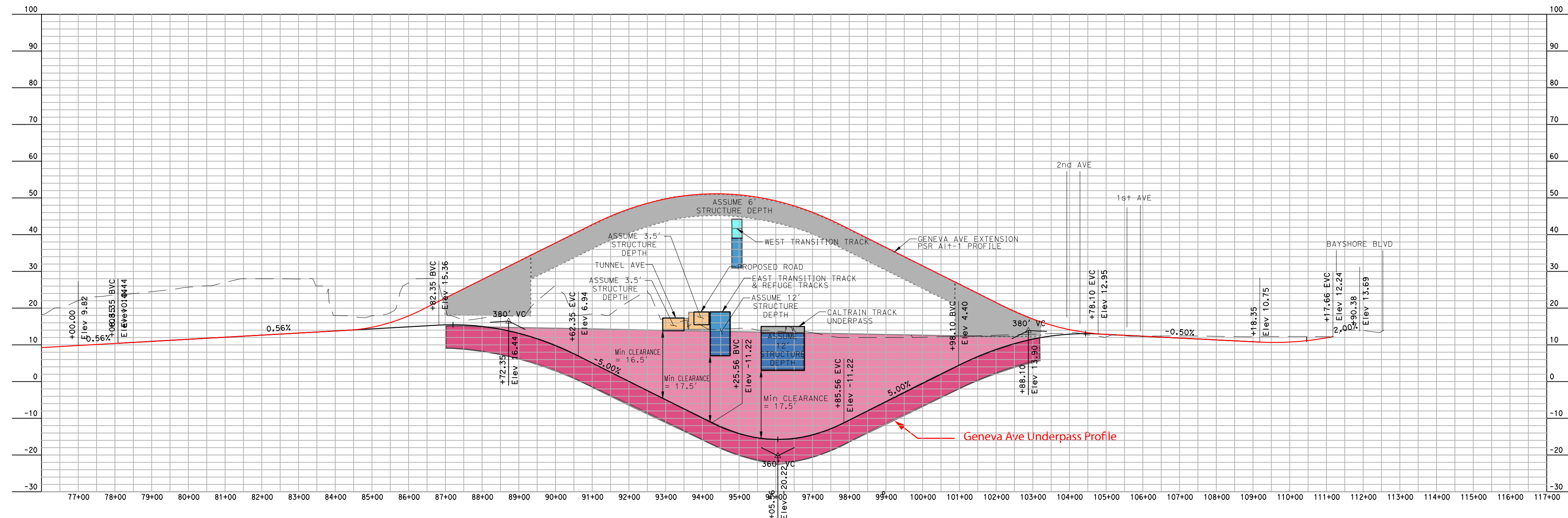
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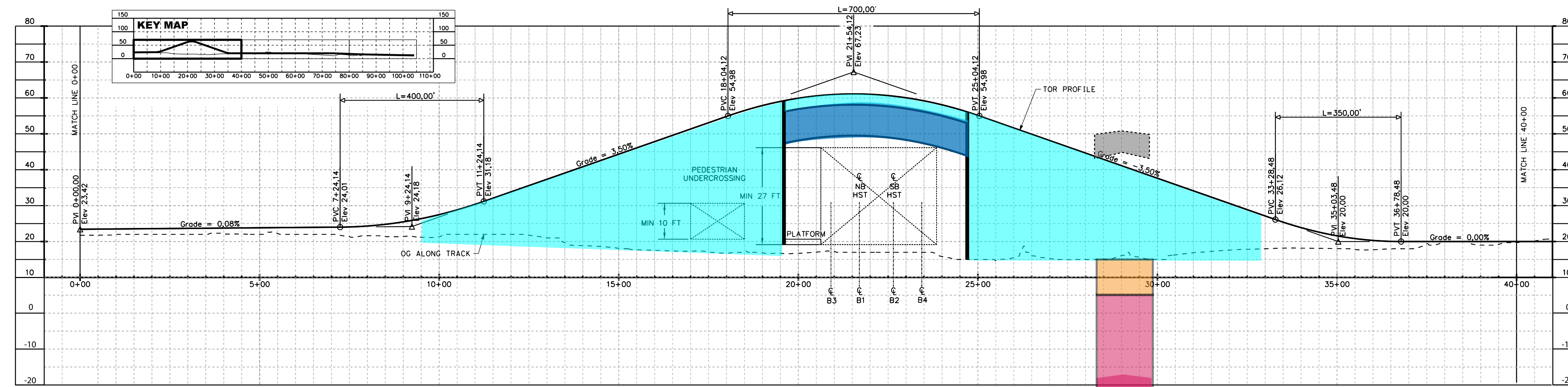




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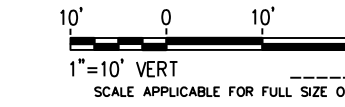
HSR - ALT A

OPTION 2A - Geneva Ave Underpass



WEST TRANSITION TRACK PROFILE

SCALE: 1"=100' HOR, 1"=10' VERT



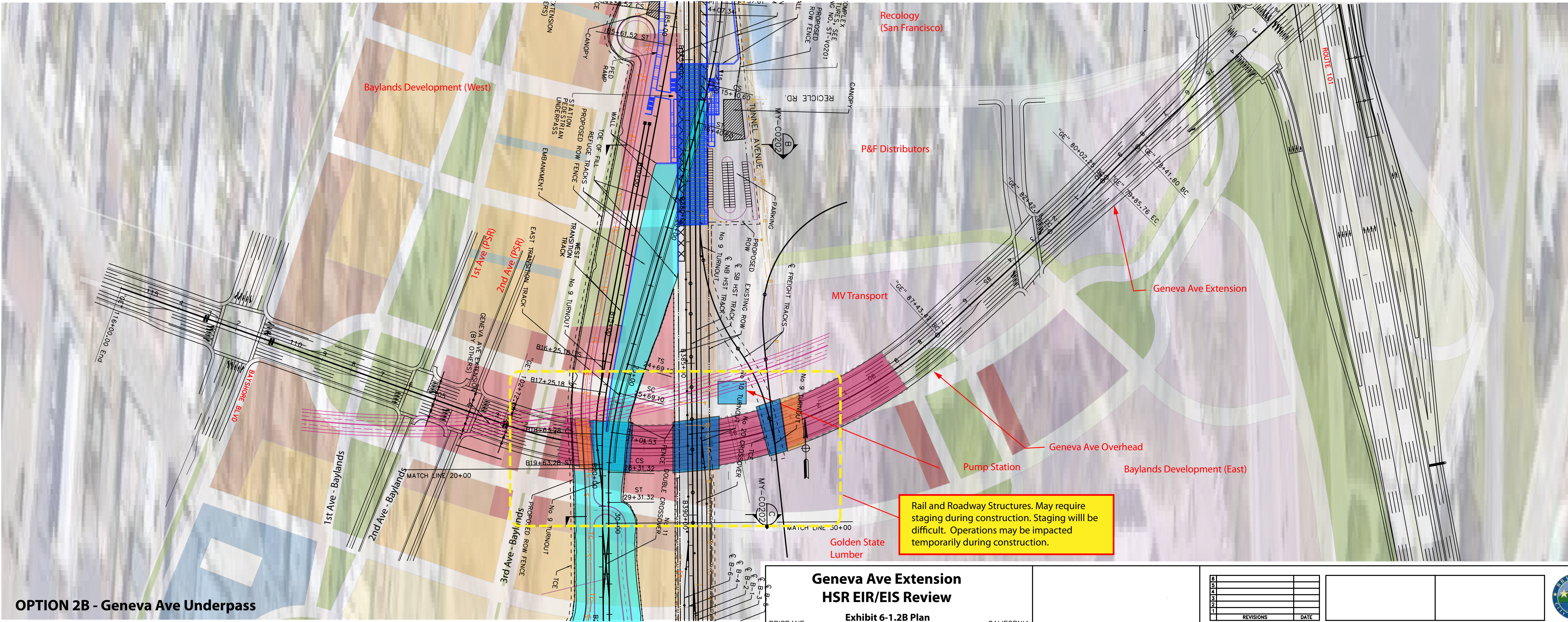
Geneva Ave Extension  
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- Road Embankment or Retained Fill
- New Geneva Structure
- New Roadway Structure
- New Track Fill or Structured Ballast
- New Rail Structure

Rail and Roadway Structures. May require staging during construction. Staging will be difficult. Operations may be impacted temporarily during construction.

**OPTION 2B - Geneva Ave Underpass**

**Geneva Ave Extension  
HSR EIR/EIS Review**

Exhibit 6-1.2B Plan

BRISBANE

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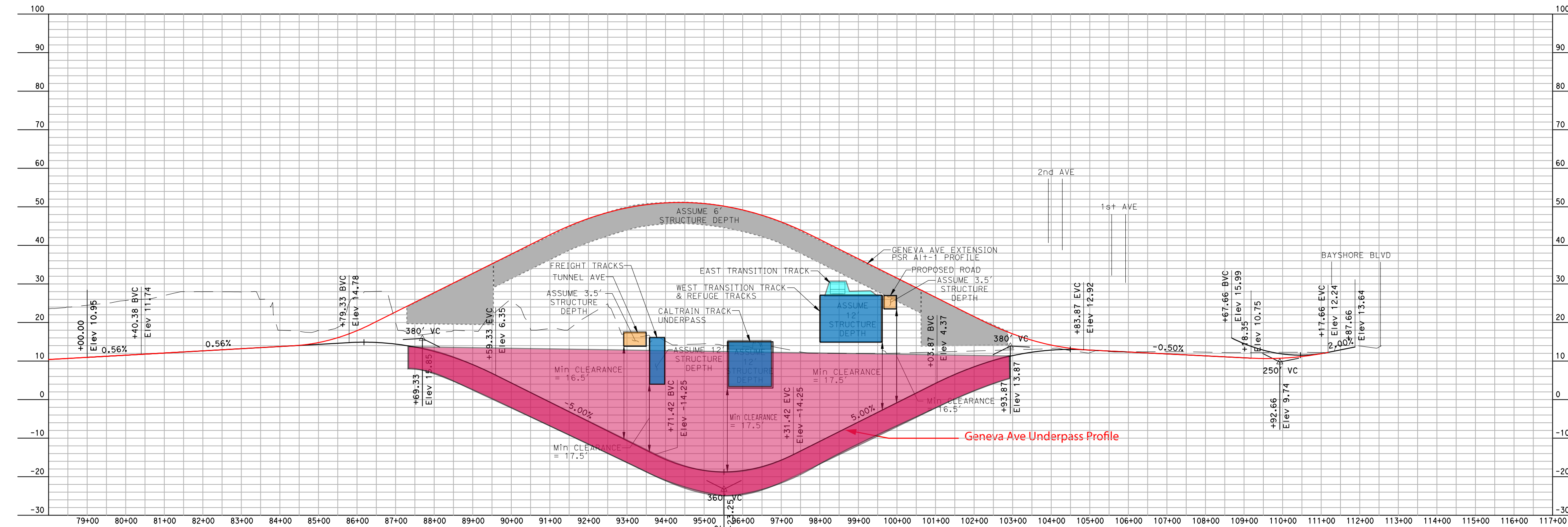
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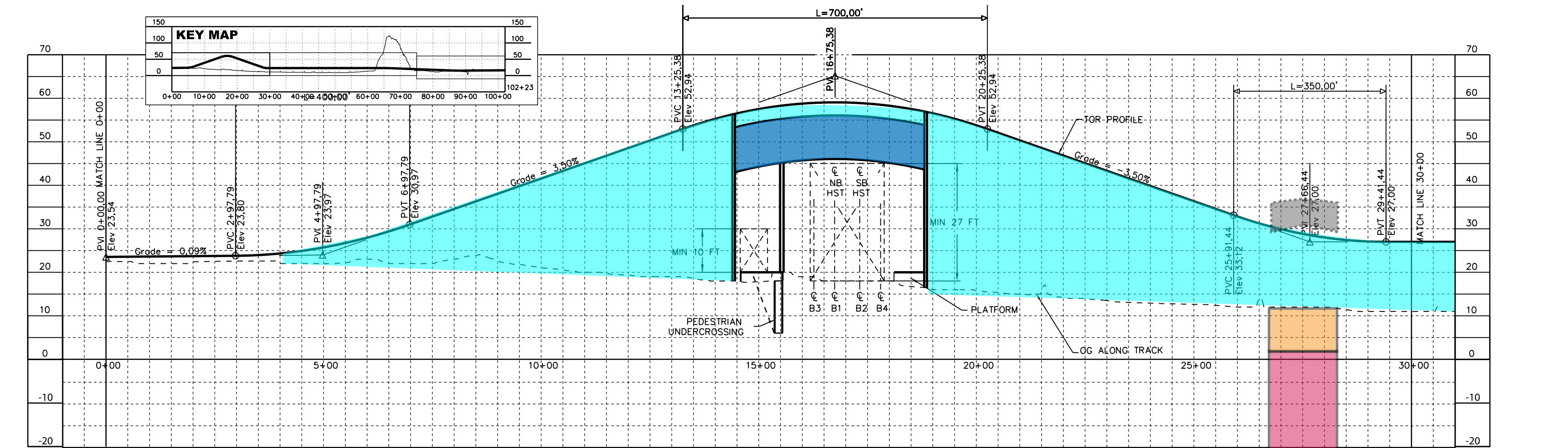
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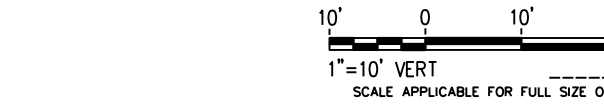
OPTION 2B - Geneva Ave Underpass



EAST TRANSITION TRACK PROFILE  
SCALE: 1"=100' HOR, 1"=10' VERT

Geneva Ave Extension  
HSR EIR/EIS Review  
Exhibit 6-1.2B Profile  
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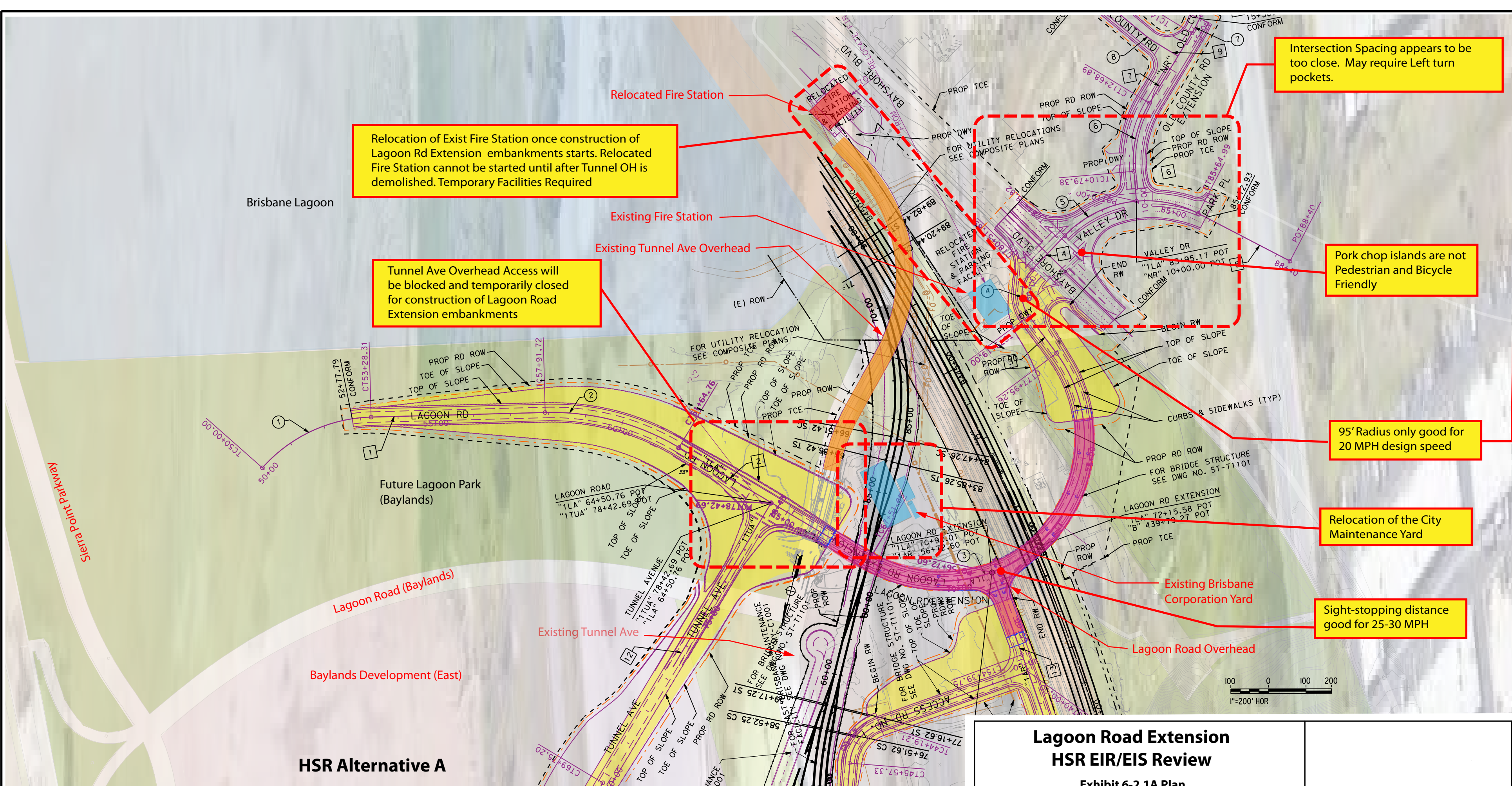
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Relocation of Exist Fire Station once construction of Lagoon Rd Extension embankments starts. Relocated Fire Station cannot be started until after Tunnel OH is demolished. Temporary Facilities Required

Tunnel Ave Overhead Access will be blocked and temporarily closed for construction of Lagoon Road Extension embankments

Intersection Spacing appears to be too close. May require Left turn pockets.

Pork chop islands are not Pedestrian and Bicycle Friendly

95' Radius only good for 20 MPH design speed

Relocation of the City Maintenance Yard

Sight-stopping distance good for 25-30 MPH

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
①	400.00	47°01'35"	174.03'	328.31'
②	660.00	32°23'02"	191.65'	373.04'
③	380.00	157°19'27"	1895.18'	1043.41'
④	95.00	80°08'51"	79.92'	132.89'
⑤	300.00	73°45'12"	225.06'	386.17'

LINE DATA		
NO.	BEARING	LENGTH, FT
1	S 89°31'52" W	463.42'
2	N 58°05'06" W	587.09'
3	S 35°24'32" E	123.74'
4	S 44°44'18" W	126.93'
5	N 61°30'30" W	275.21'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑥	300.00	36°11'38"	98.04'	189.51'
⑦	350.00	08°53'21"	27.21'	54.30'
⑧	300.00	08°26'03"	22.12'	44.16'

LINE DATA		
NO.	BEARING	LENGTH, FT
6	S 03°56'25" E	79.38'
7	S 32°15'13" W	218.17'
8	S 23°21'52" W	46.16'
9	S 57°48'34" E	67.09'
10	S 49°22'31" E	184.84'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑨	1200.00	41°38'14"	456.28'	872.05'

LINE DATA		
NO.	BEARING	LENGTH, FT
11	S 09°43'19" E	103.15'
12	S 31°54'54" E	867.49'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑩	5652.78	12°25'6.74"	1222.81	1225.21'

LINE DATA		
NO.	BEARING	LENGTH, FT
13	S 19°22'27.13" E	232.86'

- Road Embankment or Retained Fill
- Existing Overhead Structure
- New Overhead Structure
- Existing Building Structure to be Relocated
- Relocated Building Structure

**Lagoon Road Extension  
HSR EIR/EIS Review**  
Exhibit 6-2.1A Plan

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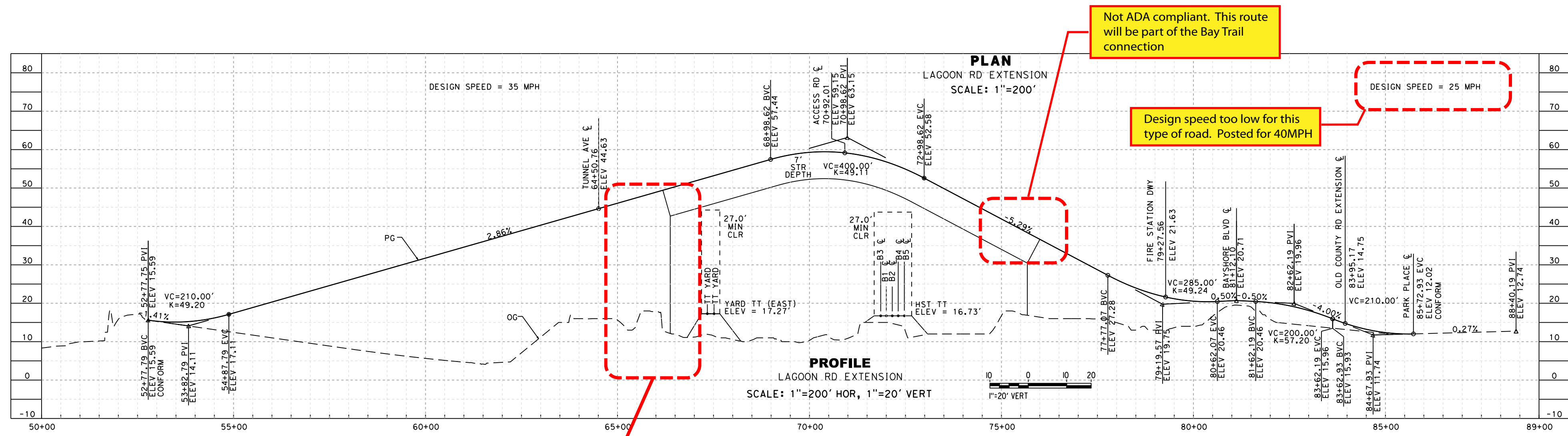
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Not ADA compliant. This route will be part of the Bay Trail connection

Design speed too low for this type of road. Posted for 40MPH

Tunnel Ave Overhead Access will be blocked and temporarily closed for construction of Lagoon Road Extension embankments

**HSR Alternative A**

**Lagoon Road Extension  
HSR EIR/EIS Review**

Exhibit 6-2.1A Profile

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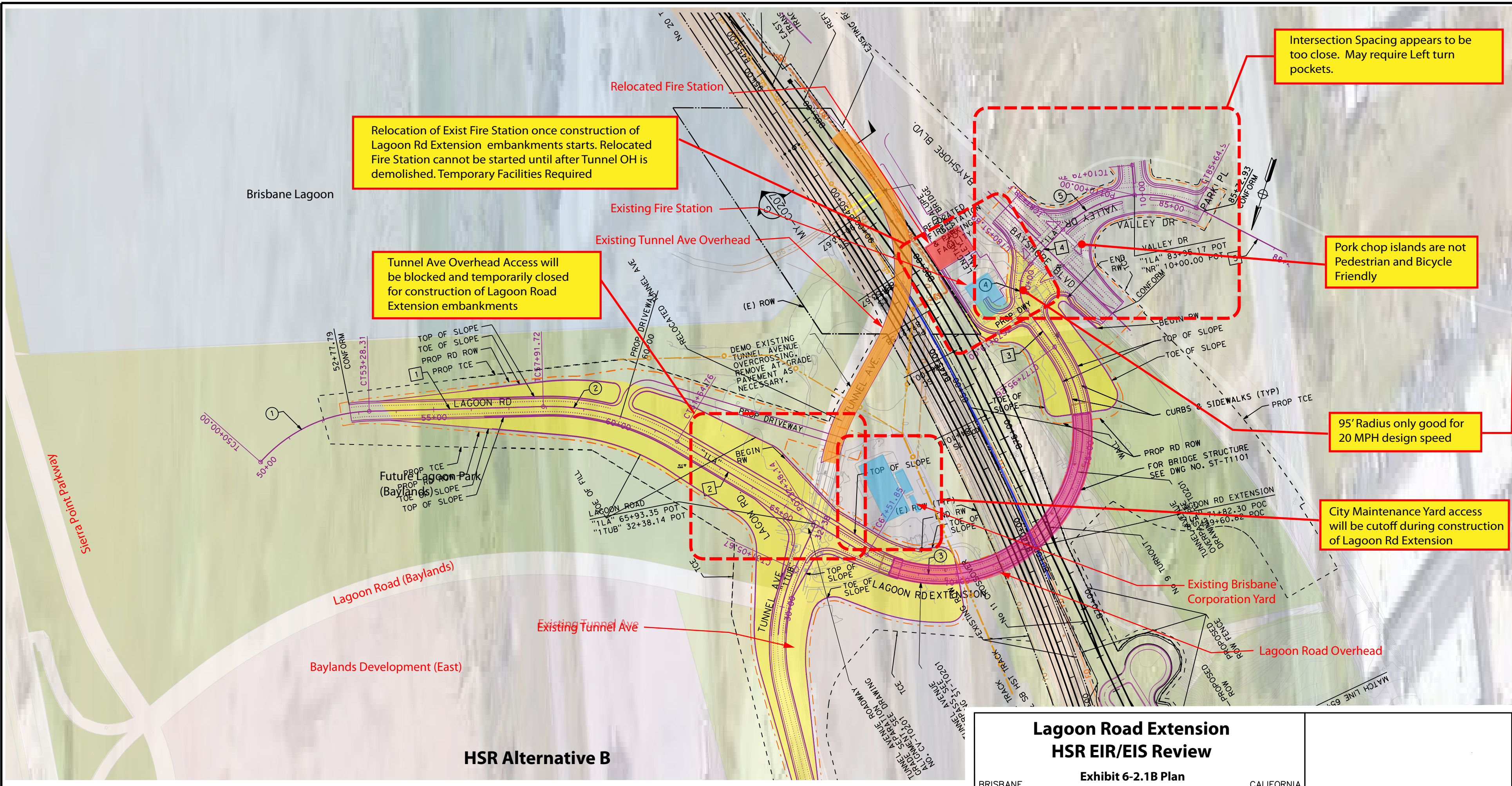


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CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
①	400.00	47°01'35"	174.03'	328.31'
②	660.00	32°23'02"	191.65'	373.04'
③	380.00	157°19'27"	1895.18'	1043.41'
④	95.00	80°08'51"	79.92'	132.89'
⑤	300.00	73°45'12"	225.06'	386.17'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑥	300.00	36°11'38"	98.04'	189.51'
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LINE DATA		
NO.	BEARING	LENGTH, FT
1	S 89°31'52" W	463.42'
2	N 58°05'06" W	587.09'
3	S 35°24'32" E	123.74'
4	S 44°44'18" W	126.93'
5	N 61°30'30" W	275.21'

LINE DATA		
NO.	BEARING	LENGTH, FT
6	S 03°56'25" E	79.38'
7	S 32°15'13" W	218.17'
8	S 23°21'52" W	46.16'
9	S 57°48'34" E	67.09'
10	S 49°22'31" E	184.84'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑨	1200.00	41°38'14"	456.28'	872.05'

LINE DATA		
NO.	BEARING	LENGTH, FT
11	S 09°43'19" E	103.15'
12	S 31°54'54" E	867.49'

CURVE DATA				
NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
⑩	5652.78	12°25'6.74"	1222.81	1225.21'

LINE DATA		
NO.	BEARING	LENGTH, FT
13	S 19°22'27.13" E	232.86'

- Road Embankment or Retained Fill
- Existing Overhead Structure
- New Overhead Structure
- Existing Building Structure to be Relocated
- Relocated Building Structure

**Lagoon Road Extension  
HSR EIR/EIS Review**

Exhibit 6-2.1B Plan

BRISBANE CALIFORNIA

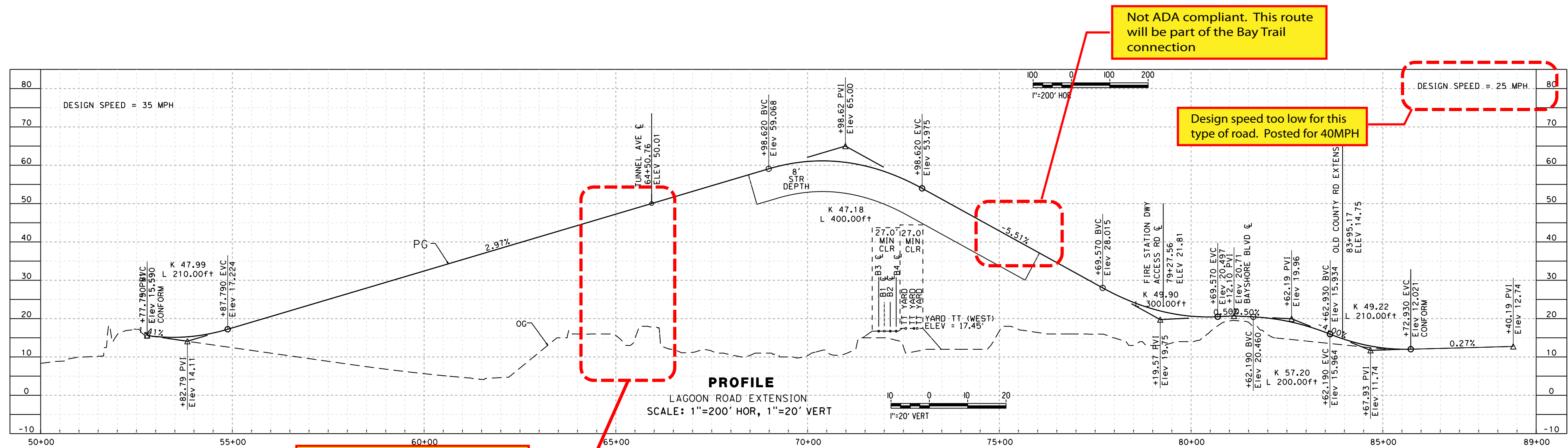
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Not ADA compliant. This route will be part of the Bay Trail connection

Design speed too low for this type of road. Posted for 40MPH

Tunnel Ave Overhead and the Corp Yard Access will be blocked and/or temporarily closed for construction of Lagoon Road Extension embankments

**HSR Alternative B**

**Lagoon Road Extension  
HSR EIR/EIS Review**

Exhibit 6-2.1B Profile

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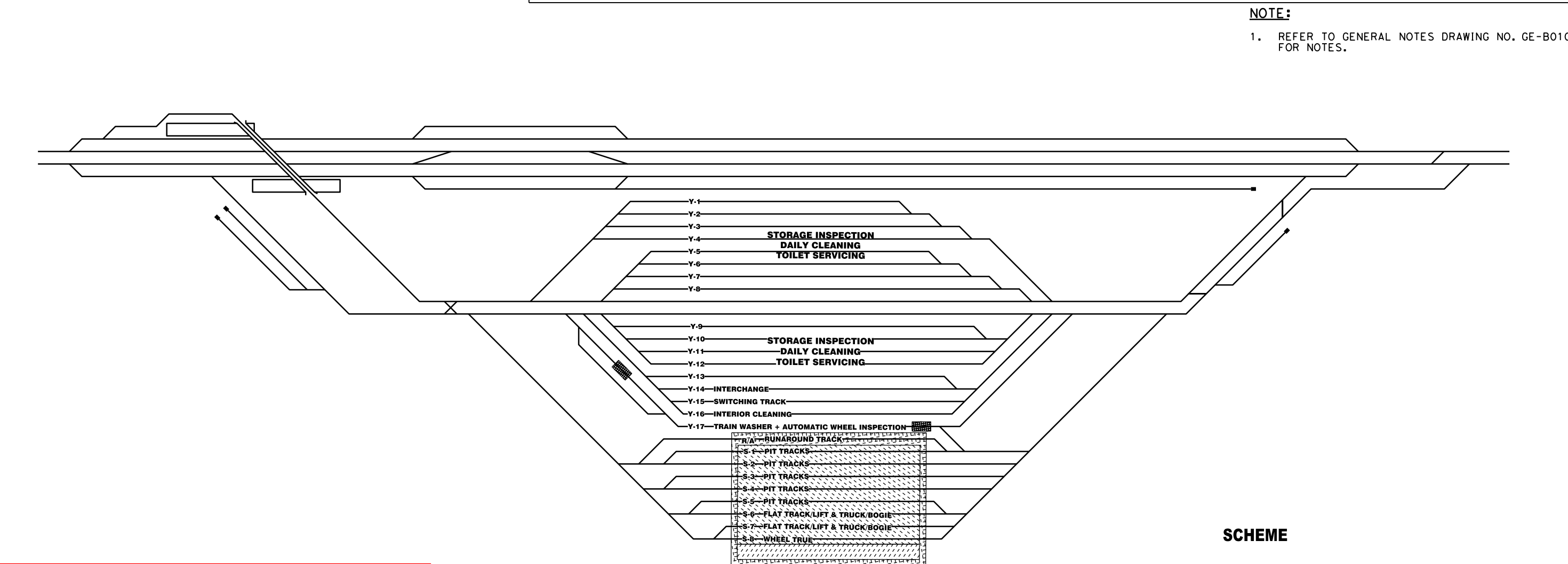
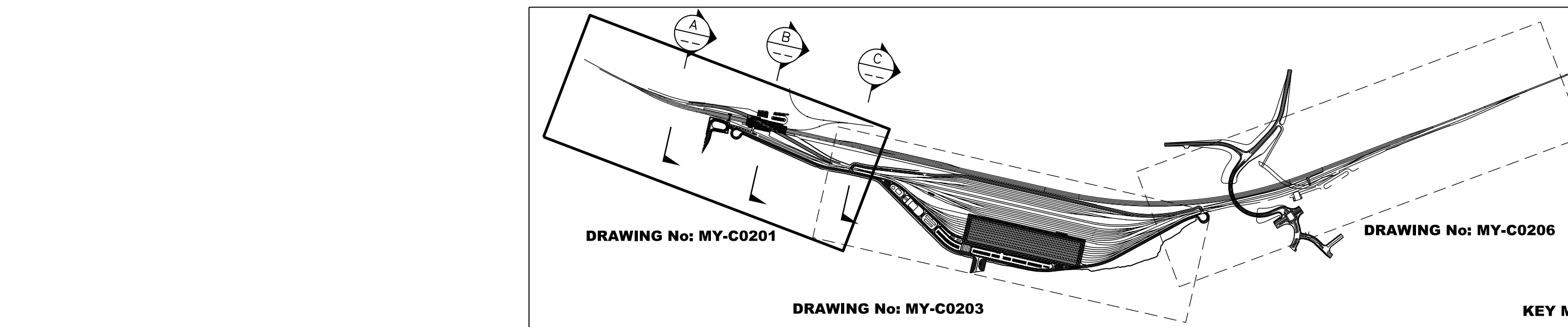
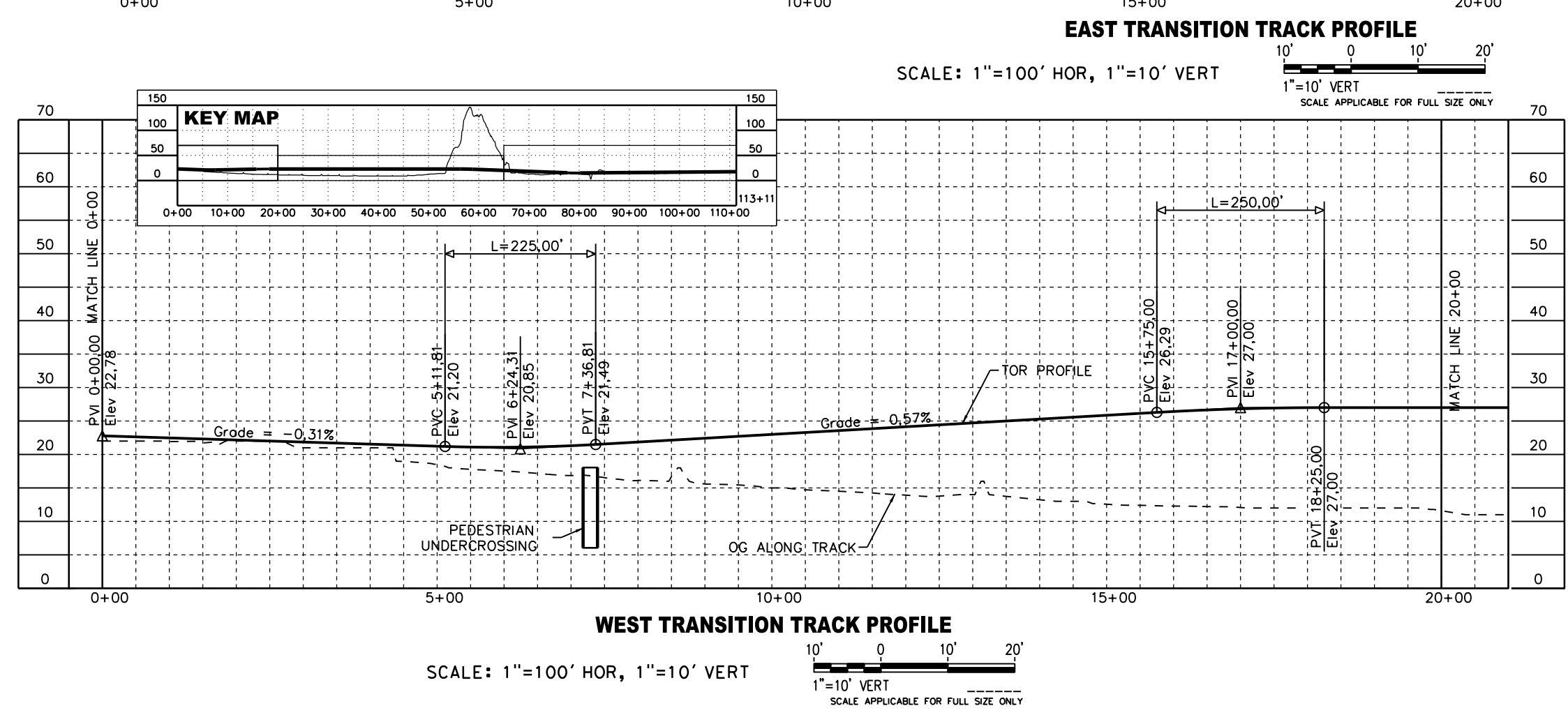
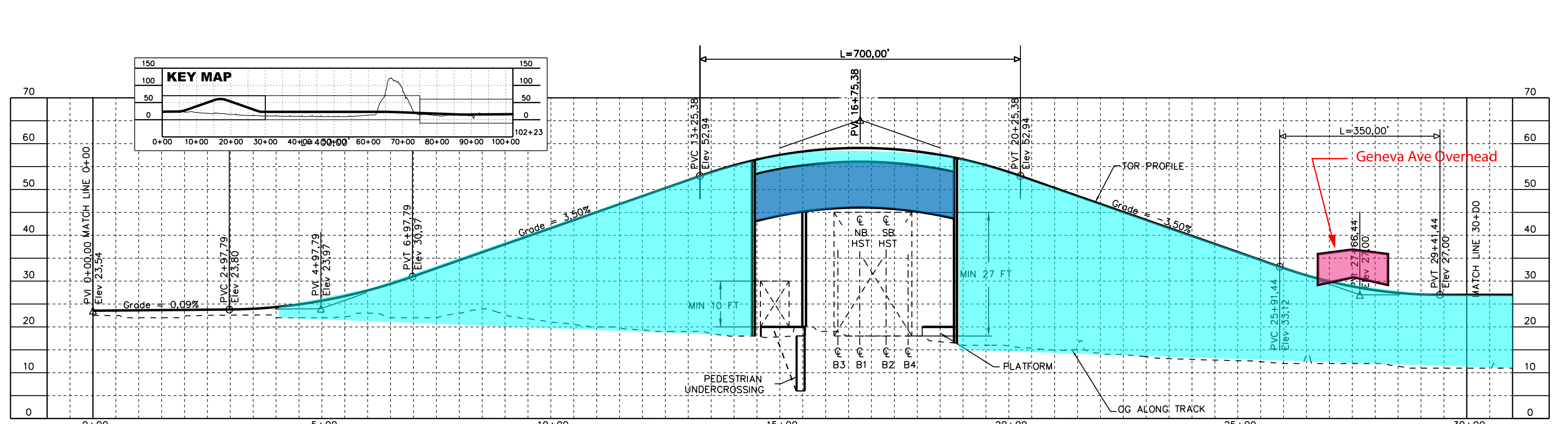
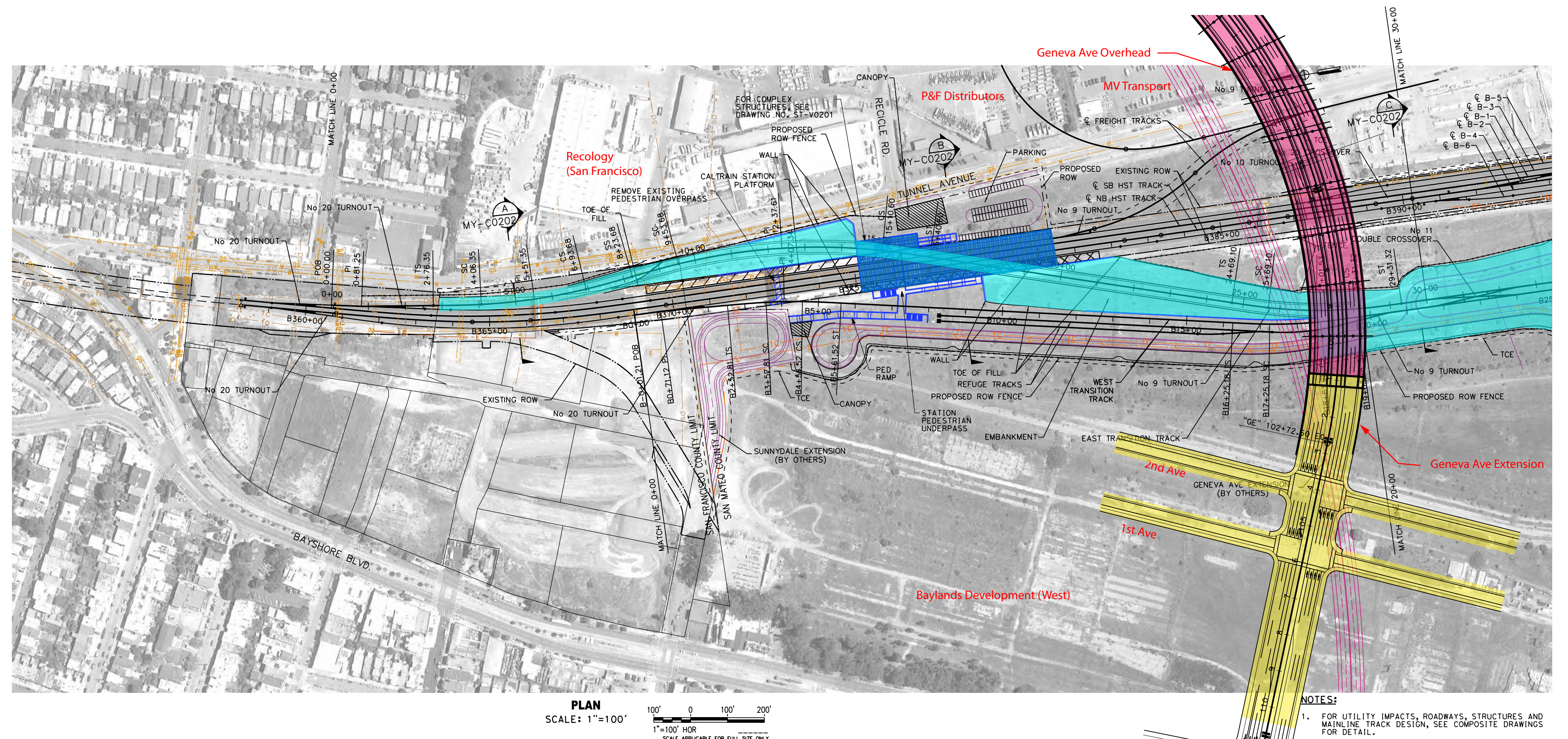
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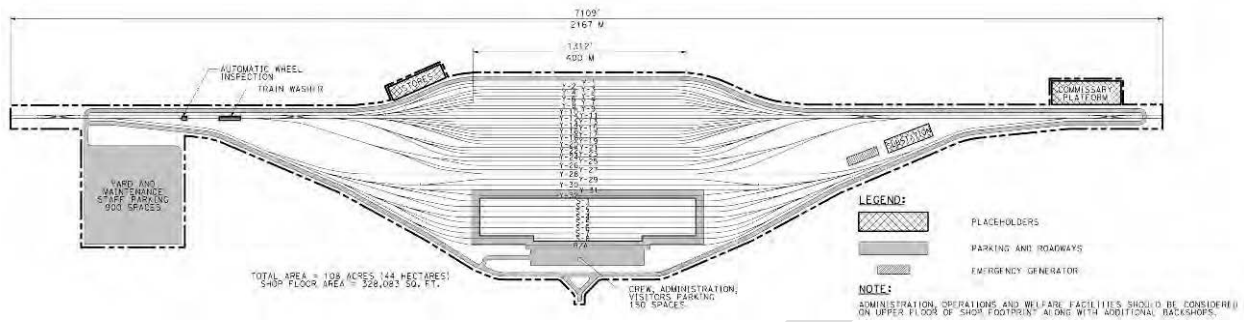
**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B4**  
**SHEET 51 OF 142**



## **Appendix B**

### **Draft EIR/EIS References**

**Figure 3 – LMF Concept Plan**



Less optimal configurations might include at-grade or “flat” interlockings, single 60 MPH crossovers at the main tracks (on both ends, immediately adjacent or within up to 3 miles of the main track turnouts), turnout speeds in interlockings of less than 60 MPH, shorter transition tracks, and single-ended facilities. Note that a single-ended LMF could be considered on a case-by-case basis depending on the proposed location of a site relative to the nearest station and on the operational details of the service plan. Work-arounds to these conditions could include additional deadhead miles or time in order to avoid delays to revenue trains by deadhead movements, additional operating crews in order to expedite reverse movements in the facility and/or on the main track, and alterations to maintenance scheduling to accommodate the arrival of deadhead trains at non-peak hours of operation. The operational and cost impacts of these less optimal configurations must be analyzed further in order to evaluate the trade-off of the additional yearly operating costs versus the increased capital construction costs and the potential increase in environmental impacts.

Other facilities that could be co-located with an LMF include an MOIF. Locating these facilities as an integral part of, or adjacent to, the LMF could facilitate better coordination and utilization of operations systems and assets, while also potentially reducing the overall footprint required for the facilities. Locating these facilities away from the LMF will not necessarily introduce negative impacts that could not be effectively managed/mitigated.



## 2.3 LOCATION ANALYSIS

### 2.3.1 Rolling Stock Maintenance Facilities

#### 2.3.1.1 Northern California, Phase 1

It is envisioned that there will be only one location in the northern section of the route that will handle the activities associated with a Level III facility. The two potential locations identified in this report at Brisbane and Gilroy are however envisioned to work together. Whichever location is finally determined to be the best to handle the Level III activity then it is still a requirement for the other one be developed such that is equipped to handle lower level activity. As such at this stage it is recommended both locations be cleared as Level III capable LMF locations from an environmental perspective.

Several LMF site alternatives have been identified in the vicinity of Gilroy, with a likely alternative in the vicinity of Morgan Hill, approximately 10 miles north of Gilroy station and approximately 20 miles south of San Jose Diridon station. A LMF site alternative has been identified in Brisbane, approximately 10 miles south of San Francisco Transbay Station. For the purposes of the service planning done for this report the locations for the two northern LMFs have been assumed. These locations are consistent with the service planning done for the 2016 Business Plan.

#### 2.3.1.2 HMF in the Central Valley

Several site alternatives for the HMF in the Central Valley are currently being considered from Fresno in the north to Shafter in the south. For the purposes of the service planning done for this report the HMF has been assumed to be located in Fresno, approximately 10 miles south of Fresno Station. Again this location is consistent with the service planning done for the 2016 Business Plan.

#### 2.3.1.3 LMFs in Southern California for Phase 1

The southern LMFs are also envisioned to work in concert with each other. Preliminary guidance given in the memorandum, Summary of Requirements for O&M Facilities, 3/21/13, called for two LMFs with the larger facility being located in Los Angeles, either in the San Fernando Valley or the Los Angeles Basin, that would handle up to Level III maintenance and the smaller facility in the Antelope Valley near Palmdale that would handle up to Level I maintenance.

As it was determined for Northern California, although only one level III facility will be needed finally, it is recommended that two level III facilities will have to be cleared environmentally to ensure that the region will have adequate maintenance capability.

Five potential sites have been identified in Southern California as potential LMF locations: Antelope Valley, East Bank LA, West Bank LA, Montebello Yard and Anaheim.

The Antelope Valley site located in Lancaster provides the necessary acreage for activities up to Level III, but is more remote from Los Angeles than desirable thereby creating more deadhead miles than sites closer to Los Angeles. This site is therefore preferred as a Level I facility unless the Montebello site cannot be secured and developed.

The site at Montebello is also potentially a suitable Level III facility adjacent to the proposed mainline alignment 10 miles south of LAUS. This site would be ideally located and can provide sufficient space for storage and shop activities to serve both LAUS and Anaheim for the beginning and end of operational service. This is the preferred Level III site in Southern California.

The sites at East and West Bank identified as part of the Southern California Regional Interconnection Project (SCRIP) whilst closer to LAUS both present less than ideal solutions. The East bank alternative in particular is problematic owing to its inability to provide storage for Anaheim based trains and the fact that it is elevated. For these reasons the East Bank site is not recommended for progression.





### **Potential Light Maintenance Facility Sites**

The SAA also evaluated potential LMF sites. Sites were identified in accordance with the Authority's preliminary siting criteria for maintenance facilities, which described the facility design and locational criteria to meet the functional requirements for an LMF between San Francisco and San Jose (Authority 2009), including:

- **Site size**—The site must be large enough (approximately 100 acres) to accommodate storage and maintenance operations.
- **Proximity to the mainline tracks**—It is important that the LMF be immediately adjacent to the mainline tracks, to minimize the length of the lead track. Long lead tracks have the potential to disrupt communities and have noise and visual impacts.
- **Double-ended lead tracks**—The LMF should be a double-ended facility (i.e., capable of dispatching and receiving trains from both ends of the facility). Double-ended facilities increase operational flexibility and allow for efficient dispatch of track maintenance equipment in the event there is an issue with one of the lead tracks. A stub-ended track is a high-risk design and should be avoided when a double-ended facility is feasible.

Identifying potentially suitable sites between San Francisco and San Jose proved challenging in light of the dense urban development throughout the Project Section. Sites that could potentially accommodate an LMF were subjected to an initial screening process, which focused on the capacity of the sites to meet engineering and design guidelines established through the Authority's Technical Memoranda. This assessment resulted in the identification of four sites that were analyzed in the 2010 SAA (Authority and FRA 2010b) (Figure 2-25):

- Port of San Francisco (Piers 90–94)
- SFO
- West Brisbane
- East Brisbane

### **Light Maintenance Facility Alternatives Carried Forward as a Result of the Supplemental Alternatives Analysis**

The SAA evaluation focused on operational features of the potential LMF sites. Based on that assessment, the Port of San Francisco and SFO sites were withdrawn and the West Brisbane and East Brisbane sites were advanced for further evaluation.

The Port of San Francisco site was found to be operationally deficient because of its size, distance from the mainline tracks, and need to be 'stub-ended' (i.e., single access and egress), which would constrict operations. Acquiring the right-of-way to build the necessary lead tracks from this site to the Caltrain mainline tracks would be costly and running trains along the lead tracks would be disruptive to the adjacent dense urban neighborhoods. This site was therefore not recommended for further study.

The SFO site was adequately sized (100 acres), but operationally deficient because of its distance from the mainline track and need to be 'stub-ended'. Providing the necessary lead tracks from the SFO site to the Caltrain mainline tracks would be costly and require modifications to the US 101 Interchange. Furthermore, the SFO site was determined to be not available because the lease to the site had been renewed with the current tenants. This site was therefore not recommended for further study.

The East and West Brisbane sites provided adequate space (100 acres) to provide operational flexibility desired for a double-ended LMF. They are adjacent to the Caltrain mainline track, providing convenient and close connections to the HSR mainline tracks for both southbound and northbound access. Providing northbound and southbound access would support timely provision of trainsets to the San Francisco terminal station, and would facilitate switching trainsets out during normal operations. For these reasons, the two options at the Brisbane Bayshore site were recommended to be carried forward for further study.



# NORTHERN CALIFORNIA LIGHT MAINTENANCE FACILITY

**The Northern California Light Maintenance Facility in Brisbane would serve as a location where trains are cleaned, serviced, and stored and as a service point for any trains in need of emergency repair services.**

**The facility would supply trains and crew to the San Francisco terminal station at the start of the day.**

## PURPOSE AND PROPOSED LOCATION

A Light Maintenance Facility (LMF) is used for routine maintenance and operations for the California High-Speed Rail system. The LMF in Brisbane is one of three proposed train maintenance facilities in California that would support high-speed rail operations.<sup>1</sup>

The LMF would be designed, constructed, and operated with LEED® Gold Certification — it will be energy-efficient and environmentally sensitive. With three overlapping work shifts, activities would occur 24 hours a day. Most maintenance activities would take place overnight, between 10:00 pm and 6:00 am.

## SELECTING A SITE

Since 2009, the High-Speed Rail Authority (“Authority”) has considered potential LMF sites between San Francisco and San Jose. After screening out options that did not meet engineering and design criteria, the Authority further evaluated four sites for the LMF in the San Francisco to San Jose Supplemental Alternatives Analysis Report based on the Authority’s feasibility criteria for siting maintenance facilities.

### Feasibility Criteria for Siting Maintenance Facilities

Criteria	Port of San Francisco Piers 90-94		Brisbane Bayshore East of Caltrain Corridor	
	SFO Airport	M	M	Brisbane Bayshore West of Caltrain Corridor
<b>Proximity to San Francisco Terminal Station</b>	✓	✓	✓	✓
<b>Site Size</b> Approximately 100 acres	✗	✓	✓	✓
<b>Proximity to Mainline Tracks</b>	✗	✗	✓	✓
<b>Double-ended Lead Tracks</b> Trains can enter and depart from both ends	✗	✗	✓	✓
<b>Site Availability</b> Avoid conflicts with Built Improvements	✗	✗	✓	✓



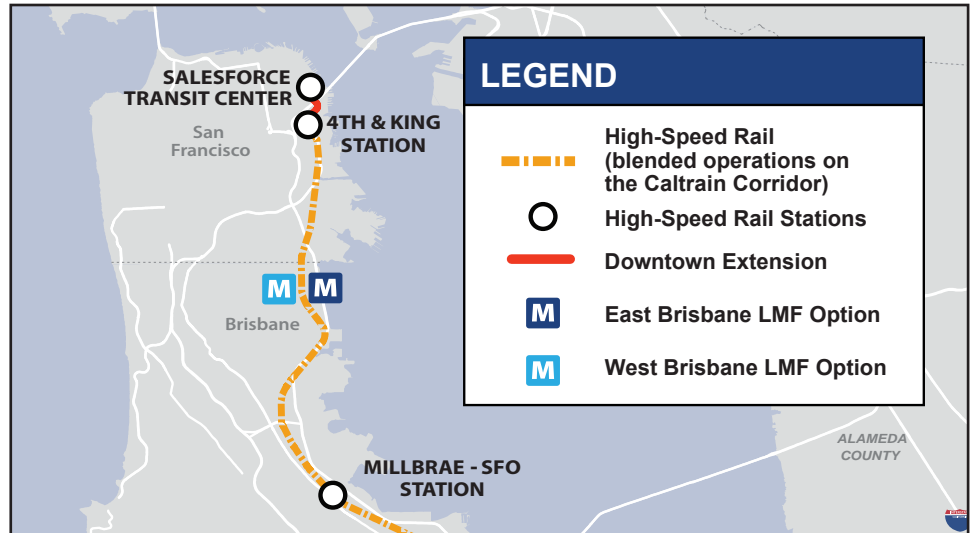
Example of a modern rail maintenance facility: Stockton’s LEED® Silver ACE train maintenance facility opened in 2015. (Photos: San Joaquin Regional Rail Commission)

<sup>1</sup> Other train maintenance facilities include (1) a heavy maintenance facility in the Central Valley and (2) a light maintenance facility in the Los Angeles area.



# FOCUS ON BRISBANE

The Brisbane Bayshore East and West sites met all siting criteria. As a result, the Authority moved both sites forward for environmental review in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/S).



**M** The East Brisbane LMF would minimize the impact to the planned mixed-use development (including housing) on the west side of the Caltrain tracks, as envisioned in the Brisbane General Plan. Tunnel Avenue and Lagoon Road would be relocated to be adjacent to the LMF. The East site would have fewer permanent impacts on wetlands than the West site and would avoid impacting eight acres of habitat for threatened and endangered butterfly species on Icehouse Hill.

**M** The West Brisbane LMF would have the greatest impact to mixed-use development, where up to 2,200 residential units (including affordable housing units) are planned. The West site would have more permanent impacts on wetlands than the East site and would impact threatened and endangered butterfly species on Icehouse Hill.



**In 2019, the Authority identified the East Brisbane LMF as the preferred location.** The East site would be more compatible with planned land uses and have fewer environmental impacts. Both options will be studied in full in the Draft EIR/EIS planned for release in the summer of 2020.





MARCH 2019

**Figure 2-25 Light Maintenance Facility Sites—San Francisco to San Jose Project Section**

The Authority conducted additional assessment of these four sites as part of the *San Francisco to San Jose Project Section Checkpoint B Summary Report* (Authority 2019c), to consider the environmental impacts that would likely result from the development of each site and to identify



## 3.2 LIGHT MAINTENANCE FACILITY

Terminal station locations will be supported by a Light Maintenance Facility (LMF) for the purpose of supplying freshly-inspected and serviced trainsets at the start of revenue service. The LMFs will be sized accordingly.

LMF locations will additionally be sized to support either Level I, Level II or Level III maintenance activities. These activities include cleaning and servicing activities between runs, pre-departure inspections and testing, and monthly inspection and maintenance activities. Level III functionality includes train wash and wheel defect detection facilities. For Level II and Level III facilities, daily servicing, and monthly and quarterly inspections and maintenance will be made utilizing inside shop tracks with interior access and inspection pits for underside and bogie inspections.

Table 3 summarizes shop track requirements at each facility based on the maintenance level. It should be noted however, number of shop tracks actually required at each facility could potentially changes from the numbers in Table 3 and needs to be determined based on the actual train operating plans and associated fleet manipulation plans.

**Table 3 – Summary of Shop Tracks at Each Maintenance Level**

Facility Type	Maintenance Level	Number of Maintenance Shop Tracks
LMF	Up to I	0
	Up to II	2
	Up to III	8
HMF	Up to V	10

The LMFs will require yard tracks, each capable of holding two complete trainsets, plus two runaround/transfer tracks to move from one end of the facility to the other. In the case of Level III LMFs, speed through the train wash will be limited, so one dedicated train wash track should be added so as to not create a bottleneck at the facility. The location of this track can vary based on the configuration of the facility, but it should be placed where the majority of trainsets will enter the facility from the main tracks and must be long enough for trainsets to stop in advance of the train wash without fouling the main tracks. If this train-wash track is combined with one of the lead tracks entering the facility, special track work must be added to allow trainsets to bypass the train wash track when occupied. Wheel defect detection equipment should be placed on the incoming lead track(s) to ensure that all vehicles are inspected. This equipment should be placed before the train wash.

The layout of the LMF in relation to the main tracks will have a significant effect on LMF functionality and the flow of trains on the main tracks. The recommended LMF configuration includes direct main track access achieved through double-ended yard leads to facilitate movements both north and south without changing direction, grade separated flyovers to access the main track opposite the LMF without affecting main track traffic, 60 MPH interlockings with universal crossovers at the main tracks (on both ends, immediately adjacent to the main track turnouts), and 1,700-foot transition tracks to reduce/increase speed to/from stop and to transition the automatic train control system. The result is a total estimated length of about 7,500 feet (not including transition tracks) with a width dependent on the number of tracks required at each facility, and an overall estimated minimum footprint of ranging from about 40 to about 110 acres. Figure 4 shows a conceptual layout for the LMF (See Appendix C for the plan in larger size). It should be noted that this conceptual layout depicts a facility with the maintenance shop tracks arranged parallel to and alongside the storage tracks, but that in-line facilities with the maintenance shop tracks arranged parallel to and in series with the storage tracks may also be acceptable, and in some cases even preferred, and may be considered on a case-by-case basis to accommodate site constraints.



## 2.3 LOCATION ANALYSIS

### 2.3.1 Rolling Stock Maintenance Facilities

#### 2.3.1.1 Northern California, Phase 1

It is envisioned that there will be only one location in the northern section of the route that will handle the activities associated with a Level III facility. The two potential locations identified in this report at Brisbane and Gilroy are however envisioned to work together. Whichever location is finally determined to be the best to handle the Level III activity then it is still a requirement for the other one be developed such that is equipped to handle lower level activity. As such at this stage it is recommended both locations be cleared as Level III capable LMF locations from an environmental perspective.

Several LMF site alternatives have been identified in the vicinity of Gilroy, with a likely alternative in the vicinity of Morgan Hill, approximately 10 miles north of Gilroy station and approximately 20 miles south of San Jose Diridon station. A LMF site alternative has been identified in Brisbane, approximately 10 miles south of San Francisco Transbay Station. For the purposes of the service planning done for this report the locations for the two northern LMFs have been assumed. These locations are consistent with the service planning done for the 2016 Business Plan.

#### 2.3.1.2 HMF in the Central Valley

Several site alternatives for the HMF in the Central Valley are currently being considered from Fresno in the north to Shafter in the south. For the purposes of the service planning done for this report the HMF has been assumed to be located in Fresno, approximately 10 miles south of Fresno Station. Again this location is consistent with the service planning done for the 2016 Business Plan.

#### 2.3.1.3 LMFs in Southern California for Phase 1

The southern LMFs are also envisioned to work in concert with each other. Preliminary guidance given in the memorandum, Summary of Requirements for O&M Facilities, 3/21/13, called for two LMFs with the larger facility being located in Los Angeles, either in the San Fernando Valley or the Los Angeles Basin, that would handle up to Level III maintenance and the smaller facility in the Antelope Valley near Palmdale that would handle up to Level I maintenance.

As it was determined for Northern California, although only one level III facility will be needed finally, it is recommended that two level III facilities will have to be cleared environmentally to ensure that the region will have adequate maintenance capability.

Five potential sites have been identified in Southern California as potential LMF locations: Antelope Valley, East Bank LA, West Bank LA, Montebello Yard and Anaheim.

The Antelope Valley site located in Lancaster provides the necessary acreage for activities up to Level III, but is more remote from Los Angeles than desirable thereby creating more deadhead miles than sites closer to Los Angeles. This site is therefore preferred as a Level I facility unless the Montebello site cannot be secured and developed.

The site at Montebello is also potentially a suitable Level III facility adjacent to the proposed mainline alignment 10 miles south of LAUS. This site would be ideally located and can provide sufficient space for storage and shop activities to serve both LAUS and Anaheim for the beginning and end of operational service. This is the preferred Level III site in Southern California.

The sites at East and West Bank identified as part of the Southern California Regional Interconnection Project (SCRIP) whilst closer to LAUS both present less than ideal solutions. The East bank alternative in particular is problematic owing to its inability to provide storage for Anaheim based trains and the fact that it is elevated. For these reasons the East Bank site is not recommended for progression.



The West bank site is much better located and can serve as level I storage to support morning operations from LAUS station as a run-through facility. If the Montebello site is not possible and the Antelope Valley site becomes the Southern California Level III LMF then the West Bank site must be built to support operations at LAUS.

To accommodate a service of up to 4 TPH to Anaheim, an additional, small two track LMFs has been proposed in Anaheim, mainly for trainset layup purposes. Maintenance at the Anaheim LMF will be limited to Level I activities due to limited available land in the area.

Before a final decision on the location of the Southern California LMFs can be made further comparative studies, design and review activities must be undertaken.

**Table 1 – Summary of HMF/LMFs**

Facility Location	Facility Type	Number of Tracks	Maximum Maintenance Level (Rolling Stock Facilities Only)	Year 2025 (Projected Fleet Size of 19 Trainsets)		Year 2034 (Projected Fleet Size of 90 Trainsets)		Year 2059 (Projected Fleet Size of 110 Trainsets)	
				Trainsets at Each Facility <sup>1</sup>	Morning Train Starts from Each Facility <sup>2</sup>	Trainsets at Each Facility <sup>1</sup>	Morning Train Starts from Each Facility <sup>2</sup>	Trainsets at Each Facility <sup>1</sup>	Morning Train Starts from Each Facility <sup>2</sup>
Brisbane	LMF	13 yard 2 or 8 shop	III (or I) <sup>3</sup>	8 to 10	6 to 8	14 to 17	10 to 13	16 to 21	12 to 17
Gilroy	LMF	10 yard 8 or 2 shop	I (or III) <sup>3</sup>	8 to 10 (See Note)	6 to 8 (See Note)	13 to 15	12 to 14	13 to 17	12 to 16
Central Valley	HMF	14 yard 10 shop	V	9 to 12	6 to 8	20 to 22	11 to 13	22 to 24	13 to 15
Antelope Valley	LMF	21 yard 8 shop	I (or III) <sup>4</sup>	N/A	N/A	9 to 29	8 to 25	13 to 37	12 to 32
Los Angeles (West Bank) <sup>5</sup>	LMF	7 yard	I or II	N/A	N/A	9 to 14	8 to 13	13 to 19	12 to 18
Montebello	LMF	21 yard 8 shop	III (or I) <sup>4</sup>	N/A	N/A	9 to 29	8 to 25	13 to 37	12 to 32
Anaheim	LMF	2 yard	I	N/A	N/A	1 to 3	1 to 3	2 to 5	2 to 5

<sup>1</sup> Number of trainsets (as single consists) at each facility is given as a range to allow for unknown availability of station tracks for overnight layup and for storage of consists that have been outfitted with autonomous inspection and measurement equipment.

<sup>2</sup> Number of morning starts (as single consists) from each facility differs from the number of trainsets stored at each facility due to allowances for hot standby trainsets, high-demand spares, and maintenance downtime.

<sup>3</sup> Maximum maintenance level at Brisbane could be lowered to Level I if the facility in Gilroy is built with the Level III capability.

<sup>4</sup> Maximum maintenance level at Antelope Valley facility could be potentially lowered to Level I if the facility at Montebello is built with the Level III capability.

<sup>5</sup> If the facility in Montebello is not built, West Bank facility would be necessary to support operations at LA Union Station.

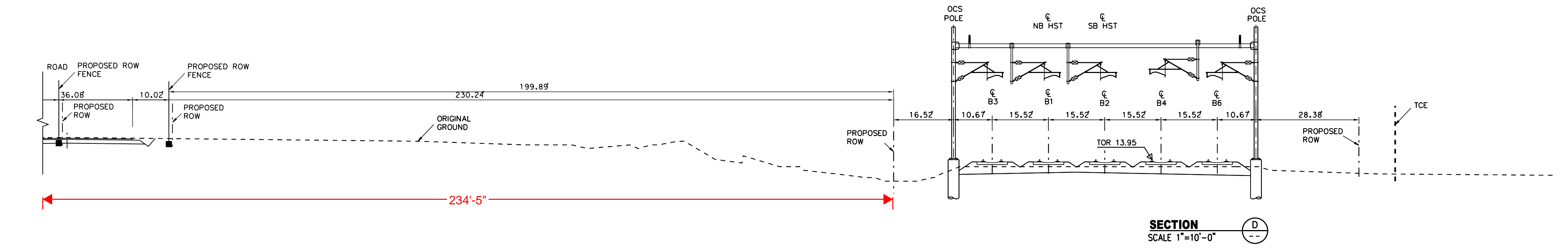
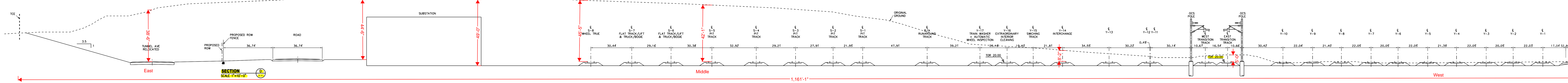
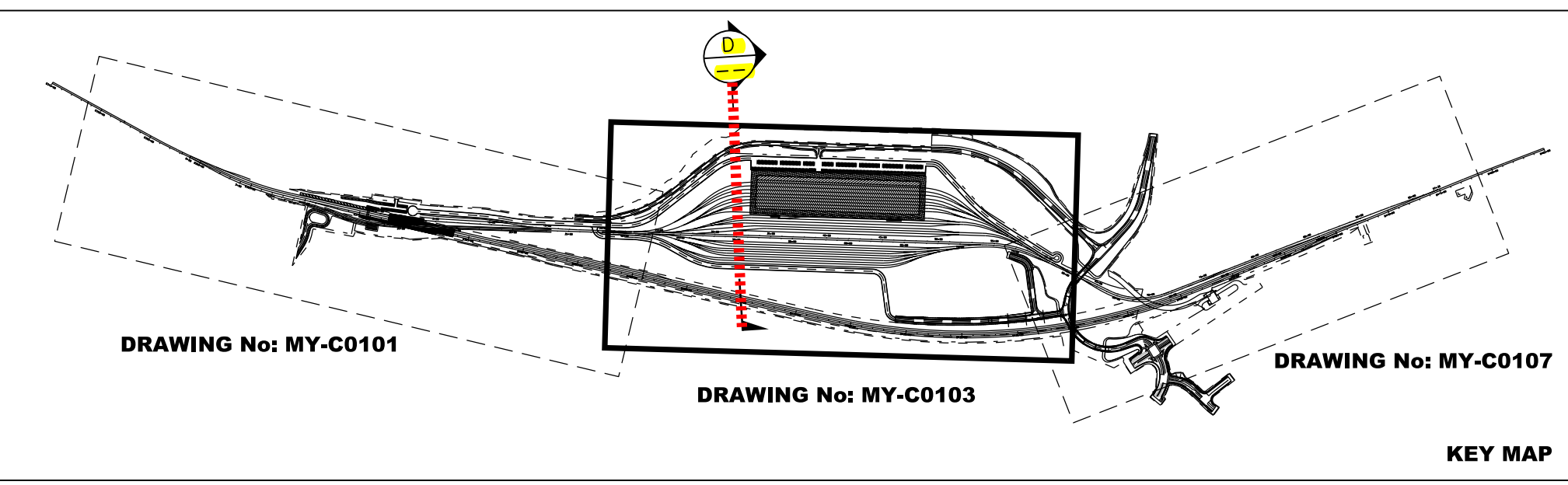








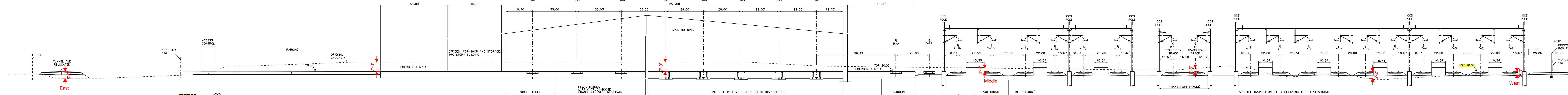
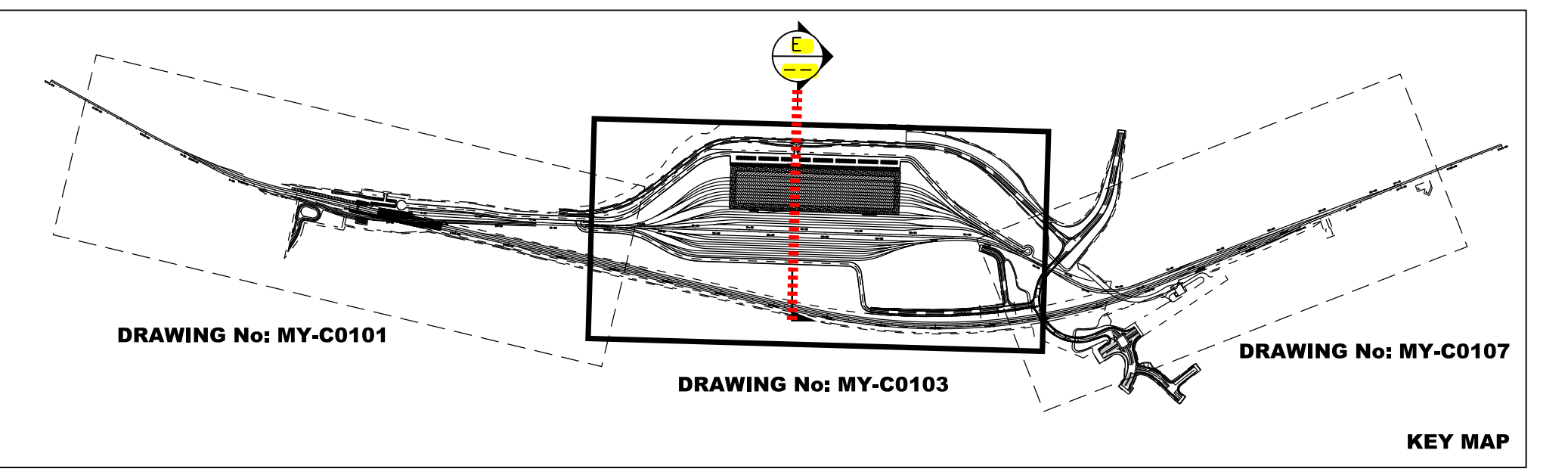
NOTE:  
1. REFER TO GENERAL NOTES DRAWING NO. GE-B0101 FOR NOTES.



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE A**  
**BOOK A4**  
**SHEET 68 OF 100**

RECORD PERM SUBMITTAL APRIL 11, 2019 NOT FOR CONSTRUCTION	<b>HNTB</b> 1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN FRANCISCO TO SAN JOSE</b> ALTERNATIVE A BRISBANE LIGHT MAINTENANCE FACILITY EAST COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS	CONTRACT NO. HSR15-34 DRAWING NO. MY-C0104 SCALE AS SHOWN SHEET NO.
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**NOTE:**  
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**SECTION**  
SCALE 1"=10'-0"

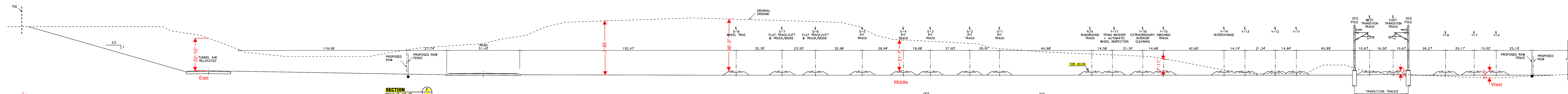
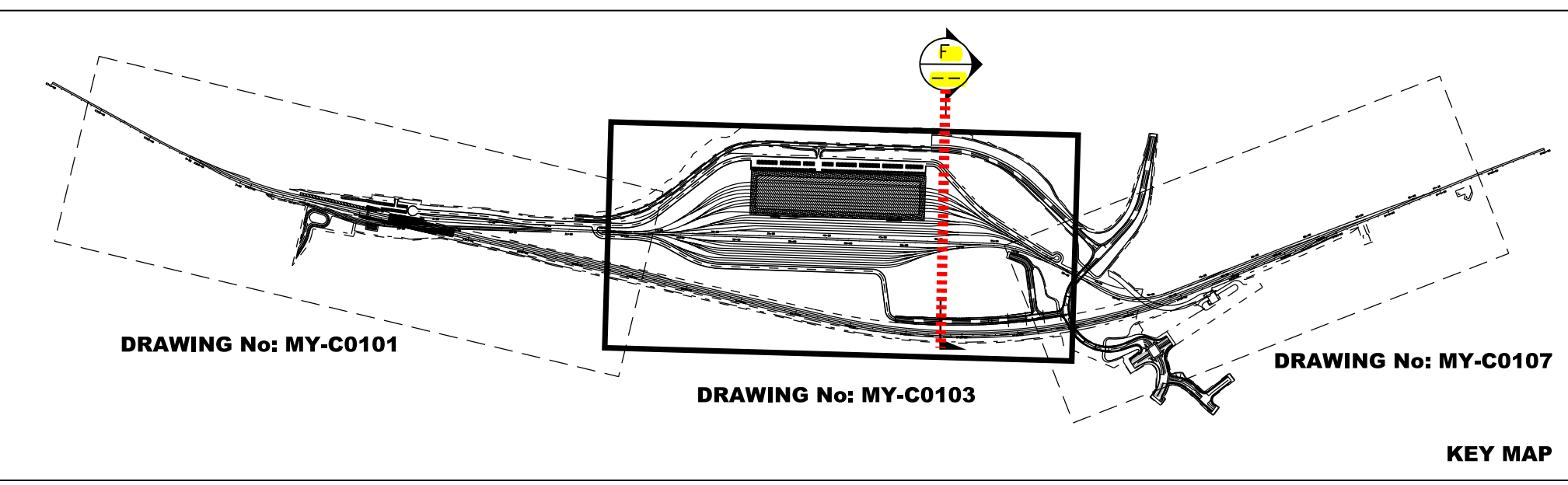
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**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE A**  
**BOOK A4**  
**SHEET 69 OF 100**

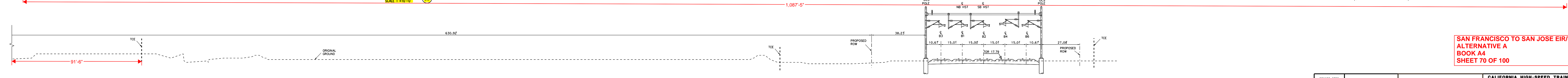
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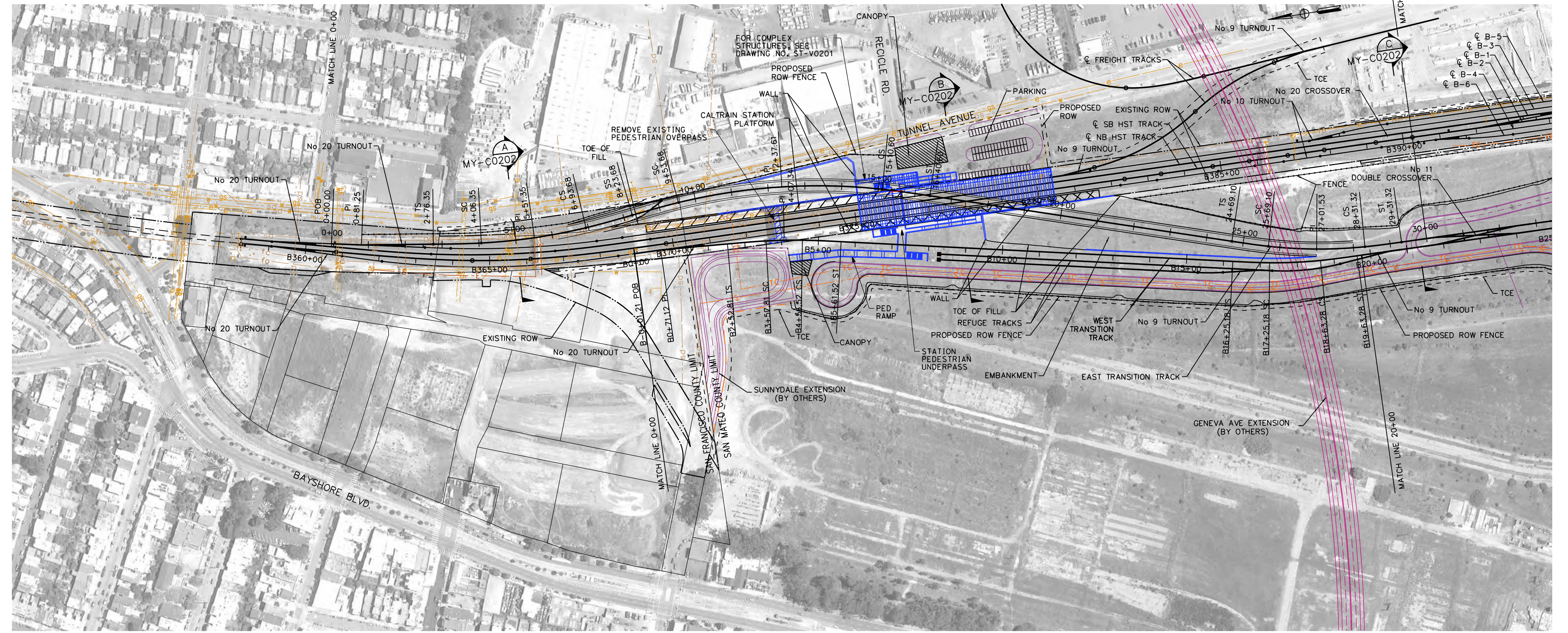
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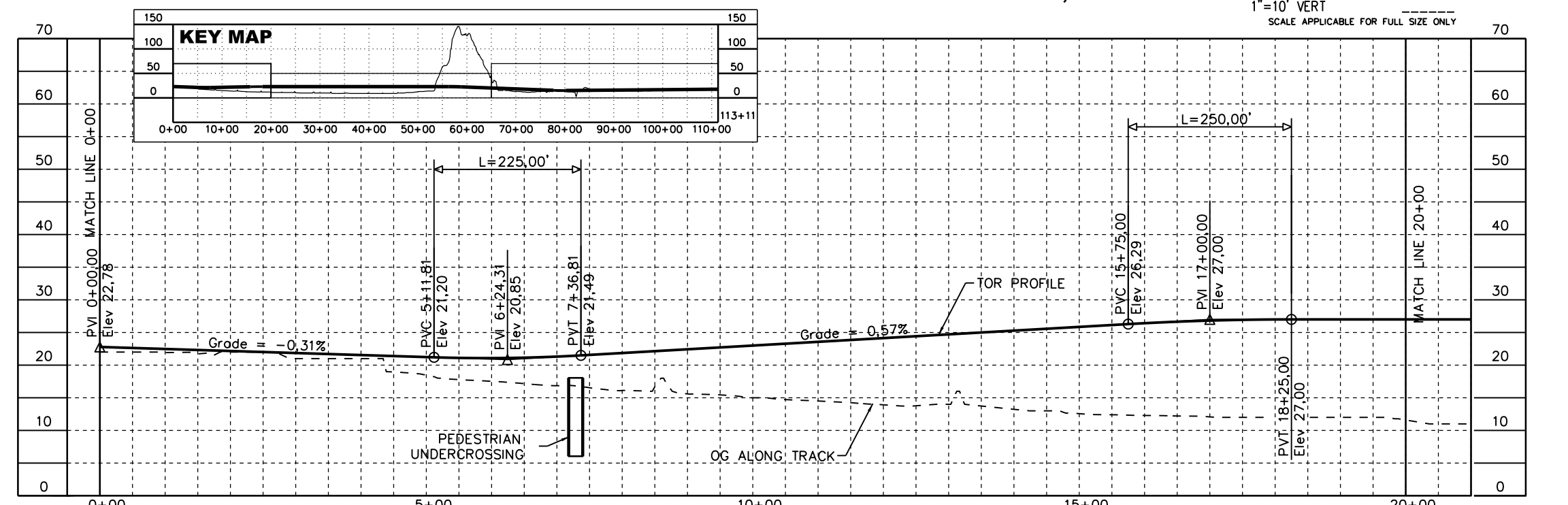
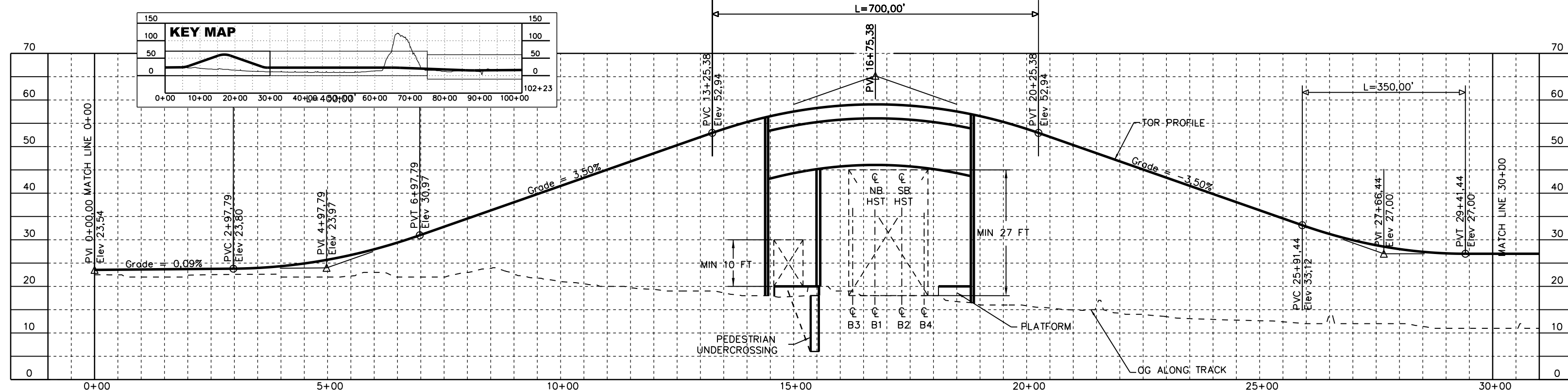
**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE A**  
**BOOK A4**  
**SHEET 70 OF 100**

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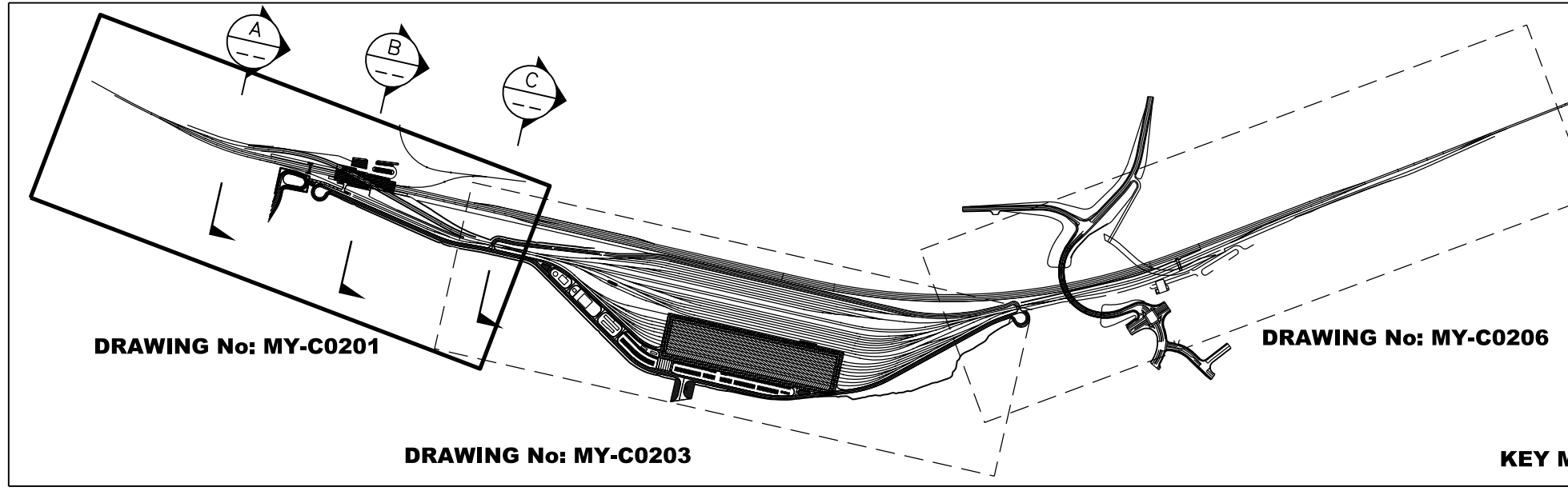




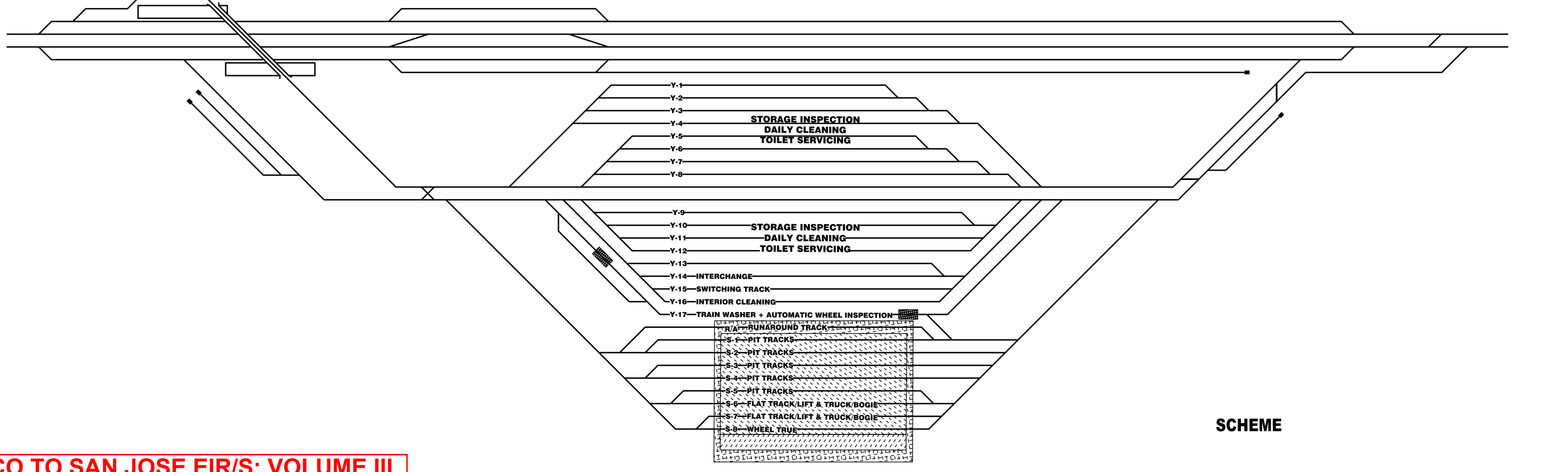
**NOTES:**  
1. FOR UTILITY IMPACTS, ROADWAYS, STRUCTURES AND MAINLINE TRACK DESIGN, SEE COMPOSITE DRAWINGS FOR DETAIL.



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B4**  
**SHEET 51 OF 142**

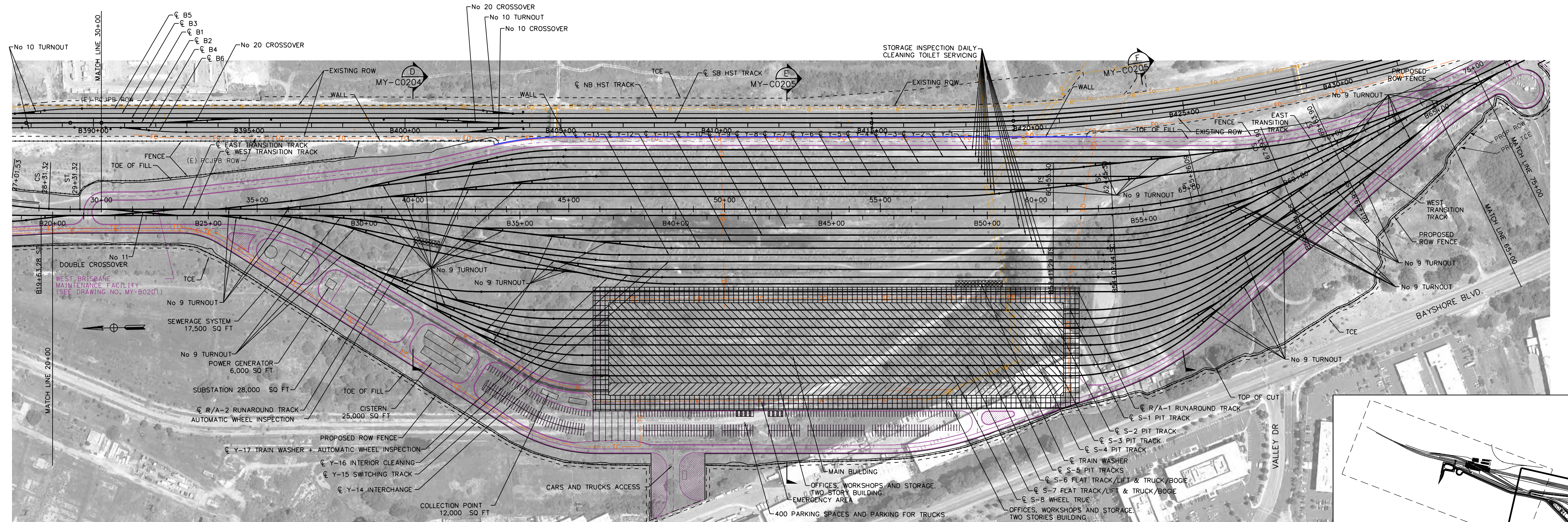


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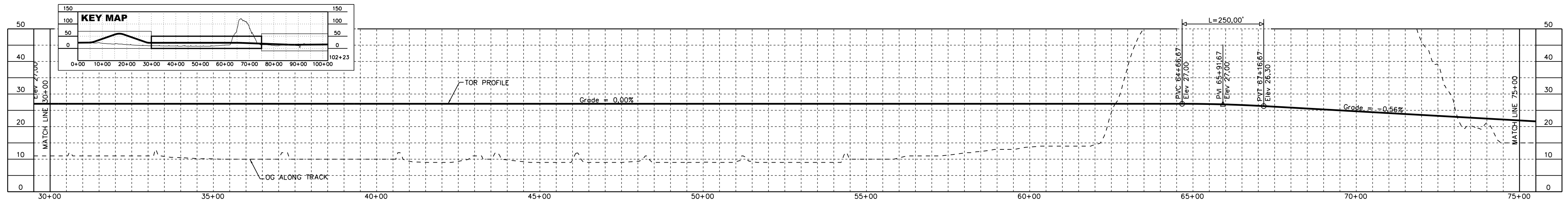
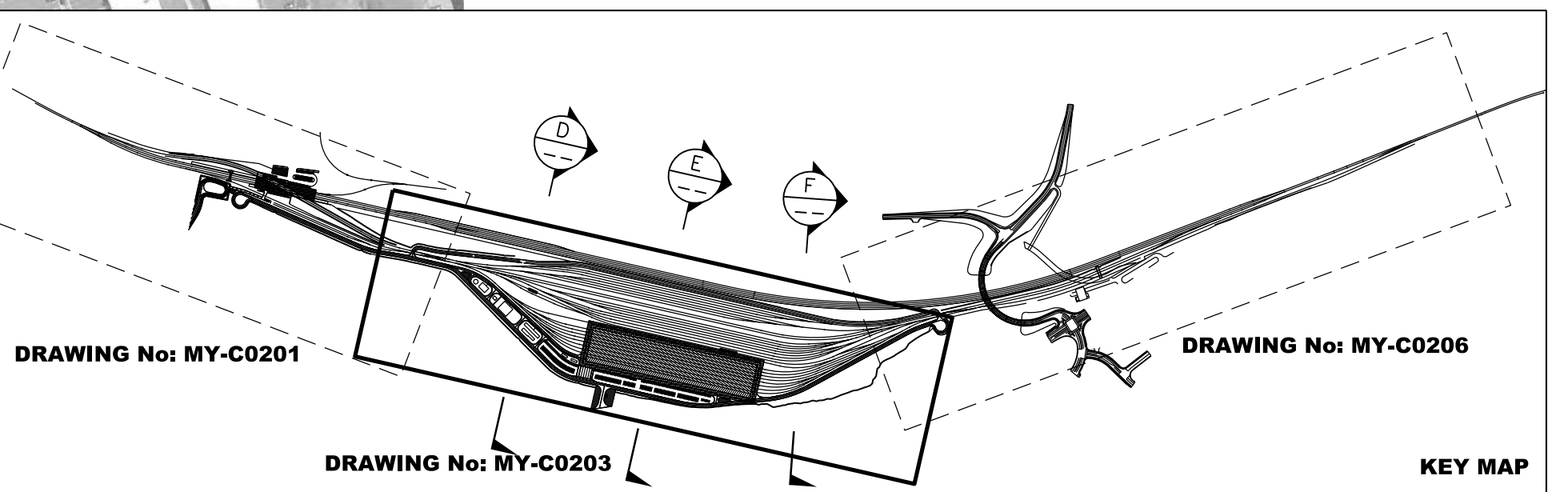
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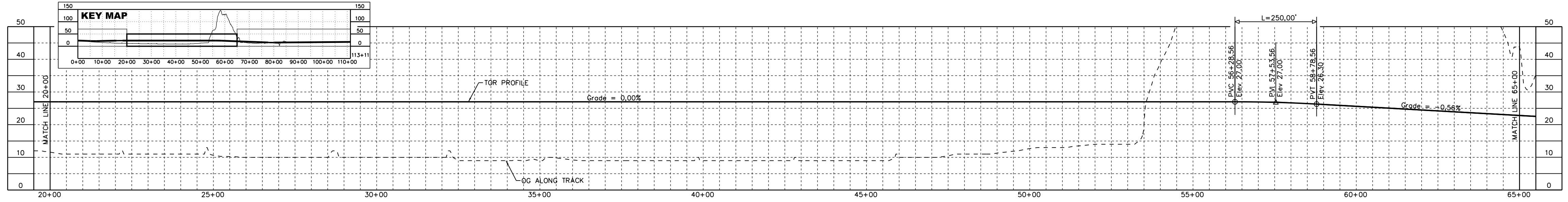


**PLAN**  
SCALE: 1"=100'

**NOTES:**  
1. FOR UTILITY IMPACTS, ROADWAYS, STRUCTURES AND MAINLINE TRACK DESIGN, SEE COMPOSITE DRAWINGS FOR DETAIL.



**EAST TRANSITION TRACK PROFILE**  
SCALE: 1"=100' HOR, 1"=10' VERT



**WEST TRANSITION TRACK PROFILE**  
SCALE: 1"=100' HOR, 1"=10' VERT

**NOTE:**  
1. REFER TO GENERAL NOTES DRAWING NO. GE-B0101 FOR NOTES.

**SAN FRANCISCO TO SAN JOSE EIR'S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B4**  
**SHEET 53 OF 142**

RECORD PERM SUBMITTAL  
APRIL 11, 2019  
NOT FOR CONSTRUCTION

**HNTB**  
1111 Broadway  
9th Floor  
Oakland, CA 94607

**CALIFORNIA**  
High-Speed Rail Authority

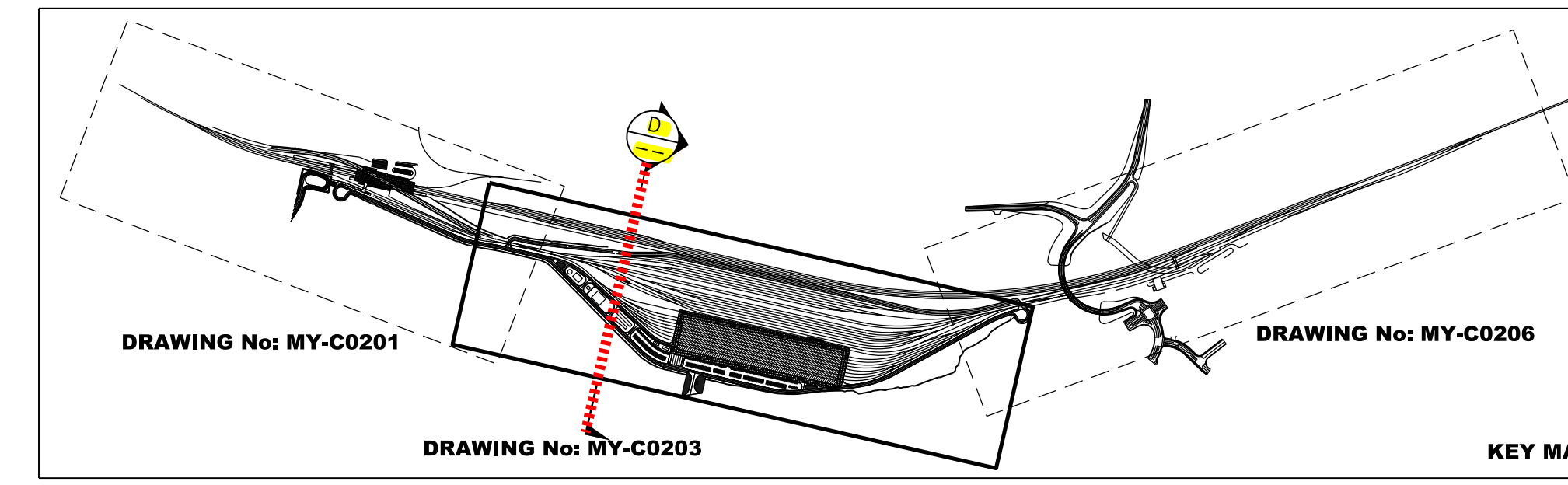
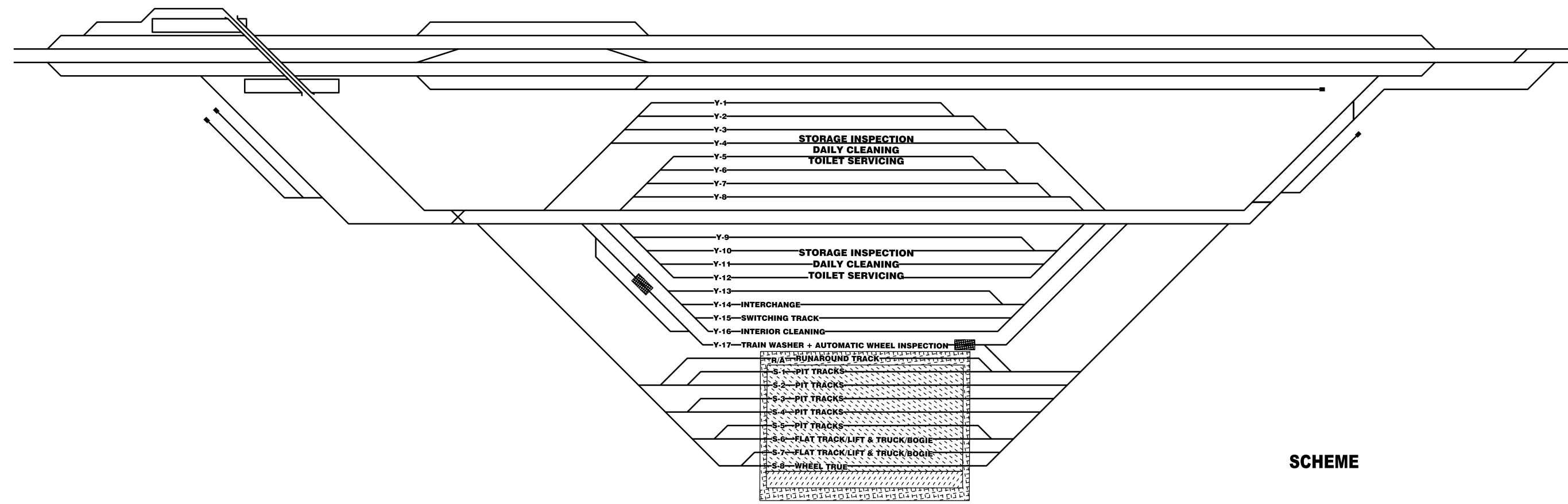
**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
ALTERNATIVE B  
BRISBANE LIGHT MAINTENANCE FACILITY WEST  
COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS

CONTRACT NO. HSR15-34  
DRAWING NO. MY-C0203  
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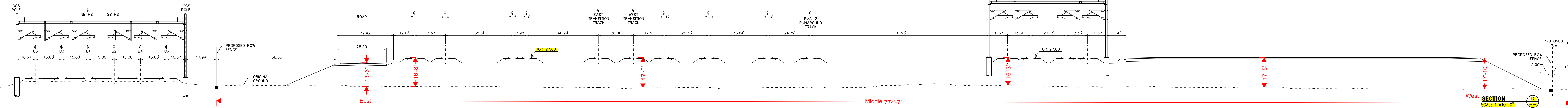


EAST TRANSITION TRACK GEOMETRY DATA															
CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, A	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA)(IN)	UNBALANCED SUPERELEVATION (EU)(IN)	WCB (0°00'00")	
				NORTHING	EASTING									(TANGENT)	START ANGLE
Tangent	Tangent	ST	19+63.28	2084192.37	6011204.29									S 1°13'13" W	
		TS	52+11.29	2080945.09	6011351.12										
3	Clothoid	TS	52+11.29	2080945.09	6011351.12									S 1°13'13" W	S 2°03'32" E
	Clothoid	SPI	54+38.74	2080917.89	6011332.41	191.15	3'16"45"	95.56	0.91						
	Clothoid	SC	54+02.44	2080753.17	6011344.69										
	Arc	SC	54+02.44	2080753.17	6011344.69										
	Arc	PI	56+83.24	2080473.34	6011144.78	1670	556.4	19°05'22"			50	3.00	2.99	S 2°03'32" E	S 21°08'54" E
	Arc	CC	59+58.84	2080813.96	6012803.62										
	Arc	CS	59+58.84	2080211.45	6011246.09										
	Clothoid	CS	59+58.84	2080211.45	6011246.09	191.15	3'16"45"	95.56	0.91					S 21°08'54" E	S 24°25'39" E
	Clothoid	SPI	61+49.99	2080035.96	6011321.79										
	Clothoid	ST	61+49.99	2080035.96	6011321.79										
Tangent	Tangent	TS	75+75.23	2078738.3	6011911.19									S 24°25'39" E	

WEST TRANSITION TRACK GEOMETRY DATA															
CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, A	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA)(IN)	UNBALANCED SUPERELEVATION (EU)(IN)	WCB (0°00'00")	
				NORTHING	EASTING									(TANGENT)	START ANGLE
Tangent	Tangent	ST	29+31.32	2084067.36	6011221.63									S 1°13'13" W	
		TS	60+55.30	2080944.09	6011155.1										
4	Clothoid	TS	60+55.30	2080944.09	6011155.1									S 1°13'13" W	S 2°04'43" E
	Clothoid	SPI	61+81.99	2080817.43	6011152.4	190	3'17"56"	94.99	0.91						
	Clothoid	SC	62+45.30	2080754.12	6011154.7										
	Arc	SC	62+45.30	2080754.12	6011154.7	1650	548.6	19°03'00"			45	2.50	2.41	S 2°04'43" E	S 21°07'43" E
	Arc	PI	65+22.16	2080474.44	6011164.74										
	Arc	CC	67+93.90	2080813.96	6012803.62										
	Arc	CS	67+93.90	2080219.2	6011264.54										
	Clothoid	CS	67+93.90	2080219.2	6011264.54	190	3'17"56"	94.99	0.91					S 21°07'43" E	S 24°25'39" E
	Clothoid	SPI	69+83.90	2080044.76	6011339.77										
	Clothoid	ST	69+83.90	2080044.76	6011339.77										
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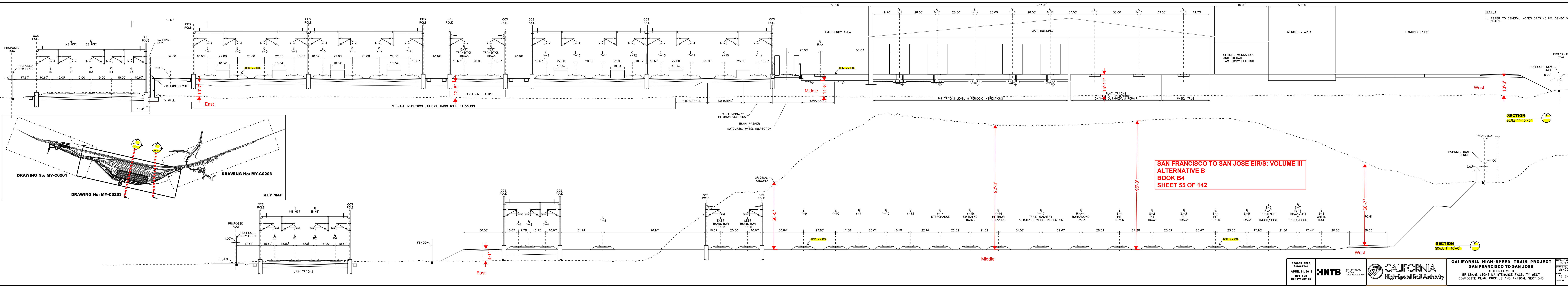


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**ALTERNATIVE B**  
**BOOK B4**  
**SHEET 54 OF 142**

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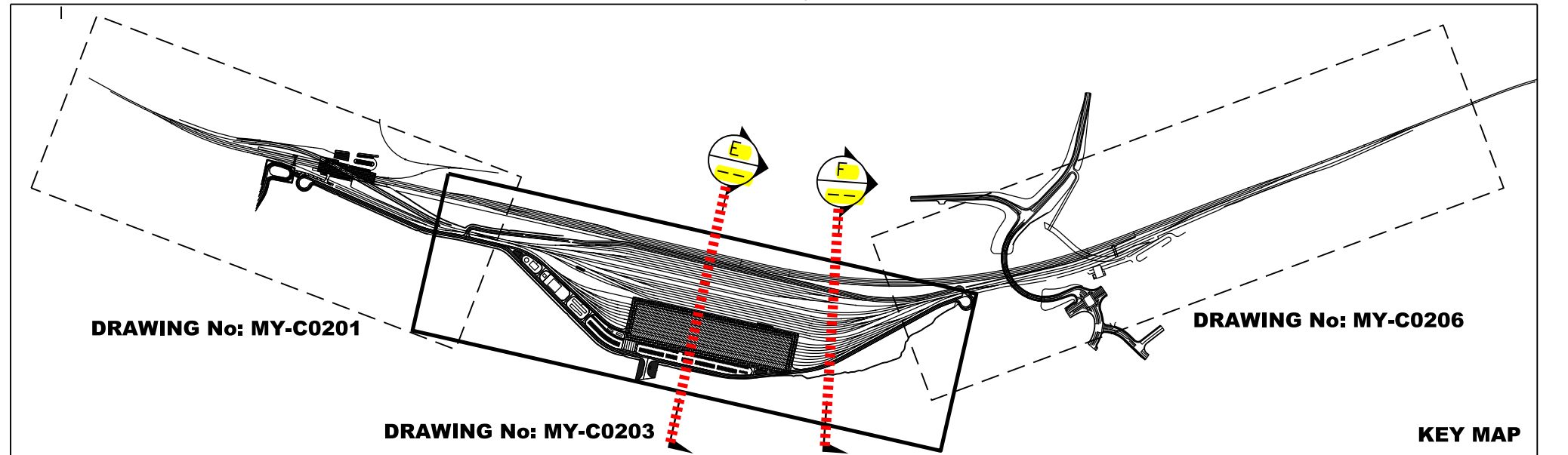


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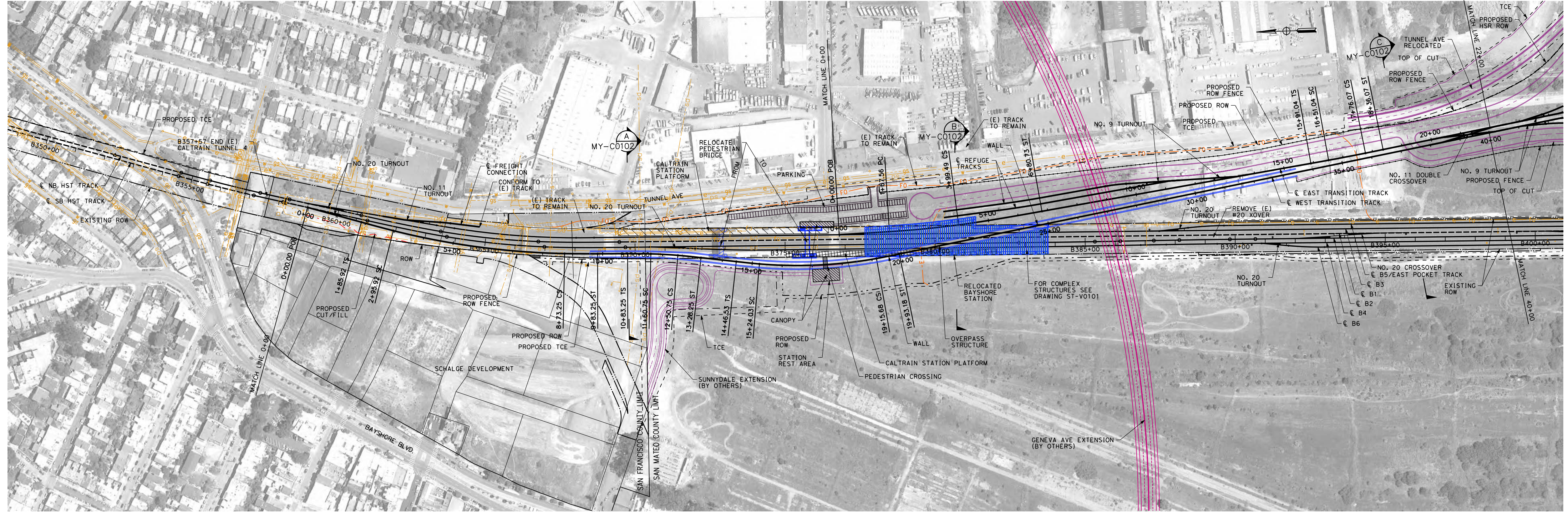
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ALTERNATIVE B  
BOOK B4  
SHEET 55 OF 142**



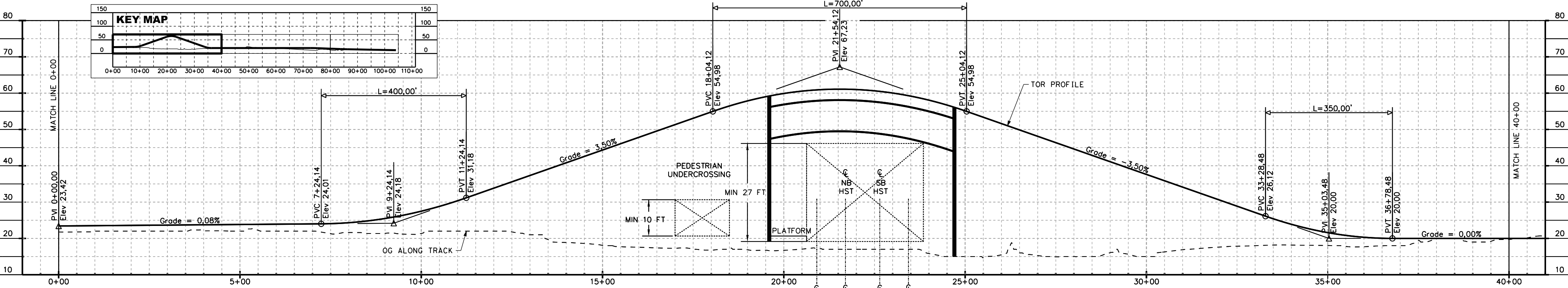
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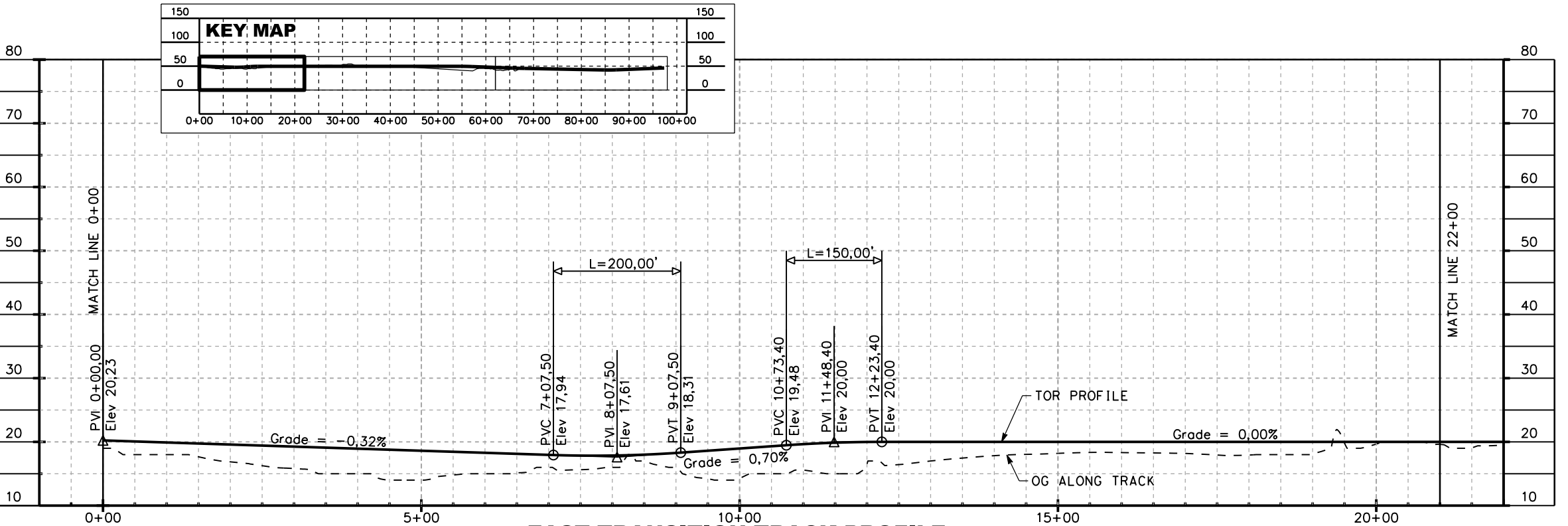


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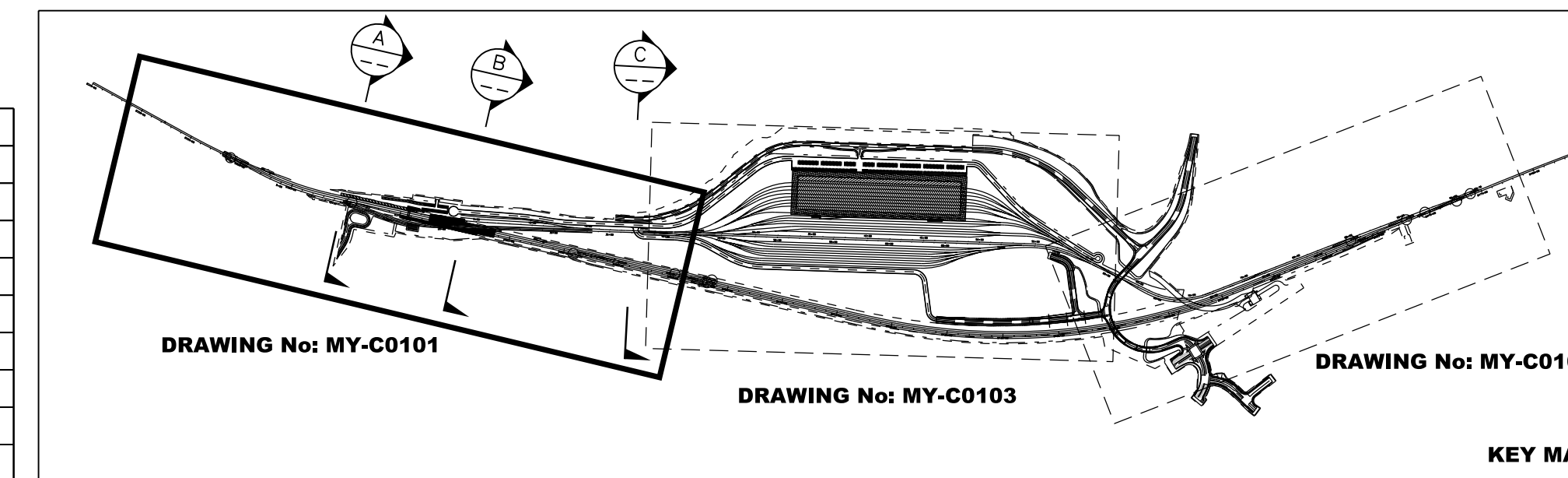
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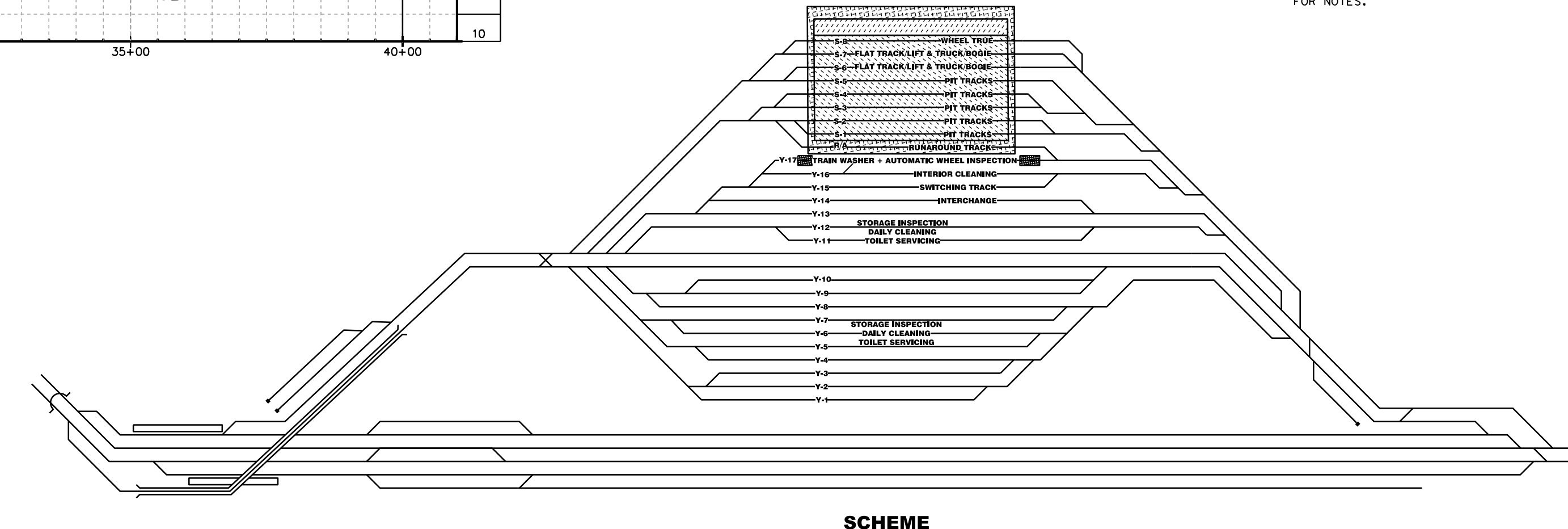


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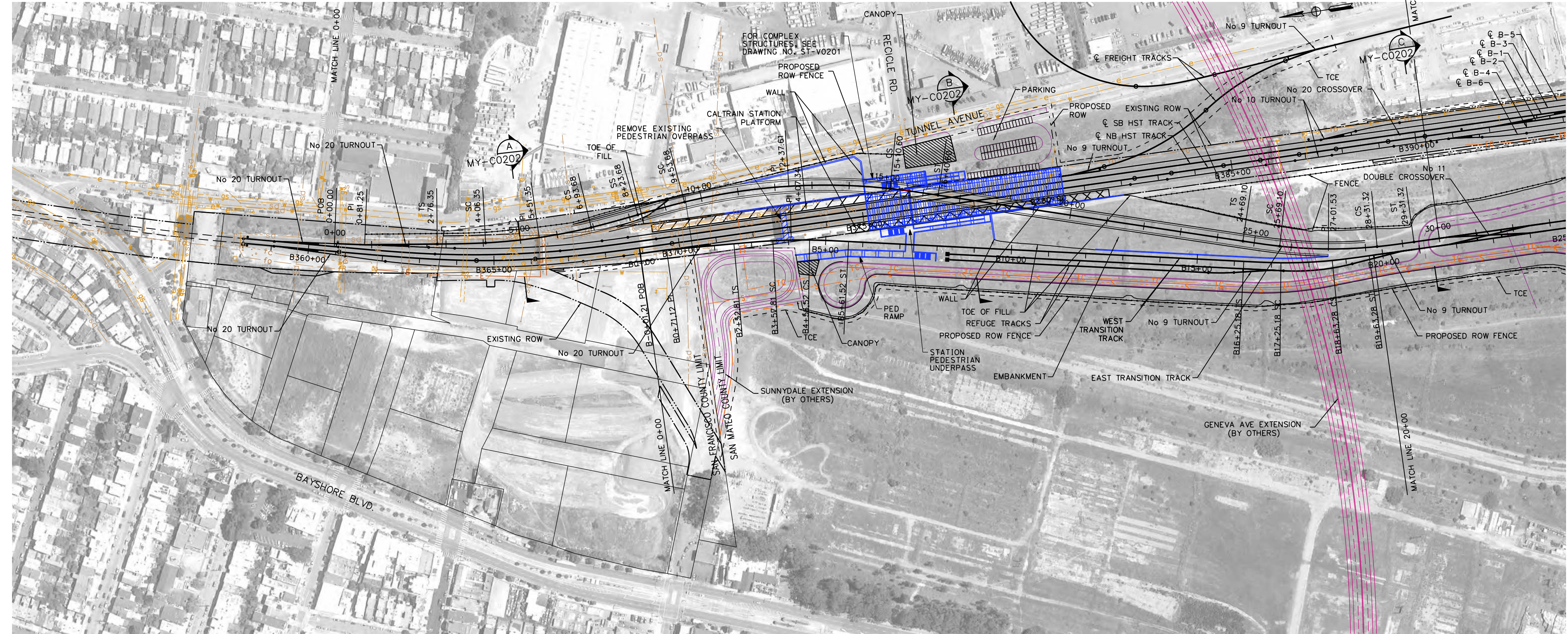


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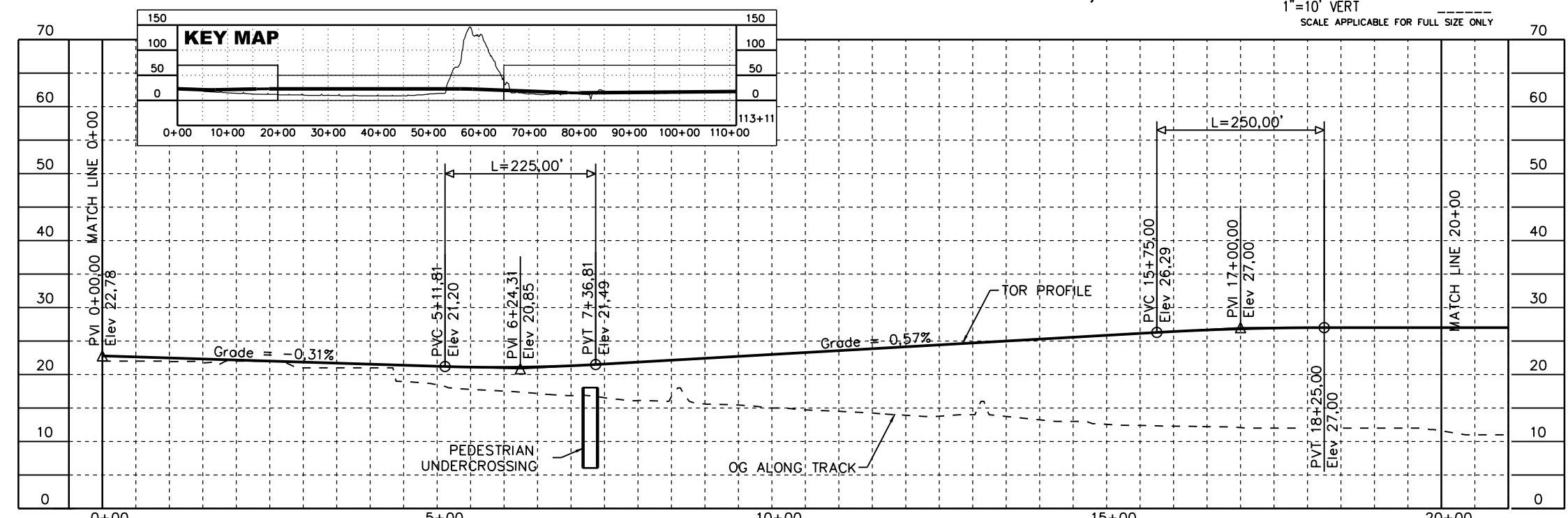
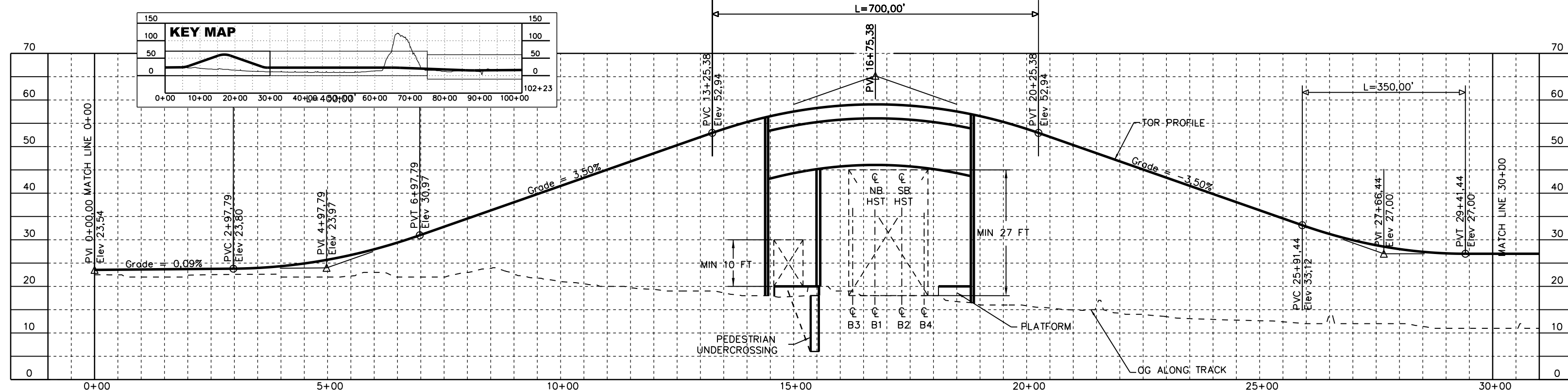
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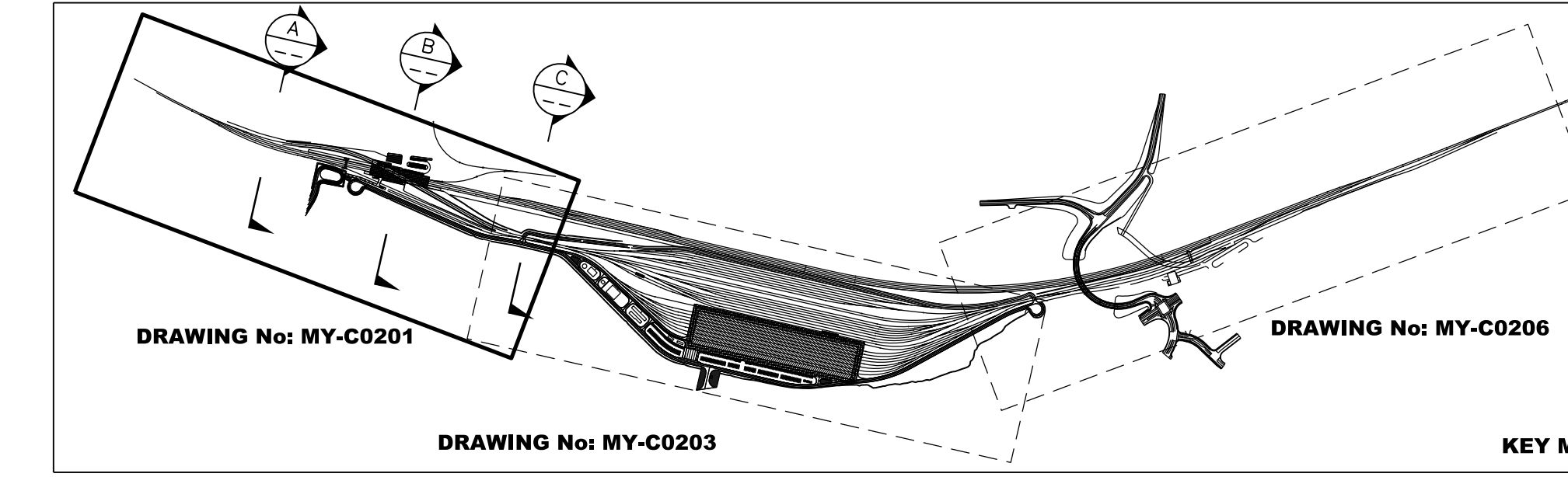




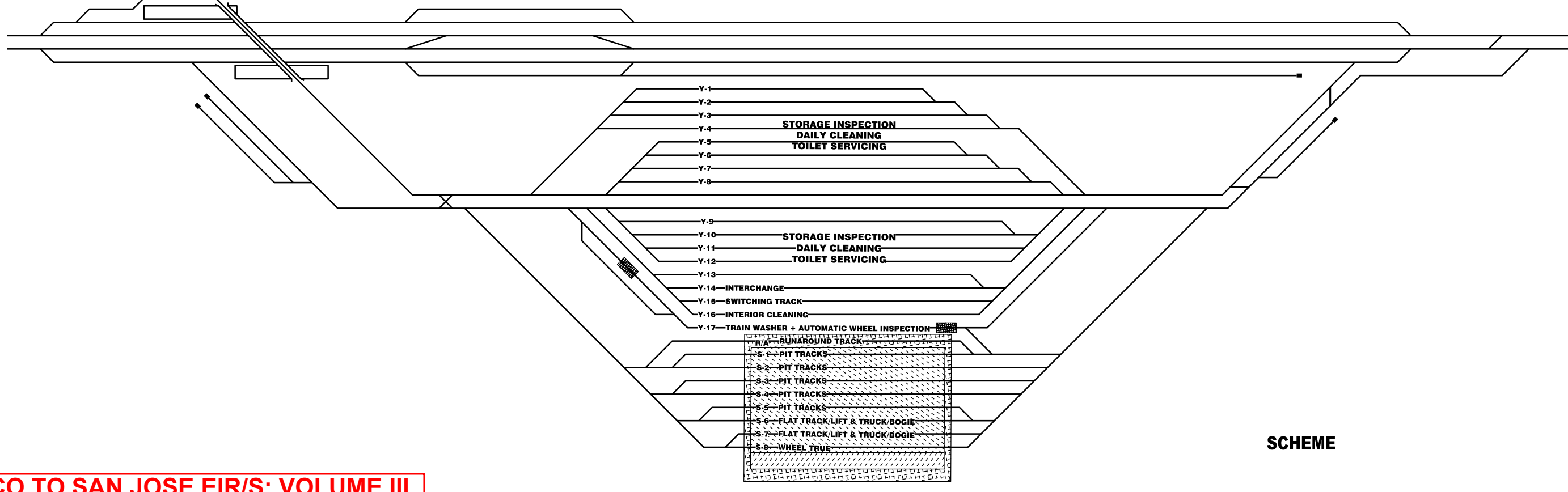
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**ALTERNATIVE B**  
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**SHEET 51 OF 142**

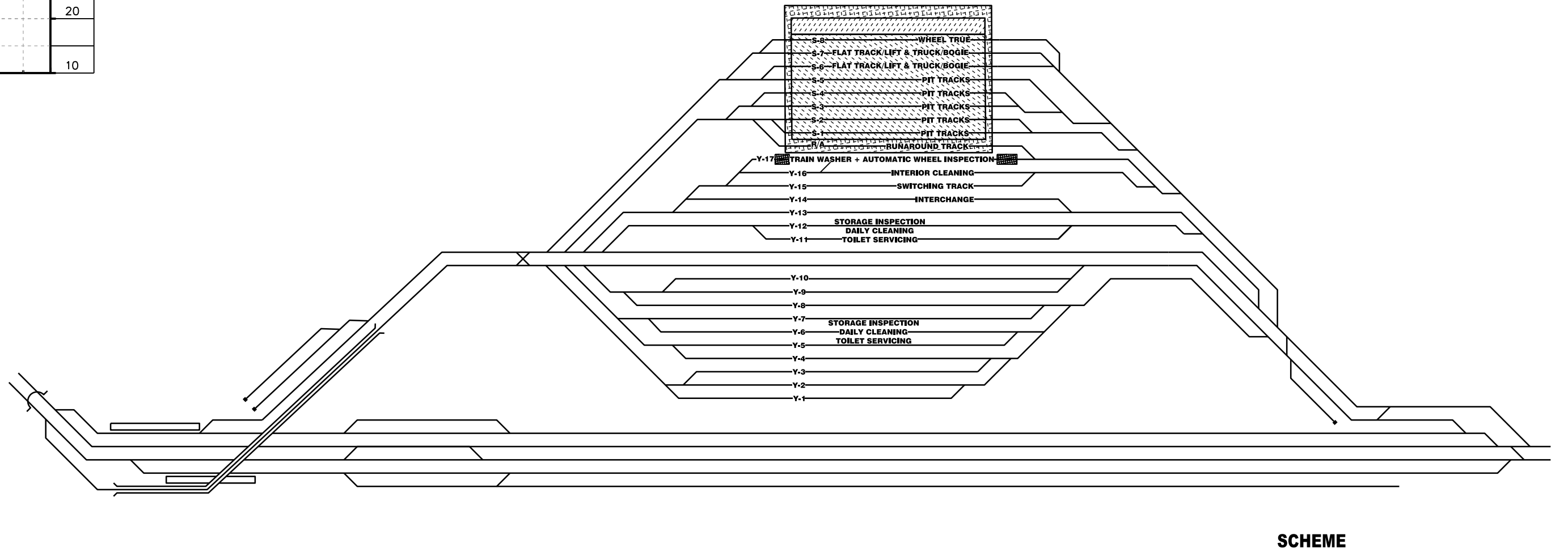
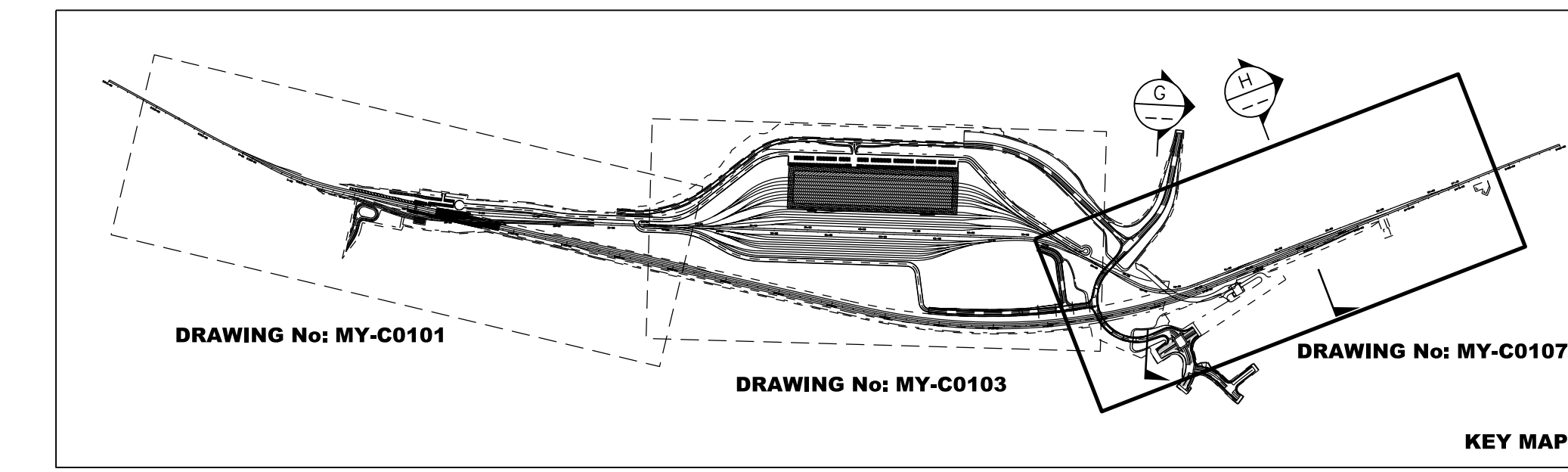
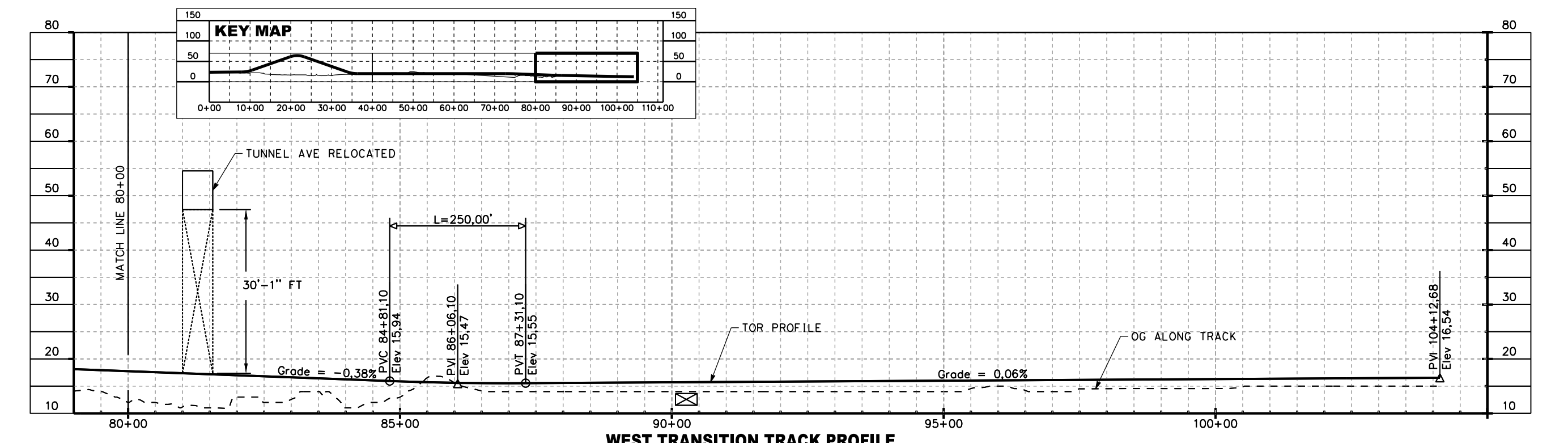
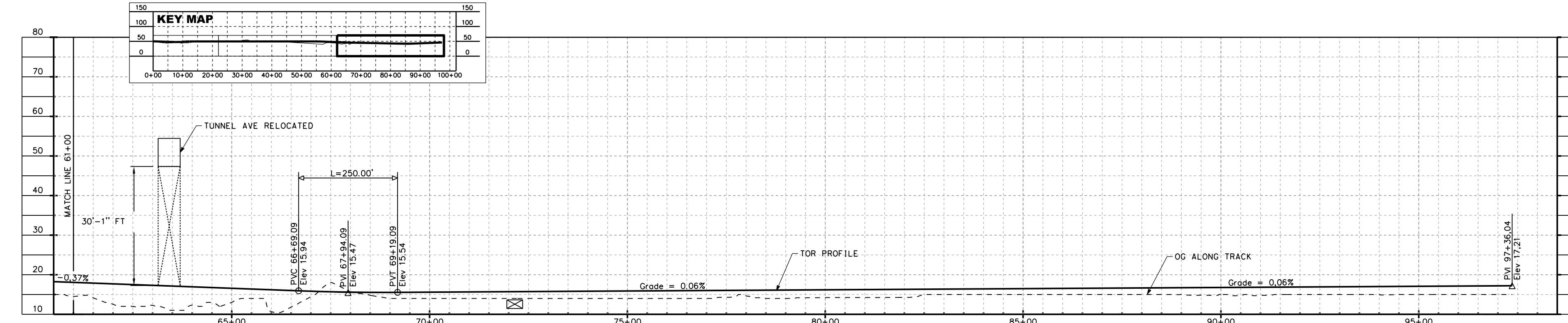
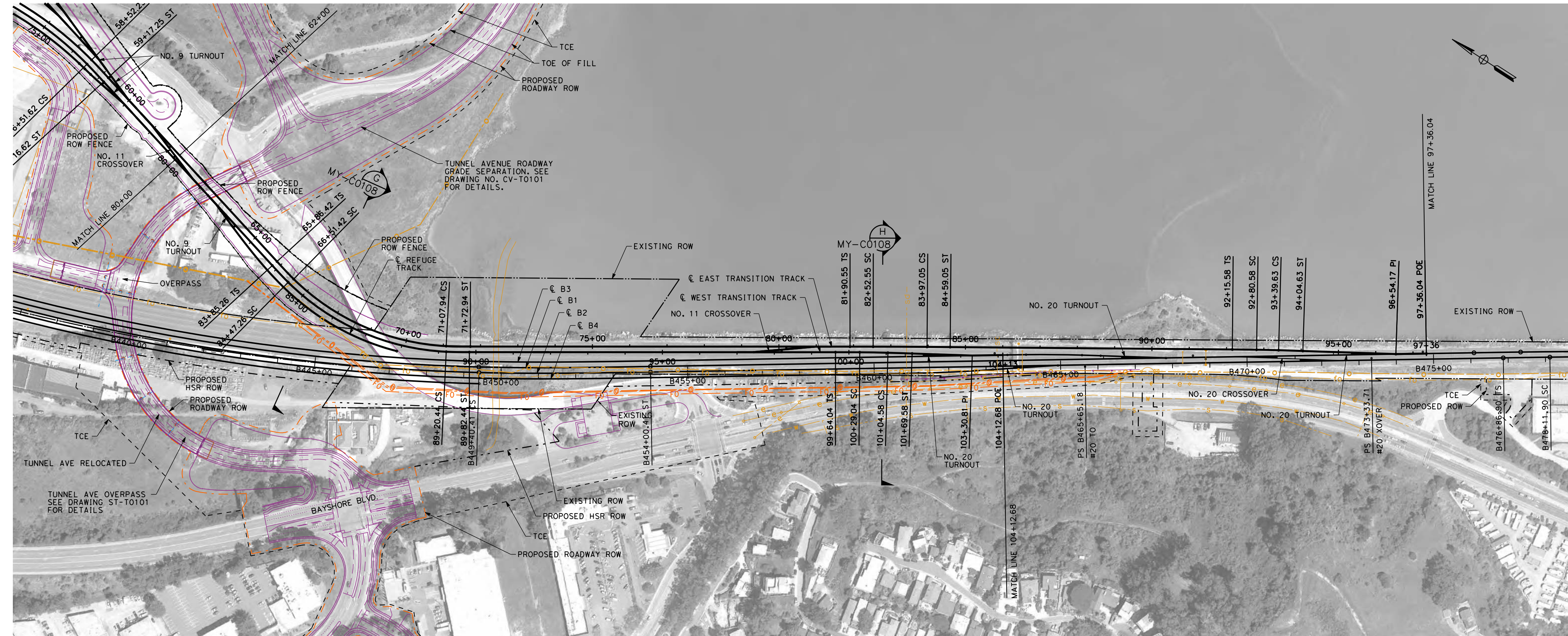


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ALTERNATIVE A  
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SHEET 71 OF 100**

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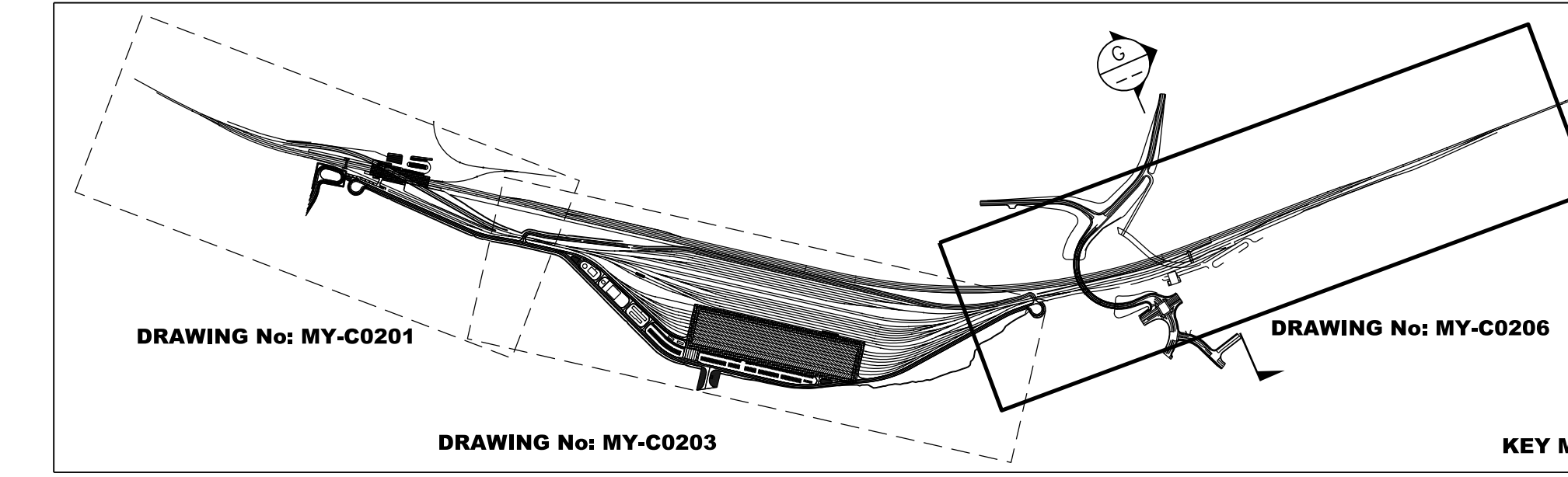
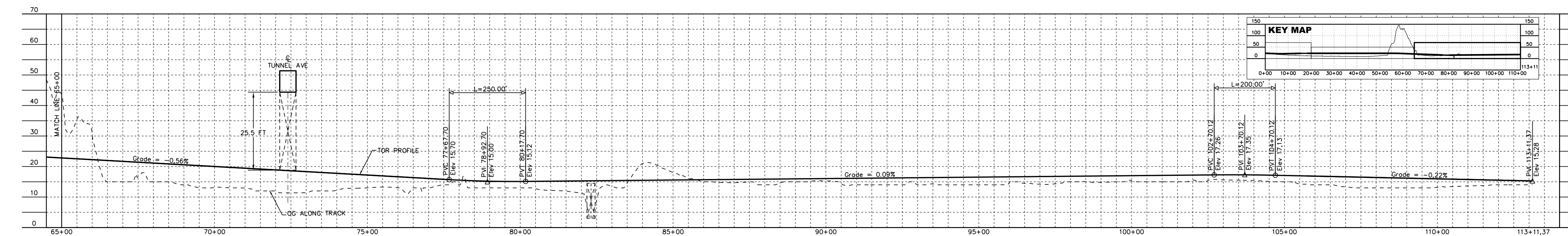
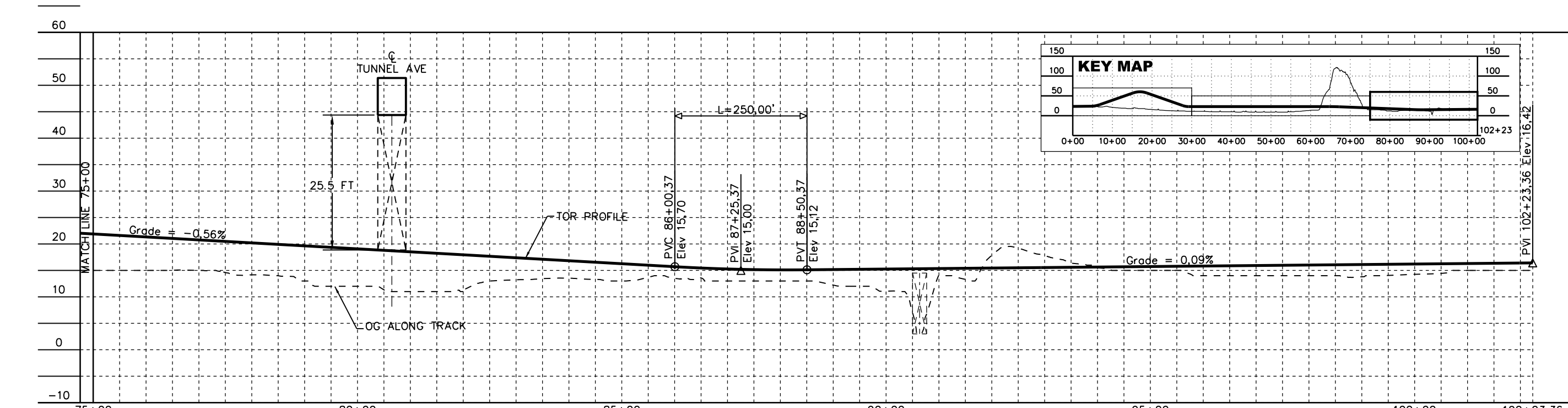
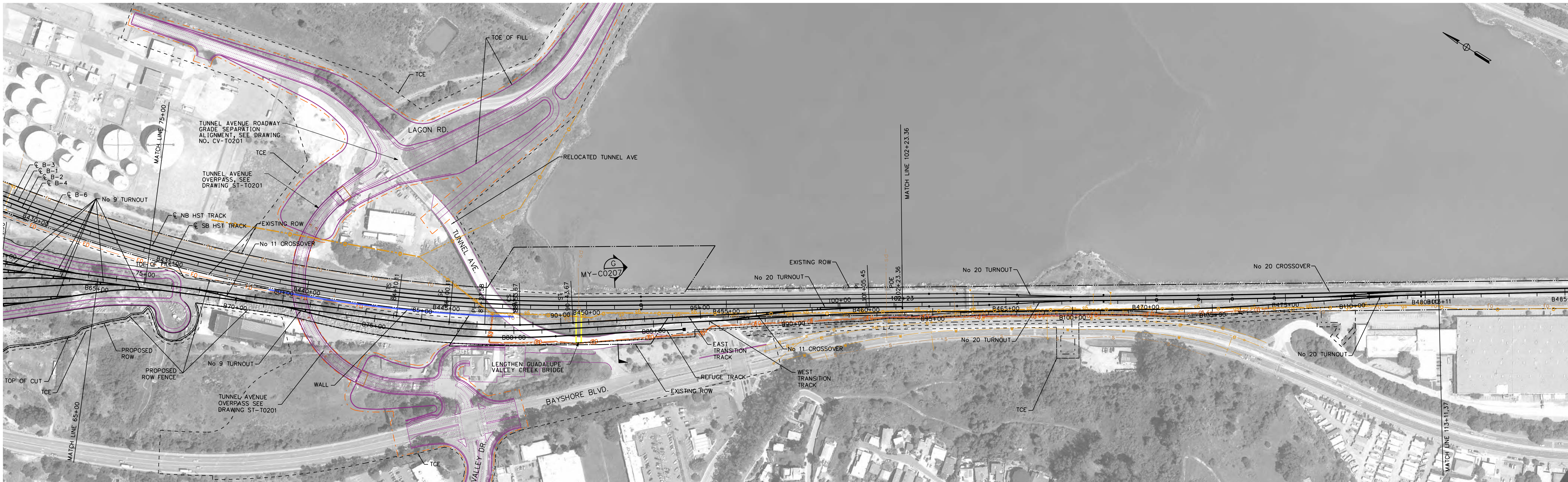
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
ALTERNATIVE A  
BRISBANE LIGHT MAINTENANCE FACILITY EAST  
COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS

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**Attachment Metis-G**

**Brisbane Baylands**

**Water Supply Assessment**

**May 24, 2013**



# REPORT

## Brisbane Baylands Project Water Supply Assessment

*Prepared For:*

City of Brisbane  
50 Park Place  
Brisbane, CA 94005

*Prepared By:*

CDM Smith Inc.  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596

May 24, 2013



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## Appendices

A Water Code Section 10910(d)(2)

B Technical Memo prepared by Brown and Caldwell

C 2009 Water Supply Agreement between the City and County of San Francisco and the Wholesale Customers in Alameda, San Mateo, and Santa Clara County

D BWD Existing Individual Water Supply Contract with the City and County of San Francisco

E GVMID Existing Individual Water Supply Contract with the City and County of San Francisco

F Term Sheet between OID and the City of Brisbane

G CPP and CPP-V Water Demand Calculations

H 2010 Urban Water Management Plan for the City and County of San Francisco

## Acronyms

AFY	acre-feet per year
BAWSCA	Bay Area Water Supply and Conservation Agency
Baylands	Brisbane Baylands
BWD	Brisbane Water District
CEQA	California Environmental Quality Act
CPP	Community Proposed Plan
CPP-V	Community Proposed Plan – Recology Expansion Variant
DRIP	Drought Implementation Plan
DSP	Developer-Sponsored Plan
DSP-V	Developer-Sponsored Plan – Entertainment Variant
DSS	Decision Support System
gpf	gallons per flush
GVMID	Guadalupe Valley Municipal Improvement District
MG	million gallons
MGD	million gallons per day
MID	Modesto Irrigation District
OID	Oakdale Irrigation District
PEIR	Programmatic Environmental Impact Report
R&D	research and development
SB	Senate Bill
SFPUC	San Francisco Public Utilities Commission
SWPCP	Southeast Water Pollution Control Plant
UPC	Universal Paragon Corporation
UWMP	Urban Water Management Plan
WAVE	Water Alliances for Voluntary Efficiency
WRP	Water Resources Plan
WSA	Water Supply Assessment
WSIP	Water System Improvement Program

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# Section 1

## Introduction

This section describes the purpose of the Brisbane Baylands Project Water Supply Assessment (WSA), the regulatory requirements, and the roles and responsibilities for this WSA.

### 1.1 Overview

In 2008, the City of Brisbane Public Works Department received a request from Universal Paragon Corporation (UPC) to produce a WSA for the proposed Brisbane Baylands Project, pursuant to the requirements of California Water Code Section 10910 *et. seq.*.

This document comprises the WSA for the proposed Brisbane Baylands Project. It presents information on water demand and water supply availability for the Brisbane Baylands Project through 2035, in normal, dry, and multiple dry years.

### 1.2 Regulatory Requirements

Senate Bill (SB) 610 was passed in 2002 and amended Sections 10910 through 10915 of the California Water Code (Water Code), requiring any city or county that determines a project (as defined in Water Code Section 10912) is subject to the California Environmental Quality Act (CEQA) to complete a WSA and include that assessment in the environmental documentation for the project. The WSA provides information on water supply availability to decision-makers prior to approval of large development projects and serves as evidence for the approval of such projects.

As required by Water Code Section 10910, the WSA must determine if the public water system's total projected water supplies available during normal, single dry, and multiple dry water years over a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

The proposed Brisbane Baylands Project is defined as a project according to Water Code Section 10912 and is subject to CEQA; therefore a WSA must be completed.

The City of Brisbane has only approximately 1,900 service connections and supplies less than 3,000 acre-feet of water annually; therefore it does not meet the definition of "Urban Water Supplier" under Water Code Section 10617 and it is not required to complete an Urban Water Management Plan (UWMP).

### 1.3 Uses of this WSA

The WSA for the proposed Brisbane Baylands Project, including information on plans to acquire additional water supplies, will be used in conjunction with the Draft EIR for the project.

When the City of Brisbane reviews the proposed Brisbane Baylands Project and issues an approval/disapproval, the City must determine "based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned

future uses. (Water Code Section 10911(c))” If the City of Brisbane determines that water supplies will not be sufficient, the City must include this determination in its CEQA findings for the project.

## 1.4 Roles and Responsibilities

SB 610 assumes that the land use planning agency (city or county) is not the water supplier for the project. However, in the case of the City of Brisbane, the City is the land use planning agency responsible for approving the Proposed Project as well as the water supplier that would supply water to the Proposed Project.

For the purposes of this document, the land use planning agency responsible for approving land use projects is the City of Brisbane’s Community Development Department. The water supplier is the Brisbane Water District (BWD) and Guadalupe Valley Municipal Improvement District (GVMID), both operated by the City of Brisbane’s Public Works Department. The City Council is the governing body that will have the discretion to approve/disapprove this WSA.

## 1.5 Supporting Documentation

This WSA relies on the following supporting documents:

- *Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County, July 2009.*
- *Term Sheet for Water Transfer Agreement by and between the Oakdale Irrigation District and the City of Brisbane.*
- *Baylands Water Use Projections and Water Balance for Base Land Use Scenario, Technical Memorandum No.1, March 19, 2013.* Prepared for: Universal Paragon Corporation. Prepared by: Brown and Caldwell.
- *2010 Urban Water Management Plan for the City and County of San Francisco, June 2011,* Prepared by: The San Francisco Public Utilities Commission (SFPUC).

These documents can be found in the appendices to this WSA.

## 1.6 Applicable Water Code Requirements

The California Water Code contains specific requirements for a WSA. Table 1-1 below presents the applicable water code sections and the locations in this document where these sections are addressed.

**Table 1-1. Water Code Sections Addressed in this WSA**

Water Code Section	Description	Found in Section:
Water Code Section 10910(a)	Determine if Project is Subject to CEQA	1.2
Water Code Section 10910(b)	Identify public water system that will or may supply water to the Project	1.4
Water Code Section 10910(c)(1)	Determine if proposed project was included in most recent adopted UWMP	1.2
Water Code Section 10910(c)(3)	Determine if the public water system’s total projected water supplies available during normal, single dry, and multiple dry years during a 20-year projection will meet the projected water demand of the proposed project, in addition to the public water system’s existing and planned future uses	6

**Table 1-1. Water Code Sections Addressed in this WSA**

Water Code Section	Description	Found in Section:
Water Code Section 10910(d)(1)	Include identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years	5
Water Code Section 10910(d)(2)	Provide proof of existing water supply entitlements, water rights, or water service contracts	Appendix C,D,E, and F
Water Code Section 10911(a)	<p>If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:</p> <p>(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.</p> <p>(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.</p> <p>(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system expects to be able to acquire additional water supplies.</p>	5

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## Section 2

# Proposed Project

This section briefly describes the proposed Brisbane Baylands project.

## 2.1 Background

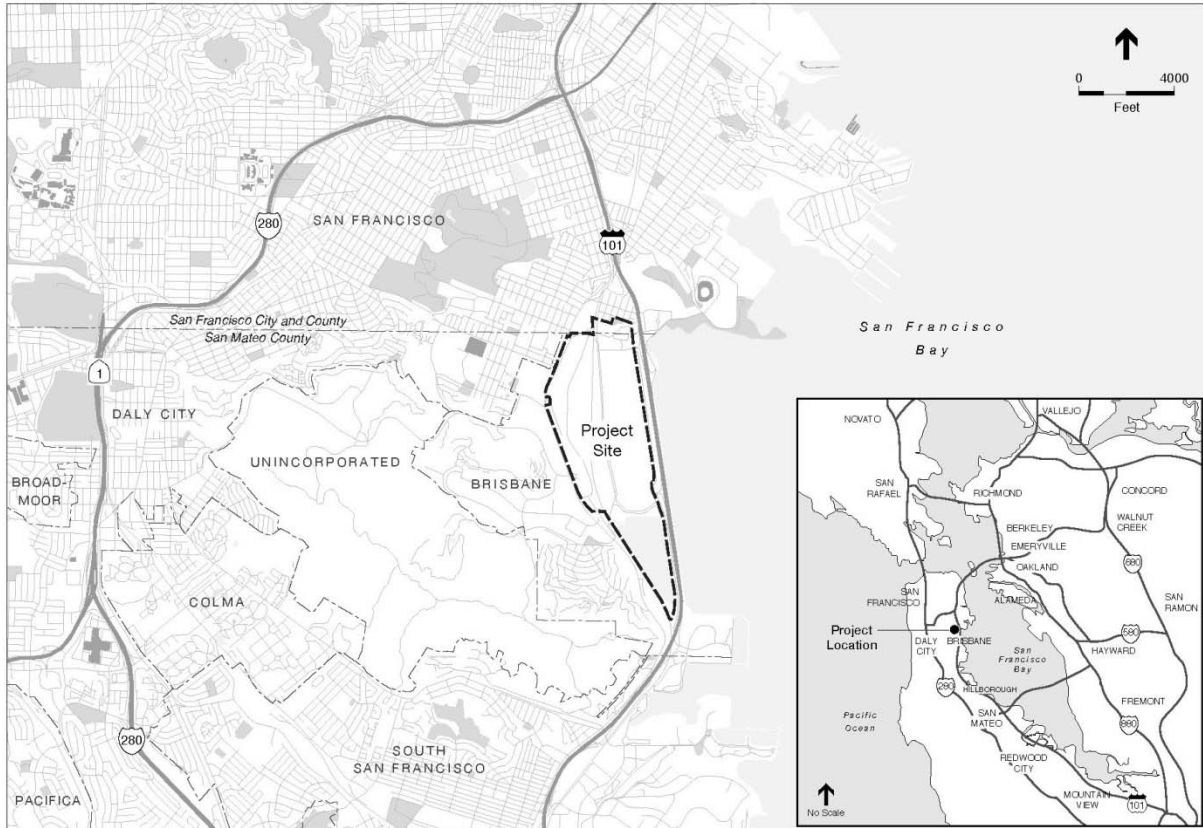
The Brisbane Baylands project site is an undeveloped area in the City of Brisbane that contains a former landfill and a former Southern Pacific Bayshore Railyard. The major developments currently on the site include two lumberyards, a Recology, Inc. facility, a cooking fuels company, a small industrial park, a rock and concrete crushing operations, a soils processing facility, , and a water pump station owned by Bayshore Sanitary District. The Kinder Morgan Tank Farm, and equipment manufacturing/distribution company lie within the boundaries of the Baylands General Plan subarea, but are not included as part of the project.

The former landfill area is approximately 345 acres and operated from the early 1930s through the mid-1960s as a depository for municipal solid waste. After the landfill closed in 1967, the landfill site was, and continues to be, used for soil and construction material recycling.

The former railyard is approximately 228 acres and was historically operated by Southern Pacific Railroad for freight train activity into and out of San Francisco between 1914 and 1960. Currently, the site is undergoing remediation to address contamination from the former railyard activities (City of Brisbane 2006).

## 2.2 Location

The proposed development location, referred to as the Brisbane Baylands (Baylands), is within the City of Brisbane in the northeast portion of San Mateo County, flanking the west side of San Francisco Bay. The Baylands site is bound on the north by the City and County of San Francisco, on the east by US Highway 101, and on the west and south by Bayshore Boulevard. The Baylands site is shown in Figure 2-1, and includes approximately 622 acres of upland area and 111 acres of lagoon (i.e., water area), totaling 733 acres.



Source: ESA

**Figure 2-1**  
**Project Location**

## 2.3 Description of Proposed Development

The City of Brisbane General Plan requires a Concept Plan for the development of the Baylands. Four different Concept Plans are being considered for development of the project site, all of which are being evaluated in the Brisbane Baylands EIR. Those concepts include the following:

- **Developer-Sponsored Plan (DSP).** The DSP scenario was proposed by UPC, the primary landowner at the Project Site, and is defined within the *Draft Brisbane Baylands Specific Plan* (dated February 2011) (Specific Plan). The DSP includes only the 684-acre portion of the Baylands within the Brisbane city limits and excludes the 44.7-acre Recology site. The DSP proposes approximately 7 million square feet of office/ retail /industrial/ institutional uses, 4,434 residential units, approximately 169.7 acres of “open space/open area,” and approximately 135.6 acres of “lagoon” area. Total new development under the DSP would be approximately 12.1 million square feet.
- **Developer-Sponsored Plan – Entertainment Variant (DSP-V).** The DSP-V is also proposed by UPC and defined within the Specific Plan. The DSP-V encompasses the same 684-acre area as the DSP scenario. It is similar to the DSP in its development intensity and land use pattern but replaces the retail and office/research and development (R&D) uses proposed under the DSP in the northeast portion of the Project Site with entertainment-oriented uses, including a 17,000-

to 20,000-seat sports arena, a 5,500-seat concert theater, a multiple-screen cinema, and more conference/exhibition space and hotel rooms than are proposed under the DSP. New development under the DSP-V would total approximately 12.0 million square feet.

- **Community Proposed Plan (CPP).** The CPP scenario was developed through extensive community input and designated for study in the EIR by the Brisbane City Council in 2010. The CPP provides for approximately 7.7 million square feet of office, industrial, commercial, and institutional uses, along with approximately 330 acres of open space/open area and the 135.6-acre lagoon. In addition to the 684-acre area included as part of the DSP, the CPP includes the 44.7-acre Recology site, which spans the cities of Brisbane and San Francisco, encompassing the Beatty Subarea designated in the City of Brisbane General Plan. The CPP does not include residential development. New development under the CPP would total approximately 7.7 million square feet.
- **Community Proposed Plan – Recology Expansion Variant (CPP-V).** The CPP-V scenario differs from the CPP in that it proposes expansion of the existing Recology facility within the northeast portion of the Brisbane Baylands within the Brisbane city limits. Under the CPP-V, Recology would expand southward from its current boundary, replacing the hotel and R&D uses proposed under the CPP just north of Geneva Avenue and east of Tunnel Road. The existing 44.7-acre Recology site would expand by 24 acres to a total of 68 acres, consolidating existing offsite recycling and corporation yard facilities into one location within the Baylands. The square footage of the developed areas on the Recology site would increase from the existing 260,000 square feet to 1,011,000 square feet. Total new development under the CPP-V would be approximately 8.1 million square feet.

In addition to potential approval of a development concept for the project site, a related action included with the Brisbane Baylands Project, as addressed in the Brisbane Baylands EIR, is the proposed approval of an agreement providing for the importation of a water supply to the Baylands and City of Brisbane. The City proposes to acquire a supplemental water supply of 2,400 acre-feet per year (AFY) via a water transfer agreement with the Oakdale Irrigation District (OID). OID and the City of Brisbane have signed a term sheet for the proposed water transfer that establishes a framework for the potential future transfer of up to 2,400 AFY annually for a 50-year period, with possible renewals for additional 25-year periods. The 2,400 AFY includes 2,000 AFY to serve the Baylands and 400 AFY to accommodate planned growth within the City of Brisbane as a whole. The water would be transferred from OID to the City of Brisbane pursuant to water supply and conveyance agreements to be executed among OID, Modesto Irrigation District, San Francisco Public Utilities Commission (SFPUC) and the City of Brisbane. The WSA presented herein addresses future water demands and supplies both with and without this proposed water transfer.

Summaries of land area types proposed for development (**Table 2-1**), proposed land use changes under each of the Concept Plan scenarios (**Table 2-2**), and proposed development by land use under each of the Concept Plan scenarios (**Table 2-3**) are provided below.

**Table 2-1. Land Area Types on Brisbane Baylands Project Site**

Component	Developer-Sponsored Plan (DSP) and Variant (DSP-V) (acres)	Community Proposed Plan (CPP) and Variant (CPP-V) (acres)
<b>Project Site Area</b>		
<b>Total Buildable Area<sup>(1)</sup></b>	<b>378.7</b>	<b>222.7</b>
Existing Recology Site	0.0	44.7
Lagoon	135.6	135.6
Open Space	169.7	330.0
<b>Total Site Area</b>	<b>684.0</b>	<b>733.0<sup>(2)</sup></b>

<sup>(1)</sup> The “buildable area” includes all planned development and associated area for streets and infrastructure.

<sup>(2)</sup> The total site area under the CPP and CPP-V includes the existing 44.7-acre Recology site plus adjacent roadway rights of way.

Source: City of Brisbane 2010

**Table 2-2. Proposed Land Use Changes for Brisbane Baylands Project Site**

Component	Developer-Sponsored Plan		Community Proposed Plan	
	DSP (square feet)	DSP-V (square feet)	CPP (square feet)	CPP-V (square feet)
<b>Existing Development</b>				
Existing Industrial Park to be Removed	(231,400)	(231,400)	(231,400)	(231,400)
Existing Roundhouse and Lazzari Fuel Company	28,200	28,200	28,200	28,200
Existing Lumberyards to be Relocated	142,500	142,500	142,500	142,500
Existing Recology Use to Remain/(be Removed)	NA	NA	260,000	(260,000) <sup>(1)</sup>
<b>Total Square Feet of Existing Uses</b>	<b>402,100</b>	<b>402,100</b>	<b>662,100</b>	<b>662,100</b>
<b>Total Square Feet of Existing Uses to Remain</b>	<b>170,700</b>	<b>170,700</b>	<b>430,700</b>	<b>170,700</b>
<b>Proposed New Development</b>				
Net New Residential Development	5,150,400	5,150,400	0	0
Net New Non-Residential Development	6,945,900	6,899,000	7,742,600	8,072,600
<b>Total Square Feet of New Development</b>	<b>12,096,300</b>	<b>12,049,400</b>	<b>7,742,600</b>	<b>8,072,600</b>
<b>Total Square Feet of Development at Buildout<sup>(2)</sup></b>	<b>12,238,800</b>	<b>12,191,900</b>	<b>8,145,100</b>	<b>8,215,100</b>

NA = not applicable

<sup>(1)</sup> Recology’s plan for facility redevelopment indicates that “most” (approximately 20) existing structures would be removed.

<sup>(2)</sup> This total represents the total square feet of new development plus the total square feet of existing uses that would be relocated.

Source: City of Brisbane 2010

**Table 2-3. Proposed Development for Brisbane Baylands Project Site Buildable Area**

	DSP (square feet)	DSP-V (square feet)	CPP (square feet)	CPP-V (square feet)
<b>Residential</b>	<b>5,150,400</b>	<b>5,150,400</b>	<b>0</b>	<b>0</b>
Residential Flats	4,351,800 (3,950 units)	4,351,800 (3,950 units)	-	-
Residential Townhomes	798,600 (484 units)	798,600 (484 units)	-	-
<b>Hotels and Conference</b>	<b>261,100</b>	<b>586,800</b>	<b>1,392,300</b>	<b>1,046,100</b>
Hotels and Conference	261,100 (369 rooms)	586,800 (719 rooms)	1,392,300 (1,990 rooms)	1,046,100 (1,500 rooms)



**Table 2-3. Proposed Development for Brisbane Baylands Project Site Buildable Area**

	DSP (square feet)	DSP-V (square feet)	CPP (square feet)	CPP-V (square feet)
<b>Retail and Mixed Use</b>	<b>566,300</b>	<b>283,400</b>	<b>2,209,500</b>	<b>2,209,500</b>
Retail	566,300	283,400	-	-
Commercial/Office/R&D	-	-	2,209,500	2,209,500
<b>Research and Development Single Use</b>	<b>3,328,300</b>	<b>2,599,200</b>	<b>2,007,000</b>	<b>1,672,200</b>
Research and Development	3,328,300	2,599,200	2,007,000	1,672,200
<b>Office and Institutional</b>	<b>2,762,000</b>	<b>2,363,100</b>	<b>992,700</b>	<b>992,700</b>
Office	2,651,200	2,252,300	-	-
Institutional	110,800	110,800	-	-
Office/ Institutional Mixed	-	-	992,700	992,700
<b>Entertainment/Civic/Cultural</b>	<b>28,200</b>	<b>1,066,500</b>	<b>1,074,500</b>	<b>1,074,500</b>
Arena	-	630,100	-	-
Theater/ Exhibition/Performance Venue	-	337,200	274,500	274,500
Multiplex	-	71,000	-	-
Cultural/Entertainment	-	-	611,300	611,300
Civic/ Cultural	28,200	28,200	188,700	188,700
<b>Industrial</b>	<b>142,500</b>	<b>142,500</b>	<b>469,100</b>	<b>1,220,100</b>
Existing Relocated Industrial	142,500	142,500	142,500	142,500
New Industrial	-	-	66,600	66,600
Existing Resource and Recovery	-	-	260,000	-
Expanded/Rebuilt Resource and Recovery	-	-	-	1,011,000
<b>Total</b>	<b>12,238,800</b>	<b>12,191,900</b>	<b>8,145,100</b>	<b>8,215,100</b>

NOTE: See Table 2-1 for description of “buildable area.”

Source: UPC, 2011

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## Section 3

# Assessment Methods

This section describes the methodology used to assess water supplies for the Brisbane Baylands Project.

## 3.1 Assessment Methodology

This WSA considers the potential water demands of the Proposed Project in addition to the existing and future water demands of the water suppliers, the BWD and GVMID.

Three different demand projections are used in this WSA:

- **Existing and Committed Demand (Without-Project)** – The current baseline demand of the BWD, and GVMID, including existing development and any new developments with approved zoning that have adopted a WSA.
- **Existing and Committed Demand and the Proposed Project Demand (With-Project)** – The current demand of the BWD and GVMID plus the demand of the Proposed Brisbane Baylands Project.
- **Full Build-Out** – This includes the existing and committed demands, the Proposed Project demands, and any additional future development (on previously undeveloped property) that is planned through 2035.

### 3.1.1 Without-Project Demand

In cooperation with SFPUC and BAWSCA, the City of Brisbane has developed water demand projections for 2010 through 2030 using the Demand Side Management Least-Cost Planning Decision Support System [DSS] model. These projections have been included by SFPUC in their 2010 UWMP (SFPUC 2011b)<sup>1</sup> to help estimate future water demands for SFPUC's wholesale customers. The water demands from the City of Brisbane's DSS model will be used to identify without-project demand in this WSA. The DSS model only projects out to 2030; however this WSA is required to project out 20 years to 2035. SFPUC's 2010 UWMP extrapolated data from the DSS model to estimate future water demand for the City of Brisbane to 2035. This WSA will use the 2035 water demand estimate calculated by SFPUC.

### 3.1.2 With-Project Demand

In February 2011, UPC published the draft *Brisbane Baylands Infrastructure Plan* (UPC et al. 2011). Appendix N of the Infrastructure Plan contains the *Water Use Projections and Water Balance for Base Land Use Scenario and Entertainment Land Use Scenario, Technical Memorandum No. 1* (Brown and Caldwell 2011) prepared by Brown and Caldwell for UPC, which provides water demands (both indoor and outdoor irrigation) for the DSP and DSP-V Concept Plan scenarios. This WSA relies on the water demands for the DSP and DSP-V developed by Brown and Caldwell as part of UPC's 2011

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<sup>1</sup> Appendix H contains a copy of the 2010 UWMP for the City and County of San Francisco.

Infrastructure Plan. Brown and Caldwell updated this memorandum in 2013. A copy of the updated Technical Memo prepared by Brown and Caldwell is provided in Appendix B.

Brown and Caldwell did not calculate water demand for the CPP and CPP-V. Water demands for the CPP and CPP-V were based on the Brown and Caldwell rates developed for the DSP and DSP-V but were calculated separately by CDM Smith. First, water demand per square foot for the DSP and DSP-V land use types were calculated using the Brown and Caldwell water demands. Then, the water use per square foot was applied to each of the different land use types of the CPP and CPP-V. If the rates per square foot varied between the DSP and DSP-V for the same land use type, the higher rate was applied to the CPP and CPP-V. The expansion of the Recology facility under the CPP-V would consolidate existing uses; therefore water demand for the Recology facility was calculated as zero. Appendix G contains the calculations used to determine water demand for the CPP and CPP-V.

Brown and Caldwell calculated water demand for the Brisbane Baylands Project under five different Water Savings Programs. Each program included more stringent measures to reduce water use or conserve water. The City of Brisbane has decided that Water Savings Program D and E should be evaluated as part of the EIR as they are the two most likely programs to be implemented if the project is approved. Therefore, this WSA includes the water demands for each Concept Plan scenario (DSP, DSP-V, CPP, and CPP-V) under Water Savings Program D and E. Details about these Water Savings Programs are provided in the Brown and Caldwell Technical Memo (See Appendix B of this WSA) and briefly described below.

### **3.1.2.1 Water Savings Programs D and E**

Water Savings Program D includes measures to conserve water, while Water Savings Program E includes all the applicable measures in Program D as well as the construction of a wastewater treatment facility and the use of recycled water for all outdoor irrigation and some non-potable indoor plumbing. Summer demands under Water Savings Program D are higher than in the winter because of irrigation. Because Program E would use recycled water for all irrigation, water demands are the same in the summer and winter.

Water Savings Program D (without wastewater treatment plant/no recycled water) includes the following water savings measures:

- Water budgets
- Public outreach information
- Landscape requirements for new systems
- Water audits for commercial users
- Water audits for hotels-motels
- Requirements for multi-family unit sub-metering
- Multi-family efficient clothes washer rebate
- Water Alliances for Voluntary Efficiency (WAVE) Program (USEPA) for Hotels
- Dedicated landscape meters for outdoor irrigation use



- Native plant landscaping
- Subsurface irrigation for turf
- Hard-scape (e.g. track and exercise equipment instead of large lawns in parks): Area is covered with materials other than vegetation.
- High efficiency toilets: high efficiency toilets (1.28 gallons per flush [gpf] or less), or dual-flush toilets (0.8 gpf half-flush and 1.6 gpf full-flush) in new commercial, industrial, and institutional buildings
- Automatic sinks
- Waterless urinals (Brown and Caldwell 2013).

The water demand for the Proposed Project with the wastewater treatment facility and the use of recycled water for irrigation and other non-potable uses is referred to as Water Savings Program E and would involve all wastewater flows from the Baylands site being treated at the on-site wastewater treatment facility, decreasing the overall demand for potable water from that of Water Savings Program D. Water Savings Program E would also include all applicable water savings measures outlined in Water Savings Program D.

### 3.1.3 Future Build-Out Demand

The City of Brisbane water demand projections described above in Section 3.1.1 include and account for existing land uses and general plan build-out, with two notable exceptions; one being the proposed Baylands development project described above and the other being the proposed Sierra Point development projects, which include planned office, restaurant, and hotel uses. As described in Section 5.2.3, the City of Brisbane prepared water demand estimates for the future Sierra Point developments, which will be added to the without-project demand in order to obtain an accurate estimate of water demand at future build-out.

### 3.1.4 Planning Horizon

This WSA will review water demand and supply for a 20-year period (2015 through 2035).

### 3.1.5 Water Supply Reductions during Dry and Multiple Dry Year Types

This WSA assumes the City's water supply from the SFPUC would be reduced to 83 percent of the normal water year supply during a single dry year and during the first year of multiple dry years, and further reduced to 72 percent of the normal water year supply for the second and third years of multiple dry years. These percentage reductions are based on the total SFPUC wholesale water allocation reductions for single and multiple dry years. The actual required reductions for BWD and GVMID will be based on the Tier 2 Drought Implementation Plan (DRIP) (adopted in 2011) that calculates the reduced allocation on a formula factoring in: (1) agency's Supply Assurance from SFPUC; (2) agency's purchases from SFPUC during the 3 years preceding adoption of the Plan (2008-2011); and (3) the rolling average of the actual water purchased from SFPUC over the three years preceding any drought.

### 3.1.6 Water Demand during Dry and Multiple Dry Year Types

This WSA assumes demand remains the same during normal, dry, and multiple dry years. However, in reality, the City of Brisbane would likely implement water conservation measures during a drought. These measures would help to reduce overall demand to some degree.

## Section 4

# Water Supplies

This section describes the water supplies for BWD and GVMID.

### 4.1 Overview

The City of Brisbane is unique in that it is the approving agency for the Proposed Project and it is also the water supplier for the Proposed Project. The City of Brisbane Public Works Department is a water retailer to a service area of almost four square miles and a residential service population of approximately 4,282 (approximately 1,920 service connections) (City of Brisbane 2003; City of Brisbane 2006b). The Public Works Department operates two separate water districts; BWD and GVMID. The BWD serves Central Brisbane, Sierra Point, and the Baylands, while the GVMID covers an area of approximately 0.5 square mile and serves the Crocker Industrial Park and the North East Ridge residential development (City of Brisbane 2006a). Both districts are interconnected, giving the City the capability of moving water, at no cost, between the two districts (City of Brisbane 2006b). Water for the proposed Brisbane Baylands Project would be available from both districts, and therefore both districts are included in this WSA as water suppliers for the Proposed Project.

Both water districts operated by the Public Works Department are wholesale customers of the SFPUC; they do not have any local water supplies. SFPUC water is delivered to Brisbane through five turnouts on the Crystal Springs pipelines. The source of the SFPUC's water delivered to Brisbane is the Hetch Hetchy Reservoir in Yosemite National Park.

The City's current Settlement Agreement and Master Water Sales Contract with the SFPUC, as further described below, provides supply guarantee of 0.46 million gallons per day (MGD) for BWD, and 0.52 MGD for GVMID. This WSA assumes the existing water supply guarantee is a fixed supply through 2035, however it is important to note that after December 31, 2018, SFPUC must decide whether to provide water in excess of the 184 MGD Supply Assurance to meet its Wholesale customers' future projected demands through the year 2030, and whether to offer a corresponding increase in the Supply Assurance (SFPUC 2011b).

### 4.2 Existing Water Supply for SFPUC

Water supply for SFPUC wholesale customers is primarily from the Tuolumne River through the Hetch Hetchy water system (85 percent), and from runoff that is collected in local reservoirs (15 percent). During drought periods, water from the Hetch Hetchy system can make up to 93 percent of the supply (SFPUC 2005). Reservoirs are critical to the overall SFPUC water system as they provide carry-over storage during dry years when the Tuolumne River water deliveries decrease and there is little local runoff.

Based on 2005 delivery levels, the SFPUC water system can experience up to a 25 percent water shortage during 15 to 20 percent of the time during multiple-dry years (SFPUC 2005). During previous multiple-dry years, demands have been higher than supplies and therefore SFPUC is currently implementing the Water System Improvement Program (WSIP) to address this issue. The WSIP consists of a series of capital improvements to increase water quality, water supply and

reliability (SFPUC 2008). A Final Program Environmental Impact Statement/Environmental Impact Report for the WSIP was released on October 30, 2008.

### 4.3 Existing Water Supply for BWD and GVMID

In May of 1984, the Bay Area Water Utilities Association<sup>2</sup> made up of 27 agencies including the BWD and GVMID, signed the “Settlement Agreement and Master Water Sales Contract” with the City and County of San Francisco. After signing this agreement, individual water supply contracts were developed with each of the wholesale customers, including BWD and GVMID. Two-thirds of SFPUCs wholesale customers rely solely on water from the SFPUC, while one-third of their customers have the ability to obtain some portion of their water from other sources (SFPUC 2005). BWD and GVMID rely solely on SFPUC for water as they do not have any other water sources.

The Settlement Agreement and Master Water Sales Contract outlined the water rates for the City and County of San Francisco’s wholesale customers and allocation of supply. The contract required the City and County of San Francisco to supply a maximum annual average metered water supply of 184 MGD, but this could be reduced during water shortages, emergencies, or maintenance of the system. The Master Water Contract between the City and County of San Francisco and its wholesale customers expired on June 30, 2009.

On April 28, 2009, the Bay Area Water Supply and Conservation Agency (BAWSCA) and SFPUC signed the new “2009 Water Supply Agreement between the City and County of San Francisco and the Wholesale Customers in Alameda, San Mateo, and Santa Clara County” (SFPUC 2009) (See Appendix C), to replace the expired contract. Individual contracts with each of the wholesale customers were then developed. The 2009 Agreement, which expires on June 30, 2034, outlines the water rates for the SFPUC’s wholesale customers and allocation of supply.

The 2009 Agreement continues the 184 MGD Supply Assurance for wholesale customers originally outlined in the 1984 Agreement, including a total supply guarantee of 0.98 MGD for the BWD and GVMID. The 2009 Agreement includes an “Interim Supply Limitation” that limits water sales to retail and wholesale customers to 265 MGD (81 MGD for retail customers and 184 MGD for wholesale customers) through 2018. Under the Interim Supply Limitation, wholesale customers receive 184 MGD. As part of the implementation of the Interim Supply Limitation, on December 14, 2010, SFPUC established each individual wholesale customer’s share of the Interim Supply Limitation, referred to as “Interim Supply Allocations” (SFPUC Res. No. 10-0213). The City of Brisbane and GVMID’s combined ISA is 0.96 MGD. The ISAs are effective until December 31, 2018 and do not affect the 184 MGD Supply Assurance or the individual supply assurances for each wholesale customer.

The SFPUC’s 2010 UWMP projected future water demand of SFPUC wholesale customers through 2035. The water demands by the wholesale customers are projected to increase from 149.5 MGD in 2010 to 196.5 MGD by 2035, assuming the Interim Supply Limitation ends in 2018. This includes an increase in water demand for BWD and GVMID from 0.58 MGD in 2010 to 1.07 MGD by 2035. After the completion of all necessary California Environmental Quality Act (CEQA) review and project approvals, the 2009 Agreement requires the SFPUC to decide by December 31, 2018 whether to provide water in excess of the 184 MGD Supply Assurance to meet its Wholesale customers’ future

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<sup>2</sup> In the 1980s, the wholesale water suppliers in Alameda, San Mateo, and Santa Clara Counties who receive water from SFPUC joined together to create the Bay Area Water Utilities Association (BAWUA). In 2003, the Bay Area Water Supply and Conservation Agency (BAWSCA) was created and is the legal and political successor to BAWUA (SFPUC 2011b).



projected demands through the year 2030, and whether to offer a corresponding increase in the Supply Assurance (SFPUC 2011b).

In 2018, SFPUC will reevaluate water demands in its service area through 2030 and assess whether or not to increase deliveries to wholesale and retail customers. At this time, and for purposes of the WSA, it is assumed that deliveries from the SFPUC to its wholesale customers will not be in excess of 184 MGD in the future. This assumption is consistent with what the SFPUC has stated in its 2010 UWMP.

### 4.3.1 Individual Water Supply Contracts

The BWD and GVMID each have existing individual water supply contracts with the City and County of San Francisco. Hard copies of these contracts can be found in Appendices D and E.

#### *Brisbane Water District Contract*

According to the water supply contract, the BWD's contracted Supply Guarantee is 0.46 MGD or approximately 515 acre-feet per year. Appendix D contains a copy of the individual water contract for BWD.

#### *Guadalupe Valley Municipal Improvement District Contract*

According to the water supply contract, GVMID's contracted Supply Guarantee is 0.52 MGD or approximately 582 acre-feet per year. Appendix E contains a copy of the individual water contract for GVMID.

Table 4-1 presents the total supply available to the City of Brisbane.

**Table 4-1. Existing Water Supply Guarantee for City of Brisbane**

	Acre- Feet/Year	MGD	gpd
BWD	515	0.46	459,500
GVMID	582	0.52	520,500
<b>Total Supply</b>	<b>1,097</b>	<b>0.98</b>	<b>980,000</b>

Source: SFPUC 2005

MGD – million gallons per day

gpd – gallons per day

GVMID - Guadalupe Valley Municipal Improvement District

BWD –Water District

### 4.3.2 Water Reductions During Dry Years

Although BWD and GVMID have a supply guarantee from the SFPUC, this can be reduced during emergencies, drought situations, or maintenance activities. According to the 2010 UWMP, SFPUC can meet water demands for all wholesale customers in average and above average water years. In order to address allocation during dry years, the Interim Water Shortage Allocation Plan was created in 2000 that outlines reductions between SFPUC and its wholesale customers (as a whole) for reductions up to 20 %. Each year, SFPUC forecasts their total water supplies and the water demands of their customers to determine if water reductions are necessary. Table 4-2 shows the wholesale customer allocations depending on the level of system wide water reductions required. Under normal hydrologic conditions, wholesale customers receive 69.4% of SFPUC's total water supply of 265 MGD, or 184 MGD. During a 20% reduction in total SFPUC supply (212 MGD total available), wholesale customers would receive 62.5% (or 132.5 MGD). A 20% system-wide drought reduction scenario

results in a total 28% reduction in supplies for wholesale customers. Individual agency cutbacks could be higher depending on the allocation of the reduced supply (BAWSCA 2010).

**Table 4-2. System Wide Water Reductions**

Level of System Wide Water Reduction Required	Share of Available Water	
	Total SFPUC Supply Available	Wholesale Customers Share of Total SFPUC Supply
No Reductions	100%	69.4 %
	265 MGD	184 MGD
5% or less	95%	64.5%
	251.75 MGD	162.37
6% through 10%	94% to 90%	64.0%
	249.1 to 238.5 MGD	152.64 MGD
11% through 15%	89% to 85%	63.0%
	235.85 to 225.25 MGD	141.90 MGD
16% through 20%	84% to 80%	62.5%
	222.6 to 212 MGD	132.5 MGD

Source: SFPUC 2005; BAWSCA 2010

The IWSAP also has a second tier that describes allocations between wholesale customers during water shortages. The Interim Water Shortage Allocation Plan Among Suburban Customers allocates the wholesale customers shares using a formula based on three factors:

1. Each agency's supply assurance from SFPUC (with several exceptions).
2. Each agency's purchases from the three previous years before the IWSAP were adopted.
3. The rolling average of the agency's water purchases three years immediately preceding the drought.

The IWSAP allows for voluntary transfers of shortage allocations between SFPUC and the wholesale customers and between wholesale customer agencies. Also, water "banked" by a wholesale customer, through reductions in usage greater than required, can also be transferred (SFPUC 2005).

The SFPUC has a reliability goal of 80 percent, which means that water reductions in any given year should not be more than 20 percent during the design drought (an 8.5 year drought). To meet this goal, the SFPUC is currently implementing the Water System Improvement Program, which includes various projects and upgrades to existing water facilities to improve water supply and reliability. The Final Programmatic Environmental Impact Report for the WSIP was released to the public in September 2008 and the document was certified in October 2008.

The SFPUC presented the wholesale allocations in normal, dry, and multiple dry years in the 2010 UWMP (See Table 4-3 below).

**Table 4-3. SFPUC Wholesale Customer Allocations in Normal, Dry, and Multiple Dry Years**

Year	Normal Year		Single Dry Year		Multiple Dry Years					
	MGD	% of Normal	MGD	% of Normal	Year 1		Year 2		Year 3	
	MGD	% of Normal	MGD	% of Normal	MGD	% of Normal	MGD	% of Normal	MGD	% of Normal
2010	184	100	152.6	83	152.6	83	132.5	72	132.5	72
2015	184	100	152.6	83	152.6	83	132.5	72	132.5	72
2020	184	100	152.6	83	152.6	83	132.5	72	132.5	72
2025	184	100	152.6	83	152.6	83	132.5	72	132.5	72
2030	184	100	152.6	83	152.6	83	132.5	72	132.5	72
2035	184	100	152.6	83	152.6	83	132.5	72	132.5	72

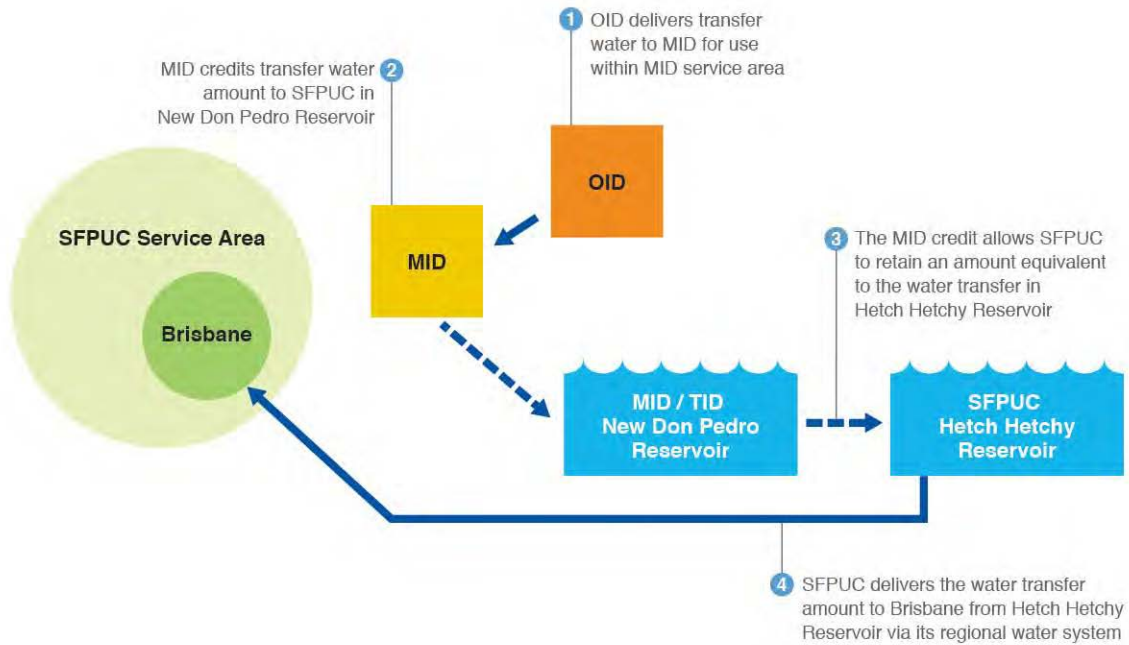
Source: SFPUC 2011b

The 2010 UWMP (SFPUC 2011b) shows that SFPUC would have sufficient water supplies to meet wholesale water demands through 2035, assuming that the wholesale supply assurance of 184 MGD is not exceeded and no new water supplies are developed beyond those necessary to meet water demands of 2018. During a single dry year, a shortage of up to 17% of the normal water year supply could occur for SFPUC's wholesale customers.

### 4.3.3 Water Transfer from Oakdale Irrigation District

Potable water supply for the development of the Baylands under each Concept Plan scenario would come from a proposed water transfer agreement between the City of Brisbane and the Oakdale Irrigation District (OID). The proposed Agreement between the City and OID would guarantee the transfer of up to 2,400 acre-feet per year (AFY), without restrictions on permitting from the State Water Resources Control Board, for a term of 50 years. (See Appendix F for a copy of the Term Sheet between OID and the City of Brisbane.) The proposed Agreement relies upon existing facilities and does not require the construction of any new facilities. The diagram below shows the general pathway of the water transfer from OID to Brisbane. While the Agreement has been proposed to provide an ensured water supply for the Baylands, the Agreement is being considered as an independent component of the Proposed Project and could be approved regardless of any action taken by the City to approve, modify, or not approve any of the proposed Concept Plans or the Specific Plan proposed by UPC.

The method of water delivery to Brisbane set forth in the Agreement is illustrated in Figure 4-1 and discussed in more detail below.



**Figure 4-1**  
**Method of Water Delivery**

OID is located in the northeast portion of the San Joaquin Valley within Stanislaus and San Joaquin Counties. The majority of OID's water supplies come from pre-1914 surface water rights that enable OID to divert up to 257,074 AFY from the Stanislaus River at Goodwin Dam upstream of the city of Oakdale without restrictions. The proposed transfer would be implemented by OID physically delivering up to 2,400 AFY of water into the Modesto Irrigation District (MID) system, via existing facilities (i.e., released from OID's Claribel canal system, generally located near Claribel Road south of the city of Riverbank into MID's South Main Canal). MID would make use of the 2,400 AFY and in turn hold an equivalent amount in storage in New Don Pedro Reservoir, located on the Tuolumne River northeast of La Grange. Through a similar exchange, MID would forego delivery of 2,400 AFY from the SFPUC's Hetch Hetchy system, which generally runs from the Sierra Nevada in Yosemite National Park through the Central Valley and South San Francisco Bay to San Francisco. The SFPUC has a water bank account in New Don Pedro Reservoir (in Tuolumne County), from which MID would credit the SFPUC with the annual amount provided by OID to the City, up to the maximum 2,400 AFY. The SFPUC would, in turn, deliver up to 2,400 AFY from its regional water supply system to the City using its existing water supply infrastructure and operational plans.

Recommendations for policy, organizational, and facility improvements to accommodate current and future water demands within OID are set forth in a comprehensive Water Resources Plan (WRP) prepared by OID in 2004. A Programmatic Environmental Impact Report (PEIR) was certified and the WRP adopted by the OID Board of Directors on June 19, 2007. The WRP accounts for changes within OID's service area over the next 20 years, including water demand decreases due to land use changes from agriculture to urban and pasture to orchards, and water supply increases resulting from infrastructure improvements. As such, the WRP anticipates an increase in water supplies made available for transfer or annexation from 30,000 acre-feet to 50,000 acre-feet for firm water transfers, and from 11,000 acre-feet to 17,000 acre-feet for variable water transfers, resulting in a total volume



(firm and variable) of available water equal to approximately 67,000 acre-feet by 2030. A “firm water transfer” is defined in the WRP as the quantity of water that would be made available in all water years irrespective of the hydrologic yield of the basin, as is reflected in the proposed Agreement between OID and the City.

### 4.3.4 Additional Water Supply Sources

The City of Brisbane currently receives all water from SFPUC; it does not have any local supplies. These sections describe other potential sources and explain why they are not currently viable.

#### 4.3.4.1 Surface Water

There are no local surface water supplies available to the City of Brisbane (City of Brisbane 2003).

#### 4.3.4.2 Groundwater

There are no known groundwater basins in the City of Brisbane; therefore there is no groundwater supply (City of Brisbane 2003).

#### 4.3.4.3 Recycled Water

The City of Brisbane does not have access to a supply of recycled water. The City of Brisbane exports its raw sewage to the SFPUC’s Southeast Water Pollution Control Plant (SWPCP) for treatment and disposal. The SWPCP does not have recycled water capabilities and does not have a method of delivering recycled water to the City of Brisbane (City of Brisbane 2003). While the SFPUC has several recycled water projects completed or currently under construction, these projects will supply water to golf courses and commercial and industrial users and do not have the capability to provide recycled water to SFPUC’s wholesale customers (SFPUC 2011b; SFPUC 2011a).

#### 4.3.4.4 Saline Water

The City of Brisbane does not have any desalination facilities and does not have access to any desalination facilities in the surrounding region (City of Brisbane 2003).

### 4.3.5 Current and Projected Water Supply

Table 4-4 shows the current and projected water supply during normal years for BWD and GVMID.

**Table 4-4. Current and Projected Water Supply During Normal Water Year (gpd)**

	Water Districts	2012	2015	2020	2025	2030	2035
SFPUC	BWD	459,500	459,500	459,500	459,500	459,500	459,500
	GVMID	520,500	520,500	520,500	520,500	520,500	520,500
<i>SFPUC Total</i>		<i>980,000</i>	<i>980,000</i>	<i>980,000</i>	<i>980,000</i>	<i>980,000</i>	<i>980,000</i>
OID Transfer		0	2,142,581	2,142,581	2,142,581	2,142,581	2,142,581
<b>Total (gpd)</b>		<b>980,000</b>	<b>3,122,581</b>	<b>3,122,581</b>	<b>3,122,581</b>	<b>3,122,581</b>	<b>3,122,581</b>
<b>Total (MGD)</b>		<b>0.98</b>	<b>3.123</b>	<b>3.123</b>	<b>3.123</b>	<b>3.123</b>	<b>3.123</b>

## 4.4 Summary of Water Supply

The City of Brisbane has a total supply guarantee from SFPUC of 0.98 MGD subject to decreases under certain conditions. Water transfers from OID for the next 20 years would provide an additional 2,400 AF per year (2.14 MGD). This would result in a total supply of 3.12 MGD for the City of Brisbane. The water transfer from OID would occur during every year type and would not be subject to shortages. Besides the SFPUC water supply and the transfer from OID, there are currently no other viable water supply sources for BWD and GVMID.

## Section 5

# Existing and Projected Water Demand

This section describes the historical, existing, and projected water demand for the City of Brisbane.

## 5.1 Historical Water Demand

Table 5-1 shows the actual water purchases of BWD and GVMID from SFPUC from 2006 through 2011. Water demand has generally decreased since 2006 as the City of Brisbane has implemented over time more water conservation measures citywide and redevelopment of older existing uses incorporate the use of water conservation devices such as low-flow toilets, restricted-flow shower heads, etc.

**Table 5-1. Total Annual Water Use 2006-2011**

Year	BWD	GVMID	CCF/Year	Total	
	CCF/Year	CCF/Year		MG/Year	MGD
2006	177,146	137,261	314,407	235.176	0.644
2007	112,258	194,142	306,400	229.187	0.628
2008	131,708	183,386	315,094	235.690	0.646
2009	136,189	153,058	289,247	216.357	0.593
2010	130,331	142,553	272,884	204.117	0.559
2011	143,222	127,808	271,030	202.730	0.555

Source: Flanagan 2012

Key:

BWD = Brisbane Water District

CCF = 100 Cubic Feet

GVMID –Guadalupe Valley Municipal Improvement District

MG = Million gallons

MGD = Million gallons per day

## 5.2 Future Water Demand

This section describes the existing and committed water demand of the City of Brisbane without the project, the water demand of the Proposed Project, and the total water demand (City demand + Proposed Project demand + future buildout demand) through 2035.

### 5.2.1 Existing and Committed (Without-Project) Demand

Future water demands for the City of Brisbane (both the BWD and GVMID) were updated in 2010 using an end-use demand model, called the DSS model. The DSS model used water demand in 2001 as the base year to determine future demand. The model was also used to determine conservation potential. The results of the model were provided to SFPUC to be used in planning studies, and have been published in the SFPUC's 2010 UWMP (SFPUC 2011b).

The following table (Table 5-2) presents the estimated water demands for the City of Brisbane through 2035. These projections assume changes to the plumbing code and conservation measures will be implemented. The water demand projections do not include the Proposed Project, or three future developments at Sierra Point in the City of Brisbane. The City of Brisbane's projections extend through 2030; they do not extend through 2035. The SFPUC's 2010 UWMP estimated a demand of

1.07 in 2035 for the City of Brisbane based on their DSS model projections through 2030; therefore the demand of 1.07 MGD for the year 2035 will also be used in this WSA.

**Table 5-2. Future Without-Project Water Demand (MGD)**

Water District	2015	2020	2025	2030	2035 <sup>(1)</sup>
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Total</b>	<b>0.98</b>	<b>1.02</b>	<b>1.04</b>	<b>1.06</b>	<b>1.07</b>

<sup>(1)</sup> Estimated by SFPUC from DSS model demand projections (See SFPUC 2011b).

## 5.2.2 Existing and Committed Demand and Proposed Project Demand (With-Project Demand)

The Proposed Project's estimated water demands are presented in Table 5-3, below. Water demand for each of the Scenarios and Variants includes an on-site wastewater treatment facility that would reduce overall water demand of the Proposed Project by providing recycled water for non-potable uses such as irrigation. However, because the actual construction of the wastewater treatment facility may not be completed until several years into the Proposed Project, two different water demand scenarios are presented, one without the wastewater treatment facility, (Water Savings Program D) which would not involve the use of recycled water, and one with the facility (Water Savings Program E), which would involve reuse of all wastewater for irrigation and other non-potable uses. It is assumed that for the first few years after construction starts, water demand would be higher until the wastewater treatment facility was brought online and working at full capacity. If the OID transfer does not occur, the wastewater treatment facility would be brought online at the beginning of the project (2015); however, the City would still face a water shortage in all years (2015 through 2035) under all Concept Plan scenarios. If the OID transfer does occur, the wastewater treatment facility would be brought online before 2035 and the City would then have sufficient supplies to meet all water demands through 2035 under all Concept Plan scenarios.

Water demand was estimated in 2013 by Brown and Caldwell (Brown and Caldwell 2013) for the DSP and DSP-V with and without the wastewater treatment facility. Water demands for the CPP and CPP-V were then calculated using the water demand per square foot for the DSP and DSP-V land use types and applying that to each of the land uses under the CPP and CPP-V. If the rates per square foot varied between the DSP and DSP-V for the same land use type, the higher rate was applied to the CPP and CPP-V.

The water demand for the Proposed Project without the wastewater treatment facility and use of recycled water is referred to as Water Savings Program D and was calculated by Brown and Caldwell assuming the implementation of the following water savings measures:

- Water budgets
- Public outreach information
- Landscape requirements for new systems
- Water audits for commercial users
- Water audits for hotels-motels



- Requirements for multi-family unit sub-metering
- Multi-family efficient clothes washer rebate
- Water Alliances for Voluntary Efficiency (WAVE) Program (USEPA) for Hotels
- Dedicated landscape meters for outdoor irrigation use
- Native plant landscaping
- Subsurface irrigation for turf
- Hard-scape (e.g. track and exercise equipment instead of large lawns in parks): Area is covered with materials other than vegetation.
- High efficiency toilets: high efficiency toilets (1.28 gallons per flush [gpf] or less), or dual-flush toilets (0.8 gpf half-flush and 1.6 gpf full-flush) in new commercial, industrial, and institutional buildings
- Automatic sinks
- Waterless urinals (Brown and Caldwell 2013).

Table 5-3 presents the total water demand for the Proposed Project under Water Savings Program D.

**Table 5-3. Proposed Project Water Demand (Water Savings Program D) at Build-Out**

Scenario/ Variant	Project Average Daily Water Demand (gpd)	Project Average Daily Irrigation Demand (gpd)	Total Project Demand (gpd)	Total Project Demand (MGD)
DSP	1,333,240 <sup>(1)</sup>	304,410 <sup>(1)</sup>	1,637,650 <sup>(1)</sup>	1.638 <sup>(1)</sup>
	1,333,240 <sup>(2)</sup>	0 <sup>(2)</sup>	1,333,240 <sup>(2)</sup>	1.333 <sup>(2)</sup>
DSP-V	1,386,180 <sup>(1)</sup>	304,410	1,690,590 <sup>(1)</sup>	1.691 <sup>(1)</sup>
	1,386,180 <sup>(2)</sup>	0 <sup>(2)</sup>	1,386,180 <sup>(2)</sup>	1.386 <sup>(2)</sup>
CPP	883,079 <sup>(1)</sup>	510,963 <sup>(1)</sup>	1,394,042 <sup>(1)</sup>	1.394 <sup>(1)</sup>
	883,079 <sup>(2)</sup>	0.00 <sup>(2)</sup>	883,079 <sup>(2)</sup>	0.883 <sup>(2)</sup>
CPP-V	771,322 <sup>(1)</sup>	510,963 <sup>(1)</sup>	1,282,285 <sup>(1)</sup>	1.282 <sup>(1)</sup>
	771,322 <sup>(2)</sup>	0.00 <sup>(2)</sup>	771,322 <sup>(2)</sup>	0.771 <sup>(2)</sup>

Source: Brown and Caldwell 2013 for DSP and DSP-V. See text for explanation of how CPP and CPP-V values were calculated from using Brown and Caldwell data.

Key:

<sup>(1)</sup> Summer – Approx. April through November (228 days)

<sup>(2)</sup> Winter – Approx. December through March (137 days)

gpd = gallons per day

MGD = million gallons per day

The water demand for the Proposed Project with the wastewater treatment facility and the use of recycled water for irrigation and other non-potable uses is referred to as Water Savings Program E and would involve all wastewater flows from the site being treated at the on-site wastewater treatment facility, decreasing the overall demand for potable water from that of Water Savings Program D. Water Savings Program E would also include all applicable water savings measures

outlined in Water Savings Program D. Table 5-4 presents the total water demand for the Proposed Project under Water Savings Program E.

**Table 5-4. Proposed Project Water Demand (Water Savings Program E) at Build-Out**

Scenario/Variant	Project Average Daily Water Demand (gpd)	Project Average Daily Irrigation Demand (gpd)	Total Project Demand (gpd)	Total Project Demand (MGD)
DSP	955,400 <sup>(1)</sup>	0	955,400 <sup>(1)</sup>	0.955 <sup>(1)</sup>
	955,400 <sup>(2)</sup>	0	955,400 <sup>(2)</sup>	0.955 <sup>(2)</sup>
DSP-V	979,750 <sup>(1)</sup>	0	979,750 <sup>(1)</sup>	0.980 <sup>(1)</sup>
	979,750 <sup>(2)</sup>	0	979,750 <sup>(2)</sup>	0.980 <sup>(2)</sup>
CPP	587,565 <sup>(1)</sup>	0	587,565 <sup>(1)</sup>	0.588 <sup>(1)</sup>
	587,565 <sup>(2)</sup>	0	587,565 <sup>(2)</sup>	0.588 <sup>(2)</sup>
CPP-V	484,912 <sup>(1)</sup>	0	484,912 <sup>(1)</sup>	0.485 <sup>(1)</sup>
	484,912 <sup>(2)</sup>	0	484,912 <sup>(2)</sup>	0.485 <sup>(2)</sup>

Source: Brown and Caldwell 2013.

Key:

<sup>(1)</sup> Summer – Approx. April through November (228 days)

<sup>(2)</sup> Winter – Approx. December through March (137 days)

gpd = gallons per day

MGD = million gallons per day

Note: There is no irrigation demand because recycled water would be used for all irrigation. The source of this recycled water would be from the on-site wastewater treatment plant. There would be no demand for potable water for irrigation.

The DSP and DSP-V Scenarios would be constructed in phases over a 20 year period; therefore Brown and Caldwell have developed a phased water demand based on the square feet of development expected to be constructed each year. CDM Smith applied this phased approach to develop water demands for the CPP and CPP-V based on the percent of development expected to occur each year for the DSP and DSP-V. Tables 5-5 and 5-6 below presented the phased water demand for the Proposed Project under Water Savings Programs D and E.

**Table 5-5. Proposed Project Water Demand (Water Savings Program D) for Phased Construction**

Scenario/ Variant	2015	2020	2025	2030	2035	Total at Build-Out	
% of Development Complete	4.5%	23.2%	49.2%	76.3%	100%	<b>100%</b>	
DSP	Square Feet of Development	551,250	2,806,250	5,949,500	9,240,050	12,096,300	<b>12,096,300</b>
	Summer Demand (MGD)	0.075	0.380	0.805	1.251	1.638	<b>1.638</b>
	Winter Demand (MGD)	0.061	0.309	0.656	1.018	1.333	<b>1.333</b>
DSP-V	Square Feet of Development	551,150	2,805,750	5,936,500	9,193,650	12,049,400	<b>12,049,400</b>
	Summer Demand (MGD)	0.077	0.394	0.833	1.290	1.691	<b>1.691</b>
	Winter Demand (MGD)	0.063	0.323	0.683	1.058	1.386	<b>1.386</b>
CPP	Square Feet of Development	372,564	1,896,618	4,012,929	6,214,683	8,145,100	<b>8,145,100</b>
	Summer Demand (MGD)	0.064	0.325	0.687	1.064	1.394	<b>1.394</b>
	Winter Demand (MGD)	0.040	0.206	0.435	0.674	0.883	<b>0.883</b>

**Table 5-5. Proposed Project Water Demand (Water Savings Program D) for Phased Construction**

Scenario/ Variant		2015	2020	2025	2030	2035	Total at Build-Out
CPP-V	Square Feet of Development	375,766	1,912,918	4,047,417	6,268,093	8,215,100	<b>8,215,100</b>
	Summer Demand (MGD)	0.059	0.299	0.632	0.978	1.282	<b>1.282</b>
	Winter Demand (MGD)	0.035	0.180	0.380	0.588	0.771	<b>0.771</b>

Source: Brown and Caldwell 2013 for DSP and DSP-V. See text for explanation of how CPP and CPP-V values were calculated from using Brown and Caldwell data.

Key:

<sup>(1)</sup> Summer – Approx. April through November (228 days)

<sup>(2)</sup> Winter – Approx. December through March (137 days)

gpd = gallons per day

MGD = million gallons per day

**Table 5-6. Proposed Project Water Demand (Water Savings Program E) for Phased Construction**

Scenario/ Variant		2015	2020	2025	2030	2035	Total at Build-Out
% of Development Complete		4.5%	23.2%	49.2%	76.3%	100%	<b>100%</b>
DSP	Square Feet of Development	551,250	2,806,250	5,949,500	9,240,050	12,096,300	<b>12,096,300</b>
	Summer Demand (MGD)	0.044	0.222	0.470	0.730	<b>0.955</b>	<b>0.955</b>
	Winter Demand (MGD)	0.044	0.222	0.470	0.730	<b>0.955</b>	<b>0.955</b>
DSP-V	Square Feet of Development	551,150	2,805,750	5,936,500	9,193,650	12,049,400	<b>12,049,400</b>
	Summer Demand (MGD)	0.045	0.228	0.483	0.748	<b>0.980</b>	<b>0.980</b>
	Winter Demand (MGD)	0.045	0.228	0.483	0.748	<b>0.980</b>	<b>0.980</b>
CPP	Square Feet of Development	372,564	1,896,618	4,012,929	6,214,683	8,145,100	<b>8,145,100</b>
	Summer Demand (MGD)	0.027	0.137	0.290	0.449	0.588	<b>0.588</b>
	Winter Demand (MGD)	0.027	0.137	0.290	0.449	0.588	<b>0.588</b>
CPP-V	Square Feet of Development	375,766	1,912,918	4,047,417	6,268,093	8,215,100	<b>8,215,100</b>
	Summer Demand (MGD)	0.022	0.113	0.239	0.370	0.485	<b>0.485</b>
	Winter Demand (MGD)	0.022	0.113	0.239	0.370	0.485	<b>0.485</b>

Source: Brown and Caldwell 2013 for DSP and DSP-V. See text for explanation of how CPP and CPP-V values were calculated from using Brown and Caldwell data.

Note: Water demand is the same in the summer and winter under Water Savings Program E.

<sup>(1)</sup> Summer – Approx. April through November (228 days)

<sup>(2)</sup> Winter – Approx. December through March (137 days)

MGD = million gallons per day

The total existing and committed water demand for the City of Brisbane in addition to the demands of the Proposed Project under Water Savings Program D (no recycled water) are presented in Table 5-7. The greatest daily water demand in the summer would be 2.761 MGD in 2035 if the DSP-V is selected for construction. The smallest summer water demand would be 2.352 MGD in 2035 if the CPP-V is selected for construction.

**Table 5-7. Existing and Committed Demand and Proposed Project Demand (MGD) Under Water Savings Program D**

Scenario/ Variant		2015	2020	2025	2030	2035
DSP	Summer	1.055	1.400	1.845	2.311	2.708
	Winter	1.041	1.329	1.696	2.078	2.403
DSP-V	Summer	1.057	1.414	1.873	2.350	2.761
	Winter	1.043	1.343	1.723	2.118	2.456
CPP	Summer	1.044	1.345	1.727	2.124	2.464
	Winter	1.020	1.226	1.475	1.734	1.953
CPP-V	Summer	1.039	1.319	1.672	2.038	2.352
	Winter	1.015	1.200	1.420	1.648	1.841

The total existing and committed water demand of the City of Brisbane in addition to the demands of the Proposed Project under Water Savings Program E (use of recycled water) are presented in Table 5-8. The greatest daily water demand in the summer would be 2.05 MGD in 2035 if the DSP-V is selected for construction. The smallest summer water demand would be 1.555 MGD in 2035 if the CPP-V is selected for construction.

**Table 5-8. Existing and Committed Demand and Proposed Project Demand (MGD) Under Water Savings Program E**

Scenario/ Variant		2015	2020	2025	2030	2035
DSP	Summer	1.024	1.242	1.510	1.790	2.025
	Winter	1.024	1.242	1.510	1.790	2.025
DSP-V	Summer	1.025	1.248	1.523	1.808	2.050
	Winter	1.025	1.248	1.523	1.808	2.050
CPP	Summer	1.007	1.157	1.330	1.509	1.658
	Winter	1.007	1.157	1.330	1.509	1.658
CPP-V	Summer	1.002	1.133	1.279	1.430	1.555
	Winter	1.002	1.133	1.279	1.430	1.555

### 5.2.3 Full Build-Out

Three future developments are planned for Sierra Point in the City of Brisbane. These three new developments were not included in the City of Brisbane's water demand projections through 2035. The Opus Office Project is the only project with a certified California Environmental Quality Act document and WSA. The remaining two projects do not have completed environmental reviews or WSAs. The City of Brisbane provided preliminary water demand for these developments (See Table 5-9 below). These developments are anticipated to be constructed by 2020. At this time, no other future development is planned for the City of Brisbane through 2035.



**Table 5-9. Future Development Water Demand (MGD)**

Future Development	Water Demand (MGD)
Parcel 3 (Opus Office Project)	0.119
Parcel R (Restaurant)	0.0323
Hotel	0.260
<b>Total</b>	<b>0.4113</b>

The water demand for the City of Brisbane at Full Build-Out (existing and committed water demand for the City of Brisbane + the Proposed Project under Water Savings Program D (no recycled water) + all future development at Sierra Point) is presented in Table 5-10. At Full Build-out, the greatest demand for water would occur if the DSP-V is selected for construction. If this Concept Plan scenario is constructed, the City of Brisbane would have a total summer water demand of 3.172 MGD by 2035.

**Table 5-10. Full Build-Out (Existing and Committed Demand + Proposed Project Water Savings Program D + Future Development) in MGD**

Scenario/ Variant		2015	2020	2025	2030	2035
DSP	Summer	1.055	1.811	2.257	2.722	3.119
	Winter	1.041	1.741	2.107	2.490	2.815
DSP-V	Summer	1.057	1.825	2.284	2.761	3.172
	Winter	1.043	1.754	2.134	2.529	2.867
CPP	Summer	1.044	1.756	2.138	2.535	2.875
	Winter	1.020	1.637	1.886	2.145	2.364
CPP-V	Summer	1.039	1.730	2.083	2.449	2.763
	Winter	1.015	1.611	1.831	2.059	2.252

The water demand for the City of Brisbane at Full Build-Out (existing and committed water demand for the City of Brisbane + the Proposed Project under Water Savings Program E (recycled water) + all future development at Sierra Point) is presented in Table 5-11. At Full Build-out, the greatest demand for water would occur if the DSP-V is selected for construction. If this Concept Plan scenario is constructed, the City of Brisbane would have a summer water demand of 2.461 MGD by 2035.

**Table 5-11. Full Build-Out (Existing and Committed Demand + Proposed Project Water Savings Program E + Future Development) in MGD**

Scenario/ Variant		2015	2020	2025	2030	2035
DSP	Summer	1.024	1.653	1.921	2.201	2.437
	Winter	1.024	1.653	1.921	2.201	2.437
DSP-V	Summer	1.025	1.659	1.934	2.219	2.461
	Winter	1.025	1.659	1.934	2.219	2.461
CPP	Summer	1.007	1.568	1.741	1.920	2.069
	Winter	1.007	1.568	1.741	1.920	2.069
CPP-V	Summer	1.002	1.544	1.690	1.841	1.966
	Winter	1.002	1.544	1.690	1.841	1.966

## 5.2.4 Total Water Demand with Water Savings Program D

Tables 5-12 through 5-15 summarize the total water demand for the City of Brisbane through 2035 by Concept Plan scenario under Water Savings Program D.

**Table 5-12. Total Water Demand (MGD) with DSP Water Savings Program D**

	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
DSP Summer	0.075	0.380	0.805	1.251	1.638
DSP Winter	0.061	0.309	0.656	1.018	1.333
<b>Total Summer</b>	<b>1.055</b>	<b>1.811</b>	<b>2.257</b>	<b>2.722</b>	<b>3.119</b>
<b>Total Winter</b>	<b>1.041</b>	<b>1.741</b>	<b>2.107</b>	<b>2.490</b>	<b>2.815</b>

**Table 5-13. Total Water Demand (MGD) with DSP-V Water Savings Program D**

	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
DSP-V Summer	0.077	0.394	0.833	1.290	1.691
DSP-V Winter	0.063	0.323	0.683	1.058	1.386
<b>Total Summer</b>	<b>1.057</b>	<b>1.825</b>	<b>2.284</b>	<b>2.761</b>	<b>3.172</b>
<b>Total Winter</b>	<b>1.043</b>	<b>1.754</b>	<b>2.134</b>	<b>2.529</b>	<b>2.868</b>

**Table 5-14. Total Water Demand (MGD) with CPP Water Savings Program D**

	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
CPP Summer	0.064	0.325	0.687	1.064	1.394
CPP Winter	0.040	0.206	0.435	0.674	0.883
<b>Total Summer</b>	<b>1.044</b>	<b>1.756</b>	<b>2.138</b>	<b>2.535</b>	<b>2.875</b>
<b>Total Winter</b>	<b>1.020</b>	<b>1.637</b>	<b>1.886</b>	<b>2.145</b>	<b>2.364</b>

**Table 5-15. Total Water Demand (MGD) with CPP-V Water Savings Program D**

Water District	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
CPP-V Summer	0.059	0.299	0.632	0.978	1.282
CPP-V Winter	0.035	0.180	0.380	0.588	0.771
<b>Total Summer</b>	<b>1.039</b>	<b>1.730</b>	<b>2.083</b>	<b>2.449</b>	<b>2.763</b>
<b>Total Winter</b>	<b>1.015</b>	<b>1.611</b>	<b>1.831</b>	<b>2.059</b>	<b>2.253</b>

### 5.2.5 Total Demand with Water Savings Program E

Tables 5-16 through 5-19 summarize the total water demand for the City of Brisbane through 2035 by Concept Plan scenario under Water Savings Program E.

**Table 5-16. Total Water Demand (MGD) with DSP Water Savings Program E**

Water District	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
DSP Summer	0.044	0.222	0.470	0.730	<b>0.955</b>
DSP Winter	0.044	0.222	0.470	0.730	<b>0.955</b>
<b>Total Summer</b>	<b>1.024</b>	<b>1.653</b>	<b>1.921</b>	<b>2.201</b>	<b>2.437</b>
<b>Total Winter</b>	<b>1.024</b>	<b>1.653</b>	<b>1.921</b>	<b>2.201</b>	<b>2.437</b>

**Table 5-17. Total Water Demand (MGD) with DSP-V Water Savings Program E**

Water District	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
DSP-V Summer	0.045	0.228	0.483	0.748	0.980
DSP-V Winter	0.045	0.228	0.483	0.748	0.980
<b>Total Summer</b>	<b>1.025</b>	<b>1.659</b>	<b>1.934</b>	<b>2.219</b>	<b>2.461</b>
<b>Total Winter</b>	<b>1.025</b>	<b>1.659</b>	<b>1.934</b>	<b>2.219</b>	<b>2.461</b>

**Table 5-18. Total Water Demand (MGD) with CPP Water Savings Program E**

Water District	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
CPP Summer	0.027	0.137	0.29	0.449	0.588
CPP Winter	0.027	0.137	0.29	0.449	0.588
<b>Total Summer</b>	<b>1.007</b>	<b>1.568</b>	<b>1.741</b>	<b>1.920</b>	<b>2.069</b>
<b>Total Winter</b>	<b>1.007</b>	<b>1.568</b>	<b>1.741</b>	<b>1.920</b>	<b>2.069</b>

**Table 5-19. Total Water Demand (MGD) with CPP-V Water Savings Program E**

Water District	2015	2020	2025	2030	2035
<b>City of Brisbane</b>					
BWD	0.49	0.50	0.51	0.52	0.53
GVMID	0.49	0.52	0.53	0.54	0.54
<b>Future Sierra Point Developments</b>	0	0.4113	0.4113	0.4113	0.4113
<b>Proposed Project</b>					
CPP-V Summer	0.022	0.113	0.239	0.37	0.485
CPP-V Winter	0.022	0.113	0.239	0.37	0.485
<b>Total Summer</b>	<b>1.002</b>	<b>1.544</b>	<b>1.690</b>	<b>1.841</b>	<b>1.966</b>
<b>Total Winter</b>	<b>1.002</b>	<b>1.544</b>	<b>1.690</b>	<b>1.841</b>	<b>1.966</b>



## Section 6

# Demand and Supply Analysis

This section presents the analysis of water demand and supply for the City of Brisbane during normal, dry, and multiple dry years for a 20 year period (2015 through 2035). The City of Brisbane’s overall water demand includes existing and committed water demand for the City of Brisbane from 2015 through 2035, the Proposed Project, and three future developments planned at Sierra Point in 2020 (See Sections 5.2.4 and 5.2.5). The City of Brisbane’s total water supply includes the supply guarantee from SFPUC for BWD and GVMID and the OID transfer (See Section 4.3.5). For analysis purposes, two different scenarios have been analyzed; one scenario assuming the OID transfer does not occur and the other where the OID transfer does occur.

### 6.1 Without OID Transfer

This section analyzes the water demand and supply for the City of Brisbane during normal, dry, and multiple dry years through 2035 without the OID transfer. The total water demand includes the summer and winter water demand for the Proposed Project under Program D. The summer and winter water demands for the Proposed Project under Program E would be the same; there would be no difference in water demand. For the purposes of this WSA, water supplies are expected to be 83 percent of normal year supply during a single dry year and during the first year of multiple dry years, and 72 percent of normal year supply during the second and third years of multiple dry years (See Table 6-1).

**Table 6-1. City of Brisbane’s SFPUC Water Supply in Normal, Dry, and Multiple Dry Years Without OID Transfer**

Year	Normal Year		Single Dry Year		Multiple Dry Years					
	MGD	% of Normal	MGD	% of Normal <sup>1</sup>	Year 1		Year 2		Year 3	
					MGD	% of Normal <sup>1</sup>	MGD	% of Normal <sup>1</sup>	MGD	% of Normal <sup>1</sup>
2010	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72
2015	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72
2020	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72
2025	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72
2030	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72
2035	0.98	100	0.8134	83	0.8134	83	0.7056	72	0.7056	72

<sup>1</sup>These percentage reductions are based on the total SFPUC wholesale water allocation reductions for single and multiple dry years. The actual required reductions for BWD and GVMID (agencies) will be based on the Tier 2 DRIP (adopted in 2011) that calculates the reduced allocation on a formula factoring in: (1) agency’s Supply Assurance from SFPUC; (2) agency’s purchases from SFPUC during the 3 years preceding adoption of the Plan (2008-2011); and (3) the rolling average of the actual water purchased from SFPUC over the three years preceding any drought.

#### 6.1.1 Normal Water Year

In a normal water year (and with implementation of Water Savings Program D) the City of Brisbane would not have sufficient water supplies to meet summer demands from 2015 through 2035 (See Table 6-2). Water shortages would range from 1.784 MGD to 2.192 MGD by 2035, depending on the Concept Plan scenario selected for construction.

**Table 6-2. Normal Water Demand (Water Savings Program D) Without OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	0.98	0.98	0.98	0.98	0.98
<b>Difference</b>	<b>-0.075</b>	<b>-0.831</b>	<b>-1.277</b>	<b>-1.742</b>	<b>-2.139</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	0.98	0.98	0.98	0.98	0.98
<b>Difference</b>	<b>-0.077</b>	<b>-0.845</b>	<b>-1.304</b>	<b>-1.781</b>	<b>-2.192</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.064</b>	<b>-0.776</b>	<b>-1.158</b>	<b>-1.555</b>	<b>-1.895</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.059</b>	<b>-0.750</b>	<b>-1.103</b>	<b>-1.469</b>	<b>-1.783</b>

In a normal water year (and with implementation of Water Savings Program D) the City of Brisbane would not have sufficient water supplies to meet winter demands from 2015 through 2035 (See Table 6-3). Water shortages would range from 1.272 MGD to 1.887 MGD by 2035, depending on the Concept Plan scenario selected for construction.

**Table 6-3. Normal Water Demand (Water Savings Program D) Without OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	0.98	0.98	0.98	0.98	0.98
<b>Difference</b>	<b>-0.061</b>	<b>-0.761</b>	<b>-1.127</b>	<b>-1.510</b>	<b>-1.835</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.063</b>	<b>-0.774</b>	<b>-1.154</b>	<b>-1.549</b>	<b>-1.887</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	0.98	0.98	0.98	0.98	0.98
<b>Difference</b>	<b>-0.040</b>	<b>-0.657</b>	<b>-0.906</b>	<b>-1.165</b>	<b>-1.384</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	0.98	0.98	0.98	0.98	0.98
<b>Difference</b>	<b>-0.035</b>	<b>-0.631</b>	<b>-0.851</b>	<b>-1.079</b>	<b>-1.272</b>

In a normal water year (and with implementation of Water Savings Program E) the City of Brisbane would not have sufficient water supplies to meet summer or winter demands from 2015 through 2035 (See Table 6-4). Water shortages would range from 0.986 MGD to 1.481 MGD by 2035, depending on the Concept Plan scenario selected for construction.

**Table 6-4. Normal Water Demand (Water Savings Program E) Without OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.044</b>	<b>-0.673</b>	<b>-0.941</b>	<b>-1.221</b>	<b>-1.457</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.045</b>	<b>-0.679</b>	<b>-0.954</b>	<b>-1.239</b>	<b>-1.481</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.027</b>	<b>-0.588</b>	<b>-0.761</b>	<b>-0.940</b>	<b>-1.089</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	0.980	0.980	0.980	0.980	0.980
<b>Difference</b>	<b>-0.022</b>	<b>-0.564</b>	<b>-0.710</b>	<b>-0.861</b>	<b>-0.986</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-4 above represents both winter and summer water demand.

### 6.1.2 Single Dry Year

In a single dry year, this WSA assumes the City of Brisbane would receive 83 percent of their normal year supply guarantee from SFPUC. This reduction is based on a 17 percent reduction in SFPUC supplies to wholesale customers described in the SFPUC's 2010 UWMP. In reality, the City of Brisbane's allocation during a dry year would be calculated based on the factors described in Section 4.3.2., and would vary because it would depend on the rolling average of the City's water purchases for the three years preceding the dry year.<sup>3</sup> This analysis assumes the City of Brisbane's water demand during a single dry year would not change from that of a normal water year. However, it is likely that in the event of a drought, conservation measures would be implemented that would reduce water demand to some degree.

In a single dry year (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet summer demands from 2015 through 2035 (See Table 6-5). Water shortages would range from 1.950 MGD to 2.358 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.

<sup>3</sup> These percentage reductions are based on the total SFPUC wholesale water allocation reductions for single and multiple dry years. The actual required reductions for BWD and GVMID (agencies) will be based on the Tier 2 DRIP (adopted in 2011) that calculates the reduced allocation on a formula factoring in: (1) agency's Supply Assurance from SFPUC; (2) agency's purchases from SFPUC during the 3 years preceding adoption of the Plan (2008-2011); and (3) the rolling average of the actual water purchased from SFPUC over the three years preceding any drought.

**Table 6-5. Single Dry Year (Water Savings Program D) Without OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.241</b>	<b>-0.998</b>	<b>-1.443</b>	<b>-1.909</b>	<b>-2.306</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.244</b>	<b>-1.012</b>	<b>-1.471</b>	<b>-1.948</b>	<b>-2.358</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.231</b>	<b>-0.943</b>	<b>-1.325</b>	<b>-1.722</b>	<b>-2.062</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.226</b>	<b>-0.917</b>	<b>-1.270</b>	<b>-1.636</b>	<b>-1.950</b>

In a single dry year (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet winter demands from 2015 through 2035 (See Table 6-6). Water shortages would range from 1.439 MGD to 2.054 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.

**Table 6-6. Single Dry Year (Water Savings Program D) Without OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.227</b>	<b>-0.927</b>	<b>-1.294</b>	<b>-1.676</b>	<b>-2.001</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.230</b>	<b>-0.941</b>	<b>-1.321</b>	<b>-1.716</b>	<b>-2.054</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.207</b>	<b>-0.824</b>	<b>-1.073</b>	<b>-1.332</b>	<b>-1.551</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.202</b>	<b>-0.798</b>	<b>-1.018</b>	<b>-1.246</b>	<b>-1.439</b>

In a single dry year (under Water Savings Program E and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet summer or winter demands from 2015 through 2035 (See Table 6-7). Water shortages would range from 1.153 MGD to 1.648 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.



**Table 6-7. Single Dry Year (Water Savings Program E) Without OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.210</b>	<b>-0.840</b>	<b>-1.108</b>	<b>-1.388</b>	<b>-1.623</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.211</b>	<b>-0.846</b>	<b>-1.121</b>	<b>-1.405</b>	<b>-1.648</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.194</b>	<b>-0.755</b>	<b>-0.928</b>	<b>-1.107</b>	<b>-1.256</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.189</b>	<b>-0.731</b>	<b>-0.877</b>	<b>-1.028</b>	<b>-1.153</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-7 above represents both winter and summer water demand.

### 6.1.3 Multiple Dry Years

In multiple dry years, this WSA assumes the City of Brisbane would receive 83 percent of their normal water year supply guarantee from SFPUC during dry year 1 and 72 percent of their normal water year supply guarantee during dry years 2 and 3. This reduction is based on the SFPUC reductions in supplies to wholesale customers described in the SFPUC's 2010 UWMP. In reality, the City of Brisbane's allocation during multiple dry years would be calculated based on the factors described in Section 4.3.2., and would vary because it would depend on the rolling average of the City's water purchases for the three years preceding the dry year.<sup>4</sup> This analysis assumes the City of Brisbane's water demand during multiple dry years would not change from that of a normal water year. However, it is likely that in the event of a drought, conservation measures would be implemented that would reduce water demand to some degree.

In the first year of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet summer demands from 2015 through 2035 (See Table 6-8). Water shortages would range from 1.951 MGD to 2.359 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.

<sup>4</sup> These percentage reductions are based on the total SFPUC wholesale water allocation reductions for single and multiple dry years. The actual required reductions for BWD and GVMID (agencies) will be based on the Tier 2 DRIP (adopted in 2011) that calculates the reduced allocation on a formula factoring in: (1) agency's Supply Assurance from SFPUC; (2) agency's purchases from SFPUC during the 3 years preceding adoption of the Plan (2008-2011); and (3) the rolling average of the actual water purchased from SFPUC over the three years preceding any drought.

**Table 6-8. Multiple Dry Years – Year 1 (Water Savings Program D) Without OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.241</b>	<b>-0.998</b>	<b>-1.443</b>	<b>-1.909</b>	<b>-2.306</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.244</b>	<b>-1.012</b>	<b>-1.471</b>	<b>-1.948</b>	<b>-2.359</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.231</b>	<b>-0.943</b>	<b>-1.325</b>	<b>-1.722</b>	<b>-2.062</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.226</b>	<b>-0.917</b>	<b>-1.270</b>	<b>-1.636</b>	<b>-1.951</b>

In the first year of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet winter demands from 2015 through 2035 (See Table 6-9). Water shortages would range from 1.439 MGD to 2.054 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.

**Table 6-9. Multiple Dry Years – Year 1 (Water Savings Program D) Without OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.228</b>	<b>-0.928</b>	<b>-1.294</b>	<b>-1.677</b>	<b>-2.002</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.230</b>	<b>-0.941</b>	<b>-1.321</b>	<b>-1.716</b>	<b>-2.054</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.207</b>	<b>-0.824</b>	<b>-1.073</b>	<b>-1.332</b>	<b>-1.551</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.202</b>	<b>-0.798</b>	<b>-1.018</b>	<b>-1.246</b>	<b>-1.439</b>

In the first year of multiple dry years (under Water Savings Program E and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet summer or winter demands from 2015 through 2035 (See Table 6-10). Water shortages would range from 1.153 MGD to 1.648 MGD by 2035, depending on the Concept Plan scenario selected for construction for the Baylands.

**Table 6-10. Multiple Dry Years – Year 1 (Water Savings Program E) Without OID Transfer in Summer/Winter ( MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.210</b>	<b>-0.840</b>	<b>-1.108</b>	<b>-1.388</b>	<b>-1.623</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	0.813	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.211</b>	<b>-0.846</b>	<b>-1.121</b>	<b>-1.405</b>	<b>-1.648</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	<b>0.813</b>	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.194</b>	<b>-0.755</b>	<b>-0.928</b>	<b>-1.107</b>	<b>-1.256</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	<b>0.813</b>	0.813	0.813	0.813	0.813
<b>Difference</b>	<b>-0.189</b>	<b>-0.731</b>	<b>-0.877</b>	<b>-1.028</b>	<b>-1.153</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-10 above represents both winter and summer water demand.

In the second and third years of multiple dry years (under Water Savings Program D and E and assuming demand remains the same as that of a normal water year) the City of Brisbane would not have sufficient water supplies to meet summer or winter demands from 2015 through 2035 (See Table 6-11 through 6-13). Under Water Savings Program D, summer water shortages in 2035 would range from 2.058 to 2.466 MGD, and winter shortages would range from 1.547 to 2.162 MGD, depending on the Concept Plan scenario implemented. Under Water Savings Program E, summer and winter water shortages in 2035 would range from 1.261 to 1.755 MGD, depending on the Concept Plan scenario implemented.

**Table 6-11. Multiple Dry Years – Year 2 and 3 (Water Savings Program D) Without OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.349</b>	<b>-1.106</b>	<b>-1.551</b>	<b>-2.017</b>	<b>-2.413</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.352</b>	<b>-1.119</b>	<b>-1.579</b>	<b>-2.056</b>	<b>-2.466</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.338</b>	<b>-1.051</b>	<b>-1.433</b>	<b>-1.830</b>	<b>-2.170</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.333</b>	<b>-1.025</b>	<b>-1.378</b>	<b>-1.744</b>	<b>-2.058</b>

**Table 6-12. Multiple Dry Years – Year 2 and 3 (Water Savings Program D) Without OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.335</b>	<b>-1.035</b>	<b>-1.401</b>	<b>-1.784</b>	<b>-2.109</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.338</b>	<b>-1.048</b>	<b>-1.429</b>	<b>-1.823</b>	<b>-2.162</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.315</b>	<b>-0.931</b>	<b>-1.181</b>	<b>-1.439</b>	<b>-1.659</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	0.706	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.309</b>	<b>-0.906</b>	<b>-1.126</b>	<b>-1.354</b>	<b>-1.547</b>

**Table 6-13. Multiple Dry Years – Year 2 and 3 (Water Savings Program E) Without OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	<b>0.706</b>	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.318</b>	<b>-0.947</b>	<b>-1.216</b>	<b>-1.496</b>	<b>-1.731</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	<b>0.706</b>	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.319</b>	<b>-0.954</b>	<b>-1.228</b>	<b>-1.513</b>	<b>-1.755</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	<b>0.706</b>	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.301</b>	<b>-0.863</b>	<b>-1.036</b>	<b>-1.215</b>	<b>-1.364</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	<b>0.706</b>	0.706	0.706	0.706	0.706
<b>Difference</b>	<b>-0.296</b>	<b>-0.839</b>	<b>-0.985</b>	<b>-1.136</b>	<b>-1.261</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-13 above represents both winter and summer water demand.

## 6.2 With OID Transfer

This section analyzes the water demand and supply for the City of Brisbane during normal, dry, and multiple dry years through 2035 with the proposed OID transfer. The proposed OID transfer would not be reduced during different water year types (See Table 6-14).



**Table 6-14. City of Brisbane’s Water Supply in Normal, Dry, and Multiple Dry Years with OID Transfer in MGD**

Source	Normal Year		Single Dry Year		Multiple Dry Years					
	GPD	%	GPD	% of Normal	Year 1		Year 2		Year 3	
					GPD	% of Normal	GPD	% of Normal	GPD	% of Normal
SFPUC Supply	980,000	100	813,400	83	813,400	83	705,600	72	705,600	72
OID Transfer	2,142,581	100	2,142,581	100	2,142,581	100	2,142,581	100	2,142,581	100
<b>Total Supply (GPD)</b>	<b>3,122,581</b>		<b>2,955,981</b>		<b>2,955,981</b>		<b>2,848,181</b>		<b>2,848,181</b>	
<b>Total Supply (MGD)</b>	<b>3.12</b>		<b>2.96</b>		<b>2.96</b>		<b>2.85</b>		<b>2.85</b>	

### 6.2.1 Normal Water Year with OID Transfer

In a normal water year with the OID transfer (and with implementation of Water Savings Program D) the City of Brisbane would have sufficient water supplies to meet summer and winter demands for all Concept Plan scenarios from 2015 through 2030 with the exception of DSP-V’s summer demand. Under the DSP-V, the City would have water shortages beginning in 2035 (See Table 6-15 and 6-16).

**Table 6-15. Normal Water Demand (Water Savings Program D) With OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.065</b>	<b>1.309</b>	<b>0.863</b>	<b>0.398</b>	<b>0.001</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.063</b>	<b>1.295</b>	<b>0.836</b>	<b>0.359</b>	<b>-0.052</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.076</b>	<b>1.3637</b>	<b>0.9817</b>	<b>0.5847</b>	<b>0.2447</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.081</b>	<b>1.3897</b>	<b>1.0367</b>	<b>0.6707</b>	<b>0.3567</b>

**Table 6-16. Normal Water Demand (Water Savings Program D) With OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.079</b>	<b>1.379</b>	<b>1.013</b>	<b>0.630</b>	<b>0.305</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.077</b>	<b>1.366</b>	<b>0.986</b>	<b>0.591</b>	<b>0.253</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.100</b>	<b>1.483</b>	<b>1.234</b>	<b>0.975</b>	<b>0.756</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.105</b>	<b>1.509</b>	<b>1.289</b>	<b>1.061</b>	<b>0.868</b>

In a normal water year with the OID transfer (and with implementation of Water Savings Program E) the City of Brisbane would have sufficient water supplies to meet demands from 2015 through 2035 (See Table 6-17) under all Concept Plan scenarios.

**Table 6-17. Normal Water Demand (Water Savings Program E) With OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.096</b>	<b>1.467</b>	<b>1.199</b>	<b>0.919</b>	<b>0.683</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.095</b>	<b>1.461</b>	<b>1.186</b>	<b>0.901</b>	<b>0.659</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.113</b>	<b>1.552</b>	<b>1.379</b>	<b>1.200</b>	<b>1.051</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	3.12	3.12	3.12	3.12	3.12
<b>Difference</b>	<b>2.118</b>	<b>1.576</b>	<b>1.430</b>	<b>1.279</b>	<b>1.154</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-17 above represents both winter and summer water demand.

### 6.2.2 Single Dry Year with OID Transfer

In a single dry year (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies for summer water demands under Concept Plan scenarios CPP and CPP-V through 2035, but would not have sufficient supplies for summer water demands of the DSP and DSP-V in 2035 (See Table 6-18).

**Table 6-18. Single Dry Year (Water Savings Program D) With OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.905</b>	<b>1.149</b>	<b>0.703</b>	<b>0.238</b>	<b>-0.159</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.903</b>	<b>1.135</b>	<b>0.676</b>	<b>0.199</b>	<b>-0.212</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.916</b>	<b>1.204</b>	<b>0.822</b>	<b>0.425</b>	<b>0.085</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.921</b>	<b>1.230</b>	<b>0.877</b>	<b>0.511</b>	<b>0.197</b>

In a single dry year (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies for winter water demands under all Concept Plan scenarios (See Table 6-19).

**Table 6-19. Single Dry Year (Water Savings Program D) With OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.919</b>	<b>1.219</b>	<b>0.853</b>	<b>0.470</b>	<b>0.145</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.917</b>	<b>1.206</b>	<b>0.826</b>	<b>0.431</b>	<b>0.093</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.940</b>	<b>1.323</b>	<b>1.074</b>	<b>0.815</b>	<b>0.596</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.945</b>	<b>1.349</b>	<b>1.129</b>	<b>0.901</b>	<b>0.708</b>

In a single dry year (under Water Savings Program E and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient water supplies for summer and winter water demand through 2035 (See Table 6-20) for all Concept Plan scenarios.

**Table 6-20. Single Dry Year (Water Savings Program E) With OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.936</b>	<b>1.307</b>	<b>1.039</b>	<b>0.759</b>	<b>0.523</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.935</b>	<b>1.301</b>	<b>1.026</b>	<b>0.741</b>	<b>0.499</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.953</b>	<b>1.392</b>	<b>1.219</b>	<b>1.040</b>	<b>0.891</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.958</b>	<b>1.416</b>	<b>1.270</b>	<b>1.119</b>	<b>0.994</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-20 above represents both winter and summer water demand.

### 6.2.3 Multiple Dry Years with OID Transfer

In the first year of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet the summer water demands of Concept Plan scenarios CPP and CPP-V through 2035, but would not have sufficient supplies to meet the summer demands of the DSP and DSP-V in 2035 (See Table 6-21).

**Table 6-21. Multiple Dry Years - Year 1 (Water Savings Program D) With OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.905</b>	<b>1.149</b>	<b>0.703</b>	<b>0.238</b>	<b>-0.159</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.903</b>	<b>1.135</b>	<b>0.676</b>	<b>0.199</b>	<b>-0.2119</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.916</b>	<b>1.204</b>	<b>0.822</b>	<b>0.425</b>	<b>0.085</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.921</b>	<b>1.230</b>	<b>0.877</b>	<b>0.511</b>	<b>0.197</b>

In the first year of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet winter water demands of all Concept Plan scenarios through 2035 (See Table 6-22).

**Table 6-22. Multiple Dry Years - Year 1 (Water Savings Program D) With OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.919</b>	<b>1.219</b>	<b>0.853</b>	<b>0.470</b>	<b>0.145</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.917</b>	<b>1.206</b>	<b>0.826</b>	<b>0.431</b>	<b>0.093</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.940</b>	<b>1.323</b>	<b>1.074</b>	<b>0.815</b>	<b>0.596</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.945</b>	<b>1.349</b>	<b>1.129</b>	<b>0.901</b>	<b>0.708</b>

In the first year of multiple dry years (under Water Savings Program E and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet summer and winter water demands through 2035 for all Concept Plan scenarios (See Table 6-23).

**Table 6-23. Multiple Dry Years – Year 1 (Water Savings Program E) With OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.936</b>	<b>1.307</b>	<b>1.039</b>	<b>0.759</b>	<b>0.523</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.935</b>	<b>1.301</b>	<b>1.026</b>	<b>0.741</b>	<b>0.499</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069



**Table 6-23. Multiple Dry Years – Year 1 (Water Savings Program E) With OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.953</b>	<b>1.392</b>	<b>1.219</b>	<b>1.040</b>	<b>0.891</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	2.960	2.960	2.960	2.960	2.960
<b>Difference</b>	<b>1.958</b>	<b>1.416</b>	<b>1.270</b>	<b>1.119</b>	<b>0.994</b>

Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-23 above represents both winter and summer water demand.

In the second and third years of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet summer demands of the CPP-V through 2035. The City would not have sufficient supplies for the DSP, DSP-V, or CPP in 2035 (See Table 6-24).

**Table 6-24. Multiple Dry Years – Year 2 and 3 (Water Savings Program D) With OID Transfer in Summer (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.055	1.811	2.257	2.722	3.119
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.795</b>	<b>1.039</b>	<b>0.593</b>	<b>0.128</b>	<b>-0.269</b>
Total Demand (With DSP-V and Water Savings Program D)	1.057	1.825	2.284	2.761	3.172
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.793</b>	<b>1.025</b>	<b>0.566</b>	<b>0.089</b>	<b>-0.322</b>
Total Demand (With CPP and Water Savings Program D)	1.044	1.756	2.138	2.535	2.875
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.806</b>	<b>1.094</b>	<b>0.712</b>	<b>0.315</b>	<b>-0.025</b>
Total Demand (With CPP-V and Water Savings Program D)	1.039	1.730	2.083	2.449	2.763
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.811</b>	<b>1.120</b>	<b>0.767</b>	<b>0.401</b>	<b>0.087</b>

In the second and third years of multiple dry years (under Water Savings Program D and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet winter demands of all the Concept Plan scenarios with the exception of the DSP-V in 2035 (See Table 6-25).

**Table 6-25. Multiple Dry Years – Year 2 and 3 (Water Savings Program D) With OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program D)	1.041	1.741	2.107	2.490	2.815
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.809</b>	<b>1.109</b>	<b>0.743</b>	<b>0.360</b>	<b>0.035</b>
Total Demand (With DSP-V and Water Savings Program D)	1.043	1.754	2.134	2.529	2.867
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.807</b>	<b>1.096</b>	<b>0.716</b>	<b>0.321</b>	<b>-0.017</b>
Total Demand (With CPP and Water Savings Program D)	1.020	1.637	1.886	2.145	2.364
Water Supply	2.850	2.850	2.850	2.850	2.850

**Table 6-25. Multiple Dry Years – Year 2 and 3 (Water Savings Program D) With OID Transfer in Winter (MGD)**

	2015	2020	2025	2030	2035
<b>Difference</b>	<b>1.830</b>	<b>1.213</b>	<b>0.964</b>	<b>0.705</b>	<b>0.486</b>
Total Demand (With CPP-V and Water Savings Program D)	1.015	1.611	1.831	2.059	2.252
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.835</b>	<b>1.239</b>	<b>1.019</b>	<b>0.791</b>	<b>0.598</b>

In the second and third years of multiple dry years (under Water Savings Program E and assuming demand remains the same as that of a normal water year) the City of Brisbane would have sufficient supplies to meet summer and winter demands through 2035 for all Concept Plan scenarios (See Table 6-26).

**Table 6-26. Multiple Dry Years – Year 2 and 3 (Water Savings Program E) With OID Transfer in Summer/Winter (MGD)**

	2015	2020	2025	2030	2035
Total Demand (With DSP and Water Savings Program E)	1.024	1.653	1.921	2.201	2.437
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.826</b>	<b>1.197</b>	<b>0.929</b>	<b>0.649</b>	<b>0.413</b>
Total Demand (With DSP-V and Water Savings Program E)	1.025	1.659	1.934	2.219	2.461
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.825</b>	<b>1.191</b>	<b>0.916</b>	<b>0.631</b>	<b>0.389</b>
Total Demand (With CPP and Water Savings Program E)	1.007	1.568	1.741	1.920	2.069
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.843</b>	<b>1.282</b>	<b>1.109</b>	<b>0.930</b>	<b>0.781</b>
Total Demand (With CPP-V and Water Savings Program E)	1.002	1.544	1.690	1.841	1.966
Water Supply	2.850	2.850	2.850	2.850	2.850
<b>Difference</b>	<b>1.848</b>	<b>1.306</b>	<b>1.160</b>	<b>1.009</b>	<b>0.884</b>

*Note: Water Savings Program E would result in the same water demand in winter and summer; therefore Table 6-26 above represents both winter and summer water demand.*

## Section 7

### Conclusions

Without the OID transfer, the City of Brisbane would not have sufficient water supplies to meet its current and future water demands and the demands of the Proposed Project. Regardless of whether Water Savings Program D or E is implemented, the City would face water shortages in all water year types for the 20 year period analyzed (2015 through 2035) for all Concept Plan scenarios.

With the OID transfer, under Water Savings Program D, the City of Brisbane would not have sufficient water supplies for the following:

- Normal Water Year – The DSP-V summer water demand would result in shortages in 2035;
- Dry Water Year – The DSP and DSP-V summer water demand would result in shortages in 2035;
- Multiple Dry Years (Year 1) - The DSP and DSP-V summer demand would result in shortages in 2035;
- Multiple Dry Years (Year 2 and 3) - The DSP, DSP-V, and CPP summer demand would result in shortages in 2035. The DSP-V winter demand would result in shortages in 2035.

With the OID transfer, the City of Brisbane would have sufficient water supplies to meet its current and future water demands and the demands of the Proposed Project through 2035 in normal, dry, and multiple dry years if Water Savings Program E is implemented.

If the OID transfer does not occur, the proposed wastewater treatment facility (Water Savings Program E) would need to be brought online at the beginning of the project (2015); however, the City would still face a water shortage in all years (2015 through 2035) under all Concept Plan scenarios. If the OID transfer does occur, the wastewater treatment facility would need to be brought online before 2035 to ensure the City would have sufficient supplies to meet all water demands through 2035 under all Concept Plan scenarios.

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## Section 8

### References

Bay Area Water Users Association (BAWSCA). 2010. *Long Term Reliable Water Supply Strategy Phase 1 Scoping Report, May 2010*. Prepared by: CDM.

Brown and Caldwell. 2011. *Baylands Water Use Projections and Water Balance for Base Land Use Scenario, Technical Memorandum No. 1*, February 2, 2011. Prepared for: Universal Paragon Corporation. Prepared by: Brown and Caldwell.

Brown and Caldwell. 2013. *Baylands Water Use Projections and Water Balance for Base Land Use Scenario Technical Memorandum No. 1*, March 19, 2013. Prepared for: Universal Paragon Corporation. Prepared by: Brown and Caldwell.

City of Brisbane. 2003a. *City of Brisbane Water Master Plan, June 2003*. Walnut Creek, California. Prepared by Brown and Caldwell.

City of Brisbane. 2006. *Brisbane Baylands Phase 1 Specific Plan, February 2006*. City of Brisbane, California. Prepared by: Universal Paragon Corporation and Wallace Roberts & Todd, LLC / Solomon E.T.C.

City of Brisbane. 2006a. *Sierra Point Biotech Project Draft EIR, November 2006*. Berkeley, California. Prepared by LSA Associates, Inc.

City of Brisbane. 2006b. *Sierra Point Biotech Project Water Supply Assessment, July 2006*. Prepared by: City of Brisbane Department of Public Works.

City of Brisbane. 2010. *Revised Notice of Preparation for the Brisbane Baylands Specific Plan Environmental Impact Report, December 7, 2010*.

Flanagan, Jerry. 2012. Personal Communication with S. Porter of CDM Smith regarding historical water demand.

San Francisco Public Utilities Commission (SFPUC). 2005. *2005 Urban Water Management Plan for the City and County of San Francisco, December 2005*. Accessed on: 06 15 2007. Available at: [http://sfwater.org/Files/Reports/Final\\_2005\\_UWMP\\_SanFrancisco\\_reduced.pdf](http://sfwater.org/Files/Reports/Final_2005_UWMP_SanFrancisco_reduced.pdf)

SFPUC. 2008. *Water System Improvement Program (WSIP) Final Program Environmental Impact Report, October 2008, Chapter 3, Volume I*. Accessed on: 04 26 2012. Available at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=8048>

SFPUC. 2009. *Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County, July 2009*. Accessed on: 04 26 2012. Available at: [http://bawasca.org/docs/FINAL\\_WSA\\_with\\_Attachments.PDF](http://bawasca.org/docs/FINAL_WSA_with_Attachments.PDF)

SFPUC. 2011a. *Recycled Water – Efforts to Expand Recycled Water Use*. Accessed on: 04 26 2012. Available at: <http://sfwater.org/index.aspx?page=141>

SFPUC. 2011b. *2010 Urban Water Management Plan for the City and County of San Francisco, June 2011*. Accessed on: 04 26 2012. Available at:  
<http://sfwater.org/Modules/ShowDocument.aspx?documentID=1055>

Universal Paragon Corporation, BKF Engineers, Brown and Caldwell, Geosyntec, GrafCon, Millenium Design, and Treadwell & Rollo (UPC et al.). 2011. *Draft Brisbane Baylands Infrastructure Plan, February 2011*. Prepared for: City of Brisbane.

## Appendix A

### Water Code Section 10910(d)(2)

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## CALIFORNIA CODES

**WATER CODE**

## SECTION 10910-10915

**10910.** (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources **Code**) under Section 21080 of the Public Resources **Code** shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources **Code**, shall identify any **water** system that is, or may become as a result of supplying **water** to the project identified pursuant to this subdivision, a public **water** system, as defined in Section 10912, that may supply **water** for the project. If the city or county is not able to identify any public **water** system that may supply **water** for the project, the city or county shall prepare the **water** assessment required by this part after consulting with any entity serving domestic **water** supplies whose service area includes the project site, the local agency formation commission, and any public **water** system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources **Code**, shall request each public **water** system identified pursuant to subdivision (b) to determine whether the projected **water** demand associated with a proposed project was included as part of the most recently adopted urban **water** management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected **water** demand associated with the proposed project was accounted for in the most recently adopted urban **water** management plan, the public **water** system may incorporate the requested information from the urban **water** management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected **water** demand associated with the proposed project was not accounted for in the most recently adopted urban **water** management plan, or the public **water** system has no urban **water** management plan, the **water** supply assessment for the project shall include a discussion with regard to whether the public **water** system's total projected **water** supplies available during normal, single dry, and multiple dry **water** years during a 20-year projection will meet the projected **water** demand associated with the proposed project, in addition to the public **water** system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the **water** supply assessment for the project shall include a discussion with regard to whether the total projected **water** supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry **water** years during a 20-year projection, will meet the projected **water** demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing **water** supply entitlements, **water**

rights, or **water** service contracts relevant to the identified **water** supply for the proposed project, and a description of the quantities of **water** received in prior years by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing **water** supply entitlements, **water** rights, or **water** service contracts.

(2) An identification of existing **water** supply entitlements, **water** rights, or **water** service contracts held by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified **water** supply.

(B) Copies of a capital outlay program for financing the delivery of a **water** supply that has been adopted by the public **water** system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the **water** supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the **water** supply.

(e) If no **water** has been received in prior years by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing **water** supply entitlements, **water** rights, or **water** service contracts, the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its **water** supply assessment pursuant to subdivision (c), an identification of the other public **water** systems or **water** service contractholders that receive a **water** supply or have existing **water** supply entitlements, **water** rights, or **water** service contracts, to the same source of **water** as the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of **water** supply within its **water** supply assessments.

(f) If a **water** supply for a proposed project includes groundwater, the following additional information shall be included in the **water** supply assessment:

(1) A review of any information contained in the urban **water** management plan relevant to the identified **water** supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin

from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected **water** demand associated with the proposed project. A **water** supply assessment shall not be required to include the information required by this paragraph if the public **water** system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected **water** demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public **water** system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public **water** system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public **water** system intends to request an extension of time to prepare and adopt the assessment, the public **water** system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public **water** system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public **water** system to comply with the requirements of this part relating to the submission of the **water** supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a **water** supply assessment that complies with the requirements of this part, no additional **water** supply assessment shall be required for subsequent projects that were part of a larger project for which a **water** supply assessment was completed and that has complied with the requirements of this part and for which the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its **water** supplies are sufficient to meet the projected **water** demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in **water** demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of **water** for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment

was prepared.

10911. (a) If, as a result of its assessment, the public **water** system concludes that its **water** supplies are, or will be, insufficient, the public **water** system shall provide to the city or county its plans for acquiring additional **water** supplies, setting forth the measures that are being undertaken to acquire and develop those **water** supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that **water** supplies are, or will be, insufficient, the city or county shall include in its **water** supply assessment its plans for acquiring additional **water** supplies, setting forth the measures that are being undertaken to acquire and develop those **water** supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional **water** supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional **water** supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public **water** system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional **water** supplies.

(b) The city or county shall include the **water** supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources **Code**.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected **water** supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that **water** supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) (A) Except as otherwise provided in subparagraph (B), a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet



of floor area.

(B) A proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of **water** annually.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of **water** equivalent to, or greater than, the amount of **water** required by a 500 dwelling unit project.

(b) If a public **water** system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public **water** system's existing service connections, or a mixed-use project that would demand an amount of **water** equivalent to, or greater than, the amount of **water** required by residential development that would represent an increase of 10 percent or more in the number of the public **water** system's existing service connections.

(c) "Public **water** system" means a system for the provision of piped **water** to the public for human consumption that has 3,000 or more service connections. A public **water** system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system that is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats **water** on behalf of one or more public **water** systems for the purpose of rendering it safe for human consumption.

(d) This section shall remain in effect only until January 1, 2017, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2017, deletes or extends that date.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of **water** equivalent to, or greater than, the amount of **water** required by a 500 dwelling unit project.

(b) If a public **water** system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public **water** system's existing service connections, or a mixed-use project that would demand an amount of **water** equivalent to, or greater than, the amount of **water** required by residential development that would represent an increase of 10 percent or more in the number of the public **water** system's existing service connections.

(c) "Public **water** system" means a system for the provision of piped **water** to the public for human consumption that has 3,000 or more service connections. A public **water** system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system that is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats **water** on behalf of one or more public **water** systems for the purpose of rendering it safe for human consumption.

(d) This section shall become operative on January 1, 2017.

10914. (a) Nothing in this part is intended to create a right or entitlement to **water** service or any specific level of **water** service.

(b) Nothing in this part is intended to either impose, expand, or limit any duty concerning the obligation of a public **water** system to provide certain service to its existing customers or to any future potential customers.

(c) Nothing in this part is intended to modify or otherwise change existing law with respect to projects which are not subject to this part.

(d) This part applies only to a project for which a notice of preparation is submitted on or after January 1, 1996.

10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a **water** element to coordinate planning for **water** that is consistent with the requirements of this part.

(e) The San Diego County **Water** Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts

for planning purposes and to implement the **water** element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the **water** element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a **water** supply assessment that is prepared pursuant to Section **10910**.

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## Appendix B

Technical Memo prepared by Brown and Caldwell

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Prepared for: Universal Paragon Corporation, California

Project Title: Brisbane Baylands Project

Project No: 134535-001-\*\*\*\*

Technical Memorandum No. 1

Subject: Baylands Water Use Projections and Water Balance for Base Land Use Scenario

Date: March 19, 2013

To: Jonathan Scharfman, Land Development Director

From: Tom Birmingham, P.E., Senior Engineer

Copy to: Jeff Burnham, E.I.T., LEED AP

Prepared by: \_\_\_\_\_

Jenny Gain, P.E., Senior Engineer

Tom Birmingham, P.E., Senior Engineer

Reviewed by: \_\_\_\_\_

Bill Faisst, P.E., Ph.D., Vice President

*Limitations:*

*This document was prepared solely for Universal Paragon Corporation (UPC) in accordance with professional standards at the time the services were performed and in accordance with the contract between UPC and Brown and Caldwell dated January 8, 2008. This document is governed by the specific scope of work authorized by UPC; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by UPC and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.*

## 1. INTRODUCTION

---

This Technical Memorandum 1 (Tech Memo 1) includes the water use projections, balance, and savings plan for the Baylands development in Brisbane, California planned by Universal Paragon Corporation (UPC). Also included are the methods and assumptions used to develop the water use projections based on the “base land use scenario”.

### 1.1 Scope of Work

This Tech Memo 1 is intended to fulfill the Task 1 (“Create a Comprehensive Water Balance”) scope of work, including the following subtasks:

#### 1.1.1 Task 1 - Water Demand Forecast and Balance

Based on the most recent project development provided by UPC (square footage by type of use), develop a specific, comprehensive water balance for the Brisbane Baylands Project. Forecast water demands for the project based on the current projections of commercial, residential, retail, and office space. We will use our experience with area developments and AWWA standards to determine the water use for each. We will coordinate with Wallace Roberts & Todd, LLC (WRT) to determine the percentage of landscaped area’s with high, medium, and low irrigation demands. Brown and Caldwell will engage Natural Systems International, Inc to assist in completing this task.

#### 1.1.2 Task 2 - Water Savings Plan

Brown and Caldwell will create an aggressive but practical water savings plan for the Brisbane Baylands Project. In 2004, URS, the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA) completed a report detailing a three-tiered water conservation plan. The report used Programs A, B, and C for water conservation, with Program A conforming with the current Uniform Plumbing Code, and Program C using the most aggressive conservation measures. In 2006, BC worked with BAWSCA to update that report. We will use our knowledge of the report to develop water use plans for the Baylands Project. We will also update projections for additional savings possible in Brisbane and Guadalupe Valley Municipal Improvement District (GVMID) if Program C is implemented and an order-of-magnitude estimated cost of that implementation as a possible offset to new water demands from the Baylands. Beyond Program C, evaluate how using recycled water for irrigation will reduce overall water demand. Beyond Program C, evaluate how using recycled water with dual piping will lower the water demands beyond Program C. For this option, in conjunction with Task 3 below, determine if onsite water use would generate sufficient effluent for recycled water needs or whether some raw sewage would need to be diverted from the City/GVMID raw sewage discharge to the San Francisco Southeast Treatment Plant. Brown and Caldwell will engage Natural Systems International, Inc to assist in completing this task.

#### 1.1.3 Task 3 - Draft Technical Memorandum

Brown and Caldwell will prepare a draft technical memorandum (estimated at five pages of text plus supporting tables) summarizing Task 1 and submit five copies to UPC for review and comment. We will address one set of collated comments, and submit 10 copies (PDF format) of a final draft for review by the City. Meeting with City staff once is included to review the draft and receive one set of collated comments and answer questions. We will respond to questions and finalize the tech memo.



## 2. WATER USE PROJECTIONS AND BALANCE

---

The water use projections and balance along with methods and assumptions are included in this section.

### 2.1 Methods

#### 2.1.1 Indoor Water Savings Programs

Water use projections were developed for five different scenarios (Table 2-1). To the extent that is economically viable, the maximum water savings will be sought through selection of either one of the water savings programs described in this section or a combination of the programs.

Within Table 2-1, Program A serves as a baseline water demand. The water demand evaluation conducted for the Baylands development includes the water savings under each of three programs (i.e., Programs A, B, and C), assuming that the following indoor water conservation measures are implemented, as appropriate based on end uses for the water, as follows:

##### Program A

- Public Information

##### Program B

- Public Information
- Require 0.5 gal/flush Urinals in New Commercial, Industrial, Institutional (CII) Buildings
- Commercial water audits

##### Program C

- All components of Program B
- Water Audits Hotels-Motels
- WAVE Program (US EPA) for Hotels

In addition to the three programs summarized above, more aggressive conservation is incorporated into three additional demand projection scenarios (Programs D, E and F), which are further described below.

##### Program D

In addition to the packages of water conservation measures evaluated in the SFPUC study, another program (Program D) was developed to incorporate more aggressive water conservation measures in the Baylands development. The measures included in Program D include those mentioned in Program C (above), and additional measures are as follows:

- All components of Program C
- High Efficiency Toilets (1.28 gpf or less) or Dual-Flush Toilets (0.8 gpf half-flush and 1.6 gpf full-flush)
- Automatic sinks
- Waterless urinals

## Program E

Program E includes recycling of all wastewater generated onsite. After wastewater is treated, polished through constructed wetlands, filtered, and disinfected, it would be recycled onsite for irrigation and for flushing toilets and urinals. The water recycling would be achieved through dual plumbing of the water systems throughout the property. The components of Programs C and D are assumed to be implemented in Program E, with the exception that more costly higher efficiency measures would not be implemented if they would be supplied by recycled water in Program E. Such measures include high efficiency and dual-flush toilets and waterless urinals. The components of Program E are as follows:

- All components of Program D (except for high efficiency and dual-flush toilets and waterless urinals)
- Onsite wastewater treatment and recycling
- Dual-plumbing for potable and recycled water

## Program F (Offsite Conservation Option, Appendix A)

Another option that was considered includes the implementation of water conservation measures within the City of Brisbane but outside of the Baylands development. The program components considered under this option (Program F – Offsite Conservation Option) include conservation measures that are not cost effective for the City to implement but that would result in water savings. The purpose in implementing such measures would be to pursue a “water credit” from the City by offsetting its current water demand through more intensive water use efficiency.

In 2006, the SFPUC prepared the “Investigation of Regional Water Supply Option No. 4” (RWSO4) technical memorandum to determine the potential for demand reductions related to regional conservation programs. The RWSO4 included the evaluation of three potential regional conservation programs (Programs R1, R2, and R3). All water use efficiency measures evaluated in the RWSO4 and their respective water savings for the City of Brisbane are included in Appendix A.

### 2.1.2 Outdoor Water Savings Programs

Programs A through D assume the use of potable water for landscape irrigation. Program E assumes that recycled water would be used for landscape applications to reduce potable water demands.

### 2.1.3 Calculations

Calculations were performed using a number of assumptions, as further described in Section 2.2. Most calculations were simple conversions of units and occupancy rates.

The most involved of the calculations was the projection for landscape water demand, which was performed by Natural Systems International (NSI). The irrigation requirement was calculated using the Landscape Coefficient Method, as follows:

- **Gross Demand =  $E_{To} \times KL$**

where:  $E_{To}$  = Reference Evapotranspiration for the Region, inches

$KL$  = Landscape Coefficient

- **Landscape Coefficient  $KL = k_s \times k_d \times k_{mc}$**

where:  $k_s$  = Species factor, which takes into account the different water requirements of different species. Adequately green landscapes can be maintained at about 50 percent of

reference ET, therefore the average ks value is 0.5. Truly xeric landscapes that require no additional water after establishment have a ks = 0.

kd = Density factor, accounting for number of plants and total leaf area of a landscape. Sparsely planted areas will have a lower ET rate than densely planted areas.

kmc = Microclimate factor, accounting for landscape variation in temperature, wind exposure, and humidity. The average kmc is 1.0. Higher values occur in landscapes surrounded by heat-absorbing or reflective surfaces, or where wind exposure is unusually high. Examples of high kmc areas are parking lots, west sides of buildings, west and south slopes, medians, and areas experiencing wind-tunneling. Low kmc areas are shady areas, areas protected from wind, north sides of buildings, courtyards, areas under overhangs, and the north sides of slopes.

- **Net Demand = (Gross Demand / IE) x CE**

where: IE = Irrigation Efficiency, for the project irrigation type, as shown in the following table.

*Table 2-1. Irrigation Efficiency by Type*

Irrigation Type	Irrigation Efficiency
<i>Sprinkler</i>	<i>0.625</i>
<i>Drip</i>	<i>0.90</i>

CE = Controller Efficiency: all major irrigation projects should use a high-efficiency controller, such as an ET-controller. For the purposes of initial estimation of residential landscaping, CE is assumed to be 1.0. For golf courses which will be using an ET-controller or similar controls, CE is assumed to be 0.75, until design is finalized enough to apply direct calculation of likely CE using a daily water balance based on historical rainfall, using daily records or generated daily gamma distributions.

The data and calculations that were used for the landscape water demand are included in Appendix B.

### 2.1.4 Schedule

It is assumed that the construction of the Baylands development will be phased over approximately 20 years, starting in approximately 2014. The anticipated phased construction will result in a phased water demand for the property. The property buildout in square footage added per year is anticipated to proceed as shown in Figure 2-1.

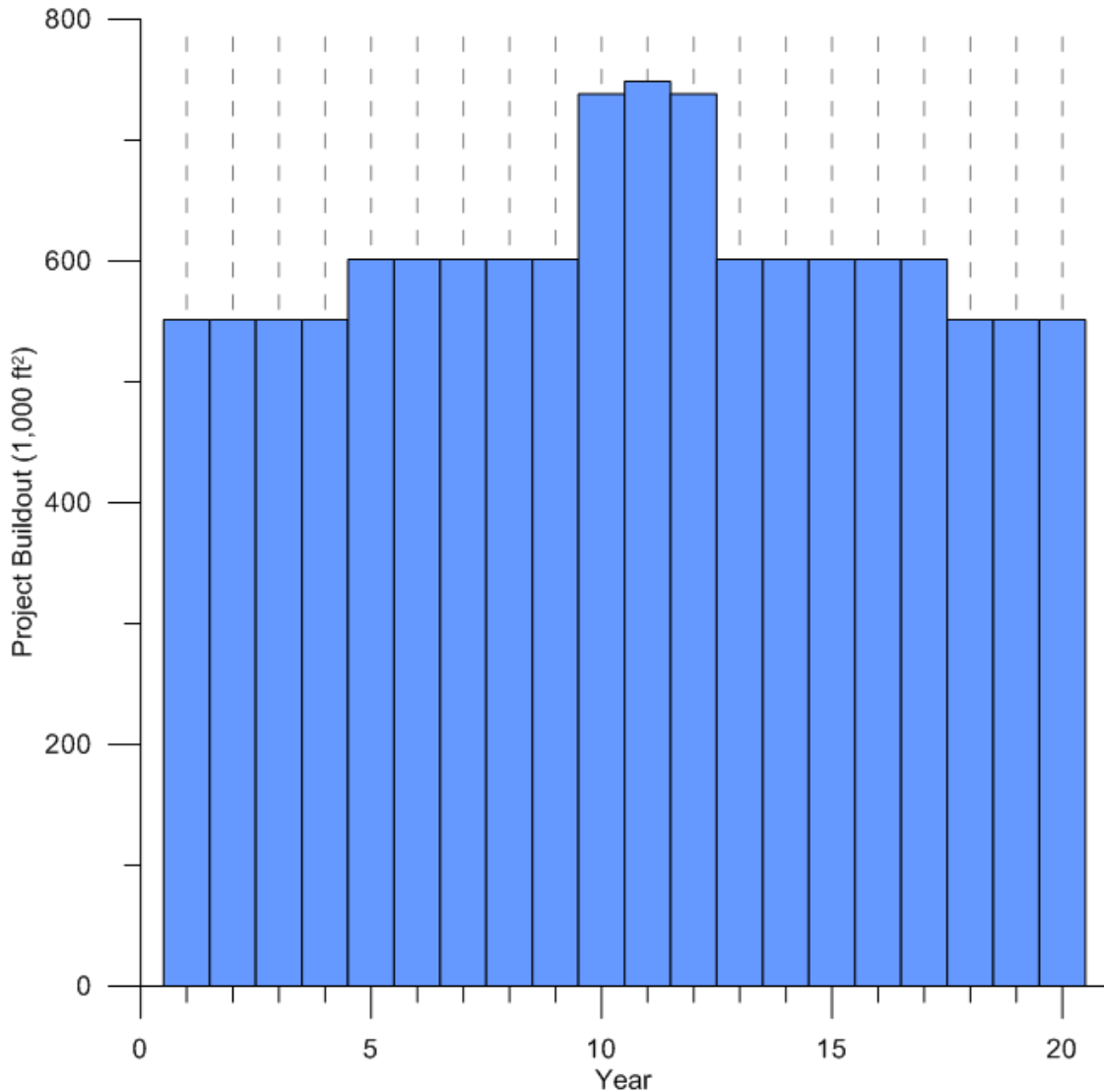


Figure 2-1. Baylands Development Buildout by Year

## 2.2 Assumptions

A number of assumptions had to be made to estimate water demand for the Baylands property. Assumptions by land use are as follows:

- **Residential** – Residential water use is calculated for one bedroom, two bedroom, and three bedroom flats and townhomes, each assumed to have 85 percent occupancy. One bedroom units are assumed to house 1.5 persons per unit, two bedroom units are assumed to house 3 persons per unit, and three bedroom unites are assumed to house 4.5 persons per unit.. The number of residential flats includes:
  - One bedroom flats: 1,580
  - Two bedroom flats: 1,975
  - Three bedroom flats: 395



The number of residential townhomes includes:

- Two bedroom townhomes: 242
- Three bedroom townhomes: 242

Outdoor water demands are not included in the residential use, but are included in the irrigation demand.

- **Office and Institutional** – The office and institutional land uses are assumed to be occupied five days per week (as included in the annual demand). Cooling water demand is estimated as 10 percent of the total water use.
- **Research and Development (R&D)** – It is assumed that there are 1,600 employees. The type of R&D being conducted could potentially drastically change the water demand. For this scenario, we assumed the R&D facility would comprise of 75% office space and 25% R&D. The water demand projection for the R&D portion is based on water use at an existing biotech facility. It is assumed in the annual demand that the R&D facility is operational 365 days a year (i.e., an occupancy rate of 100 percent). Cooling water demand is estimated as 10 percent of the total water use.
- **Retail** – It is assumed in the annual demand that the retail uses are operational 365 days a year (i.e., an occupancy rate of 100 percent). Cooling water demand is estimated as 10 percent of the total water use.
- **Hotel** – It is assumed that there are 185 one bedroom units and 184 two bedroom units. Occupancy rates for the one bedroom and two bedroom units are estimated at 1.5 persons per unit and 3 persons per unit, respectively. It is also assumed that the one bedroom units use 110 gpd and that the two bedroom units use 220 gpd for indoor uses. The hotel restaurant will have a water demand of 35 gpd for each person staying at the hotel, which is embedded within the water demand per hotel room. Using the assumed hotel room occupancy rates of 1.5 persons per unit and 3 persons per unit for one and two bedroom hotel rooms, respectively, the water rates are 162 gpd/room for one bedroom and 325 gpd/room for two bedroom. The hotel is assumed to have an occupancy rate of 75 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Conference Hall** – The conference hall is assumed to have a capacity of 1,400 persons per day with an occupancy rate of 80 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Irrigation** – Assumptions related to irrigation include as made by NSI include that the water demand reflects an “average” (50th percentile) year. Density and microclimate coefficients (kd and kmc) of 1.0 were used. For likely ks (species) values, the value of 0.8 was used for turf (adequate maintenance of “green” for cool-season turfs), while the value 0.5 was used for non-turf (average for mixed trees, shrubs, and ground-cover). A default irrigation efficiency of 62.5 percent was used for spray/sprinkler (turf) and 90 percent for drip irrigation (non-turf).

## 2.3 Results

### 2.3.1 Water Use Projections

The results of the water demand are included in Tables 2-2 and 2-3. In addition, the amount of water used annually through the phased construction of the Baylands development is included in Table 2-4.

If Program F were considered a viable option for pursuing alternative water supply through funding and supporting the implementation of water use efficiency measures in the City of Brisbane, a water credit of at least 41,000 gpd would be available (Appendix A). It should be noted that water savings information was not

available for each of the conservation measures listed in Appendix A; so, the water credit estimation is conservative and could be refined in the future if deemed appropriate.

Figure 2-2 depicts the cumulative water demands under Programs D and E as a function of the phased Baylands development construction. (Note that Program E assumes that no potable water is used for irrigation.)

The irrigation calculations give a peak July demand of 5,393 gpd for turf (including trees planted in turf) and 2,341 gpd for irrigated non-turf. Average annual (April – November) values are less, at 2,821 gpd for turf and 1,225 gpd for non-turf.

Table 2-2. Water Demand Projections under Various Water Savings Programs for the Base Land Use Scenario

Use	Area (sf)	Rate	Units	Program A (gpd)		Program B (gpd)		Program C (gpd)		Program D (gpd)		Program E (gpd)			
				S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>		
Residential	5,150,400														
Condos/Apartments	4,351,800														
Residential Flats - 1 BR		110	gpd/unit	1,580	units	162,500	162,500	162,500	162,500	162,500	162,500	152,750	152,750	118,630	118,630
Residential Flats - 2 BR		220	gpd/unit	1,975	units	406,260	406,260	406,260	406,260	406,260	406,260	381,880	381,880	296,570	296,570
Residential Flats - 3 BR		330	gpd/unit	395	units	121,880	121,880	121,880	121,880	121,880	121,880	114,560	114,560	88,970	88,970
Townhomes	798,600														
Residential Townhomes - 2 BR		220	gpd/unit	242	units	49,780	49,780	49,780	49,780	49,780	49,780	46,790	46,790	36,340	36,340
Residential Townhomes - 3 BR		330	gpd/unit	242	units	74,670	74,670	74,670	74,670	74,670	74,670	70,190	70,190	54,510	54,510
Office and Institutional	2,790,200	75	gpd/1000 sq ft	--	--	218,680	218,680	196,810	196,810	196,810	196,810	147,610	147,610	50,300	50,300
R&D	3,328,300			1,600	employees										
Office	2,496,225	75	gpd/1000 sq ft			195,640	195,640	176,080	176,080	176,080	176,080	132,060	132,060	45,000	45,000
Lab	832,075	10,000	gpd/acre			199,610	199,610	199,610	199,610	199,610	199,610	199,610	199,610	199,610	199,610
Retail	566,300	50	gpd/1000 sq ft	--	--	31,150	31,150	28,030	28,030	28,030	28,030	21,020	21,020	7,160	7,160
Hotel	239,800														
Hotel - 1 BR		162	gpd/room	185	rooms	24,730	24,730	24,730	24,730	19,290	19,290	18,130	18,130	18,050	18,050
Hotel - 2 BR		325	gpd/room	184	rooms	49,340	49,340	49,340	49,340	38,480	38,480	36,170	36,170	36,010	36,010
Conference Hall	21,300	15	gpd/person	1,400	persons	18,480	18,480	16,630	16,630	16,630	16,630	12,470	12,470	4,250	4,250
<b>Development Subtotal</b>	<b>12,096,300</b>					<b>1,552,720</b>	<b>1,552,720</b>	<b>1,506,320</b>	<b>1,506,320</b>	<b>1,490,020</b>	<b>1,490,020</b>	<b>1,333,240</b>	<b>1,333,240</b>	<b>955,400</b>	<b>955,400</b>
Irrigation		82.81 acres (3,607,204 sq. ft.) (See Section 2.3.)		--	--	304,410	0	304,410	0	304,410	0	304,410	0	0	0
<b>Irrigation Subtotal</b>						<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>12,096,300</b>					<b>1,857,130</b>	<b>1,552,720</b>	<b>1,810,730</b>	<b>1,506,320</b>	<b>1,794,430</b>	<b>1,490,020</b>	<b>1,637,650</b>	<b>1,333,240</b>	<b>955,400</b>	<b>955,400</b>

<sup>a</sup>S = Summer/dry season, defined as April through November

<sup>b</sup>W = Winter/wet season, defined as December through March

Table 2-3. Total Water Demand Projections under Various Water Savings Programs for the Base Land Use Scenario (in acre-feet per year)

Program A	Program B	Program C	Program D	Program E
1,897	1,852	1,833	1,674	1,054

Table 2-4. Total Baylands Annual Water Demand with Phased Construction

Year	Area (sf)	Program A (gpd)		Program B (gpd)		Program C (gpd)		Program D (gpd)		Program E (gpd)		Cumulative Demand Based on Program D for Summer Season <sup>a</sup> (gpd)	Cumulative Demand Based on Program D for Winter Season <sup>b</sup> (gpd)	Cumulative Demand Based on Program E for Summer Season <sup>a</sup> (gpd)	Cumulative Demand Based on Program E for Winter Season <sup>b</sup> (gpd)
		S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>				
1	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	74,631	60,758	43,539	43,539
2	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	149,261	121,516	87,079	87,079
3	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	223,892	182,274	130,618	130,618
4	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	298,523	243,033	174,157	174,157
5	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	379,922	309,302	221,646	221,646
6	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	461,322	375,571	269,134	269,134
7	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	542,722	441,840	316,622	316,622
8	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	624,122	508,109	364,111	364,111
9	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	705,522	574,378	411,599	411,599
10	738,250	113,343	94,764	113,343	94,764	110,511	91,932	109,516	90,937	99,948	81,369	805,469	655,747	469,908	469,908
11	748,550	114,924	96,086	114,924	96,086	112,053	93,215	111,044	92,206	101,342	82,504	906,811	738,251	529,031	529,031
12	738,250	113,343	94,764	113,343	94,764	110,511	91,932	109,516	90,937	99,948	81,369	1,006,759	819,620	587,340	587,340
13	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	1,088,159	885,889	634,828	634,828
14	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	1,169,559	952,158	682,317	682,317
15	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	1,250,958	1,018,427	729,805	729,805
16	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	1,332,358	1,084,697	777,294	777,294
17	601,250	92,309	77,178	92,309	77,178	90,003	74,872	89,193	74,062	81,400	66,269	1,413,758	1,150,966	824,782	824,782
19	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	1,488,389	1,211,724	868,321	868,321
19	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	1,563,019	1,272,482	911,861	911,861
20	551,250	84,633	70,760	84,633	70,760	82,518	68,646	81,775	67,903	74,631	60,758	1,637,650	1,333,240	955,400	955,400
<b>TOTAL</b>	<b>12,096,300</b>											<b>1,637,650</b>	<b>1,333,240</b>	<b>955,400</b>	<b>955,400</b>

<sup>a</sup>S = Summer/dry season, defined as April through November

<sup>b</sup>W = Winter/wet season, defined as December through March



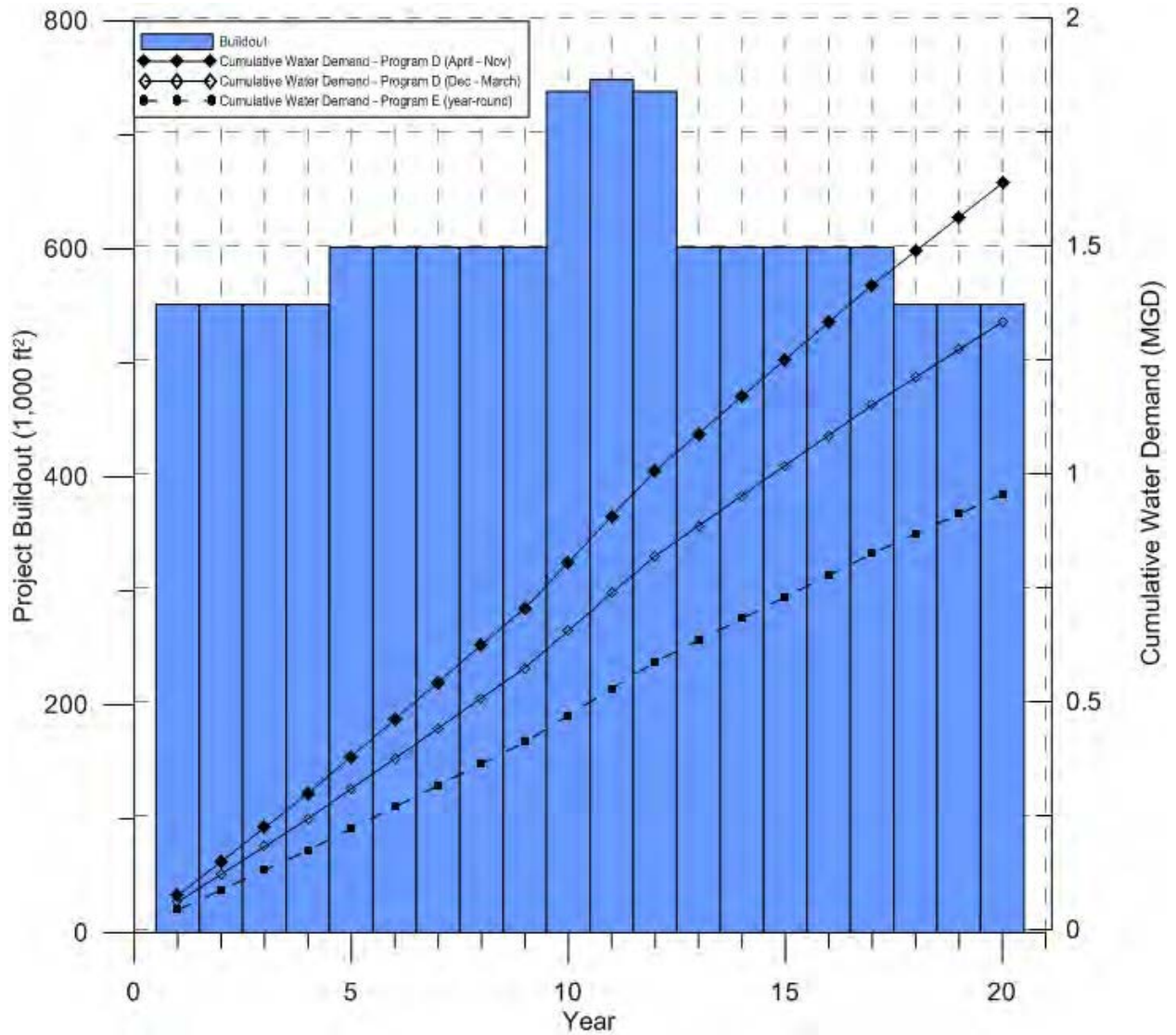


Figure 2-2. Baylands Cumulative Water Demand (under Programs D and E) as a Function of Buildout Schedule  
 Notes: (1) Program E assumes no potable water would be used for irrigation; (2) MGD is million gallons per day.

## REFERENCES

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Nanos, Brian P., 2007. Oro Valley Car Wash Uses Recycled Water. Explorer Newspaper. 31 January 2007.

URS, 2006. Investigation of Regional Water Supply Option No. 4 Technical Memorandum. Prepared for the San Francisco Public Utilities Commission. 6 March 2006.

URS, 2004. SFPUC Wholesale Customer Water Conservation Potential. Prepared for the San Francisco Public Utilities Commission.

## APPENDIX A – PROGRAM F (OFFSITE CONSERVATION OPTION) WATER USE EFFICIENCY MEASURES

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Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	1	Residential Water Surveys	0.001		
Measure	2	Residential Retrofit			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	3	Large Landscape Conservation	0.002		
Measure	4	Water Budgets		0.017	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	5	Clothes Washer Rebate	0.001		
Measure	6	Public Information Program		0.002	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	7	Commercial Water Audits	0.004		
Measure	8	Commercial ULF Toilet and Urinal Rebates	0.000		
Measure	9	Residential ULF Toilet Rebate	0.004		
Measure	10	Require 1.6 gpf toilets to be installed at the time of sale of existing buildings	0.005		
Measure	11	Home Leak Detection and Repair	0.000		
Measure	12	Rebates for 6/3 dual flush or 4 liter toilets	0.004		
Measure	13	ET Controller Rebates	0.002		
Measure	14	Xeriscape education and staff training at retail garden/irrigation supply houses			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.



Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	15	Homeowner irrigation classes	0.001		
Measure	16	Promote water efficient plantings at new homes	0.000		
Measure	17	Offer incentives for replacement of clothes washers in coin-operated laundries	0.001		
Measure	18	Incentives for retrofitting sub-metering	0.000		
Measure	19	Require sub-metering multifamily units	0.001		
Measure	20	Rebate efficient clothes washers	0.000		
Measure	21	Enforce landscape requirements for new landscaping systems (turf limitations/regulations)		0.006	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	22	Restaurant low flow spray rinse nozzles	0.001		
Measure	23	Focused water audits for hotels/motels	0.002		
Measure	24	WAVE Program (USEPA) for hotels	0.000		
Measure	25	Hotel retrofit (w/ financial assistance)	0.001		
Measure	26	Award program for water savings by business			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	27	Replace inefficient water using equipment	0.000		

Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	28	Require 0.5 gpf urinals in new buildings		0.002	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	29	Financial incentives for complying with water use budget	0.010		
Measure	30	Financial incentives for irrigation upgrades	0.001		
Measure	31	Require dedicated irrigation meters for new accounts			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	32	Water Utility/City Department water reduction goals			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM1	Direct Install of HETs			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM2	Educational and Training Programs			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM3	Rain Sensor Rebate			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM4	Replacement of Urinals			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	RM7	Commercial Water Audits (revised)			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	RM25	Hotel-Motel Retrofit (revised)			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
<b>TOTAL</b>			<b>0.041</b>	<b>0.027</b>	

NOTE: All average potential City of Brisbane water savings shown in this table are based on URS, 2006 (Investigation of Regional Water Supply Option No. 4 Technical Memorandum. Prepared for the San Francisco Public Utilities Commission)

## APPENDIX B – LANDSCAPE WATER DEMAND DATA AND CALCULATIONS

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# CLIMATE SUMMARY

## Climate and Soil Summary

**Project:** Baylands Project

**Locale:** Brisbane, CA



### Sources:

- 1) Temperature Data from: NOAA Climatology of the U.S. #20: 30-year Station Normals.  
Stations: San Francisco Downtown, Int'l AP, & Oceanside (3 Stn Avg).
- 2) Precipitation Data from: *ibid.* (average of 3 stations).
- 3) Pan Evaporation Data: Oregon Climate Service (Western Regional Climate Center);  
Station: San Francisco Int'l Airport (calculated via Mod Penman eq'n)
- 4) Evapotranspiration Data: WUCOLS III (CIMIS 1999): Avg  $ET_0$  Zones 1&2 (Coast. Fog Areas)  
(Verified w/ CIMIS Estimates for July for San Fran: 4.6" - 4.9")
- 5) Design Storm Data from: NOAA ATLAS 2 vol.11, Northern California (San Francisco).

### Mean Air Temperature<sup>1</sup>

January: 50.8 °F = **10.4 °C** (min)  
 July: 60.5 °F = **15.8 °C** (max)

### Mean Pan Evap & Precipitation (inches)<sup>2,3,4</sup>

	PanEv <sup>3</sup>	ET <sub>0</sub> <sup>4</sup>	Precip <sup>2</sup>	PE <sup>3</sup> %	ET <sub>0</sub> <sup>4</sup> %	P <sup>2</sup> %
Jan	1.7	1.09	4.44	3.1%	3.0%	21.4%
Feb	2.4	1.54	3.97	4.4%	4.3%	19.1%
Mar	3.8	2.79	3.30	7.0%	7.8%	15.9%
Apr	5.3	3.60	1.20	9.7%	10.0%	5.8%
May	6.4	4.34	0.48	11.8%	12.1%	2.3%
Jun	7.1	4.80	0.11	13.1%	13.3%	0.5%
Jul	6.7	4.81	0.03	12.3%	13.4%	0.2%
Aug	6.6	4.34	0.08	12.1%	12.1%	0.4%
Sep	5.9	3.60	0.22	10.8%	10.0%	1.0%
Oct	4.4	2.64	1.09	8.1%	7.3%	5.2%
Nov	2.4	1.50	2.80	4.4%	4.2%	13.5%
Dec	1.7	0.93	3.01	3.1%	2.6%	14.5%
<b>Annual</b>	<b>54.4</b>	<b>35.97</b>	<b>20.72</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

### Design Storm Events (inches)<sup>5</sup>

Frequency	2-y	5-y	10-y	50-y	100-y	year
Duration	24	24	24	24	24	hours
P (inch)	2.40	3.00	3.30	4.30	4.50	inches
i (in/h)	0.10	0.13	0.14	0.18	0.19	inch/hour



**Water Balance:  
Climate Data Summary**

Project: Baylands Project  
Phase: Preliminary Study Review  
File Date: 1/25/08



**1. Rainfall Probabilities**

**Table 1. Means from 1971-2000 Monthly Normals.**

Month	Days per Month	Mean (inches)	Mean Distribution Curve (%)
Jan	31	4.44	21.4%
Feb	28	3.97	19.1%
Mar	31	3.30	15.9%
Apr	30	1.20	5.8%
May	31	0.48	2.3%
Jun	30	0.11	0.5%
Jul	31	0.03	0.2%
Aug	31	0.08	0.4%
Sep	30	0.22	1.0%
Oct	31	1.09	5.2%
Nov	30	2.80	13.5%
Dec	31	3.01	14.5%
Ann	365	20.72	100.0%

**Table 2. Incomplete Gamma Distribution: based on 1971-2000 monthly normals. (Average of 3 Stations)**

Annual Precipitation Probabilites (NOAA)			
percentile	10%	50%	90%
inches	11.75	19.78	30.87

*It should be noted that rainfall probabilities do not follow a normal distribution; rather, rainfall is best modeled by the gamma or partial-gamma distribution (Table 3, above). The water balance is thus calculated for 3 possibilities: the 50th percentile, 90th percentile (wettest year in 10), & 10th percentile (driest year in 10). Note that the 50th percentile annual rainfall is not equal to the mean. This is an expected difference, and is the result of statistical modeling methods. For this water balance, the annual rainfall depth will be used, distributed according to the mean distribution curve (see Table 1 ).*

**Table 3. Precipitation based on Annual Depth x Mean Distribution Curve (inch)**

Month	10th Percentile	50th Percentile	90th Percentile
Jan	2.52	4.24	6.61
Feb	2.25	3.79	5.91
Mar	1.87	3.15	4.91
Apr	0.68	1.15	1.79
May	0.27	0.46	0.71
Jun	0.06	0.11	0.16
Jul	0.02	0.03	0.05
Aug	0.05	0.08	0.12
Sep	0.12	0.21	0.32
Oct	0.62	1.04	1.62
Nov	1.59	2.68	4.18
Dec	1.71	2.88	4.49
Annual	11.75	19.78	30.87



## 2. Planting Mix Landscape Coefficients & Irrigation Coefficients

**Table 6. Crop & Irrigation Coefficients**

Landscape Type	Species Factor (K <sub>s</sub> )	Density Factor (K <sub>d</sub> )	Micro Climate (K <sub>mc</sub> )	Landscape Coefficient (K <sub>L</sub> )	Irrigation Type	Irrigation Efficiency (IE)	Controller Reduction (CR)
<b>Turf</b>	0.8	1.0	1.0	<b>0.80</b>	spray	0.625	1.0
<b>Non-Turf</b>	0.5	1.0	1.0	<b>0.50</b>	drip	0.9	1.0

Source: Metcalf & Eddy, "Water Reuse", McGraw-Hill, 2007 & WUCOLS III (U. Cal. 1999).

## 3. Evapotranspiration (ET<sub>0</sub>) Data

**Table 7. Pan and Reference ET (inches)**

Month	Mean Pan Evap	ET <sub>0</sub> (green cvr)	Percent ET Distribution
Jan	1.70		0.0%
Feb	2.40		0.0%
Mar	3.80		0.0%
Apr	5.30	3.60	12.1%
May	6.40	4.34	14.6%
Jun	7.10	4.80	16.2%
Jul	6.70	4.81	16.2%
Aug	6.60	4.34	14.6%
Sep	5.90	3.60	12.1%
Oct	4.40	2.64	8.9%
Nov	2.40	1.50	5.1%
Dec	1.70		0.0%
<b>Annual</b>	<b>54.40</b>	<b>29.63</b>	<b>100.0%</b>

PE from: Oregon Climate Service (Western Reg. Clim. Ctr.); Stn: San Francisco Int'l Airport.

ET<sub>0</sub> from: WUCOLS III (U. Cal. 1999 - CIMIS Data): Average ET<sub>0</sub> Zones 1&2 (Coast. Fog Areas).

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**4. Net Demand = (ET<sub>0</sub> x K<sub>L</sub> x CE) / IE**



**Adjust Demand for Rainfall?** **no** (no if ET<sub>0</sub> takes into account rainfall already)

**Effective Rainfall Use by Plants:** **0%** (typ. 40%-60%, unless ET<sub>0</sub> takes into account rainfall)

**Design Rainfall Use by Plants:** **0%**

**Table 8A. Average-Year Demand (inches)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0.00	0.00	
Feb	0.00	0.00	
Mar	0.00	0.00	
Apr	4.61	2.00	
May	5.56	2.41	
Jun	6.14	2.67	
Jul	6.16	2.67	
Aug	5.56	2.41	
Sep	4.61	2.00	
Oct	3.38	1.47	
Nov	1.92	0.83	
Dec	0.00	0.00	
<b>Annual</b>	<b>37.93</b>	<b>16.46</b>	

**Table 8B. Rainfall Adj. Avg Demand (in)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0.00	0.00	
Feb	0.00	0.00	
Mar	0.00	0.00	
Apr	4.61	2.00	
May	5.56	2.41	
Jun	6.14	2.67	
Jul	6.16	2.67	
Aug	5.56	2.41	
Sep	4.61	2.00	
Oct	3.38	1.47	
Nov	1.92	0.83	
Dec	0.00	0.00	
<b>Annual</b>	<b>37.93</b>	<b>16.46</b>	

**Table 8C. Average Demand (gpd/acre)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0	0	
Feb	0	0	
Mar	0	0	
Apr	4,171	1,810	
May	4,866	2,112	
Jun	5,561	2,414	
Jul	5,393	2,341	
Aug	4,866	2,112	
Sep	4,171	1,810	
Oct	2,960	1,285	
Nov	1,738	754	
Dec	0	0	
<b>Annual</b>	<b>2,821</b>	<b>1,225</b>	

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

5. Landscaping Mix By Locale



Table 11. Landscaping Mix by Category

Landscaping Area	Planted Acres	% Planted Turf	% Planted Non-Turf	% Planted
Parking Lot Turf Landscape	7.78	100.00%	0%	100%
Right-of-Way Turf Landscape	18.26	100.00%	0%	100%
Open Space Landscape	25.1	76.49%	23.51%	100%
Open Area Landscape	29.9	34.78%	65.22%	100%
<b>Total Acres:</b>	<b>81.04</b>	<b>69%</b>	<b>31%</b>	<b>100%</b>

6. Annual Water Demand

Table 12. Summary of Demand

Landscaping Area	Avg Yearly Demand (acre-feet)
Parking Lot Turf Landscape	24.6
Right-of-Way Turf Landscape	57.7
Open Space Landscape	68.8
Open Area Landscape	59.6
	-
	-
	-
	-
	-
<b>Total Demand (acre-feet per year)</b>	<b>210.7</b>
<b>Total Demand (million gallons/yr)</b>	<b>68.65</b>

Table 13. Summary of Landscaping

	Acres of Parking Landscape (10% of footprint)	Acres of Right-of-Way Landscape (9 sf/tree)	Acres of Open "Space"	Acres of Open "Area"	Total Acres of Landscape Type
total acres	7.78	18.26	25.1	29.9	81.04
Turf acres:	7.78	18.26	19.2	10.4	55.64
%:	100.00%	100.00%	76.49%	34.78%	68.66%
H <sub>2</sub> O AFY:	24.59	57.71	60.68	32.87	175.85
Non-turf ac:	0	0	5.9	19.5	25.4
%:	0.00%	0.00%	23.51%	65.22%	31.34%
H <sub>2</sub> O AFY:	0.00	0.00	8.09	26.75	34.84



LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**Table 14. Summary of Tree Assumptions**



	# Trees in Parking Landscape (1 tree per 6 spaces)	# Trees in Right-of-Way (25 ft tree spacing)	# Trees in Open Space Turf	# Trees in Open Area Turf	Total Acres of Landscape Type
# Trees:	2,446	4,096	0	0	6,542
Water Use:	included above for turf & non plantings	included above for turf & non plantings	0 but would be incl'd in above est.	0 but would be incl'd in above est.	included above for turf & non plantings

**Table 15. Summary of ET<sub>0</sub>/K<sub>L</sub> Method Landscape Demand**

	Landscape Demand (acre-ft/yr) (Apr - Nov)	Landscape Demand (mil.gal/yr) (Apr - Nov)	Peak (July) gpd/acre turf	Annual (Apr - Nov) gpd/acre turf	Peak (July) gpd/acre non-turf	Annual (Apr - Nov) gpd/acre non-turf
ET <sub>0</sub> /K <sub>L</sub> Method	<b>210.7</b>	68.65	5,393	2,821	2,341	1,225

## 7. Landscape Coefficient Method Explanation



$ET_o$  represents the estimated water demand for a reference crop, typically green groundcover.

Landscaping demand is estimated using the widely accepted Landscape Coefficient Method, which is outlined in Metcalf & Eddy, "Water Reuse", McGraw-Hill, 2007, "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California", and the USGBC LEED NC-2.2 Reference Manual.

$$\text{Gross Demand} = ET_o \times K_L$$

where:  $ET_o$  = Reference Evapotranspiration for the Region, inches

$K_L$  = Landscape Coefficient

$$\text{Landscape Coefficient } K_L = k_s \times k_d \times k_{mc}$$

$k_s$  = Species factor, which takes into account the different water requirements of different species. Adequately green landscapes can be maintained at about 50% of reference  $ET$ , therefore the average  $k_s$  value is 0.5. Truly xeric landscapes that require no additional water after establishment have a  $k_s = 0$ .

$k_d$  = Density factor, accounting for number of plants and total leaf area of a landscape. Sparsely planted areas will have a lower  $ET$  rate than densely planted areas.

$k_{mc}$  = Microclimate factor, accounting for landscape variation in temperature, wind exposure, and humidity. The average  $k_{mc}$  is 1.0. Higher values occur in landscapes surrounded by heat-absorbing or reflective surfaces, or where wind exposure is unusually high. Examples of high  $k_{mc}$  areas are parking lots, west sides of buildings, west and south slopes, medians, and areas experiencing wind-tunneling. Low  $k_{mc}$  areas are shady areas, areas protected from wind, north sides of buildings, courtyards, areas under overhangs, and the north sides of slopes.

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**Typical Landscape Coefficient Factors**



Vegetation Type	Species Factor $k_s$		
	low	average	high
Trees	0.2	0.5	0.9
Shrubs	0.2	0.5	0.7
Groundcovers	0.2	0.5	0.7
Tree, Shrub, Groundcover: Mixed	0.2	0.5	0.9
Turfgrass	0.6	0.7	0.8

Vegetation Type	Density Factor $k_d$		
	low	average	high
Trees	0.5	1.0	1.3
Shrubs	0.5	1.0	1.1
Groundcovers	0.5	1.0	1.1
Tree, Shrub, Groundcover: Mixed	0.6	1.1	1.3
Turfgrass	0.6	1.0	1.0

Vegetation Type	Microclimate Factor $k_{mc}$		
	low	average	high
Trees	0.5	1.0	1.4
Shrubs	0.5	1.0	1.3
Groundcovers	0.5	1.0	1.2
Tree, Shrub, Groundcover: Mixed	0.5	1.0	1.4
Turfgrass	0.8	1.0	1.2

**Net Demand = (Gross Demand / IE) x CE**

where: IE = Irrigation Efficiency for the project irrigation, as shown in the next table.

CR = Controller Reduction: all major irrigation projects should use a high-efficiency controller, such as an ET-controller.

For the purposes of initial estimation of residential landscaping, CE is assumed to be 1.0. For golf courses which will be using an ET-controller or similar controls, CE could be assumed to be 0.75.

**Typical Irrigation Efficiencies**

Irrigation Type	Irrigation Efficiency
Sprinkler	0.625
Drip	0.90

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Prepared for: Universal Paragon Corporation, California

Project Title: Brisbane Baylands Project

Project No: 134535-001-\*\*\*\*

Technical Memorandum No. 1

Subject: Baylands Water Use Projections and Water Balance for Entertainment Land Use Scenario

Date: March 19, 2013

To: Jonathan Scharfman, Land Development Director

From: Tom Birmingham, P.E., Senior Engineer

Copy to: Jeff Burnham, E.I.T., LEED AP

Prepared by: \_\_\_\_\_

Jenny Gain, P.E., Senior Engineer

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*Limitations:*

*This document was prepared solely for Universal Paragon Corporation (UPC) in accordance with professional standards at the time the services were performed and in accordance with the contract between UPC and Brown and Caldwell dated January 8, 2008. This document is governed by the specific scope of work authorized by UPC; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by UPC and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.*



## 1. INTRODUCTION

---

This Technical Memorandum 1 (Tech Memo 1) includes the water use projections, balance, and savings plan for the Baylands development in Brisbane, California planned by Universal Paragon Corporation (UPC). Also included are the methods and assumptions used to develop the water use projections based on the “entertainment land use scenario”.

### 1.1 Scope of Work

This Tech Memo 1 is intended to fulfill the Task 1 (“Create a Comprehensive Water Balance”) scope of work, including the following subtasks:

#### 1.1.1 Task 1 - Water Demand Forecast and Balance

Based on the most recent project development provided by UPC (square footage by type of use), develop a specific, comprehensive water balance for the Brisbane Baylands Project. Forecast water demands for the project based on the current projections of commercial, residential, retail, and office space. We will use our experience with area developments and AWWA standards to determine the water use for each. We will coordinate with Wallace Roberts & Todd, LLC (WRT) to determine the percentage of landscaped area’s with high, medium, and low irrigation demands. Brown and Caldwell will engage Natural Systems International, Inc to assist in completing this task.

#### 1.1.2 Task 2 - Water Savings Plan

Brown and Caldwell will create an aggressive but practical water savings plan for the Brisbane Baylands Project. In 2004, URS, the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA) completed a report detailing a three-tiered water conservation plan. The report used Programs A, B, and C for water conservation, with Program A conforming with the current Uniform Plumbing Code, and Program C using the most aggressive conservation measures. In 2006, BC worked with BAWSCA to update that report. We will use our knowledge of the report to develop water use plans for the Baylands Project. We will also update projections for additional savings possible in Brisbane and Guadalupe Valley Municipal Improvement District (GVMID) if Program C is implemented and an order-of-magnitude estimated cost of that implementation as a possible offset to new water demands from the Baylands. Beyond Program C, evaluate how using recycled water for irrigation will reduce overall water demand. Beyond Program C, evaluate how using recycled water with dual piping will lower the water demands beyond Program C. For this option, in conjunction with Task 3 below, determine if onsite water use would generate sufficient effluent for recycled water needs or whether some raw sewage would need to be diverted from the City/GVMID raw sewage discharge to the San Francisco Southeast Treatment Plant. Brown and Caldwell will engage Natural Systems International, Inc to assist in completing this task.

#### 1.1.3 Task 3 - Draft Technical Memorandum

Brown and Caldwell will prepare a draft technical memorandum (estimated at five pages of text plus supporting tables) summarizing Task 1 and submit five copies to UPC for review and comment. We will address one set of collated comments, and submit 10 copies (PDF format) of a final draft for review by the City. Meeting with City staff once is included to review the draft and receive one set of collated comments and answer questions. We will respond to questions and finalize the tech memo.

## 2. WATER USE PROJECTIONS AND BALANCE

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The water use projections and balance along with methods and assumptions are included in this section.

### 2.1 Methods

#### 2.1.1 Water Savings Programs

Water use projections were developed for five different scenarios (Table 2-1). To the extent that is economically viable, the maximum water savings will be sought through selection of either one of the water savings programs described in this section or a combination of the programs.

Within Table 2-1, Program A serves as a baseline water demand. The water demand evaluation conducted for the Baylands development includes the water savings under each of three programs (i.e., Programs A, B, and C), assuming that the following indoor water conservation measures are implemented, as appropriate based on end uses for the water, as follows:

##### Program A

- Public Information

##### Program B

- Public Information
- Require 0.5 gal/flush Urinals in New Commercial, Industrial, Institutional (CII) Buildings
- Commercial water audits

##### Program C

- All components of Program B
- Water Audits Hotels-Motels
- WAVE Program (US EPA) for Hotels

In addition to the three programs summarized above, more aggressive conservation is incorporated into three additional demand projection scenarios (Programs D, E and F), which are further described below.

##### Program C

In addition to the packages of water conservation measures evaluated in the SFPUC study, another program (Program D) was developed to incorporate more aggressive water conservation measures in the Baylands development. The measures included in Program D include those mentioned in Program C (above), and additional measures are as follows:

- All components of Program C
- High Efficiency Toilets (1.28 gpf or less) or Dual-Flush Toilets (0.8 gpf half-flush and 1.6 gpf full-flush)
- Automatic sinks
- Waterless urinals

In addition to the three programs summarized above, more aggressive conservation is incorporated into three additional demand projection scenarios (Programs D, E and F), which are further described below.

## Program D

Program E includes recycling of all wastewater generated onsite. After wastewater is treated, polished through constructed wetlands, filtered, and disinfected, it would be recycled onsite for irrigation and for flushing toilets and urinals. The water recycling would be achieved through dual plumbing of the water systems throughout the property. The components of Programs C and D are assumed to be implemented in Program E, with the exception that more costly higher efficiency measures would not be implemented if they would be supplied by recycled water in Program E. Such measures include high efficiency and dual-flush toilets and waterless urinals. The components of Program E are as follows:

- All components of Program D (except for high efficiency and dual-flush toilets and waterless urinals)
- Onsite wastewater treatment and recycling
- Dual-plumbing for potable and recycled water

## Program F (Offsite Conservation Option, Appendix A)

Another option that was considered includes the implementation of water conservation measures within the City of Brisbane but outside of the Baylands development. The program components considered under this option (Program F – Offsite Conservation Option) include conservation measures that are not cost effective for the City to implement but that would result in water savings. The purpose in implementing such measures would be to pursue a “water credit” from the City by offsetting its current water demand through more intensive water use efficiency.

In 2006, the SFPUC prepared the “Investigation of Regional Water Supply Option No. 4” (RWSO4) technical memorandum to determine the potential for demand reductions related to regional conservation programs. The RWSO4 included the evaluation of three potential regional conservation programs (Programs R1, R2, and R3). All water use efficiency measures evaluated in the RWSO4 and their respective water savings for the City of Brisbane are included in Appendix A.

### 2.1.2 Outdoor Water Savings Programs

Programs A through D assume the use of potable water for landscape irrigation. Program E assumes that recycled water would be used for landscape applications to reduce potable water demands.

### 2.1.3 Calculations

Calculations were performed using a number of assumptions, as further described in Section 2.2. Most calculations were simple conversions of units and occupancy rates.

The most involved of the calculations was the projection for landscape water demand, which was performed by Natural Systems International (NSI). The irrigation requirement was calculated using the Landscape Coefficient Method, as follows:

- **Gross Demand = ETo x KL**

where: ETo = Reference Evapotranspiration for the Region, inches

KL = Landscape Coefficient

- **Landscape Coefficient KL = ks x kd x kmc**

where: ks = Species factor, which takes into account the different water requirements of different species. Adequately green landscapes can be maintained at about 50 percent of

reference ET, therefore the average ks value is 0.5. Truly xeric landscapes that require no additional water after establishment have a ks = 0.

kd = Density factor, accounting for number of plants and total leaf area of a landscape. Sparsely planted areas will have a lower ET rate than densely planted areas.

kmc = Microclimate factor, accounting for landscape variation in temperature, wind exposure, and humidity. The average kmc is 1.0. Higher values occur in landscapes surrounded by heat-absorbing or reflective surfaces, or where wind exposure is unusually high. Examples of high kmc areas are parking lots, west sides of buildings, west and south slopes, medians, and areas experiencing wind-tunneling. Low kmc areas are shady areas, areas protected from wind, north sides of buildings, courtyards, areas under overhangs, and the north sides of slopes.

- **Net Demand = (Gross Demand / IE) x CE**

where: IE = Irrigation Efficiency, for the project irrigation type, as shown in the following table.

*Table 2-1. Irrigation Efficiency by Type*

Irrigation Type	Irrigation Efficiency
<i>Sprinkler</i>	<i>0.625</i>
<i>Drip</i>	<i>0.90</i>

CE = Controller Efficiency: all major irrigation projects should use a high-efficiency controller, such as an ET-controller. For the purposes of initial estimation of residential landscaping, CE is assumed to be 1.0. For golf courses which will be using an ET-controller or similar controls, CE is assumed to be 0.75, until design is finalized enough to apply direct calculation of likely CE using a daily water balance based on historical rainfall, using daily records or generated daily gamma distributions.

The data and calculations that were used for the landscape water demand are included in Appendix B.

### 2.1.4 Schedule

It is assumed that the construction of the Baylands development will be phased over approximately 20 years, starting in approximately 2014. The anticipated phased construction will result in a phased water demand for the property. The property buildout in square footage added per year is anticipated to proceed as shown in Figure 2-1.



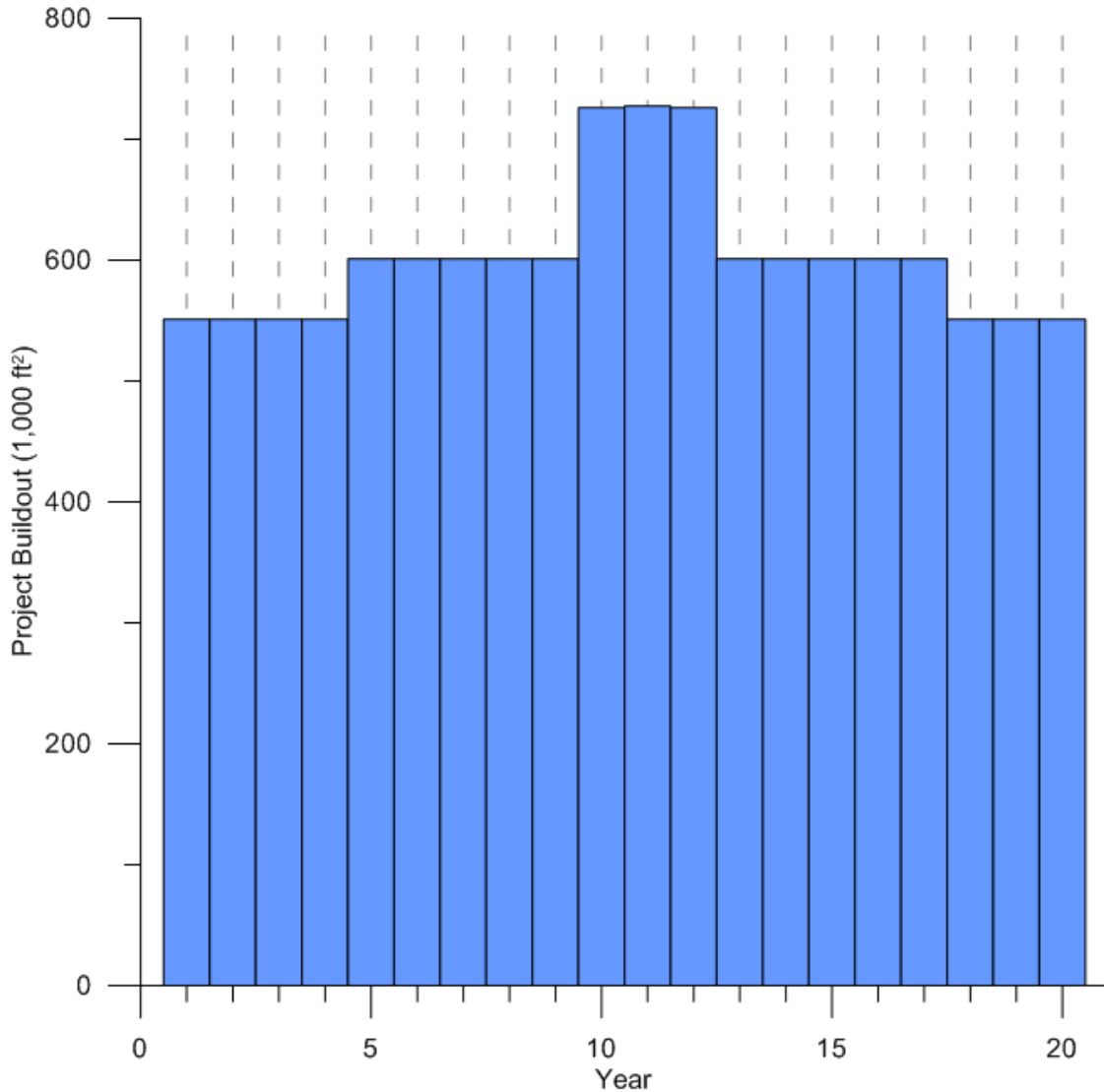


Figure 2-1. Baylands Development Buildout by Year

## 2.2 Assumptions

A number of assumptions had to be made to estimate water demand for the Baylands property. Assumptions by land use are as follows:

- **Cinema** – The cinema is assumed to have 2,300 seats with an occupancy rate of 75 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Arena** – The arena is assumed to contain 19,000 seats with an occupancy rate of 80 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Residential** – Residential water use is calculated for one bedroom, two bedroom, and three bedroom flats and townhomes, each assumed to have 85 percent occupancy. One bedroom units are assumed to house 1.5 persons per unit, two bedroom units are assumed to house 3 persons per unit, and three bedroom unites are assumed to house 4.5 persons per unit.. The number of residential flats includes:

- One bedroom flats: 1,580
- Two bedroom flats: 1,975
- Three bedroom flats: 395

The number of residential townhomes includes:

- Two bedroom townhomes: 242
- Three bedroom townhomes: 242

Outdoor water demands are not included in the residential use, but are included in the irrigation demand.

- **Office and Institutional** – The office and institutional land uses are assumed to be occupied five days per week (as included in the annual demand). Cooling water demand is estimated as 10 percent of the total water use.
- **Research and Development (R&D)** – It is assumed that there are 1,600 employees. The type of R&D being conducted could potentially drastically change the water demand. For this scenario, we assumed the R&D facility would comprise of 75% office space and 25% R&D. The water demand projection for the R&D portion is based on water use at an existing biotech facility. It is assumed in the annual demand that the R&D facility is operational 365 days a year (i.e., an occupancy rate of 100 percent). Cooling water demand is estimated as 10 percent of the total water use.
- **Retail** – It is assumed in the annual demand that the retail uses are operational 365 days a year (i.e., an occupancy rate of 100 percent). Cooling water demand is estimated as 10 percent of the total water use.
- **Entertainment Theater** – The entertainment theater is assumed to have 9,700 seats with an 80 percent occupancy rate. Cooling water demand is estimated as 10 percent of the total water use.
- **Hotel** – It is assumed that there are 360 one bedroom units and 359 two bedroom units. Occupancy rates for the one bedroom and two bedroom units are estimated at 1.5 persons per unit and 3 persons per unit, respectively. It is also assumed that the one bedroom units use 110 gpd and that the two bedroom units use 220 gpd for indoor uses. The hotel restaurant will have a water demand of 35 gpd for each person staying at the hotel, which is embedded within the water demand per hotel room. Using the assumed hotel room occupancy rates of 1.5 persons per unit and 3 persons per unit for one and two bedroom hotel rooms, respectively, the water rates are 162 gpd/room for one bedroom and 325 gpd/room for two bedroom. The hotel is assumed to have an occupancy rate of 75 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Conference Hall** – The conference hall is assumed to have a capacity of 5,000 persons per day with an occupancy rate of 80 percent. Cooling water demand is estimated as 10 percent of the total water use.
- **Irrigation** – Assumptions related to irrigation include as made by NSI include that the water demand reflects an “average” (50th percentile) year. Density and microclimate coefficients (kd and kmc) of 1.0 were used. For likely ks (species) values, the value of 0.8 was used for turf (adequate maintenance of “green” for cool-season turfs), while the value 0.5 was used for non-turf (average for mixed trees, shrubs, and ground-cover). A default irrigation efficiency of 62.5 percent was used for spray/sprinkler (turf) and 90 percent for drip irrigation (non-turf).

## 2.3 Results

### 2.3.1 Water Use Projections

The results of the water demand are included in Tables 2-2 and 2-3. In addition, the amount of water used annually through the phased construction of the Baylands development is included in Table 2-4.

If Program F were considered a viable option for pursuing alternative water supply through funding and supporting the implementation of water use efficiency measures in the City of Brisbane, a water credit of at least 41,000 gpd would be available (Appendix A). It should be noted that water savings information was not available for each of the conservation measures listed in Appendix A; so, the water credit estimation is conservative and could be refined in the future if deemed appropriate.

Figure 2-2 depicts the cumulative water demands under Programs D and E as a function of the phased Baylands development construction. (Note that Program E assumes that no potable water is used for irrigation.)

The irrigation calculations give a peak July demand of 5,393 gpd for turf (including trees planted in turf) and 2,341 gpd for irrigated non-turf. Average annual (April – November) values are less, at 2,821 gpd for turf and 1,225 gpd for non-turf.

Table 2-2. Water Demand Projections under Various Water Savings Programs for the Entertainment Land Use Scenario

Use	Area (sf)	Rate		Units		Program A (gpd)		Program B (gpd)		Program C (gpd)		Program D (gpd)		Program E (gpd)	
						S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>
Cinema (Multiplex)	71,000	3	gpd/seat	2,300	seats	5,690	5,690	5,120	5,120	5,120	5,120	3,590	3,590	1,310	1,310
Arena	630,100	5	gpd/seat	19,000	seats	83,600	83,600	75,240	75,240	75,240	75,240	52,670	52,670	19,230	19,230
Residential (Total)	5,150,400														
Condos/Apartments	4,351,800														
Residential Flats - 1 BR		110	gpd/unit	1,580	units	162,500	162,500	162,500	162,500	162,500	162,500	152,750	152,750	118,630	118,630
Residential Flats - 2 BR		220	gpd/unit	1,975	units	406,260	406,260	406,260	406,260	406,260	406,260	381,880	381,880	296,570	296,570
Residential Flats - 3 BR		330	gpd/unit	395	units	121,880	121,880	121,880	121,880	121,880	121,880	114,560	114,560	88,970	88,970
Townhomes	798,600														
Residential Townhomes - 2 BR		220	gpd/unit	242	units	49,780	49,780	49,780	49,780	49,780	49,780	46,790	46,790	36,340	36,340
Residential Townhomes - 3 BR		330	gpd/unit	242	units	74,670	74,670	74,670	74,670	74,670	74,670	70,190	70,190	54,510	54,510
Office / Institutional / Public / Civic / Cultural	2,391,300	75	gpd/1000 sq ft	--	--	187,420	187,420	168,680	168,680	168,680	168,680	126,510	126,510	43,110	43,110
R&D	2,599,200			1,600	employees										
Office	1,949,400	75	gpd/1000 sq ft			152,780	152,780	137,510	137,510	137,510	137,510	103,130	103,130	35,140	35,140
Lab	649,800	10,000	gpd/acre			155,890	155,890	155,890	155,890	155,890	155,890	155,890	155,890	155,890	155,890
Retail	283,400	50	gpd/1000 sq ft	--	--	15,590	15,590	14,030	14,030	14,030	14,030	10,520	10,520	3,590	3,590
Theater	337,200	3	gpd/seat			25,610	25,610	23,050	23,050	23,050	23,050	17,290	17,290	5,890	5,890
Hotel	513,300														
Hotel - 1 BR		162	gpd/room	360	rooms	48,110	48,110	48,110	48,110	37,530	37,530	35,280	35,280	35,120	35,120
Hotel - 2 BR		325	gpd/room	359	rooms	96,260	96,260	96,260	96,260	75,080	75,080	70,580	70,580	70,270	70,270
Conference Hall	73,500	15	gpd/person	5,000	persons	66,000	66,000	59,400	59,400	59,400	59,400	44,550	44,550	15,180	15,180
<b>Development Subtotal</b>	<b>12,049,400</b>					<b>1,652,040</b>	<b>1,652,040</b>	<b>1,598,380</b>	<b>1,598,380</b>	<b>1,566,620</b>	<b>1,566,620</b>	<b>1,386,180</b>	<b>1,386,180</b>	<b>979,750</b>	<b>979,750</b>
Irrigation		82.81 acres (3,607,204 sq. ft.) (See Section 2.3.)		--	--	304,410	0	304,410	0	304,410	0	304,410	0	0	0
<b>Irrigation Subtotal</b>						<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>304,410</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>12,049,400</b>					<b>1,956,450</b>	<b>1,652,040</b>	<b>1,902,790</b>	<b>1,598,380</b>	<b>1,871,030</b>	<b>1,566,620</b>	<b>1,690,590</b>	<b>1,386,180</b>	<b>979,750</b>	<b>979,750</b>

<sup>a</sup>S = Summer/dry season, defined as April through November

<sup>b</sup>W = Winter/wet season, defined as December through March

Table 2-3. Total Water Demand Projections under Various Water Savings Programs for the Entertainment Land Use Scenario (in acre-feet per year)

Program A	Program B	Program C	Program D	Program E
2,018	1,964	1,928	1,740	1,084



Table 2-4. Total Baylands Annual Water Demand with Phased Construction

Year	Area (sf)	Program A (gpd)		Program B (gpd)		Program C (gpd)		Program D (gpd)		Program E (gpd)		Cumulative Demand Based on Program D for Summer Season <sup>a</sup> (gpd)	Cumulative Demand Based on Program D for Winter Season <sup>b</sup> (gpd)	Cumulative Demand Based on Program E for Summer Season <sup>a</sup> (gpd)	Cumulative Demand Based on Program E for Winter Season <sup>b</sup> (gpd)
		S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>	S <sup>a</sup>	W <sup>b</sup>				
1	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	77,329	63,405	44,815	44,815
2	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	154,658	126,810	89,629	89,629
3	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	231,987	190,215	134,444	134,444
4	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	309,316	253,620	179,258	179,258
5	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	393,661	322,777	228,139	228,139
6	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	478,005	391,935	277,019	277,019
7	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	562,349	461,092	325,899	325,899
8	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	646,693	530,249	374,779	374,779
9	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	731,038	599,406	423,659	423,659
10	726,150	117,904	99,559	117,904	99,559	114,671	96,325	112,757	94,411	101,882	83,537	832,920	682,943	482,703	482,703
11	727,550	118,132	99,751	118,132	99,751	114,892	96,511	112,974	94,593	102,079	83,698	934,999	766,642	541,861	541,861
12	726,150	117,904	99,559	117,904	99,559	114,671	96,325	112,757	94,411	101,882	83,537	1,036,881	850,179	600,905	600,905
13	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	1,121,226	919,336	649,785	649,785
14	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	1,205,570	988,493	698,666	698,666
15	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	1,289,914	1,057,650	747,546	747,546
16	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	1,374,259	1,126,808	796,426	796,426
17	601,150	97,608	82,421	97,608	82,421	94,931	79,744	93,347	78,159	84,344	69,157	1,458,603	1,195,965	845,306	845,306
19	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	1,535,932	1,259,370	890,121	890,121
19	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	1,613,261	1,322,775	934,935	934,935
20	551,150	89,490	75,566	89,490	75,566	87,035	73,111	85,583	71,659	77,329	63,405	1,690,590	1,386,180	979,750	979,750
<b>TOTAL</b>	<b>12,049,400</b>											<b>1,690,590</b>	<b>1,386,180</b>	<b>979,750</b>	<b>979,750</b>

<sup>a</sup>S = Summer/dry season, defined as April through November

<sup>b</sup>W = Winter/wet season, defined as December through March

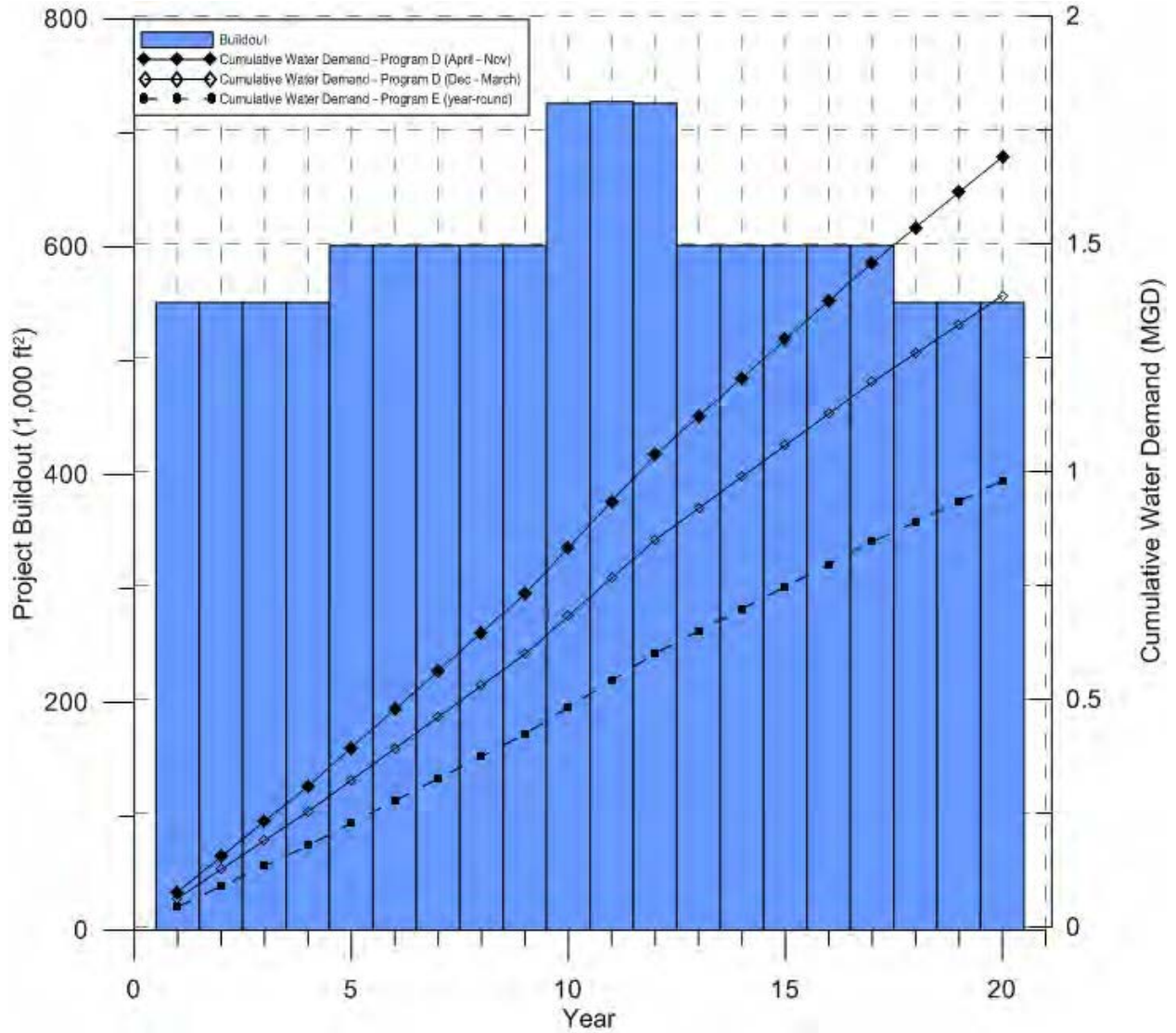


Figure 2-2. Baylands Cumulative Water Demand (under Programs D and E) as a Function of Buildout Schedule  
 Notes: (1) Program E assumes no potable water would be used for irrigation; (2) MGD is million gallons per day.

## REFERENCES

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Nanos, Brian P., 2007. Oro Valley Car Wash Uses Recycled Water. Explorer Newspaper. 31 January 2007.

URS, 2006. Investigation of Regional Water Supply Option No. 4 Technical Memorandum. Prepared for the San Francisco Public Utilities Commission. 6 March 2006.

URS, 2004. SFPUC Wholesale Customer Water Conservation Potential. Prepared for the San Francisco Public Utilities Commission.

## APPENDIX A – PROGRAM F (OFFSITE CONSERVATION OPTION) WATER USE EFFICIENCY MEASURES

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Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	1	Residential Water Surveys	0.001		
Measure	2	Residential Retrofit			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	3	Large Landscape Conservation	0.002		
Measure	4	Water Budgets		0.017	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	5	Clothes Washer Rebate	0.001		
Measure	6	Public Information Program		0.002	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	7	Commercial Water Audits	0.004		
Measure	8	Commercial ULF Toilet and Urinal Rebates	0.000		
Measure	9	Residential ULF Toilet Rebate	0.004		
Measure	10	Require 1.6 gpf toilets to be installed at the time of sale of existing buildings	0.005		
Measure	11	Home Leak Detection and Repair	0.000		
Measure	12	Rebates for 6/3 dual flush or 4 liter toilets	0.004		
Measure	13	ET Controller Rebates	0.002		
Measure	14	Xeriscape education and staff training at retail garden/irrigation supply houses			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.

Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	15	Homeowner irrigation classes	0.001		
Measure	16	Promote water efficient plantings at new homes	0.000		
Measure	17	Offer incentives for replacement of clothes washers in coin-operated laundries	0.001		
Measure	18	Incentives for retrofitting sub-metering	0.000		
Measure	19	Require sub-metering multifamily units	0.001		
Measure	20	Rebate efficient clothes washers	0.000		
Measure	21	Enforce landscape requirements for new landscaping systems (turf limitations/regulations)		0.006	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	22	Restaurant low flow spray rinse nozzles	0.001		
Measure	23	Focused water audits for hotels/motels	0.002		
Measure	24	WAVE Program (USEPA) for hotels	0.000		
Measure	25	Hotel retrofit (w/ financial assistance)	0.001		
Measure	26	Award program for water savings by business			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	27	Replace inefficient water using equipment	0.000		

Conservation Program Measure		Measure Description	Avg. Potential City of Brisbane Water Savings (MGD)		Notes
			Included in Program F	Not Included in Program F	
Measure	28	Require 0.5 gpf urinals in new buildings		0.002	Included in Program B from the SFPUC Wholesale Customer Water Conservation Potential tech memo (URS, 2004). Assumed to be included in the City of Brisbane's water conservation program.
Measure	29	Financial incentives for complying with water use budget	0.010		
Measure	30	Financial incentives for irrigation upgrades	0.001		
Measure	31	Require dedicated irrigation meters for new accounts			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	32	Water Utility/City Department water reduction goals			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM1	Direct Install of HETs			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM2	Educational and Training Programs			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM3	Rain Sensor Rebate			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	NM4	Replacement of Urinals			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	RM7	Commercial Water Audits (revised)			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
Measure	RM25	Hotel-Motel Retrofit (revised)			Savings for this measure were not quantified in the SFPUC RWSO4 tech memo.
<b>TOTAL</b>			<b>0.041</b>	<b>0.027</b>	

NOTE: All average potential City of Brisbane water savings shown in this table are based on URS, 2006 (Investigation of Regional Water Supply Option No. 4 Technical Memorandum. Prepared for the San Francisco Public Utilities Commission)

## APPENDIX B – LANDSCAPE WATER DEMAND DATA AND CALCULATIONS

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# CLIMATE SUMMARY

## Climate and Soil Summary

**Project:** Baylands Project

**Locale:** Brisbane, CA



### Sources:

- 1) Temperature Data from: NOAA Climatology of the U.S. #20: 30-year Station Normals.  
Stations: San Francisco Downtown, Int'l AP, & Oceanside (3 Stn Avg).
- 2) Precipitation Data from: *ibid.* (average of 3 stations).
- 3) Pan Evaporation Data: Oregon Climate Service (Western Regional Climate Center);  
Station: San Francisco Int'l Airport (calculated via Mod Penman eq'n)
- 4) Evapotranspiration Data: WUCOLS III (CIMIS 1999): Avg  $ET_0$  Zones 1&2 (Coast. Fog Areas)  
(Verified w/ CIMIS Estimates for July for San Fran: 4.6" - 4.9")
- 5) Design Storm Data from: NOAA ATLAS 2 vol.11, Northern California (San Francisco).

### Mean Air Temperature<sup>1</sup>

January: 50.8 °F = **10.4 °C** (min)  
 July: 60.5 °F = **15.8 °C** (max)

### Mean Pan Evap & Precipitation (inches)<sup>2,3,4</sup>

	PanEv <sup>3</sup>	ET <sub>0</sub> <sup>4</sup>	Precip <sup>2</sup>	PE <sup>3</sup> %	ET <sub>0</sub> <sup>4</sup> %	P <sup>2</sup> %
Jan	1.7	1.09	4.44	3.1%	3.0%	21.4%
Feb	2.4	1.54	3.97	4.4%	4.3%	19.1%
Mar	3.8	2.79	3.30	7.0%	7.8%	15.9%
Apr	5.3	3.60	1.20	9.7%	10.0%	5.8%
May	6.4	4.34	0.48	11.8%	12.1%	2.3%
Jun	7.1	4.80	0.11	13.1%	13.3%	0.5%
Jul	6.7	4.81	0.03	12.3%	13.4%	0.2%
Aug	6.6	4.34	0.08	12.1%	12.1%	0.4%
Sep	5.9	3.60	0.22	10.8%	10.0%	1.0%
Oct	4.4	2.64	1.09	8.1%	7.3%	5.2%
Nov	2.4	1.50	2.80	4.4%	4.2%	13.5%
Dec	1.7	0.93	3.01	3.1%	2.6%	14.5%
<b>Annual</b>	<b>54.4</b>	<b>35.97</b>	<b>20.72</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

### Design Storm Events (inches)<sup>5</sup>

Frequency	2-y	5-y	10-y	50-y	100-y	year
Duration	24	24	24	24	24	hours
P (inch)	2.40	3.00	3.30	4.30	4.50	inches
i (in/h)	0.10	0.13	0.14	0.18	0.19	inch/hour

**Water Balance:  
Climate Data Summary**

Project: Baylands Project  
Phase: Preliminary Study Review  
File Date: 1/25/08



**1. Rainfall Probabilities**

**Table 1. Means from 1971-2000 Monthly Normals.**

Month	Days per Month	Mean (inches)	Mean Distribution Curve (%)
Jan	31	4.44	21.4%
Feb	28	3.97	19.1%
Mar	31	3.30	15.9%
Apr	30	1.20	5.8%
May	31	0.48	2.3%
Jun	30	0.11	0.5%
Jul	31	0.03	0.2%
Aug	31	0.08	0.4%
Sep	30	0.22	1.0%
Oct	31	1.09	5.2%
Nov	30	2.80	13.5%
Dec	31	3.01	14.5%
Ann	365	20.72	100.0%

**Table 2. Incomplete Gamma Distribution: based on 1971-2000 monthly normals. (Average of 3 Stations)**

Annual Precipitation Probabilites (NOAA)			
percentile	10%	50%	90%
inches	11.75	19.78	30.87

*It should be noted that rainfall probabilities do not follow a normal distribution; rather, rainfall is best modeled by the gamma or partial-gamma distribution (Table 3, above). The water balance is thus calculated for 3 possibilities: the 50th percentile, 90th percentile (wettest year in 10), & 10th percentile (driest year in 10). Note that the 50th percentile annual rainfall is not equal to the mean. This is an expected difference, and is the result of statistical modeling methods. For this water balance, the annual rainfall depth will be used, distributed according to the mean distribution curve (see Table 1 ).*

**Table 3. Precipitation based on Annual Depth x Mean Distribution Curve (inch)**

Month	10th Percentile	50th Percentile	90th Percentile
Jan	2.52	4.24	6.61
Feb	2.25	3.79	5.91
Mar	1.87	3.15	4.91
Apr	0.68	1.15	1.79
May	0.27	0.46	0.71
Jun	0.06	0.11	0.16
Jul	0.02	0.03	0.05
Aug	0.05	0.08	0.12
Sep	0.12	0.21	0.32
Oct	0.62	1.04	1.62
Nov	1.59	2.68	4.18
Dec	1.71	2.88	4.49
Annual	11.75	19.78	30.87



## 2. Planting Mix Landscape Coefficients & Irrigation Coefficients

**Table 6. Crop & Irrigation Coefficients**

Landscape Type	Species Factor (K <sub>s</sub> )	Density Factor (K <sub>d</sub> )	Micro Climate (K <sub>mc</sub> )	Landscape Coefficient (K <sub>L</sub> )	Irrigation Type	Irrigation Efficiency (IE)	Controller Reduction (CR)
<b>Turf</b>	0.8	1.0	1.0	<b>0.80</b>	spray	0.625	1.0
<b>Non-Turf</b>	0.5	1.0	1.0	<b>0.50</b>	drip	0.9	1.0

Source: Metcalf & Eddy, "Water Reuse", McGraw-Hill, 2007 & WUCOLS III (U. Cal. 1999).

## 3. Evapotranspiration (ET<sub>0</sub>) Data

**Table 7. Pan and Reference ET (inches)**

Month	Mean Pan Evap	ET <sub>0</sub> (green cvr)	Percent ET Distribution
Jan	1.70		0.0%
Feb	2.40		0.0%
Mar	3.80		0.0%
Apr	5.30	3.60	12.1%
May	6.40	4.34	14.6%
Jun	7.10	4.80	16.2%
Jul	6.70	4.81	16.2%
Aug	6.60	4.34	14.6%
Sep	5.90	3.60	12.1%
Oct	4.40	2.64	8.9%
Nov	2.40	1.50	5.1%
Dec	1.70		0.0%
<b>Annual</b>	<b>54.40</b>	<b>29.63</b>	<b>100.0%</b>

PE from: Oregon Climate Service (Western Reg. Clim. Ctr.); Stn: San Francisco Int'l Airport.

ET<sub>0</sub> from: WUCOLS III (U. Cal. 1999 - CIMIS Data): Average ET<sub>0</sub> Zones 1&2 (Coast. Fog Areas).

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**4. Net Demand = (ET<sub>0</sub> x K<sub>L</sub> x CE) / IE**



**Adjust Demand for Rainfall?** **no** (no if ET<sub>0</sub> takes into account rainfall already)

**Effective Rainfall Use by Plants:** **0%** (typ. 40%-60%, unless ET<sub>0</sub> takes into account rainfall)

**Design Rainfall Use by Plants:** **0%**

**Table 8A. Average-Year Demand (inches)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0.00	0.00	
Feb	0.00	0.00	
Mar	0.00	0.00	
Apr	4.61	2.00	
May	5.56	2.41	
Jun	6.14	2.67	
Jul	6.16	2.67	
Aug	5.56	2.41	
Sep	4.61	2.00	
Oct	3.38	1.47	
Nov	1.92	0.83	
Dec	0.00	0.00	
<b>Annual</b>	<b>37.93</b>	<b>16.46</b>	

**Table 8B. Rainfall Adj. Avg Demand (in)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0.00	0.00	
Feb	0.00	0.00	
Mar	0.00	0.00	
Apr	4.61	2.00	
May	5.56	2.41	
Jun	6.14	2.67	
Jul	6.16	2.67	
Aug	5.56	2.41	
Sep	4.61	2.00	
Oct	3.38	1.47	
Nov	1.92	0.83	
Dec	0.00	0.00	
<b>Annual</b>	<b>37.93</b>	<b>16.46</b>	

**Table 8C. Average Demand (gpd/acre)**

Month	Demand <b>Turf</b>	Demand <b>Non-Turf</b>	Demand
Jan	0	0	
Feb	0	0	
Mar	0	0	
Apr	4,171	1,810	
May	4,866	2,112	
Jun	5,561	2,414	
Jul	5,393	2,341	
Aug	4,866	2,112	
Sep	4,171	1,810	
Oct	2,960	1,285	
Nov	1,738	754	
Dec	0	0	
<b>Annual</b>	<b>2,821</b>	<b>1,225</b>	



LANDSCAPE COEFFICIENT METHOD WATER BALANCE

5. Landscaping Mix By Locale



Table 11. Landscaping Mix by Category

Landscaping Area	Planted Acres	% Planted Turf	% Planted Non-Turf	% Planted
Parking Lot Turf Landscape	7.78	100.00%	0%	100%
Right-of-Way Turf Landscape	18.26	100.00%	0%	100%
Open Space Landscape	25.1	76.49%	23.51%	100%
Open Area Landscape	29.9	34.78%	65.22%	100%
<b>Total Acres:</b>	<b>81.04</b>	<b>69%</b>	<b>31%</b>	<b>100%</b>

6. Annual Water Demand

Table 12. Summary of Demand

Landscaping Area	Avg Yearly Demand (acre-feet)
Parking Lot Turf Landscape	24.6
Right-of-Way Turf Landscape	57.7
Open Space Landscape	68.8
Open Area Landscape	59.6
	-
	-
	-
	-
	-
<b>Total Demand (acre-feet per year)</b>	<b>210.7</b>
<b>Total Demand (million gallons/yr)</b>	<b>68.65</b>

Table 13. Summary of Landscaping

	Acres of Parking Landscape (10% of footprint)	Acres of Right-of-Way Landscape (9 sf/tree)	Acres of Open "Space"	Acres of Open "Area"	Total Acres of Landscape Type
total acres	7.78	18.26	25.1	29.9	81.04
Turf acres:	7.78	18.26	19.2	10.4	55.64
%:	100.00%	100.00%	76.49%	34.78%	68.66%
H <sub>2</sub> O AFY:	24.59	57.71	60.68	32.87	175.85
Non-turf ac:	0	0	5.9	19.5	25.4
%:	0.00%	0.00%	23.51%	65.22%	31.34%
H <sub>2</sub> O AFY:	0.00	0.00	8.09	26.75	34.84

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**Table 14. Summary of Tree Assumptions**



	# Trees in Parking Landscape (1 tree per 6 spaces)	# Trees in Right-of-Way (25 ft tree spacing)	# Trees in Open Space Turf	# Trees in Open Area Turf	Total Acres of Landscape Type
# Trees:	2,446	4,096	0	0	6,542
Water Use:	included above for turf & non plantings	included above for turf & non plantings	0 but would be incl'd in above est.	0 but would be incl'd in above est.	included above for turf & non plantings

**Table 15. Summary of ET<sub>0</sub>/K<sub>L</sub> Method Landscape Demand**

	Landscape Demand (acre-ft/yr) (Apr - Nov)	Landscape Demand (mil.gal/yr) (Apr - Nov)	Peak (July) gpd/acre turf	Annual (Apr - Nov) gpd/acre turf	Peak (July) gpd/acre non-turf	Annual (Apr - Nov) gpd/acre non-turf
ET <sub>0</sub> /K <sub>L</sub> Method	<b>210.7</b>	68.65	5,393	2,821	2,341	1,225

## 7. Landscape Coefficient Method Explanation



$ET_o$  represents the estimated water demand for a reference crop, typically green groundcover.

Landscaping demand is estimated using the widely accepted Landscape Coefficient Method, which is outlined in Metcalf & Eddy, "Water Reuse", McGraw-Hill, 2007, "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California", and the USGBC LEED NC-2.2 Reference Manual.

$$\text{Gross Demand} = ET_o \times K_L$$

where:  $ET_o$  = Reference Evapotranspiration for the Region, inches

$K_L$  = Landscape Coefficient

$$\text{Landscape Coefficient } K_L = k_s \times k_d \times k_{mc}$$

$k_s$  = Species factor, which takes into account the different water requirements of different species. Adequately green landscapes can be maintained at about 50% of reference  $ET$ , therefore the average  $k_s$  value is 0.5. Truly xeric landscapes that require no additional water after establishment have a  $k_s = 0$ .

$k_d$  = Density factor, accounting for number of plants and total leaf area of a landscape. Sparsely planted areas will have a lower  $ET$  rate than densely planted areas.

$k_{mc}$  = Microclimate factor, accounting for landscape variation in temperature, wind exposure, and humidity. The average  $k_{mc}$  is 1.0. Higher values occur in landscapes surrounded by heat-absorbing or reflective surfaces, or where wind exposure is unusually high. Examples of high  $k_{mc}$  areas are parking lots, west sides of buildings, west and south slopes, medians, and areas experiencing wind-tunneling. Low  $k_{mc}$  areas are shady areas, areas protected from wind, north sides of buildings, courtyards, areas under overhangs, and the north sides of slopes.

LANDSCAPE COEFFICIENT METHOD WATER BALANCE

**Typical Landscape Coefficient Factors**



Vegetation Type	Species Factor $k_s$		
	low	average	high
Trees	0.2	0.5	0.9
Shrubs	0.2	0.5	0.7
Groundcovers	0.2	0.5	0.7
Tree, Shrub, Groundcover: Mixed	0.2	0.5	0.9
Turfgrass	0.6	0.7	0.8

Vegetation Type	Density Factor $k_d$		
	low	average	high
Trees	0.5	1.0	1.3
Shrubs	0.5	1.0	1.1
Groundcovers	0.5	1.0	1.1
Tree, Shrub, Groundcover: Mixed	0.6	1.1	1.3
Turfgrass	0.6	1.0	1.0

Vegetation Type	Microclimate Factor $k_{mc}$		
	low	average	high
Trees	0.5	1.0	1.4
Shrubs	0.5	1.0	1.3
Groundcovers	0.5	1.0	1.2
Tree, Shrub, Groundcover: Mixed	0.5	1.0	1.4
Turfgrass	0.8	1.0	1.2

**Net Demand = (Gross Demand / IE) x CE**

where: IE = Irrigation Efficiency for the project irrigation, as shown in the next table.

CR = Controller Reduction: all major irrigation projects should use a high-efficiency controller, such as an ET-controller.

For the purposes of initial estimation of residential landscaping, CE is assumed to be 1.0. For golf courses which will be using an ET-controller or similar controls, CE could be assumed to be 0.75.

**Typical Irrigation Efficiencies**

Irrigation Type	Irrigation Efficiency
Sprinkler	0.625
Drip	0.90



## Appendix C

2009 Water Supply Agreement between the City and County of San Francisco and the Wholesale Customers in Alameda, San Mateo, and Santa Clara County

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**WATER SUPPLY AGREEMENT**

**between**

**THE CITY AND COUNTY OF SAN FRANCISCO**

**and**

**WHOLESALE CUSTOMERS**

**in**

**ALAMEDA COUNTY, SAN MATEO COUNTY AND  
SANTA CLARA COUNTY**

**JULY 2009**

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- C List of Agencies and Individual Supply Guarantees (Section 3.02)
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# **WHOLESALE WATER SUPPLY AGREEMENT**

## **Introductory Statement**

Both San Francisco, as the Regional Water System owner and operator, and its Wholesale Customers share a commitment to the Regional Water System providing a reliable supply of high quality water at a fair price, and achieving these goals in an environmentally sustainable manner.

## **Article 1. Parties, Effective Date, and Defined Terms**

### **1.01 Definitions**

The capitalized terms used in this Agreement shall have the meanings set forth in Attachment A.

### **1.02 Parties**

The parties to this Agreement are the City and County of San Francisco and such of the following entities (all of which purchase water from San Francisco) as have executed this Agreement:

- Alameda County Water District
- California Water Service Company
- City of Brisbane
- City of Burlingame
- City of Daly City
- City of East Palo Alto
- City of Hayward
- City of Menlo Park
- City of Millbrae
- City of Milpitas
- City of Mountain View
- City of Palo Alto
- City of Redwood City

City of San Bruno  
City of San José  
City of Santa Clara  
City of Sunnyvale  
Coastside County Water District  
Estero Municipal Improvement District  
Guadalupe Valley Municipal Improvement District  
Mid-Peninsula Water District  
North Coast County Water District  
Purissima Hills Water District  
Skyline County Water District  
Stanford University  
Town of Hillsborough  
Westborough Water District

The entities listed above which have executed this Agreement shall be collectively referred to as the "Wholesale Customers."

**1.03 Effective Date**

A. Except as provided in subsection C, this Agreement shall become effective only when it has been approved by San Francisco and by each of the entities listed in Section 1.02 and when San Francisco and each of those entities (except for the City of Hayward) have entered into an Individual Water Sales Contract as provided in Section 9.01.

B. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract on or before July 1, 2009, the effective date shall be July 1, 2009. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract after July 1, 2009 but on or before September 1, 2009, the effective date shall be the date on which the last entity listed in Section 1.02 approves this Agreement and, if required, an Individual Water Sales Contract.

C. If by September 1, 2009 this Agreement has been approved by fewer than all of the entities listed in Section 1.02 or fewer than all of such entities (other than the City of Hayward) have entered into an Individual Water Sales Contract, but it has been approved by entities representing at least 75% in number and 75% of the water purchased from SFPUC by

all listed agencies during FY 2007-08 (i.e., 173.39 MGD), then San Francisco shall have the option to waive the requirement in subsection A that all listed agencies have approved this Agreement and an Individual Water Sales Contract as a condition precedent to this Agreement and any Individual Water Sales Contract becoming effective. San Francisco shall have 60 days from September 1, 2009 (i.e., until October 31, 2009) within which to decide whether or not to waive the condition. If San Francisco decides to waive the condition, those listed agencies that have approved this Agreement and Individual Water Sales Contract before October 31, 2009 will be bound thereby and this Agreement and Individual Water Sales Contracts will become effective as to them, as of the date of San Francisco's waiver. For purposes of determining whether listed agencies that have approved this Agreement represent at least 75% of the water purchased during FY 2007-08, the quantity of water attributable to each listed entity shall be as set forth on Attachment B.

D. The provisions of Article 9 that apply to fewer than all Wholesale Customers (i.e., Sections 9.02 - 9.07) shall not become effective unless San Francisco and the entity to which the section applies have each approved (1) this Agreement, and (2) the underlying Individual Water Sales Contract, unless otherwise provided in Article 9. This provision does not affect the continued enforceability of provisions in those sections that derive from independently enforceable judgments, orders or agreements.

## **Article 2. Term; Amendments During Term**

### **2.01 Term**

The term ("Term") of this Agreement shall be twenty five (25) years. The Term shall begin on July 1, 2009, regardless of whether the Effective Date is before or after that date, and shall end on June 30, 2034. Except as provided in Article 9, the term of all Individual Water Sales Contracts shall also begin on July 1, 2009 and end on June 30, 2034.

### **2.02 Extension and Renewal of Term**

A. In December 2031, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2032 and June 30, 2032, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2032 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2030-31, the Term shall be extended for another five (5) years ("First Extension Term"), through June 30, 2039. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

B. In December 2036, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2037 and June 30, 2037, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2037 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2035-36, the Term shall be extended for another five (5) years ("Second Extension Term"), through June 30, 2044. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

C. After the expiration of the Term, and, if applicable, the Extension Terms, this Agreement may be renewed by mutual consent of the parties, subject to any modifications thereof which may be determined at that time. If fewer than all of the parties desire to renew this Agreement beyond its Term, with or without modifications, the SFPUC and the Wholesale



Customers who wish to extend the Agreement shall be free to do so, provided that no party to this Agreement which does not wish to become a party to such a renewed Agreement shall be compelled to do so by the actions of other parties under this section.

## **2.03 Amendments**

### **A. Amendments to Agreement; General**

1. This Agreement may be amended with the written consent of all parties.
2. This Agreement may also be amended with the written consent of San Francisco and of Wholesale Customers representing at least two-thirds in number (i.e., 18 as of July 1, 2009) and seventy five percent (75%) of the quantity of water delivered by San Francisco to all Wholesale Customers during the fiscal year immediately preceding the amendment.
3. No amendment which adversely affects a Fundamental Right of a Wholesale Customer may be made without the written consent of that customer. Amendments to Article 5 which merely affect the allocation of costs between City Retail customers on the one hand and Wholesale Customers collectively on the other, and amendments to Articles 6 and 7 which merely alter budgetary, accounting and auditing procedures do not affect Fundamental Rights and may be made with the consent of parties meeting the requirements of Section 2.03.A.2.
4. When an amendment has been approved by San Francisco and the number of Wholesale Customers required in Section 2.03.A.2, San Francisco shall notify each of the Wholesale Customers in writing of the amendment's adoption. Notwithstanding any provision of law or this Agreement, any Wholesale Customer that claims that the amendment violates its Fundamental Rights under Section 2.03.A.3, shall have 30 days from the date San Francisco delivers the notice of its adoption in which to challenge the amendment's validity through a judicial action. If no such action is filed within 30 days, the amendment shall be finally and conclusively deemed to have been adopted in compliance with this section.

### **B. Amendments to Article 9**

1. Notwithstanding the provisions of Sections 2.03.A.2 and 2.03.A.3, any provision of Article 9 which applies only to an individual Wholesale Customer may be amended with the written concurrence of San Francisco and the Wholesale Customer to which it applies;

provided that the amendment will not, directly or indirectly, adversely affect the Fundamental Rights of the other Wholesale Customers.

2. Before making any such amendment effective, San Francisco shall give notice, with a copy of the text of the proposed amendment, to all other Wholesale Customers. The Wholesale Customers shall have 30 days in which to object to the amendment on the ground that it is not permissible under this subsection. If no such objection is received by San Francisco, the proposed amendment shall become effective. If one or more Wholesale Customers object to the amendment, San Francisco, the individual Wholesale Customer with which San Francisco intends to effect the amendment, and the Wholesale Customer(s) which lodged the objection shall meet to discuss the matter.

3. If the dispute cannot be resolved and San Francisco and the Wholesale Customer involved elect to proceed with the amendment, either San Francisco or the Wholesale Customer shall give written notice of such election to each Wholesale Customer that has objected. Any Wholesale Customer that has objected to such amendment shall have 30 days from receipt of this notice within which to commence an action challenging the validity of such amendment, and such amendment shall be deemed effective as of the end of this 30-day period unless restrained by order of court.

**C. Amendments to Attachments.** The following attachments may be amended with the written concurrence of San Francisco and BAWSCA on behalf of the Wholesale Customers:

<u>Attachment</u>	<u>Name</u>
G	January 2006 Water Quality Notification and Communications Plan
J	Water Use Measurement and Tabulation
L-1	Identification of WSIP Projects as Regional/Retail
N-1	Balancing Account/Rate Setting Calculation Table
N-2	Wholesale Revenue Requirement Schedules
N-3	Schedule of Projected Water Sales, Wholesale Revenue Requirement and Wholesale Rates
P	Management Representation Letter

Amendments to these attachments shall be approved on behalf of San Francisco by the Commission and on behalf of BAWSCA by its Board of Directors, unless the Commission by resolution delegates such authority to the General Manager of the SFPUC or the Board of Directors by resolution delegates such authority to the General Manager/CEO of BAWSCA.

**D. Amendments to Individual Water Sales Contracts.** Individual Water Sales Contracts described in Section 9.01 may be amended with the written concurrence of San Francisco and the Wholesale Customer which is a party to that Individual Water Sales Contract; provided that the amendment is not inconsistent with this Agreement or in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement.

## **Article 3. Water Supply**

### **3.01 Supply Assurance**

A. San Francisco agrees to deliver water to the Wholesale Customers up to the amount of the Supply Assurance. The Supply Assurance is for the benefit of the entities listed in Section 1.02, irrespective of whether or not they have executed this Agreement. Water delivered by San Francisco to Retail Customers shall not be included in the Supply Assurance. Until December 31, 2018, the foregoing commitment is subject to Article 4.

B. Both the Supply Assurance and the Individual Supply Guarantees identified in Section 3.02 are expressed in terms of daily deliveries on an annual average basis and do not themselves constitute a guarantee by San Francisco to meet peak daily or hourly demands of the Wholesale Customers, irrespective of what those peak demands may be. The parties acknowledge, however, that the Regional Water System has been designed and constructed to meet peak daily and hourly demands and that its capacity to do so has not yet been reached. San Francisco agrees to operate the Regional Water System to meet peak requirements of the Wholesale Customers to the extent possible without adversely affecting its ability to meet peak demands of Retail Customers. This Agreement shall not preclude San Francisco from undertaking to meet specific peak demand requirements of individual Wholesale Customers in their Individual Water Sales Contracts.

C. The Supply Assurance is perpetual and shall survive the expiration or earlier termination of this Agreement. Similarly, the Individual Supply Guarantees identified in Section 3.02 and/or the Individual Water Sales Contracts are perpetual and shall survive the expiration or earlier termination of this Agreement or the Individual Water Sales Contracts.

D. Notwithstanding the Supply Assurance established by this section, the Individual Supply Guarantees identified in Section 3.02 and the Individual Water Sales Contracts, the amount of water made available by San Francisco to the Wholesale Customers is subject to reduction, to the extent and for the period made necessary by reason of water shortage, Drought, Emergencies, or by malfunctioning or rehabilitation of facilities in the Regional Water System. Any such reduction will be implemented in accordance with Section 3.11. The amount of water made available to the Wholesale Customers may not be reduced, however, merely because the water recycling and groundwater projects which the WSIP envisions to be constructed within San Francisco, or the conservation programs intended to reduce water use



by Retail Customers that are included in the WSIP, do not generate the yield or savings (10 MGD combined) anticipated by San Francisco.

### **3.02 Allocation of Supply Assurance**

A. Pursuant to Section 7.02 of the 1984 Agreement, a portion of the Supply Assurance has been allocated among 24 of the 27 Wholesale Customers. These Individual Supply Guarantees are also expressed in terms of annual average metered deliveries of millions of gallons per day and are listed in Attachment C.

B. Three Wholesale Customers do not have Individual Supply Guarantees. The cities of San Jose and Santa Clara do not have an Individual Supply Guarantees because San Francisco has provided water to them on a temporary and interruptible basis as described in Sections 4.05 and 9.06. The City of Hayward does not have an Individual Supply Guarantee because of the terms of the 1962 contract between it and San Francisco, as further described in Section 9.03.

C. If the total amount of water delivered by San Francisco to Hayward and to the Wholesale Customers that are listed on Attachment C exceeds 184 MGD over a period of three consecutive fiscal years (i.e., July 1 through June 30), then the Individual Supply Guarantees of those Wholesale Customers listed on Attachment C shall be reduced pro rata so that their combined entitlement and the sustained use by Hayward does not exceed 184 MGD. The procedure for calculating the pro rata reduction in Individual Supply Guarantees is set out in Attachment D.

1. The provisions of this subsection C are not in derogation of the reservation of claims to water in excess of the Supply Assurance which are contained in Section 8.07. Nor do they constitute an acknowledgement by Wholesale Customers other than Hayward that San Francisco is obligated or entitled to reduce their Individual Supply Guarantees in the circumstances described herein. The provisions of this subsection C shall, however, be operative unless and until a court determines that its provisions violate rights of the Wholesale Customers derived independently of this Agreement.

2. The foregoing paragraph is not intended to and shall not constitute a contractual commitment on the part of San Francisco to furnish more water than the Supply Assurance to the Wholesale Customers or a concession by San Francisco that the provisions of this subsection violate any rights of the Wholesale Customers.

D. Notwithstanding the reservation of claims contained in Sections 3.02.C and 8.07, it shall be the responsibility of each Wholesale Customer to limit its purchases of water from San Francisco so as to remain within its Individual Supply Guarantee. San Francisco shall not be liable to any Wholesale Customer or be obligated to supply more water to any Wholesale Customer individually or to the Wholesale Customers collectively than the amount to which it or they are otherwise entitled under this Agreement due to the use by any Wholesale Customer of more water than the amount to which it is entitled under this Agreement.

E. San Francisco shall install such new connections between the Regional Water System and the distribution system of any Wholesale Customer that are necessary to deliver the quantities of water to which the Wholesale Customer is entitled under this Agreement. San Francisco shall have the right to determine the location of such connections, in light of the need to maintain the structural integrity of the Regional Water System and, where applicable, the need to limit peaking directly off of Regional Water System pipelines by a Wholesale Customer's individual retail customers, the need to ensure that a Wholesale Customer's individual retail customers have access to alternative sources of water in the event of a reduction in San Francisco's ability to provide them with water, and other factors which may affect the desirability or undesirability of a particular location. San Francisco's decisions regarding the location of new connections and the location, size and type of any new meters shall not be reviewable by a court except for an abuse of discretion or failure to provide a Wholesale Customer with connections and meters adequate to deliver the quantity of water to which it is entitled under this Agreement.

### **3.03 Wholesale Customer Service Areas**

A. Each of the Individual Water Sales Contracts described in Section 9.01 will contain, as an exhibit, a map of the Wholesale Customer's service area. A Wholesale Customer may not deliver water furnished to it by San Francisco outside the boundary of its service area without the prior written consent of San Francisco, except for deliveries to another Wholesale Customer on an emergency and temporary basis pursuant to Section 3.07.B.

B. If a Wholesale Customer wishes to expand its service area, it shall request San Francisco's consent to the expansion and provide information reasonably requested by San Francisco about the amount of water projected to be purchased from San Francisco to meet demand within the area proposed to be added to the service area.

C. San Francisco may refuse a Wholesale Customer's request to expand its service area on any reasonable basis. If San Francisco denies a request by a Wholesale Customer to expand its service area, or fails to act on the request for six months after it has been submitted, the Wholesale Customer may challenge San Francisco's denial or delay in court. Such a challenge may be based on the Wholesale Customers' claim, reserved in Section 8.07, that San Francisco is obligated under federal or state law to furnish water, included within its Individual Supply Guarantee, to it for delivery outside its then-existing service area and that it is entitled to enlarge its service area to supply water to such customers. San Francisco reserves the right to contest any such claim on any applicable ground. This subsection does not apply to San Jose and Santa Clara, whose maximum service areas are fixed pursuant to Section 9.06.

D. This section will not prevent San Francisco and any Wholesale Customer, other than San Jose and Santa Clara, from agreeing in an Individual Water Sales Contract or an amendment thereto that:

- the Wholesale Customer may expand its service area without subsequent San Francisco approval to a definitive size but no larger, or
- the Wholesale Customer will not expand its service area beyond its present limits without San Francisco approval

and waiving the provisions of this section with respect to any additional expansion.

E. If two or more Wholesale Customers agree to adjust the boundaries of their respective service areas so that one assumes an obligation to serve customers in an area that was previously within the service area of another Wholesale Customer, they may also correspondingly adjust their respective Individual Supply Guarantees. Such adjustments are not subject to the requirements of Section 3.04 and shall require only the consent of San Francisco and the Wholesale Customers involved, so long as the Supply Assurance and the Individual Supply Guarantees of other Wholesale Customers are not affected. Service area boundary adjustments that would result in the expansion of any California Water Service Company service areas are subject to the requirements of Section 9.02.D. Any adjustment of service area boundaries that would result in the supply of water in violation of this Agreement or the Act shall be void.

F. San Francisco acknowledges that it has heretofore consented in writing to deliveries of water by individual Wholesale Customers outside their service area boundaries and

agrees that nothing in this Agreement is intended to affect such prior authorizations, which remain in full force and effect according to their terms. Such authorizations shall be identified in the Individual Water Sales Contracts.

### **3.04 Permanent Transfers of Individual Supply Guarantees**

A. A Wholesale Customer that has an Individual Supply Guarantee may transfer a portion of it to one or more other Wholesale Customers, as provided in this section.

B. Transfers of a portion of an Individual Supply Guarantee must be permanent. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Individual Supply Guarantees are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Individual Supply Guarantee proposed to be transferred, the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC, and the Individual Supply Guarantees of both participants resulting from the transfer. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide notice to the SFPUC and BAWSCA. By September 30 of each year during the Term, the SFPUC and BAWSCA will prepare an updated Attachment C to reflect transfers occurring during the immediately preceding fiscal year.

F. Amounts transferred will remain subject to pro rata reduction under the circumstances described in Section 3.02.C and according to the formula set forth in Attachment D.

### **3.05 Restrictions on Resale**

Each Wholesale Customer agrees that it will not sell any water purchased from San Francisco to a private party for resale by such private party to others in violation of the Act.



Each Wholesale Customer also agrees that it will not sell water purchased from San Francisco to another Wholesale Customer without prior written approval of the SFPUC, except on a temporary and emergency basis as permitted in Section 3.07.B.2. The SFPUC agrees that it will not unreasonably withhold its consent to a request by a Wholesale Customer to deliver water to another Wholesale Customer for resale.

### **3.06 Conservation; Use of Local Sources; Water Management Charge**

A. In order to support the continuation and expansion of water conservation programs, water recycling, and development of alternative supplies within the Wholesale Customers' service areas, the SFPUC will, if requested by BAWSCA, include the Water Management Charge in water bills sent to Wholesale Customers. The SFPUC will deliver all Water Management Charge revenue to BAWSCA monthly and shall deliver an annual accounting of Water Management Charge revenue to BAWSCA within 90 days after the end of each fiscal year. The SFPUC's obligations to collect and deliver Water Management Charge revenue to BAWSCA under this subsection are conditioned on BAWSCA's delivery to the SFPUC of an annual report describing the projects and programs on which Water Management Charge funds received from the SFPUC during the previous fiscal year were expended and an estimate of the amount of water savings attributable to conservation programs and of the yield of alternative supplies developed. This report will be due within 180 days after the end of each fiscal year during which Water Management Charge funds were received.

B. The SFPUC will work together with BAWSCA to explore ways to support water conservation programs, recycling projects, and conjunctive use alternatives outside the Wholesale Service Area, in particular projects and programs that have the potential to increase both flows in the lower Tuolumne River (downstream of New Don Pedro Reservoir) and water deliveries to the Regional Water System.

C. Each Wholesale Customer shall take all actions within its legal authority related to water conservation that are necessary to insure that the SFPUC (a) remains eligible for (i) state and federal grants and (ii) access to the Drought Water Bank operated by the California Department of Water Resources, as well as other Drought-related water purchase or transfer programs, and (b) complies with future legal requirements imposed on the Regional Water System by the federal government, the State, or any other third party as conditions for receiving funding or water supply.

D. San Francisco and each Wholesale Customer agree that they will diligently apply their best efforts to use both surface water and groundwater sources located within their respective service areas and available recycled water to the maximum feasible extent, taking into account the environmental impacts, the public health effects and the effects on supply reliability of such use, as well as the cost of developing such sources.

### **3.07 Restrictions on Purchases of Water from Others; Minimum Annual Purchases**

A. Each Wholesale Customer (except for Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale) agrees that it will not contract for, purchase or receive, with or without compensation, directly or indirectly, from any person, corporation, governmental agency or other entity, any water for delivery or use within its service area without the prior written consent of San Francisco.

B. The prohibition in subsection A does not apply to:

1. recycled water;
2. water necessary on an emergency and temporary basis, provided that the Wholesale Customer promptly gives San Francisco notice of the nature of the emergency, the amount of water that has been or is to be purchased, and the expected duration of the emergency; or
3. water in excess of a Wholesale Customer's Individual Supply Guarantee.

C. Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale may purchase water from sources other than San Francisco, provided that San Francisco shall require that each purchase a minimum annual quantity of water from San Francisco. These minimum quantities are set out in Attachment E and shall also be included in the Individual Water Sales Contracts between San Francisco and each of these four Wholesale Customers. The minimum purchase requirement in these Individual Water Sales Contracts will be waived during a Drought or other period of water shortage if the water San Francisco makes available to these Wholesale Customers is less than its minimum purchase quantity.

### **3.08 Water Quality**

A. San Francisco shall deliver treated water to Wholesale Customers (except Coastside County Water District, which receives untreated water from Crystal Springs and Pilarcitos Reservoirs) that complies with primary maximum contaminant level and treatment

technique standards at the regulatory entry points designated in the San Francisco Regional Water System Domestic Water Supply Permit (currently Permit No. 02-04-04P3810001) issued by the California Department of Public Health (CDPH).

B. San Francisco will provide notice to the Wholesale Customers in accordance with the Water Quality Notification and Communications Plan (current version dated January 2006), attached hereto as Attachment G. San Francisco will regularly update its plan in consultation with the Wholesale Customers and the CDPH. The next update will be completed one year after the Effective Date and include expanded coverage of secondary maximum contaminant level exceedances and water quality communication triggers. The plan will note that the Wholesale Customers will receive the same notification no later than the San Francisco water system (currently Permit No. 02-04-01P3810011) except for distribution-related issues.

C. San Francisco and the Wholesale Customers will establish a Water Quality Committee. The Water Quality Committee will meet at least quarterly to collaboratively address water quality issues, such as Water Quality Notification and Communications Plan updates, regulatory issues, and water quality planning studies/ applied research. San Francisco and each Wholesale Customer will designate a representative to serve on the committee. There will be a Chair and Vice Chair position for the Water Quality Committee. The Chair and Vice Chair positions will be held by San Francisco and the Wholesale Customers and rotate between them on an annual basis.

### **3.09 Completion of WSIP**

San Francisco will complete construction of the physical facilities in the WSIP by December 31, 2015. The SFPUC agrees to provide for full public review and comment by local and state interests of any proposed changes that delay previously adopted project completion dates or that delete projects. The SFPUC shall meet and consult with BAWSCA before proposing to the Commission any changes in the scope of WSIP projects which reduce their capacity or ability to achieve adopted levels of service goals. The SFPUC retains discretion to determine whether to approve the physical facilities in the WSIP until after it completes the CEQA process as set forth in Section 4.07.

### **3.10 Regional Water System Repair, Maintenance and Operation**

A. San Francisco will keep the Regional Water System in good working order and repair consistent with prudent utility practice.

B. San Francisco will submit reports to its Retail and Wholesale Customers on the "State of the Regional Water System," including reports on completed and planned maintenance, repair or replacement projects or programs, by September of every even-numbered year, with reports to start in September 2010.

C. San Francisco will cooperate with any audit of the SFPUC's asset management practices that may be initiated and financed by BAWSCA or the Wholesale Customers. BAWSCA may contract with third parties to conduct the audits. San Francisco will consider the findings and recommendations of such audits and will provide a written response indicating agreement with the recommendations, or disagreement with particular recommendations and the reasons why, within 90 calendar days after receipt.

D. San Francisco will continue to operate its reservoirs in a manner that assigns higher priority to the delivery of water to the Bay Area and the environment than to the generation of electric power. The SFPUC, as the Regional Water System operator, is solely responsible for making day-to-day operational decisions.

### 3.11 **Shortages**

A. **Localized Water Reductions.** Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers individually, San Francisco may reduce the amount of water available or interrupt water deliveries to specific geographical areas within the Regional Water System service area to the extent that such reductions are necessary due to Emergencies, or in order to install, repair, rehabilitate, replace, investigate or inspect equipment in, or perform other maintenance work on, the Regional Water System. Such reductions or interruptions may be imposed by San Francisco without corresponding reductions or interruptions in the amount of water available to SFPUC water users outside the specific geographical area where reductions or interruptions are necessary, if the system's ability to supply water outside the specific geographical area has not been impaired. In the event of such a reduction or interruption, San Francisco will restore the supply of water to the specific geographical area as soon as is possible. Except in cases of Emergencies (during which oral notice shall be sufficient), San Francisco will give the affected Wholesale Customer(s) reasonable written notice of such localized reductions or interruptions, the reasons therefor, and the probable duration thereof.

**B. System-Wide Shortages and SFPUC Response to Regional Emergencies.**

Following a major system emergency event, the SFPUC will work closely with its Wholesale Customers to monitor customer demand, including the demand source. In the event that any individual Wholesale Service Area or Retail Service Area customer's uncontrolled distribution system leaks could result in major water waste and endanger the supply provided by the Regional Water System as a whole, flow through some customer connections may need to be temporarily reduced or terminated. SFPUC will work closely with customers to assess the nature of the demand (e.g. fire-fighting versus leakage), so that public health and safety protection can be given top priority.

1. All emergencies that require use of non-potable source water will require use of chlorine, or other suitable disinfectant, if feasible.

2. San Francisco will use its best efforts to meet the seismic reliability and delivery reliability level of service goals adopted by the Commission in conjunction with the WSIP. San Francisco will distribute water on an equitable basis throughout the Regional Water System service area following a regional Emergency, subject to physical limitations caused by damage to the Regional Water System.

3. San Francisco's response to Emergencies will be guided by the then-current version of the ERRP. The SFPUC shall periodically review, and the Commission may amend, the ERRP to ensure that it remains an up-to-date and effective management tool.

4. The SFPUC will give the Wholesale Customers notice of any proposal to amend the ERRP in a manner that would affect them. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

**C. Shortages Caused by Drought; Acquisition of Dry Year Supplies.**

Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers individually, San Francisco may reduce the amount of water available to the Wholesale Customers in response to Drought.

1. The Tier 1 Shortage Plan (Attachment H) will continue to be used to allocate water from the Regional Water System between Retail and Wholesale Customers during system-wide shortages of 20% or less.



2. San Francisco and the Wholesale Customers may negotiate in good faith revisions to the Tier 1 Shortage Plan to adjust for and accommodate anticipated changes due to demand hardening in the SFPUC's Wholesale and Retail Service Areas. Until agreement is reached, the current Tier 1 Shortage Plan will remain in effect.

3. The SFPUC will honor allocations of water among the Wholesale Customers ("Tier 2 Allocations") provided by BAWSCA or if unanimously agreed to by all Wholesale Customers. If BAWSCA or all Wholesale Customers do not provide the SFPUC with Tier 2 Allocations, then the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers. For Regional Water System shortages in excess of 20%, San Francisco shall (a) follow the Tier 1 Shortage Plan allocations up to the 20% reduction, (b) meet and discuss how to implement incremental reductions above 20% with the Wholesale Customers, and (c) make a final determination of allocations above the 20% reduction. After the SFPUC has made the final allocation decision, the Wholesale Customers shall be free to challenge the allocation on any applicable legal or equitable basis.

4. San Francisco will use its best efforts to identify potential sources of dry year water supplies and establish the contractual and other means to access and deliver those supplies in sufficient quantity to meet a goal of not more than 20 percent system-wide shortage in any year of the design drought.

5. San Francisco will cooperate with BAWSCA to improve water supply reliability. As an example of such cooperation, San Francisco may invite a representative of BAWSCA to attend and participate in meetings with third parties for development of dry year water supplies. If San Francisco does not invite a BAWSCA representative to attend a specific scheduled meeting, it will promptly (within 30 days of any such meeting) provide BAWSCA with a written or oral report on the meeting, including any decisions reached at it, as well as information about planned subsequent meetings. Progress in securing dry year water supplies will be reported to the SFPUC and the BAWSCA board of directors during the first quarter of each calendar year.

### **3.12 Wheeling of Water from Outside SFPUC System**

Subject to the Wheeling Statute, the SFPUC will not deny use of Regional Water System unused capacity for wheeling when such capacity is available for wheeling purposes during

periods when the SFPUC has declared a water shortage emergency under Water Code Section 350 if the following conditions are met:

A. The transferor pays reasonable charges incurred by the SFPUC as a result of the wheeling, including capital, operation, maintenance, administrative and replacement costs (as such are defined in the Wheeling Statute).

B. Wheeled water that is stored in the Regional Water System spills first.

C. Wheeled water will not unreasonably: (1) impact fish and wildlife resources in Regional Water System reservoirs; (2) diminish the quality of water delivered for consumptive uses; or (3) increase the risk of exotic species impairing Regional Water System operations. The transferor may at its own expense provide for treatment to mitigate these effects.

D. Priority will be given to wheeling by Wholesale Customers or BAWSCA over arrangements for third-party public entities.

### **3.13 Limits on New Customers**

**A. New Wholesale Customers Prior to December 31, 2018.** Until December 31, 2018, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;

2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD; and

3. This Agreement is amended to incorporate any commitments to proposed new wholesale customers and to San Jose and Santa Clara, and to address the effects, if any, of the new customer(s) on water supply reliability, water quality and cost to existing customers of the Regional Water System.

**B. New Wholesale Customers After December 31, 2018.** As of January 1, 2019, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;
2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD;
3. Doing so increases the reliability of the Regional Water System; and
4. This Agreement is concurrently amended (a) to reflect that increased reliability by means of an increased commitment by San Francisco to deliver water during Droughts and (b) to address the effects, if any, of the new customer(s) on water supply, water quality and cost to existing customers of the Regional Water System.

**C. New Retail Customers.** San Francisco may enter into new retail water service obligations outside of the City and County of San Francisco:

1. Only in Alameda, San Mateo, Santa Clara, San Joaquin and Tuolumne Counties;
2. That are within or immediately adjacent to areas in which it currently serves other Retail Customers; and
3. Until the aggregate additional demand represented by the new retail customers reaches 0.5 MGD.

The limitations on serving new Retail Customers described in this subsection do not apply to historical obligations to supply water that may be contained in prior agreements between the SFPUC or its predecessor the Spring Valley Water Company, and individual users or property owners located adjacent to Regional Water System transmission pipelines.

**D. Water Exchanges and Cost Sharing Agreements with Other Water Suppliers.** Subject to completion of necessary environmental review under CEQA, San Francisco may at any time enter into water exchanges or cost sharing agreements with other water suppliers to enhance dry year or normal year water deliveries, provided that San Francisco cannot incur new water service obligations to such other water suppliers unless the requirements for taking on new wholesale customers in subsections A and B above are met.

### **3.14 Measurement of Water**

A. The parties recognize that continuous and accurate measurement of water deliveries to and from the Regional Water System and maintenance of complete and accurate records of those measurements is necessary (1) for the costs of the Regional Water System to be allocated in accordance with this Agreement, (2) for implementation of other provisions of this Agreement, and (3) for effective operation and maintenance of a water system serving a large urbanized region.

B. It is the responsibility of the SFPUC to obtain and record these measurements. To do so, the SFPUC shall install, maintain and operate measuring and recording equipment at the following locations: (1) inputs to the Regional Water System from all water sources (“System Input Meters”), (2) internal flow meters to support operation of the Regional Water System (“In-Line Meters”), (3) deliveries to the City at the San Francisco-San Mateo County line (“County-Line Meters”) and to three reservoirs in San Francisco (“In-City Terminal Reservoir Meters”), (4) deliveries to SFPUC Retail Customers located outside the boundaries of the City, and (5) deliveries to the Wholesale Customers, as described and illustrated in Attachment J.

C. The SFPUC shall inspect, test, service, and calibrate the measuring and recording equipment installed at the locations described in subsection B and will repair or replace them when necessary, in order to ensure that their accuracy is consistent with specifications provided in Attachment J.

D. The SFPUC shall continue to contract with a qualified independent metering consultant to perform periodic inspection, testing, servicing and calibration of the County-Line Meters, the In-City Terminal Reservoir Meters, and the System Input and In-Line Meters described in Attachment J, as well as the portion of the SFPUC’s Supervisory Control and Data Acquisition (SCADA) system that utilizes the flow signals produced by that measuring and recording equipment. The method, schedule and frequency for calibration and maintenance of the County-Line Meters and the In-City Terminal Reservoir Meters are specified in Attachment J. The SFPUC shall provide copies of the metering consultant’s reports to BAWSCA.

E. System Input Meters measure water deliveries into the Regional Water System from sources such as Hetch Hetchy and the SFPUC’s water treatment plants. System Input Meters also measure deliveries from the Regional Water System to outside sources or from

such sources to the Regional Water System through interties with the Santa Clara Valley Water District and the East Bay Municipal Utility District. In-Line Meters measure internal system flows and are located on the Bay Division Pipelines and other main transmission pipelines. These meters are collectively referred to as the “System Input and In-line Meters.” Similar to the County-Line Meters, the System Input and In-Line Meters have secondary metering equipment, such as differential pressure transmitters and flow recorders. The System Input and In-Line Meters, and all associated secondary metering equipment, shall be calibrated and maintained according to the method, schedule, and frequency specified in the Procedures Manual described in subsection G, below.

F. The locations of the smaller and more numerous meters described in subsection B (4) and (5) are not illustrated in Attachment J; however, they are also critical in the determination of cost allocations, and accordingly require continued maintenance and calibration. It is the responsibility of the SFPUC to maintain the accuracy of these meters and their secondary metering equipment.

G. The SFPUC will prepare a Procedures Manual which will describe in detail the procedures for periodic inspection, testing, servicing and calibration of the measuring and recording equipment described in subsection B. Once the Procedures Manual is completed, the SFPUC and BAWSCA may agree that it should supersede some or all of the requirements in Attachment J regarding the County-Line and the In-City Terminal Reservoir Meters. Unless and until such an agreement is reached and documented, however, the requirements in Attachment J, Section D will continue in force as minimum standards for meter maintenance and calibration of the County-Line and In-City Terminal Reservoir Meters (subject to modification under the circumstances described in Attachment J, Section A.4).

H. If BAWSCA and the SFPUC are unable to agree on the water use calculations required by Attachment J for a particular year, the Wholesale Customers may file a demand for arbitration challenging the SFPUC's determination of the Wholesale Revenue Requirement for that year on the basis of its reliance on disputed water use calculations. Such a challenge must be brought in the manner and within the time specified in Section 8.01.

### **3.15 New Sources of Water Supply to Maintain Supply Assurance**

**A. Urgent Reductions of Existing Surface Water Supplies.** Sudden and unanticipated events may require San Francisco to act promptly to protect the health, safety and



economic well-being of its Retail and Wholesale Customers. Such sudden events include, but are not limited to drought, earthquakes, terrorist acts, catastrophic failures of facilities owned and operated by San Francisco, and other natural or man-made events. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. To the extent appropriate and applicable, San Francisco will act in accordance with Section 3.11 and the ERRP. Nothing in this subsection limits San Francisco's obligations under Section 3.11 to pursue additional sources of supply to augment supplies available during drought.

**B. Non-Urgent Reductions of Existing Surface Water Supplies.** Climate change, regulatory actions and other events may impact San Francisco's ability to maintain the Supply Assurance from its existing surface water supplies, but on timescales long enough to permit San Francisco to collaborate with its Wholesale Customers on how best to address possible impacts to water supply. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. San Francisco will solicit input and recommendations from BAWSCA and the Wholesale Customers, and take those recommendations into consideration. Prior to Commission approval of plans or taking other actions that would impact the Wholesale Revenue Requirement, San Francisco will hold a public hearing to receive written and oral comments. Nothing in this subsection modifies San Francisco's obligation to maintain the ability to provide the Supply Assurance under this Agreement.

### **3.16 New Sources of Water Supply to Increase Supply Assurance**

**A. Surface Water Supplies From Existing Watersheds After 2018.** The Commission action in SFPUC Resolution Number 08-0200, adopted October 30, 2008 requires certain decisions by San Francisco regarding whether to supply more than 265 MGD from its

watersheds following 2018. Such decisions are to be made by December 31, 2018, subject to the exercise of San Francisco's retained CEQA discretion in Section 4.07. San Francisco's future decisions may include an offer to increase the Supply Assurance at the request of some or all of its Wholesale Customers. Costs associated with providing additional water from its existing water supplies in San Mateo, Santa Clara, Alameda, Tuolumne, and Stanislaus Counties shall be allocated to Wholesale and Retail Customers as described in Article 5.

**B. New Water Supplies.** If San Francisco seeks to develop additional water supplies from new sources to increase the Supply Assurance available to Wholesale Customers, studies and resulting water supply projects will be conducted jointly with BAWSCA under separate agreement(s) specifying the purpose of the projects, the anticipated regional benefits and how costs of studies and implementation will be allocated and charged. Nothing in this Agreement shall serve as precedent for the allocation of such new supply capital costs between Retail and Wholesale Customers or associated operational expenses, which shall only occur following approval of both parties and amendment of this Agreement, if necessary, under Section 2.03.

### **3.17 Westside Basin Conjunctive Use Program**

Subject to completion of necessary CEQA review as provided in Section 4.07, the SFPUC may enter into an agreement with the cities of Daly City and San Bruno and the California Water Service Company, South San Francisco Service Area ("Participating Pumpers") governing the operation of the South Westside Basin Conjunctive Use Program ("Program"), a WSIP Project. The Program would produce Regional benefits for all customers of the Regional Water System by making use of available groundwater storage capacity in the Southern portion of the Westside Basin through the supply of additional surface water ("In Lieu Water") to the Participating Pumpers from the Regional Water System, in exchange for a corresponding reduction in groundwater pumping at existing wells owned by the Participating Pumpers. The new groundwater supply that would accrue to storage as a result of delivery of In Lieu Water would then be recovered from the SFPUC basin storage account during water shortages using new SFPUC Regional Program wells operated by the Participating Pumpers and the SFPUC. Program annual operations and maintenance expenses and water supplies are expected to be allocated as follows:

A. All In Lieu Water delivered to the Participating Pumpers shall be (1) temporary and interruptible in nature and (2) at the sole discretion of the SFPUC based on the total volume of water available to the Regional Water System.

B. All In Lieu Water delivered to the Participating Pumpers shall be considered a delivery of water to storage and shall not be construed to affect or increase the Individual Supply Guarantees of these wholesale customers or to otherwise entitle them to any claim of water in excess of their Individual Supply Guarantees or their Interim Supply Allocations. Furthermore, Environmental Enhancement Surcharges authorized under Section 4.04 will not be applied by the SFPUC to any quantity of In Lieu Water that is delivered to the Participating Pumpers, but will instead be based solely on Participating Pumper water deliveries in excess of their respective Interim Supply Allocations.

C. Any operation and maintenance expenses incurred by the Participating Pumpers and the SFPUC that are related to the operation of Regional Program wells and related assets shall be included as Regional pumping expenses under Section 5.05.B and included as part of the Wholesale Revenue Requirement. For rate setting purposes, estimated Regional Program operation and maintenance expenses shall be used as set forth in Section 6.01. Operation and maintenance expenses associated with the Participating Pumpers' existing wells that do not provide Regional benefits shall not be included in the Wholesale Revenue Requirement. On a case-by-case basis, the SFPUC may include Participating Pumper existing well operation and maintenance expenses in the Wholesale Revenue Requirement provided that such expenses (1) are solely attributable to Regional Program operations and (2) are not caused by the Participating Pumper's failure to operate and maintain its existing wells in a reasonable and prudent manner consistent with water utility industry standards.

D. The SFPUC will audit operation and maintenance expenses submitted by the Participating Pumpers for reimbursement to confirm that such costs were incurred as a result of operating Regional Program wells and related assets. Costs associated with the use of Program facilities for Direct Retail or Direct Wholesale purposes, or that do not otherwise provide Regional benefits, shall not be included in the Wholesale Revenue Requirement. The SFPUC is responsible for resolving disputes with the Participating Pumpers concerning expense allocations. Program expense documentation, including documentation of negotiation and settlement of disputed costs, will be available for review during the Compliance Audit described

in Section 7.04. The Wholesale Customers may dispute the SFPUC's resolution of expense allocations through the arbitration provisions in Section 8.01 of this Agreement.

E. The SFPUC may direct the Participating Pumpers to recover water from the SFPUC basin storage account for any type of shortage referenced in Section 3.11. Water recovered from the SFPUC basin storage account using Regional Program wells may be used for (1) the benefit of all Regional Water System customers; (2) Retail Customers; or (3) one or more of the Participating Pumpers. The Wholesale Revenue Requirement shall only include operation and maintenance expenses incurred due to the operation of Program wells for Regional benefits.

F. All water recovered from the SFPUC basin storage account by the Participating Pumpers and by the SFPUC for delivery to Retail Customers during Shortages caused by Drought shall be used to free up a comparable volume of surface water from the Regional Water System for allocation in accordance with the Tier 1 Shortage Plan.

G. If the Program is terminated for any reason, including breach of the Program agreement by the Participating Pumpers or SFPUC, or due to regulatory action or legal action, then

1. Any water remaining SFPUC Regional storage account shall be used for the benefit of all customers of the Regional Water System;

2. Outstanding eligible operation and maintenance expenses, including costs incurred during recovery of remaining stored water, will be allocated as provided in this section; and

3. The Wholesale Customers will be credited with their share of proceeds from disposition of Program facilities or reimbursed their share of such capital costs for any Program facilities which are retained by the SFPUC for Direct Retail benefit and not used for the benefit of the Wholesale Customers, on the basis of (a) original cost less depreciation and outstanding related Indebtedness or (b) original cost less accumulated depreciation for revenue funded Regional Program facilities.

## **Article 4. Implementation of Interim Supply Limitation.**

### **4.01 Interim Supply Limitation Imposed by SFPUC**

In adopting the WSIP in Res. No. 08-0200, the Commission included full implementation of all proposed WSIP capital improvement projects to achieve level of service goals relating to public health, seismic safety, and delivery reliability, but decided to adopt a water supply element that includes the Interim Supply Limitation. This article describes how the parties will implement the Interim Supply Limitation imposed by the SFPUC between the Effective Date and December 31, 2018.

### **4.02 Retail and Wholesale Customer Allocations Under Interim Supply Limitation**

The Interim Supply Limitation is allocated as follows between Retail and Wholesale Customers:

Retail Customers' allocation:	81 MGD
Wholesale Customers' allocation:	184 MGD

The Wholesale Customers' collective allocation of 184 MGD under the Interim Supply Limitation includes the demand of the cities of San Jose and Santa Clara, whose demand is not included in the Supply Assurance, as provided in Section 3.02.B. By December 31st, 2010, the Commission will establish each Wholesale Customer's Interim Supply Allocation at a public meeting.

### **4.03 Transfers of Interim Supply Allocations**

A. Any Wholesale Customer, including Hayward, may transfer a portion of its Interim Supply Allocation to one or more other Wholesale Customers, as provided in this section. All Wholesale Customers are also eligible transferees, including California Water Service Company up to its Individual Supply Guarantee.

B. Transfers of a portion of an Interim Supply Allocation must be prospective. The duration of a transfer cannot be less than the balance of the fiscal year. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Interim Supply Allocations are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with



the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Interim Supply Allocation proposed to be transferred and the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide written notice to the SFPUC and BAWSCA.

F. Transfers of Interim Supply Allocations shall continue in effect until the earlier of (1) delivery of written notice to the SFPUC by the transfer participants that the transfer has been rescinded or (2) December 31, 2018.

#### **4.04 Environmental Enhancement Surcharge**

**A. Establishment of Environmental Enhancement Surcharge.** Beginning with wholesale water rates for fiscal year 2011-2012, and continuing for the duration of the Interim Supply Limitation, the Commission will establish the Environmental Enhancement Surcharge concurrently with the budget-coordinated rate process set forth in Article 6 of this Agreement. The monetary amount of the Environmental Enhancement Surcharge per volume of water, such as dollars per acre-foot, will be equivalent for Retail Customer use in excess of 81 MGD and Wholesale Customer use in excess of 184 MGD. The Environmental Enhancement Surcharge will be simple to calculate so that Wholesale Customers can estimate potential surcharges for budgeting purposes and establish retail rates within their service areas.

**B. Application of Environmental Enhancement Surcharge.** Beginning in fiscal year 2011-12, the Environmental Enhancement Surcharge will be levied only if and when combined Retail Customer and Wholesale Customer purchases exceed the Interim Supply Limitation of 265 MGD and if the fund described in subsection D below has been established by the San Francisco Board of Supervisors. In that event, the Environmental Enhancement Surcharge will apply to Retail Customers for use in excess of 81 MGD and to individual

Wholesale Customers for use in excess of their Interim Supply Allocations established by the Commission pursuant to Section 4.02.

1. Environmental Enhancement Surcharges related to the Retail Customers' use in excess of their 81 MGD Retail Customer Allocation will be paid by the SFPUC, and no portion of such surcharges may be allocated to Wholesale Customers. The method of recovering the Environmental Enhancement Surcharges imposed upon Retail Customers shall be within the sole discretion of the SFPUC.

2. Environmental Enhancement Surcharges related to the individual Wholesale Customers' use in excess of their respective Interim Supply Allocations will be paid to the SFPUC by individual Wholesale Customers.

**C. Collection of Environmental Enhancement Surcharge.** Notwithstanding the budget-coordinated rate setting process contemplated in Article 6 of this Agreement, the Environmental Enhancement Surcharge for any given year will be determined retrospectively based on actual annual usage during the fiscal year in excess of the Interim Supply Allocation and paid in equal monthly installments over the remainder of the immediately following fiscal year.

**D. Establishment of Fund for Environmental Enhancement Surcharge Proceeds.** Environmental Enhancement Surcharges paid by the SFPUC and by Wholesale Customers will be placed into a restricted reserve fund. The SFPUC will request the San Francisco Board of Supervisors to establish this fund by ordinance and, if adopted, the fund will be subject to the following restrictions:

1. Interest earnings will stay in the reserve fund.
2. The reserve fund shall (a) be subject to automatic appropriation; (b) require unexpended and unencumbered fund balances to be carried forward from year to year; and (c) not be transferred to the San Francisco General Fund.
3. The reserve fund may be used only for specific environmental restoration and enhancement measures for the Sierra and local watersheds, such as those included in the Watershed Environmental Improvement Program.
4. Environmental Enhancement Surcharge proceeds shall be expended in an expeditious manner. Any Environmental Enhancement Surcharge proceeds that remain in

the reserve fund as of December 31, 2018 shall be used to complete projects previously approved under subsection E. Upon completion of the identified projects, the balance of any unexpended sums in the reserve fund shall be distributed to BAWSCA and the SFPUC in proportion to the total amount of surcharges assessed to the Wholesale and Retail Customers, respectively.

**E. Use of Environmental Enhancement Surcharge Proceeds.** Specific uses of Environmental Enhancement Surcharges will be decided by the SFPUC and BAWSCA General Managers following input from environmental stakeholders and other interested members of the public. If parties are unable to agree, then they will jointly select a third person to participate in making the decision.

**4.05 San Jose/ Santa Clara Interim Supply Allocation and Process for Reduction/ Termination.**

San Francisco will supply a combined annual average of 9 MGD to the cities of San Jose and Santa Clara through 2018. Water supplied by San Francisco may only be used in the existing defined service areas in the northern portions of San Jose and Santa Clara shown on Attachment Q. San Francisco may reduce the quantity of water specified in this section when it establishes the Interim Supply Allocations for Wholesale Customers in Section 4.02. The establishment of Interim Supply Allocations for San Jose and Santa Clara shall not be considered a reduction of supply within the meaning of this section, provided that the Interim Supply Allocations assigned to San Jose and Santa Clara do not effect a reduction greater than the aggregate average reduction in Individual Supply Guarantees for Wholesale Customers that have such guarantees. The application of Interim Supply Allocations to San Jose and Santa Clara is subject to the following provisions:

A. In December 2010 and in each December thereafter through 2017, the SFPUC shall prepare and the Commission shall consider, at a regularly scheduled public meeting, a Water Supply Development Report detailing progress made toward meeting the Interim Supply Limitation by June 30, 2018.

B. The annual Water Supply Development Report shall be based on water purchase projections and work plans for achieving the Interim Supply Limitation in the Retail and Wholesale Service Areas. The projections and work plans will be prepared by the SFPUC for

the Retail Customers and by BAWSCA for the Wholesale Customers, respectively, and submitted to the Commission in June of each year beginning in 2010.

C. If the Commission finds that the projections in the Water Supply Development Report show that the Interim Supply Limitation will not be met by June 30, 2018, as a result of Wholesale Customers' projected use exceeding 184 MGD, the Commission may issue a conditional five-year notice of interruption or reduction in supply of water to San Jose and Santa Clara.

D. Upon issuance of the conditional notice of interruption or reduction, the SFPUC will prepare a new analysis of water supply that will be utilized by the San Francisco Planning Department in its preparation of any necessary documentation under CEQA pursuant to Section 4.07 on the impacts of interrupting or reducing service to San Jose and Santa Clara.

E. Such notice of interruption or reduction will be rescinded if the Commission finds, based upon a subsequent annual Water Supply Development Report, that sufficient progress has been made toward meeting the Interim Supply Limitation or projections show that the Interim Supply Limitation will be met by June 30, 2018.

F. In no case shall any interruption or reduction of service to San Jose or Santa Clara pursuant to this section become effective less than two years from the completion of the CEQA process (not including resolution of any appeals or litigation) or five years from the notice, whichever is longer. If the five-year notice is issued after 2013, such interruption or reduction would occur after 2018.

G. If deliveries to San Jose and Santa Clara are interrupted, existing turnout facilities to San Jose and Santa Clara will remain in place for possible use during emergencies.

H. San Francisco and the cities of San Jose and Santa Clara will cooperate with BAWSCA and the Santa Clara Valley Water District in the identification and implementation of additional water sources and conservation measures for the cities' service areas that are relevant to the water supply and the possible offer of permanent status for the two cities by the SFPUC.

#### **4.06 San Francisco Decisions in 2018 Regarding Future Water Supply**

A. By December 31, 2018, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 that is relevant to making San Jose and Santa Clara

permanent customers of the Regional Water System and will decide whether or not to make San Jose and Santa Clara permanent customers of the Regional Water System. San Francisco will make San Jose and Santa Clara permanent customers only if, and to the extent that, San Francisco determines that Regional Water System long term water supplies are available. In the event that San Francisco decides to afford permanent status to San Jose and Santa Clara, this Agreement will be amended pursuant to Section 2.03.

B. By December 31, 2018, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 and will decide how much water if any, in excess of the Supply Assurance it will supply to Wholesale Customers from the Regional Water System to meet their projected future water demands until the year 2030, and whether to offer a corresponding increase in the Supply Assurance as a result of its determination.

#### **4.07 Retained Discretion of SFPUC and Wholesale Customers**

A. This Agreement contemplates discretionary actions that the SFPUC and the Wholesale Customers may choose to take in the future that could result in physical changes to the environment ("Discretionary Actions"). The Discretionary Actions include decisions to:

1. Develop additional or alternate water resources by the SFPUC or one or more Wholesale Customers;
2. Implement the physical facilities comprising the WSIP by December 31, 2015;
3. Approve wheeling proposals by Wholesale Customers;
4. Approve new wholesale customers and water exchange or cost sharing agreements with other water suppliers;
5. Provide additional water to San Jose and/or Santa Clara;
6. Offer permanent status to San Jose and/or Santa Clara;
7. Reduce or terminate supply to San Jose and/or Santa Clara;
8. Provide additional water to Wholesale Customers in excess of the Supply Assurance to meet their projected future water demands; and



9. Offer a corresponding volumetric increase in the Supply Assurance.

The Discretionary Actions may require the SFPUC or Wholesale Customers to prepare environmental documents in accordance with CEQA prior to the SFPUC or the Wholesale Customers determining whether to proceed with any of the Discretionary Actions. Accordingly, and notwithstanding any provision of this Agreement to the contrary, nothing in this Agreement commits the SFPUC or the Wholesale Customers to approve or carry out any Discretionary Actions that are subject to CEQA. Furthermore, the SFPUC's or Wholesale Customers' decisions to approve any of these Discretionary Actions are subject to the requirement that San Francisco and each Wholesale Customer, as either a "Lead Agency" (as defined in Section 21067 of CEQA and Section 15367 of the CEQA Guidelines) or a "Responsible Agency" (as defined in Section 21069 of CEQA and Section 15381 of the CEQA Guidelines) shall have completed any CEQA-required environmental review prior to approving a proposed Discretionary Action.

B. In considering any proposed Discretionary Actions, the SFPUC and Wholesale Customers retain absolute discretion to: (1) make such modifications to any of the proposed Discretionary Actions as may be necessary to mitigate significant environmental impacts; (2) select feasible alternatives to the proposed Discretionary Actions that avoid significant adverse impacts; (3) require the implementation of specific measures to mitigate the significant adverse environmental impacts as part of the decision to approve the Discretionary Actions; (4) balance the benefits of the proposed Discretionary Actions against any significant environmental impacts before taking final actions to approve the proposed Discretionary Actions if such significant impacts cannot otherwise be avoided; or (5) determine not to proceed with the proposed Discretionary Actions.

## **Article 5. Wholesale Revenue Requirement**

### **5.01 Scope of Agreement**

This Article shall be applicable only to the water rates charged by San Francisco to the Wholesale Customers. Nothing contained in this Agreement shall limit, constrain, or in any way affect the rates which San Francisco may charge for water sold to Retail Customers or the methodology by which such rates are determined.

### **5.02 General Principles**

This Article sets forth the method by which the Wholesale Customers' collective share of expenses incurred by the SFPUC in delivering water to them will be determined. This collective share is defined as the "Wholesale Revenue Requirement."

- A. The SFPUC currently operates several enterprises, including the Water Enterprise, the Wastewater Enterprise, and the Hetch Hetchy Enterprise.
- B. The Wastewater Enterprise is responsible for treating sewage within San Francisco and provides no benefit to the Wholesale Customers.
- C. The Hetch Hetchy Enterprise is responsible for storing and transmitting water to the Water Enterprise, generating hydroelectric power and transmitting it to San Francisco, generating electric power within San Francisco, and distributing electricity and steam heat within San Francisco. Its water supply operations provide benefits to the Wholesale Customers.
- D. The Water Enterprise delivers water to both Retail Customers, which are located both within and outside San Francisco, and to the Wholesale Customers, all of which are located outside San Francisco.
- E. This Article implements two general principles as follows: (1) the Wholesale Customers should not pay for expenses of SFPUC operations from which they receive no benefit and (2) the Wholesale Customers should pay their share of expenses incurred by the SFPUC in delivering water to them on the basis of Proportional Annual Use unless otherwise explicitly provided in this Agreement.
- F. To implement these general principles, the Wholesale Revenue Requirement will consist of, and be limited to, the Wholesale Customers' shares of the following categories of expense:

1. Capital cost recovery of Water Enterprise Existing Assets, and Hetch Hetchy Enterprise Existing Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.03)
2. Contribution to the capital cost of Water Enterprise New Regional Assets (Section 5.04)
3. Water Enterprise operation and maintenance expenses, including power purchased from the Hetch Hetchy Enterprise that is used in the operation of the Water Enterprise (Section 5.05)
4. Water Enterprise administrative and general expenses (Section 5.06)
5. Water Enterprise property taxes (Section 5.07)
6. The Water Enterprise's share of the Hetch Hetchy Enterprise's operation and maintenance, administrative and general, and property tax expenses (Section 5.08)
7. The Water Enterprise's share of the Hetch Hetchy Enterprise's capital cost of New Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.09)

In each of these cost categories, Direct Retail Expenses will be allocated entirely to Retail Customers. Direct Wholesale Expenses will be allocated entirely to the Wholesale Customers. Regional Expenses will be allocated between Retail Customers and Wholesale Customers as provided in this Article.

G. For purposes of establishing the rates to be charged Wholesale Customers, expenses will be based on the budget for, and estimates of water purchases in, the following fiscal year, as provided in Article 6. For purposes of accounting, the Wholesale Revenue Requirement will be determined on the basis of actual expenses incurred and actual water use, as provided in Article 7.

H. In addition, rates charged to Wholesale Customers may include the Wholesale Customers' contribution to a Wholesale Revenue Coverage Reserve, as provided in Section 6.06, which is not included in the Wholesale Revenue Requirement itself.

### **5.03 Capital Cost Recovery - Existing Regional Assets**

A. SFPUC has previously advanced funds to acquire or construct Existing Assets used and useful in the delivery of water to both Wholesale Customers and Retail Customers. The parties estimate that the Wholesale Customers' share of the net book value of these assets, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately \$366,734,424, as shown on Attachment K-1.

B. In addition, SFPUC has also previously advanced funds received from Retail Customer revenues to acquire or construct assets included in Construction-Work-In-Progress (CWIP) as of June 30, 2009. The parties estimate that the Wholesale Customers' share of the book value of these revenue funded capital expenditures, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately \$15,594,990, as shown on Attachment K-2. The Wholesale Customers shall pay their share of the cost of Existing Assets and revenue-funded CWIP by amortizing the amounts shown on Attachment K-1 and Attachment K-2 over 25 years at an interest rate of 5.13 percent. The amounts to be included in the Wholesale Revenue Requirement pursuant to this section shall be the sum of the annual principal and interest amounts shown on Attachments K-3 (for Water Enterprise Regional Assets and the one Direct Wholesale Asset) and K-4 (for Hetch Hetchy Enterprise Water-Only Assets and the Water-Related portion [45 percent] of Joint assets) calculated on the basis of monthly amortization of principal as set forth on Attachments K-3 and K-4.

C. In addition, the Commission has previously appropriated funds, advanced through rates charged to Retail Customers, for construction of capital projects. Some of these projects are active, and have unexpended balances of appropriated funds that are not included in CWIP as of June 30, 2009. These projects, and the associated balances, are shown on Attachment K-5. Expenditures of funds from these balances during FY 2009-10, FY 2010-11 and FY 2011-12 will be reviewed in FY 2012-13. The SFPUC will prepare a report showing the amount expended in each year on each project and the total expended during all years on all projects that are categorized as Regional or, in the case of Hetch Hetchy Enterprise, are categorized as either Water-Only or Joint. The wholesale share of that total will be determined using the allocation principles in this Agreement based on Proportional Water Use during those three years. The result, plus accrued interest at the rate specified in Section 6.05.B, will be calculated by the SFPUC and its calculation reviewed by the Compliance Auditor as part of the Compliance Audit for FY 2012-13. The audited total will be paid based on a schedule of level annual principal and interest amounts over ten years at an interest rate of 4.00%, calculated on

a monthly amortization basis. All or any portion of the balance may be prepaid. The first year's payment will be included in the Wholesale Revenue Requirement for FY 2014-15.

D. The parties agree that the Wholesale Customers' share of the net book values of Existing Regional Assets as of June 30, 2008 as shown on Attachment K-1 are accurate. The compliance audit conducted on the calculation of the FY 2008-09 Suburban Revenue Requirement required by the 1984 Agreement will determine the actual amounts of depreciation on, and capital additions to, plant in service during that fiscal year. Those amounts will be compared to the corresponding estimates shown on Attachments K-1 and K-2. The differences will be added to or subtracted from the estimated asset values shown on Attachments K-1 and K-2 and the amortization schedules in Attachments K-3 and K-4 will be recalculated. The wholesale allocation factors shall be fixed at 70.1% for the Water Enterprise Existing Assets and 64.2% for Hetch Hetchy Enterprise Existing Assets for both the preliminary and final payment schedules. The SFPUC will prepare and provide to the Wholesale Customers revised Attachments K-1 through K-4 based on the Wholesale Customers' share of the net book value of the assets placed in service as of June 30, 2009 used to provide water service to the Wholesale Customers and the net book value of revenue-funded CWIP expended as of June 30, 2009. The revised Attachments K-1 through K-4 shall be approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA and will be substituted for the original Attachments K-1 through K-4.

E. The original Attachments K-1 through K-4, based on estimates, shall be used for estimating the Wholesale Revenue Requirement for the fiscal year beginning July 1, 2009. The revised Attachments, based on audited actuals, shall be used to determine the actual Wholesale Revenue Requirement for FY 2009-10 and to determine the Wholesale Revenue Requirement(s) in all subsequent years, except as may be provided elsewhere in this Agreement.

F. The Wholesale Customers, acting through BAWSCA, may prepay the remaining unpaid Existing Assets principal balance, in whole or in part, at any time without penalty or early payment premium. Any prepayments will be applied in the month immediately following the month in which the prepayment is made and the revised monthly amount(s) will be used to calculate the Wholesale Revenue Requirement. Any partial prepayments must be in an amount at least equal to \$10 million. In the event of a partial prepayment, an updated schedule for the remaining payments shall be prepared reflecting the unpaid balance after prepayment,



amortized through the end of FY 2034, calculated as provided in this section. The updated schedule, approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA, will be substituted for Attachment K-3 and/or Attachment K-4.

#### **5.04 Capital Cost Contribution - New Regional Assets**

**A. Debt-Funded Capital Additions.** The Wholesale Customers shall pay the wholesale share of Net Annual Debt Service for New Regional Assets. The Regional projects in the WSIP are identified in Attachment L-1.

1. The amount of Net Annual Debt Service for New Regional Assets will be determined for each series of Indebtedness issued. Until the proceeds of a particular series are Substantially Expended, the amount attributable to specific projects will be based on the expected use of proceeds shown in the "Certificate Regarding Use of Proceeds" executed by the SFPUC General Manager on behalf of the Commission in connection with the sale of the Indebtedness, provided such certificate identifies the use of proceeds at a level of detail equivalent to that shown on Attachment L-2, which is a copy of the certificate prepared for the 2006 Revenue Bonds, Series A. If a certificate does not identify the use of proceeds at that level of detail, the SFPUC General Manager shall prepare and execute a separate certificate which does identify the use of proceeds at the level of detail shown on Attachment L-2 and deliver it to BAWSCA within 15 days from the closing of the sale of the Indebtedness.

2. After the proceeds of a series are Substantially Expended, the SFPUC General Manager will prepare and execute a certificate showing the actual expenditure of proceeds at a level of detail equivalent to the initial General Manager certificate. The resulting allocation of Net Debt Service to New Regional Assets for a series of bonds will be used in the fiscal year in which the proceeds have been Substantially Expended and thereafter. Differences between the amount of Net Debt Service paid by Wholesale Customers prior to that year and the amount of Net Debt Service that they should have paid during that time based on the actual expenditure of proceeds will be taken into account in calculation of the balancing account for the fiscal year in which the proceeds were Substantially Expended. The application of the remaining proceeds shall be proportionate to the allocation of the Net Debt Service to New Regional Assets.

3. The Wholesale Customers' share of Net Annual Debt Service for the New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the

projects in the WSIP are categorized as Direct Wholesale.) The Wholesale Customers' share of Net Annual Debt Service for all other New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use.

4. If Indebtedness is issued by the SFPUC to refund the 2006 Revenue Bonds, Series A or to refund any other long-term Indebtedness issued after July 1, 2009, the Net Annual Debt Service attributable to proceeds used for refunding will be allocated on the same basis as the Indebtedness being refunded.

5. The SFPUC will prepare an annual report showing for each issue of Indebtedness and through the most recently completed fiscal year: (1) net financing proceeds available to pay project costs, (2) actual earnings on proceeds, (3) actual expenditures by project. The report shall be substantially in the form of Attachment L-3 and shall be delivered to BAWSCA on or before November 30 of each year, commencing November 2009.

6. In addition to Net Debt Service, Wholesale Customers will pay a proportionate share of annual administrative costs associated with Indebtedness, such as bond trustee fees, credit rating agency fees, letter of credit issuer fees, San Francisco Revenue Bond Oversight Committee fees, etc., but only to the extent such fees are neither paid from proceeds of Indebtedness nor included in SFPUC operation and maintenance or administrative and general expenses.

**B. Revenue-Funded Capital Additions.** The Wholesale Customers shall pay the wholesale share of the appropriation contained in the SFPUC annual budget for each year to be used to acquire or construct New Regional Assets. If such appropriations are reimbursed from proceeds of Indebtedness, the Wholesale Customers will be credited for prior payments made under this Section 5.04.B.

The Wholesale Customers' share of the annual appropriation for revenue-funded New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the Repair and Replacement projects in the SFPUC's most recent capital improvement program updated on February 10, 2009, is categorized as Direct Wholesale.) The Wholesale Customers' share of the annual appropriation for all other revenue-funded New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use in each fiscal year. The amount appropriated in each fiscal year for the wholesale share of New

Regional Assets shall be contributed to the Wholesale Capital Fund described in Section 6.08 and reported on and administered as shown in that section and Attachments M-1 through M-3.

#### **5.05 Water Enterprise Operation and Maintenance Expenses**

There are five categories of Water Enterprise Operation and Maintenance Expenses, described below:

##### **A. Source of Supply**

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of collecting and impounding reservoirs, dams, wells and other water supply facilities located outside San Francisco; watershed protection; water supply planning; and the purchase of water.

2. Allocation: Direct Retail expenses, including water supply planning for Retail operations (such as City Retail water conservation programs), will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Source of Supply category.)

##### **B. Pumping**

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of water pumping plants, ancillary structures and equipment and surrounding grounds; and fuel and power purchased for pumping water.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Pumping category.)

##### **C. Treatment**

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies and other expenses incurred in the operation and

maintenance of water treatment plants and drinking water quality sampling and testing. The cost of water quality testing will not include expenses incurred on behalf of the Wastewater Enterprise. Any remaining costs, after adjusting for the Wastewater Enterprise, will be reduced by the amount of revenue received for laboratory analyses of any type performed for agencies, businesses and/or individuals other than the Water and Hetch Hetchy Enterprises.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Treatment category.)

**D. Transmission and Distribution**

1. Description: This category consists of the cost of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of transmission and distribution pipelines, appurtenances, meters (other than those expenses payable by individual Wholesale Customers pursuant to Section 5.10.C.3), distribution reservoirs storing treated water, craft shops and auto shops servicing vehicles used for operation and maintenance of the Regional Water System rather than for Direct Retail facilities, and miscellaneous facilities related to the transmission and distribution of water.

2. Allocation: Direct Retail Transmission and Distribution expenses will be assigned to the Retail Customers. Regional Transmission and Distribution expenses will be allocated between Retail and Wholesale Customers on the basis of Proportional Annual Use. Expenses incurred for the operation and maintenance of three terminal reservoirs, i.e., Sunset Reservoir (North and South Basins), University Mound Reservoir (North and South Basins), and Merced Manor Reservoir, as well as transmission pipelines delivering water to them, are classified as Regional expenses notwithstanding the location of the reservoirs within San Francisco. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date the only Direct Wholesale expenses in the Transmission and Distribution category are associated with the Palo Alto pipeline.)

**E. Customer Services**

1. Description: This category consists of labor; materials and supplies; and other expenses incurred for meter reading, customer record keeping, and billing and collection for the Water Enterprise.

2. Allocation: Customer Services expenses will be allocated among the Water Enterprise, the Wastewater Enterprise, and Hetch Hetchy Enterprise in proportion to the time spent by employees in Customer Services for each operating department/enterprise. The Water Enterprise's share of Customer Services expense will be allocated 98 percent to the Retail Customers and two percent to the Wholesale Customers, as illustrated on Attachment N-2, Schedule 1.

**5.06 Water Enterprise Administrative and General Expenses**

Administrative and General expenses consist of the Water Enterprise's share of the cost of general government distributed through the full-cost Countywide Cost Allocation Plan, the services of SFPUC support bureaus, Water Enterprise administrative and general expenses that cannot be directly assigned to a specific operating and maintenance category, and the cost of the Compliance Audit. These four subcategories, and the method by which costs in each are to be calculated and allocated, are as follows:

**A. Countywide Cost Allocation Plan**

1. Description: This subcategory consists of the Water Enterprise's share of the costs of San Francisco general government and other City central service departments which are not directly billed to the Water Enterprise or other operating departments. All San Francisco operating departments are assigned a prorated share of these costs through the full-cost Countywide Cost Allocation Plan (COWCAP) prepared annually by the San Francisco Controller.

2. Allocation: The Water Enterprise's assigned share of central government costs as shown in the annual full-cost COWCAP prepared by the San Francisco Controller, will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of the allocated expenses in the five categories of operation and maintenance expense described in Section 5.05. The composite wholesale percentage shown on Attachment N-2, Schedule 1 is 42.07 percent, derived by dividing the wholesale share of



Operation and Maintenance expenses (\$46,573,883) by total Operation and Maintenance expenses (\$110,700,133).

**B. Services of SFPUC Bureaus**

1. Description: This subcategory consists of the support services provided to the Water Enterprise by the SFPUC Bureaus, which presently consist of the General Manager's Office, Business Services, External Affairs, and Infrastructure Bureau. Business Services presently includes Financial Services, Information Technology Services, Human Resource Services, Fleet Management, and Customer Services.

2. Allocation: There are three steps involved in determining the Wholesale Customers' share of SFPUC Bureau costs.

a. Step One: Bureau expenses which have either been recovered separately or which provide no benefit to Wholesale Customers will be excluded. Examples of Bureau expenses recovered separately include (1) Customer Services expenses, which are recovered as provided in Section 5.05.E, and (2) Infrastructure expenses, which are assigned to individual projects and capitalized. An example of a Bureau expense that provides no benefit to Wholesale Customers is Information Technology Services expenses for support of the San Francisco Municipal Railway. In addition, the SFPUC will continue its practice of assigning City Attorney Office expenses charged to the General Manager's Office for projects or lawsuits that relate to only one enterprise directly to that enterprise. For example, costs related to a lawsuit involving the Wastewater Enterprise will not be assigned to the Water Enterprise.

b. Step Two: Bureau expenses adjusted as provided in Step One will be allocated among the Water Enterprise, the Wastewater Enterprise and the Hetch Hetchy Enterprise on the basis of the actual salaries of employees in each enterprise or department, as illustrated on Attachment N-2, Schedule 7.

c. Step Three: The amount allocated to the Water Enterprise through Step Two will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

**C. Water Enterprise Administrative and General**

1. Description: This category includes expenses incurred by the Water Enterprise that are not readily assignable to specific operating divisions. This category includes the following expenses:

a. Water Administration: This includes the costs of labor and other expenses of the administrative section of the Water Enterprise, supervision and engineering expenses, professional services, travel and training, equipment purchases, and materials and supplies not directly assignable to a specific operating unit.

b. Services Provided by Other City Departments: This includes charges of other San Francisco departments directly billed to the Water Enterprise administration by other San Francisco departments for services ordered by the Water Enterprise, such as legal services, risk management, telecommunications, employee relations, purchasing, mail services, and workers compensation claims paid.

c. Litigation and Claims Paid: This includes charges incurred for attorney services and claims and judgments paid in litigation arising from the operation of the Water Enterprise.

2. Allocation: In each of these three subcategories, expenses that benefit only Retail Customers will be excluded. For example, the cost of claims and judgments resulting from a break in or leak from pipelines or reservoirs in the Retail Service Area (with the exception of the three terminal reservoirs and pipelines delivering water to them) will be assigned to the Retail Customers. Remaining Water Enterprise Administrative and General expenses will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of allocated operation and maintenance expense categories described in Section 5.05.

**D. Compliance Audit.** The cost of the Compliance Audit described in Section 7.04 will be assigned 50 percent to the Retail Customers and 50 percent to the Wholesale Customers.

### **5.07 Water Enterprise Property Taxes**

A. Description: This category consists of property taxes levied against property owned by San Francisco located in Alameda, San Mateo and Santa Clara counties and used and managed by the SFPUC.

B. Allocation: All property taxes paid, net of (1) reimbursements received from lessees and permit holders, and (2) refunds from the taxing authority, are Regional expenses. Net property taxes will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

### **5.08 Hetch Hetchy Enterprise Expenses**

A. **Introduction.** There are two steps involved in determining the amount of the Wholesale Customers' share of Hetch Hetchy Enterprise expenses.

1. The first step is to determine the Water Enterprise's share of Hetch Hetchy Enterprise operation expenses, maintenance expenses, administrative and general expenses, and property taxes.

2. The second step is to determine the Wholesale Customers' share of expenses allocable to the Water Enterprise.

#### **B. Determination of the Water-Related Portion of Hetch Hetchy Enterprise Expenses**

1. **Operation and Maintenance Expenses:** This category consists of the cost of labor, materials and supplies, and other expenses incurred in operating and maintaining Hetch Hetchy Enterprise physical facilities.

a. **Description:** Expenses associated exclusively with the production and distribution of hydroelectric power (e.g., generating plants and power transmission lines and towers, transformers and associated electric equipment, purchased power, wheeling charges, rental of power lines, etc.) are categorized as Power-Only and are allocated to power. Expenses associated exclusively with the operation and maintenance of facilities that serve only the water function (e.g., water transmission pipelines and aqueducts, activities related to compliance with federal and state drinking water quality laws, etc.) are categorized as Water-Only and are allocated entirely to water. Expenses associated with the operation and maintenance of facilities that serve both the water and power functions (e.g., dams, security

programs, etc.) are categorized as Joint and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

2. Administrative and General Expenses: There are three subcategories of Hetch Hetchy Enterprise Administrative and General expenses.

a. Full-Cost Countywide Cost Allocation Plan: This subcategory consists of the cost of San Francisco general government and other City central service departments which are not directly billed to operating departments but allocated through the full-cost Countywide Cost Allocation Plan described in Section 5.06.A. Costs in this subcategory are classified as Joint, and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

b. SFPUC Bureau Costs: This subcategory consists of the expenses described in Section 5.06.B. One hundred percent of Customer Services expenses allocated to the Hetch Hetchy Enterprise are categorized as Power-Only. The remaining amount of Bureau expenses allocated to the Hetch Hetchy Enterprise pursuant to Section 5.06.B will be reallocated between power and water in proportion to the salaries of Hetch Hetchy Enterprise employees assigned to each function as shown on Attachment N-2, Schedule 7.1.

c. Other Administrative and General: This subcategory includes payments to the United States required by the Act, labor, supervision and engineering and other costs not readily assignable to a specific operation or maintenance function or program. Costs related to power administration (such as long range planning and policy analysis for energy development, administration of power contracts, and administration of work orders to City departments for energy services) are Power-Only costs. Costs related to water administration (such as legal and professional services for the protection of the City's water rights) are Water-Only costs and will be assigned to the Water Enterprise. Costs related to both power administration and water administration (such as general administration, office rents, office materials and supplies, and services of other City departments benefitting to both power and water are Joint administrative and general costs and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

3. Property Taxes. This category consists of property taxes levied against property owned by San Francisco in Tuolumne, Stanislaus, San Joaquin, and Alameda counties and operated and managed by the Hetch Hetchy Enterprise.

Allocation: Property taxes are classified as Joint costs. They will be reallocated as 55 percent Power-Related and 45 percent Water-Related.

**C. Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Expenses.** The Water Enterprise's share of Hetch Hetchy Enterprise expenses consist of 100 percent of Water-Only expenses and the Water-Related portion (45%) of Joint expenses.

The Wholesale Customers' share of the sum of the Water Enterprise's share of Hetch Hetchy Enterprise expenses determined under subsection B shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.

### **5.09 Hetch Hetchy Enterprise Capital Costs**

**A. Introduction.** Wholesale Customers are also allocated a share of Hetch Hetchy Enterprise capital costs.

**B. Components of Capital Costs.** The components of Hetch Hetchy Enterprise capital costs are as follows:

1. Existing Assets Cost Recovery. The Wholesale Customers' repayment of their share of Hetch Hetchy Existing Assets (Water-Only and the Water-Related portion [45 percent] of Joint assets) is shown on Attachment K-4 accompanying Section 5.03.

2. Debt Service on New Assets. The Water Enterprise will be assigned 100 percent of Net Annual Debt Service attributable to acquisition and construction of New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of Net Annual Debt Service on New Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.A apply to debt service on New Hetch Hetchy Enterprise assets.

3. Revenue-Funded Capital Additions. The Water Enterprise will be assigned 100 percent of capital expenditures from revenues for New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of such expenditures for new Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.B apply to the payment of New revenue-funded Hetch Hetchy Enterprise assets.

**C. Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Capital Costs.** The Wholesale Customers' share of the Net Annual Debt Service and revenue funded capital expenditures determined under subsections B.2 and 3 shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.



## 5.10 Additional Agreements Related to Financial Issues

**A. Wholesale Customers Not Entitled to Certain Revenues.** The Wholesale Customers have no entitlement to any of the following sources of revenue to the SFPUC.

1. Revenues from leases or sales of SFPUC real property.
2. Revenues from the other utility services such as the sale of electric power, natural gas and steam.
3. Revenues from the sale of water to customers and entities other than the Wholesale Customers.
4. Revenues earned from the investment of SFPUC funds other than funds contributed by the Wholesale Customers to the Wholesale Revenue Coverage Reserve described in Section 6.06 or the Wholesale Capital Fund described in Section 6.08. Wholesale Customers are also entitled to the benefit of earnings on proceeds of Indebtedness (through expenditure on New Regional Assets and /or application to Debt Service) and to interest on the Balancing Account as provided in Section 6.05.B.
5. Revenues not related to the sale of water.

**B. Wholesale Customers Not Charged with Certain Expenses.** The Wholesale Customers will not be charged with any of the following expenses:

1. Capital costs for assets constructed or acquired prior to July 1, 1984 other than Existing Asset costs that are repaid pursuant to Section 5.03.
2. Expenses incurred by the SFPUC for generation and distribution of electric power, including Hetch Hetchy Enterprise Power-Only expenses and the Power-Related share of Hetch Hetchy Enterprise Joint expenses. An exception to this is Regional energy costs incurred by the Water Enterprise, for which Wholesale Customers are charged on the basis of Proportional Annual Use.
3. Expenses incurred by SFPUC in providing water to Retail Customers.
4. Expenses associated with the SFPUC's accruals or allocations for uncollectible Retail Water accounts.

5. Attorneys' fees and costs incurred by the Wholesale Customers that a court of competent jurisdiction orders San Francisco to pay as part of a final, binding judgment against San Francisco as provided in Section 8.03.B.2.

6. Any expenses associated with funding any reserves (other than the required Wholesale Revenue Coverage Reserve described in Section 6.06) accrued and not anticipated to be paid within one year unless such reserve is established by mutual agreement of the SFPUC and BAWSCA.

7. Any expenses accrued in respect to pending or threatened litigation, damage or personal injury claims or other loss contingencies unless projected to be paid within one year. Otherwise, such expenses will be charged to the Wholesale Customers when actually paid.

8. Any expense associated with installing, relocating, enlarging, removing or modifying meters and service connections at the request of an individual Wholesale Customer.

9. The Retail Customers' portion of any Environmental Enhancement Surcharges imposed to enforce the Interim Supply Limitation set forth in Section 4.04.

**C. Revenues Not Credited to Payment of Wholesale Revenue Requirement.**

The following payments by Wholesale Customers, individually or collectively, are not credited as Wholesale revenues for purposes of Section 6.05.B:

1. Payments by individual Wholesale Customers of the Environmental Enhancement Surcharge imposed to enforce the Interim Supply Limitation set forth in Section 4.04.

2. Payments of attorneys' fees and costs incurred by San Francisco that a court of competent jurisdiction orders the Wholesale Customers to pay as part of a final, binding judgment against the Wholesale Customers, as provided in Section 8.03.B.3.

3. Payments by individual Wholesale Customers for installation, relocation, enlargement, removal or modification of meters and service connections requested by, and charged to, a Wholesale Customer.

4. Payments applied to the amortization of the ending balance in the balancing account under the 1984 Agreement, pursuant to Section 6.05.A.

5. Payments of the Water Management Charge which are delivered to BAWSCA pursuant to Section 3.06.

6. Payments directed to the Wholesale Revenue Coverage Reserve pursuant to Section 6.06.

7. Prepayments authorized by Sections 5.03.C and 5.03.F.

**D. Other**

1. The Wholesale Customers will receive a proportional benefit from funds received by the SFPUC from (a) governmental grants, rebates, reimbursements or other subventions, (b) private-sector grants for Regional capital or operating purposes of the Water Enterprise and the Water-Only and Water-related portion of Joint Hetch Hetchy Water Enterprise expenses, or (c) a SFPUC use of taxable bonds.

2. The Wholesale Customers will receive a proportionate benefit from recovery of damages, including liquidated damages, by SFPUC from judgments against or settlements with contractors, suppliers, sureties, etc., related to Regional Water System projects and the Water-Only and Water-Related portion of Joint Hetch Hetchy Enterprise projects.

3. The SFPUC will continue to charge Wholesale Customers for assets acquired or constructed with proceeds of Indebtedness on which Wholesale Customers paid Debt Service during the Term of this Agreement on the “cash” basis (as opposed to the “utility” basis) after the expiration or earlier termination of this Agreement. The undertaking in this Section 5.10.D.3 will survive the expiration or earlier termination of this Agreement.

## **Article 6. Integration of Wholesale Revenue Requirement with SFPUC Budget Development and Rate Adjustments**

### **6.01 General**

A. The purpose of the allocation bases set forth in Article 5 is to determine the Wholesale Revenue Requirement for each fiscal year. The Wholesale Revenue Requirement can only be estimated in advance, based on projected costs and water deliveries. These projections are used to establish water rates applicable to the Wholesale Customers.

B. After the close of each fiscal year, the procedures described in Article 7 will be used to determine the actual Wholesale Revenue Requirement for that year, based on actual costs incurred, allocated according to the provisions of Article 5, and using actual water delivery data. The amount properly allocated to the Wholesale Customers shall be compared to the amount billed to the Wholesale Customers for the fiscal year, other than those identified in Section 5.10.C. The difference will be entered into a balancing account to be charged to, or credited to, the Wholesale Customers, as appropriate.

C. The balancing account shall be managed as described in Section 6.05.

### **6.02 Budget Development**

The SFPUC General Manager will send a copy of the proposed SFPUC budget to BAWSCA at the same time as it is sent to the Commission. In addition, a copy of materials submitted to the Commission for consideration at meetings prior to the meeting at which the overall SFPUC budget is considered (including (a) operating budgets for the Water Enterprise and the Hetch Hetchy Enterprise, (b) budgets for SFPUC Bureaus, and (c) capital budgets for the Water Enterprise and the Hetch Hetchy Enterprise) will also be sent to BAWSCA concurrently with their submission to the Commission.

### **6.03 Rate Adjustments**

A. **Budget Coordinated Rate Adjustments.** Adjustments to the rates applicable to the Wholesale Customers shall be coordinated with the budget development process described in this section except to the extent that Sections 6.03.B and 6.03.C authorize emergency rate increases and drought rate increases, respectively.

If the SFPUC intends to increase wholesale water rates during the ensuing fiscal year, it will comply with the following procedures:

1. Adjustments to the wholesale rates will be adopted by the Commission at a regularly scheduled meeting or at special meeting, properly noticed, called for the purpose of adjusting rates or for taking any other action under the jurisdiction of the Commission.

2. The SFPUC will send a written notice by mail or electronic means to each Wholesale Customer and to BAWSCA of the recommended adjustment at least thirty (30) days prior to the date of the meeting at which the Commission will consider the proposed adjustment. The notice will include the date, time and place of the Commission meeting.

3. The SFPUC shall prepare and provide to each Wholesale Customer and to BAWSCA the following materials: (a) a table illustrating how the increase or decrease in the Wholesale Revenue Requirement and wholesale rates were calculated, substantially in the form of Attachment N-1, (b) a schedule showing the projected expenses included in the Wholesale Revenue Requirement for the fiscal year for which the rates are being proposed, and supporting materials, substantially in the form of Attachment N-2, and (c) a schedule showing projected water sales, Wholesale Revenue Requirements and wholesale rates for the fiscal year for which rates are being set and the following four years, substantially in the form of Attachment N-3. These materials will be included with the notification required by Section 6.03.A.2.

4. Rate adjustments will be effective no sooner than thirty (30) days after adoption of the wholesale rate by the Commission.

5. San Francisco will use its best efforts to provide the Wholesale Customers with the information described above. San Francisco's failure to comply with the requirements set forth in this section shall not invalidate any action taken by the Commission (including, but not limited to, any rate increase or decrease adopted). In the event of such failure, the Wholesale Customers may either invoke arbitration, as set forth in Section 8.01, or seek injunctive relief, to compel San Francisco to remedy the failure as soon as is reasonably practical, and San Francisco shall be free to oppose the issuance of the requested judicial or arbitral relief on any applicable legal or equitable basis. The existence of this right to resort to arbitration shall not be deemed to preclude the right to seek injunctive relief.

6. Because delays in the budget process or other events may cause San Francisco to defer the effective date of Wholesale Customer rate adjustments until after the beginning of San Francisco's fiscal year, nothing contained in this Agreement shall require San Francisco to make any changes in the water rates charged to Wholesale Customers effective at



the start of San Francisco's fiscal year or at any other specific date. Nothing in the preceding sentence shall excuse non-compliance with the provisions of Section 6.02 and this section.

**B. Emergency Rate Increases.** The Commission may adjust the Wholesale Customers' rates without complying with the requirements of Section 6.03.A in response to an Emergency that damages the Regional Water System and disrupts San Francisco's ability to maintain normal deliveries of water to Retail and Wholesale Customers. In such an Emergency, the Commission may adopt an emergency rate surcharge applicable to Wholesale Customers without following the procedures set forth in this section, provided that any such rate surcharge imposed by the Commission shall be applicable to both Retail and Wholesale Customers and incorporate the same percentage increase for all customers. Any emergency rate surcharge adopted by the Commission shall remain in effect only until the next-budget coordinated rate-setting cycle.

**C. Drought Rates.** If the Commission declares a water shortage emergency under Water Code Section 350, implements the Tier 1 Shortage Plan (Attachment H) described in Section 3.11.C, and imposes drought rates on Retail Customers, it may concurrently adjust wholesale rates independently of coordination with the annual budget process. Those adjustments may be designed to encourage water conservation and may constitute changes to the structure of the rates within the meaning of Section 6.04. The parties agree, however, that, in adopting changes in rates in response to a declaration of water shortage emergency, the Commission shall comply with Section 6.03.A.1 and 2 but need not comply with Section 6.04.B. Drought Rate payments and payments of excess use charges levied in accordance with the Tier 1 Shortage Plan described in Section 3.11.C constitute Wholesale Customer Revenue and count towards the Wholesale Revenue Requirement. The SFPUC may use these revenues to purchase additional water for the Wholesale Customers from the State Drought Water Bank or other willing seller.

#### **6.04 Rate Structure**

A. This Agreement is not intended and shall not be construed to limit the Commission's right (a) to adjust the structure of the rate schedule applicable to the Wholesale Customers (i.e., the relationship among the several charges set out therein) or (b) to add, delete, or change the various charges which make up the rate schedule, provided that neither such charges nor the structure of the rate schedule(s) applicable to the Wholesale Customers shall be arbitrary, unreasonable, or unjustly discriminatory as among said customers. The

SFPUC will give careful consideration to proposals for changes in the rate schedule made jointly by the Wholesale Customers but, subject to the limitations set out above, shall retain the sole and exclusive right to determine the structure of the rate schedule.

B. If the SFPUC intends to recommend that the Commission adopt one or more changes to the structure of wholesale rates (currently set forth in SFPUC Rate Schedule W-25), it shall prepare and distribute to the Wholesale Customers and BAWSCA a report describing the proposed change(s), the purpose(s) for which it/they are being considered, and the estimated financial effect on individual Wholesale Customers or classes of customers. Wholesale Customers may submit comments on the report to the SFPUC for sixty (60) days after receiving the report. The SFPUC will consider these comments and, if it determines to recommend that the Commission adopt the change(s), as described in the report or as modified in response to comments, the SFPUC General Manager shall submit a report to the Commission recommending specific change(s) in the rate structure. Copies of the General Manager's report shall be sent to all Wholesale Customers and BAWSCA at least thirty (30) days prior to the Commission meeting at which the changes will be considered.

C. The SFPUC may recommend, and the Commission may adopt, changes in the structure of wholesale rates at any time. However, the new rate schedule implementing these changes will become effective at the beginning of the following fiscal year.

#### **6.05 Balancing Account**

A. **Balancing Account Established Under 1984 Agreement.** The amount of credit in favor of San Francisco as of the expiration of the term of 1984 Agreement (June 30, 2009) is not known with certainty as of preparation and execution of this Agreement. It will not be known with certainty until the Compliance Audit for FY 2008-09 is completed and disputes, if any, that the Wholesale Customers or the SFPUC may have with the calculation of the Suburban Revenue Requirement for that fiscal year and for previous fiscal years have been settled or decided by arbitration.

The parties anticipate that the amount of the credit in favor of San Francisco as of June 30, 2009 may be within the range of \$15 million to \$20 million.

In order to reduce the credit balance due San Francisco under the 1984 Agreement in an orderly manner, while avoiding unnecessary fluctuations in wholesale rates, the parties agree to implement the following procedure.

1. In setting wholesale rates for FY 2009-10, SFPUC will include a balancing account repayment of approximately \$2 million.

2. In setting wholesale rates for FY 2010-11 and following years, SFPUC will include a balancing account repayment of not less than \$2 million and not more than \$5 million annually until the full amount of the balance due, plus interest at the rate specified in Section 6.05.B, is repaid.

3. The actual ending balance as of June 30, 2009 will be determined, by the parties' agreement or arbitral ruling, after the Compliance Audit report for FY 2008-09 is delivered to BAWSCA. That amount, once determined, will establish the principal to be amortized through subsequent years' repayments pursuant to this Section 6.05.A.

**B. Balancing Account Under This Agreement**

1. Operation. After the close of each fiscal year, the SFPUC will compute the costs allocable to the Wholesale Customers for that fiscal year pursuant to Article 5, based on actual costs incurred by the SFPUC and actual amounts of water used by the Wholesale Customers and the Retail Customers. That amount will be compared to the amounts billed to the Wholesale Customers for that fiscal year (including any Excess Use Charges, but excluding revenues described in Section 5.10.C). The difference will be posted to a "balancing account" as a credit to, or charge against, the Wholesale Customers. Interest shall also be posted to the balancing account calculated by multiplying the amount of the opening balance by the average net interest rate, certified by the Controller as earned in the San Francisco Treasury for the previous fiscal year on the San Francisco County Pooled Investment Account. Interest, when posted, will carry the same mathematical sign (whether positive or negative) as carried by the opening balance. The amount posted to the balancing account in each year shall be added to, or subtracted from, the balance in the account from previous years. The calculation of the amount to be posted to the balancing account shall be included in the report prepared by the SFPUC pursuant to Section 7.02.

The opening balance for fiscal year 2009-10 shall be zero.

2. Integration of Balancing Account with Wholesale Rate Setting Process. If the amount in the balancing account is owed to the Wholesale Customers (a positive balance), the SFPUC shall take it into consideration in establishing wholesale rates. However, the SFPUC need not apply the entire amount to reduce wholesale rates for the immediately ensuing

year. Instead, the SFPUC may prorate a positive ending balance over a period of up to three successive years in order to avoid fluctuating decreases and increases in wholesale rates.

a. If a positive balance is maintained for three successive years and represents 10 percent or more of the Wholesale Revenue Requirement for the most recent fiscal year, the SFPUC shall consult with BAWSCA as to the Wholesale Customers' preferred application of the balance. The Wholesale Customers shall, through BAWSCA, direct that the positive balance be applied to one or more of the following purposes: (a) transfer to the Wholesale Revenue Coverage Reserve, (b) amortization of any remaining negative balance from the ending balancing account under the 1984 Agreement, (c) prepayment of the existing asset balance under Section 5.03, (d) water conservation or water supply projects administered by or through BAWSCA, (e) immediate reduction of wholesale rates, or (f) continued retention for future rate stabilization purposes. In the absence of a direction from BAWSCA, the SFPUC shall continue to retain the balance for rate stabilization in subsequent years.

b. If the amount in the balancing account is owed to the SFPUC (a negative balance), the SFPUC shall not be obligated to apply all or any part of the negative balance in establishing wholesale rates for the immediately ensuing year. Instead, the SFPUC may prorate the negative balance in whole or in part over multiple years in order to avoid fluctuating increases and decreases in wholesale rates.

#### **6.06 Wholesale Revenue Coverage Reserve**

A. The SFPUC may include in wholesale rates for any fiscal year an additional dollar amount ("Wholesale Revenue Coverage"), which for any fiscal year shall equal the following:

1. The lesser of (i) 25% of the Wholesale Customers' share of Net Annual Debt Service for that fiscal year determined as described in Section 5.04.A, or (ii) the amount necessary to meet the Wholesale Customers' proportionate share of Debt Service coverage required by then-current Indebtedness for that fiscal year, minus

2. A credit for (i) the actual amounts previously deposited in the "Wholesale Revenue Coverage Reserve" (as defined in subsection B below), (ii) accrued interest on the amounts on deposit in the Wholesale Revenue Coverage Reserve, and (iii) an amount equal to any additional interest that would have accrued on the actual amounts previously deposited in

the Wholesale Revenue Coverage Reserve assuming no withdrawals had been made therefrom.

B. During each fiscal year, the SFPUC will set aside and deposit that portion of revenue equal to Wholesale Revenue Coverage into a separate account that the SFPUC will establish and maintain, to be known as the "Wholesale Revenue Coverage Reserve." Deposits into the Wholesale Revenue Coverage Reserve shall be made no less frequently than monthly. The Wholesale Revenue Coverage Reserve shall be credited with interest at the rate specified in Section 6.05.B. The SFPUC may use amounts in the Wholesale Revenue Coverage Reserve for any lawful purpose. Any balance in the Wholesale Revenue Coverage Reserve in excess of the Wholesale Revenue Coverage amount as of the end of any fiscal year (as calculated in subsection 6.06(A) above) shall be applied as a credit against wholesale rates in the immediately following fiscal year unless otherwise directed by BAWSCA.

C. Within 180 days following the later of expiration of the Term or final payment of Debt Service due on Indebtedness issued during the Term to which Wholesale Customers were contributing, SFPUC shall rebate to the Wholesale Customers an amount equal to the Wholesale Revenue Coverage amount in effect for the fiscal year during which the Term expires or the final payment of Debt Service on Indebtedness is made based on each Wholesale Customer's Proportional Annual Use in the fiscal year during which the Term expires or the final payment of debt service on Indebtedness is made.

D. SFPUC shall provide a schedule of debt issuance (with assumptions), and the Wholesale Customers' share of Net Annual Debt Service (actual and projected) expected to be included in wholesale rates starting in 2009-10 through the expected completion of the WSIP. The schedule is to be updated annually prior to rate setting. If estimated Debt Service is used in rate setting, the SFPUC must be able to demonstrate that the Water Enterprise revenues will be sufficient to meet the additional bonds test for the proposed bonds and rate covenants for the upcoming year.

E. Conditions in the municipal bond market may change from those prevailing in 2009. If, prior to expiration of the Term, the SFPUC determines that it would be in the best financial interest of both Retail Customers and Wholesale Customers of the Regional Water System for the Debt Service coverage requirement to be increased in one or more series of proposed new Indebtedness above 1.25%, or for the coverage covenant to be strengthened in



other ways, it will provide a written report to BAWSCA. The report will contain (1) a description of proposed covenant(s) in the bond indenture; (2) an explanation of how savings are expected to be achieved (e.g., increase in the SFPUC's credit rating over the then-current level; ability to obtain credit enhancement, etc.); (3) the estimated all-in true interest cost savings; (4) a comparison of the Wholesale Revenue Requirements using the Debt Service coverage limitation in subsection A and under the proposed methodology; and (5) a comparison of the respective monetary benefits expected to be received by both Retail and Wholesale Customers. The SFPUC and BAWSCA agree to meet and confer in good faith about the proposed changes.

F. Any increase in Debt Service coverage proposed by the SFPUC shall be commensurate with Proportional Water Use by Retail and Wholesale Customers. If the SFPUC demonstrates that an increase in Debt Service coverage will result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, BAWSCA may agree to a modification of the Wholesale Revenue Coverage requirement in subsection A. If BAWSCA does not agree to a proposed modification in coverage requirements in the covenants for new Indebtedness, SFPUC may nevertheless proceed with the modification and the issuance of new Indebtedness. Any Wholesale Customer, or BAWSCA, may challenge an increase in the Wholesale Revenue Requirement resulting from the modification in Debt Service coverage through arbitration as provided in Section 8.01.A. If the arbitrator finds that the increase in Debt Service coverage (1) did not and will not result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, or (2) was not commensurate with Proportional Water Use, the arbitrator may order the Wholesale Revenue Requirement to be recalculated both retrospectively and prospectively to eliminate the differential impact to Wholesale or Retail Customers, subject to the limitation in Section 8.01.C.

#### **6.07 Working Capital Requirement**

A. The SFPUC maintains working capital in the form of unappropriated reserves for the purpose of bridging the gap between when the SFPUC incurs operating expenses required to provide service and when it receives revenues from its Retail and Wholesale Customers. The Wholesale Customers shall fund their share of working capital as part of the annual Wholesale Revenue Requirement calculation. The amount of wholesale working capital for which the Wholesale Customers will be responsible will be determined using the 60-day standard formula approach.

B. Applying this approach, annual wholesale working capital equals one-sixth of the wholesale allocation of operation and maintenance, administrative and general, and property tax expenses for the Water and Hetch Hetchy Enterprises. Wholesale working capital shall be calculated separately for the Water and Hetch Hetchy Enterprises.

C. Each month, the sum of the Water Enterprise and Hetch Hetchy Enterprise working capital components will be compared with the ending balance in the Wholesale Revenue Coverage Reserve to determine if the Wholesale Customers provided the minimum required working capital. If the Wholesale Revenue Coverage Reserve is greater than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will have provided their share of working capital. If the Wholesale Revenue Coverage Reserve is less than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will be charged interest on the difference, which will be included in the adjustment to the Balancing Account under Section 6.05.B for the subsequent fiscal year.

#### **6.08 Wholesale Capital Fund**

A. The SFPUC currently funds revenue-funded capital projects through annual budget appropriations that are included in rates established for that fiscal year and transferred to a capital project fund from which expenditures are made. Consistent with the San Francisco Charter and Administrative Code, the SFPUC appropriates funds in advance of construction in order to maintain a positive balance in the capital project fund. The capital project fund also accrues interest and any unspent appropriations in excess of total project costs. It is the SFPUC's practice to regularly monitor the capital project fund balance to determine whether a surplus has accumulated, which can be credited against the next fiscal year's capital project appropriation.

B. The SFPUC shall establish a comparable Wholesale Revenue-Funded Capital Fund (Wholesale Capital Fund) to enable the Wholesale Customers to fund the wholesale share of revenue-funded New Regional Assets. The Wholesale Capital Fund balance is zero as of July 1, 2009. The SFPUC may include in wholesale rates for any fiscal year an amount equal to the wholesale share of the SFPUC's appropriation for revenue funded New Regional Assets for that year, which sum will be credited to the Wholesale Capital Fund. The wholesale share of other sources of funding, where legally permitted and appropriately accounted for under GAAP,

will also be credited to the Wholesale Capital Fund, together with interest earnings on the Wholesale Capital Fund balance.

C. The SFPUC will expend revenues appropriated and transferred to the Wholesale Capital Fund only on New Regional Assets. The annual capital appropriation included in each fiscal year's budget will be provided to BAWSCA in accordance with Section 6.02 and will take into account the current and projected balance in the Wholesale Capital Fund, as well as current and projected unexpended and unencumbered surplus, as shown on attachment M-1, which will be prepared by the SFPUC each year.

D. Commencing on November 30, 2010 and thereafter in each fiscal year during the Term, the SFPUC will also provide an annual report to BAWSCA on the status of individual revenue-funded New Regional Assets, substantially in the form of Attachment M-2.

E. In order to prevent the accumulation of an excessive unexpended and unencumbered surplus in the Wholesale Capital Fund, the status of the fund balance will be reviewed through the Compliance Audit at five-year intervals, commencing in FY 2014-15. Any excess fund balance (i.e., an accumulated unexpended, unencumbered amount in excess of ten percent (10%) of the wholesale share of total capital appropriations for New Regional Assets during the five preceding years) will be transferred to the credit of the Wholesale Customers to the Balancing Account described in Section 6.05. Attachment M-3 illustrates the operation of this review process, covering FY 2009-10 through FY 2013-14 and FY 2014-15 through 2018-19.

F. Three years prior to the end of the Term, the SFPUC and BAWSCA will discuss the disposition of the Wholesale Capital Fund balance at the end of the Term. Absent agreement, any balance remaining in the Wholesale Capital Fund at the end of the Term shall be transferred to the Balancing Account, to the credit of the Wholesale Customers.

## Article 7. Accounting Procedures; Compliance Audit

### 7.01 SFPUC Accounting Principles, Practices

A. **Accounting Principles.** San Francisco will maintain the accounts of the SFPUC and the Water and Hetch Hetchy Enterprises in conformity with Generally Accepted Accounting Principles. San Francisco will apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB) as well as statements and interpretations of the Financial Accounting Standards Board and Accounting Principles Board opinions issued on or before March 30, 1989, unless those pronouncements or opinions conflict with GASB pronouncements.

B. **General Rule.** San Francisco will maintain the accounting records of the SFPUC and the Water and Hetch Hetchy Enterprises in a format and level of detail sufficient to allow it to determine the annual Wholesale Revenue Requirement in compliance with this Agreement and to allow its determination of the Wholesale Revenue Requirement to be audited as provided in Section 7.04.

C. **Water Enterprise.** San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated by location (inside San Francisco and outside San Francisco) and by function (Direct Retail, Regional and Direct Wholesale).

D. **Hetch Hetchy Enterprise.** San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated into Water Only, Power Only and Joint categories.

E. **SFPUC.** San Francisco will maintain an account structure which allows any expenses of SFPUC bureaus that benefit only the Wastewater Enterprise, the Power-Only operations of the Hetch Hetchy Enterprise or Retail Customers to be excluded from the Wholesale Revenue Requirement.

F. **Utility Plant Ledgers.** San Francisco will maintain subsidiary plant ledgers for the Water and Hetch Hetchy Enterprises that contain unique identifying numbers for all assets included in the rate base and identify the original cost, annual depreciation, accumulated depreciation, date placed in service, useful life, salvage value if any, source of funding (e.g., bond series, revenues, grants), and classification for purposes of this Agreement.

- G. Debt.** San Francisco will maintain documentation identifying:
1. The portion of total bonded debt outstanding related to each series of each bond issue.
  2. The portion of total interest expense related to each series of each bond issue.
  3. The use of proceeds of each bond issue (including proceeds of commercial paper and/or other interim financial instruments redeemed or expected to be redeemed from bonds and earnings on the proceeds of financings) in sufficient detail to determine, for each bond issue, the proceeds and earnings of each (including proceeds and earnings of interim financing vehicles redeemed by a bond issue) and the total amounts expended on Direct Retail improvements and the total amounts expended on Regional improvements.

**H. Changes in Accounting.** Subject to subsections A thru G, San Francisco may change the chart of accounts and accounting practices of the SFPUC and the Water and Hetch Hetchy Enterprises. However, the allocation of any expense to the Wholesale Customers that is specified in the Agreement may not be changed merely because of a change in (1) the accounting system or chart of accounts used by SFPUC, (2) the account to which an expense is posted or (3) a change in the organizational structure of the SFPUC or the Water or Hetch Hetchy Enterprises.

**I. Audit.** San Francisco will arrange for an audit of the financial statements of Water and Hetch Hetchy Enterprises to be conducted each year by an independent certified public accountant, appointed by the Controller, in accordance with Generally Accepted Auditing Standards.

## **7.02 Calculation of and Report on Wholesale Revenue Requirement**

A. Within five months after the close of each fiscal year, San Francisco will prepare a report showing its calculation of the Wholesale Revenue Requirement for the preceding fiscal year and the change in the balancing account as of the end of that fiscal year. The first such report will be prepared by November 30, 2010 and will cover fiscal year 2009-10 and the balancing account as of June 30, 2010.



B. The report will consist of the following items:

1. Statement of changes in the balancing account for the fiscal year being reported on, and for the immediately preceding fiscal year, substantially in the form of Attachment O.
2. Detailed supporting schedules 8.1 through 8.2 substantially in the form of Attachment N-2.
3. Description and explanation of any changes in San Francisco's accounting practices from those previously in effect.
4. Explanation of any line item of expense (shown on Attachment N-2, schedules 1 and 4) for which the amount allocated to the Wholesale Customers increased by (a) ten percent or more from the preceding fiscal year, or (b) more than \$1,000,000.
5. Representation letter signed by the SFPUC General Manager and by other SFPUC financial staff shown on Attachment P, as the General Manager may direct, subject to change in position titles at the discretion of the SFPUC.

C. The report will be delivered to the BAWSCA General Manager by the date identified in Subsection A.

Once the report has been delivered to BAWSCA, San Francisco will, upon request:

1. Provide BAWSCA with access to, and copies of, all worksheets and supporting documents used or prepared by San Francisco during its calculation of the Wholesale Revenue Requirement;
2. Make available to BAWSCA all supporting documentation and calculations used by San Francisco in preparing the report; and
3. Promptly provide answers to questions from BAWSCA staff about the report.

### 7.03 **Appointment of Compliance Auditor**

**A. Purpose.** The purpose of this section is to provide for an annual Compliance Audit by an independent certified public accountant of the procedures followed and the underlying data used by San Francisco in calculating the Wholesale Revenue Requirement for the preceding fiscal year. The annual Compliance Audit shall also determine whether the Wholesale Revenue Requirement has been calculated in accordance with the terms of the Agreement and whether amounts paid by the Wholesale Customers in excess of or less than the Wholesale Revenue Requirement have been posted to the balancing account, together with interest as provided in Section 6.05.

**B. Method of Appointment.** The Controller shall select an independent certified public accountant ("Compliance Auditor") to conduct the Compliance Audit described below. The Compliance Auditor may be the same certified public accountant engaged by the Controller to audit the financial statements of the Water and Hetch Hetchy Enterprises. Subject to approval by the Controller and the General Manager of the SFPUC, the Compliance Auditor shall have the authority to engage such consultants as it deems necessary or appropriate to assist in the audit. The terms of this Article shall be incorporated into the contract between San Francisco and the Compliance Auditor, and the Wholesale Customers shall be deemed to be third-party beneficiaries of said contract.

### 7.04 **Conduct of Compliance Audit**

**A. Standards.** The Compliance Auditor shall perform the Compliance Audit in accordance with Generally Accepted Auditing Standards. In particular, its review shall be governed by the standards contained in Section AU 623 (Reports on Specified Elements, Accounts or Items of a Financial Statement) of the AICPA, *Professional Standards*, as amended from time to time.

**B. Preliminary Meeting; Periodic Status Reports; Access to Data.** Prior to commencing the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss the audit plan, the procedures to be employed and the schedule to be followed. During the course of the audit, the Compliance Auditor shall keep San Francisco and BAWSCA informed of any unforeseen problems or circumstances which could cause a delay in the audit or any material expansion of the audit's scope. The Compliance Auditor shall be given full

access to all records of the SFPUC and the Water and Hetch Hetchy Enterprises that the Auditor deems necessary for the audit.

**C. Audit Procedures.** The Compliance Auditor shall review San Francisco's calculation of the Wholesale Revenue Requirement and the underlying data in order to carry out the purpose of the audit described in Section 7.03.A and to issue the report described in Section 7.05. At a minimum, the Compliance Auditor shall address the following:

1. Water Enterprise Operating and Maintenance Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the recorded operating and maintenance expenses fairly reflect the costs incurred, were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, and were allocated to the Wholesale Customers as provided in this Agreement.

2. Water Enterprise Administrative and General Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers and other appropriate financial records, including those of the SFPUC, to determine whether the recorded administrative and general expenses fairly reflect the costs incurred by or allocated to the Water Enterprise, whether they were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, whether SFPUC charges were allocated to the Water Enterprise in accordance with this Agreement, and whether the amount of administrative and general expenses allocated to the Wholesale Customers was determined as provided by this Agreement.

3. Property Taxes. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the amount of property taxes shown on the report fairly reflects the property tax expense incurred by San Francisco for Water Enterprise property outside of San Francisco and whether there has been deducted from the amount to be allocated (1) all taxes actually reimbursed to San Francisco by tenants of Water Enterprise property under leases that require such reimbursement and (2) any refunds received from the taxing authority. The Compliance Auditor also shall determine whether the amount of property taxes allocated to the Wholesale Customers was determined as provided in this Agreement.

4. Debt Service. The Compliance Auditor shall review SFPUC records to determine whether debt service, and associated coverage requirements, were allocated to the Wholesale Customers as provided in this Agreement.

5. Amortization of Existing Assets in Service as of June 30, 2009. The Compliance Auditor shall review both Water and Hetch Hetchy Enterprise records to determine whether the payoff amount for Existing Assets allocated to the Wholesale Customers as shown on Attachment K-1 through K-4 was calculated as provided in Section 5.03 of this Agreement.

6. Revenue-Funded Capital Appropriations/Expenditures. The Compliance Auditor shall review San Francisco's calculation of actual expenditures on the wholesale share of revenue-funded New Regional Assets and remaining unexpended and unencumbered project balances in the "Wholesale Capital Fund" described in Section 6.08, to determine whether the procedures contained in that section were followed.

7. Hetch Hetchy Expenses. The Compliance Auditor shall determine whether Hetch Hetchy Enterprise expenses were allocated to the Wholesale Customers as provided in this Agreement.

**D. Use of and Reliance on Audited Financial Statements and Water Use Data**

1. In performing the audit, the Compliance Auditor shall incorporate any adjustments to the cost ledgers recommended by the independent certified public accountant, referred to in Section 7.01.I, which audited the financial statements of the Water and Hetch Hetchy Enterprises. The Compliance Auditor may rely upon the work performed by that independent certified public accountant if the Compliance Auditor reviews the work and is willing to take responsibility for it as part of the compliance audit.

2. In performing the Compliance Audit and issuing its report, the Compliance Auditor may rely on water use data furnished by the Water Enterprise, regardless of whether the Wholesale Customers contest the accuracy of such data. The Compliance Auditor shall have no obligation to independently verify the accuracy of the water use data provided by San Francisco; however, the Compliance Auditor shall disclose in its report any information which came to its attention suggesting that the water use data provided by San Francisco are inaccurate in any significant respect.

**E. Exit Conference.** Upon completion of the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss audit findings, including (1) any material weakness in internal controls and (2) adjustments proposed by the Compliance Auditor and San Francisco's response (i.e., booked or waived).

#### **7.05 Issuance of Compliance Auditor's Report**

A. San Francisco will require the Compliance Auditor to issue its report no later than nine months after the fiscal year under audit (i.e., March 31 of the following calendar year). The Compliance Auditor's report shall be addressed and delivered to San Francisco and BAWSCA. The report shall contain:

1. A statement that the Auditor has audited the report on the calculation of the Wholesale Revenue Requirement and changes in the balancing account, and supporting documents, prepared by San Francisco as required by Section 7.02.

2. A statement that the audit was conducted in accordance with auditing standards generally accepted in the United States of America, and that the audit provides a reasonable basis for its opinion.

3. A statement that in the Compliance Auditor's opinion the Wholesale Revenue Requirement was calculated by San Francisco in accordance with this Agreement and that the change in the balancing account shown in San Francisco's report was calculated as required by this Agreement and presents fairly, in all material respects, changes in and the balance due to (or from) the Wholesale Customers as of the end of the fiscal year under audit.

#### **7.06 Wholesale Customer Review**

A. One or more Wholesale Customers, or BAWSCA, may engage an independent certified public accountant (CPA) to conduct a review (at its or their expense) of San Francisco's calculation of the annual Wholesale Revenue Requirement and a review of changes in the balancing account.

B. If a Wholesale Customer or BAWSCA wishes such a review to be conducted it will provide written notice to SFPUC within 30 days of the date the Compliance Auditor's report is issued. The notice will identify the CPA or accounting/auditing firm that will conduct the review and the specific aspects of the Compliance Auditor's report that are the subject of the review. If more than one notice of review is received by the SFPUC, the requesting Wholesale Customers shall combine and coordinate their reviews and select a lead auditor to act on their behalf for the purposes of requesting documents and conducting on-site investigations.

C. San Francisco will cooperate with the CPA appointed by a Wholesale Customer or BAWSCA. This cooperation includes making requested records promptly available, making



knowledgeable SFPUC personnel available to timely and truthfully answer the CPA's questions and directing the Compliance Auditor to cooperate with the CPA.

D. The Wholesale Customer's review shall be completed within 60 days after the date the Compliance Auditor's report is issued. At the conclusion of the review, representatives of San Francisco and BAWSCA shall meet to discuss any differences between them concerning San Francisco's compliance with Articles 5 or 6 of this Agreement during the preceding fiscal year or San Francisco's calculation of the Wholesale Revenue Requirement for the preceding fiscal year. If such differences cannot be resolved, the dispute shall be submitted to arbitration in accordance with Section 8.01.

## Article 8. Other Agreements of the Parties

### 8.01 Arbitration and Judicial Review

**A. General Principles re Scope of Arbitration.** All questions or disputes arising under the following subject areas shall be subject to mandatory, binding arbitration and shall not be subject to judicial determination:

1. the determination of the Wholesale Revenue Requirement, which shall include both the calculations used in the determination and the variables used in those calculations;
2. the SFPUC's adherence to accounting practices and conduct of the Compliance Audit; and
3. the SFPUC's classification of new assets for purposes of determining the Wholesale Revenue Requirement.

All other questions or disputes arising under this Agreement shall be subject to judicial determination. Disputes about the scope of arbitrability shall be resolved by the courts.

**B. Demand for Arbitration.** If any arbitrable question or dispute should arise, any Wholesale Customer or the SFPUC may commence arbitration proceedings hereunder by service of a written Demand for Arbitration. Demands for arbitration shall set forth all of the issues to be arbitrated, the general contentions relating to those issues, and the relief sought by the party serving the Demand. Within 45 days after service of a Demand upon it, any Wholesale Customer or the SFPUC may serve a Notice of Election to become a party to the arbitration and a Response to the issues set forth in the Demand. The Response shall include the party's general contentions and defenses with respect to the claims made in the Demand, and may include any otherwise arbitrable claims, contentions and demands that concern the fiscal year covered by the Demand. If a timely Notice of Election and Response is not filed by any such entity, it shall not be a party to the arbitration but shall nonetheless be bound by the award of the arbitrator. If no party to this Agreement serves a timely Notice of Election and Response, the party seeking arbitration shall be entitled to the relief sought in its Demand for Arbitration without the necessity of further proceedings. Any claims not made in a Demand or Response shall be deemed waived.

If a Demand or Notice of Election is made by the SFPUC, it shall be served by personal delivery or certified mail to each Wholesale Customer at the address of such customer as set forth in the billing records of the SFPUC. If a Demand or Notice of Election is made by a Wholesale Customer, service shall be by certified mail or personal delivery to the General Manager, SFPUC, 1155 Market Street, 11<sup>th</sup> Floor, San Francisco, California 94103, and to each of the other Wholesale Customers. If arbitration is commenced, the Wholesale Customers shall use their best efforts to formulate a single, joint position with respect thereto. In any event, with respect to the appointment of arbitrators, as hereinafter provided, all Wholesale Customers that take the same position as to the issues to be arbitrated shall jointly and collectively be deemed to be a single party.

**C. Limitations Period.** All Demands For Arbitration shall be served within twelve months of receipt by BAWSCA of the Wholesale Revenue Requirement Compliance Auditor's Report for that year. If a party fails to file a Demand within the time period specified in this subsection, that party waives all present and future claims with respect to the fiscal year in question. If no such Demand is served within the twelve month period specified above, the SFPUC's determination of the Wholesale Revenue Requirement for that year shall be final and conclusive. Whether any particular claim is barred by the twelve month limitations period provided for herein shall be for the arbitrator to determine. Prior to the expiration of the twelve month limitations period, the parties to the dispute may agree by written stipulation to extend the period by up to six additional months.

The Arbitrator may order the alteration or recalculation of underlying Water Enterprise and/or Hetch Hetchy Enterprise accounts or asset classifications. Such changes shall be used to calculate the Wholesale Revenue Requirement for the fiscal year in dispute and shall also be used to determine future Wholesale Revenue Requirements, if otherwise applicable, even though the existing entries in such accounts or the asset classifications, in whole or in part, predate the twelve month period described above, so long as a timely arbitration Demand has been filed in accordance with this subsection.

**D. Number and Appointment of Arbitrators.** All arbitration proceedings under this section shall be conducted by a single arbitrator, selected by the SFPUC and a designated representative of the Wholesale Customers or each group of Wholesale Customers that take the same position with respect to the arbitration, within 75 days after service of the Demand. If the parties to the arbitration cannot agree on an arbitrator within 75 days, any party may petition

the Marin County Superior Court for the appointment of an arbitrator pursuant to Code of Civil Procedure Section 1281.6 (or any successor provision).

**E. Guidelines for Qualifications of Arbitrators.** The Wholesale Customers and the SFPUC acknowledge that the qualifications of the arbitrator will vary with the nature of the matter arbitrated, but, in general, agree that such qualifications may include service as a judge or expertise in one or more of the following fields: public utility law, water utility rate setting, water system and hydraulic engineering, utility accounting methods and practices, and water system operation and management. The parties to the arbitration shall use their best efforts to agree in advance upon the qualifications of any arbitrator to be appointed by the Superior Court.

**F. Powers of Arbitrator; Conduct of Proceedings**

1. Except as provided in this section, arbitrations under this section shall be conducted under and be governed by the provisions of California Code of Civil Procedure Sections 1282.2 through 1284.2 (hereinafter, collectively, "Code sections"), and arbitrators appointed hereunder shall have the powers and duties specified by the Code sections.

2. Within the meaning of the Code sections, the term "neutral arbitrator" shall mean the single arbitrator selected by the parties to the arbitration.

3. Unless waived in writing by the parties to the arbitration, the notice of hearing served by the arbitrator shall not be less than 90 days.

4. The lists of witnesses (including expert witnesses), and the lists of documents (including the reports of expert witnesses) referred to in Code of Civil Procedure Section 1282.2 shall be mutually exchanged, without necessity of demand therefore, no later than 60 days prior to the date of the hearing, unless otherwise agreed in writing by the parties to the arbitration. Upon application of any party, or on his or her own motion, the arbitrator may schedule one or more prehearing conferences for the purposes of narrowing and/or expediting resolution of the issues in dispute. Strict conformity to the rules of evidence is not required, except that the arbitrator shall apply applicable law relating to privileges and work product. The arbitrator shall consider evidence that he or she finds relevant and material to the dispute, giving the evidence such weight as is appropriate. The arbitrator may limit testimony to exclude evidence that would be immaterial or unduly repetitive, provided that all parties are afforded the opportunity to present material and relevant evidence.

5. Within thirty days after the close of the arbitration hearing, or such other time as the arbitrator shall determine, the parties will submit proposed findings and a proposed remedy to the arbitrator. The parties may file objections to their adversary's proposed findings and remedy within a time limit to be specified by the arbitrator. The arbitrator shall not base his or her award on information not obtained at the hearing.

6. The arbitrator shall render a written award no later than twelve months after the arbitrator is appointed, either by the parties or by the court, provided that such time may be waived or extended as provided in Code of Civil Procedure Section 1283.8.

7. The provisions for discovery set forth in Code of Civil Procedure Section 1283.05 are incorporated into and made part of this Agreement, except that: (a) leave of the arbitrator need not be obtained for the taking of depositions, including the depositions of expert witnesses; (b) the provisions of Code of Civil Procedure Section 2034.010 et seq., relating to discovery of expert witnesses, shall automatically be applicable to arbitration proceedings arising under this Agreement without the necessity for a formal demand pursuant to Section 2034.210 and the date for the exchange of expert discovery provided by Sections 2034.260 and 2034.270 shall be not later than 60 days prior to the date for the hearing; and (c) all reports, documents, and other materials prepared or reviewed by any expert designated to testify at the arbitration shall be discoverable. In appropriate circumstances, the arbitrator may order any party to this Agreement that is not a party to the arbitration to comply with any discovery request.

8. For the purposes of allocation of expenses and fees, as provided in Code of Civil Procedure Section 1284.2, if any two or more Wholesale Customers join together in a single, joint position in the arbitration, those Wholesale Customers shall be deemed to be a single party. If any Wholesale Customer or customers join together with the SFPUC in a single joint position in the arbitration, those Wholesale Customers and the SFPUC together shall be deemed to be a single party.

9. Subject to any other limitations imposed by the Agreement, the arbitrator shall have power to issue orders mandating compliance with the terms of the Agreement or enjoining violations of the Agreement. With respect to any arbitration brought to redress a claimed wholesale overpayment to the SFPUC, the arbitrator's power to award monetary relief



shall be limited to entering an order requiring that an adjustment be made in the amount posted to the balancing account for the fiscal year covered by the Demand.

10. All awards of the arbitrator shall be binding on the SFPUC and the Wholesale Customers regardless of the participation or lack thereof by any Wholesale Customer or the SFPUC as a party to the arbitration proceeding. The parties to an arbitration shall have the power to modify or amend any arbitration award by mutual consent. The arbitrator shall apply California law.

## **8.02 Attorneys' Fees**

**A. Arbitration or Litigation Between San Francisco and Wholesale Customers Arising under the Agreement or Individual Water Sales Contracts.** Each party will bear its own costs, including attorneys' fees, incurred in any arbitration or litigation arising under this Agreement or the Individual Water Sales Contracts between San Francisco and the Wholesale Customers. Notwithstanding the foregoing, and subject to the limitations contained herein, the SFPUC may allocate to the Wholesale Customers as an allowable expense, utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses, any attorneys' fees and costs incurred by the SFPUC in connection with arbitration and/or litigation arising under this Agreement and/or the Individual Water Sales Contracts. Attorneys' fees incurred by the SFPUC for attorneys employed in the San Francisco City Attorney's office shall be billed at the hourly rates charged for the attorneys in question by the San Francisco City Attorney's Office to the SFPUC. Attorneys' fees incurred by the SFPUC for attorneys other than those employed in the San Francisco City Attorney's Office shall be limited to the hourly rates charged to the SFPUC for attorneys and paralegals with comparable experience employed in the San Francisco City Attorney's office and in no event shall exceed the highest hourly rate charged by any attorney or paralegal employed in the City Attorney's Office to the SFPUC.

## **B. Arbitration or Litigation Outside of Agreement Concerning the SFPUC Water System or Reserved Issues**

1. The attorneys' fees and costs incurred by the SFPUC in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement, shall be allocated between the Retail Customers and the

Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

2. If, in any litigation described in subsection B.1 above, attorneys' fees and costs are awarded to one or more of the Wholesale Customers as prevailing parties, the SFPUC's payment of the Wholesale Customers' attorneys' fees and costs shall not be an allowable expense pursuant to subsection A.

3. If, in any litigation described in subsection B.1, the SFPUC obtains an award of attorneys' fees and costs as a prevailing party against one or more of the Wholesale Customers, any such award shall be reduced to offset the amount of the SFPUC's fees and costs, if any, that have already been paid by the Wholesale Customers in the current or any prior fiscal years pursuant to subsection B.1 and the provisions of Articles 5 and 6 of the Agreement.

4. Nothing contained in this Agreement, including this subsection, shall authorize a court to award attorneys' fees and costs to a prevailing party as a matter of contract and/or the provisions of Civil Code Section 1717, in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement.

**C. Attorneys Fees and Costs Incurred by the SFPUC in Connection with the Operation and Maintenance of the SFPUC Water Supply System.** All attorneys' fees and costs incurred by the SFPUC in connection with the operation and maintenance of the SFPUC's water supply system shall be allocated between Retail Customers and the Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

### **8.03 Annual Meeting and Report**

A. The parties wish to ensure that the Wholesale Customers may, in an orderly way, be informed of matters affecting the Regional Water System, including matters affecting the continuity and adequacy of their water supply from San Francisco.

For this purpose, the General Manager of the SFPUC shall meet annually with the Wholesale Customers and BAWSCA during the month of February, commencing

February 2010. At these annual meetings, the SFPUC shall provide the Wholesale Customers a report on the following topics:

1. Capital additions under construction or being planned for the Regional Water System, including the status of planning studies, financing plans, environmental reviews, permit applications, etc.;
2. Water use trends and projections for Retail Customers and Wholesale Customers;
3. Water supply conditions and projections;
4. The status of any administrative proceedings or litigation affecting San Francisco's water rights or the SFPUC's ability to deliver water from the watersheds which currently supply the Regional Water System;
5. Existing or anticipated problems with the maintenance and repair of the Regional Water System or with water quality;
6. Projections of Wholesale Revenue Requirements for the next five years;
7. Any other topic which the SFPUC General Manager places on the agenda for the meeting;
8. Any topic which the Wholesale Customers, through BAWSCA, request be placed on the agenda, provided that the SFPUC is notified of the request at least 10 days before the meeting.

B. The General Manager of the SFPUC, the Assistant General Manager of the Water Enterprise, and the Assistant General Manager of Business Services-CFO will use their best efforts to attend the annual meetings. If one or more of these officers are unable to attend, they will designate an appropriately informed assistant to attend in their place.

#### **8.04 Administrative Matters Delegated to BAWSCA**

A. The Wholesale Customers hereby delegate the authority and responsibility for performing the following administrative functions contemplated in this Agreement to BAWSCA:

1. Approval of calculations of Proportional Annual Water Use required by Section 3.14 and Attachment J, "Water Use Measurement and Tabulation";
2. Approval of amendments to Attachments J and K-3 and K-4, "25-Year Payoff Schedules for Existing Rate Base";
3. Agreement that the Water Meter and Calibration Procedures Manual to be prepared by the SFPUC may supersede some or all of the requirements in Attachment J, as described in Section 3.14;
4. Conduct of Wholesale Customer review of SFPUC's calculation of annual Wholesale Revenue Requirement/Change in Balancing Account described in Section 7.06;
5. Approval of an adjustment to Wholesale Revenue Coverage as described in Section 6.06.

B. A majority of the Wholesale Customers may, without amending this Agreement, delegate additional administrative functions to BAWSCA. To be effective, such expanded delegation must be evidenced by resolutions adopted by the governing bodies of a majority of the Wholesale Customers.

C. Unless otherwise explicitly stated, the administrative authority delegated to BAWSCA may be exercised by the General Manager/CEO of BAWSCA, rather than requiring action by the BAWSCA Board of Directors. In addition, the Wholesale Customers may, with the consent of BAWSCA, delegate to BAWSCA the initiation, defense, and settlement of arbitration proceedings provided for in Section 8.01.

#### **8.05 Preservation of Water Rights; Notice of Water Rights Proceedings**

A. It is the intention of San Francisco to preserve all of its water rights, irrespective of whether the water held under such water rights is allocated under this Agreement. Nothing in this Agreement shall be construed as an abandonment, or evidence of an intent to abandon, any of the water rights that San Francisco presently possesses.

B. San Francisco shall use its best efforts to give prompt notice to BAWSCA of any litigation or administrative proceedings to which San Francisco is a party involving water rights to the Regional Water System. The failure of San Francisco to provide notice as required by this section, for whatever reason, shall not give rise to any monetary liability.

#### **8.06 SFPUC Rules and Regulations**

The sale and delivery of all water under this Agreement shall be subject to such of the “Rules and Regulations Governing Water Service to Customers” of the Water Enterprise adopted by the Commission, as those rules and regulations may be amended from time to time, as are (1) applicable to the sale and delivery of water to the Wholesale Customers, (2) reasonable, and (3) not inconsistent with either this Agreement or with an Individual Water Sales Contract. The SFPUC will give the Wholesale Customers notice of any proposal to amend the Rules and Regulations in a manner that would affect the Wholesale Customers. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

#### **8.07 Reservations of, and Limitations on, Claims**

**A. General Reservation of Raker Act Contentions.** The 1984 Agreement resolved a civil action brought against San Francisco by certain of the Wholesale Customers. Plaintiffs in that action contended that they, and other Wholesale Customers that are municipalities or special districts, were “co-grantees” within the meaning of Section 8 of the Act and were entitled to certain rights, benefits and privileges by virtue of that status. San Francisco disputed those claims.

Nothing in this Agreement, or in the Individual Water Sales Contracts, shall be construed or interpreted in any way to affect the ultimate resolution of the controversy between the parties concerning whether any of the Wholesale Customers are “co-grantees” under the Act and, if so, what rights, benefits and privileges accrue to them by reason of that claimed status.

**B. Claims Reserved but not Assertable During Term or Portions Thereof.** The following claims, which San Francisco disputes, are reserved but may not be asserted during the Term (or portions thereof, as indicated):

1. The Wholesale Customers’ claim that the Act entitles them to water at cost.
2. The Wholesale Customers’ claim that San Francisco is obligated under the Act or state law to supply them with additional water in excess of the Supply Assurance. This claim may not be asserted unless and until San Francisco decides not to meet projected



water demands of Wholesale Customers in excess of the Supply Assurance pursuant to Section 4.06.

3. The claim by San Jose and Santa Clara that they are entitled under the Act, or any other federal or state law, to permanent, non-interruptible status and to be charged rates identical to those charged other Wholesale Customers. This claim may not be asserted unless and until San Francisco notifies San Jose or Santa Clara that it intends to interrupt or terminate water deliveries pursuant to Section 4.05.

4. The Wholesale Customers' claim that the SFPUC is not entitled to impose a surcharge for lost power generation revenues attributable to furnishing water in excess of the Supply Assurance. This claim may not be asserted unless and until SFPUC furnishes water in excess of the Supply Assurance during the Term and also includes such a surcharge in the price of such water.

5. Claims by Wholesale Customers (other than San Jose and Santa Clara, whose service areas are fixed) that SFPUC is obligated under the Act or state law to furnish water, within their Individual Supply Guarantee, for delivery to customers outside their existing service area and that Wholesale Customers are entitled to enlarge their service areas to supply those customers. Such claims may be asserted only after compliance with the procedure set forth in Section 3.03, followed by SFPUC's denial of, or failure for six months to act on, a written request by a Wholesale Customer to expand its service area.

**C. Waived Activities.** The Wholesale Customers (and the SFPUC, where specified) will refrain from the following activities during the Term (or portions thereof, as specified):

1. The Wholesale Customers and the SFPUC will not contend before any court, administrative agency or legislative body or committee that the methodology for determining the Wholesale Revenue Requirement (or the requirements for (a) amortization of the ending balance under the 1984 Agreement, or (b) contribution to the Wholesale Revenue Coverage) determined in accordance with this Agreement violates the Act or any other provision of federal law, state law, or San Francisco's City Charter, or is unfair, unreasonable or unlawful.

2. The Wholesale Customers will not challenge the transfer of funds by the SFPUC to any other San Francisco City department or fund, provided such transfer complies with the San Francisco City Charter. The transfer of its funds, whether or not permitted by the

City Charter, will not excuse the SFPUC from its failure to perform any obligation imposed by this Agreement.

3. The Wholesale Customers and the SFPUC will not assert monetary claims against one another based on the 1984 Agreement other than otherwise arbitrable claims arising from the three fiscal years immediately preceding the start of the Term (i.e., FYs 2006-07, 2007-08 and 2008-09). Such claims, if any, shall be governed by the dispute resolution provisions of this Agreement, except that the time within which arbitration must be commenced shall be 18 months from delivery of the Compliance Auditor's report.

**D. Other**

1. This Agreement shall determine the respective monetary rights and obligations of the parties with respect to water sold by the SFPUC to the Wholesale Customers during the Term. Such rights and obligations shall not be affected by any judgments or orders issued by any court in litigation, whether or not between parties hereto, and whether or not related to the controversy over co-grantee status, except for arbitration and/or litigation expressly permitted in this Agreement. No judicial or other resolution of issues reserved by this section will affect the Wholesale Revenue Requirement which, during the Term, will be determined exclusively as provided in Articles 5, 6 and 7 of this Agreement.

2. Because delays in the budget process or other events may cause the SFPUC to defer the effective date of changes in wholesale rates until after the beginning of the fiscal year, this Agreement does not require the SFPUC to make changes in wholesale rates effective at the start of the fiscal year or at any other specific date.

3. The Wholesale Customers do not, by executing this Agreement, concede the legality of the SFPUC's establishing Interim Supply Allocations, as provided in Article 4 or imposing Environmental Enhancement Surcharges on water use in excess of such allocations. Any Wholesale Customer may challenge such allocation when imposed and/or such surcharges if and when levied, in any court of competent jurisdiction.

4. The furnishing of water in excess of the Supply Assurance by San Francisco to the Wholesale Customers shall not be deemed or construed to be a waiver by San Francisco of its claim that it has no obligation under any provision of law to supply such water to the Wholesale Customers, nor shall it constitute a dedication by San Francisco to the Wholesale Customers of such water.

### **8.08 Prohibition of Assignment**

A. This Agreement shall be binding on, and shall inure to the benefit of, the parties and their respective successors and permitted assigns. Each Wholesale Customer agrees that it will not transfer or assign any rights or privileges under this Agreement, either in whole or in part, or make any transfer of all or any part of its water system or allow the use thereof in any manner whereby any provision of this Agreement will not continue to be binding on it, its assignee or transferee, or such user of the system. Any assignment or transfer in violation of this covenant, and any assignment or transfer that would result in the supply of water in violation of the Act, shall be void.

B. Nothing in this section shall prevent any Wholesale Customer (except the California Water Service Company and Stanford) from entering into a joint powers agreement or a municipal or multi-party water district with any other Wholesale Customer (except the two listed above) to exercise the rights and obligations granted to and imposed upon the Wholesale Customers hereunder, nor shall this section prevent any Wholesale Customer (except the two listed above) from succeeding to the rights and obligations of another Wholesale Customer hereunder as long as the Wholesale Service Area served by the Wholesale Customers involved in the succession is not thereby enlarged.

### **8.09 Notices**

A. All notices and other documents that San Francisco is required or permitted to send to the Wholesale Customers under this Agreement shall be sent to each and all of the Wholesale Customers by United States mail, first class postage prepaid, addressed to each Wholesale Customer at the address to which monthly water bills are mailed by the Water Enterprise.

B. All notices or other documents which the Wholesale Customers are required or permitted to send to San Francisco under this Agreement shall be sent by United States mail, first class postage prepaid, addressed as follows:

General Manager  
San Francisco Public Utilities Commission  
1155 Market Street, 11<sup>th</sup> Floor  
San Francisco, CA 94103

C. Each Wholesale Customer is a member of BAWSCA. San Francisco shall send a copy of each notice or other document which it is required to send to all Wholesale Customers to BAWSCA addressed as follows:

General Manager/CEO  
Bay Area Water Supply and Conservation Agency  
155 Bovet Road, Suite 302  
San Mateo, CA 94402

The failure of San Francisco to send a copy of such notices or documents to BAWSCA shall not invalidate any rate set or other action taken by San Francisco.

D. Any party (or BAWSCA) may change the address to which notice is to be sent to it under this Agreement by notice to San Francisco (in the case of a change desired by a Wholesale Customer or BAWSCA ) and to the Wholesale Customer and BAWSCA (in the case of a change desired by San Francisco).

The requirements for notice set forth in Section 8.01 concerning arbitration shall prevail over this section, when they are applicable.

#### **8.10 Incorporation of Attachments**

Attachments A through Q, referred to herein, are incorporated in and made a part of this Agreement.

#### **8.11 Interpretation**

In interpreting this Agreement, or any provision thereof, it shall be deemed to have been drafted by all signatories, and no presumption pursuant to Civil Code Section 1654 may be invoked to determine the Agreement's meaning. The marginal headings and titles to the sections and paragraphs of this Agreement are not a part of this Agreement and shall have no effect upon the construction or interpretation of any part hereof.

#### **8.12 Actions and Approvals by San Francisco**

Whenever action or approval by San Francisco is required or contemplated by this Agreement, authority to act or approve shall be exercised by the Commission, except if such action is required by law to be taken, or approval required to be given, by the San Francisco Board of Supervisors. The Commission may delegate authority to the General Manager in

accordance with the San Francisco City Charter and Administrative Code, except for actions that this Agreement requires to be taken by the Commission.

### **8.13 Counterparts**

Execution of this Agreement may be accomplished by execution of separate counterparts by each signatory. San Francisco shall deliver its executed counterpart to BAWSCA and the counterpart which each Wholesale Customer executes shall be delivered to San Francisco. The separate executed counterparts, taken together, shall constitute a single agreement.

### **8.14 Limitations on Damages**

A. Unless otherwise prohibited by this Agreement, general or direct damages may be recovered for a breach of a party's obligations under this Agreement. No party is liable for, or may recover from any other party, special, indirect or consequential damages or incidental damages, including, but not limited to, lost profits or revenue. No damages may be awarded for a breach of Section 8.17.

B. The limitations in subsection A apply only to claims for damages for an alleged breach of this Agreement. These limitations do not apply to claims for damages for an alleged breach of a legal duty that arises independently of this Agreement, established by constitution or statute.

C. If damages would be an inadequate remedy for a breach of this Agreement, equitable relief may be awarded by a court in a case in which it is otherwise proper.

D. This section does not apply to any claim of breach for which arbitration is the exclusive remedy pursuant to Section 8.01.A.

### **8.15 Force Majeure**

A. **Excuse from Performance**. No party shall be liable in damages to any other party for delay in performance of, or failure to perform, its obligations under this Agreement, including the obligations set forth in Sections 3.09 and 4.06, if such delay or failure is caused by a "Force Majeure Event."

B. **Notice**. The party claiming excuse shall deliver to the other parties a written notice of intent to claim excuse from performance under this Agreement by reason of a Force



Majeure Event. Notice required by this section shall be given promptly in light of the circumstances, and, in the case of events described in (c), (d) or (e) of the definition of Force Majeure Event only, not later than ten (10) days after the occurrence of the Force Majeure Event. Such notice shall describe the Force Majeure Event, the services impacted by the claimed event, the length of time that the party expects to be prevented from performing, and the steps which the party intends to take to restore its ability to perform.

**C. Obligation to Restore Ability to Perform.** Any suspension of performance by a party pursuant to this section shall be only to the extent, and for a period of no longer duration than, required by the nature of the Force Majeure Event, and the party claiming excuse shall use its best efforts to remedy its inability to perform as quickly as possible.

**8.16 No Third-Party Beneficiaries**

This Agreement is exclusively for the benefit of the parties and not for the benefit of any other Person. There are no third-party beneficiaries of this Agreement and no person not a party shall have any rights under or interests in this Agreement.

No party may assert a claim for damages on behalf of a person other than itself, including a person that is not a party.

**8.17 Good Faith and Fair Dealing**

San Francisco and the Wholesale Customers each acknowledge their obligation under California law to act in good faith toward, and deal fairly with, each other with respect to this Agreement.

## **Article 9. Implementation and Special Provisions Affecting Certain Wholesale Customers**

### **9.01 General; Individual Water Sales Contracts**

A. As described in Section 1.03, San Francisco previously entered into Individual Water Sales Contracts with each of the Wholesale Customers. The term of the majority of Individual Water Sales Contracts will expire on June 30, 2009, concurrently with the expiration of the 1984 Agreement. Except as provided below in this Article, each of the Wholesale Customers will execute a new Individual Water Sales Contract with San Francisco concurrently with its approval of the Agreement.

B. The Individual Water Sales Contracts will describe the service area of each Wholesale Customer, identify the location and size of connections between the Regional Water System and the Wholesale Customer's distribution system, provide for periodic rendering and payment of bills for water usage, and in some instances contain additional specialized provisions unique to the particular Wholesale Customer and not of general concern or applicability. A sample Individual Water Sales Contract is provided at Attachment F. The Individual Water Sales Contracts between San Francisco and the Wholesale Customers will not contain any provision inconsistent with Articles 1 through 8 of this Agreement except (1) as provided below in this Article or (2) to the extent that such provisions are not in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement. Any provisions in an Individual Water Sales Contract which are in violation of this section shall be void.

### **9.02 California Water Service Company**

A. The parties recognize that the California Water Service Company is an investor-owned utility company and, as such, has no claim to co-grantee status under the Act, which specifically bars private parties from receiving for resale any water produced by the Hetch Hetchy portion of the Regional Water System. Accordingly, the following provisions shall apply to the California Water Service Company, notwithstanding anything to the contrary elsewhere in this Agreement.

B. The total quantity of water delivered by San Francisco to the California Water Service Company shall not in any calendar year exceed 47,400 acre feet, which is the estimated average annual production of Local System Water. If San Francisco develops additional Local System Water after the Effective Date, it may (1) increase the maximum

delivery amount stated herein; and (2) increase the Supply Assurance, but not necessarily both. San Francisco has no obligation to deliver water to California Water Service Company in excess of the maximum stated herein, except as such maximum may be increased by San Francisco pursuant to this subsection. The maximum annual quantity of Local System Water set forth in this subsection is intended to be a limitation on the total quantity of water that may be allocated to California Water Service Company, and is not an Individual Supply Guarantee for purposes of Section 3.02. The maximum quantity of Local System Water set forth in this subsection is subject to reduction in response to (1) changes in long-term hydrology or (2) environmental water requirements that may be imposed by or negotiated with state and federal resource agencies in order to comply with state or federal law or to secure applicable permits for construction of Regional Water System facilities. San Francisco shall notify California Water Service Company of any anticipated reduction of the quantity of Local System Water set forth in this subsection, along with an explanation of the basis for the reduction.

C. Notwithstanding anything in Section 8.08 to the contrary, California Water Service Company shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of California Water Service Company under any contract between it and San Francisco applicable to any individual district of California Water Service Company in connection with the acquisition by such public agency of all or a portion of the water system of California Water Service Company in such district. In the event of any such assignment of all the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of all further obligations under such contract provided that the assignee public agency expressly assumes the obligations of California Water Service Company thereunder. In the event of such an assignment of a portion of the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of such portion of such obligations so assigned thereunder provided that the assignee public agency shall expressly assume such obligations so assigned to it.

D. Should California Water Service Company seek to take over or otherwise acquire, in whole or in part, the service obligations of another Wholesale Customer under Section 3.03.E, it will so inform San Francisco at least six months prior to the effective date of the sale and provide information concerning the total additional demand proposed to be served, in order that San Francisco may compare the proposed additional demand to the then-current estimate of Local System Water. In this regard, California Water Service Company has notified

the SFPUC that it has reached an agreement to acquire the assets of Skyline County Water District (“Skyline”) and assume the responsibility for providing water service to customers in the Skyline service area. California Water Service Company has advised the SFPUC that, on September 18, 2008, the California Public Utilities Commission approved California Water Service Company’s acquisition of Skyline. The SFPUC anticipates approving the transfer of Skyline’s Supply Guarantee as shown on Attachment C to California Water Service Company and the expansion of California Water Service Company’s service area to include the current Skyline service area before the Effective Date of this Agreement. All parties to this Agreement authorize corresponding modifications of Attachment C, as well as any of the Agreement’s other provisions, to reflect the foregoing transaction without the necessity of amending this Agreement.

E. Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, district, political subdivision, or other public agency for resale to customers within the service area of the California Water Service Company. Nothing in this Agreement shall require or contemplate any delivery of water to California Water Service Company in violation of the Act.

F. Nothing in this Agreement shall alter, amend or modify the Findings of Fact and Conclusions of Law and the Judgment dated May 25, 1961, in that certain action entitled *City and County of San Francisco v. California Water Service Company* in the Superior Court of the State of California in and for the County of Marin, No. 23286, as modified by the Quitclaim Deed from California Water Service Company to San Francisco dated August 22, 1961. The rights and obligations of San Francisco and California Water Service Company under these documents shall continue as therein set forth.

### **9.03 City of Hayward**

A. San Francisco and the City of Hayward (“Hayward”) entered into a water supply contract on February 9, 1962 (“the 1962 contract”) which provides, *inter alia*, that San Francisco will supply Hayward with all water supplemental to sources and supplies of water owned or controlled by Hayward as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1962 contract “on a permanent basis.” The service area map attached as Exhibit C to the 1962 contract was amended in 1974 to remove an area of land in the Hayward hills and in 2008 to make minor boundary adjustments identified in SFPUC Resolution No. 08-0035.

B. The intention of the parties is to continue the 1962 contract, as amended, in effect as the Individual Water Sales Contract between San Francisco and Hayward. Accordingly, it shall not be necessary for San Francisco and Hayward to enter into a new Individual Water Sales Contract pursuant to this Article and approval of this Agreement by Hayward shall constitute approval of both this Agreement and an Individual Water Sales Contract for purposes of Section 1.03. The 1962 contract, as amended, will continue to describe the service area of Hayward, while rates for water delivered to Hayward during the Term shall be governed by Article 5 hereof. The 1962 contract, as amended, will continue in force after the expiration of the Term.

#### **9.04 Estero Municipal Improvement District**

A. San Francisco and the Estero Municipal Improvement District (“Estero”) entered into a water supply contract on August 24, 1961, the term of which continues until August 24, 2011 (“the 1961 Contract”). The 1961 Contract provides, *inter alia*, that San Francisco will supply Estero with all water supplemental to sources and supplies of water owned or controlled by Estero as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1961 Contract.

B. The intention of the parties is to terminate the 1961 Contract and replace it with a new Individual Water Sales Contract which will become effective on July 1, 2009. The new Individual Water Sales Contract will describe the current service area of Estero. The Individual Supply Guarantee applicable to Estero shall be 5.9 MGD, rather than being determined as provided in the 1961 Contract.

#### **9.05 Stanford University**

A. The parties recognize that The Board of Trustees of The Leland Stanford Junior University (“Stanford”) operates a non-profit university, and purchases water from San Francisco for redistribution to the academic and related facilities and activities of the university and to residents of Stanford, the majority of whom are either employed by or students of Stanford. Stanford agrees that all water furnished by San Francisco shall be used by Stanford only for domestic purposes and those directly connected with the academic and related facilities and activities of Stanford, and no water furnished by San Francisco shall be used in any area now or hereafter leased or otherwise used for industrial purposes or for commercial purposes other than those campus support facilities that provide direct services to Stanford faculty, students or staff such as the U.S. Post Office, the bookstore and Student Union.



Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, political subdivision or other public agency for resale to Stanford or to customers within the service area of Stanford.

B. Notwithstanding anything in Section 8.08 to the contrary, Stanford shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of Stanford under this Agreement or the Individual Water Sales Contract between it and San Francisco in connection with the acquisition by such public agency of all or a portion of Stanford's water system. In the event of any such assignment of all the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of all further obligations under such contract, provided that the assignee public agency expressly assumes Stanford's obligations thereunder. In the event of such an assignment of a portion of the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of such obligations so assigned thereunder, provided that the assignee public agency shall expressly assume such obligations so assigned to it.

Nothing in this Agreement shall require or contemplate any delivery of water to Stanford in violation of the Act.

#### **9.06 City of San Jose and City of Santa Clara**

A. **Continued Supply on Temporary, Interruptible Basis.** During the term of the 1984 Agreement, San Francisco provided water to the City of San Jose ("San Jose") and the City of Santa Clara ("Santa Clara") on a temporary, interruptible basis pursuant to SFPUC Resolution No. 85-0256. Subject to termination or reduction of supply as provided in Section 4.05 of this Agreement, San Francisco will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by the Commission, pursuant to Section 4.05.H, as to whether to make San Jose and Santa Clara permanent customers of the Regional Water System. San Francisco will furnish water to San Jose and Santa Clara at the same rates as those applicable to other Wholesale Customers pursuant to this Agreement. Water delivered to San Jose and Santa Clara after July 1, 2009 may be limited by the SFPUC's ability to meet the full needs of all its other Retail and Wholesale Customers. The service areas of San Jose and Santa Clara set forth in their Individual Water Sales Contracts may not be expanded using the procedure set forth in Section 3.03. The combined annual average water usage of San Jose and Santa Clara shall not exceed 9 MGD. The allocation of that total

amount between San Jose and Santa Clara shall be as set forth in their Individual Water Sales Contracts.

**B. Reservation of Rights.** In signing this Agreement, neither San Jose nor Santa Clara waives any of its rights to contend, in the event that San Francisco (1) elects to terminate or interrupt water deliveries to either or both of the two cities prior to 2018 using the process set forth in Section 4.05, or (2) does not elect to take either city on as a permanent customer in 2018, that it is entitled to permanent customer status, pursuant to the Act or any other federal or state law. In signing this Agreement, San Francisco does not waive its right to deny any or all such contentions.

**9.07 City of Brisbane, Guadalupe Valley Municipal Improvement District, Town of Hillsborough**

A. The parties acknowledge that San Francisco has heretofore provided certain quantities of water to the City of Brisbane (“Brisbane”), Guadalupe Valley Municipal Improvement District (“Guadalupe”) and the Town of Hillsborough (“Hillsborough”) at specified rates or without charge pursuant to obligations arising out of agreements between the predecessors of San Francisco and these parties, which agreements are referred to in judicial orders, resolutions of the SFPUC and/or the 1960 contracts between San Francisco and Brisbane, Guadalupe and Hillsborough. The parties intend to continue those arrangements and accordingly agree as follows:

1. Nothing in this Agreement is intended to alter, amend or modify the terms of SFPUC Resolution No. 74-0653 or the indenture of July 18, 1908 between the Guadalupe Development Company and the Spring Valley Water Company.

2. Nothing in this Agreement is intended to alter, amend or modify the Findings of Fact and Conclusions of Law and Judgment dated May 25, 1961 in that certain action entitled *City and County of San Francisco v. Town of Hillsborough* in the Superior Court of the State of California in and for the County of Marin, No. 23282, as modified by the Satisfaction of Judgment filed October 23, 1961 and the Compromise and Release between Hillsborough and San Francisco dated August 22, 1961. The rights and obligations of Hillsborough under these documents shall continue as therein set forth.

3. Nothing in this Agreement is intended to affect or prejudice any claims, rights or remedies of Guadalupe or of Crocker Estate Company, a corporation, or of Crocker

Land Company, a corporation, or of San Francisco, or of their successors and assigns, respectively, with respect to or arising out of that certain deed dated May 22, 1884, from Charles Crocker to Spring Valley Water Works, a corporation, recorded on May 24, 1884, in Book 37 of Deeds at page 356, Records of San Mateo County, California, as amended by that certain Deed of Exchange of Easements in Real Property and Agreement for Trade in Connection Therewith, dated July 29, 1954, recorded on August 4, 1954, in Book 2628, at page 298, Official Records of said San Mateo County, or with respect to or arising out of that certain action involving the validity or enforceability of certain provisions of said deed entitled *City and County of San Francisco v. Crocker Estate Company*, in the Superior Court of the State of California in and for the County of Marin, No. 23281.

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IN WITNESS WHEREOF the parties have executed this Agreement by their duly authorized officers.

**CITY AND COUNTY OF SAN FRANCISCO**  
Acting by and through its Public Utilities Commission

By: \_\_\_\_\_  
Edward Harrington  
General Manager

Date: \_\_\_\_\_, 2009

Approved by Commission Resolution No. 09-0069,  
adopted April 28, 2009

\_\_\_\_\_  
Michael Housh  
Secretary to Commission

Approved as to form:

DENNIS J. HERRERA  
City Attorney

By: \_\_\_\_\_  
Joshua D. Milstein  
Deputy City Attorney

## Attachment A - Definitions

**“1984 Agreement”** refers to the 1984 Settlement Agreement and Master Water Sales Contract between the City and County of San Francisco and certain Suburban Purchasers in San Mateo County, Santa Clara County and Alameda County, which expires on June 30, 2009.

**“Act”** refers to the Raker Act, 38 Stat. 242, the Act of Congress, enacted in 1913, that authorized the construction of the Hetch Hetchy system on federal lands.

**“Adjusted Proportional Annual Use”** means the respective percentages of annual water use, as adjusted to reflect deliveries of water by the Hetch Hetchy Enterprise to outside City Retail Customers. The adjustment is calculated each year as described in Section B of Attachment J and is shown on lines 18 and 19 of Table 1 of that Attachment.

**“Agreement”** refers to this Water Supply Agreement, by and among San Francisco and the Wholesale Customers who approve this Agreement in accordance with Section 1.03.

**“BAWSCA”** refers to the Bay Area Water Supply and Conservation Agency established pursuant to Division 31 of the California Water Code (Water Code §§81300-81461) or its successor and permitted assigns.

**“CEQA”** refers to the California Environmental Quality Act found at §§21000 et seq. of the Public Resources Code and the Guidelines for the California Environmental Quality Act found at §§15000 et seq. of Title 14 of the California Code of Regulations, as amended from time to time.

**“Commission”** means the governing board of the SFPUC, whose members, as of the date of this Agreement, are appointed by the Mayor of San Francisco and confirmed by the San Francisco Board of Supervisors.

**“Compliance Audit”** refers to the annual audit of the Wholesale Revenue Requirement by the Compliance Auditor required by Sections 7.03 through 7.05.

**“Compliance Auditor”** refers to the independent certified public accountant chosen by the San Francisco Controller to conduct each fiscal year’s audit of the SFPUC’s calculation of the Wholesale Revenue Requirement as provided in Section 7.03.B.



**“Countywide Cost Allocation Plan”** refers to the full costs of the Water and Hetch Hetchy Enterprises’ prorated share of San Francisco city government expenses that are not directly billed to city departments, as determined by the Controller of the City and County of San Francisco.

**“Debt Service”** means principal and interest paid during a fiscal year on Indebtedness incurred by the SFPUC for the 2006 Revenue Bonds, Series A, and subsequently issued Indebtedness (exclusive of 2006 Revenue Bonds Series B and C), the proceeds of which are used or are scheduled to be used for the acquisition or construction of New Regional Assets or to refund such Indebtedness.

**“Direct Retail”** refers to Regional Water System capital or operating expenditures that are incurred to provide water service solely to Retail Customers.

**“Direct Wholesale”** refers to Regional Water System capital or operating expenditures that are incurred to provide water service solely to one or more Wholesale Customers.

**“Drought”** means a water shortage caused by lack of precipitation, as reflected in resolutions of the Commission calling for voluntary or mandatory water rationing based on evaluation of water stored or otherwise available to the Regional Water System, whether or not the Commission declares a water shortage emergency pursuant to Water Code §§ 350 et seq., as amended from time to time.

**“Effective Date”** refers to the date this Agreement will become effective in accordance with the terms of Section 1.03.

**“Emergency”** means a sudden, non-drought event, such as an earthquake, failure of Regional Water System infrastructure or other catastrophic event or natural disaster that results in an insufficient supply of water available to the Retail or Wholesale Service Areas for basic human consumption, firefighting, sanitation, and fire protection.

**“Encumbrance”** or **“Encumber”** refers to the process by which the City Controller certifies the availability of amounts previously appropriated by the Commission for specifically identified SFPUC capital projects performed either by third parties or through work orders to other City departments.

**“Environmental Enhancement Surcharge”** means the surcharge to be imposed by the SFPUC on individual parties to this Agreement whose use exceeds their Interim Supply Allocation when the collective use of water by all parties to this Agreement is in excess of the Interim Supply Limitation.

**“ERRP”** refers to a SFPUC document entitled *Emergency Response and Recovery Plan: Regional Water System* (“ERRP”) dated August 23, 2003, and updated November 2006.

**“Excess Use Charges”** are monthly charges set by the SFPUC, in the form of multipliers, that are applied to the Wholesale Customer water rates during times of mandatory rationing if a Wholesale Customer's water usage is greater than its shortage allocation. Excess Use Charges are further described in Section 4 of the Tier 1 Shortage Plan (Attachment H).

**“Existing Assets”** refers to Regional and Hetch Hetchy Water-Only and Water-Related capital assets plant in service as of June 30, 2009.

**“Force Majeure Event”** means an event not the fault of, and beyond the reasonable control of, the party claiming excuse which makes it impossible or extremely impracticable for such party to perform obligations imposed on it by this Agreement, by virtue of its effect on physical facilities and their operation or employees essential to such performance. Force Majeure Events include (a) an “act of God” such as an earthquake, flood, earth movement, or similar catastrophic event, (b) an act of the public enemy, terrorism, sabotage, civil disturbance or similar event, (c) a strike, work stoppage, picketing or similar concerted labor action, (d) delays in construction caused by unanticipated negligence or breach of contract by a third party or inability to obtain essential materials after diligent and timely efforts; or (e) an order or regulation issued by a federal or state regulatory agency after the Effective Date or a judgment or order entered by a federal or state court after the Effective Date.

**“Fundamental Rights”** of Wholesale Customers are their status as parties to this Agreement, their allocation of water recognized in Section 3.02, their protection against arbitrary, unreasonable, or unjustly discriminatory rates provided in Section 6.04, and any specific rights described in Article 9.

**“Hetch Hetchy Enterprise”** refers to Hetch Hetchy Water and Power Enterprise, a SFPUC operating department.

**“Include”** and its variants mean “including but not limited to” whenever used in this Agreement, regardless of whether or not it is capitalized.

**“Indebtedness”** includes revenue bonds, bond anticipation notes, certificates of participation (excluding certificates of participation towards which SFPUC contributes debt service as an operating expense), and commercial paper.

**“Individual Water Sales Contract”** refers to the contracts between each Wholesale Customer and San Francisco contemplated in Section 9.01 that details customer-specific matters such as location of service connections, service area maps and other matters specific to that customer.

**“Individual Supply Guarantee”** refers to each Wholesale Customer’s share of the Supply Assurance, as shown in Attachment C.

**“Interim Supply Allocation”** refers to each Wholesale Customer’s share, to be established by the SFPUC pursuant to Section 4.02, of the Interim Supply Limitation.

**“Interim Supply Limitation”** refers to the 265 MGD annual average limitation on water deliveries until December 31, 2018 from Regional Water System watersheds imposed by the SFPUC in its approval of the WSIP in Resolution Number 08-0200 dated October 30, 2008.

**“Joint,”** when used in connection with Hetch Hetchy Enterprise assets or expenses, refers to assets used or expenses incurred in providing both water supply (“Water-Related”) and in the generation and transmission of electrical energy (“Power-Related”).

**“Local System Water”** refers to Regional Water System water supplies developed in San Mateo, Alameda and Santa Clara Counties or otherwise not produced by the Hetch Hetchy Enterprise under rights of way granted by the Raker Act.

**“MGD”** refers to an average flow rate of one million gallons per day over a specific time period, often a year. For example, one MGD is equal to 365 million gallons per year or 1,120 acre feet per year.

**“Net Annual Debt Service”** refers to debt service less payments made from proceeds of Indebtedness (e.g., capitalized interest), earnings on bond proceeds (e.g., reserve fund earnings) used to pay Debt Service, and interest paid from renewed commercial paper, or from reserve fund liquidation.

**“New Assets”** refers to Regional and Hetch Hetchy Water-Only and Water-Related capital assets added to Regional Water System plant in service after June 30, 2009.

**“New Regional Assets”** refers to New Assets placed in service on or after July 1, 2009 that are used and useful in delivering water to Wholesale Customers. The following four categories comprise New Regional Assets:

1. Water Enterprise Regional Assets
2. Water Enterprise Direct Wholesale Assets
3. Hetch Hetchy Water Only Assets
4. Water-Related portion (45 percent) of Hetch Hetchy Joint Assets

**“Power-Only,”** when used with reference to Hetch Hetchy Enterprise capital costs and operating and maintenance expenses, means capital costs and expenses that are incurred solely for the construction and operation of assets used to generate and transmit electrical energy.

**“Power-Related”** refers to the power related portion (55%) of Joint Hetch Hetchy Enterprise assets or expenses.

**“Prepayment”** refers to payments of principal and interest amounts not due in the year the prepayment is made, as described in Section 5.03.

**“Proportional Annual Use”** means the shares of deliveries from the Regional Water System used by City Retail Customers and by the Wholesale Customers in a fiscal year, expressed as a percentage. The percentages of annual use are calculated each year as described in Section B of Attachment J and are shown on lines 10 and 11 of Table 1 of that Attachment.

**“Proportional Water Use”** refers the general principle of allocating Regional Water System costs based on the relative purchases of water by Retail and Wholesale Customers.

**“Regional,”** when used with reference to Water Enterprise capital assets and operating expenses, refers to assets and expenses that benefit Wholesale and Regional Customers.

**“Regional Water System”** means the water storage, transmission and treatment system operated by the SFPUC in Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo and San Francisco counties, including projects constructed under the WSIP, but excluding Direct Retail and Direct Wholesale assets.

**“Retail Customers”** means any customer that purchases water from San Francisco that is not a Wholesale Customer, whether located inside or outside of San Francisco.

**“Retail Service Area”** means the areas where SFPUC sells water to Retail Customers.

**“Retail Water”** means water sold by the SFPUC to its Retail Customers within and outside San Francisco.

**“San Francisco”** refers to the City and County of San Francisco.

**“SFPUC”** refers to the San Francisco Public Utilities Commission as an operating department of San Francisco, the General Manager of which reports to the Commission.

**“SFPUC Bureaus”** refers to the portions of the SFPUC that provide support services to the SFPUC Operating Departments. These presently consist of the General Manager’s Office, Business Services, and External Affairs.

**“SFPUC Operating Departments”** refers to the Water, Hetch Hetchy and Wastewater Program Enterprises under the control and management of the SFPUC pursuant to the San Francisco Charter.

**“Substantially Expended”**: A bond issue series is substantially expended when 98% of the proceeds and investment earnings contributed to the project fund have been expended.

**“Supply Assurance”** means the 184 MGD maximum annual average metered supply of water dedicated by San Francisco to public use in the Wholesale Service Area (not including San Jose and Santa Clara) in the 1984 Agreement and Section 3.01 of this Agreement.

**“Term”** means the 25-year term commencing July 1, 2009, including one or both 5-year extensions authorized by Section 2.02.A and B.

**“Tier 1 Shortage Plan”** refers to the Water Shortage Allocation Plan (Attachment H) adopted by the SFPUC and the Wholesale Customers in conjunction with this Agreement describing the method for allocating water between the SFPUC and the Wholesale Customers collectively for shortages of up to 20% of deliveries from the Regional Water System, as amended from time-to-time.



**“Water Enterprise”** refers to the San Francisco Water Department (SFWD), an SFPUC Operating Department.

**“Water Management Charge”** refers to the charge collected by San Francisco on behalf of BAWSCA for local water resource development in the Wholesale Service Area pursuant to Section 3.06 of this Agreement.

**“Water-Only,”** when used with reference to Hetch Hetchy Enterprise capital costs and operating and maintenance expenses, means capital costs and expenses that are incurred solely for the construction and operation of assets used to protect water quality or to provide for the delivery of water for consumptive purposes.

**“Water-Related”** refers to the water related portion (45%) of Joint Hetch Hetchy Enterprise assets or expenses.

**“Water Supply Development Report”** refers to the annual report prepared pursuant to Section 4.05, and submitted to the Commission for purposes of estimating whether Regional Water System demand will be within the Interim Supply Limitation by June 30, 2018.

**“Wheeling Statute”** refers to Article 4 of Chapter 11 of the California Water Code, as amended from time to time.

**“Wholesale Capital Fund”** is the account established by the SFPUC for deposit of Wholesale Customer revenue that is used to fund the wholesale share of revenue-funded New Regional Assets, as described in Section 6.08.

**“Wholesale Customer” or “Customers”** means one or more of the 27 water customers identified in Section 1.01 that are contracting for purchase of water from San Francisco pursuant to this Agreement.

**“Wholesale Revenue Coverage”** refers to the additional dollar amount included in wholesale rates each fiscal year that is charged to Wholesale Customers by the SFPUC for their proportionate share of Debt Service coverage under Section 6.06.A.

**“Wholesale Revenue Coverage Reserve”** refers to the account established by the SFPUC for deposit of Wholesale Revenue Coverage under Section 6.06.B.

**“Wholesale Revenue Requirement”** means the calculated Wholesale Customer portion of SFPUC Regional Water System capital and operating costs as determined in accordance with the provisions of Article 5 of this Agreement, formerly called the “Suburban Revenue Requirement” in the 1984 Agreement.

**“Wholesale Service Area”** means the combined service areas of the Wholesale Customers, as delineated on the service area maps attached to each Individual Water Sales Contract.

**“WSIP”** refers to the Water System Improvement Program approved by the Commission in Resolution No. 08-0200 on October 30, 2008, as amended from time to time.

**ATTACHMENT B**

**WHOLESALE CUSTOMER REGIONAL WATER SYSTEM PURCHASES FY 2007-2008\***

*(To determine 75% approval process for Section 1.02)*

<b>WHOLESALE CUSTOMER</b>	<b>MGD</b>
Alameda County Water District	12.90
California Water Service Company	37.72
City of Brisbane	0.23
City of Burlingame	4.50
City of Daly City	4.49
City of East Palo Alto	2.16
City of Hayward	19.33
City of Menlo Park	3.69
City of Millbrae	2.46
City of Milpitas	6.95
City of Mountain View	10.51
City of Palo Alto	12.72
City of Redwood City	11.01
City of San Bruno	1.86
City of San Jose	4.80
City of Santa Clara	3.49
City of Sunnyvale	10.52
Coastside County Water District	2.08
Estero Municipal Improvement District	5.51
Guadalupe Valley Municipal Improvement District	0.40
Mid-Peninsula Water District	3.25
North Coast County Water District	3.25
Purissima Hills Water District	2.31
Skyline County Water District	0.16
Stanford University	2.31
Town of Hillsborough	3.83
Westborough Water District	0.95
<b>Total</b>	<b>173.39</b>

\*Source: SFPUC Commercial Division Records

Note: FY 2007-2008 was a Leap Year with 366 days.

**ATTACHMENT C  
INDIVIDUAL SUPPLY GUARANTEES**

<b>WHOLESALE CUSTOMER</b>	<b>(1) 100 Cubic Feet *</b>	<b>(2) MGD</b>
Alameda County Water District	6,714,439	13.760
California Water Service Company**	17,320,807	35.499
City of Brisbane	224,435	0.460
City of Burlingame	2,553,753	5.234
City of Daly City	2,094,386	4.292
City of East Palo Alto	957,813	1.963
City of Menlo Park	2,174,231	4.456
City of Millbrae	1,538,120	3.152
City of Milpitas	4,504,533	9.232
City of Mountain View	6,567,648	13.460
City of Palo Alto	8,331,697	17.075
City of Redwood City	5,333,115	10.930
City of San Bruno	1,583,899	3.246
City of Sunnyvale	6,138,122	12.580
Coastside County Water District	1,061,453	2.175
Estero Municipal Improvement District	2,878,807	5.900
Guadalupe Valley Municipal Improvement District	254,436	0.521
Mid-Peninsula Water District	1,898,707	3.891
North Coast County Water District	1,872,928	3.838
Purissima Hills Water District	792,832	1.625
Skyline County Water District	88,537	0.181
Stanford University	1,479,764	3.033
Town of Hillsborough	1,995,644	4.090
Westborough Water District	644,172	1.320
<b>Total:***</b>	<b>79,004,278</b>	<b>161.913</b>

\* 100 Cubic feet equals MGD divided by 0.0000204946. Figures in this column are calculated using unrounded MGD values and are more precise than the figures listed in column (2).

\*\* Includes quantities from Los Trancos County Water District and Palomar Park Water District.

\*\*\* Total does not equal sum of MGD figures due to rounding. Total is not 184 MGD because table does not include the City of Hayward.

\*\*\*\* Cordilleras Mutual Water Association is not a party to this Agreement, but it has its own Supply Assurance of 3,007 hundred cubic feet (CCF).

## ATTACHMENT D

### PROCEDURE FOR PRO-RATA REDUCTION OF WHOLESALE CUSTOMERS' INDIVIDUAL SUPPLY GUARANTEES (SECTION 3.02).

The 23 wholesale customers listed on Attachment C have individual Supply Guarantees that total approximately 161.9 MGD.

If the amount of water purchased from SFPUC by Hayward exceeds 22.1 MGD for three consecutive fiscal years, the individual Supply Guarantees of each of those 23 wholesale customers will be reduced as described below.

#### STEP ONE:

Obtain the average annual excess purchases during the three fiscal year period. For example, assume Hayward uses 25.0 MGD, 24.2 MGD and 26.0 MGD in three consecutive years. The average annual excess use for that period is 2.9 MGD; calculated as follows:

$$\frac{[25.0 \text{ MGD} + 24.2 \text{ MGD} + 26.0 \text{ MGD}]}{3} + 161.9 \text{ MGD} = 186.9 \text{ MGD}$$

$$186.9 \text{ MGD} - 184.0 \text{ MGD} = 2.9 \text{ MGD}$$

#### STEP TWO:

Allocate the excess purchases among the 23 Wholesale Customers in proportion to each customer's Supply Guarantee as a percentage of the total Supply Guarantees (161.9 MGD as of FY 2009-10).

For example, assume that Wholesale Customer A's Supply Guarantee is 12.0 MGD. Wholesale Customer A's percentage share of the total individual supply guarantees is 0.074, calculated as follows:

$$\frac{12.0 \text{ MGD}}{161.9 \text{ MGD}} = 0.074$$

and its share of the excess use is 0.22 MGD, calculated as follows:

$$2.9 \text{ MGD} \times 0.074 = 0.22 \text{ MGD}$$



**STEP THREE:**

Determine Wholesale Customer's adjusted Supply Guarantee by subtracting the result of Step Two from the Wholesale Customer's Supply Guarantee:

$$12 \text{ MGD} - 0.22 \text{ MGD} = 11.78 \text{ MGD}$$

\* \* \* \* \*

Adjustments will be made at intervals comprised of distinct three-year periods of use by Hayward in excess of 22.1 MGD rather than overlapping periods. For example, assuming that the first adjustment were to occur in FY 2014-15 (based on use during FY 2011-12, FY 2012-13 and FY 2013-14), a second adjustment will not occur earlier than three full fiscal years thereafter (i.e., FY 2017-18, based on use by Hayward in FY 2014-15, FY 2015-16 and FY 2016-17). The figures used in the second and subsequent adjustments will reflect previous adjustments. For example, a second adjustment will use 158.9 MGD as the total of individual Supply Guarantees (161.6 MGD - 2.7 MGD = 158.9 MGD).

For purposes of simplicity, the volumetric units used in the foregoing example are MGD. For actual adjustment calculations, the unit employed will be hundreds of cubic feet ("ccf"), the unit by which the SFPUC measures water deliveries for billing purposes.

The procedure described and illustrated above is independent of and unrelated to the establishment by the SFPUC of Interim Supply Limitations described in Article 4.

**ATTACHMENT E**

**MINIMUM ANNUAL PURCHASE QUANTITIES**

**(Section 3.07.C)**

<b>AGENCY</b>	<b>MINIMUM ANNUAL PURCHASE QUANTITY (IN MGD)</b>
Alameda County Water District	7.648
City of Milpitas	5.341
City of Mountain View	8.930
City of Sunnyvale	8.930

**ATTACHMENT F**

**WATER SALES CONTRACT**

This Contract, dated as of \_\_\_\_\_, 2009, is entered into by and between the City and County of San Francisco ("San Francisco") and

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ ("Customer").

**RECITALS**

San Francisco and the Customer have entered into a Water Supply Agreement ("WSA"), which sets forth the terms and conditions under which San Francisco will continue to furnish water for domestic and other municipal purposes to Customer and to other Wholesale Customers. The WSA contemplates that San Francisco and each individual Wholesale Customer will enter into an individual contract describing the location or locations at which water will be delivered to each customer by the San Francisco Public Utilities Commission ("SFPUC"), the customer's service area within which water so delivered is to be sold, and other provisions unique to the individual purchaser. This Water Sales Contract is the individual contract contemplated by the WSA.

**AGREEMENTS OF THE PARTIES**

1. **Incorporation of the WSA**

The terms and conditions of the WSA are incorporated into this Contract as if set forth in full herein.

2. **Term**

Unless explicitly provided to the contrary in Article 9 of the WSA, the term of this Contract shall be identical to that provided in Section \_\_\_\_ of the WSA.

3. Service Area

Water delivered by San Francisco to the Customer may be used or sold within the service area shown on the map designated Exhibit A attached hereto. Except as provided in Section \_\_\_ of the WSA, Customer shall not deliver or sell any water provided by San Francisco outside of this area without the prior written consent of the General Manager of the SFPUC.

4. Location and Description of Service Connections

Sale and delivery of water to Customer will be made through a connection or connections to the SFPUC Regional Water System at the location or locations shown on Exhibit A attached hereto and with the applicable present account number, description, connection size, and meter size shown on Exhibit B attached hereto.

5. Interties With Other Systems.

Customer maintains interties with neighboring water systems at the location or locations shown on Exhibit A attached hereto and with the connection size(s) as shown on Exhibit C attached hereto.

6. Billing and Payment

San Francisco shall compute the amounts of water delivered and bill Customer therefor on a monthly basis. The bill shall show the separate components of the charge (e.g., service, consumption, demand). Customer shall pay the amount due within thirty (30) days after receipt of the bill.

If Customer disputes the accuracy of any portion of the water bill it shall (a) notify the General Manager of the SFPUC in writing of the specific nature of the dispute and (b) pay the undisputed portion of the bill within thirty (30) days after receipt. Customer shall meet with the General Manager of the SFPUC or a delegate to discuss the disputed portion of the bill.

7., 8., 9... Other Specialized Provisions

[Certain Wholesale Customers will require additional provisions in their individual contracts addressed to issues such as minimum and/or maximum water delivery quantities, prior authorized wheeling arrangements, maximum expansion of the service area, etc. These and other provisions addressing issues unique to the particular Wholesale Customer may be added here, subject to the provisions of Section 9.01 of the WSA.]

IN WITNESS WHEREOF, the parties hereto have executed this Contract, to become effective upon the effectiveness of the WSA, by their duly authorized representatives.

CITY AND COUNTY OF SAN FRANCISCO Acting by and through its Public Utilities Commission  BY _____ Edward Harrington General Manager	Date: _____, 2009
NAME OF WHOLESALE CUSTOMER  BY _____ Name: Title:	Date: _____, 2009

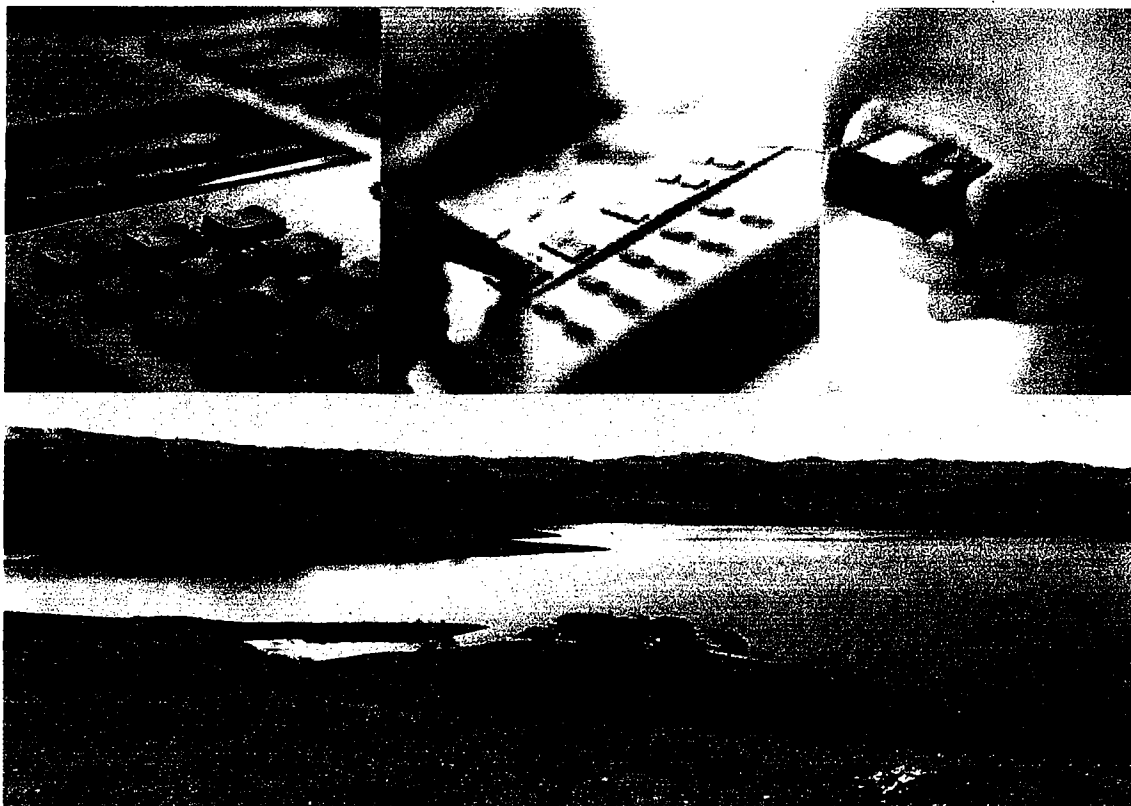
**Note:** This attachment is provided for the convenience of the prospective parties to the Water Supply Agreement and associated individual contracts. The format may be modified as desired by San Francisco and Wholesale Customer, subject to Section 9.01 of the WSA.





ATTACHMENT G

Water Quality  
Notification and Communications Plan  
Revision 4  
January 2006



Updated by:  
Water Quality Engineering  
Olivia Chen Consultants, Inc.

# ATTACHMENT H

## WATER SHORTAGE ALLOCATION PLAN

This Interim Water Shortage Allocation Plan ("Plan") describes the method for allocating water between the San Francisco Public Utilities Commission ("SFPUC") and the Wholesale Customers collectively during shortages caused by drought. The Plan implements a method for allocating water among the individual Wholesale Customers which has been adopted by the Wholesale Customers. The Plan includes provisions for transfers, banking, and excess use charges. The Plan applies only when the SFPUC determines that a system-wide water shortage due to drought exists, and all references to "shortages" and "water shortages" are to be so understood. This Plan was adopted pursuant to Section 7.03(a) of the 1984 Settlement Agreement and Master Water Sales Contract and has been updated to correspond to the terminology used in the June 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County ("Agreement").

### SECTION 1. SHORTAGE CONDITIONS

**1.1. Projected Available SFPUC Water Supply.** The SFPUC shall make an annual determination as to whether or not a shortage condition exists. The determination of projected available water supply shall consider, among other things, stored water, projected runoff, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, allowance for carryover storage, and water bank balances, if any, described in Section 3.

**1.2 Projected SFPUC Purchases.** The SFPUC will utilize purchase data, including volumes of water purchased by the Wholesale Customers and by Retail Customers (as those terms are used in the Agreement) in the year immediately prior to the drought, along with other available relevant information, as a basis for determining projected system-wide water purchases from the SFPUC for the upcoming year.

**1.3. Shortage Conditions.** The SFPUC will compare the available water supply (Section 1.1) with projected system-wide water purchases (Section 1.2). A shortage condition exists if the SFPUC determines that the projected available water supply is less than projected system-wide water purchases in the upcoming Supply Year (defined as the period from July 1 through June 30). When a shortage condition exists, SFPUC will determine whether voluntary or mandatory actions will be required to reduce purchases of SFPUC water to required levels.

**1.3.1 Voluntary Response.** If the SFPUC determines that voluntary actions will be sufficient to accomplish the necessary reduction in water use throughout its service area, the SFPUC and the Wholesale Customers will make good faith efforts to reduce their water purchases to stay within their annual shortage allocations and associated monthly water use budgets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits, or impose a ceiling on further accumulation of bank credits, consistent with Section 3.2.1 of this Plan.

**1.3.2 Mandatory Response.** If the SFPUC determines that mandatory actions will be required to accomplish the necessary reduction in water use in the SFPUC service area, the SFPUC may implement excess use charges as set forth in Section 4 of this Plan.

**1.4. Period of Shortage.** A shortage period commences when the SFPUC determines that a water shortage exists, as set forth in a declaration of water shortage emergency issued by the SFPUC pursuant to California Water Code Sections 350 et seq. Termination of the water shortage emergency will be declared by resolution of the SFPUC.

## SECTION 2. SHORTAGE ALLOCATIONS

**2.1. Annual Allocations between the SFPUC and the Wholesale Customers.** The annual water supply available during shortages will be allocated between the SFPUC and the collective Wholesale Customers as follows:

Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The water allocated to the SFPUC shall correspond to the total allocation for all Retail Customers.

**2.2. Annual Allocations among the Wholesale Customers.** The annual water supply allocated to the Wholesale Customers collectively during system wide shortages of 20 percent or less will be apportioned among them based on a methodology adopted by all of the Wholesale Customers, as described in Section 3.11(C) of the Agreement. In any year for which the methodology must be applied, the Bay Area Water Supply and Conservation Agency (“BAWSCA”) will calculate each Wholesale Customer’s individual percentage share of the amount of water allocated to the Wholesale Customers collectively pursuant to Section 2.1. Following the declaration or reconfirmation of a water shortage emergency by the SFPUC, BAWSCA will deliver to the SFPUC General Manager a list, signed by the President of BAWSCA’s Board of Directors and its General Manager, showing each Wholesale Customer together with its percentage share and stating that the list has been prepared in accordance with the methodology adopted by the Wholesale Customers. The SFPUC shall allocate water to each Wholesale Customer, as specified in the list. The shortage allocations so established may be transferred as provided in Section 2.5 of this Plan. If BAWSCA or all Wholesale Customers do not provide the SFPUC with individual allocations, the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers.

The methodology adopted by the Wholesale Customers utilizes the rolling average of each individual Wholesale Customer’s purchases from the SFPUC during the three immediately

preceding Supply Years. The SFPUC agrees to provide BAWSCA by November 1 of each year a list showing the amount of water purchased by each Wholesale Customer during the immediately preceding Supply Year. The list will be prepared using Customer Service Bureau report MGT440 (or comparable official record in use at the time), adjusted as required for any reporting errors or omissions, and will be transmitted by the SFPUC General Manager or his designee.

**2.3. Limited Applicability of Plan to System Wide Shortages Greater Than Twenty**

**Percent.** The allocations of water between the SFPUC and the Wholesale Customers collectively, provided for in Section 2.1, apply only to shortages of 20 percent or less. The SFPUC and Wholesale Customers recognize the possibility of a drought occurring which could create system-wide shortages greater than 20 percent despite actions taken by the SFPUC aimed at reducing the probability and severity of water shortages in the SFPUC service area. If the SFPUC determines that a system wide water shortage greater than 20 percent exists, the SFPUC and the Wholesale Customers agree to meet within 10 days and discuss whether a change is required to the allocation set forth in Section 2.1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or Retail Customers. Following these discussions, the Tier 1 water allocations set forth in Section 2.1 of this Plan, or a modified version thereof, may be adopted by mutual written consent of the SFPUC and the Wholesale Customers. If the SFPUC and Wholesale Customers meet and cannot agree on an appropriate Tier 1 allocation within 30 days of the SFPUC's determination of water shortage greater than 20 percent, then (1) the provisions of Section 3.11(C) of the Agreement will apply, unless (2) all of the Wholesale Customers direct in writing that a Tier 2 allocation methodology agreed to by them be used to apportion the water to be made available to the Wholesale Customers collectively, in lieu of the provisions of Section 3.11(C).

The provisions of this Plan relating to transfers (in Section 2.5), banking (in Section 3), and excess use charges (in Section 4) shall continue to apply during system-wide shortages greater than 20 percent.

**2.4. Monthly Water Budgets.** Within 10 days after adopting a declaration of water shortage emergency, the SFPUC will determine the amount of Tier 1 water allocated to the Wholesale Customers collectively pursuant to Section 2.1. The SFPUC General Manager, using the Tier 2 allocation percentages shown on the list delivered by BAWSCA pursuant to Section 2.2, will calculate each Wholesale Customer's individual annual allocation. The SFPUC General Manager, or his designee, will then provide each Wholesale Customer with a proposed schedule of monthly water budgets based on the pattern of monthly water purchases during the Supply Year immediately preceding the declaration of shortage (the "Default Schedule"). Each Wholesale Customer may, within two weeks of receiving its Default Schedule, provide the SFPUC with an alternative monthly water budget that reschedules its annual Tier 2 shortage allocation over the course of the succeeding Supply Year. If a Wholesale Customer does not deliver an alternative monthly water budget to the SFPUC within two weeks of its receipt of the Default Schedule, then its monthly budget for the ensuing Supply Year shall be the Default Schedule proposed by the SFPUC.

Monthly Wholesale Customer water budgets will be derived from annual Tier 2 allocations for purposes of accounting for excess use. Monthly Wholesale Customer water budgets shall be adjusted during the year to account for transfers of shortage allocation under Section 2.5 and

transfers of banked water under Section 3.4.

**2.5. Transfers of Shortage Allocations.** Voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customers, and between any Wholesale Customers, will be permitted using the same procedure as that for transfers of banked water set forth in Section 3.4. The SFPUC and BAWSCA shall be notified of each transfer. Transfers of shortage allocations shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC. Transfers of shortage allocations shall be in compliance with Section 3.05 of the Agreement. The transferring parties will meet with the SFPUC, if requested, to discuss any effect the transfer may have on its operations.

### SECTION 3. SHORTAGE WATER BANKING

**3.1. Water Bank Accounts.** The SFPUC shall create a water bank account for itself and each Wholesale Customer during shortages in conjunction with its resale customer billing process. Bank accounts will account for amounts of water that are either saved or used in excess of the shortage allocation for each agency; the accounts are not used for tracking billings and payments. When a shortage period is in effect (as defined in Section 1.4), the following provisions for bank credits, debits, and transfers shall be in force. A statement of bank balance for each Wholesale Customer will be included with the SFPUC's monthly water bills.

**3.2. Bank Account Credits.** Each month, monthly purchases will be compared to the monthly budget for that month. Any unused shortage allocation by an agency will be credited to that agency's water bank account. Credits will accumulate during the entire shortage period, subject to potential restrictions imposed pursuant to Section 3.2.1. Credits remaining at the end of the shortage period will be zeroed out; no financial or other credit shall be granted for banked water.

**3.2.1. Maximum Balances.** The SFPUC may suspend the prospective accumulation of credits in all accounts. Alternatively, the SFPUC may impose a ceiling on further accumulation of credits in water bank balances based on a uniform ratio of the bank balance to the annual water allocation. In making a decision to suspend the prospective accumulation of water bank credits, the SFPUC shall consider the available water supply as set forth in Section 1.1 of this Plan and other reasonable, relevant factors.

**3.3. Account Debits.** Each month, monthly purchases will be compared to the budget for that month. Purchases in excess of monthly budgets will be debited against an agency's water bank account. Bank debits remaining at the end of the fiscal year will be subject to excess use charges (see Section 4).

**3.4. Transfers of Banked Water.** In addition to the transfers of shortage allocations provided for in Section 2.5, voluntary transfers of banked water will also be permitted between the SFPUC and any Wholesale Customer, and among the Wholesale Customers. The volume of transferred water will be credited to the transferee's water bank account and debited against the transferor's water bank account. The transferring parties must notify the SFPUC and BAWSCA of each transfer in writing (so that adjustments can be made to bank accounts), and will meet with the SFPUC, if requested, to discuss any affect the transfer may have on SFPUC operations. Transfers of banked water shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC.



If the SFPUC incurs extraordinary costs in implementing transfers, it will give written notice to the transferring parties within ten (10) business days after receipt of notice of the transfer. Extraordinary costs means additional costs directly attributable to accommodating transfers and which are not incurred in non-drought years nor simply as a result of the shortage condition itself. Extraordinary costs shall be calculated in accordance with the procedures in the Agreement and shall be subject to the disclosure and auditing requirements in the Agreement. In the case of transfers between Wholesale Customers, such extraordinary costs shall be considered to be expenses chargeable solely to individual Wholesale Customers and shall be borne equally by the parties to the transfer. In the case of transfers between the SFPUC and a Wholesale Customer, the SFPUC's share of any extraordinary transfer costs shall not be added to the Wholesale Revenue Requirement.

**3.4.1. Transfer Limitations.** The agency transferring banked water will be allowed to transfer no more than the accumulated balance in its bank. Transfers of estimated prospective banked credits and the "overdrafting" of accounts shall not be permitted. The price of transfer water originally derived from the SFPUC system is to be determined by the transferring parties and is not specified herein. Transfers of banked water shall be in compliance with Section 3.05 of the Agreement.

## SECTION 4. WHOLESALE EXCESS USE CHARGES

**4.1. Amount of Excess Use Charges.** Monthly excess use charges shall be determined by the SFPUC at the time of the declared water shortage consistent with the calendar in Section 6 and in accordance with Section 6.03 of the Agreement. The excess use charges will be in the form of multipliers applied to the rate in effect at the time the excess use occurs. The same excess use charge multipliers shall apply to the Wholesale Customers and all Retail Customers. The excess use charge multipliers apply only to the charges for water delivered at the rate in effect at the time the excess use occurred.

**4.2 Monitoring Suburban Water Use.** During periods of voluntary rationing, water usage greater than a customer's allocation (as determined in Section 2) will be indicated on each SFPUC monthly water bill. During periods of mandatory rationing, monthly and cumulative water usage greater than a Wholesale Customer's shortage allocation and the associated excess use charges will be indicated on each SFPUC monthly water bill.

**4.3. Suburban Excess Use Charge Payments.** An annual reconciliation will be made of monthly excess use charges according to the calendar in Section 6. Annual excess use charges will be calculated by comparing total annual purchases for each Wholesale Customer with its annual shortage allocation (as adjusted for transfers of shortage allocations and banked water, if any). Excess use charge payments by those Wholesale Customers with net excess use will be paid according to the calendar in Section 6. The SFPUC may dedicate excess use charges paid by Wholesale Customers toward the purchase of water from the State Drought Water Bank or other willing sellers in order to provide additional water to the Wholesale Customers. Excess use charges paid by the Wholesale Customers constitute Wholesale Customer revenue and shall be included within the SFPUC's annual Wholesale Revenue Requirement calculation.

## **SECTION 5. GENERAL PROVISIONS GOVERNING WATER SHORTAGE ALLOCATION PLAN**

**5.1. Construction of Terms.** This Plan is for the sole benefit of the parties and shall not be construed as granting rights to any person other than the parties or imposing obligations on a party to any person other than another party.

**5.2. Governing Law.** This Plan is made under and shall be governed by the laws of the State of California.

**5.3. Effect on Agreement.** This Plan describes the method for allocating water between the SFPUC and the collective Wholesale Customers during system-wide water shortages of 20 percent or less. This Plan also provides for the SFPUC to allocate water among the Wholesale Customers in accordance with directions provided by the Wholesale Customers through BAWSCA under Section 2.2, and to implement a program by which such allocations may be voluntarily transferred among the Wholesale Customers. The provisions of this Plan are intended to implement Section 3.11(C) of the Agreement and do not affect, change or modify any other section, term or condition of the Agreement.

**5.4. Inapplicability of Plan to Allocation of SFPUC System Water During Non-Shortage Periods.** The SFPUC's agreement in this Plan to a respective share of SFPUC system water during years of shortage shall not be construed to provide a basis for the allocation of water between the SFPUC and the Wholesale Customers when no water shortage emergency exists.

**5.5. Termination.** This Plan shall expire at the end of the Term of the Agreement. The SFPUC and the Wholesale Customers can mutually agree to revise or terminate this Plan prior to that date due to changes in the water delivery capability of the SFPUC system, the acquisition of new water supplies, and other factors affecting the availability of water from the SFPUC system during times of shortage.

## **SECTION 6. ALLOCATION CALENDAR**

**6.1. Annual Schedule.** The annual schedule for the shortage allocation process is shown below. This schedule may be changed by the SFPUC to facilitate implementation.

### **6.1.1**

#### **In All Years**

1. SFPUC delivers list of annual purchases by each Wholesale Customer during the immediately preceding Supply Year
2. SFPUC meets with the Wholesale Customers and presents water supply forecast for the following Supply Year
3. SFPUC issues initial estimate of available water supply
4. SFPUC announces potential first year of drought (if applicable)
5. SFPUC and Wholesale Customers meet upon request to exchange information concerning water availability and projected system-wide purchases
6. SFPUC issues revised estimate of available water supply, and confirms continued potential shortage conditions, if applicable
7. SFPUC issues final estimate of available water supply
  
8. SFPUC determines amount of water available to Wholesale Customers collectively

#### **Target Dates**

- November 1
- February
- February 1
- February 1
- February 1-May 31
- 
- March 1
- April 15<sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.
- April 15<sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.

#### **In Drought Years**

9. SFPUC formally declares the existence of water shortage emergency (or end of water shortage emergency, if applicable) under Water Code Sections 350 et. seq.
10. SFPUC declares the need for a voluntary or mandatory response
11. BAWSCA submits calculation to SFPUC of individual Wholesale Customers' percentage shares of water allocated to Wholesale Customers collectively
12. SFPUC determines individual shortage allocations, based on BAWSCA's submittal of individual agency percentage shares to SFPUC, and monthly water budgets (Default Schedule)
13. Wholesale Customers submit alternative monthly water budgets (optional)
14. Final drought shortage allocations are issued for the Supply Year beginning July 1 through June 30
15. Monthly water budgets become effective

#### **Target Dates**

- April 15-31
- April 15-31
- April 15- 31
- 
- April 25—May 10
- 
- May 8-May 24
- 
- June 1
- 
- July 1
- 
- August 1 (of the beginning year) through June 30 (of the succeeding year)
- August of the succeeding year

**ATTACHMENT I**

**NOT USED**

## ATTACHMENT J

### DEFINITIONS AND FORMULAS FOR CALCULATING PROPORTIONAL ANNUAL WATER USE

#### TABLE OF CONTENTS

This Attachment contains four sections, three figures, and five tables.

Section A:	Water Meters
Section B:	Calculation of Proportional Annual Water Use
Section C:	Data Requirements and Schedule
Section D:	County Line and In-City Terminal Reservoir Meter Calibration and Maintenance
Figure 1:	Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs
Figure 2:	Generalized Schematic of Lake Merced Pump Station
Figure 3:	Locations of System Input and In-Line Meters
Table 1:	Base Usage and Allocation Rates
Table 2:	Locations of SFPUC County-line Meters and In-City Terminal Reservoirs
Table 3:	Locations of SFPUC System Input and In-line Meters
Table 4:	County-line Meters, In-City Terminal Reservoirs and Associated Metering Equipment
Table 5:	Meter Calibration and Maintenance Frequency

Table 1 presents the format for the water usage and allocation rate calculations for reference and to illustrate the definitions and formulas described in Sections A through C. Tables 2 and 3 list the meters whose locations are shown on Figures 1 and 3, respectively. Table



4 identifies the type of meter and associated metering equipment for the County-line Meters and Terminal Reservoirs. Table 5 identifies the meter calibration and maintenance frequency for the meters and equipment listed in Table 4.

## SECTION A. WATER METERS

### 1. General

The Agreement provides that certain operating and maintenance expenses and the capital cost of certain categories of utility plant in service are to be allocated between San Francisco and the Wholesale Customers on the basis of proportionate annual usage of the Regional Water System. The purpose of this Attachment is to describe the meters and illustrate the method by which proportionate annual usage will be calculated.

### 2. Units of Measurement, Rounding, Conversion

The SFPUC will compile the usage data required to complete Table 1 annually. The units of measurement and conventions for converting and rounding will be as follows.

The data in the Table 1 will be presented, and the calculations contemplated by this Attachment shown, in units of millions of gallons per day (mgd), rounded to the nearest tenth of an mgd. Percentages (e.g., the City and Wholesale usage rates) shall be carried to two digits to the right of the decimal point and reduction factors shall be carried to four digits to the right of the decimal point. Data compiled by the SFPUC in units of hundreds of cubic feet per year (ccf) shall be converted to mgd by multiplying hundreds of cubic feet per year by 0.0000020493 (or  $2.0493 \times 10^{-6}$ ) for non-leap years and 0.0000020437 (or  $2.0437 \times 10^{-6}$ ) for leap years.

In rounding, if the rightmost digit dropped is 0 through 4, the preceding digit shall be left unchanged; if the rightmost digit dropped is 5 through 9, the preceding digit shall be increased by 1.

### 3. Location of Meters/Gauges

The SFPUC presently maintains meters and gauges that have been used to determine the proportionate usage of the Regional Water System, in accordance with the methods and calculations described in Exhibit J to the 1984 contract between San Francisco and the Wholesale Customers. These meters consist of “County-Line Meters,” “In-City Terminal Reservoir Meters” and “System Input and In-line Meters” as described in the following subsections. As new capital improvement projects are designed and constructed by the SFPUC, it may be necessary for new meters to be installed to ensure continued accurate determinations of the proportionate usage of the Regional Water System. “Planned meters” are included in the following subsections where planned capital improvement projects are likely to require the installation of additional meters.

#### a. County-line Meters

The SFPUC presently maintains meters at or near the San Mateo-San Francisco County line to measure flow through all transmission pipelines entering the City (“County-line Meters”). The existing and planned County-line Meters are listed in Table 2 and shown on Figures 1 and 2. Additional details pertaining to the County-line meters located at the Lake Merced Pump Station, and specifically to water deliveries from the pump station to Sunset Reservoir, Sutro Reservoir, and Lake Merced are provided below.

##### (1) County-Line deliveries to Sunset and Sutro Reservoirs

Water delivered to the City through the Sunset Supply Pipeline may be pumped from the Lake Merced Pump Station to either Sunset Reservoir or Sutro Reservoir located within the City. When water is pumped from the Lake Merced Pump Station to both Sunset and Sutro reservoirs simultaneously, the recording instrumentation on the Sunset and Sutro venturi meters are designed to record flows through both meters.

When water is pumped to Sutro Reservoir only (typically utilizing Pump No. 4 at the

Lake Merced Pump Station), the source water is from the Sunset Reservoir (not the County-line), and the direction of flow through the Sunset venturi meter is reversed. Under this pumping scenario, the recording instrumentation on the Sunset and Sutro venturi meters are designed to not record flow on their respective recorders such that the in-City transfer of water between Sunset and Sutro Reservoirs is not included as a County-line delivery to the City. Figure 2 provides a generalized schematic of the Lake Merced Pump Station and the typical direction of flow from the County-line, through the pump station.

(2) County-line deliveries to Lake Merced

In order to raise and maintain water levels in Lake Merced, the SFPUC occasionally delivers water directly from the Regional Water System to Lake Merced. Deliveries from the Regional Water System to Lake Merced are accomplished at the Lake Merced Pump Station. The procedure involves operating valves on the suction side of Sunset Pump No. 2 such that water may flow by gravity in the Sunset Supply Pipeline, from San Mateo County, across the County-line and into San Francisco, through Lake Merced Pump Station and into the Lake Merced wet well. A 16-inch pipeline connection on the suction side of Sunset Pump No. 2 allows for deliveries of water to the wet well (see Figure 2). Water deliveries from the Regional Water System to Lake Merced are considered County-line deliveries and an in-City usage in the calculation of water allocation rates.

b. In-City Terminal Reservoirs

Water usage by the City includes water deliveries from the SFPUC's "terminal reservoirs." The terminal reservoirs are: 1) Sunset Reservoir, 2) University Mound Reservoir, and 3) Merced Manor Reservoir. The terminal reservoirs are shown on Figure 1.

c. System Input and In-Line Meters

The SFPUC presently measures water flow into and through the Regional System utilizing "System Input and In-Line Meters." The existing and planned System Input and In-Line Meters are listed in Table 3 and shown on Figure 3.

d. Wholesale Customer Meters and City Retail Customer Meters Located Outside the Boundaries of the City

The SFPUC presently measures water deliveries from the Regional Water System to its Wholesale Customers at various locations where the water delivery systems of the individual Wholesale Customers tie into the Regional Water System. The meters at these locations are referred to as the Wholesale Customers' "master meters." The SFPUC also measures water deliveries from the Regional Water System to other customers located outside of the boundaries of the City that are not Wholesale Customers. Water deliveries to the Wholesale Customers and Retail Customers outside the City's boundaries that receive water from the Regional Water System are accounted for by the SFPUC's Customer Service Division as described in Section B.

4. Replacement and Relocation of Meters, Gauges, and Recording Devices.

The SFPUC presently equips all of its large venturi meters with differential pressure transmitters. The smaller meters utilize other methods and equipment to register and record flows. The SFPUC will maintain the meters, gauges, and recording devices described above in subsections (a), (b), (c), and (d) unless and until such meters, gauges, and recording devices are replaced.

The SFPUC may replace the meters, gauges, and recording devices described above in subsections (a), (b), (c), and (d) or install new meters, gauges, and recording devices at new locations, provided that such changes do not diminish the accuracy of the water flow measurements or impair the ability of the SFPUC to separate direct City water use from water use by the wholesale customers. Maintenance and calibration procedures for new or replaced equipment may change. Modified maintenance and calibration procedures for new or replaced equipment will conform to industry standards set forth in AWWA Manual M33, the applicable

standards in the International Society of Automation, and will implement the manufacturer's instructions for maintenance and calibration. The SFPUC will provide BAWSCA with advance written notice of any such changes, together with a brief explanation of the reasons therefor and a description of the type and location of the replacement. Such notice shall automatically amend the list of meters, gauges, and recording devices set forth above in subsections (a), (b), (c), and (d).

5. Recording of Water Flow Data

a. Flow Data

The City shall record and maintain data measuring base water flow throughout the SFPUC Regional Water System as necessary to determine proportional annual water usage.

b. Reservoir Data

The SFPUC shall record and maintain data measuring the levels of the terminal reservoirs described above in subsection A.3.b and shown on Figure 1 on an hourly basis. Flow values derived from reservoir level readings for all reservoirs in the SFPUC wholesale system shall be calculated using the tables contained in the SFPUC publication "Reservoir Data" (aka "The Weir Book"), which set forth the relationship between reservoir levels and water volumes, as such tables may be amended from time to time to reflect changes in the volumes of the various reservoirs. The tables to be used initially shall be those from the current edition of The Weir Book.

SECTION B. CALCULATION OF PROPORTIONAL ANNUAL  
USAGE

"Base rates" means the percentages of annual SFPUC deliveries attributed to the Wholesale Customers and to City Retail Customers.



The percentage of annual SFPUC metered deliveries attributed to the Wholesale Customers (i.e., the wholesale base rate) shall be calculated for each fiscal year as described below and illustrated in Table 1. The item numbers listed below correspond to the item numbers listed in Table 1.

- (1) "Gross San Francisco County line base deliveries" shall equal the total amount of water flowing into the City's distribution system through transmission pipelines entering the City, as measured by the County-Line Meters described in Section A.3.a. and shown on Figures 1 and 2.
- (2) "Daly City base deliveries" shall equal the water flowing to Daly City through meter accounts provided downstream of the County-Line meters or through SFPUC's City Distribution Division. At present these accounts are:
  - (a) CSPL1/Macdonald Avenue Service (Account number 010084-01-0)
  - (b) Guttenberg Street Service (Account number 010013-01-3)
  - (c) Carter Street Service (Account numbers 284070-01-8 and 284071-01-6)

These accounts represent a portion of the total deliveries to Daly City. The quantities of water delivered to these four Daly City accounts are reported monthly in Form MGT441 by the SFPUC's Customer Service Division. These connections to meters are presently located within the City, and thus record water which has already been recorded by the SFPUC's master meters at the County line. So long as this condition continues, Daly City base deliveries shall be subtracted from "Gross San Francisco County line base deliveries."

- (3) "Net San Francisco base deliveries" shall equal the result of subtracting "Daly City base deliveries" from "Gross San Francisco County line base deliveries."

- (4) “Other suburban raw water base deliveries” shall equal the sum of all deliveries of raw (untreated) water to customers of the SFPUC located outside the City other than deliveries to the Wholesale Customers. “Other suburban raw water base deliveries” include deliveries of raw water in Alameda and San Mateo Counties to SFPUC Retail Customers, City departments and commissions, and other users affiliated with San Francisco.
- (5) “Other suburban treated water base deliveries” shall equal the sum of all deliveries of treated water to customers of the SFPUC located outside the City other than deliveries to the Wholesale Customers. Other suburban treated water base deliveries include deliveries of treated water to the SFPUC’s Retail Customers in San Mateo, Santa Clara and Alameda Counties (such as NASA Ames Research Center and LLNL), to City departments and commissions and other users affiliated with San Francisco (such as the San Francisco International Airport, the San Francisco County Jail, and tenants of land owned by the City Recreation and Park Department).
- (6) “Other suburban base deliveries” shall equal the sum of “Other suburban raw water deliveries” and “Other suburban treated water deliveries.” The combined amount of raw and treated water delivered to suburban entities other than the Wholesale Customers is reported monthly in Form MGT440 by the SFPUC’s Customer Service Division.
- (7) “Total City base usage” shall equal “Net San Francisco base deliveries” plus “Other suburban base deliveries.”
- (8) “Total wholesale base usage” shall equal the sum of all metered deliveries to the Wholesale Customers measured at their SFPUC master meters (including all deliveries to Daly City which are comprised of deliveries through meters located outside San Francisco and meters located inside San Francisco, deliveries through the latter of which are designated above in paragraph B.1.2 as “Daly City base

deliveries”). The quantity of water delivered to the individual Wholesale Customers, and the combined amount of water delivered to all Wholesale Customers is reported monthly in Form MGT440 by the SFPUC’s Customer Service Division.

- (9) “Total system base usage” shall equal “City base usage” plus “Wholesale base usage.”
- (10) “Wholesale base rate” shall equal the percentage obtained by dividing “Wholesale base usage” by “Total system base usage.”
- (11) “City base rate” shall equal the percentage obtained by subtracting “Wholesale base rate” from 100 percent.
- (12) “Base system input” shall equal all amounts of water supplied to the SFPUC Regional Water System, which presently comes from the following sources:
  - (a) Hetch Hetchy water as measured at the venturi meters on the 58-inch, 61-inch, and 78.5-inch San Joaquin Pipeline Nos. 1, 2, and 3 near Oakdale.
  - (b) Water supplied by HHWPD to LLNL as measured at the customer meter. Water delivered from the system to LLNL shall be deemed negative in sign for the purpose of determining “Base system input.”
  - (c) Hetch Hetchy water pumped from the Alameda siphons to San Antonio Reservoir as measured at the venturi meter on the 60-inch San Antonio pipeline. Water delivered from the system to San Antonio Reservoir shall be deemed negative in sign for the purpose of determining “Base system input.”

- (d) Sunol Valley Water Treatment Plant as measured at the meter on the 78-inch effluent pipeline.
- (e) Harry Tracy Water Treatment Plant as measured at the venturi meters on the 60-inch and 78-inch effluent pipelines.
- (f) Raw water deliveries to all SFPUC Retail Customers outside the City boundaries as measured at the customer meter. These deliveries are considered positive for the purposes of Table 1. Currently, raw water deliveries to the system are represented by the following account numbers contained in Form MGT440 prepared by the SFPUC's Customer Service Division:

266081-01-7 (Calaveras Nursery)  
266081-02-5 (Calaveras Nursery)  
264355-01-7 (Caltrans)  
266084-02-9 (Color Spot Nursery)  
272701-02-0 (Color Spot Nursery)  
266069-02-0 (Crystal Springs Golf Course)  
266078-02-1 (Dell Franklin)  
266078-01-3 (Dells Nursery)  
266084-01-1 (Hi-C Nursery)  
272701-01-2 (Hi-C Nursery)  
284112-01-8 (Hansen Aggregates)  
266084-03-7 (Jeff Anhorn Nursery)  
272701-03-8 (Jeff Anhorn Nursery)  
266079-02-9 (Mission Valley Rock)  
281043-01-8 (Mission Valley Rock)  
267618-02-3 (Nagata Farms)  
267618-01-5 (Nagata Farms)  
266090-01-8 (Naka Nursery)

266091-01-6 (Naka Nursery)  
266090-02-6 (Naka Nursery)  
266091-02-4 (Naka Nursery)  
264315-02-9 (Pacific Nurseries)  
266076-01-7 (Sunol Christmas Tree Farm)  
266076-02-5 (Sunol Tree Farm)  
276095-01-5 (Sunol Valley Golf & Recreation)  
266077-02-3 (Ura Farm)  
264352-01-4 (Ura, John)  
266075-01-9 (Valley Crest)  
268276-01-1 (Valley Crest Nursery)  
266093-01-2 (Valley Crest Tree Company)  
268426-02-0 (Valley Crest Tree Company)  
266075-02-7 (Valley Crest Tree Company)  
266093-02-0 (Valley Crest Tree Company)  
268276-02-9 (Valley Crest Tree Company)  
266082-01-5 (Western Star Nursery)  
266089-01-0 (Western Star Nursery)  
267254-02-7 (Western Star Nursery)  
266082-02-3 (Western Star)  
266089-02-8 (Western Star)  
267254-03-5 (Western Star)

- (g) Raw water deliveries from Pilarcitos Reservoir and Crystal Springs Reservoir to Coastside County Water District as measured at the customer meters. These deliveries are considered positive for the purposes of Table 1. Currently, raw water deliveries to Coastside County Water District from both reservoirs are represented under account number 010027-01-9 contained in Form MGT441 prepared by the SFPUC's Customer Service Division:



- (h) Crystal Springs Balancing Reservoir. The flow into or out of the Crystal Springs Balancing Reservoir shall be calculated based on the changes in the amounts of water stored in the reservoir. The amounts of water stored shall be determined by the use of water level sensors, and the application of water level readings to a water level-storage capacity table. Decreases in storage, which indicate a flow from the Balancing Reservoir into the system, shall be deemed positive in sign. Increases in storage, which indicate a flow into the Balancing Reservoir from the system, shall be deemed negative in sign. Over the period of a year, the total flows into and out of Crystal Springs Balancing Reservoir are nearly equivalent. As such, total system input from Crystal Springs Reservoir shall be deemed zero for calculating current base rates.
- (i) Deliveries to Crystal Springs Reservoir as measured by the overflow weir at the Pulgas Pump Station. Deliveries from the system to Crystal Springs Reservoir (“spills”) shall be deemed negative in sign for the purpose of determining “Base system input.”
- (j) Terminal Reservoirs. The “terminal reservoirs” consist of Sunset Reservoir, University Mound Reservoir, and Merced Manor Reservoir, each located within the City of San Francisco. The flow into or out of the terminal reservoirs shall be calculated based on the changes in the amounts of water stored in them. The amounts of water stored shall be determined by the use of water level sensors, and the application of water levels to water level-storage capacity tables. Over the period of a year, the total flows into and out of terminal reservoirs are nearly equivalent. As such, total system input from the terminal reservoirs shall be deemed zero for calculating base rates.
- (k) Other Sources. Other sources of flow into, or from, the Regional Water System, shall be accounted for as “other sources.” Examples of other

sources of system input would include intertie water deliveries between the Regional System and the Santa Clara Valley Water District, and between the Regional System and the East Bay Municipal Utilities District, and deliveries of raw water from Crystal Springs Reservoir in the event of an emergency. Flows from the system shall be deemed negative in sign for the purpose of determining "Base system input."

- (13) "Total base system input" shall equal the sum of the system inputs from the sources described in paragraph B.1.12.
- (14) "Joint system loss reduction factor" shall equal "Total system base usage" divided by "Total base system input." "Joint system loss reduction factor" shall not exceed 1.0.
- (15) "Daly City reduction factor" shall equal "Net San Francisco base deliveries" divided by "Gross San Francisco County line base deliveries." "Daly City reduction factor" shall not exceed 1.0.
- (16) "Total suburban base deliveries" shall equal "Other suburban base deliveries" plus "Total wholesale base usage."
- (17) "Suburban reduction factor" shall equal "Wholesale base usage" divided by "Total suburban base deliveries." "Suburban reduction factor" shall not exceed 1.0.
- (18) "HHWPD Deliveries above Oakdale" shall equal the total amount of water delivered by the HHWPD to users located above the system input meters in Oakdale. Water users located above the system input meters in Oakdale are currently represented by Groveland Community Services District and the HHWPD facility at Moccasin.

- (19) “HH Reduction Factor” is calculated for the purpose of determining the Wholesale Customers’ share of the Hetch Hetchy Assessment. The factor shall equal a fraction, the numerator of which is the total system input measured at the Oakdale meters (Table 1, line 12.a) and the denominator of which is the sum of the total system input measured at the Oakdale meters (Table 1, line 12.a) plus the total “HHWPD deliveries above Oakdale” (Table 1, line 18).

## SECTION C.

### DATA REQUIREMENTS AND SCHEDULE

#### 1. Collection and Dissemination of Data

The SFPUC presently compiles daily flow data for the County-line meters, System Input and In-Line Meters, and daily reservoir water level data, and provides copies of that data to the Wholesale Customers (through BAWSCA) on a monthly basis. The SFPUC also provides copies of wholesale “Suburban Resale” and City Retail water usage data to BAWSCA on a monthly basis. Additionally, the SFPUC provides BAWSCA access to flow data for the meters as reported and recorded by the SFPUC’s SCADA system.

The SFPUC shall continue to provide the flow and water usage data described above to BAWSCA on a monthly basis, and shall continue to allow BAWSCA access to the SCADA system data, so that a coordinated effort between the SFPUC and BAWSCA will allow for updating Table 1 of this Attachment annually on a timely basis.

It shall continue to be the SFPUC’s responsibility to compile the data necessary to update Table 1 of this Attachment annually and the City shall deliver to BAWSCA, for review and approval, copies of the updated Table 1 by September 15 for the fiscal year ending the preceding June 30, as shown by the schedule contained in Section C.3.

Upon reasonable notice to the General Manager of the SFPUC, BAWSCA shall be given access to all water flow and usage records compiled by the SFPUC, including raw data, at reasonable times during business hours and shall have the right to copy such records and data at its expense.

2. Lack of Data

The parties recognize that, because of human error, mechanical failure, or other unplanned events, portions of the data required for the calculation of the usage rates and ratios described in Sections B and C of this Attachment occasionally may be unavailable or incorrect. In the event that such data are unavailable or inaccurate, the SFPUC shall make a reasonable estimate of the unavailable or incorrect data or use the most accurate alternative data that are available, and substitute the estimate therefor.

If the SFPUC uses an estimate of the unavailable or inaccurate data or alternative data, it shall provide BAWSCA with the following:

(1) a description of the unavailable or inaccurate data and the estimation or substitution of data used therefor;

(2) an explanation of the cause of the missing or inaccurate data and the reasons underlying the SFPUC's estimation or substitution of alternate data; and

(3) a statement of how the error or malfunction that caused the unavailability or inaccuracy of the data will be avoided in the future.

The SFPUC shall provide this information to BAWSCA upon calculation by the SFPUC of the usage rates and ratios described in this Attachment for the fiscal year in question.

3. Schedule for Completing the Annual Calculations of Water Usage Rates

The parties recognize the importance of updating Table 1 of this Attachment annually in a timely manner, and that historically, doing so has required a coordinated effort between the SFPUC and BAWSCA. To assure timely completion of the annual calculations of water usage rates and ratios, the parties agree to adhere to the following schedule.

(1) By August 15: The SFPUC shall forward to BAWSCA all data for the fiscal year ending the preceding June 30, necessary to make a determination of the base water usage and base allocation rates for the Wholesale Customers and the City.

(2) By September 15. The City shall deliver to BAWSCA, for review and approval, draft copies of the updated Table 1 for the fiscal year ending the preceding June 30.

(3) Between September 15 and October 15. The SFPUC and BAWSCA shall reconcile any discrepancies or inaccuracies in the draft calculations of water usage rates and shall reach agreement on a final updated Table 1 for the fiscal year ending the preceding June 30.

(4) By November 1. The SFPUC shall deliver to BAWSCA a finalized updated Table 1, signed by the SFPUC General Manager, or appropriate designee, representing the water usage rates agreed upon by the SFPUC and BAWSCA, for the fiscal year ended June 30.

(5) By November 15. BAWSCA shall return the finalized Table 1 to the SFPUC, counter-signed by the BAWSCA General Manager/CEO. If the SFPUC does not receive the countersigned Table 1 from BAWSCA by November 15, it may use the water use data as contained in the Table 1 delivered pursuant to paragraph (4) above, subject to arbitration as provided in section 8.01 of the Agreement.



## SECTION D. COUNTY LINE AND IN-CITY TERMINAL RESERVOIR METER CALIBRATION AND MAINTENANCE

### 1. General

This section refers only to the County-Line and In-City Terminal Reservoir Meters. The term “meter(s)” includes the primary meter itself (most of the primary meters in the SFPUC’s water system are Venturi-type flow meters) as well as any and all of the associated equipment used to measure, record, and transmit flow and water level data. The metering equipment associated with the primary metering device (also referred to as the secondary metering equipment) includes differential pressure transmitters, recorders, telecommunications equipment and the portion of the SFPUC’s Supervisory Control and Data Acquisition (SCADA) System that is used to transmit flow and water level measurements from the water meter to the computer terminal that records the measured data.

The County-Line and In-City Terminal Reservoir meters, their general locations, and their associated metering equipment are listed in Table 4.

### 2. Frequency and Type of Work to be Performed

The meters, water level sensors, and associated metering equipment are to be inspected, tested, calibrated, and maintained according to the applicable meter calibration and maintenance frequency specified in Table 5.

### 3. Components of the Calibration and Maintenance Work

The SFPUC will contract with an independent metering consultant to perform periodic inspections, testing, servicing and calibrations of the meters and metering equipment for the County-line meters and In-City Terminal Reservoirs. The metering consultant's calibration and maintenance work will include the following components:

- Annual Pitot Tube Tests: Pitot tube flow tests shall be performed once a year on all Venturi-type flow meters. See Sections 4.b and 4.c for further detail.
- Quarterly Secondary Meter Equipment Testing and Calibration: The secondary metering equipment shall be tested for accuracy and calibrated quarterly at five input levels (0%, 25%, 50%, 75% and 100% of the full range of flow). See Section 4.a for further detail.
- Cleaning: Clean and remove dust, oils, dirt, etc. from all instruments.
- Flushing: Flush and clean Venturi tube differential pressure (D/P) sensing lines.
- Inspecting: Inspections for mechanical fatigue, leaky pipes and fittings, worn parts, and improper operation of electrical/electronic equipment.
- Lubrication: Mechanical parts shall be lubricated as needed.

#### 4. Calibration Procedures

The metering consultant shall continue to calibrate and maintain the County-line meters and metering equipment listed in Table 4 in accordance with the frequency of work specified in Table 5. The work includes documenting meter readings and accuracy before and after calibration. Specific tasks to be completed by the metering consultant are as follows:

- a) Quarterly testing and calibration. The secondary metering equipment shall be tested and calibrated quarterly using NIST Traceable test equipment, and a "dead weight tester."

The system loop error for the secondary metering equipment is determined by connecting its output to the differential pressure transmitter and adjusting the dead weight tester to 5 places over the full range of flow: 0%, 25%, 50%, 75% and 100%, while all instruments in the loop are connected. For water level transmitters, provide simulated test head equal to full range of the transmitter being calibrated, comparing the simulated test head to its 4-20 milliamp output signal to determine transmitter error and calibration requirements. The system loop error for the secondary metering equipment may not exceed +/-2%. The individual components of the secondary metering equipment shall also be tested at the same 5 input levels and calibrated as necessary to ensure the error of the system and individual components does not exceed +/- 2%.

- b) Annual Pitot Tube Testing and Calibration. Annual Pitot tube testing shall be conducted for a comparison of flow totalized by the Pitot tube test equipment and the totalizer used by the SFPUC for water measurement and billing purposes. Annual Pitot tube flow testing shall be performed on all flow meters for assessment of Venturi error using the Annubar continuous flow method at 22% of the pipe radius. Pitot tube flow testing must be conducted continuously for a minimum of 30 minutes per test.

The Pitot tube flow tests are first performed before any of the secondary metering instruments are calibrated to determine the total system error (system consisting of the primary metering device and secondary metering equipment). Once the total system loop error has been established, perform secondary loop instrument testing and calibration as per the quarterly testing and calibration procedures described in 4.a above. If the total system error exceeds +/- 2% after calibration of the secondary metering equipment, minor adjustments to the differential pressure transmitter shall be made to correct (calibrate) the error in the Venturi meter. Repeat Pitot tube testing must be performed after the individual instrument calibration and differential pressure transmitter adjustments have been performed to establish that total system loop error is within +/- 2%.

- c) Pitot tube testing shall be conducted at a flow rate representing the typical flow for the meter (and, if operationally possible, at three different flows ranging from a minimum to near maximum capacity flow).
- d) The metering consultant shall perform the meter testing and calibration procedures utilizing the meter characteristic curves (for example, the pressure drop vs. flow for a Venturi meter) that have been obtained during previous meter calibration and maintenance work.
- e) During each quarterly site visit, the metering consultant shall inspect, assess and document the condition of all metering equipment, including meter, gauges, indicators, recorders, transmitters and other instrumentation, used in the measurement and recording of flow rates and cumulative flow totals and shall document all operational problems with the calibration instruments and meters during the calibration process. Problems may include air entrainment, leakage, flow disturbance and unstable meter readings.
- f) Prior to each quarterly site visit, the metering consultant shall review prior calibration records and reports for each meter to determine if previously-identified errors or equipment deficiencies were corrected as previously recommended.
- g) Each quarter, the metering consultant shall submit a final report (See Section 6) containing all of the calibration results for each meter tested and calibrated during the quarter. The metering consultant's report shall include a narrative description of the work conducted on each meter and meter calibration reports for the individual metering equipment. The quarterly report shall also address deficiencies that were not previously corrected according to the recommendations made in the prior report.

## 5. Calibration Instruments

The instrument used for flow testing of the primary meter (Venturi) must meet the accuracy standards required by the American Water Works Association (AWWA), and be

capable of measuring actual flows with an error of less than +/- 2%. If a particular calibration instrument is not rated for accuracy by the AWWA, its accuracy will be determined by reference to its manufacturer's representations as to accuracy.

## 6. Calibration Reports

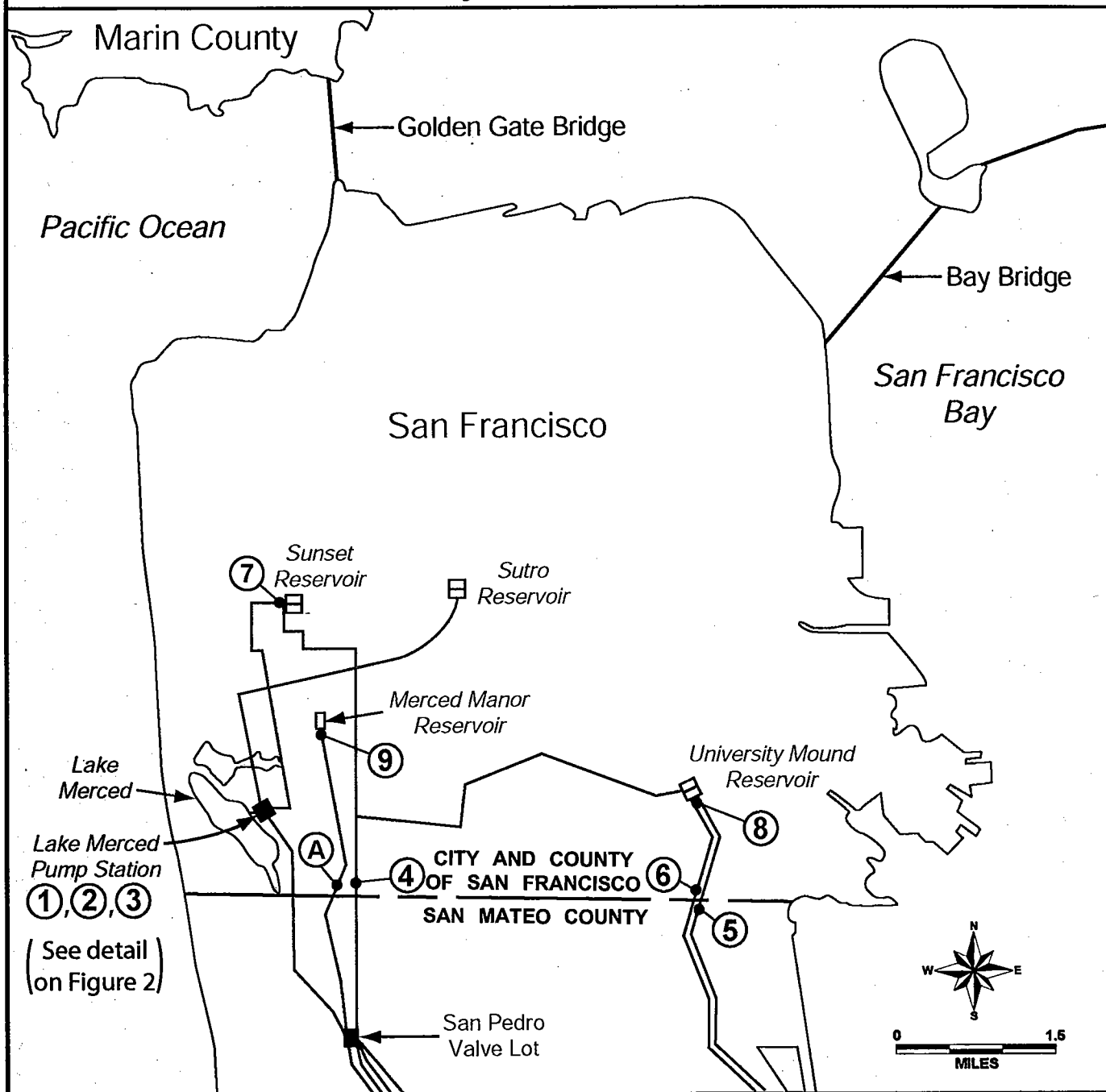
Within fourteen (14) working days after the beginning of each quarter, the metering consultant shall submit a written progress report of the work performed during the previous quarter. Each quarterly report will describe the results of the meter calibrations and any other tasks performed. The report will also include comments regarding any observations of abnormal conditions and any recommendations regarding these meters and their related equipment.

The reports must include complete descriptions and status of meters and related equipment, dates and times of service, all calibration specifics, pipeline dimensions, range of flow rates and totalized volumes, before and after error analysis and accuracy levels achieved, testing equipment used, and the name(s) of the person(s) that performed the work.

When appropriate and necessary, the metering consultant shall provide recommendations for improving the accuracy and reliability of the equipment and/or the methods of data collection. If, in the opinion of the metering consultant, the condition of a meter or its associated metering equipment is found to be defective, damaged, or otherwise in need of immediate repair or replacement, the metering consultant shall: 1) promptly notify the appropriate SFPUC personnel of the problem and recommend a solution to the problem so that the SFPUC can determine how to address it and, 2) include the problem description in its quarterly report.



## Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs

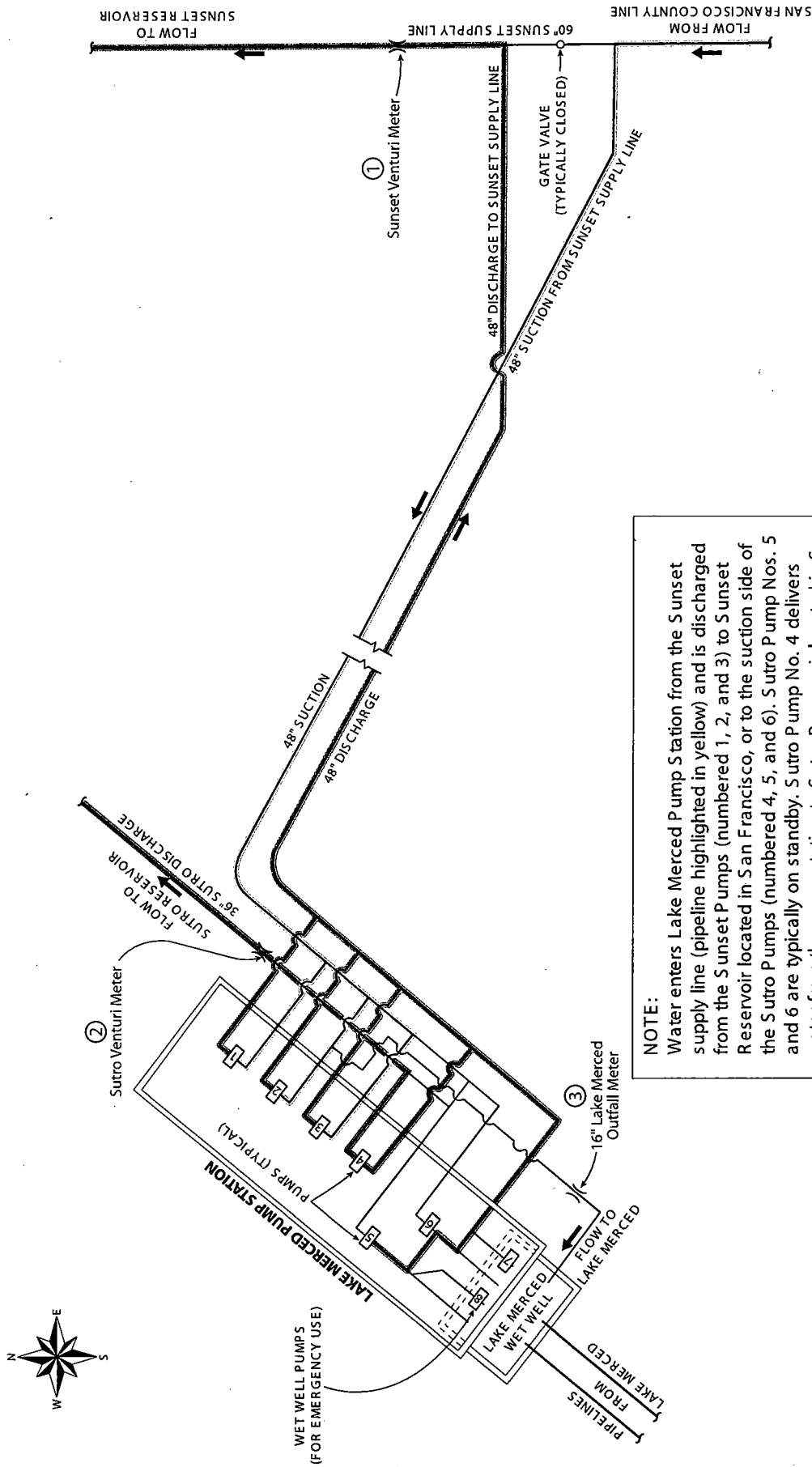


METER	PIPELINE	LOCATION
1	Sunset	Lake Merced Pump Station
2	Sutro	Lake Merced Pump Station
3	Lake Merced Outfall	Lake Merced Pump Station
4	San Andreas No. 2	Junipero Serra (Hwy. 280) South of Belle Ave.
5	Crystal Springs No. 1	PG&E Martin Service Center Yard
6	Crystal Springs No. 2	Tamasco Ct. South of Sunnydale Ave.
A	San Andreas No. 3 (Planned)	To be determined

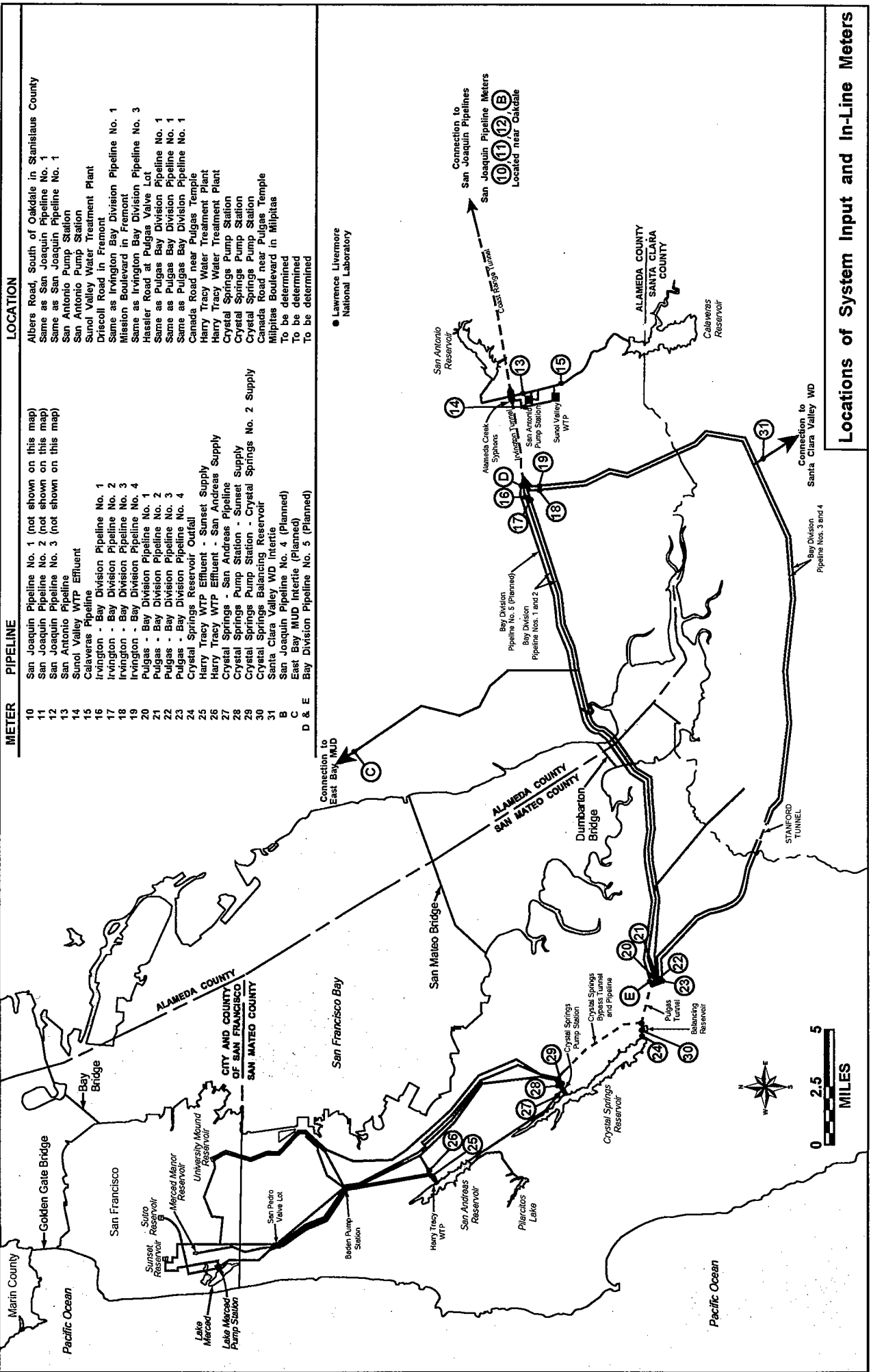
METER	RESERVOIR	LOCATION
7	Sunset Reservoir	26th Avenue and Ortega
8	University Mound Reservoir	University Avenue and Bacon
9	Merced Manor Reservoir	23rd Avenue and Ocean

Generalized Schematic of Lake Merced Pump Station



**NOTE:**  
 Water enters Lake Merced Pump Station from the S sunset supply line (pipeline highlighted in yellow) and is discharged from the S sunset Pumps (numbered 1, 2, and 3) to S sunset Reservoir located in San Francisco, or to the suction side of the S utro Pumps (numbered 4, 5, and 6). S utro P pump Nos. 5 and 6 are typically on standby. S utro P pump No. 4 delivers water from the pump station to S utro R reservoir located in San Francisco. Deliveries from the SFPUC water system to Lake Merced are accomplished by gravity through the 16-inch pipeline that connects to the suction side of S sunset P pump No. 2.

FIGURE 3



Locations of System Input and In-Line Meters

**Table 1**  
**Base Usage (mgd) and Allocation Rates**

(1) Usage	(2) Definition	(3) 2004-05	(4) 2005-06	(5) 2006-07	(6) 2007-08	(7) 2008-09	(8) 2009-10
1. Gross S.F. Co. line	B.1	79.5	78.3	75.7			
2. Daly City portion	B.2	0.2	0.2	0.2			
3. Net S.F.	(1-2)	79.3	78.1	75.5			
4. Other suburban raw water	B.4	0.4	0.5	0.7			
5. Other suburban treated water	B.5	4.1	3.4	3.9			
6. Total other suburban	(4+5)	4.5	3.9	4.6			
7. Total City usage	(3+6)	83.8	82.0	80.1			
8. Total wholesale usage	B.8	167.4	164.4	175.8			
9. Total system usage	(7+8)	251.2	246.4	255.9			
10. Wholesale alloc. rate	(8/9)	66.63%	66.72%	68.70%			
11. City alloc. rate	(100%-10)	33.37%	33.28%	31.30%			
12a. HHWPD input (Oakdale)	B.12	194.7	202.6	227.3			
12b. Deliveries to LLNL	B.12	-0.4	-0.9	-0.9			
12c. HH to San Ant. Res.	B.12	-3.8	-1.8	-11.6			
12d. Sunol Valley WTP	B.12	28.5	29.4	17.6			
12e. Harry Tracy WTP	B.12	45.2	40.4	41.2			
12f. Raw water deliveries	B.12	0.4	0.4	0.7			
12g. Deliveries to Coastside Co. WD	B.12	1.8	1.6	2.1			
12h. Crys. Sprs. Bal. Res.	B.12	0.0	0.0	0.0			
12i. Spill to CS Res.	B.12	-19.9	-42.6	-37.1			
12j. Terminal Reservoirs	B.12	0.0	0.0	0.0			
12k. Other sources	B.12	0.0	1.9	3.8			
13. Total system input	B.13	246.5	231.0	243.1			
14. Jt. sys. loss red. fact.	(9/13)	1.0000	1.0000	1.0000			
15. Daly City red. factor	(3/1)	0.9975	0.9974	0.9974			
16. Total suburban	(6+8)	171.9	168.3	180.4			
17. Suburban red. factor	(8/16)	0.9736	0.9768	0.9745			
18. HHWPD Deliveries above Oakdale	B.18						
19. HH Reduction Factor	B.19	99.56%					

**Table 2  
Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs**

**County-Line Meters**

<b><u>Meter</u></b>	<b><u>Pipeline</u></b>	<b><u>Location</u></b>
1	Sunset	Lake Merced Pump Station
2	Sutro	Lake Merced Pump Station
3	Lake Merced Outfall	Lake Merced Pump Station
4	San Andreas No. 2	Junipero Serra (Hwy. 280) South of Belle Ave.
5	Crystal Springs No. 1	PG&E Martin Service Center Yard
6	Crystal Springs No. 2	Tamasco Ct. South of Sunnydale Ave.
A	San Andreas No. 3 (Planned)	To be determined

**In-City Terminal Reservoirs**

<b><u>Meter</u></b>	<b><u>Reservoir</u></b>	<b><u>Location</u></b>
7	Sunset Reservoir	26 <sup>th</sup> Avenue and Ortega
8	University Mound Reservoir	University Avenue and Bacon
9	Merced Manor Reservoir	23 <sup>rd</sup> Avenue and Ocean



**Table 3  
Locations of SFPUC System Input and In-Line Meters**

<u>Meter</u>	<u>Pipeline</u>	<u>Location</u>
10	San Joaquin Pipeline No. 1	Albers Road, South of Oakdale in Stanislaus County
11	San Joaquin Pipeline No. 2	Same as San Joaquin Pipeline No. 1
12	San Joaquin Pipeline No. 3	Same as San Joaquin Pipeline No. 1
13	San Antonio Pipeline	San Antonio Pump Station
14	Sunol Valley WTP Effluent	San Antonio Pump Station
15	Calaveras Pipeline	Sunol Valley Water Treatment Plant
16	Irvington – Bay Division Pipeline No. 1	Driscoll Road in Fremont
17	Irvington – Bay Division Pipeline No. 2	Same as Irvington Bay Division Pipeline No.1
18	Irvington – Bay Division Pipeline No. 3	Mission Boulevard in Fremont
19	Irvington – Bay Division Pipeline No. 4	Same as Irvington Bay Division Pipeline No.3
20	Pulgas – Bay Division Pipeline No. 1	Hassler Road at Pulgas Valve Lot
21	Pulgas – Bay Division Pipeline No. 2	Same as Pulgas Bay Division Pipeline No. 1
22	Pulgas – Bay Division Pipeline No. 3	Same as Pulgas Bay Division Pipeline No. 1
23	Pulgas – Bay Division Pipeline No. 4	Same as Pulgas Bay Division Pipeline No. 1
24	Crystal Springs Reservoir Outfall	Canada Road near Pulgas Temple
25	Harry Tracy WTP Effluent – Sunset Supply	Harry Tracy Water Treatment Plant
26	Harry Tracy WTP Effluent – San Andreas Supply	Harry Tracy Water Treatment Plant
27	Crystal Springs – San Andreas Pipeline	Crystal Springs Pump Station
28	Crystal Springs Pump Station – Sunset Supply	Crystal Springs Pump Station
29	Crystal Springs Pump Station – Crystal Springs No. 2 Supply	Crystal Springs Pump Station
30	Crystal Springs Balancing Reservoir	Canada Road near Pulgas Temple
31	Santa Clara Valley WD Intertie	Milpitas Boulevard in Milpitas
B	San Joaquin Pipeline No. 4 (Planned)	To be determined
C	East Bay MUD Intertie (Planned)	To be determined
D&E	Bay Division Pipeline No. 5 (Planned)	To be determined

**TABLE 4**  
**SFPUC COUNTY-LINE METERS, IN-CITY TERMINAL RESERVOIRS,**  
**AND ASSOCIATED METERING EQUIPMENT**

<b>County-Line Meter</b>	<b>Meter Type</b>	<b>Location</b>
<b>1. Sunset</b>	60" Venturi	Lake Merced Pump Station
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Rosemount D/P transmitter</li> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>2. Sutro</b>	36" Venturi	Lake Merced Pump Station
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Rosemount D/P transmitter</li> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>3. Lake Merced Outfall</b>	16" Mag. Meter	Lake Merced Pump Station
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>4. San Andreas No. 2</b>	36" Venturi	Junipero Serra (Hwy. 280) south of Belle Avenue
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Yokogawa D/P transmitter</li> <li>• NLS display</li> <li>• AGM electronics</li> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>5. Crystal Springs No. 1</b>	44" Venturi	PG&E Martin Service Center Yard
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Yokogawa D/P transmitter</li> <li>• NLS display</li> <li>• AGM electronics</li> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>6. Crystal Springs No. 2</b>	60" Venturi	Tamasco Ct. south of Sunnydale Avenue
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Yokogawa D/P transmitter</li> <li>• NLS display</li> <li>• AGM electronics</li> <li>• SCADA</li> </ul>	
<b>In-City Terminal Reservoirs</b>		
<b>1. Sunset</b>	Pressure Transducer	26 <sup>th</sup> Avenue and Ortega
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>2. Merced-Manor</b>	Pressure Transducer	23 <sup>rd</sup> Avenue and Ocean
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	
<b>3. University Mound</b>	Pressure Transducer	University Avenue and Bacon
Associated Metering Equipment:	<ul style="list-style-type: none"> <li>• Honeywell recorder</li> <li>• SCADA</li> </ul>	

**TABLE 5  
METER CALIBRATION AND MAINTENANCE FREQUENCY**

METER/ EQUIPMENT	FREQUENCY			WORK TO BE PERFORMED (See Work Codes Listed Below)					
	Quarterly	Semi- Annual	Annual	CA	CL	FL	IN	LU	PT
Venturi Meters			X	X		X (1)	X (1)		X
Magnetic Meters		X		X (2)	X (2)		X (2)		
Yokagowa D/P Transmitters	X			X	X	X	X		
Rosemount D/P Transmitters	X			X	X	X	X		
Honeywell Recorders	X			X	X		X		
Water Level Sensors (Pressure Transducers)	X			X	X		X		
SCADA Electronics	X			X					
AGM Electronics	X			X					
NLS Digital Displays	X			X					
Electrostatic 24V DC Power Supplies			X				X (3)		
ASCO Solenoids			X		X		X (4)	X	

**WORK CODES:**

CA = CALIBRATE; CL = CLEAN; FL = FLUSH; IN = INSPECT; LU = LUBRICATE; PT = PITOT TUBE TEST.

**NOTES:**

- (1) Inspection and flushing requirements for Venturi meters refer to the pressure tubing from the meter to the differential pressure transmitter.
- (2) May calibrate using clamp-on meter where conditions allow. Inspection and cleaning requirements for magnetic meters refer to the sensors or probes that are inserted through the pipe wall.
- (3) Adjust voltage if necessary.
- (4) Replace rubber ware as needed.

**ATTACHMENT K-1**  
**WHOLESALE CUSTOMERS' SHARE OF NET BOOK VALUE OF EXISTING ASSETS**  
**\*\*PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES\*\***  
**(Section 5.03)**

	Notes	Projected Value		
		Water	Hetch Hetchy	Total
Regional System Net Plant as of 6/30/08 (Actual)	1	\$ 435,639,907	\$ 66,135,724	
Less: Projected Depreciation on Regional Assets	2	\$ (32,526,143)	\$ (3,598,189)	
Plus: Projected FY 2008-09 Capital Additions	3	\$ 62,771,153	\$ -	
Projected Regional System Net Plant as of 6/30/09		\$ 465,884,917	\$ 62,537,535	
Plus: Projected Construction Work In Progress (CWIP) as of 6/30/09	4	\$ 16,928,503	\$ 5,807,023	
Projected Regional System Net Plant and CWIP as of 6/30/09		\$ 482,813,420	\$ 68,344,558	\$ 551,157,978
Allocation Factor:	5	70.1%	64.2%	
Wholesale Share of Projected Regional System Net Plant as of 6/30/09		\$ 326,585,327	\$ 40,149,098	\$ 366,734,424
Plus: Wholesale Share of Projected CWIP as of 6/30/09	6	\$ 11,866,881	\$ 3,728,109	\$ 15,594,989
Wholesale Share of Projected Net Plant and CWIP as 6/30/09		\$ 338,452,207	\$ 43,877,206	\$ 382,329,414
Interest Rate:		5.13%	5.13%	
Term (Yrs):		25	25	
Monthly Principal & Interest		\$ 2,004,277	\$ 259,836	\$ 2,264,113
Annual Wholesale Revenue Requirement Amount		\$ 24,051,326	\$ 3,118,033	\$ 27,169,359

Notes

- 1 FAACS 120A Report as of 6/30/08
- 2 SFPUC Estimate
- 3 SFPUC Estimate based on projects and amounts as follows:

	Water Assets
CUW358 Sunset Reservoir (North Basin)	\$ 57,382,744
CUW 365 Cross Connection Controls	\$ 3,679,415
CUW 394 Watershed Land Acquisition	\$ 1,708,994
Total Additions	\$ 62,771,153

- 4 CWIP based on balance as 6/30/08 plus YTD expenditures (see Attachment K-2)
- 5 Fixed allocation factors based on dollar weighted 5-year average of J-Table allocation factors (2003-04 through 2007-08)
- 6 Wholesale share CWIP based on balance as 6/30/08 plus YTD expenditures (see Attachment K-2)

**ATTACHMENT K-2**  
**WHOLESALE CUSTOMERS' SHARE OF THE BOOK VALUE OF REVENUE FUNDED CAPITAL EXPENDITURES**  
**\*\*PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES\*\***  
**(Section 5.03)**

[1] Project No.	[2] Project Description	[3] Rate Class	[4] CWIP as of 6/30/08	[5] FY 2008-09 Expenditures	[6] Reduction for O2A Funding	[7] CWIP as 6/30/09	[8] Water Related CWIP	[9] Wholesale Share
A.	Water Enterprise							
1	Regional Projects							
CUW352	Alameda Creek Fishery	Joint	\$ 2,007,607	\$ 224,582	\$ 2,232,189	\$ -		\$ -
CUW353	Seismic Upgrade @ Hayward Fault	Joint	\$ 3,129,234	\$ 1,967,625	\$ 5,096,859	\$ -		\$ -
CUW354	LOWER CRYSTAL SPRINGS DAM-REV-SFWD	Joint	\$ 7,046,944	\$ 1,086,262	\$ 8,133,206	\$ -		\$ -
CUW355	STANDBY POWER FACILITIES	Joint	\$ 3,715,276	\$ 6,596,849	\$ 10,312,125	\$ -		\$ -
CUW357	Adit Leak Repairs	Joint	\$ 783	\$ 1,129	\$ 1,912	\$ -		\$ -
CUW359	Irvington Tunnel	Joint	\$ 21,391,129	\$ 5,176,713	\$ 26,567,842	\$ -		\$ -
CUW359		Joint	\$ 7,837,176	\$ -	\$ 7,837,176	\$ -		\$ -
CUW361	Pulgas Balancing Reservoir	Joint	\$ 368,057	\$ 1,383,959	\$ 1,752,016	\$ -		\$ -
CUW361		Joint	\$ 1,255,545	\$ -	\$ 1,255,545	\$ -		\$ -
CUW361		Joint	\$ 1,248,002	\$ -	\$ 1,248,002	\$ -		\$ -
CUW361	SCADA Phase II	Joint	\$ 570,179	\$ -	\$ 570,179	\$ -		\$ -
CUW361		Joint	\$ 712,921	\$ -	\$ 712,921	\$ -		\$ -
CUW363	Cross Connection Control	Joint	\$ 1,335,371	\$ 1,738,045	\$ 3,073,416	\$ -		\$ -
CUW363		Joint	\$ 1,062,050	\$ -	\$ 1,062,050	\$ -		\$ -
CUW365	HTWTP LT Impr	Joint	\$ 3,635,172	\$ 547,801	\$ 4,182,973	\$ -		\$ -
CUW367	BDPL Hydraulic Capacity	Joint	\$ 8,011,348	\$ 2,479,731	\$ 10,491,079	\$ -		\$ -
CUW368	BDPL Hydraulic Capacity	Joint	\$ 23,640,601	\$ -	\$ 23,640,601	\$ -		\$ -
CUW368		Joint	\$ 17,556,905	\$ 4,200,442	\$ 21,757,347	\$ -		\$ -
CUW368		Joint	\$ 2,579,847	\$ -	\$ 2,579,847	\$ -		\$ -
CUW370	Pipeline Readiness	Joint	\$ 5,320,934	\$ 328,070	\$ 5,649,004	\$ -		\$ -
CUW371	CSPS and Pipeline	Joint	\$ 11,420,770	\$ 3,872,779	\$ 15,293,549	\$ -		\$ -
CUW372	University Mound (N)	Joint	\$ 4,624,981	\$ 1,068,147	\$ 5,693,128	\$ -		\$ -
CUW373	SJPL	Joint	\$ 19,479,341	\$ 6,023,849	\$ 25,503,190	\$ -		\$ -
CUW373		Joint	\$ 7,199,051	\$ -	\$ 7,199,051	\$ -		\$ -
CUW374	Calaveras Dam	Joint	\$ 31,171,669	\$ 4,314,430	\$ 35,486,099	\$ -		\$ -
CUW374		Joint	\$ 2,366,343	\$ -	\$ 2,366,343	\$ -		\$ -
CUW378	CSPL #2	Joint	\$ 7,453,098	\$ 913,369	\$ 8,366,467	\$ -		\$ -
CUW379	SAPL #3	Joint	\$ 5,728,934	\$ 588,346	\$ 6,317,280	\$ -		\$ -
CUW380	BDPK #3&4 Crossovers	Joint	\$ 3,855,357	\$ 1,083,888	\$ 4,939,245	\$ -		\$ -
CUW381	SVWTP Expansion	Joint	\$ 5,450,995	\$ -	\$ 5,450,995	\$ -		\$ -
CUW381		Joint	\$ 53,222	\$ 3,090,520	\$ 3,143,742	\$ -		\$ -
CUW381		Joint	\$ 97,373	\$ -	\$ 97,373	\$ -		\$ -
CUW382	SVWTP Treated Water Reservoir	Joint	\$ 5,799,505	\$ 575	\$ 5,800,080	\$ -		\$ -
CUW384	Tesla	Joint	\$ 6,102,621	\$ 7,444,942	\$ 13,547,563	\$ -		\$ -
CUW386	SAPS X-CONNECT & PUMP IMP 96A UEB	Joint	\$ 1,374,491	\$ 971,625	\$ 2,346,116	\$ -		\$ -
CUW388	PEIR	Joint	\$ 896,476	\$ 1,641,717	\$ 2,538,193	\$ -		\$ -
CUW388		Joint	\$ 1,331,676	\$ -	\$ 1,331,676	\$ -		\$ -
CUW390	Desalination Pilot	Joint	\$ 175,165	\$ -	\$ 175,165	\$ -		\$ -
CUW391	Baden/San Pedro Valve Lots	Joint	\$ 3,964,642	\$ 948,589	\$ 4,913,231	\$ -		\$ -
CUW392	Program Management	Joint	\$ 2,452,297	\$ 5,081,444	\$ 7,533,741	\$ -		\$ -
CUW393	BDPL #4 Condition Assessment	Joint	\$ 25,071	\$ 294,634	\$ 319,705	\$ -		\$ -
CUW394	Watershed Environment Improvement	Joint	\$ 142,924	\$ 96,027	\$ 238,951	\$ -		\$ -
CUW101	SAN ANDREAS PLANT EXPANSION #1	Joint	\$ 182	\$ 96,027	\$ -	\$ 96,209		\$ 67,443
CUW111	LOWER CRYSTAL SPRINGS DAM-REV-SFWD	Joint	\$ 40,436	\$ -	\$ -	\$ 40,436		\$ 28,346
CUW151	Baden PS	Joint	\$ 921	\$ 26,760	\$ -	\$ 27,681		\$ 19,404
CUW161	Water Treatment Facilities	Joint	\$ 75,801	\$ 605	\$ -	\$ 76,406		\$ 53,561
CUW178	SAPS X-CONNECT & PUMP IMP 96A UEB	Joint	\$ 104,902	\$ -	\$ -	\$ 104,902		\$ 73,536
CUW202	Replace PCCP	Joint	\$ 50,808	\$ -	\$ -	\$ 50,808		\$ 35,616
CUW202		Joint	\$ 285,003	\$ 64,256	\$ -	\$ 349,259		\$ 244,831
CUW202		Joint	\$ 2,365	\$ -	\$ -	\$ 2,365		\$ 1,658
CUW127	SCADA	Joint	\$ 50,029	\$ 2,481,274	\$ -	\$ 2,531,303		\$ 1,774,443
CUW356	New Crystal Springs Bypass Tunnel	Joint	\$ 13,992,264	\$ 5,560,862	\$ 16,028,397	\$ 3,524,729		\$ 2,470,835
CUW358	Sunset (N)	Joint	\$ 52,494,764	\$ 4,887,980	\$ 55,806,081	\$ 1,576,663		\$ 1,105,241
CUW387	Tesla Portal Disinfection	Joint	\$ 2,377,262	\$ (1,996)	\$ 1,223,945	\$ 1,151,321		\$ 807,076
CUW135	New Lines and Bypass Valves	Joint	\$ 45,413	\$ -	\$ -	\$ 45,413		\$ 31,835
CUW135		Joint	\$ 153,983	\$ 620,156	\$ -	\$ 774,139		\$ 542,671
CUW135		Joint	\$ 8,860	\$ -	\$ -	\$ 8,860		\$ 6,211
CUW143	HH Water Treatment Plan	Joint	\$ 5,656	\$ -	\$ -	\$ 5,656		\$ 3,965
CUW143		Joint	\$ 709,972	\$ 8,817	\$ -	\$ 718,789		\$ 503,871
CUW143		Joint	\$ 96,292	\$ -	\$ -	\$ 96,292		\$ 67,501
CUW186	SVWTP IMPROVEMENT PROJECT-CPB-SFWD	Joint	\$ 3,604	\$ -	\$ -	\$ 3,604		\$ 2,526
CUW206	Tesla Portal/Thomas Shaft Emergency Disinfection	Joint	\$ 4,365	\$ -	\$ -	\$ 4,365		\$ 3,060
CUW206		Joint	\$ 283,620	\$ 5,665	\$ -	\$ 289,285		\$ 202,789
CUW206		Joint	\$ 227,004	\$ -	\$ -	\$ 227,004		\$ 159,130
CUW231	Millbrae Labs	Joint	\$ 81,856	\$ 34,685	\$ -	\$ 116,541		\$ 81,695
CUW236	TELSA/SJVH WQ MONITORING IMPR	Joint	\$ 152,963	\$ -	\$ -	\$ 152,963		\$ 107,227
CUW366	HTWTP ST Improvements	Joint	\$ 16,523	\$ -	\$ -	\$ 16,523		\$ 11,583
CUW366		Joint	\$ 1,398,798	\$ 5,732,626	\$ 7,131,424	\$ -		\$ -
CUW366		Joint	\$ 1,452,901	\$ -	\$ 1,452,901	\$ -		\$ -
CUW120	WATER QUALITY PLANNING STUDY	Joint	\$ 577	\$ -	\$ -	\$ 577		\$ 404
CUW164	WATER VULNERABILITY STUDY-UEB	Joint	\$ 479	\$ -	\$ -	\$ 479		\$ 336
CUW181	STANDBY POWER FACILITIES	Joint	\$ 5,905	\$ -	\$ -	\$ 5,905		\$ 4,139
CUW210	Millbrae Administrative Bldg Remodel	Joint	\$ 7,803	\$ 321,553	\$ -	\$ 329,356		\$ 230,879
CUW220	Calaveras Dam Evaluation	Joint	\$ 308,971	\$ -	\$ -	\$ 308,971		\$ 216,589
CUW227	Watershed Facilities and Fencing	Joint	\$ 190,552	\$ 206,448	\$ -	\$ 397,000		\$ 278,297
CUW228	Watershed Roads	Joint	\$ 358,434	\$ 85,337	\$ -	\$ 443,771		\$ 311,083
CUW232	Crystal Springs Dam Discharge	Joint	\$ 363,823	\$ -	\$ -	\$ 363,823		\$ 255,040
CUW242	Demolition of Unsafe Structures	Joint	\$ 311,548	\$ 22,741	\$ -	\$ 334,289		\$ 254,337
CUW242		Joint	\$ 315	\$ -	\$ -	\$ 315		\$ 221
CUW261	Regional R&R - Storage	Joint	\$ 275,694	\$ 277,958	\$ -	\$ 553,652		\$ 388,110
CUW262	Regional R&R - Treatment	Joint	\$ 1,236,895	\$ 409,282	\$ -	\$ 1,646,177		\$ 1,153,970
CUW262		Joint	\$ 277,383	\$ -	\$ -	\$ 277,383		\$ 194,445



**ATTACHMENT K-2**  
**WHOLESALE CUSTOMERS' SHARE OF THE BOOK VALUE OF REVENUE FUNDED CAPITAL EXPENDITURES**  
**\*\*PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES\*\***  
**(Section 5.03)**

[1] Project No.	[2] Project Description	[3] Rate Class	[4] CWIP as of 6/30/08	[5] FY 2008-09 Expenditures	[6] Reduction for 02A Funding	[7] CWIP as 6/30/09	[8] Water Related CWIP	[9] Wholesale Share
CUW263	Regional R&R - Transmission	Joint	\$ 768,422	\$ 797,659		\$ 1,566,081		\$ 1,097,823
CUW263		Joint	\$ 1,224,094	\$ -		\$ 1,224,094		\$ 858,090
CUW360	PLANNING - WSTD Sunol Quarry Reservoirs	Joint	\$ 2,513	\$ -		\$ 2,513		\$ 1,762
CUW934	BOA/BAW/13/F2/SFWD-CONT PROJ-OPER FD	Joint	\$ 59,479	\$ (2,210)	\$ 998,005	\$ (940,736)		\$ (659,456)
	TOTAL REGIONAL WATER PROJECTS		\$ 313,100,517	\$ 84,802,574	\$ 379,397,925	\$ 18,505,166		\$ 12,972,121
	Less Projects to be Capitalized in FY 2008-09					\$ 1,576,663		\$ 1,105,241
	ADJUSTED TOTAL REGIONAL WATER PROJECTS					\$ 16,928,503		\$ 11,866,881
<b>2. Wholesale Direct</b>								
	None							
<b>B. Hetch Hetchy Water &amp; Power</b>								
CUH703	Priest Reservoir By-pass	Joint	-	47,164		\$ 47,164	\$ 21,224	\$ 13,626
CUH762	SJPL Repairs	Water	53,616	255,011		\$ 308,627	\$ 308,627	\$ 198,139
CUH766	HH Security Improvements	Joint	164,478	261,601		\$ 426,079	\$ 191,736	\$ 123,094
CUH767	Power Transformers	Power	-	-		\$ -	\$ -	\$ -
CUH803	Street Lights	Power	-	40,506		\$ 40,506	\$ -	\$ -
CUH804	HH Roads	Joint	-	341,240		\$ 341,240	\$ 153,558	\$ 98,584
CUH829	HH SCADA	Joint	-	-		\$ -	\$ -	\$ -
CUH842	Moccasin Cottages Renovations	Joint	-	-		\$ -	\$ -	\$ -
CUH846	New Moccasin Penstock	Power	543,073	-		\$ 543,073	\$ -	\$ -
CUH851	Turbine Generator Renovations	Power	111,755	926,254		\$ 1,038,009	\$ -	\$ -
CUH868	Moccasin Energy Absorber	Power	-	-		\$ -	\$ -	\$ -
CUH876	Moccasin Phone System	Joint	-	15,677		\$ 15,677	\$ 7,055	\$ 4,529
CUH878	O'Shaugnessy Discharge/Toulumne River Channel Impr.	Joint	31,953	168,076		\$ 200,029	\$ 90,013	\$ 57,788
CUH891	Metering Muni Load	Power	18	4,361		\$ 4,379	\$ -	\$ -
CUH893	Cherry/Eleanor Pump Upgrade	Power	-	17,012		\$ 17,012	\$ -	\$ -
CUH896	Street Lights	Power	9,294	568,794		\$ 578,088	\$ -	\$ -
CUH899	Canyon Tunnel Penstock	Power	6,210	21,804		\$ 28,014	\$ -	\$ -
CUH915	UG Assessment/Hunters Point	Power	961,755	1,668,663		\$ 2,630,418	\$ -	\$ -
CUH926	Pipe Purchase	Water	-	13,667		\$ 13,667	\$ 13,667	\$ 8,774
CUH931	Microwave Replacement	Joint	3,157,491	156,270		\$ 3,313,761	\$ 1,491,192	\$ 957,346
CUH932	HH SCADA	Joint	-	-		\$ -	\$ -	\$ -
CUH825	Distribution System	Power	446,419	109,797		\$ 556,216	\$ -	\$ -
CUH941	HHP SCADA Security & Control, East/O'Shaugnessy	Joint	1,433,974	246,948		\$ 1,680,922	\$ 756,415	\$ 485,618
CUH942	O'Shaugnessy Dam Discharge Needle Valves	Joint	-	-		\$ -	\$ -	\$ -
CUH943	Renewable Energy	Power	-	-		\$ -	\$ -	\$ -
CUH945	SJPL Crossovers	Water	-	-		\$ -	\$ -	\$ -
CUH946	Facility Maintenance	Joint	-	239		\$ 239	\$ 108	\$ 69
CUH947	Sustainable Energy Account	Power	441,226	1,838,396		\$ 2,279,622	\$ -	\$ -
CUH948	Facility Maintenance - Transmission Lines	Power	70,631	101,295		\$ 171,926	\$ -	\$ -
CUH949	POW Maintenance	Power	-	-		\$ -	\$ -	\$ -
CUH950	HPP/KPH/MPH	Power	1,236,853	1,167,621		\$ 2,404,474	\$ -	\$ -
CUH955	Solar Monitoring	Power	222	-		\$ 222	\$ -	\$ -
CUH956	Facility Maintenance - Gate Valves	Water	275,213	-		\$ 275,213	\$ 275,213	\$ 176,687
CUH957	Moccasin Corriion Control	Joint	48,023	110,986		\$ 159,009	\$ 71,554	\$ 45,938
CUH958	Generation Metering	Power	-	18,811		\$ 18,811	\$ -	\$ -
CUH959	Moccasin Reservoir Water Quality	Water	109,379	-		\$ 109,379	\$ 109,379	\$ 70,221
CUH960	Solar Power Project	Power	6,480	(5,333)		\$ 1,147	\$ -	\$ -
CUH861	MECA Solar	Power	-	26,369		\$ 26,369	\$ -	\$ -
CUH962	SF Electrical Reliability	Power	9,672,565	2,653		\$ 9,675,218	\$ -	\$ -
CUH964	Watershed Lan Purchase	Water	-	75,756		\$ 75,756	\$ 75,756	\$ 48,635
CUH966	MECA - Demand Reduction	Power	-	-		\$ -	\$ -	\$ -
CUH969	SFJA SCADA	Power	-	-		\$ -	\$ -	\$ -
CUH971	Neward - CCSF Transmission Project	Power	235,120	54,602		\$ 289,722	\$ -	\$ -
CUH972	Load Metering	Power	145,039	1,274		\$ 146,313	\$ -	\$ -
CUH973	Distribution Assessment	Power	-	-		\$ -	\$ -	\$ -
CUH975	Hetch Hetchy Water R&R	Power	-	130,100		\$ 130,100	\$ -	\$ -
CUH975	Hetch Hetchy Water R&R	Water	52,613	516,524		\$ 569,137	\$ 569,137	\$ 365,386
CUH975	Hetch Hetchy Water R&R	Joint	999,854	887,864		\$ 1,887,718	\$ 849,473	\$ 545,362
CUH976	KPH Rewind	Power	1,053,295	1,417,914		\$ 2,471,209	\$ -	\$ -
CUH977	Facilities Maintenance - Water	Joint	770,899	1,049,878		\$ 1,820,717	\$ 819,323	\$ 526,005
CUH978	Community Choice Aggregation	Power	5,571	101,075		\$ 106,646	\$ -	\$ -
CUH979	Hunters Point Distribution	Power	1,926,977	532,011		\$ 2,458,988	\$ -	\$ -
CUH981	Shore Power for Cruise Ships	Power	2,690	-		\$ 2,690	\$ -	\$ -
CUH986	SEA - Energy Efficiency	Power	15,262	-		\$ 15,262	\$ -	\$ -
CUW687	525 Golden Gate	Joint	-	4,105		\$ 4,105	\$ 1,847	\$ 1,186
IUH004	Auto Maintenance	Joint	-	3,882		\$ 3,882	\$ 1,747	\$ 1,122
PUH501	SF Environment Energy/Green Power	Power	-	66,107		\$ 66,107	\$ -	\$ -
PYEAES	Youth Employment	Joint	-	-		\$ -	\$ -	\$ -
	TOTAL HHWP PROJECTS		23,987,888	12,964,974	-	36,952,862	5,807,023	3,728,109
<b>C</b>	<b>TOTAL COMBINED WATER AND HHWP</b>		<b>\$ 337,088,405</b>	<b>\$ 97,767,548</b>	<b>\$ 379,397,925</b>	<b>\$ 55,458,028</b>		<b>\$ 15,594,990</b>

**Notes**

- 6/30/08 CWIP per FAMIS
- FY 2008-09 Expenditures posted through 3/20/09 per FAMIS
- Wholesale share of CWIP 70.1% (see Note 5 Attachment K-1)
- Water Related HHWP CWIP includes 100% of Water and 45% of Joint
- Wholesale share of CWIP 64.2% (see Note 5 Attachment K-1)
- Fund 2A expenditures are funded by Series 2006A bond proceeds, proceeds of commercial paper redeemed from 2006A proceeds and earnings on such proceeds, as applicable.

**ATTACHMENT K-3**  
**25 YEAR PAYOFF SCHEDULE FOR EXISTING RATE BASE**  
**WATER ENTERPRISE REGIONAL ASSETS AND ONE DIRECT WHOLESALE ASSET**  
**\*\*PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES\*\***  
**(Section 5.03)**

	<u>Water Assets</u>
6/30/09 Wholesale Share of Net Plant & CWIP (Attachment K-1)	338,452,207
Interest Rate:	5.13%
Term:	25
Monthly Principal & Interest Calculation:	2,004,277
Annual Wholesale Revenue Requirement:	24,051,326

Fiscal Yr Ending	Principal	Interest	Annual Payment (Wtr)	Year End Balance
Jun-10	6,848,259	17,203,067	<b>24,051,326</b>	331,603,948
Jun-11	7,207,954	16,843,372	<b>24,051,326</b>	324,395,994
Jun-12	7,586,541	16,464,785	<b>24,051,326</b>	316,809,453
Jun-13	7,985,013	16,066,313	<b>24,051,326</b>	308,824,439
Jun-14	8,404,415	15,646,911	<b>24,051,326</b>	300,420,024
Jun-15	8,845,844	15,205,482	<b>24,051,326</b>	291,574,180
Jun-16	9,310,459	14,740,867	<b>24,051,326</b>	282,263,721
Jun-17	9,799,478	14,251,848	<b>24,051,326</b>	272,464,243
Jun-18	10,314,181	13,737,145	<b>24,051,326</b>	262,150,062
Jun-19	10,855,919	13,195,407	<b>24,051,326</b>	251,294,143
Jun-20	11,426,110	12,625,216	<b>24,051,326</b>	239,868,033
Jun-21	12,026,250	12,025,076	<b>24,051,326</b>	227,841,784
Jun-22	12,657,911	11,393,415	<b>24,051,326</b>	215,183,873
Jun-23	13,322,749	10,728,577	<b>24,051,326</b>	201,861,123
Jun-24	14,022,507	10,028,819	<b>24,051,326</b>	187,838,616
Jun-25	14,759,019	9,292,307	<b>24,051,326</b>	173,079,597
Jun-26	15,534,215	8,517,111	<b>24,051,326</b>	157,545,382
Jun-27	16,350,127	7,701,199	<b>24,051,326</b>	141,195,254
Jun-28	17,208,894	6,842,432	<b>24,051,326</b>	123,986,361
Jun-29	18,112,766	5,938,560	<b>24,051,326</b>	105,873,594
Jun-30	19,064,113	4,987,213	<b>24,051,326</b>	86,809,482
Jun-31	20,065,428	3,985,898	<b>24,051,326</b>	66,744,054
Jun-32	21,119,335	2,931,991	<b>24,051,326</b>	45,624,719
Jun-33	22,228,597	1,822,729	<b>24,051,326</b>	23,396,122
Jun-34	23,396,122	655,204	<b>24,051,326</b>	0
Totals:	338,452,207	262,830,943	601,283,150	

**ATTACHMENT K-4**  
**25 YEAR PAYOFF SCHEDULE FOR EXISTING RATE BASE**  
**HETCH HETCHY WATER ASSETS AND WATER-RELATED PORTION OF JOINT ASSETS**  
**\*\*PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES\*\***  
**(Section 5.03)**

	<u>Hetch Hetchy</u>
6/30/09 Wholesale Share of Net Plant & CWIP (Attachment K-1)	43,877,206
Interest Rate:	5.13%
Term:	25
Monthly Principal & Interest Calculation:	259,836
Annual Wholesale Revenue Requirement:	3,118,033

Fiscal Yr Ending	Principal	Interest	Annual Payment (HH)	Year End Balance
Jun-10	887,814	2,230,219	<b>3,118,033</b>	42,989,393
Jun-11	934,445	2,183,588	<b>3,118,033</b>	42,054,948
Jun-12	983,525	2,134,507	<b>3,118,033</b>	41,071,423
Jun-13	1,035,183	2,082,849	<b>3,118,033</b>	40,036,239
Jun-14	1,089,555	2,028,478	<b>3,118,033</b>	38,946,685
Jun-15	1,146,782	1,971,250	<b>3,118,033</b>	37,799,903
Jun-16	1,207,015	1,911,017	<b>3,118,033</b>	36,592,887
Jun-17	1,270,412	1,847,621	<b>3,118,033</b>	35,322,475
Jun-18	1,337,138	1,780,894	<b>3,118,033</b>	33,985,337
Jun-19	1,407,370	1,710,663	<b>3,118,033</b>	32,577,967
Jun-20	1,481,290	1,636,743	<b>3,118,033</b>	31,096,678
Jun-21	1,559,092	1,558,940	<b>3,118,033</b>	29,537,585
Jun-22	1,640,981	1,477,051	<b>3,118,033</b>	27,896,604
Jun-23	1,727,172	1,390,861	<b>3,118,033</b>	26,169,432
Jun-24	1,817,889	1,300,144	<b>3,118,033</b>	24,351,544
Jun-25	1,913,371	1,204,662	<b>3,118,033</b>	22,438,173
Jun-26	2,013,868	1,104,165	<b>3,118,033</b>	20,424,305
Jun-27	2,119,643	998,389	<b>3,118,033</b>	18,304,662
Jun-28	2,230,974	887,058	<b>3,118,033</b>	16,073,688
Jun-29	2,348,153	769,880	<b>3,118,033</b>	13,725,535
Jun-30	2,471,486	646,546	<b>3,118,033</b>	11,254,048
Jun-31	2,601,298	516,735	<b>3,118,033</b>	8,652,751
Jun-32	2,737,927	380,106	<b>3,118,033</b>	5,914,824
Jun-33	2,881,733	236,300	<b>3,118,033</b>	3,033,091
Jun-34	3,033,091	84,941	<b>3,118,033</b>	0
	43,877,206	34,073,607	77,950,813	

**ATTACHMENT K-5  
UNEXPENDED APPROPRIATIONS FOR REVENUE-FUNDED REGIONAL ASSETS  
CONSTRUCTION WORK IN PROGRESS AS OF MARCH 30, 2009  
(Section 5.04)**

Project	Project Title	Fund Type	Subfund	Classification	Appropriation	YTD Expenditures	PTD Expenditures	Encumbrances	Available Balances	Notes
CUW257	WATERSHED PROTECTION	5W	AAAAACP	REGIONAL	1,448,720	29,653	413,529	141,643	893,548	
CUW250	WATERSHED TRAILS&RECREATION IMPROV	5W	AAAAACP	REGIONAL	387,639	9,431	112,689	6,675	268,275	
CUW261	REGIONAL WATER STORAGE RNR -BUDGET	5W	AAAAACP	REGIONAL	1,750,000	250,970	526,664	26,687	1,196,648	Annual R&R
CUW242	DEMOLITION UNSAFE STRUCTURES	5W	AAAAACP	REGIONAL	1,000,000	22,647	407,820	21,524	570,656	
CUW263	CONVEYANCE/TRANSMISSION - BUDGET	5W	AAAAACP	REGIONAL	7,825,000	763,603	3,378,543	125,990	4,320,466	Annual R&R
CUW264	WATERSHED ROADS - BUDGET	5W	AAAAACP	REGIONAL	3,000,000	77,074	1,391,500	162,401	1,446,099	Annual R&R
CUW262	TREATMENT FACSWQ IMPROVE-BUDGET	5W	AAAAACP	REGIONAL	4,801,000	399,073	2,704,204	349,016	1,747,780	Annual R&R
CUW168	ALAMEDA CREEK FISH RELEASE	5W	AAAAACP	REGIONAL	1,537,398	46,624	1,040,919	152,647	343,832	
CUW231	MILLBRAE LAB CAPITAL IMPROVEMENTS	5W	AAAAACP	REGIONAL	770,000	19,119	532,135	0	237,865	
CUW227	WATERSHED FENCES/FACILITIES	5W	AAAAACP	REGIONAL	3,000,000	206,222	2,223,776	581,926	194,298	
CUW253	FACILITIES SECURITY PROJECT	5W	AAAAACP	REGIONAL	5,300,000	73,048	4,146,944	113,124	1,039,931	
CUW210	MILLBRAE ADMIN BLDG INTERIM REMODEL	5W	AAAAACP	REGIONAL	2,407,700	284,902	1,935,204	160	472,337	
CUW228	WATERSHED ROADS RECONSTRUCTION	5W	AAAAACP	REGIONAL	5,170,000	82,952	4,413,061	18,598	738,340	
CUW202	SAN ANTONIO PIPELINE EMERGENCY REPA	5W	AAAAACP	REGIONAL	1,400,000	6,012	1,269,190	61,727	69,083	
CUW148	ENVIRONMENTAL & REGULATORY COMP	5W	AAAAACP	REGIONAL	3,241,279	0	3,014,995	184,774	41,510	
CUW135	NEW LINE & BYPASS VALVES	5W	AAAAACP	REGIONAL	4,829,680	2,103	4,689,067	47,947	140,613	
CUW143	HETCH HETCHY WATER TREATMENT PLAN	5W	AAAAACP	REGIONAL	18,821,529	0	18,452,053	47,947	321,529	
CUW161	TREATMENT FACILITIES IMPROVEMENTS	5W	AAAAACP	REGIONAL	15,028,319	334	14,747,873	0	280,446	
CUW241	FACILITIES MAINT SUPPORT STRUCTURES	5W	AAAAACP	REGIONAL	5,000,000	8,390	4,988,882	0	11,118	
CUW392	PROGRAM MANAGEMENT SERVICES - WSIF	5W	AAAAACP	LOCAL/REGIONAL	1,837,000	(98,519)	751,659	71,973	1,013,368	
CUW127	INST SCADA SYSTEM	5W	AAAAACP	LOCAL/REGIONAL	13,156,681	2,481,274	8,653,641	0	4,503,040	
CUW710	OCIP PROJECT CONTROL	5W	AAAAACP	LOCAL/REGIONAL	2,497,881	235,706	2,496,959	0	922	
	TOTAL ALL PROJECTS				104,209,826	4,900,661	82,291,307	2,066,813	19,851,706	
	LOCAL PROJECTS			LOCAL	0	0	0	0	0	
	REGIONAL AND REGIONAL PROJECTS			LOCAL/REGIONAL	17,491,562	2,618,462	11,902,259	71,973	5,517,330	
	REGIONAL PROJECTS			REGIONAL	86,718,264	2,282,199	70,389,048	1,994,840	14,334,376	
	TOTAL ALL PROJECTS				104,209,826	4,900,661	82,291,307	2,066,813	19,851,706	
				<u>Hetchy Hetchy Assets</u>						
CUH975	WATER INFRASTRUCTURE - BUDGET	5T	AAAAACP	WATER	9,000,000	1,534,488	2,806,592	3,565,023	2,628,385	
CUH964	WATERSHED PROPERTY PURCHASES	5T	AAAAACP	WATER	800,000	75,756	454,756	0	345,244	
CUH957	FAC MAINTENANCE-WATER TRANSPORTAT	5T	AAAAACP	WATER	3,400,000	110,986	2,885,394	209,138	305,469	
CUH703	PRIEST RESERVOIR DIVERSION CHANNEL	5T	AAAAACP	WATER	21,210,344	47,164	20,166,993	0	1,043,351	
CUH826	PIPELINE PURCHASE REPLACEMENT PIPE	5T	AAAAACP	WATER	159,860	13,667	157,489	0	2,371	
CUH762	SAN JOAQUIN PIPELINE REPAIRS	5T	AAAAACP	WATER	41,469,206	255,011	41,215,761	134,652	118,792	
CUW687	525 GOLDEN GATE	5T	AAAAACP	JOINT	280,600	4,105	26,437	0	254,163	
CUH977	FACILITIES MAINTENANCE - BUDGET	5T	AAAAACP	JOINT	9,300,000	1,049,878	3,578,478	803,231	4,918,290	
CUH931	HH MICROWAVE REPLACEMENT	5T	AAAAACP	JOINT	4,767,000	156,270	3,313,761	1,227,242	225,997	
CUH941	HH SCADA SECURITY & CONTROL, EAST	5T	AAAAACP	JOINT	2,068,180	246,948	1,680,922	256,198	131,060	
CUH804	HETCH-HETCHY ROADS REBUILDING	5T	AAAAACP	JOINT	4,175,027	341,240	3,544,483	113,314	517,230	
CUH766	HETCHY FACILITIES SECURITY IMPROV.	5T	AAAAACP	JOINT	2,086,692	261,601	1,960,386	62,470	63,836	
CUH876	MOCCASIN PHONE SYSTEM	5T	AAAAACP	JOINT	1,610,000	15,677	1,528,780	0	81,220	
CUH878	O'SHAUGNESSY DIS REPAIRS	5T	AAAAACP	JOINT	7,179,009	33,750	7,101,644	9,297	68,068	
CUH810	VARIOUS OLD JOB	5T	AAAAACP	JOINT	7,613,638	18,690	7,538,034	1,561	74,044	
CUH946	FAC MAINTENANCE-SUPPORT STRUCTURE	5T	AAAAACP	JOINT	2,281,454	239	2,273,485	0	7,969	
CUH949	RIGHT OF WAY MAINTENANCE	5T	AAAAACP	JOINT	815,000	0	814,208	166	626	
	TOTAL ALL PROJECTS				118,216,010	4,165,470	101,047,602	6,382,292	10,786,117	
	POWER PROJECTS			POWER	0	0	0	0	0	
	WATER PROJECTS			WATER	76,039,410	2,037,072	67,686,985	3,908,812	4,443,613	
	JOINT PROJECTS			JOINT	42,176,600	2,128,397	33,360,617	2,473,480	6,342,504	
	TOTAL ALL PROJECTS				118,216,010	4,165,470	101,047,602	6,382,292	10,786,117	

**ATTACHMENT L-1  
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL  
(Section 5.04)**

<b>Project Number</b>	<b>Project Description</b>
<b>REGIONAL</b>	
<b>San Joaquin Region</b>	
CUW373	Regional San Joaquin Pipeline System Rehabilitation
CUW384	Regional Tesla Advance Disinfection
CUW387	Regional Tesla Portal Disinfection
<b>Sunol Valley Region</b>	
CUW352	Regional Alameda Creek Fishery Enhancement
CUW355	Regional Stand-by Power - Various Locations
CUW359	Regional New Irvington Tunnel/Alameda Siphon No. 4
CUW370	Regional Pipeline Readiness Improvements
CUW374	Regional Calaveras Dam Replacement
CUW381	Regional SWWTP 40 mgd Addition
CUW382	Regional SWWTP Finished Water Reservoir
CUW386	Regional San Antonio Pump Station Upgrade
<b>Bay Division Region</b>	
CUW353	Regional Seismic Upgrade BDPL 3 & 4
CUW363	Regional SCADA Phase II/Security Upgrades
CUW368	Regional BDPL Reliability Upgrades
CUW380	Regional BDPL 3 & 4 Crossover
CUW389	Regional EBMUD Intertie
CUW393	Regional BDPL 4 Slipline
<b>Peninsula Region</b>	
CUW354	Regional Lower Crystal Springs Dam Improvement
CUW356	Regional Crystal Springs Bypass Tunnel
CUW357	Regional Adit Leak Repairs
CUW361	Regional Pulgas Balancing Reservoir Rehabilitation and Improvements
CUW365	Regional Cross Connection Control
CUW366	Regional HTWTP Short Term Improvements
CUW367	Regional HTWTP Long Term Improvements
CUW369	Regional Capuchino Valve Lot Improvements
CUW371	Regional Crystal Springs/San Andreas Transmission
CUW378	Regional Crystal Springs Pipeline 2 Replacement
CUW379	Regional San Andreas Pipeline 3 Installation
CUW390	Regional Desalination
CUW391	Regional Baden & San Pedro Valve Lots Improvements



**ATTACHMENT L-1  
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL  
(Section 5.04)**

<b>Project Number</b>	<b>Project Description</b>	
<b>San Francisco Region</b>		
CUW358	Regional	Sunset Reservoir Upgrades - North Basin
CUW372	Regional	University Mound Reservoir Upgrades - North Basin
<b>System-Wide</b>		
CUW388	Regional	PEIR
CUW392	Regional	Program Management Services
CUW394	Regional	Watershed Land Acquisition
 <b>RETAIL</b>		
<b>Reservoirs</b>		
CUW307	Local	Summit Reservoir Rehabilitation
CUW310	Local	New Northwest Reservoir
CUW319	Local	Hunters Point Reservoir Rehabilitation
CUW334	Local	Stanford Heights Reservoir Rehabilitation
CUW335	Local	Potrero Heights Reservoir Rehabilitation
CUW337	Local	Sutro Reservoir Rehabilitation
 <b>Pump Stations/Tanks</b>		
CUW306	Local	Crocker Amazon Pump Station Upgrade
CUW309	Local	Lake Merced Pump Station Upgrade
CUW314	Local	La Grande Tank Upgrade
CUW318	Local	Forest Hill Tank Rehabilitation
CUW320	Local	Forest Hill Pump Station Upgrade
CUW321	Local	Forest Knoll Pump Station Upgrade
CUW322	Local	Lincoln Park Pump Station Upgrade
CUW323	Local	Alemanys Pump Station Upgrade
CUW324	Local	Mount Davidson Pump Station Upgrade
CUW326	Local	Palo Alto Pump Station Upgrade
CUW326	Local	Sktview-AquaVista Pump Station Upgrade
CUW327	Local	Summit Pump Station Upgrade
CUW328	Local	McLaren #1 Tank Rehabilitation
CUW329	Local	Potrero Heights Tank Seismic Upgrade
CUW330	Local	Forest Knoll Tank Seismic Upgrade
CUW331	Local	Lincoln Park Tank Seismic Upgrade
CUW332	Local	McLaren #2 Tank Rehabilitation
CUW333	Local	Mount Davidson Tank Seismic Upgrade
CUW338	Local	La Grande Pump Station Upgrade
CUW339	Local	Potrero Heights Pump Station Upgrade
CUW340	Local	Vista Francisco Pump Station Upgrade

**ATTACHMENT L-1  
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL  
(Section 5.04)**

<b>Project Number</b>		<b>Project Description</b>
		<b>Pipelines/Valves</b>
CUW304	Local	North University Mound System Upgrade
CUW308	Local	Motorize Key Valves
CUW311	Local	Sunset Circulation Improvements
CUW312	Local	Lincoln Way Transmission Line
CUW313	Local	Noe Valley Transmission Main, Phase 2
CUW315	Local	East/West Transmission Main
CUW316	Local	Fulton @ Sixthe Ave Main Replacement
		<b>Water Supply/Water Quality</b>
CUW301	Local	Groundwater
CUW302	Local	Recycled Water
CUW364	Local	Lawrence-Livermore National Laboratory Water Quality Improvements
		<b>Miscellaneous</b>
CUW303	Local	Vehicle Service Facility Upgrade
CUW305	Local	Fire Protection at CCD

03/13/06

**\$507,815,000**  
**PUBLIC UTILITIES COMMISSION**  
**OF THE CITY AND COUNTY OF SAN FRANCISCO**  
**SAN FRANCISCO WATER REVENUE BONDS, 2006 SERIES A**

**\$110,065,000**  
**PUBLIC UTILITIES COMMISSION**  
**OF THE CITY AND COUNTY OF SAN FRANCISCO**  
**SAN FRANCISCO WATER REVENUE BONDS, 2006 REFUNDING SERIES B**

**CERTIFICATE REGARDING USE OF PROCEEDS**

The undersigned hereby states and certifies as follows:

(i) The undersigned is the General Manager of the Public Utilities Commission of the City and County of San Francisco (the "Commission"), and is authorized to execute this certificate on behalf of the Commission and is knowledgeable with respect to the matters set forth herein.

(ii) On the date hereof, the Commission is issuing the two series of bonds captioned above (the "2006 Series A Bonds," the "2006 Refunding Series B Bonds" and, together, the "Bonds") pursuant to an Amended and Restated Indenture dated as of August 1, 2002 and the First Supplemental Indenture dated as of March 1, 2006 (collectively, the "Indenture"), both by and between the Commission and U.S. Bank National Association, as trustee (the "Trustee").

(iii) The Trustee will transfer and deposit the proceeds of the 2006 Series A Bonds received by the Trustee on the date hereof as follows:

(1) \$48,212,528.32 will be deposited in the 2006 Series A Capitalized Interest Account established within the Interest Fund;

(2) \$15,958,031.25 will be deposited in the 2006 Series A Reserve Account of the Bond Reserve Fund;

(3) \$623,906.09 will be deposited in the 2006 Series A Costs of Issuance Fund;

(4) \$120,622,352.19 will be deposited in the 2006 Series A Refunding Fund and transferred pursuant to Irrevocable Refunding Instructions of the Commission dated the date hereof; and

(5) the remaining \$338,600,816.86 will be transferred to the Treasurer for deposit to the 2006 Series A Project Fund.

(iv) The proceeds of the 2006 Series A Bonds transferred pursuant to the Irrevocable Refunding Instructions of the Commission will be used to defease and refund the Commission's Commercial Paper Notes (Water Series) on a current basis. The Notes were issued to finance a portion of the facilities described in Exhibit A hereto.

(v) The proceeds of the Bonds deposited in the 2006 Series A Project Fund will be used to finance a portion of the facilities described in Exhibit A hereto.

(vi) The Trustee will transfer and deposit the proceeds of the 2006 Refunding Series B Bonds received by the Trustee on the date hereof as follows:

(1) \$192,498.04 will be deposited in the 2006 Refunding Series B Costs of Issuance Fund; and

(2) \$111,178,241.95 will be deposited in the 2006 Refunding Series B Refunding Fund.

(vii) The proceeds of the Bonds deposited in the 2006 Refunding Series B Refunding Fund, together with amounts on deposit in the funds and accounts established under the Indenture for the Commission's San Francisco Water Revenue Bonds, 1996 Series A (the "1996 Series A Bonds") and its San Francisco Water Revenue Bonds, 2001 Series A (the "2001 Series A Bonds"), will be used to refund on an advance basis a portion of the outstanding 1996 Series A Bonds and a portion of the outstanding 2001 Series A Bonds. The portion of the 1996 Series A Bonds being refunded were issued to finance the facilities (the "1996 Project") described in Exhibit B hereto, and the portion of the 2001 Series A Bonds being refunded were used to finance the facilities (the "2001 Project") described in Exhibit B hereto.

(viii) Exhibit C hereto attached describes (A) each use to be made by any person of the Project, the 1996 Project and the 2001 Project other than use by the Commission and other non-federal governmental units and other than use by members of the public generally, and (B) payments (if any) directly or indirectly in respect of such use which are to be made after the date hereof;

(ix) Other than as set forth in Exhibit A and Exhibit B, no portion of the proceeds of the Bonds will be used, directly or indirectly, to make or finance a loan to any person (other than a State or local government unit) or to acquire property which will be sold or leased to any person (other than a State or local government unit) on an installment a sale basis except as referenced in Exhibit C.

(x) The Commission expects to use the Project for the purposes referenced and discussed in Exhibit A, Exhibit B, Exhibit C and Exhibit D or for other governmental purposes of the Commission during the entire term of the Bonds.

(xi) Set forth on Exhibit D is the Commission's methodology for determining governmental use and private use with respect to the water enterprise.

(xii) To the best knowledge of the undersigned, the above statements are reasonable and there are no other facts, estimates or circumstances, other than those set forth herein, that would materially affect the statements made herein.

Capitalized terms used but not defined herein have the meanings set forth in the Indenture.

IN WITNESS WHEREOF, I have hereunto set my name this 15th day of March, 2006.

PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO

By: \_\_\_\_\_

  
General Manager

**ATTACHMENT L-2 (CONTINUED)**  
**WATER ENTERPRISE REVENUE BOND 2006 SERIES A**  
**SUMMARY OF SOURCES AND USES OF FUNDS**  
**(Section 5.04)**

**Source: Closing Documents (Certificate Regarding Use of Proceeds)**

**Proceeds**

Principal	507,815,000.00
Plus Premium	19,109,138.35
Minus Underwriter's Discount	(932,940.06)
Minus Insurance	<u>(1,973,563.58)</u>
Net Proceeds	524,017,634.71

**Use of Proceeds**

Capitalized Interest Fund	48,212,528.32	
Bond Reserve Fund	15,958,031.25	
Insurance Fund	623,906.09	
Series A Refunding Fund	120,622,352.19	} 459,223,169.05
Series A Project Fund	<u>338,600,816.86</u>	
Total Uses	524,017,634.71	

	<b>Commercial Paper</b>	<b>Project Fund</b>	<b>Total</b>
<b>Hetch Hetchy</b>			
Tesla Portal Disinfection	251,262.58	1,147,302.42	1,398,565.00
Advance Disinfection	429,714.76	5,611,554.24	6,041,269.00
SJPL	<u>4,737,937.28</u>	<u>17,784,667.72</u>	<u>22,522,605.00</u>
Total Hetch Hetchy	5,418,914.62	24,543,524.38	29,962,439.00
<b>SF Regional</b>			
University Mound - North	55,728.10	5,964,279.90	6,020,008.00
Sunset - North	7,525,896.84	28,782,094.16	36,307,991.00
Groundwater	3,400,973.67	2,963,110.33	6,364,084.00
Recycled Water	<u>1,548,036.76</u>	<u>11,316,958.24</u>	<u>12,864,995.00</u>
Total SF Regional	12,530,635.37	49,026,442.63	61,557,078.00
<b>SF Local</b>	45,405,787.71	106,407,313.30	151,813,101.01
<b>Sunol Valley Subregional</b>			
Calaveras Dam	9,065,945.51	15,993,818.49	25,059,764.00
Stand-by Power	556,398.67	1,207,319.33	1,763,718.00
Pipeline Readiness	649,566.31	4,942,205.69	5,591,772.00
SAPS Upgrade	213,423.44	1,748,134.56	1,961,558.00
SVWTP Finished Water Res	3,317,203.82	7,838,383.18	11,155,587.00
Irvington Tunnel	4,084,139.65	18,247,176.35	22,331,316.00
Alameda Creek Fishery	656,765.00	1,327,119.00	1,983,884.00
SVWTP 40 mgd Addition	<u>25,378.75</u>	<u>3,474,585.25</u>	<u>3,499,964.00</u>
Total Sunol Valley Subregional	18,568,821.15	54,778,741.85	73,347,563.00



**ATTACHMENT L-2 (CONTINUED)**  
**WATER ENTERPRISE REVENUE BOND 2006 SERIES A**  
**SUMMARY OF SOURCES AND USES OF FUNDS**  
**(Section 5.04)**

Miscellaneous				
PEIR	3,204,177.44	5,103,872.56	8,308,050.00	
PPPCMS Services	2,964,786.31	10,358,811.69	13,323,598.00	
Watershed Land Acquisition	-	502,660.00	502,660.00	
Total Miscellaneous	6,168,963.75	15,965,344.25	22,134,308.00	
LLNL	133,156.60	282,702.40	415,859.00	
Bay Division Subregional				
Seismic Upgrade BDPL 3 & 4	4,758,306.54	16,481,539.46	21,239,846.00	
BDPL Reliability	4,360,664.44	40,874,800.56	45,235,465.00	
BDPL 3 & 4 Crossover	802,494.94	493,817.06	1,296,312.00	
SCADA Phase II	65,497.37	1,247,963.63	1,313,461.00	
EBMUD Intertie	6,668,906.37	4,075,015.63	10,743,922.00	
BDPL 4 Slipline	-	1,219,251.00	1,219,251.00	
Total Bay Division Subregional	16,655,869.66	64,392,387.34	81,048,257.00	
Peninsula Subregional				
Capuchino Valve Lot	162,584.69	753,779.31	916,364.00	
CS/SA Transmission	2,288,853.10	3,448,975.90	5,737,829.00	
Adit Leak Repair	255,334.99	1,650,368.01	1,905,703.00	
HTWTP Short Term	2,874,763.69	3,582,860.31	6,457,624.00	
Cross Connection Control	1,150,559.48	324,549.52	1,475,109.00	
CS Bypass Tunnel	2,873,475.22	15,532,584.78	18,406,060.00	
LCS Dam Improvement	931,587.07	3,278,932.93	4,210,520.00	
Pulgas Balancing Reservoir	1,218,341.39	2,706,284.61	3,924,626.00	
HTWTP Long Term	1,107,185.77	2,549,793.23	3,656,979.00	
Baden & San Pedro Valve Lots	60,203.48	2,963,540.52	3,023,744.00	
Total Peninsula Subregional	12,922,888.88	36,791,669.12	49,714,558.00	
San Francisco Subregional				
CSPL 2 Replacement	1,269,111.95	5,019,824.05	6,288,936.00	
SAPL 3	1,492,584.40	1,942,479.60	3,435,064.00	
Desalination	55,618.10	596,473.90	652,092.00	
Total San Francisco Subregional	2,817,314.45	7,558,777.55	10,376,092.00	
Grand Total	120,622,352.19	359,746,902.82	480,369,255.01	
Regional			328,140,295.00	68.31%
Local			152,228,960.01	31.69%
			480,369,255.01	

This certificate is for illustration only. It was prepared in 2006 and shown groundwater and recycled water projects as regional instead of local. In addition, it does not reflect expenditures for the portions of regional assets which in rate base as of June 30, 2008 nor what is expected to be added to rate base through June 30, 2009. For these reasons, the percentages shown for regional and local projects are not accurate.

ATTACHMENT L-3  
WATER ENTERPRISE REVENUE BOND 2006 SERIES A  
ANNUAL REPORT ON EXPENDITURES OF AND EARNINGS ON PROCEEDS  
AS OF JUNE 30, 2009  
(Section 5.04 A)

Project Number		Project Description	Net Financing Proceeds <sup>1</sup>	Appropriated Interest Earnings <sup>2</sup>	Adjusted Project Funding	Expenditures Thru 6/30/09 <sup>3</sup>	Remaining Balance
<b>REGIONAL PROGRAM</b>							
<b>San Joaquin Region</b>							
CUW373	Regional	San Joaquin Pipeline System Rehabilitation	1,398,565				
CUW384	Regional	Tesla Advance Disinfection	6,041,269				
CUW387	Regional	Tesla Portal Disinfection	22,522,605				
<b>Total San Joaquin Region</b>			<b>29,962,439</b>				
<b>Sunol Valley Region</b>							
CUW352	Regional	Alameda Creek Fishery Enhancement	1,983,884				
CUW355	Regional	Stand-by Power - Various Locations	1,763,718				
CUW359	Regional	New Irvington Tunnel/Alameda Siphon No. 4	22,331,316				
CUW370	Regional	Pipeline Readiness Improvements	5,591,772				
CUW374	Regional	Calaveras Dam Replacement	25,059,764				
CUW381	Regional	SVWTP 40 mgd Addition	3,499,964				
CUW382	Regional	SVWTP Finished Water Reservoir	11,155,587				
CUW386	Regional	San Antonio Pump Station Upgrade	1,961,558				
<b>Total Sunol Valley Region</b>			<b>73,347,563</b>				
<b>Bay Division Region</b>							
CUW353	Regional	Seismic Upgrade BDPL 3 & 4	21,234,846				
CUW363	Regional	SCADA Phase II/Security Upgrades	1,313,461				
CUW368	Regional	BDPL Reliability Upgrades	45,235,465				
CUW380	Regional	BDPL 3 & 4 Crossover	21,239,846				
CUW389	Regional	EBMUD Intertie	10,743,922				
CUW393	Regional	BDPL 4 Slipline	1,219,251				
<b>Total Bay Division Region</b>			<b>100,986,791</b>				
<b>Peninsula Region</b>							
CUW354	Regional	Lower Crystal Springs Dam Improvement	4,210,520				
CUW356	Regional	Crystal Springs Bypass Tunnel	18,406,090				
CUW357	Regional	Adit Leak Repairs	1,905,703				
CUW361	Regional	Pulgas Balancing Reservoir Rehabilitation and Improvements	3,824,626				
CUW365	Regional	Cross Connection Control	1,475,109				
CUW366	Regional	HTWTP Short Term Improvements	6,457,624				
CUW367	Regional	HTWTP Long Term Improvements	3,656,979				
CUW369	Regional	Capuchino Valve Lot Improvements	916,364				
CUW371	Regional	Crystal Springs/San Andreas Transmission	5,737,829				
CUW378	Regional	Crystal Springs Pipeline 2 Replacement	6,288,936				
CUW379	Regional	San Andreas Pipeline 3 Installation	3,435,064				
CUW390	Regional	Desalination	652,092				
CUW391	Regional	Baden & San Pedro Valve Lots Improvements	3,023,744				
<b>Total Peninsula Region</b>			<b>60,090,650</b>				
<b>San Francisco Region</b>							
CUW358	Regional	Sunset Reservoir Upgrades - North Basin	6,020,008				
CUW372	Regional	University Mound Reservoir Upgrades - North Basin	36,307,991				
<b>Total San Francisco Region</b>			<b>42,327,999</b>				
<b>System-Wide</b>							
CUW388	Regional	PEIR	8,308,050				
CUW392	Regional	Program Management Services	13,323,598				
CUW394	Regional	Watershed Land Acquisition	502,660				
<b>Total System-Wide</b>			<b>22,134,308</b>				
<b>Total Regional Program</b>			<b>328,849,750</b>				
<b>LOCAL PROGRAM</b>							
<b>Reservoirs</b>							
CUW307	Local	Summit Reservoir Rehabilitation					
CUW310	Local	New Northwest Reservoir					
CUW319	Local	Hunters Point Reservoir Rehabilitation					
CUW334	Local	Stanford Heights Reservoir Rehabilitation					
CUW335	Local	Potrero Heights Reservoir Rehabilitation					
CUW337	Local	Sutro Reservoir Rehabilitation					
<b>Total Reservoirs</b>							
<b>Pump Stations/Tanks</b>							
CUW306	Local	Crocker Amazon Pump Station Upgrade					
CUW309	Local	Lake Merced Pump Station Upgrade					
CUW314	Local	La Grande Tank Upgrade					
CUW318	Local	Forest Hill Tank Rehabilitation					
CUW320	Local	Forest Hill Pump Station Upgrade					
CUW321	Local	Forest Knoll Pump Station Upgrade					
CUW322	Local	Lincoln Park Pump Station Upgrade					
CUW323	Local	Alemany Pump Station Upgrade					
CUW324	Local	Mount Davidson Pump Station Upgrade					

ILLUSTRATIVE ONLY DRAFT

**WATER ENTERPRISE REVENUE BOND 2006 SERIES A**  
**ANNUAL REPORT ON EXPENDITURES OF AND EARNINGS ON PROCEEDS**  
**AS OF JUNE 30, 2009**  
**(Section 5.04 A)**

Project Number	Project Description	Net Financing Proceeds <sup>1</sup>	Appropriated Interest Earnings <sup>2</sup>	Adjusted Project Funding	Expenditures Thru 6/30/09 <sup>3</sup>	Remaining Balance
CUW326	Local Palo Alto Pump Station Upgrade					
CUW326	Local Sktview-AquaVista Pump Station Upgrade					
CUW327	Local Summit Pump Station Upgrade					
CUW328	Local McLaren #1 Tank Rehabilitation					
CUW329	Local Potrero Heights Tank Seismic Upgrade					
CUW330	Local Forest Knoll Tank Seismic Upgrade					
CUW331	Local Lincoln Park Tank Seismic Upgrade					
CUW332	Local McLaren #2 Tank Rehabilitation					
CUW333	Local Mount Davidson Tank Seismic Upgrade					
CUW338	Local La Grande Pump Station Upgrade					
CUW339	Local Potrero Heights Pump Station Upgrade					
CUW340	Local Vista Francisco Pump Station Upgrade					
<b>Total Pump Stations/Tanks</b>						
<b>Pipelines/Valves</b>						
CUW304	Local North University Mound System Upgrade					
CUW308	Local Motorize Key Valves					
CUW311	Local Sunset Circulation Improvements					
CUW312	Local Lincoln Way Transmission Line					
CUW313	Local Noe Valley Transmission Main, Phase 2					
CUW315	Local East/West Transmission Main					
CUW316	Local Fulton @ Sixth Ave Main Replacement					
<b>Total Pipelines/Valves</b>						
<b>Water Supply/Water Quality</b>						
CUW301	Local Groundwater					
CUW302	Local Recycled Water					
CUW364	Local Lawrence-Livermore National Laboratory Water Quality Improvements					
<b>Total Water Supply/Water Quality</b>						
<b>Miscellaneous</b>						
CUW303	Local Vehicle Service Facility Upgrade					
CUW305	Local Fire Protection at CCD					
<b>Total Miscellaneous</b>						
<b>Total Local Program</b>						
<b>Grand Total Regional and Local Programs</b>						
<b>Unappropriated Interest Earnings</b>						
<b>Percent of Net Proceeds<sup>4</sup></b>						
<b>Percent of Net Proceeds and Earnings<sup>4</sup></b>						

ILLUSTRATION ONLY DRAFT

<sup>1</sup>Net financing proceeds available on date of issue (i.e. deposit to project fund)  
<sup>2</sup>Cumulative net of arbitrage rebate liability  
<sup>3</sup>Cumulative  
<sup>4</sup>If financing sources Substantially Expended, proceed allocations are then fixed

**REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)**  
**Subfund: 5W CPF WCF - Wholesale Customer Capital Fund (Water)**

Projected FAMIS as of July 1, 2009 (Day 1 of New Budget Year)

Project Title	A FY 2009-10 Approved Budget - Total Regional	B FY 2009-10 Approved Budget - WHOLESALE SHARE	C Total Appropriation - All Years <sup>A</sup>	D All Years Actual Expenditures <sup>A</sup>	E Fiscal Year 2009-10 Actual Expenditures <sup>A</sup>	F Encumbered But Not Expended <sup>A</sup>	G=C-D-F Appropriated, Unencumbered Balance <sup>A</sup>	H Projected Expended & Encumbered through 6/30/2010	I=G-H Projected Surplus / (Shortfall)
CUW262 Regional Water RnR - Treatment Facilities	\$ 1,000,000	\$ 687,000	\$ 687,000	\$ -	\$ -	\$ -	\$ 687,000	\$ 229,000	\$ 458,000
CUW263 Regional Water RnR - Conveyance/Transmission Systems	\$ 7,000,000	\$ 4,809,000	\$ 4,809,000	\$ -	\$ -	\$ -	\$ 4,809,000	\$ 1,603,000	\$ 3,206,000
CUW264 Regional Water - Watersheds / ROW Management	\$ 500,000	\$ 343,500	\$ 343,500	\$ -	\$ -	\$ -	\$ 343,500	\$ 114,000	\$ 229,500
FUW100 Regional Water - Facilities Maintenance	\$ 3,700,000	\$ 2,541,900	\$ 2,541,900	\$ -	\$ -	\$ -	\$ 2,541,900	\$ 847,000	\$ 1,694,900
CUW261 Regional Water - Storage									
<b>Regional Total</b>	<b>\$ 12,200,000</b>	<b>\$ 8,381,400</b>	<b>\$ 8,381,400</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 8,381,400</b>	<b>\$ 2,793,000</b>	<b>\$ 5,588,400</b>

Source: \* SFPUC Commission Approved Budget, February 2009, Same Format  
 ^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

**REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)**  
**Subfund: 5W CPF WCF - Wholesale Customer Capital Fund (Water)**

Projected FAMIS as of June 30, 2010 (Last Day of Budget Year)

Project Title	A FY 2009-10 Approved Budget - Total Regional	B FY 2009-10 Approved Budget - WHOLESALE SHARE	C Total Appropriation - All Years <sup>A</sup>	D All Years Actual Expenditures <sup>A</sup>	E Fiscal Year 2009-10 Actual Expenditures <sup>A</sup>	F Encumbered But Not Expended <sup>A</sup>	G=C-D-F Appropriated, Unencumbered Balance <sup>A</sup>	H Projected Expended & Encumbered through 6/30/2011	I=G-H Projected Surplus / (Shortfall)
CUW262 Regional Water RnR - Treatment Facilities	\$ 1,000,000	\$ 687,000	\$ 687,000	\$ 235,000	\$ 235,000	\$ -	\$ 452,000	\$ 409,000	\$ 43,000
CUW263 Regional Water RnR - Conveyance/Transmission Systems	\$ 7,000,000	\$ 4,809,000	\$ 4,809,000	\$ 1,395,000	\$ 1,395,000	\$ 25,000	\$ 3,389,000	\$ 1,589,000	\$ 1,800,000
CUW264 Regional Water - Watersheds / ROW Management	\$ 500,000	\$ 343,500	\$ 343,500	\$ 115,000	\$ 115,000	\$ 50,000	\$ 178,500	\$ 35,500	\$ 143,000
FUW100 Regional Water - Facilities Maintenance	\$ 3,700,000	\$ 2,541,900	\$ 2,541,900	\$ 850,000	\$ 850,000	\$ 123,000	\$ 1,568,900	\$ 768,900	\$ 800,000
CUW261 Regional Water - Storage									
<b>Regional Total</b>	<b>\$ 12,200,000</b>	<b>\$ 8,381,400</b>	<b>\$ 8,381,400</b>	<b>\$ 2,595,000</b>	<b>\$ 2,595,000</b>	<b>\$ 198,000</b>	<b>\$ 5,588,400</b>	<b>\$ 2,802,400</b>	<b>\$ 2,786,000</b>

Source: \* SFPUC Commission Approved Budget, February 2009, Same Format  
 ^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

Shown On Attachment N-2, Schedule 3  
 Revenue Capital - Actual Expenditures

Shown on Attachment N-2, Schedule 3  
 Continuing Appropriation  
 Needed for Multi-Year  
 Revenue Funded Capital

**REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)**  
**Subfund: 5T CPF WCF - Wholesale Customer Capital Fund (Hetch Hetchy)**

Projected FAMIS as of July 1, 2009 (Day 1 of New Budget Year)

Project Title	A	B	C	D	E	F	G-C-D-F	H	I-G-H
CUH931 HH Microwave Replacement	\$ 4,000,000	J \$ 1,224,900	\$ 1,224,900	\$ -	\$ -	\$ -	\$ 1,224,900	\$ 408,000	\$ 816,900
CUH977 HH Water R&R - Facilities Maintenance	\$ 3,500,000	J \$ 1,071,788	\$ 1,071,788	\$ -	\$ -	\$ -	\$ 1,071,788	\$ 357,000	\$ 714,788
CUH947 SEA - Go Solar Incentive Project	\$ 4,000,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH971 Alternative Transmission Studies	\$ 1,000,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH976 HH Water R&R - Power Infrastructure	\$ 16,700,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH979 Hunters Point Municipal Power	\$ -	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH983 Civic Center Sustainability District	\$ 1,090,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH986 General Fund Dept - Energy Efficiency Renewable/Generation	\$ 7,365,158	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Treasure Island Improvement Project	\$ 3,501,307	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Enterprise Fund Dept - Energy Efficiency	\$ 325,722	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH975 HH Water R&R - Water Infrastructure	\$ 6,000,000	W \$ 4,083,000	\$ 4,083,000	\$ -	\$ -	\$ -	\$ -	\$ 1,361,000	\$ -
Toulumne River Watershed Protection	\$ 2,000,000	W \$ 1,361,000	\$ 1,361,000	\$ -	\$ -	\$ -	\$ -	\$ 454,000	\$ -
<b>Regional Total</b>	<b>\$ 52,182,187</b>	<b>\$ 7,740,688</b>	<b>\$ 7,740,688</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,296,688</b>	<b>\$ 2,580,000</b>	<b>\$ 1,531,688</b>

Source: \* SFPLC Commission Approved Budget, February 2009, Same Format  
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

**REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)**  
**Subfund: 5T CPF WCF - Wholesale Customer Capital Fund (Hetch Hetchy)**

Projected FAMIS as of June 30, 2010 (Last Day of Budget Year)

Project Title	A	B	C	D	E	F	G-C-D-F	H	I-G-H
CUH931 HH Microwave Replacement	\$ 4,000,000	J \$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ -	\$ -	\$ -	\$ -	\$ -
CUH977 HH Water R&R - Facilities Maintenance	\$ 3,500,000	J \$ 1,071,788	\$ 1,071,788	\$ 1,071,788	\$ -	\$ -	\$ (1)	\$ -	\$ -
CUH947 SEA - Go Solar Incentive Project	\$ 4,000,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH971 Alternative Transmission Studies	\$ 1,000,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH976 HH Water R&R - Power Infrastructure	\$ 16,700,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH979 Hunters Point Municipal Power	\$ -	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH983 Civic Center Sustainability District	\$ 1,090,000	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH986 General Fund Dept - Energy Efficiency Renewable/Generation	\$ 7,365,158	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Treasure Island Improvement Project	\$ 3,501,307	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Enterprise Fund Dept - Energy Efficiency	\$ 325,722	P \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH975 HH Water R&R - Water Infrastructure	\$ 6,000,000	W \$ 4,083,000	\$ 4,083,000	\$ 4,083,000	\$ -	\$ -	\$ -	\$ -	\$ -
Toulumne River Watershed Protection	\$ 2,000,000	W \$ 1,361,000	\$ 1,361,000	\$ 1,361,000	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Regional Total</b>	<b>\$ 52,182,187</b>	<b>\$ 7,740,688</b>	<b>\$ 7,740,688</b>	<b>\$ 7,740,688</b>	<b>\$ 7,740,688</b>	<b>\$ -</b>	<b>\$ (1)</b>	<b>\$ (1)</b>	<b>\$ -</b>

Source: \* SFPLC Commission Approved Budget, February 2009, Same Format  
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

Show on Attachment N-2, Schedule 6  
Continuing Appropriation  
Needed for Multi-Year  
Revenue Funded Capital

Show on Attachment N-2, Schedule 6  
Revenue Capital - Actual Expenditures

Show on Attachment N-2, Schedule 6



**ATTACHMENT M-2**

**REVENUE FUNDED CAPITAL  
ANNUAL REPORTING REQUIREMENTS  
(Section 5.04B)**

**Part A. Updated Actual Information Through Most Recent Fiscal Year (Due in November)**

Each year, the SFPUC will provide a report on the status of the regional revenue funded projects with the following information:

Project-level information (through close-out)

- 1 Scope of project
- 2 Current cost estimate/budget.
- 3 Expected milestone dates (ie, design, environmental, construction period, close-out, etc.)
- 4 Contract status
- 5 Reasons for status changes from prior report.
- 6 Other information relevant to whether project is on time/on budget.
- 7 For most recently completed fiscal year and estimated for current year:
  - 8 Total expenditures (capital and operating); amounts paid from other sources.
  - 9 Amount of encumbered and unencumbered appropriations
  - 10 Application of any unused appropriations

Wholesale Capital Fund

- 11 Beginning balance, deposits, capital expenditures (by project), earnings, ending balance.
- 12 Components of ending balance; wholesale portion of:
  - 13 Appropriated and encumbered
  - 14 Appropriated but unencumbered

**Part B. Proposed Appropriations for Upcoming Year (Due in March)**

- 15 Project information, to the extent not provided in Part A
- 16 Expected funding needs for regional projects
- 17 Unused or excess appropriations carried over.
- 18 Proposed appropriation for upcoming fiscal year.

**ATTACHMENT M-3**  
**WHOLESALE REVENUE-FUNDED CAPITAL FUND - BALANCING ACCOUNT ADJUSTMENT**  
**\*\* EXAMPLE REPORTING FORMAT \*\***  
 (Section 6.08)

	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)
	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
a. Beginning balance	\$0	\$5,671,414	\$8,960,834	\$9,669,194	\$10,420,781	\$11,217,991	\$5,498,801	\$6,198,022	\$6,944,933	\$7,742,299	\$8,593,037
b. Transfer to Balancing Account	\$0					(\$6,467,533)					(\$2,574,995)
Year 1											
c. Budgeted appropriation	\$8,381,400					\$10,697,026					\$13,652,417
d. Encumbrance/Expenditure	(\$2,793,800)	(\$2,793,800)	(\$2,793,800)			(\$3,565,675)	(\$3,565,675)	(\$3,565,675)			(\$4,550,806)
Year 2											
e. Budgeted appropriation		\$8,800,470					\$11,231,878				
f. Encumbrance/Expenditure		(\$2,933,490)	(\$2,933,490)	(\$2,933,490)			(\$3,743,959)	(\$3,743,959)	(\$3,743,959)		
Year 3											
g. Budgeted appropriation		\$9,240,484						\$11,793,471			
h. Encumbrance/Expenditure		(\$3,080,165)	(\$3,080,165)	(\$3,080,165)				(\$3,931,157)	(\$3,931,157)	(\$3,931,157)	
Year 4											
i. Budgeted appropriation			\$9,702,518						\$12,383,145		
j. Encumbrance/Expenditure			(\$3,234,173)	(\$3,234,173)	(\$3,234,173)				(\$4,127,715)	(\$4,127,715)	(\$4,127,715)
Year 5											
k. Budgeted appropriation					\$10,187,644					\$13,002,302	
l. Encumbrance/Expenditure					(\$3,395,881)	(\$3,395,881)	(\$3,395,881)	(\$3,395,881)	(\$4,334,101)	(\$4,334,101)	(\$4,334,101)
m. Subtotal	\$5,587,600	\$8,744,594	\$9,393,873	\$10,123,885	\$10,898,206	\$5,251,755	\$6,025,163	\$6,750,702	\$7,525,246	\$8,351,628	\$8,657,838
n. Interest earnings (e.g., 3%)	\$83,814	\$216,240	\$275,321	\$296,896	\$319,785	\$247,046	\$172,859	\$194,231	\$217,053	\$241,409	\$228,763
o. Ending fund balance (unencumbered, unexpended)	\$5,671,414	\$8,960,834	\$9,669,194	\$10,420,781	\$11,217,991	\$5,498,801	\$6,198,022	\$6,944,933	\$7,742,299	\$8,593,037	\$8,886,601
p. Five Year Cumulative Appropriations w/ interest					\$47,504,581					\$60,180,421	
q. 10% of Cumulative Appropriations w/ interest					\$4,750,458					\$6,018,042	
r. Ending fund balance					\$11,217,991					\$8,593,037	
s. Excess balance transferred to Balancing Account*					(\$6,467,533)					(\$2,574,995)	

\*Test: Any balance in excess of 10% of the cumulative five-year appropriation total is credited to the balancing account.

**BALANCING ACCOUNT / RATE SETTING CALCULATION**  
**REFERENCE SECTION 6.03.A.3.a**

FY 2007-08      FY 2008-09      FY 2009-10

- Step 1:
- A. Balancing Account as of June 30, 2007
  - B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year
  - C. Wholesale Revenues for Fiscal Year
  - D. Wholesale Revenue Requirement for Fiscal Year
  - E. Settlement Credits or Other Adjustments
  - F. 1984 Agreement Balancing Account Credits
  - G. Balancing Account as of June 30, 2008

\$12,882,000  
 \$554,000  
 (\$113,932,000)  
 \$119,224,000  
 \$2,448,614  
 \$0  
 \$21,176,614

- Step 2:
- A. Balancing Account as of June 30, 2008
  - B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year
  - C. Wholesale Revenues for Fiscal Year
  - D. Wholesale Revenue Requirement for Fiscal Year
  - E. Settlement Credits or Other Adjustments
  - F. 1984 Agreement Balancing Account Credits
  - G. Balancing Account as of June 30, 2009

\$21,176,614  
 \$529,000  
 -\$123,604,000  
 \$120,562,000  
 \$21,000  
 \$0  
 \$18,684,614

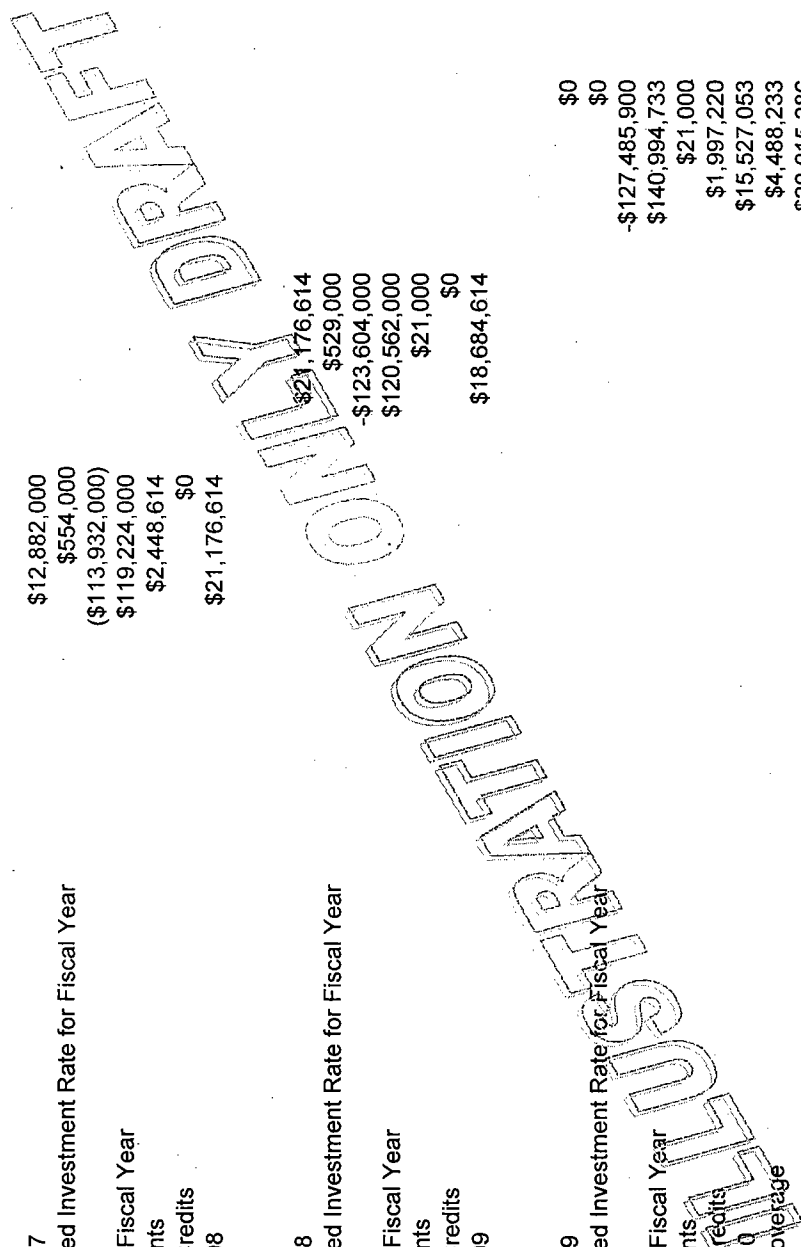
- Step 3:
- A. Balancing Account as of June 30, 2009
  - B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year
  - C. Wholesale Revenues for Fiscal Year
  - D. Wholesale Revenue Requirement for Fiscal Year
  - E. Settlement Credits or Other Adjustments
  - F. 1984 Agreement Balancing Account Credits
  - G. Balancing Account as of June 30, 2010
  - H. Net Change in Wholesale Revenue Coverage
  - I. Total Revenue Deficiency or Surplus

\$0  
 \$0  
 -\$127,485,900  
 \$140,994,733  
 \$21,000  
 \$1,997,220  
 \$15,527,053  
 \$4,488,233  
 \$20,015,286

- J. Projected Water Sales in Ccf
- K. Deficiency or (Surplus) \$(/Ccf
- L. Deficiency or (Surplus) Ccf as a Percentage of Revenues

84,621,240      83,205,600      85,920,000  
 \$0.23  
 15.7%

Note: Dollar amounts are for illustrative purposes only. The Parties have not agreed on the amount of the balancing account as of June 30, 2007, revenue requirement for FY 2007-08, settlement credits for FY 2007-08, and the amount of the balancing account as of June 30, 2009.



**BALANCING ACCOUNT / RATE SETTING CALCULATION  
METHOD OF CALCULATION  
REFERENCE SECTION 6.03.A.3.a**

N = The year for which rates are being set

N-1 = The current year

N-2 = The most recently completed year for which actual results are available

**Calculation Method:**

**Step 1**

Determine the actual revenue differential for year N-2

- A. Enter the beginning amount of the Balancing Account
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account

**Step 2**

Determine the projected revenue differential for year N-1

- A. Enter the beginning amount of the Balancing Account; this is the same amount as G in Step 1
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account

**Step 3**

Determine the projected revenue differential for year N

- A. Enter the beginning amount of the Balancing Account; this is the same amount as G in Step 2
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account
- H. Enter the net change in the Wholesale Revenue Coverage, if applicable
- I. Calculate the total revenue deficiency or surplus (G) + (H)
- J. Enter the projected water sales to Wholesale Customers in Ccf
- K. Calculate the required increase in the commodity portion of the rate by dividing (I) by (J)
- L. Calculate the required increase in revenues by dividing (I) by (C)

WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 CALCULATION OF WHOLESALE REVENUE REQUIREMENT  
 FISCAL YEAR 2009-10  
 REFERENCE ARTICLE 5

ATTACHMENT N-2  
 SCHEDULE 1

EXPENSE CATEGORY	CONTRACT REFERENCE	SCHEDULE REFERENCE	TOTAL	DIRECT RETAIL	DIRECT WHOLESALE	REGIONAL	JOINT EXPENSE ALLOCATION FACTOR	WHOLESALE SHARE
<b>OPERATING AND MAINTENANCE EXPENSE:</b>								
SOURCE OF SUPPLY	5.05 (A)	SCH 8.1	\$ 14,943,953	\$ 1,251,062	\$ -	\$ 13,692,891	ANNUAL USE <sup>1</sup>	\$ 9,364,568
PUMPING	5.05 (B)	SCH 8.1	\$ 4,342,682	\$ 3,854,000	\$ -	\$ 488,682	ANNUAL USE <sup>1</sup>	\$ 334,210
TREATMENT	5.05 (C)	SCH 8.1	\$ 30,445,053	\$ -	\$ -	\$ 30,445,053	ANNUAL USE <sup>1</sup>	\$ 20,821,372
TRANSMISSION & DISTRIBUTION	5.05 (D)	SCH 8.1	\$ 53,416,232	\$ 30,163,286	\$ -	\$ 23,252,946	ANNUAL USE <sup>1</sup>	\$ 15,902,690
CUSTOMER ACCOUNTS <sup>2</sup>	5.05 (E)	SCH 8.1	\$ 7,552,213	\$ 7,401,169	\$ 151,044	\$ -	2%	\$ 151,044
<b>TOTAL O&amp;M</b>			<b>\$ 110,700,133</b>	<b>\$ 42,669,517</b>	<b>\$ 151,044</b>	<b>\$ 67,879,572</b>		<b>\$ 46,573,883</b>
COMPOSITE % (WHOLESALE SHARE / TOTAL O&M)	5.06 (C)							42.07%
<b>ADMINISTRATIVE AND GENERAL EXPENSES:</b>								
COWCAP	5.06 (A)	SCH 8.1	\$ 1,238,009	\$ -	\$ -	\$ 1,238,009	COMPOSITE O&M	\$ 520,857
SERVICES OF SFPUC BUREAUS	5.06 (B)	SCH 7	\$ 22,465,291	\$ 8,178,424	\$ -	\$ 14,286,867	ANNUAL USE <sup>1</sup>	\$ 9,770,788
OTHER A&G	5.06 (C)	SCH 8.1	\$ 12,973,477	\$ 4,059,891	\$ -	\$ 8,962,586	COMPOSITE O&M	\$ 3,770,749
COMPLIANCE AUDIT	5.06 (D)	SCH 8.1	\$ 200,000	\$ -	\$ -	\$ 200,000	50%	\$ 100,000
<b>TOTAL A&amp;G</b>			<b>\$ 36,875,777</b>	<b>\$ 12,188,315</b>	<b>\$ -</b>	<b>\$ 24,687,462</b>		<b>\$ 14,162,394</b>
PROPERTY TAXES	5.07	SCH 8.1	\$ 1,417,293	\$ -	\$ -	\$ 1,417,293	ANNUAL USE <sup>1</sup>	\$ 969,287
CAPITAL COST RECOVERY	5.03	ATT K						\$ 24,051,326
PRE-2009 ASSETS	5.04 (A)	SCH 2						\$ 17,952,931
DEBT SERVICE ON NEW ASSETS	5.04 (B)	SCH 3						\$ 8,381,400
REVENUE FUNDED ASSETS - APPROPRIATED TO WHOLESALE CAPITAL FUND								\$ 50,385,657
<b>TOTAL CAPITAL COST RECOVERY</b>								<b>\$ 28,903,512</b>
WHOLESALE SHARE HETCH HETCHY WATER & POWER	5.04	SCH 4						\$ 140,994,733
<b>WHOLESALE REVENUE REQUIREMENT</b>								<b>\$ 4,488,233</b>
<b>WHOLESALE REVENUE COVERAGE<sup>3</sup></b>								

<sup>1</sup>Proportional Annual Use (68.39%)  
<sup>2</sup>Water Enterprise Share of Customer Accounts Expenses (62% of Total Customer Accounts Expenses)  
<sup>3</sup>25% of Wholesale Share of Debt Service



ATTACHMENT N-2  
SCHEDULE 2

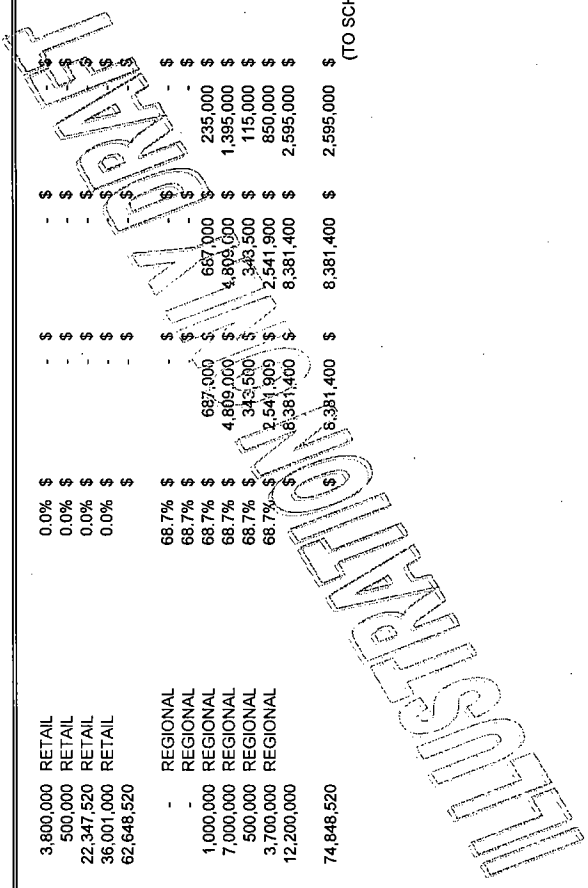
WHOLESALE REVENUE REQUIREMENT SCHEDULES  
WATER ENTERPRISE CAPITAL COST RECOVERY - ANNUAL DEBT SERVICE  
FISCAL YEAR 2009-10  
REFERENCE SECTION 5.04.A

	2006 BOND		2008 BOND		2009 BOND		XXXX BOND		XXXX BOND		XXXX BOND		TOTAL ALL	
	ISSUE SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	ISSUE ALL SERIES	OUTSTANDING BONDS
USE OF BOND PROCEEDS														
RETAIL PROJECTS		31.61%	22.95%	19.42%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	
REGIONAL PROJECTS		68.39%	77.05%	80.58%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%		
PRINCIPAL PAYMENT	\$ 8,765,000													\$ 8,765,000
RETAIL PROJECTS	\$ 2,770,617													\$ 2,770,617
REGIONAL PROJECTS	\$ 5,994,384													\$ 5,994,384
INTEREST PAYMENT (GROSS)	\$ 23,353,388	\$ 5,561,386	\$ 5,561,386	\$ 56,181,932										\$ 85,096,706
RETAIL PROJECTS	\$ 7,382,006	\$ 1,276,338	\$ 1,276,338	\$ 10,910,531										\$ 19,568,875
REGIONAL PROJECTS	\$ 15,971,382	\$ 4,285,048	\$ 4,285,048	\$ 45,271,401										\$ 65,527,831
INTEREST PAYMENT (CAPITALIZED)														
RETAIL PROJECTS				\$ 56,181,932										
REGIONAL PROJECTS				\$ 10,910,531										
INTEREST PAYMENT (NET)														
RETAIL PROJECTS	\$ 23,353,388	\$ 5,561,386												
REGIONAL PROJECTS	\$ 7,382,006	\$ 1,276,338												
TOTAL PRINCIPAL AND INTEREST PAYMENT	\$ 15,971,382	\$ 4,285,048												
RETAIL PROJECTS	\$ 31,133,880	\$ 5,561,386												\$ 37,679,774
REGIONAL PROJECTS	\$ 10,152,622	\$ 1,276,338												\$ 11,428,961
PROPORTIONAL ANNUAL USE		68.39%	68.39%	68.39%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%		\$ 17,952,931
WHOLESALE SHARE	\$ 15,022,387	\$ 2,930,544												(TO SCHEDULE 1)

Note: Allocation of bond proceeds shown are for illustrative purposes only. Regional projects will not include bond proceeds used to construct or acquire assets capitalized prior to 7/1/09. Regional projects also will not include in-city groundwater or in-city recycled water projects.

WHOLESALE REVENUE REQUIREMENT SCHEDULES  
WATER ENTERPRISE CAPITAL COST RECOVERY - REVENUE FUNDED CAPITAL PROJECTS  
FISCAL YEAR 2009-10  
REFERENCE SECTION 5.04.B

PROJECT APPROPRIATION	CLASSIFICATION	ALLOCATION FACTOR	WHOLESALE SHARE	TOTAL APPROPRIATION ALL YEARS	ALL YEARS ACTUAL EXPENDITURES	FY 2009-10 ACTUAL EXPENDITURES	ENCUMBERED, NOT EXPENDED	APPROPRIATED, UNENCUMBERED BALANCE
CUH980	Treasure Island Improvement Project							
CUW253	Facilities Security	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUW260	Local Water R&R	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUW686	Automated Meter Reading System	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Total Local		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUW202	Replace Prestressed Concrete Cylr Pipe	68.7%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUW261	Regional Water R&R - Storage	68.7%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUW262	Regional Water R&R - Treatment Facilities	68.7%	\$ 687,000	\$ 687,000	\$ 235,000	\$ -	\$ -	\$ 452,000
CUW263	Regional Water R&R Conveyance/Transmission	68.7%	\$ 4,809,000	\$ 4,809,000	\$ 1,395,000	\$ 25,000	\$ 3,389,000	\$ -
CUW264	Regional Watersheds/ROW Management	68.7%	\$ 343,500	\$ 343,500	\$ 115,000	\$ 50,000	\$ 178,500	\$ -
FUW100	Regional Facilities Maintenance	68.7%	\$ 2,541,900	\$ 2,541,900	\$ 850,000	\$ 123,000	\$ 1,568,900	\$ -
	Total Regional		\$ 8,381,400	\$ 8,381,400	\$ 2,595,000	\$ 198,000	\$ 5,588,400	\$ -
	TOTAL ALL PROJECTS		\$ 8,381,400	\$ 8,381,400	\$ 2,595,000	\$ 198,000	\$ 5,588,400	\$ -



WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 CALCULATION OF WHOLESale SHARE OF HETCH HETCHY WATER & POWER  
 FISCAL YEAR 2009-10  
 REFERENCE ARTICLE 5

ATTACHMENT N-2  
 SCHEDULE 4

EXPENSE CATEGORY	CONTRACT REFERENCE	SCHEDULE REFERENCE	TOTAL	POWER SPECIFIC	WATER SPECIFIC	JOINT	JOINT ALLOCATION PERCENTAGE	WATER-RELATED TOTAL	WHOLESale ALLOCATION FACTOR	WHOLESale SHARE
OPERATION AND MAINTENANCE										
OPERATION	5.08 B 1	SCH 8.2	\$ 44,612,220	\$ 31,853,965	\$ 9,557,861	\$ 3,200,384	45%	\$ 10,988,038		\$ 7,484,165
MAINTENANCE	5.08 B 1	SCH 8.2	\$ 16,868,612	\$ 5,048,039	\$ 3,238,622	\$ 8,581,951	45%	\$ 7,100,500		\$ 4,631,990
TOTAL OPERATION AND MAINTENANCE			\$ 61,480,832	\$ 36,902,004	\$ 12,796,483	\$ 11,782,345		\$ 18,088,538		\$ 12,316,055
ADMINISTRATIVE AND GENERAL										
COWCAP	5.08 B 2	SCH 8.2	\$ 1,139,579	\$ -	\$ -	\$ 1,139,579	45%	\$ 512,811		\$ 348,968
SERVICES OF SFPUC BUREAUS	5.08 B 2	SCH 7	\$ 8,255,307	\$ 5,375,656	\$ 2,879,651	\$ -	45%	\$ 2,879,651		\$ 1,959,603
OTHER A&G	5.08 B 2	SCH 8.2	\$ 25,581,481	\$ 14,913,071	\$ 36,070	\$ 10,632,340	45%	\$ 4,820,623		\$ 3,280,434
CUSTOMER ACCOUNTS	5.08 B 2	SCH 8.2	\$ 347,403	\$ 347,403	\$ -	\$ -	45%	\$ -		\$ -
TOTAL ADMINISTRATIVE AND GENERAL			\$ 35,323,770	\$ 20,686,130	\$ 2,916,721	\$ 11,771,919		\$ 8,213,085		\$ 5,589,004
PROPERTY TAXES	5.08 B 3	SCH 8.2	\$ 452,000	\$ -	\$ -	\$ 456,305	45%	\$ 205,337		\$ 139,732
CAPITAL COST RECOVERY										
PRE-2009 ASSETS	5.09 B 1	ATT K-4								\$ 3,118,033
DEBT SERVICE ON NEW ASSETS	5.09 B 2	SCH 5								\$ -
REVENUE FUNDED ASSETS-APPROPRIATIONS TO WHOLESale CAPITAL FUND	5.09 B 3	SCH 6								\$ 7,740,688
TOTAL CAPITAL COST RECOVERY										\$ 10,858,721
WHOLESale SHARE OF HETCH HETCHY WATER & POWER										\$ 28,903,512
WHOLESale REVENUE COVERAGE <sup>1</sup>										(TO SCHEDULE 1)
										\$ -

<sup>1</sup>Adjusted Proportional Annual Use (68.39% X 99.50% = 68.05%)  
 \*25% of Wholesale Share of Debt Service

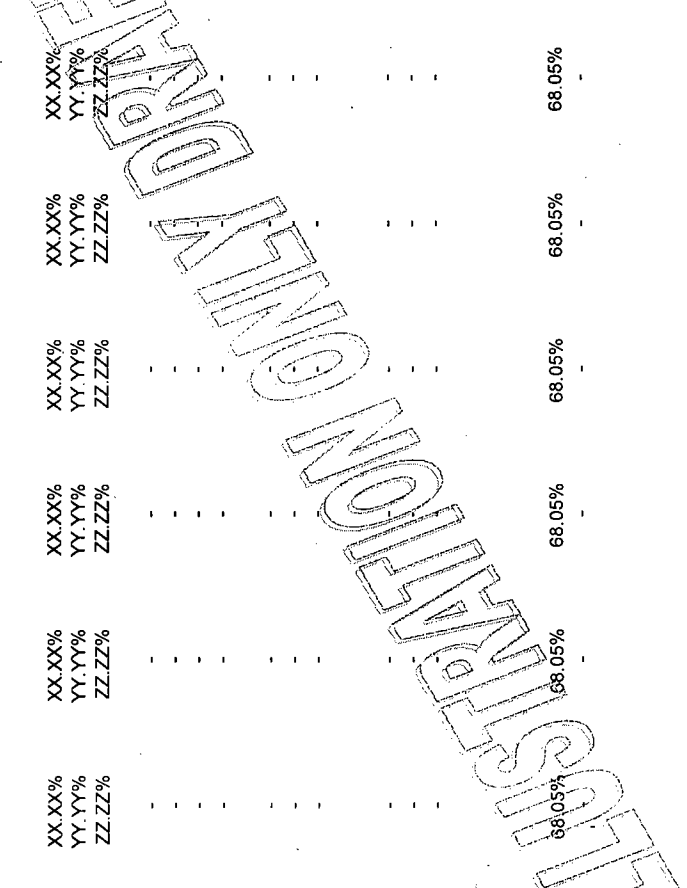
ATTACHMENT N-2  
SCHEDULE 5

WHOLESALE REVENUE REQUIREMENT SCHEDULES  
HETCH HETCHY CAPITAL COST RECOVERY - ANNUAL DEBT SERVICE  
FISCAL YEAR 2009-10  
REFERENCE SECTION 5.09.B.1

	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	TOTAL ALL OUTSTANDIN G BONDS
USE OF BOND PROCEEDS									
POWER PROJECTS	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	
WATER PROJECTS	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	
JOINT PROJECTS	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	
PRINCIPAL PAYMENT	-	-	-	-	-	-	-	-	
POWER SHARE	-	-	-	-	-	-	-	-	
WATER SHARE	-	-	-	-	-	-	-	-	
JOINT SHARE	-	-	-	-	-	-	-	-	
INTEREST PAYMENT (NET)	-	-	-	-	-	-	-	-	
POWER SHARE	-	-	-	-	-	-	-	-	
WATER SHARE	-	-	-	-	-	-	-	-	
JOINT SHARE	-	-	-	-	-	-	-	-	
TOTAL PRINCIPAL AND INTEREST PAYMENT	-	-	-	-	-	-	-	-	
POWER SHARE	-	-	-	-	-	-	-	-	
WATER SHARE	-	-	-	-	-	-	-	-	
JOINT SHARE	-	-	-	-	-	-	-	-	
WATER RELATED PRINCIPAL AND INTEREST PAYMENT <sup>1</sup>	68.05%	68.05%	68.05%	68.05%	68.05%	68.05%	68.05%	68.05%	
ADJUSTED PROPORTIONAL ANNUAL USE WHOLESALE SHARE									

<sup>1</sup>Water Related = 100% of Water Share + 45% of Joint Share

(TO SCHEDULE 4)



WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 HETCH HETCHY CAPITAL COST RECOVERY - REVENUE FUNDED CAPITAL PROJECTS  
 FISCAL YEAR 2009-10  
 REFERENCE SECTION 5.04.B

ATTACHMENT N-2  
 SCHEDULE 6

PROJECT APPROPRIATION	CLASSIFICATION	WATER RELATED PERCENTAGE	WATER RELATED SHARE	ALLOCATION FACTOR	WHOLESALE SHARE	TOTAL APPROPRIATION ALL YEARS	ALL YEARS ACTUAL EXPENDITURES	FY 2009-10 ACTUAL EXPENDITURES	ENCLUMBERED, NOT EXPENDED	APPROPRIATED, UNENCUMBERED BALANCE
CUH931	HH Microwave Replacement	45%	\$ 1,800,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ -	\$ -
CUH977	HH Water R&R - Facilities Maintenance	45%	\$ 1,575,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 1,071,768	\$ 1,071,768	\$ 1,071,768	\$ 1,071,768	\$ -	\$ -
	Total Joint		\$ 3,375,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 2,296,668	\$ 2,296,668	\$ 2,296,668	\$ 2,296,668	\$ -	\$ -
CUH947	SEA - Go Solar Incentive Project	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH971	Alternative Transmission Studies	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH976	HH Water R&R - Power Infrastructure	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH979	Hunters Point Municipal Power	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH983	Civic Center Sustainability District	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH986	General Fund Dept - Energy Efficiency Renewable/Generation	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Treasure Island Improvement Project	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Enterprise Fund Dept - Energy Efficiency	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Total Power	0%	\$ -	ADJUSTED PROPORTIONAL ANNUAL USE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUH975	HH Water R&R - Water Infrastructure	100%	\$ 6,000,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 4,083,000	\$ 4,083,000	\$ 4,083,000	\$ 4,083,000	\$ -	\$ -
	Toulumne River Watershed Protection	100%	\$ 2,000,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 1,351,000	\$ 1,351,000	\$ 1,351,000	\$ 1,351,000	\$ -	\$ -
	Total Water	100%	\$ 8,000,000	ADJUSTED PROPORTIONAL ANNUAL USE	\$ 5,444,000	\$ 5,444,000	\$ 5,444,000	\$ 5,444,000	\$ -	\$ -
	TOTAL ALL WATER RELATED PROJECTS		\$ 11,375,000		\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	\$ -	\$ -

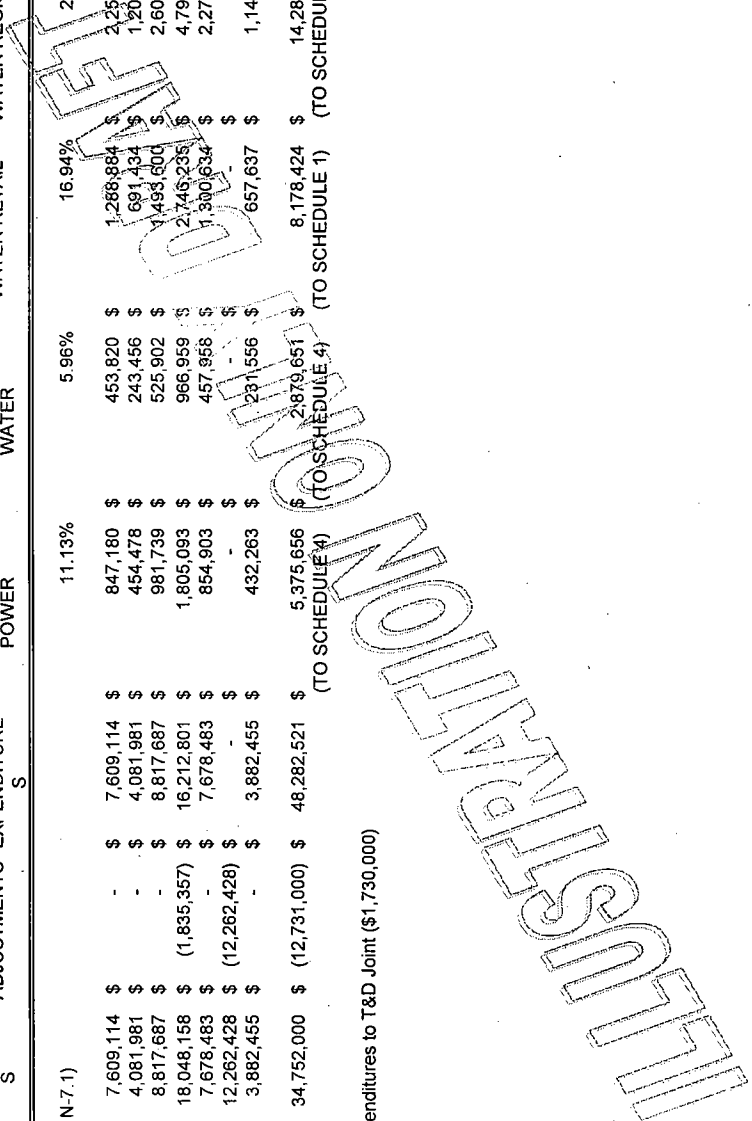


WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 SERVICES OF SFPUC BUREAUS - ALLOCATION TO ENTERPRISES  
 FISCAL YEAR 2009-10  
 REFERENCE SECTION 5.05.B

ATTACHMENT N-2  
 SCHEDULE 7

	EXPENDITURE S	ADJUSTMENTS	ADJUSTED EXPENDITURE S	HETCH HETCHY POWER	HETCH HETCHY WATER	WATER RETAIL	WATER REGIONAL	WASTEWATER	TOTAL
				11.13%	5.96%	16.94%	29.59%	36.37%	
ALLOCATION FACTORS (SCHEDULE N-7.1)									
PUC01 General Manager	\$ 7,609,114	\$ -	\$ 7,609,114	\$ 847,180	\$ 453,820	\$ 1,288,984	\$ 2,251,548	\$ 2,767,682	\$ 7,609,114
PUC1101 Biz-Serv-Administration	\$ 4,081,981	\$ -	\$ 4,081,981	\$ 454,478	\$ 243,456	\$ 691,434	\$ 1,207,864	\$ 1,484,749	\$ 4,081,981
PUC1102 Finance	\$ 8,817,687	\$ -	\$ 8,817,687	\$ 981,739	\$ 525,902	\$ 1,493,600	\$ 2,609,166	\$ 3,207,280	\$ 8,817,687
PUC1103 ITS <sup>1</sup>	\$ 18,048,158	\$ (1,835,357)	\$ 16,212,801	\$ 1,805,093	\$ 966,959	\$ 2,745,235	\$ 4,797,391	\$ 5,897,123	\$ 16,212,801
PUC1106 Human Resources	\$ 7,678,483	\$ -	\$ 7,678,483	\$ 854,903	\$ 457,958	\$ 1,300,634	\$ 2,272,074	\$ 2,792,914	\$ 7,678,483
PUC1108 Customer Services	\$ 12,262,428	\$ (12,262,428)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PUC12 External Affairs	\$ 3,882,455	\$ -	\$ 3,882,455	\$ 432,263	\$ 231,556	\$ 657,637	\$ 1,148,824	\$ 1,412,175	\$ 3,882,455
TOTAL	\$ 34,752,000	\$ (12,731,000)	\$ 48,282,521	\$ 5,375,656 (TO SCHEDULE 4)	\$ 2,879,651 (TO SCHEDULE 4)	\$ 8,178,424 (TO SCHEDULE 1)	\$ 14,286,867 (TO SCHEDULE 1)	\$ 17,561,923 (TO SCHEDULE 1)	\$ 48,282,521

<sup>1</sup>Adjustment for Transfer of SCADA Expenditures to T&D Joint (\$1,730,000)



WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 SERVICES OF SFPUC BUREAUS - ANNUAL SALARIES  
 FISCAL YEAR 2009-10  
 REFERENCE SECTION 5.05.B

ATTACHMENT N-2  
 SCHEDULE 7.1

DEPARTMENT/DIVISION	ALLOCATION FACTOR	GROUP CODE	SALARIES	PERCENTAGE
<b>HETCH HETCHY</b>				
POWER		1	\$ 6,677,939	6.27%
WATER		2	\$ 1,775,910	1.67%
JOINT			\$ 9,428,450	
WATER SHARE	45%	2	\$ 4,242,803	3.98%
POWER SHARE	55%	1	\$ 5,185,648	4.87%
<b>WATER</b>				
ADMINISTRATION (WTR01)			\$ 1,009,246	
RETAIL SHARE	33.4%	3	\$ 336,415	0.32%
REGIONAL SHARE	33.3%	4	\$ 336,415	0.32%
HETCH HETCHY WATER SHARE	33.3%	2	\$ 336,416	0.32%
CDD (WTR03)		3	\$ 17,356,922	16.29%
WATER QUALITY (WTR04)		4	\$ 7,282,589	6.83%
WATER SUPPLY & TREATMENT (WTR05)		4	\$ 18,154,689	17.05%
NATURAL RESOURCES (WTR06)		4	\$ 4,682,073	4.39%
WATER RESOURCE PLANNING			\$ 1,419,760	
WATER CONSERVATION		3	\$ 355,703	0.33%
RETAIL WATER RESOURCE PLANNING		3	\$ -	
REGIONAL SHARE (NET SALARIES)		4	\$ 1,064,057	1.00%
WASTEWATER		5	\$ 38,757,578	36.37%
<b>SALARIES BY GROUP CODE</b>				
HETCH HETCHY - POWER		1	\$ 11,863,587	11.13% (TO SCHEDULE 7)
HETCH HETCHY - WATER		2	\$ 6,355,129	5.96% (TO SCHEDULE 7)
WATER - RETAIL		3	\$ 18,049,040	16.94% (TO SCHEDULE 7)
WATER- REGIONAL		4	\$ 31,529,823	29.59% (TO SCHEDULE 7)
WASTEWATER		5	\$ 38,757,578	36.37% (TO SCHEDULE 7)
TOTAL SALARIES			\$ 106,555,156	100.00%

**WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 CALCULATION OF THE WHOLESALE REVENUE REQUIREMENT  
 FISCAL YEAR 2009-10  
 WATER ENTERPRISE SUMMARY OF OPERATING EXPENSES**

**ATTACHMENT N-2  
 SCHEDULE 8.1**

	Retail	Wholesale	Regional	Total
<b>Operating Expenses</b>				
Transmission & Distributions	\$ 30,163,286	\$ -	\$ 23,252,946	\$ 53,416,232
Adjustments to Transmission & Distribution	\$ -	\$ -	\$ -	\$ -
Adjusted Transmission & Distribution	\$ 30,163,286	\$ -	\$ 23,252,946	\$ 53,416,232
Source of Supply	\$ 1,251,062	\$ -	\$ 13,692,891	\$ 14,943,953
Adjustments to Source of Supply	\$ -	\$ -	\$ -	\$ -
Adjusted Source of Supply	\$ 1,251,062	\$ -	\$ 13,692,891	\$ 14,943,953
Pumping	\$ 3,854,000	\$ -	\$ 488,682	\$ 4,342,682
Adjustments to Pumping	\$ -	\$ -	\$ -	\$ -
Adjusted Pumping	\$ 3,854,000	\$ -	\$ 488,682	\$ 4,342,682
Treatment	\$ -	\$ -	\$ 30,445,053	\$ 30,445,053
Adjustments to Treatment	\$ -	\$ -	\$ -	\$ -
Adjusted Treatment	\$ -	\$ -	\$ 30,445,053	\$ 30,445,053
Customer Accounts	\$ 7,401,169	\$ 151,044	\$ -	\$ 7,552,213
Adjustments to Customer Accounts	\$ -	\$ -	\$ -	\$ -
Adjusted Customer Accounts	\$ 7,401,169	\$ 151,044	\$ -	\$ 7,552,213
<b>Total Adjusted Operating Expense</b>	\$ 42,669,517	\$ 151,044	\$ 67,879,572	\$ 110,700,133
<b>General &amp; Administrative Expense</b>				
COMCAP	\$ -	\$ -	\$ 1,238,009	\$ 1,238,009
Services of SFPUC Bureaus	\$ 8,178,424	\$ -	\$ 14,286,867	\$ 22,465,291
Other General & Administrative	\$ 4,009,891	\$ -	\$ 8,962,586	\$ 12,972,477
Adjustments to General & Administrative	\$ -	\$ -	\$ -	\$ -
Adjusted General & Administrative	\$ 4,009,891	\$ -	\$ 8,962,586	\$ 12,972,477
Compliance Audit	\$ 100,000	\$ 100,000	\$ -	\$ 200,000
<b>Total General &amp; Administrative</b>	\$ 12,288,315	\$ 100,000	\$ 24,487,462	\$ 36,875,777
<b>Property Taxes</b>	\$ -	\$ -	\$ 1,417,293	\$ 1,417,293
<b>Total</b>	\$ 54,957,832	\$ 251,044	\$ 93,784,327	\$ 148,993,203

Source: FAMIS/EIS

Note: All adjustments to be separately identified above

**WHOLESALE REVENUE REQUIREMENT SCHEDULES  
 CALCULATION OF THE WHOLESALE REVENUE REQUIREMENT  
 FISCAL YEAR 2009-10  
 HETCHY HETCHY WATER & POWER SUMMARY OF OPERATING EXPENSES**

**ATTACHMENT N-2  
 SCHEDULE 8.2**

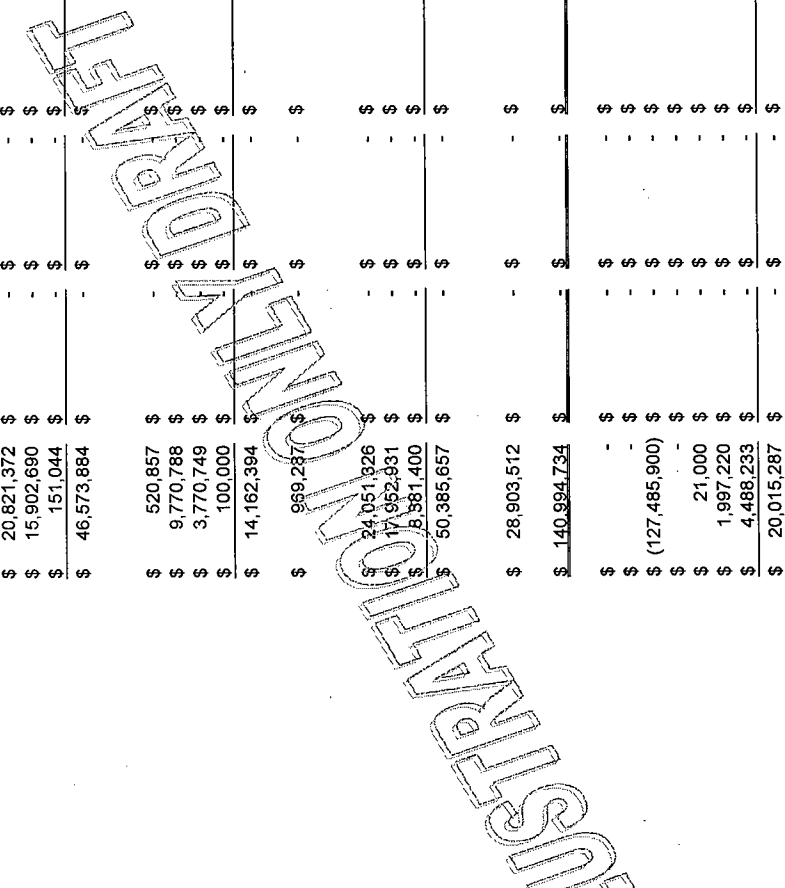
	Power	Water	Joint	Total
<b>Operating Expenses</b>				
Purchased Power & Wheeling	\$ 28,953,676			\$ 28,953,676
Adjustments to Purchased Power & Wheeling	\$ -			\$ -
Adjusted Purchased Power & Wheeling	\$ 28,953,676			\$ 28,953,676
<b>Operations</b>				
Hydraulic Generation	\$ 2,900,291	\$ -	\$ 3,200,394	\$ 6,100,685
Transmission & Distribution	\$ -	\$ -	\$ -	\$ -
Water Quality Expense	\$ -	\$ 9,557,862	\$ -	\$ 9,557,862
Adjustments to Operations	\$ -	\$ -	\$ -	\$ -
Adjusted Operations	\$ 2,900,291	\$ 9,557,862	\$ 3,200,394	\$ 15,658,547
<b>Maintenance</b>				
Hydraulic Generation	\$ 1,840,096	\$ 3,238,622	\$ 8,581,952	\$ 13,660,670
Transmission & Distribution	\$ 3,359,385	\$ -	\$ -	\$ 3,359,385
Water Quality Expense	\$ -	\$ -	\$ -	\$ -
Adjustments to Maintenance	\$ (151,442)	\$ -	\$ -	\$ (151,442)
Adjusted Maintenance	\$ 5,048,039	\$ 3,238,622	\$ 8,581,952	\$ 16,868,613
<b>Total Adjusted Operating Expense</b>	\$ 36,902,006	\$ 12,796,484	\$ 11,782,346	\$ 61,480,836
<b>General &amp; Administrative Expense</b>				
COWCAP	\$ -	\$ -	\$ 1,139,579	\$ 1,139,579
Services of SFPUC Bureaus	\$ 5,375,656	\$ 2,879,651	\$ -	\$ 8,255,307
Customer Accounts	\$ 347,403	\$ -	\$ -	\$ 347,403
Adjustments to Customer Accounts	\$ -	\$ -	\$ -	\$ -
Adjusted Customer Accounts	\$ 347,403	\$ -	\$ -	\$ 347,403
Other General & Administrative	\$ 14,913,071	\$ 36,070	\$ 10,632,340	\$ 25,581,481
Adjustments to General & Administrative	\$ -	\$ -	\$ -	\$ -
Adjusted General & Administrative	\$ 14,913,071	\$ 36,070	\$ 10,632,340	\$ 25,581,481
<b>Total General &amp; Administrative</b>	\$ 20,636,130	\$ 2,915,721	\$ 11,771,919	\$ 35,323,770
<b>Property Taxes</b>	\$ -	\$ -	\$ 452,000	\$ 452,000
<b>Total</b>	\$ 57,538,136	\$ 15,712,205	\$ 24,006,265	\$ 97,256,606

Source: FAMIS/EIS

Note: All adjustments to be separately identified above

SCHEDULE OF PROJECTED WATER SALES, WHOLESALEREVENUE REQUIREMENTS, AND WHOLESALEREVENUE RATES  
 CONTRACT REFERENCE: ARTICLE 6.03.A.3

	N	N+1	FISCAL YEAR N+2	N+3	N+4
<b>OPERATION AND MAINTENANCE EXPENSES</b>					
SOURCE OF SUPPLY	\$ 9,364,568	\$ -	\$ -	\$ -	\$ -
PUMPING	\$ 334,210	\$ -	\$ -	\$ -	\$ -
TREATMENT	\$ 20,821,372	\$ -	\$ -	\$ -	\$ -
TRANSMISSION & DISTRIBUTION	\$ 15,902,690	\$ -	\$ -	\$ -	\$ -
CUSTOMER ACCOUNTS	\$ 151,044	\$ -	\$ -	\$ -	\$ -
TOTAL OPERATION AND MAINTENANCE EXPENSES	\$ 46,573,884	\$ -	\$ -	\$ -	\$ -
<b>ADMINISTRATIVE AND GENERAL EXPENSES</b>					
COWCAP	\$ 520,857	\$ -	\$ -	\$ -	\$ -
SF PUBLIC UTILITIES COMMISSION	\$ 9,770,798	\$ -	\$ -	\$ -	\$ -
OTHER A&G	\$ 3,770,749	\$ -	\$ -	\$ -	\$ -
COMPLIANCE AUDIT	\$ 100,000	\$ -	\$ -	\$ -	\$ -
TOTAL ADMINISTRATIVE AND GENERAL EXPENSES	\$ 14,162,394	\$ -	\$ -	\$ -	\$ -
<b>PROPERTY TAXES</b>					
	\$ 969,287	\$ -	\$ -	\$ -	\$ -
<b>CAPITAL COST RECOVERY</b>					
PRE 2009 ASSETS	\$ 24,051,926	\$ -	\$ -	\$ -	\$ -
DEBT SERVICE ON NEW ASSETS	\$ 17,662,931	\$ -	\$ -	\$ -	\$ -
REVENUE FUNDED CAPITAL	\$ 8,381,400	\$ -	\$ -	\$ -	\$ -
TOTAL CAPITAL COST RECOVERY	\$ 50,095,657	\$ -	\$ -	\$ -	\$ -
<b>WHOLESALEREVENUE REQUIREMENT</b>					
WHOLESALEREVENUE REQUIREMENT	\$ 28,903,512	\$ -	\$ -	\$ -	\$ -
	\$ 140,894,734	\$ -	\$ -	\$ -	\$ -
<b>BALANCING ACCOUNT AS OF JUNE 30</b>					
INTEREST ON BALANCING ACCOUNT	\$ -	\$ -	\$ -	\$ -	\$ -
WHOLESALEREVENUES AT EXISTING RATE	\$ (127,485,900)	\$ -	\$ -	\$ -	\$ -
WHOLESALEREVENUE EXCESS USE CHARGES	\$ -	\$ -	\$ -	\$ -	\$ -
SETTLEMENT CREDITS AND OTHER ADJUSTMENTS	\$ 21,000	\$ -	\$ -	\$ -	\$ -
1984 AGREEMENT BALANCING ACCOUNT CREDITS	\$ 1,997,220	\$ -	\$ -	\$ -	\$ -
WHOLESALEREVENUE DEBIT SERVICE COVERAGE RESERVE	\$ 4,488,233	\$ -	\$ -	\$ -	\$ -
WHOLESALEREVENUE DEFICIENCY OR CREDIT	\$ 20,015,287	\$ -	\$ -	\$ -	\$ -
PERCENT WHOLESALEREVENUE DEFICIENCY OR CREDIT OF REVENUES AND EXCESS USE CHARGES	15.7%				
<b>PROJECTED WATER SALES (CCF)</b>					
PROJECTED WATER SALES (CCF)	85,920,000	0	0	0	0
WHOLESALEREVENUE DEFICIENCY OR CREDIT (\$/CCF)	0.23	0	0	0	0
PROJECTED WHOLESALEREVENUE RATE (UNIT COST) (\$/CCF)	1.66	0	0	0	0
<b>PROJECTED SERVICE CHARGE REVENUES</b>					
PROJECTED SERVICE CHARGE REVENUES	\$ 4,620,300	\$ -	\$ -	\$ -	\$ -
PROJECTED VOLUME CHARGE REVENUES	\$ 142,627,200	\$ -	\$ -	\$ -	\$ -
TOTAL WHOLESALEREVENUES	\$ 147,247,500	\$ -	\$ -	\$ -	\$ -





**ATTACHMENT O**  
**STATEMENT OF WHOLESALE REVENUE REQUIREMENT/ CHANGES IN BALANCING ACCOUNT**  
**YEAR ENDED JUNE 30**  
**(Section 7.02.B)**

	<u>FY 2008-09</u> <u>Allocation to</u> <u>Wholesale</u> <u>Customers</u>	<u>FY 2009-10</u> <u>Allocation to</u> <u>Wholesale</u> <u>Customers</u>	<u>Difference</u>
Wholesale Revenue Requirement Calculation:			
Operating and maintenance (O&M) expense:			
San Francisco Water Enterprise:			
Source of supply	\$ 9,133,025	\$ 9,364,568	\$ 231,543
Pumping	\$ 325,946	\$ 334,210	\$ 8,264
Purification	\$ 20,437,460	\$ 20,821,372	\$ 383,912
Transmission and distribution	\$ 9,350,279	\$ 15,902,690	\$ 6,552,411
Customer Accounts	\$ 224,255	\$ 151,044	\$ (73,211)
Total SFWE operating and maintenance	\$ 39,470,965	\$ 46,573,884	\$ 7,102,919
Hetch Hetchy Water and Power (HHWP):			
Operating expenses	\$ 10,359,786	\$ 7,484,165	\$ (2,875,621)
Maintenance expenses	\$ 4,526,240	\$ 4,831,890	\$ 305,650
Total HHWP operating and maintenance	\$ 14,886,026	\$ 12,316,055	\$ (2,569,971)
Administrative and general (A&G) expenses:			
COWCAP			
SFWE	\$ 512,438	\$ 520,857	\$ 8,419
HHWP	\$ 162,364	\$ 348,968	\$ 186,604
SF Public Utilities Commission:			
SFWE	\$ 7,461,835	\$ 9,770,788	\$ 2,308,953
HHWP	\$ 2,357,622	\$ 1,959,603	\$ (398,019)
Other A&G – SFWE	\$ 8,234,799	\$ 3,770,749	\$ (4,464,050)
Other A&G – HHWP	\$ -	\$ 3,280,434	\$ 3,280,434
Compliance audit	\$ 95,338	\$ 100,000	\$ 4,662
Total administrative and general expenses	\$ 18,824,396	\$ 19,751,399	\$ 927,003
Property taxes (outside city only):			
SFWE	\$ 964,040	\$ 969,287	\$ 5,247
HHWP	\$ 120,923	\$ 139,732	\$ 18,809
Total property taxes	\$ 1,084,963	\$ 1,109,019	\$ 24,056
Capital Cost Recovery			
Pre-2009 Assets			
SFWE		\$ 24,051,326	
HHWP		\$ 3,118,033	
Debt Service on New Assets			
SFWE		\$ 17,952,931	
HHWP		\$ -	
Revenue Funded Assets			
SFWE		\$ 8,381,400	
HHWP		\$ 7,740,688	
Total Capital Cost Recovery	\$ 46,378,941	\$ 61,244,378	\$ 14,865,437
Total Wholesale Revenue Requirement	\$ 120,645,291	\$ 140,994,735	\$ 20,349,444
Balancing Account July 1			
Interest on adjusted beginning balance	\$ 21,176,614	\$ -	
Wholesale revenues billed	\$ 529,415	\$ -	
Excess use charges billed	\$ (123,604,000)	\$ (147,247,500)	
Wholesale Revenue Coverage Reserve	\$ -	\$ -	
Other adjustments	\$ -	\$ 4,488,233	
Settlement adjustments	\$ -	\$ -	
1984 Agreement Balancing Account Credits	\$ 21,006	\$ 21,006	
	\$ -	\$ 1,997,220	
Balancing Account June 30	<u>\$ 18,768,326</u>	<u>\$ 253,694</u>	

**Attachment P**  
**REPRESENTATION LETTER**

Certification Pursuant to Water Sales Agreement (the Agreement) between the City and County of San Francisco (San Francisco) and certain wholesale customers in the counties of San Mateo, Santa Clara, and Alameda (the Wholesale Customers) effective July 1, 2009.

Each of the undersigned certifies that:

1. I have reviewed San Francisco Water Department and Hetch Hetchy Water & Power Department Report on the Calculation of the Wholesale Revenue Requirement and Statement of Changes in the Balancing Account (the Statement) for the year ended June 30, 200X;

Based on my knowledge, this report and Statement do not contain any untrue statements of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;

Based on my knowledge, the Statement and other financial information included in the report, fairly presents in all material respects the proper costs incurred and allocated to the Wholesale Customers in accordance with the provisions of the Agreement.

The below certifying officers and I are responsible for establishing and maintaining internal control over financial reporting and have:

Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting for purposes of the preparation of the Statement.

Evaluated the effectiveness of the allocation procedures to ensure compliance with the terms of the Agreement.

The Statement fully complies with the contractual requirements of the Agreement and fairly presents, in all material respects, the allocation of costs to the Wholesale Customers in accordance with the Agreement.

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General Manager, SFPUC	Date
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Assistant General Manager & Chief Financial Officer, SFPUC	Date
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Finance Director, SFPUC	Date
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Accounting Manager, SFPUC	Date
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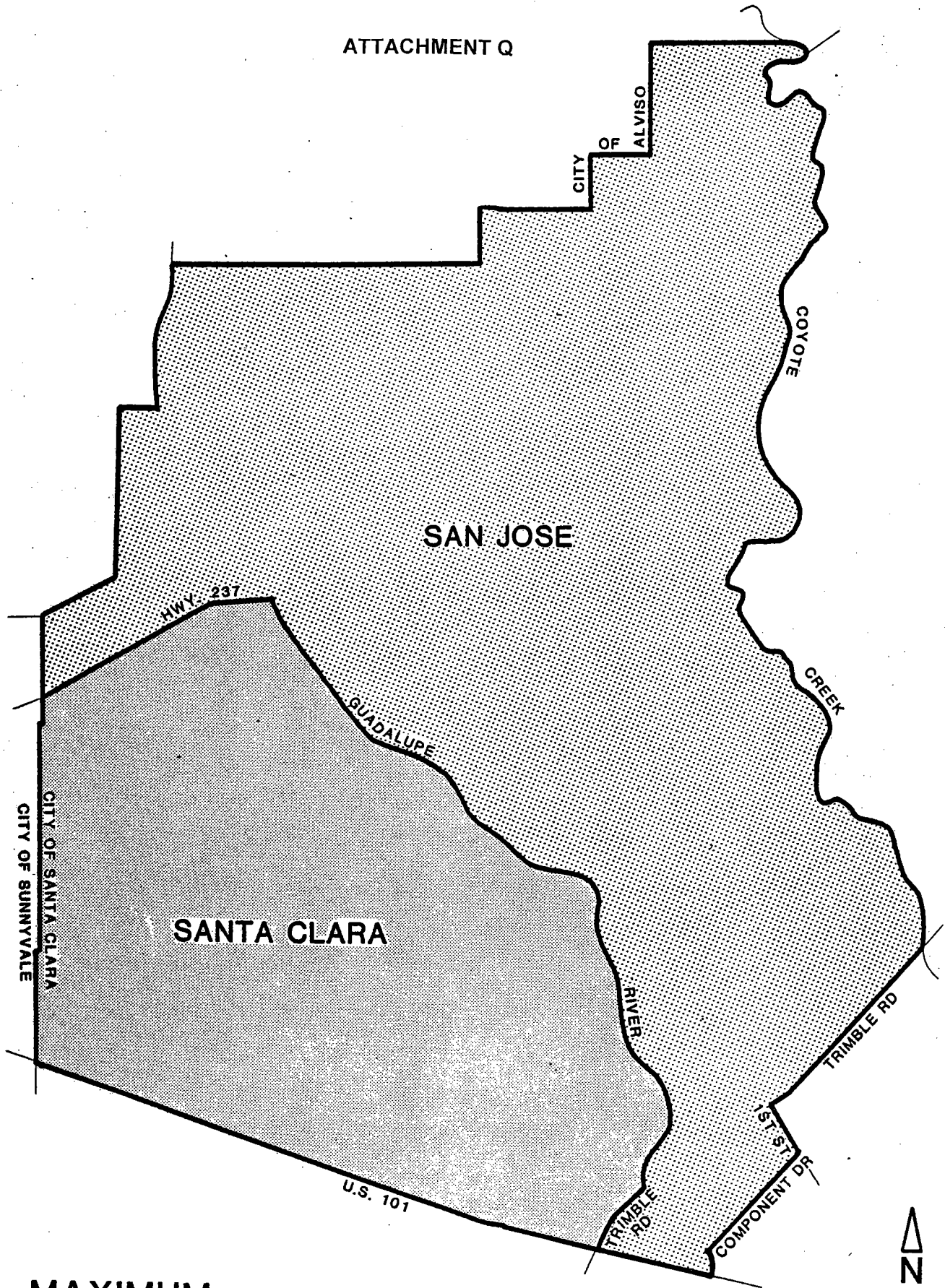
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Financial Planning Manager, SFPUC	Date
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Senior Rates Administrator, SFPUC	Date
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ATTACHMENT Q



MAXIMUM  
SERVICE AREAS

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## Appendix D

# BWD Existing Individual Water Supply Contract with the City and County of San Francisco

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# WATER SALES CONTRACT

This Contract, dated as of July 1, 2009, is entered into by and between the City and County of San Francisco ("San Francisco") and the City of Brisbane ("Customer").

## RECITALS

San Francisco and the Customer have entered into a Water Supply Agreement ("WSA"), which sets forth the terms and conditions under which San Francisco will continue to furnish water for domestic and other municipal purposes to Customer and to other Wholesale Customers. The WSA contemplates that San Francisco and each individual Wholesale Customer will enter into an individual contract describing the location or locations at which water will be delivered to each customer by the San Francisco Public Utilities Commission ("SFPUC"), the customer's service area within which water so delivered is to be sold, and other provisions unique to the individual purchaser. This Water Sales Contract is the individual contract contemplated by the WSA.

## AGREEMENTS OF THE PARTIES

### 1. Incorporation of the WSA

The terms and conditions of the WSA are incorporated into this Contract as if set forth in full herein.

### 2. Term

Unless explicitly provided to the contrary in Article 9 of the WSA, the term of this Contract shall be identical to that provided in Section 2.01 of the WSA.

### 3. Service Area

Water delivered by San Francisco to the Customer may be used or sold within the service areas shown on the map designated Exhibit A attached hereto. Except as provided in

Section 3.03 of the WSA, Customer shall not deliver or sell any water provided by San Francisco outside of this area without the prior written consent of the General Manager of the SFPUC. San Francisco consents to deliveries to the customers listed on Exhibit C.

4. Location and Description of Service Connections

Sale and delivery of water to Customer will be made through a connection or connections to the SFPUC Regional Water System at the location or locations listed, with the applicable present account number, service location, service size, and meter size shown on Exhibit B attached hereto.

5. Interties With Other Systems

Customer maintains interties with neighboring water systems at the location or locations and with the connection size(s) as shown on Exhibit C attached hereto.

6. Billing and Payment

San Francisco shall compute the amounts of water delivered and bill Customer therefor on a monthly basis. The bill shall show the separate components of the charge (e.g., service, consumption, demand). Customer shall pay the amount due within thirty (30) days after receipt of the bill.

If Customer disputes the accuracy of any portion of the water bill it shall (a) notify the General Manager of the SFPUC in writing of the specific nature of the dispute and (b) pay the undisputed portion of the bill within thirty (30) days after receipt. Customer shall meet with the General Manager of the SFPUC or a delegate to discuss the disputed portion of the bill.

7. Guadalupe Valley Municipal Improvement District

Customer has annexed the existing service area of the Guadalupe Valley Municipal Improvement District ("GVMID"), which service area is shown on Exhibit A attached hereto. If and when GVMID is dissolved and Customer assumes the powers of GVMID, Customer shall succeed to the rights and obligations of GVMID under the WSA and GVMID's individual Water

Sales Contract (including, but not limited to, GVMID's individual supply guarantee as described in Section 3.02 of the WSA and the definitions of GVMID's service area as shown on Exhibit A attached hereto) in accordance with Section 3.03.E of the WSA.

8. Reduced – Priced Water

Pursuant to rights heretofore granted to Customer, recognized by San Francisco, and confirmed by court order, the SFPUC presently delivers and shall continue to deliver to Customer 100,000 gallons of water per day at a rate of \$0.15 per 1,000 gallons. Customer shall pay for the balance of the water supplied by the SFPUC at rates set pursuant to the WSA.

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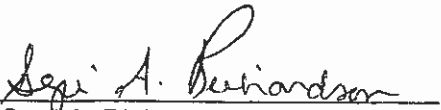
IN WITNESS WHEREOF, the parties hereto have executed this Contract, to become effective upon the effectiveness of the WSA, by their duly authorized representatives.

**CITY AND COUNTY OF SAN FRANCISCO**  
Acting by and through its Public Utilities Commission

By:   
Edward Harrington  
General Manager

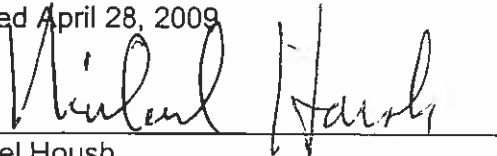
Date: July 17, 2009

**CITY OF BRISBANE**

By:   
Sept A. Richardson  
Mayor

Date: 6/15, 2009

Approved by Commission Resolution No. 09-0069,  
adopted April 28, 2009

  
Michael Housh  
Secretary to Commission

ATTEST:


  
Sheri Marie Spediacci  
City Clerk

Approved as to form:

DENNIS J. HERRERA  
City Attorney

By:   
Joshua D. Milstein  
Deputy City Attorney

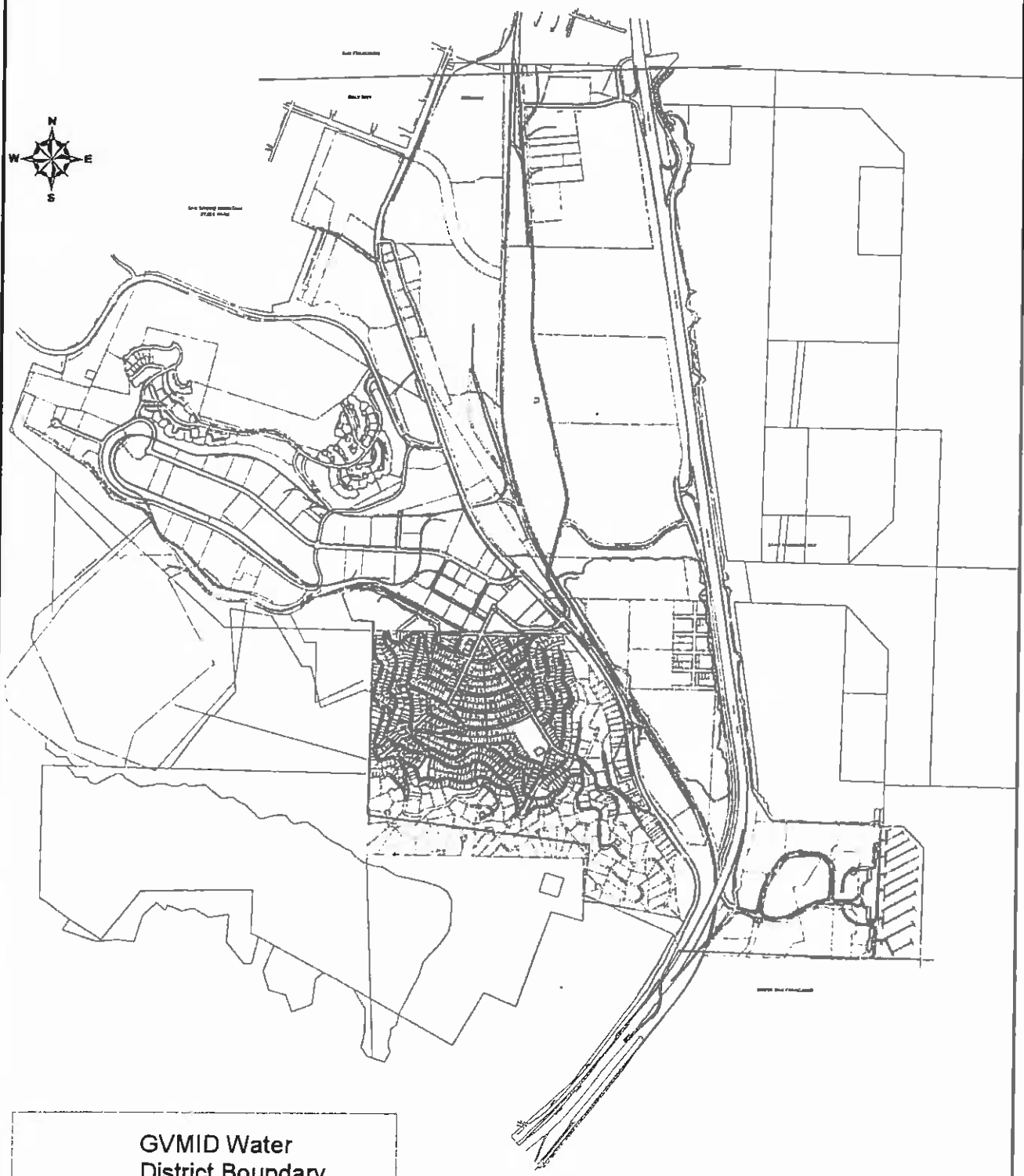
Approved as to form:

  
Harold S. Toppel  
City Attorney

**Exhibit A**  
**Service Area Map**

City of Brisbane & Guadalupe Valley Municipal Improvement District  
Water District Boundary Map 2030 Projection

SERVICE AREA



GVMID Water District Boundary  
City of Brisbane Water District Boundary



## Exhibit B

### Location and Description of Service Connections to the SFPUC Regional Water System

Account	Meter Connection	Service Address	Service Street	Service Street Suffix	Service City	Service Size	Meter Size
010008019	1	11	SAN BRUNO	AV	Brisbane	6	6
010008019	1	500	MAIN	ST	Brisbane	12	6
010008019	2	500	MAIN	ST	Brisbane		6
010009017	1	1105	SAN BRUNO	AV	Brisbane	8	8
010009017	2	1105	SAN BRUNO	AV	Brisbane		6

## Exhibit C

### Emergency Connections with Other Water Systems

Connection With	Number	Size
CWS- SSF	1	16"
Daly City	1	6"
GVMID	4	12", 12", 12", 8"



## Appendix E

# GVMID Existing Individual Water Supply Contract with the City and County of San Francisco

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# WATER SALES CONTRACT

This Contract, dated as of July 1, 2009, is entered into by and between the City and County of San Francisco ("San Francisco") and Guadalupe Valley Municipal Improvement District ("Customer").

## RECITALS

San Francisco and the Customer have entered into a Water Supply Agreement ("WSA"), which sets forth the terms and conditions under which San Francisco will continue to furnish water for domestic and other municipal purposes to Customer and to other Wholesale Customers. The WSA contemplates that San Francisco and each individual Wholesale Customer will enter into an individual contract describing the location or locations at which water will be delivered to each customer by the San Francisco Public Utilities Commission ("SFPUC"), the customer's service area within which water so delivered is to be sold, and other provisions unique to the individual purchaser. This Water Sales Contract is the individual contract contemplated by the WSA.

## AGREEMENTS OF THE PARTIES

### 1. Incorporation of the WSA

The terms and conditions of the WSA are incorporated into this Contract as if set forth in full herein.

### 2. Term

Unless explicitly provided to the contrary in Article 9 of the WSA, the term of this Contract shall be identical to that provided in Section 2.01 of the WSA.

3. Service Area

Water delivered by San Francisco to the Customer may be used or sold within the service areas shown on the map designated Exhibit A attached hereto. Except as provided in Section 3.03 of the WSA, Customer shall not deliver or sell any water provided by San Francisco outside of this area without the prior written consent of the General Manager of the SFPUC. San Francisco consents to deliveries to the customers listed on Exhibit C.

4. Location and Description of Service Connections

Sale and delivery of water to Customer will be made through a connection or connections to the SFPUC Regional Water System at the location or locations listed, with the applicable present account number, service location, service size, and meter size shown on Exhibit B attached hereto.

5. Interties With Other Systems

Customer maintains interties with neighboring water systems at the location or locations and with the connection size(s) as shown on Exhibit C attached hereto.

6. Billing and Payment

San Francisco shall compute the amounts of water delivered and bill Customer therefor on a monthly basis. The bill shall show the separate components of the charge (e.g., service, consumption, demand). Customer shall pay the amount due within thirty (30) days after receipt of the bill.

If Customer disputes the accuracy of any portion of the water bill it shall (a) notify the General Manager of the SFPUC in writing of the specific nature of the dispute and (b) pay the undisputed portion of the bill within thirty (30) days after receipt. Customer shall meet with the General Manager of the SFPUC or a delegate to discuss the disputed portion of the bill.

7. Annexation by City of Brisbane

The City of Brisbane ("Brisbane") has annexed the service area of Customer as shown on Exhibit A attached hereto. If and when Customer is dissolved and Brisbane assumes the powers of Customer, Brisbane shall succeed to the rights and obligations of Customer under the WSA and this Contract (including, but not limited to, Customer's individual supply guarantee as described in Section 3.02 of the WSA and the definition of Customer's service area as shown in Exhibit A attached hereto) in accordance with Section 3.03.E of the WSA.

8. Reduced – Priced Water

Pursuant to rights heretofore granted to Customer, recognized by San Francisco, and confirmed by court order, the SFPUC presently delivers and shall continue to deliver to Customer 300,000 gallons of water per day at a rate of \$0.15 per 1,000 gallons. Customer shall pay for the balance of the water supplied by the SFPUC at rates set pursuant to the WSA.

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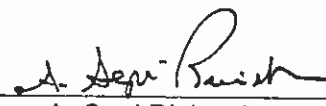
IN WITNESS WHEREOF, the parties hereto have executed this Contract, to become effective upon the effectiveness of the WSA, by their duly authorized representatives.

**CITY AND COUNTY OF SAN FRANCISCO**  
Acting by and through its Public Utilities Commission

By:   
Edward Harrington  
General Manager

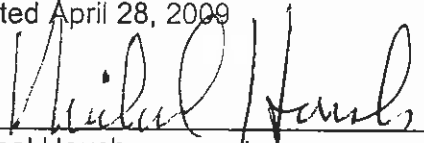
Date: July 17, 2009

**GUADALUPE VALLEY MUNICIPAL  
IMPROVEMENT DISTRICT**

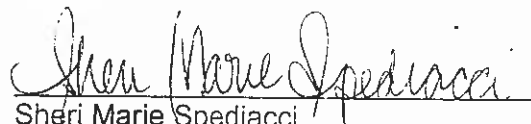
By:   
A. Sepi Richardson  
President

Date: 6/15, 2009

Approved by Commission Resolution No. 09-0069,  
adopted April 28, 2009

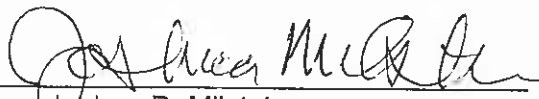
  
Michael Housh  
Secretary to Commission

ATTEST:

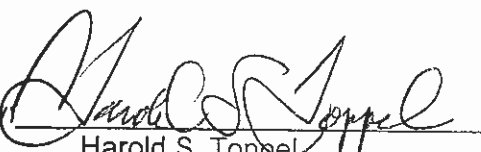
  
Sheri Marie Spediacci  
District Secretary

Approved as to form:

DENNIS J. HERRERA  
City Attorney

By:   
Joshua D. Milstein  
Deputy City Attorney

Approved as to form:

By:   
Harold S. Toppel  
District Counsel



## **Exhibit A**

### **Service Area Map**

# City of Brisbane & Guadalupe Valley Municipal Improvement District Water District Boundary Map 2030 Projection

## SERVICE AREA



-  GVMID Water District Boundary
-  City of Brisbane Water District Boundary

0 1,800 3,600 7,200 Feet

## Exhibit B

### Location and Description of Service Connections to the SFPUC Regional Water System

Account	Meter Connection	Service Address	Service Street	Service Street Suffix	Service City	Service Size	Meter Size
010006013	1	100	SAN FRANCISCO	ST	Brisbane	8	6
010007011	1	100	NORTH HILL	DR	Brisbane	8	6

**Exhibit C**

**Emergency Connections with Other Water Systems**

<b>Connection With</b>	<b>Number</b>	<b>Size</b>
Brisbane	4	12", 12", 12", 8"
Daly City	1	12"



## Appendix F

# Term Sheet between OID and the City of Brisbane

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**TERM SHEET FOR WATER TRANSFER AGREEMENT  
BY AND BETWEEN THE OAKDALE IRRIGATION DISTRICT AND  
THE CITY OF BRISBANE**

This Term Sheet, a non-binding framework for negotiation, is entered into this <sup>15<sup>th</sup></sup> day of October, 2012, between and among the Oakdale Irrigation District ("OID") and the City of Brisbane ("Brisbane"), both of which are collectively referred to hereafter as "Parties".

**RECITALS**

*WHEREAS*, OID is operating under and by virtue of Division 11 of the California Water Code; and

*WHEREAS*, Brisbane is a general law city subject to the California Government Code; and

*WHEREAS*, Brisbane desires to acquire water from OID for municipal and industrial (M&I) purposes, as those terms are generally defined by the California State Water Resources Control Board, including a water supply for the project referred to herein as the Baylands Project, a brownfield development located adjacent to the west side of Highway 101; and

*WHEREAS*, OID is interested in transferring water to Brisbane; and

*WHEREAS*, if OID transfers water to Brisbane, the Parties expect that the water will be delivered utilizing, among other facilities, OID's reservoirs, South Main Canal and laterals, certain designated facilities partially or fully owned and operated by the Modesto Irrigation District ("MID"), and the City and County of San Francisco's ("CCSF") Regional Water System; and

*WHEREAS*, this Term Sheet sets forth an understanding between the Parties to cooperate in the development, processing and completion of appropriate environmental review pursuant to the California Environmental Quality Act ("CEQA") by the designated Lead Agency; and

*WHEREAS*, this Term Sheet sets forth some of the potential terms and conditions related to a sale of water from OID to Brisbane so that the appropriate Lead Agency can commence development, processing and completion of the appropriate CEQA documentation, and

*WHEREAS*, this Term Sheet provides a general framework for the subsequent negotiation of definitive agreements regarding the transfer and delivery of water from OID, and will not create any binding contractual obligations on any party hereto or to commit any party to a particular course of action. A transaction of this type involves many essential terms and conditions that have not yet been agreed upon, and it is expressly contemplated by the Parties that, in order to effectuate the proposed transfer, binding agreements will have to be negotiated,

agreed to by the Parties and submitted for approval to the OID Board of Directors and the Brisbane City Council; and

*WHEREAS*, this Term Sheet is intended to memorialize the preliminary terms that have been negotiated among the Parties, and to inform the public regarding the goals and principles identified by OID that will guide the proposal to transfer water to Brisbane throughout the public review process; and

*WHEREAS*, the terms set forth in this Term Sheet are the Parties' preliminary concepts that may be included in a final water transfer agreement. They are not intended, nor should they be considered as, binding on the Parties; and

*WHEREAS*, the Parties reserve their complete and sole discretion to evaluate and determine project impacts, alternatives and mitigation measures including, but not limited to, the ability to choose the "No Project" alternative, under CEQA; and

*WHEREAS*, by entering into this Term Sheet, the Parties do not intend to make an irretrievable commitment of resources or to commit to any course of action prior to completion of all appropriate environmental review and all necessary prior agreements.

NOW, THEREFORE, the Parties, on the terms and conditions herein set forth, recognize the following as the framework for their negotiations:

## **TERMS**

### **1. DEFINITIONS:**

The following definitions shall govern this Term Sheet:

(a) "Delivery" means that the water is to be made available to Brisbane on an annual basis pursuant to an agreed upon schedule at a designated point(s) of delivery. The points of delivery can be Goodwin Dam or any lateral or canal at OID's boundary. It is the responsibility of Brisbane to develop an exchange of water between OID, MID and CCSF, and to develop a wheeling agreement with the CCSF, so that OID's transfer water can be delivered to the CCSF water system intake. If no exchange and/or wheeling agreements are entered into between OID, MID, CCSF, and Brisbane, as necessary, at Brisbane's option, the Delivery may be made pursuant to an alternative arrangement between OID and Brisbane that utilizes the CCSF system, the State Water Project and/or Central Valley Project facilities, or through another means of transfer. This definition is intended to include the grammatical variations of the term "delivery" including "deliver" and "delivered," where such term references water.

(b) "Transfer Water" shall mean and refer to the water transferred by OID to Brisbane under the terms and conditions of the final Water Transfer Agreement.

(c) "Water Transfer Agreement" or "the Agreement" means the final water transfer agreement executed by OID and Brisbane for the transfer of water by OID to Brisbane.

**2. TERM:**

The Parties expect a term for the Water Transfer Agreement of fifty (50) years from the effective date of the Agreement. The Parties also expect to permit renewals of the Water Transfer Agreement of twenty-five (25) years. Brisbane may terminate the Agreement on two (2) years prior notice at any time after five (5) years from the effective date.

**3. THE WATER TRANSFER:**

Brisbane will have an option under the Water Transfer Agreement to reserve or purchase for Transfer Water and may exercise the option at its discretion. If Brisbane does exercise its option, OID will annually sell and deliver Transfer Water for reasonable and beneficial uses, as those terms are generally defined by the California State Water Resources Control Board. The Parties intend that the Transfer Water will be used within the political boundaries of Brisbane, except that Brisbane may sell, lease, transfer, or assign the water for use outside its boundaries within the Hetch Hetchy water service area.

**4. QUANTITY:**

OID will make available for transfer up to a maximum of 2,400 acre-feet of water to Brisbane beginning on the effective date of the Water Transfer Agreement. For the first five (5) years following the execution of the Agreement, Brisbane shall provide OID with a delivery schedule that will identify the minimum quantity of water that OID shall deliver to Brisbane for the following year. During this five (5) year period, Brisbane can take delivery of as much or as little water as it determines necessary in the annual delivery schedule, subject to the 2,400 AF maximum.

On or before January 1 of the sixth year following the effective date of the Agreement, Brisbane must notify OID in writing how much water it will be acquiring by transfer during the remainder of the term of the Agreement. Brisbane does not need to take delivery of this quantity in each year of the term, but must pay for the identified quantity of water regardless of whether or not the full quantity is taken. The quantity identified by Brisbane shall not exceed 2,400 acre-feet.

**5. RESERVATION AND PURCHASE PRICE:**

Brisbane will pay the following amounts:

(a) **Reservation Price.** For the first five (5) years following the execution of the Water Transfer Agreement, Brisbane shall pay OID the sum of \$500 per acre foot for which delivery was taken and \$100 per acre foot derived by 2,400 minus the acre-feet taken.

(b) **Purchase Price.** Beginning in year six (6) following the execution of the Water Transfer Agreement, and for each year thereafter remaining in the term of the Agreement, Brisbane shall pay to OID \$500 per acre foot of water. Such price shall apply to the quantity identified by Brisbane in writing on or before January 1 of the sixth year, and will be paid to OID regardless of the quantity of water actually taken by Brisbane in any particular year.



**6. ANNUAL CHANGES TO PURCHASE PRICE:**

(a) The purchase price in year six (6) shall be adjusted based on changes to the Consumer Price Index as shown as the urban wage earners and clerical workers, U.S. City average (CPI-W)(“Index”) for the twelve-month period concluding with the August CPI index of each preceding year. Effective October 1 of each year, following the initial delivery of water, the base purchase price shall be modified based upon the same percentage that the Index as published in August of such year has changed, as compared to the Index published in August of the preceding year, provided, however, that the increase shall be no less than two percent (2%) and shall not exceed four percent (4%) in any year.

(b) If the Index is discontinued or revised during the term, such other index or computation with which it is replaced shall be used in order to obtain substantially the same result as would be obtained if the Index had not been discontinued or revised, and in the absence of such a comparable replacement index, the Parties shall mutually determine a comparable replacement index.

(c) The provisions of this Section 6 shall apply only to water actually purchased by Brisbane. The provisions of this Section 6 shall not apply to the \$100 reservation price as set forth in Section 5(a).

**7. WHEELING AGREEMENT:**

The Agreement is contingent upon an agreement with CCSF that provides for the wheeling of water on an annual basis pursuant to an agreed-upon schedule that permits Brisbane to acquire and use the water transferred by OID.

**8. EXCHANGE AGREEMENT:**

The Agreement is contingent upon an agreement between OID and Modesto ID, and between Modesto ID and CCSF for the exchange of water. Any costs, approvals or permits associated with the exchange agreement will be borne or obtained by OID. OID staff will cooperate with Brisbane in the development, negotiation and preparation of an exchange agreement to be presented to Modesto ID and to CCSF for consideration and possible approval. Notwithstanding such cooperation, OID retains the sole right to reject any such exchange agreement between OID and Modesto ID.

**9. DEVELOPER FUNDING AGREEMENT:**

The future Water Transfer Agreement is contingent upon an agreement between Baylands Project developer and Brisbane for developer to fully fund the development of all agreements and associated costs and for the delivery of Transfer Water to the Baylands (“the Developer Funding Agreement”). Within the Developer Funding Agreement, the developer will commit to sustainability by agreeing to build a recycled water system sized for irrigation and building plumbing demands for the final approved Baylands Project. Brisbane retains the sole right to negotiate and approve the Developer Funding Agreement. The Developer Funding Agreement will include, but not be limited to, an assumption by the developer of responsibility for payment of all costs imposed upon Brisbane for reservation and delivery of water for the Baylands

Project, referred to in Sections 4 and 5, all costs arising from the Wheeling Agreement and Exchange Agreement for water delivered to the Baylands, referred to in Sections 7 and 8, and all costs for the environmental reviews referred to in Section 13.

**10. WATER QUALITY:**

OID will not warranty the quality or fitness for use of Transfer Water.

**11. WATER SUPPLY REDUCTIONS:**

Water transferred to Brisbane will not be reduced on an annual basis by OID for any reason, unless by mutual agreement of the Parties.

**12. WATER RIGHTS:**

OID will transfer water that is not subject to the permitting jurisdiction of the State Water Resources Control Board (SWRCB).

**13. ENVIRONMENTAL REVIEW:**

Brisbane will be the lead agency for purposes of the California Environmental Quality Act (CEQA) with respect to the transfer of water from OID to Brisbane. Brisbane is also undertaking CEQA review of its local development and water supply analysis, including growth inducing impacts and its receipt of water from OID. The expenses of environmental review and approval for both OID and Brisbane will be paid entirely by Brisbane with funds to be provided by the developer of the Baylands Project pursuant to the Developer Funding Agreement referred to in Section 9.

**14. NO IRRETRIEVABLE COMMITMENT OF RESOURCES:**

By agreeing to this Term Sheet, neither Party is agreeing to commit any resources that could result in an environmental impact. It is a condition to the obligations of the Parties that environmental review be completed prior to entering into any binding agreement regarding the transfer of water from OID to Brisbane and the obligation of Brisbane to pay for Transfer Water.

Following completion of the above-referenced CEQA document and any supplements thereto, unless OID selects the "No Project" alternative (in which case no Water Transfer Agreement will be negotiated), and execution of the Developer Funding Agreement referred to in Section 9, OID will negotiate in good faith with Brisbane to develop a Water Transfer Agreement acceptable to both Parties, which Agreement will be consistent with the above-referenced CEQA documents. OID and Brisbane each expressly retain its discretion with respect to whether it will enter into a Water Transfer Agreement, and on what terms, as well as its discretion to consider any and all alternatives, including the "No Project" alternative, and any and all mitigation measures indentified in the above-referenced CEQA process.

**15. COOPERATION:**

To the extent reasonably required, each Party shall, in good faith, assist the other in developing the information and agreements necessary to develop and enter into a Water Transfer Agreement, as well as obtaining all necessary approvals and preparation of required environmental documents.

**16. RESALE, LEASE OR ASSIGN:**

Brisbane will be entitled to resell, lease, transfer, or assign the Transfer Water. However, any such resale, lease, transfer or assignment shall only be to water entities within the Hetch Hetchy water service area.

**17. ADDITIONAL ITEMS TO BE DISCUSSED, NEGOTIATED AND RESOLVED**

The Parties anticipate that terms addressing several additional topics will be needed including, but not limited to:

- (a) Additional acts
- (b) Force Majeure
- (c) Assignment
- (d) Third Party Beneficiaries
- (e) Default, Cure and Remedies
- (f) Attorneys Fees
- (g) Notices
- (h) Miscellaneous Provisions
- (i) Applicable Law and Forum

**18. NOTICES:**

All notices that are required, either expressly or by implication, to be given by any Party to the other will be signed for by OID and Brisbane by such officers as they may, from time to time, authorize in writing to so act.

Any notices to Parties required by this Agreement shall be emailed, delivered or mailed, United States first-class postage prepaid or by private mail courier, e.g. FedEx, addressed as follows:

OAKDALE IRRIGATION DISTRICT  
Attn: Steve Knell  
General Manager  
Oakdale Irrigation District  
1205 E F Street,  
Oakdale, CA 95361-4198

CITY OF BRISBANE  
Attn: Clay Holstine

City Manager  
50 Park Place  
Brisbane, CA 94005

With copy to:  
Randy Breault  
Director of Public Works/City Engineer  
50 Park Place  
Brisbane, CA 94005

And:  
Brisbane City Attorney  
50 Park Place  
Brisbane, CA 94005

Notice shall be deemed given (a) two business days following mailing via regular or certified mail, return receipt requested, (b) one business day after deposit with any one-day delivery service assuring "next day" delivery, or (c) upon actual receipt of notice, whichever is earlier. The Parties shall promptly give written notice to each other of any change of address, and mailing or shipment to the addresses stated herein shall be deemed sufficient unless written notification of a change of address has been received.

**19. MEDIATION:**

In the event of a dispute between the Parties as to any right, alleged right, obligation or alleged obligation under this Term Sheet, the Parties shall make a good faith effort to resolve the dispute by nonbinding mediation prior to the commencement of any lawsuit by one party against the other.

**20. EFFECTIVE DATE:**

The effective day and date of this Term Sheet shall be the day and date on which this Term Sheet is executed by both parties.

The Parties hereby re-confirm that neither the Water Transfer Agreement, nor the proposed water transfer, can proceed unless and until the Parties have negotiated, executed and delivered mutually acceptable agreements based upon information produced from the CEQA environmental review process and on other public review and hearing processes, and subject to all applicable governmental approvals and execution of the Developer Funding Agreement by Brisbane and the developer of the Baylands Project. The Parties intend by this Term Sheet to inform and focus the work necessary to develop and review a proposed water transfer, not to pre-determine whether or not that proposed water transfer shall be done or, if so, under what conditions.

By signing below, the Parties evidence their general agreement with the provisions of this Term Sheet and agree to use this Term Sheet as the framework for the good faith negotiations of


binding definitive agreements. Any agreements resulting from negotiations will become effective only if and after such agreement has been considered and approved by the OID Board of Directors and the Brisbane City Council following conduct of all legally required procedures.

Nothing contained in this Term Sheet or in the Water Transfer Agreement shall control or regulate Brisbane's determination and approval of land uses to be included as part of the Baylands Project.

With the above understandings and agreements the Parties hereto do execute this Term Sheet.

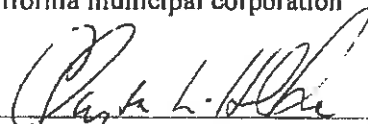
OAKDALE IRRIGATION DISTRICT,  
a political subdivision of the State of California

Dated: 10/2/12

By:   
Steve Knell, General Manager

CITY OF BRISBANE,  
a California municipal corporation

Dated: 10/15/12

By:   
Clayton L. Holstine, City Manager

Approved as to form:

  
Harold S. Toppel, City Attorney



## Appendix G

### CPP and CPP-V Water Demand Calculations

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**Table 3a**  
**Calculation of Water Demand - Assuming Water Savings Program D**  
**DSP Scenario**

Proposed Non-Residential Development	DSP	Summer Demand	Winter Demand	Summer Demand	Winter Demand
	square feet (units)	Water Demand (gpd)		Water Use (gpd) per Sq Ft or Unit	
<b>Mixed Commercial / Office / Retail</b>	<b>566,300</b>	<b>21,020</b>	<b>21,020</b>	<b>0.0371</b>	<b>0.0371</b>
<b>Office / Institutional</b>	<b>2,790,200</b>	<b>147,610</b>	<b>147,610</b>	<b>0.05</b>	<b>0.05</b>
<b>Research &amp; Development</b>	<b>3,328,300</b>	<b>331,670</b>	<b>331,670</b>	<b>0.10</b>	<b>0.10</b>
Office	2,496,225	132,060	132,060	0.05	0.05
Lab	832,075	199,610	199,610	0.24	0.24
<b>Industrial / Warehousing</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Entertainment / Cultural</b>					
Arena	0	0	0	0	0
Theater	0	0	0	0	0
Multiplex	0	0	0	0	0
<b>Conference / Exhibition</b>	<b>21,300</b>	<b>12,470</b>	<b>12,470</b>	<b>0.59</b>	<b>0.59</b>
<b>Hotel / Extended Stay</b>	<b>239,800</b>	<b>54,300</b>	<b>54,300</b>	<b>0.23</b>	<b>0.23</b>
	(369 rooms)				
185 units	2bd	18,130	18,130	98.00	98.00
184 units	3bd	36,170	36,170	196.58	196.58
<b>Public / Civic / Cultural</b>	<b>28,200</b>	Incorporated into Office/Institutional			
<b>Resource Recovery</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments	<b>4,351,800</b>	<b>649,190</b>	<b>649,190</b>	<b>0.15</b>	<b>0.15</b>
1 bd	1,580	152,750	152,750	96.68	96.68
2 bd	1,975	381,880	381,880	193.36	193.36
3 bd	395	114,560	114,560	290.03	290.03
Residential Townhomes	<b>798,600</b>	<b>116,980</b>	<b>116,980</b>	<b>0.15</b>	<b>0.15</b>
2bd	242	46,790	46,790	193.35	193.35
3bd	242	70,190	70,190	290.04	290.04
<b>Irrigation (acres)</b>	<b>196.6</b>	<b>304,410</b>	<b>0</b>	<b>1,548.37</b>	<b>0.00</b>
<b>Total</b>		<b>1,637,650</b>	<b>1,333,240</b>		
<b>Sewer Demand (95% of Water Demand)</b>		<b>1,555,768</b>	<b>1,266,578</b>		

Source: Brown and Caldwell, 2011.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	1,637,650	228	373,384,200	1,146
Dec - Mar	Winter	1,333,240	137	182,653,880	561

1,706

**Table 3b**  
**Calculation of Water Demand - Assuming Water Savings Program D**  
**DSP-V Scenario**

	DSP-V	Summer Demand	Winter Demand	Summer Demand	Winter Demand
Proposed Non-Residential Development	square feet (units)	Water Demand		Water Use (gpd) per Sq Ft or Unit	
Mixed Commercial / Office / Retail	283,400	10,520	10,520	0.0371	0.0371
Office / Institutional and Public/Civic/Cultural	2,391,300	126,510	126,510	0.05	0.05
Research & Development	2,599,200	259,020	259,020	0.10	0.10
Office	1,949,400	103,130	103,130	0.05	0.05
Lab	649,800	155,890	155,890	0.24	0.24
Industrial / Warehousing	0	0	0	0	0
Entertainment / Cultural	1,038,300	73,550	73,550	0.07	0.07
Arena	630,100	52,670	52,670	0.08	0.08
Theater	337,200	17,290	17,290	0.05	0.05
Multiplex	71,000	3,590	3,590	0.05	0.05
Conference / Exhibition	73,500	44,550	44,550	0.61	0.61
Hotel / Extended Stay	513,300	105,860	105,860	0.21	0.21
	(719 rooms)				
360		35,280	35,280	98.00	98.00
359		70,580	70,580	196.60	196.60
Public / Civic / Cultural	28,200	Incorporated into Office/Institutional			
Resource Recovery	0	0	0	0	0
Proposed Residential Development	square feet (units)				
Residential Condos / Apartments	4,351,800	649,190	649,190	0.15	0.15
	(3,950 units)				
1 bd	1580	152,750	152,750	96.68	96.68
2 bd	1975	381,880	381,880	193.36	193.36
3 bd	395	114,560	114,560	290.03	290.03
Residential Townhomes	798,600	116,980	116,980	0.15	0.15
	(484 units)				
2bd	242	46,790	46,790	193.35	193.35
3bd	242	70,190	70,190	290.04	290.04
Irrigation (acres)	196.6	304,410	0	1,548.37	0.00
<b>Total</b>	<b>12,077,600</b>	<b>1,690,590</b>	<b>1,386,180</b>		
<b>Sewer Demand</b>		<b>1,606,061</b>	<b>1,316,871</b>		

Source: Brown and Caldwell, 2011.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	1,690,590	228	385,454,520	1,183
Dec - Mar	Winter	1,386,180	137	189,906,660	583

**1,766**

**Table 3c**  
**Calculation of Water Demand - Assuming Water Savings Program D**  
**CPP Scenario**

Proposed Non-Residential Development	CPP	Summer Demand	Winter Demand	Summer Demand	Winter Demand
	square feet (units)	Water Use (gpd) per Sq Ft		Water Demand (gpd)	
Mixed Commercial / Office / Retail	2,209,500	0.0371	0.0371	82,018	82,018
Office / Institutional/ Public/Civic/Cultural	1,181,400	0.053	0.053	62,501	62,501
Research & Development	2,007,000	0.100	0.100	200,005	200,005
Office	0	0	0	0	0
Lab	0	0	0	0	0
Industrial / Warehousing	366,400	0.037	0.037	13,601	13,601
Entertainment / Cultural	611,300	0.071	0.071	43,303	43,303
Arena	0	0	0	0	0
Theater	0	0	0	0	0
Multiplex	0	0	0	0	0
Conference / Exhibition	274,500	0.606	0.606	166,381	166,381
Hotel / Extended Stay	1,392,300 (1,990 rooms)	0.226	0.226	315,271	315,271
Public / Civic / Cultural	Incorporated into Office/Institutional				
Resource Recovery	0	0	0	0	0
Proposed Residential Development	square feet (units)				
Residential Condos / Apartments	-				
1 bd					
2 bd					
3 bd					
Residential Townhomes	-				
2bd					
3bd					
Irrigation (acres)	330.0	1,548	0	510,963	0
<b>Total</b>	<b>8,042,400</b>			<b>1,394,042</b>	<b>883,079</b>
<b>Sewer Demand (95% of Water Demand)</b>				<b>1,324,340</b>	<b>838,925</b>

Source: Water Demands based on rates developed by Brown and Caldwell, 2011 for DSP and DSP-V. When rates differed, the higher rate was used.  
Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	1,394,042	228	317,841,583	975
Dec - Mar	Winter	883,079	137	120,981,845	371
				1,347	AF/YR



**Table 3d**  
**Calculation of Water Demand - Assuming Water Savings Program D**  
**CPP-V Scenario**

<b>Proposed Non-Residential Development</b>	<b>CPP-V</b>	<b>Summer Demand</b>	<b>Winter Demand</b>	<b>Summer Demand</b>	<b>Winter Demand</b>
	<b>square feet (units)</b>	<b>Water Use (gpd) per Sq Ft</b>		<b>Water Demand (gpd)</b>	
<b>Mixed Commercial / Office / Retail</b>	<b>2,209,500</b>	<b>0.0371</b>	<b>0.0371</b>	<b>82,018</b>	<b>82,018</b>
<b>Office / Institutional/Public/Civic/Cultural</b>	<b>1,181,400</b>	<b>0.05</b>	<b>0.05</b>	<b>62,501</b>	<b>62,501</b>
<b>Research &amp; Development</b>	<b>1,672,200</b>	<b>0.10</b>	<b>0.10</b>	<b>166,641</b>	<b>166,641</b>
Office	0	0.00	0.00	0	0
Lab	0	0.00	0.00	0	0
				0	0
<b>Industrial / Warehousing</b>	<b>366,400</b>	<b>0.0371</b>	<b>0.0371</b>	<b>13,601</b>	<b>13,601</b>
<b>Entertainment / Cultural</b>	<b>611,300</b>	<b>0.0708</b>	<b>0.0708</b>	<b>43,303</b>	<b>43,303</b>
Arena	0	0.0000	0.0000	0	0
Theater	0	0.0000	0.0000	0	0
Multiplex	0	0.0000	0.0000	0	0
<b>Conference / Exhibition</b>	<b>274,500</b>	<b>1</b>	<b>1</b>	<b>166,381</b>	<b>166,381</b>
<b>Hotel / Extended Stay</b>	<b>1,046,100</b>	<b>0</b>	<b>0</b>	<b>236,878</b>	<b>236,878</b>
	(1,500 rooms)				
Public / Civic / Cultural		Incorporated into Office/Insitutional			
Resource Recovery	752000	0	0	0	0
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments	-				
1 bd					
2 bd					
3 bd					
Residential Townhomes	-				
2bd					
3bd					
<b>Irrigation (acres)</b>	<b>330.0</b>	<b>1,548</b>	<b>0</b>	<b>510,963</b>	<b>0</b>
<b>Total</b>	<b>8,113,400</b>			<b>1,282,285</b>	<b>771,322</b>
<b>Sewer Demand (95% of Water Demand)</b>				<b>1,218,171</b>	<b>732,756</b>

Source: Water Demands based on rates developed by Brown and Caldwell, 2011 for DSP and DSP-V. When rates differed, the higher rate was used.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	1,282,285	228	292,360,952	897
Dec - Mar	Winter	771,322	137	105,671,115	324
					<b>1,222</b>

**Table 4a**  
**Calculation of Water Demand - Assuming Water Savings Program E**  
**DSP Scenario**

	DSP	Summer Demand	Winter Demand	Summer Demand	Winter Demand
<b>Proposed Non-Residential Development</b>	<b>square feet (units)</b>	<b>Water Demand (gpd)</b>		<b>Water Use (gpd) per Sq Ft or Unit</b>	
Mixed Commercial / Office / Retail	566,300	7,160	7,160	0.0126	0.0126
Office / Institutional	2,790,200	50,300	50,300	0.02	0.02
Research & Development	3,328,300	244,610	244,610	0.07	0.07
Office	2,496,225	45,000	45,000	0.02	0.02
Lab	832,075	199,610	199,610	0.24	0.24
Industrial / Warehousing	0	0	0	0	0
Entertainment / Cultural					
Arena	0	0	0	0	0
Theater	0	0	0	0	0
Multiplex	0	0	0	0	0
Conference / Exhibition	21,300	4,250	4,250	0.20	0.20
Hotel / Extended Stay	239,800	54,060	54,060	0.23	0.23
	(369 rooms)				
185 units	2bd	18,050	18,050	97.57	97.57
184 units	3bd	36,010	36,010	195.71	195.71
Public / Civic / Cultural	28,200	Incorporated into Office/Institutional			
Resource Recovery	0	0	0	0	0
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments	4,351,800	504,170	504,170	0.12	0.12
1 bd	1,580	118,630	118,630	75.08	75.08
2 bd	1,975	296,570	296,570	150.16	150.16
3 bd	395	88,970	88,970	225.24	225.24
Residential Townhomes	798,600	90,850	90,850	0.11	0.11
2bd	242	36,340	36,340	150.17	150.17
3bd	242	54,510	54,510	225.25	225.25
Irrigation (acres)	196.6	0	0	0.00	0.00
<b>Total Water Demand</b>		<b>955,400</b>	<b>955,400</b>		
<b>Sewer Demand (95% of Water Demand)</b>		<b>907,630</b>	<b>907,630</b>		

Source: Brown and Caldwell, 2011.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	955,400	228	217,831,200	668
Dec - Mar	Winter	955,400	137	130,889,800	402
					<b>1,070</b>

**Table 4b**  
**Calculation of Water Demand - Assuming Water Savings Program E**  
**DSP-V Scenario**

	DSP-V	Summer Demand	Winter Demand	Summer Demand	Winter Demand
<b>Proposed Non-Residential Development</b>	<b>square feet (units)</b>	<b>Water Demand</b>		<b>Water Use (gpd) per Sq Ft or Unit</b>	
<b>Mixed Commercial / Office / Retail</b>	<b>283,400</b>	<b>3,590</b>	<b>3,590</b>	<b>0.0127</b>	<b>0.0127</b>
<b>Office / Institutional and Public/Civic/Cultural</b>	<b>2,391,300</b>	<b>43,110</b>	<b>43,110</b>	<b>0.02</b>	<b>0.02</b>
<b>Research &amp; Development</b>	<b>2,599,200</b>	<b>191,030</b>	<b>191,030</b>	<b>0.07</b>	<b>0.07</b>
Office	1,949,400	35,140	35,140	0.02	0.02
Lab	649,800	155,890	155,890	0.24	0.24
<b>Industrial / Warehousing</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Entertainment / Cultural</b>	<b>1,038,300</b>	<b>26,430</b>	<b>26,430</b>	<b>0.03</b>	<b>0.03</b>
Arena	630,100	19,230	19,230	0.03	0.03
Theater	337,200	5,890	5,890	0.02	0.02
Multiplex	71,000	1,310	1,310	0.02	0.02
<b>Conference / Exhibition</b>	<b>73,500</b>	<b>15,180</b>	<b>15,180</b>	<b>0.21</b>	<b>0.21</b>
<b>Hotel / Extended Stay</b>	<b>513,300</b>	<b>105,390</b>	<b>105,390</b>	<b>0.21</b>	<b>0.21</b>
	(719 rooms)				
360		35,120	35,120	97.56	97.56
359		70,270	70,270	195.74	195.74
<b>Public / Civic / Cultural</b>	<b>28,200</b>	Incorporated into Office/Institutional			
<b>Resource Recovery</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments	<b>4,351,800</b>	<b>504,170</b>	<b>504,170</b>	<b>0.12</b>	<b>0.12</b>
	(3,950 units)				
1 bd	1580	118,630	118,630	75.08	75.08
2 bd	1975	296,570	296,570	150.16	150.16
3 bd	395	88,970	88,970	225.24	225.24
Residential Townhomes	<b>798,600</b>	<b>90,850</b>	<b>90,850</b>	<b>0.11</b>	<b>0.11</b>
	(484 units)				
2bd	242	36,340	36,340	150.17	150.17
3bd	242	54,510	54,510	225.25	225.25
<b>Irrigation (acres)</b>	<b>196.6</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Water Demand</b>		<b>979,750</b>	<b>979,750</b>		
<b>Sewer Demand (95% of Water Demand)</b>		<b>930,763</b>	<b>930,763</b>		

Source: Brown and Caldwell, 2011.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	979,750	228	223,383,000	686
Dec - Mar	Winter	979,750	137	134,225,750	412
					<b>1,097</b>

**Table 4c**  
**Calculation of Water Demand - Assuming Water Savings Program E**  
**CPP Scenario**

	CPP	Summer Demand	Winter Demand	Summer Demand	Winter Demand
<b>Proposed Non-Residential Development</b>	<b>square feet (units)</b>	<b>Water Use (gpd) per Sq Ft</b>		<b>Water Demand (gpd)</b>	
Mixed Commercial / Office / Retail	2,209,500	0.0127	0.0127	27,989	27,989
Office / Institutional/ Public/Civic/Cultural	1,181,400	0.02	0.02	21,298	21,298
Research & Development	2,007,000	0.07	0.07	147,506	147,506
Office	0	0	0	0	0
Lab	0	0	0	0	0
Industrial / Warehousing	366,400	0.0127	0.0127	4,641	4,641
Entertainment / Cultural	611,300	0.03	0.03	15,561	15,561
Arena	0	0	0	0	0
Theater	0	0	0	0	0
Multiplex	0	0	0	0	0
Conference / Exhibition	274,500	0.21	0.21	56,693	56,693
Hotel / Extended Stay	1,392,300 (1,990 rooms)	0.23	0.23	313,877	313,877
Public / Civic / Cultural		Incorporated into Office/Institutional			
Resource Recovery	0	0	0	0	0
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments	-				
1 bd					
2 bd					
3 bd					
Residential Townhomes	-				
2bd					
3bd					
Irrigation (acres)	330	0.00	0.00	0	0.00
<b>Total Water Demand</b>	<b>8,042,400</b>			<b>587,565</b>	<b>587,565</b>
<b>Sewer Demand (95% of Water Demand)</b>				<b>558,187</b>	<b>558,187</b>

Source: Water Demands based on rates developed by Brown and Caldwell, 2011 for DSP and DSP-V. When rates differed, the higher rate was used.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	587,565	228	133,964,802	411
Dec - Mar	Winter	587,565	137	80,496,394	247

**Table 4d**  
**Calculation of Water Demand - Assuming Water Savings Program E**  
**CPP-V Scenario**

	CPP-V	Summer Demand	Winter Demand	Summer Demand	Winter Demand
<b>Proposed Non-Residential Development</b>	<b>square feet (units)</b>	<b>Water Use (gpd) per Sq Ft</b>		<b>Water Demand (gpd)</b>	
Mixed Commercial / Office / Retail	2,209,500	0.0127	0.0127	27,989	27,989
Office / Institutional/Public/Civic/Cultural	1,181,400	0.02	0.02	21,298	21,298
Research & Development	1,672,200	0.07	0.07	122,899	122,899
Office	0	0	0	0	0
Lab	0	0	0	0	0
Industrial / Warehousing	366,400	0.01	0.01	4,641	4,641
Entertainment / Cultural	611,300	0.03	0.03	15,561	15,561
Arena	0	0	0	0	0
Theater	0	0	0	0	0
Multiplex	0	0	0	0	0
Conference / Exhibition	274,500	0.21	0.21	56,693	56,693
Hotel / Extended Stay	1,046,100 (1,500 rooms)	0.23	0.23	235,831	235,831
Public / Civic / Cultural		Incorporated into Office/Insitutional			
Resource Recovery	752,000	No demand - assumed to re-use all water			
<b>Proposed Residential Development</b>	<b>square feet (units)</b>				
Residential Condos / Apartments					
1 bd					
2 bd					
3 bd					
Residential Townhomes					
2bd					
3bd					
Irrigation (acres)	330	0.00	0.00	0	0
<b>Total Water Demand</b>	<b>8,113,400</b>			<b>484,912</b>	<b>484,912</b>
<b>Sewer Demand (95% of Water Demand)</b>				<b>460,666</b>	<b>460,666</b>

Source: Water Demands based on rates developed by Brown and Caldwell, 2011 for DSP and DSP-V. When rates differed, the higher rate was used.

Notes: gpd = gallons per day

**Summary**

		<u>Annual Demand</u>	<u>Days</u>	<u>Gallons Per Yr</u>	<u>Acre Feet Per Yr</u>
Apr - Nov	Summer	484,912	228	110,559,931	339
Dec - Mar	Winter	484,912	137	66,432,941	204

## Appendix H

# 2010 Urban Water Management Plan for the City and County of San Francisco



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# 2010 Urban Water Management Plan for the City and County of San Francisco

Prepared by: The San Francisco Public Utilities Commission  
June 2011



San Francisco  
**Water Power Sewer**

Services of the San Francisco Public Utilities Commission

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# 2010 Urban Water Management Plan for the City and County of San Francisco

Prepared by: The San Francisco Public Utilities Commission  
June 2011



San Francisco  
**Water**  
**Power**  
**Sewer**

Services of the San Francisco Public Utilities Commission

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# CONTACT SHEET



San Francisco  
**Water**  
**Power**  
**Sewer**

Services of the San Francisco Public Utilities Commission

## 2010 Urban Water Management Plan For the City and County of San Francisco

San Francisco Public Utilities Commission (SFPUC)

**Date plan submitted to the Department of Water Resources:** June 22, 2011

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**The Water supplier is:** San Francisco Public Utilities Commission

**The Water supplier is a:** Wholesale and retail supplier

**Utility services provided by the water supplier include:**

Surface Water, Groundwater, and Recycled Water

**Is This Agency a Bureau of Reclamation Contractor?** No

**Is This Agency a State Water Project Contractor?** No



## ABBREVIATIONS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
Act	California Urban Water Management Planning Act
ACWD	Alameda County Water District
AMI	Area Median Income
BACWA	Bay Area Clean Water Agencies
BAWSCA	Bay Area Water Supply and Conservation Agency
BDPL	Bay Division Pipeline
bg	billion gallons
BMP	Best Management Practice
CAP	Community Assistance Program
CCF	hundred cubic feet (volume of water, equivalent to 748 gallons)
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
City	City and County of San Francisco
CUWCC	California Urban Water Conservation Council
DHS	State of California Department of Health Services
DMMs	demand management measures
DSOD	Division of Safety of Dams
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
EOP	Emergency Operations Plan
ERRP	Emergency Response and Recovery Plan
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FY	fiscal year
GED	gallons per employee-day
gpcd	gallons per capita per day
gpf	gallons per flush
gpm	gallons per minute
HECW	high-efficiency clothes washing
HET	high-efficiency toilet
HTWTP	Harry Tracy Water Treatment Plant

IRWMP	Bay Area Integrated Regional Water Management Plan
ISA	interim supply allocation
ISG	individual supply guarantee
IWSAP	Interim Water Shortage Allocation Plan
mgd	million gallons per day (flow or usage rate of water)
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
NSMCSD	North San Mateo County Sanitation District
PEIR	Program Environmental Impact Report
PG&E	Pacific Gas and Electric Company
PUMA	Piloting Utility Modeling Applications for Climate Change
RISA	Regional Integrated Sciences and Assessment
RWMP	Recycled Water Master Plan
RWS	Regional Water System
RWSAP	Retail Water Shortage Allocation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SCVWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
SIC	Standard Industrial Classification
SWTP	Sunol Valley Water Treatment Plant
SWRCB	State Water Resources Control Board
TID	Turlock Irrigation District
ULFT	ultra-low-flush toilet
USEPA	U.S. Environmental Protection Agency
UV	ultraviolet
UWMP	Urban Water Management Plan
WPCP	water pollution control plant
WSA	Water Supply Agreement between SFPUC and its Wholesale Customers
WSAP	Water Shortage Allocation Plan
WSIP	Water System Improvement Program
WSMP	Water Supply Master Plan
Zone 7	Zone 7 Water Agency
°C.	degrees Celsius

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# PREFACE

Nearly 2.5 million people rely on water supplied by the San Francisco Public Utilities Commission (SFPUC) water system to meet their daily water needs. The Hetch Hetchy Regional Water System draws approximately 85% of its water from Hetch Hetchy Reservoir in the Upper Tuolumne River Watershed delivering water 167 miles by gravity through an aqueduct system to Bay Area reservoirs and customers. The remaining water supply is drawn from local surface waters in the Alameda and Peninsula watersheds.

The SFPUC has prepared this 2010 Urban Water Management Plan (UWMP) for the City and County of San Francisco in accordance with the requirements of the 1983 California Urban Water Management Planning Act (Act), California Water Code Division 6, Part 2.6, Sections 10610 through 10656, as amended. **Appendix A** contains a copy of the Act. The purpose of the Act is to assure that water suppliers plan for long-term reliability, conservation and efficient use of California's water supplies to meet existing and future demands.

The Act requires all urban water suppliers to prepare an UWMP every 5 years. The 2010 UWMPs are due to the California Department of Water Resources by July 1, 2011. As defined by Section 10617, an urban water supplier is a supplier (either publicly or privately owned) that provides water for municipal purposes to more than 3,000 customers (either directly or indirectly) or that supplies more than 3,000 acre-feet of water annually.

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# SECTION 1: PLAN PREPARATION

**This section summarizes the actions taken by the San Francisco Public Utilities Commission (SFPUC) to assure agency coordination and public participation throughout the development of this 2010 Urban Water Management Plan (UWMP) for the City and County of San Francisco (City).**

## 1.1 AGENCY COORDINATION

**Coordination with City Agencies:** The SFPUC coordinated with City agencies in developing elements of this 2010 UWMP and the documents referenced herein. The SFPUC consulted with the San Francisco Planning Department in developing growth projections. City agencies were notified regarding the SFPUC's intent to review the 2005 UWMP and prepare an updated 2010 UWMP. These City agencies received a copy of the draft 2010 UWMP and notification of the date and time of the public hearing, and comments received from the agencies on the proposed 2010 UWMP were reviewed and addressed, as appropriate. Documentation relating to these efforts and communications is provided in **Appendix B**.

**Regional Interagency Coordination:** The SFPUC coordinated with the Bay Area Water Supply and Conservation Agency (BAWSCA) on the development of this 2010 UWMP. BAWSCA is a public agency representing the wholesale agencies served by the SFPUC—i.e., Wholesale Customers of the SFPUC Regional Water System (RWS). Enabled by Assembly Bill (AB) 2058, BAWSCA was established on May 27, 2003 to represent the interests of 24 cities and water districts, as well as 2 private utilities in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the RWS.

At BAWSCA's request, the SFPUC provided water supply reliability information for distribution to all BAWSCA members. In addition, the SFPUC provided water supply reliability information directly to Cordilleras Mutual Water Company.

The SFPUC also worked with BAWSCA and the Wholesale Customers to obtain purchase projections through the year 2035. These projections are presented in **Table 17**.

In addition to coordinating with BAWSCA and its member agencies, the SFPUC also communicated with other Bay Area water agencies, including East Bay Municipal Utility District (EBMUD), Santa Clara Valley Water District (SCVWD), Contra Costa Water District (CCWD), and Zone 7 Water Agency (Zone 7).

All Wholesale Customers and other Bay Area water agencies also received mailings regarding the SFPUC's intent to review the 2005 UWMP and prepare a 2010 UWMP. The agencies also received instructions to download the draft 2010 UWMP and notification of the date and time of the public hearing on the draft document. Comments received were reviewed and addressed, as appropriate. Documentation of related communications and coordination efforts is on file with the SFPUC.



## 1.2 PUBLIC PARTICIPATION

The SFPUC has always actively encouraged public participation in its urban water management planning efforts. For the 2010 UWMP update, the following measures were taken:

- Notification of Intent to update the UWMP was mailed on March 11, 2011 to all cities and counties within which the SFPUC provides water, as well as to other interested parties. A list is provided in **Appendix B**.
- A public hearing was held on May 24, 2011 during an SFPUC Commission Meeting. A notice of the hearing was advertised as specified in California Government Code 6066. Additional noticing was printed in local community papers on May 9, 2011 and May 16, 2011 to reach a more diverse local population. Public comment on the draft 2010 UWMP was taken at the public hearing, as well as for a period prior to and after the hearing.
- Comments on the draft UWMP were also taken at the May 16, 2011 meeting of the Citizens Advisory Committee, which was publicly noticed on the SFPUC website.
- The draft 2010 UWMP was made available for review prior to the public hearing at the San Francisco Main Public Library and the main offices of the SFPUC. A copy was also posted online at [www.sfwater.org](http://www.sfwater.org).
- In addition to notification of the general public (i.e., general City Retail and Wholesale Customers), other measures were taken to inform large SFPUC Retail Customers, such as the San Francisco Jail, Lawrence Livermore National Laboratory, Treasure Island, Hunters Point Shipyard, and Groveland Community Services District. These large Retail Customers received mailings regarding the SFPUC's intent to review the 2005 UWMP and prepare an updated 2010 UWMP. They also received a copy of the draft 2010 UWMP and notification of the date and time of the public hearing on the draft document.
- An adoption hearing was held on June 14, 2011 during an SFPUC Commission meeting.

Documentation of the notification and outreach actions identified above is included in **Appendix B**.

### 1.3 PLAN ADOPTION, SUBMITTAL AND IMPLEMENTATION

The SFPUC prepared this 2010 UWMP update and presented it to the SFPUC Commission for adoption on June 14, 2011. Please refer to **Appendix C** for a copy of the SFPUC Resolution adopting this 2010 UWMP update.

Within 30 days of SFPUC Commission approval, the adopted 2010 UWMP was submitted to the California Department of Water Resources (DWR), and a copy was provided to the California State Library and to any city or county within which the SFPUC provides water. In addition, throughout this 30-day period, the SFPUC made this adopted 2010 UWMP available for public review during normal business hours. The SFPUC will implement this adopted 2010 UWMP in accordance with the California Urban Water Management Planning Act.

Following adoption of the 2005 UWMP, the SFPUC implemented water supply planning programs, such as recycled water and groundwater, identified in the UWMP. These programs were ultimately reflected in the adopted Water System Improvement Program (WSIP), which details project implementation schedules and budgets.

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# SECTION 2: SYSTEM DESCRIPTION

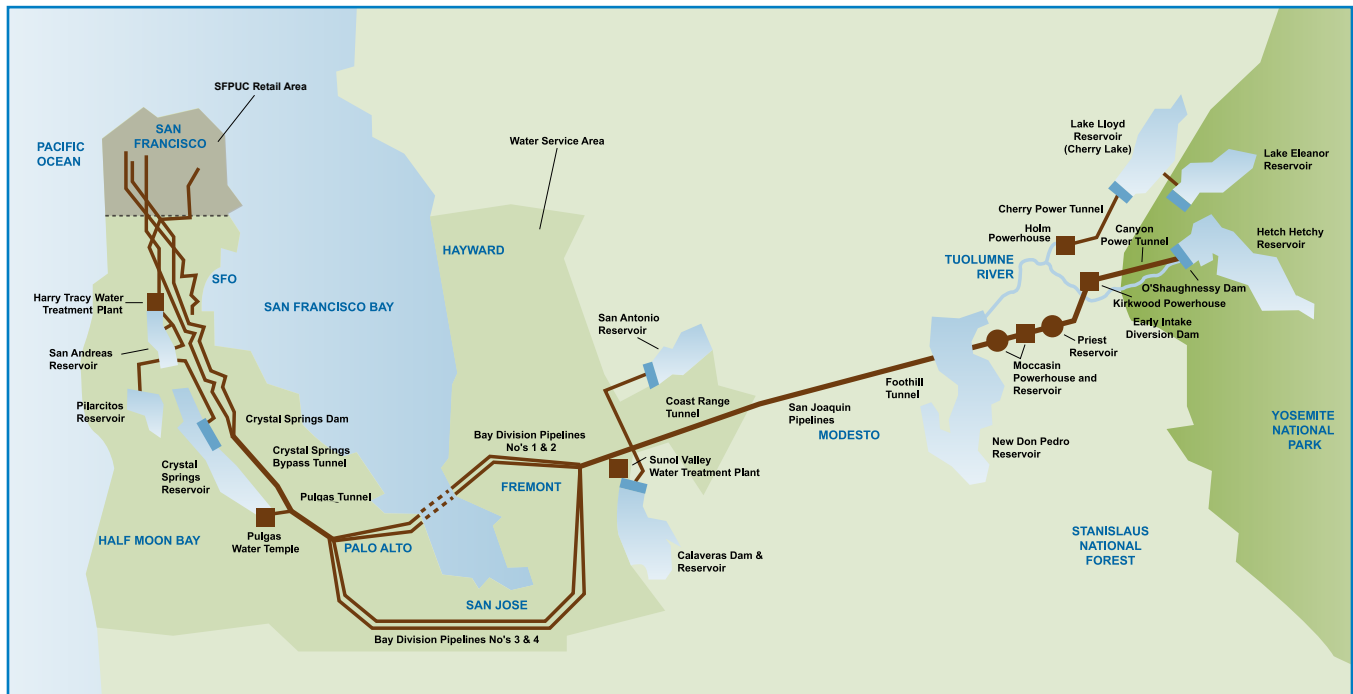
This section describes the SFPUC's water system (including the RWS and in-City distribution system), service area, climate, and demographic features.

## 2.1 SFPUC WATER SYSTEM OVERVIEW

Nearly 2.5 million people rely on water supplied by the SFPUC water system to meet their daily water needs. This water system (**Figure 1**) consists of over 280 miles of pipeline, over 60 miles of tunnels, 11 reservoirs, 5 pump stations, and 2 water treatment plants located outside the City (the RWS) and over 1,250 miles of pipeline, 12 reservoirs, 9 storage tanks, and 17 pump stations<sup>1</sup> located within the city limits (the in-City distribution system).

The RWS draws approximately 85% of its water from the Upper Tuolumne River Watershed, collected in Hetch Hetchy Reservoir in Yosemite National Park, feeding an aqueduct system, delivering water 167 miles by gravity to Bay Area reservoirs and customers. The remaining water supply is drawn from local surface waters in the Alameda and Peninsula watersheds.

**Figure 1: SFPUC Water System**



1 Does not include 3 pump stations on Treasure Island.

### **2.1.1. Historical Development of the RWS**

The RWS evolved through the development of two separate water systems: the Spring Valley Water Company and the Hetch Hetchy Project. The Springs Valley Water Company was established in 1858, developing a spring and several creeks into a local water system. It expanded over the years with the construction of Pilarcitos, San Andreas, and Upper and Lower Crystal Springs Dams on the Peninsula, and later with the development of the Pleasanton Well Field, the Sunol Filtration Galleries, and Calaveras Dam in Southern Alameda County.

Very early in San Francisco's development, it was recognized that the local water resources would be inadequate to support a burgeoning metropolis; thus, plans for importing water from the Sierra Nevada were born. In the late 1800s, the City's decision to develop its own water supply system culminated in the planning, financing, and construction of the Hetch Hetchy Project. Because many of the Hetch Hetchy Project facilities were to be located within Yosemite National Park, Congressional approval of the project was required. That approval was granted by the Raker Act of 1913.

The construction of the Hetch Hetchy Project began in earnest in 1914. After almost 20 years of construction (including building of Hetch Hetchy Reservoir and the 1930 acquisition of the Spring Valley Water Company by San Francisco), Tuolumne River water began flowing into the local distribution system. Through the operation of the two systems, the SFPUC has been able to provide the residents of the City and its neighboring communities with a supply of high-quality potable water from protected sources.

Since the 1930s, the major additions to the SFPUC's water system have included the raising of O'Shaughnessy Dam and the development of Lake Lloyd (Cherry Reservoir); the construction of additional pipelines across the San Joaquin Valley; and the local construction of San Antonio Reservoir in Alameda County and the Bay Division Pipelines 2, 3, and 4. Other local projects have included Crystal Springs Pipeline No. 3, Sunol Valley and San Andreas (now Harry Tracy) Filtration Plants, and the Crystal Springs Bypass Tunnel and Balancing Reservoir.

The RWS is geographically delineated between the Hetch Hetchy Project and the Bay Area water system facilities. The Hetch Hetchy Project is generally composed of the reservoirs, hydroelectric generation and transmission facilities, and water transmission facilities from the Hetch Hetchy Valley west to the Alameda East Portal of the Coast Range Tunnel in Sunol Valley. The local Bay Area water system generally consists of the facilities west of Alameda East Portal, and includes the Alameda and Peninsula watershed reservoirs, two water treatment plants and the distribution system that delivers water to the SFPUC's Retail and Wholesale Customers.

### **2.1.2. Water Distribution**

The subsections below provide details of the water distribution system of both the SFPUC RWS and the in-City distribution system.

**Regional Water System:** The RWS consists of more than 280 miles of pipeline and 60 miles of tunnels, 11 reservoirs, 5 pump stations, and 2 water treatment plants, and comprises three regional water supply and conveyance systems: the Hetch Hetchy System, the Alameda System, and the Peninsula System.

- **Hetch Hetchy System.** In the Hetch Hetchy System, water is diverted from Hetch Hetchy Reservoir into a series of tunnels and aqueducts from the Sierra Nevada to the San Joaquin Pipelines that cross the San Joaquin Valley to the Coast Range Tunnel, which connects to the Alameda system at the Alameda East Portal.
- **The Alameda System.** The Alameda System includes two reservoirs, San Antonio Reservoir and Calaveras Reservoir, which collect water from the upper Alameda and San Antonio Creek watersheds in Alameda County plus conveyance facilities connecting the Hetch Hetchy System and Alameda water sources to the Peninsula System. These conveyance facilities include pipelines known as the Alameda Creek Siphons that connect the Coast Range Tunnel to the Irvington Tunnel.

The Irvington Tunnel supplies the four Bay Division Pipelines (BDPLs) that cross the South Bay Area to the Peninsula System. BDPLs 1 and 2 cross the Bay near the Dumbarton Bridge; BDPLs 3 and 4 traverse the southerly edge of the Bay delivering water to SFPUC customers along the pipeline route. All four pipelines reconnect near the inlet to the Pulgas Tunnel on the Peninsula.

The Sunol Valley Water Treatment Plant (SVWTP) filters and disinfects water supplied from San Antonio and Calaveras Reservoirs.

Two turnouts from the South Bay Aqueduct (SBA) of the California State Water Project (SWP) can supply limited supplemental water to the SVWTP or San Antonio Reservoir. The SFPUC, however, currently does not possess entitlements to water from the State Water Project.

- **Peninsula System.** The Peninsula System includes conveyance facilities connecting the BDPLs to the in-City distribution system and to other SFPUC customers on the Peninsula. Two reservoirs, Crystal Springs and San Andreas, collect runoff from the San Mateo Creek watershed. Water from Pilarcitos Reservoir, on Pilarcitos Creek, directly serves one of the Wholesale Customers, the Coastside County Water District (which includes the City of Half Moon Bay), and can also deliver water to Crystal Springs and San Andreas Reservoirs. Water delivered from the BDPLs in excess of the Peninsula System and in-City demands spills into Crystal Springs and San Andreas Reservoirs. The Harry Tracy Water Treatment Plant (HTWTP) filters and disinfects water supplied from Crystal Springs and San Andreas Reservoirs before it is delivered to the Peninsula customers and the in-City distribution system.



**In-City Distribution System:** San Francisco’s water system, the in-City distribution system, was originally developed during the 100-year period between 1860 and 1960, reflecting the patterns and rates of growth in the City. San Francisco’s retail water supply is delivered to the City via several major pipelines. Two pipelines provide water to the eastern portion (eastside) of the in-City distribution system and three pipelines serve the western portion (westside) of the in-City distribution system.

As shown in **Figure 2**, San Francisco’s water system includes 10 reservoirs and 8 water tanks that store the water delivered by the Hetch Hetchy Project and the local Bay Area water system. The 17 pump stations<sup>2</sup> and approximately 1,250 miles of pipelines move water throughout the system and deliver water to homes and businesses in the City. Several major pipelines convey water from the Peninsula System to San Francisco. Water to the eastside of the City distribution system is fed by two pipelines that terminate at University Mound. Water to the westside distribution system is fed by two pipelines that terminate at Sunset Reservoir and one that terminates at Merced Manor Reservoir.

**Figure 2: San Francisco Retail Water System Facilities**



<sup>2</sup> Does not include 3 pump stations on Treasure Island.

### 2.1.3. Water Treatment

The Hetch Hetchy Reservoir is the largest unfiltered water supply on the West Coast, and one of only a few large unfiltered municipal water supplies in the nation. The water originates from spring snow melt flowing down the Tuolumne River to Hetch Hetchy Reservoir, where it is stored. This pristine water source is located in the well-protected Yosemite National Park and meets or exceeds all federal and State criteria for watershed protection. The water originating from Hetch Hetchy Reservoir is protected in pipes and tunnels as it is conveyed to the Bay Area, and requires pH adjustment to control pipeline corrosion and disinfection for bacteria control. Based on the SFPUC's disinfection treatment practice, extensive bacteriological quality monitoring, and high operational standards, the U.S. Environmental Protection Agency (USEPA) and the State of California Department of Public Health (DPH) have determined that the Hetch Hetchy water source meets federal and State drinking water quality requirements without filtration, and thus the SFPUC is not required to filter water from Hetch Hetchy Reservoir.

All water derived from sources other than Hetch Hetchy Reservoir is treated at one of two treatment plants: (1) the SVWTP, which primarily treats water from the Alameda System reservoirs and has a peak capacity of 160 million gallons per day (mgd) and a sustainable capacity of 120 mgd; and (2) the HTWTP, which treats water from the Peninsula System reservoirs and has a peak capacity of 140 mgd and a sustainable capacity of 120 mgd.

Treatment processes at the SVWTP include coagulation, flocculation, sedimentation, filtration, and disinfection. Fluoridation, chloramination and corrosion control treatment are provided for the combined Hetch Hetchy Project and SVWTP water at the Sunol chloramination and fluoridation facilities. Treatment processes at the HTWTP include ozonation, coagulation, flocculation, filtration, disinfection, fluoridation, corrosion control treatment and chloramination.

A new ultraviolet (UV) treatment facility planned for the Hetch Hetchy System that enhances high water quality is a key component of the WSIP. The SFPUC's Advanced Disinfection Project will use UV light to disinfect Hetch Hetchy water to meet new federal requirements to control the waterborne parasite cryptosporidium. The Advanced Disinfection Project combines the construction of a new UV treatment facility with a new chemical water treatment building, an operations building, tanks, and other support structures. With a capacity of 315 mgd, the new UV water treatment facility will be the third largest in the United States. The new chemical storage and water treatment facilities will replace the existing 75-year-old structures, which do not meet current earthquake standards. Other major upgrades of the SVWTP and the HTWTP are also in progress. Construction is scheduled for completion of all of these projects in June 2012.

## 2.1.4. Water Storage

The majority of the water delivered by the SFPUC is supplied by runoff from the upper Tuolumne River watershed on the western slope of the central Sierra Nevada. Three major reservoirs collect runoff: Hetch Hetchy Reservoir, Lake Lloyd, and Lake Eleanor (**Table 1**). A water bank in New Don Pedro Reservoir is integrated into system operations. New Don Pedro Reservoir is jointly owned and operated by Modesto Irrigation District and Turlock Irrigation District (the Districts), and is located on the Tuolumne River downstream of the Hetch Hetchy System.

**Table 1: Regional Water System Storage Capacity**

RESERVOIR	STORAGE (Acre-feet)	STORAGE (Billions of Gallons)
<b>Up-Country</b>		
Hetch Hetchy	360,360	117.4
Lake Lloyd <sup>1</sup>	273,300	89.1
Lake Eleanor	27,100	8.8
<b>Subtotal Up-Country</b>	<b>660,760</b>	<b>215.3</b>
<b>Local</b>		
Calaveras (East Bay) <sup>2</sup>	96,800	31.5
San Antonio (East Bay)	50,500	16.5
Crystal Springs (Peninsula) <sup>3</sup>	67,800	22.1
San Andreas (Peninsula)	19,000	6.2
Pilarcitos (Peninsula)	3,100	1
<b>Subtotal Local <sup>4</sup></b>	<b>237,200</b>	<b>77.3</b>
<b>Total Regional Water System <sup>5</sup></b>	<b>897,960</b>	<b>292.6</b>

- Storage capacity shown includes flashboards, which are boards or structures of boards extending above a dam to increase its capacity.
- Calaveras Reservoir was constructed with a storage capacity of 96,800 acre-feet. Since December 2001, in response to safety concerns about the seismic stability of the dam and a directive from DSOD, the SFPUC has held the maximum water level at approximately 37,800 acre-feet (roughly 40% of its maximum capacity), pending construction of a new comparably sized replacement dam downstream, scheduled for completion in 2015.
- Crystal Springs Reservoir has a maximum storage capacity of 22.1 billion gallons (at 291.8 feet). When the Lower Crystal Springs Dam Improvement is complete, the reservoir will be operated normally at 287.8 feet (4 feet below capacity) based on permit conditions.
- Two in-City reservoirs (Sunset and University Mound) are terminal storage for the RWS.
- This includes 63,700 acre-feet in dead storage (i.e., the volume in a reservoir below the lowest controllable level). In addition, the SFPUC may draw against a credit of up to 570,000 acre-feet in storage in a water bank account with Don Pedro Reservoir, for total storage for planning purposes of 1,469,460 acre-feet.

Water stored in Hetch Hetchy Reservoir is also used for hydroelectric generation and released downstream to satisfy instream flow requirements. Normally, only Hetch Hetchy Reservoir water supplies are exported to the Bay Area for municipal and industrial uses, and releases from Lake Eleanor and Lake Lloyd are used to satisfy instream flow requirements, satisfy Raker Act entitlements to the Districts downstream, and produce hydroelectric power. Water stored in New Don Pedro Reservoir is credited to the City’s water bank account, which allows the City to meet its Raker Act water obligations to the Districts.

On the San Francisco Peninsula, the SFPUC utilizes Crystal Springs, San Andreas, and Pilarcitos Reservoirs located in San Mateo County to capture local watershed runoff. In the Alameda Creek watershed (in Alameda County), the SFPUC has operates Calaveras and San Antonio Reservoirs. In addition to using these facilities to capture runoff, San Andreas, San Antonio, and Crystal Springs Reservoirs also provide storage for Hetch Hetchy Project diversions, and, along with Calaveras, serve as an emergency water supply in the event of an interruption to Hetch Hetchy Project deliveries.

The SFPUC’s Crystal Springs and Calaveras Reservoirs are currently operating under restrictions imposed by the Division of Safety of Dams (DSOD).

The in-City reservoirs and tanks have the capacity to hold approximately 413 million gallons of water. The SFPUC estimates this capacity to be a 5-day supply at the current average water consumption rate for the City. In addition, there is an emergency supply of existing non-potable water immediately available within the City at Lake Merced. Lake Merced currently holds approximately 1.5 billion gallons of water. **Table 2** summarizes the storage capacity of in-City reservoirs and storage tanks.

**Table 2: In-City System Potable Water Storage Capacity**

RESERVOIR	MILLIONS OF GALLONS
Sunset	176.7
University Mound	140.9
Sutro	31.4
Summit	14
College Hill	13.5
Stanford Heights	12.9
Merced Manor	9.5
Lombard	2.7
Potrero	1
Hunters Point	1.1
Storage Tanks	9.3
<b>Total</b>	<b>413</b>

## 2.2 SERVICE AREA

The SFPUC provides water to both Retail and Wholesale Customers. A population of nearly 2.5 million people within the counties of San Francisco, San Mateo, Santa Clara, Alameda, and Tuolumne rely entirely or in part on the water supplied by the SFPUC. Approximately 68% of the SFPUC's water supply is delivered to Wholesale Customers, and the remaining 32% is delivered to Retail Customers.

**Retail Customers:** The SFPUC's Retail Customers include the residents, businesses and industries located within the corporate boundaries of the City. Water service is also provided to customers located outside the City, such as the Town of Sunol, San Francisco International Airport, Lawrence Livermore National Laboratory, Castlewood, and Groveland Community Services District.<sup>3</sup>

**Wholesale Customers:** The SFPUC sells water to 27 Wholesale Customers (**Figure 3**) under terms of the *2009 Water Supply Agreement between the City and County of San Francisco and the Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County*, together with individual water supply contracts. Since 1970, the SFPUC has supplied approximately 65% of the total Wholesale Customers' water demand. Some of the Wholesale Customers are entirely reliant on the SFPUC for their water supply.

## 2.3 CLIMATE

San Francisco has a Mediterranean climate. Summers are cool and winters are mild with infrequent rainfall. Temperatures in the San Francisco area average 58 degrees Fahrenheit annually, ranging from the mid-40s in winter to the mid-70s in late summer. Strong onshore flow of wind in summer keeps the air cool, generating fog through September. The warmest temperatures generally occur in September and October. Rainfall in the San Francisco area averages about 20 inches<sup>4</sup> per year and is generally confined to the "wet" season from late October to early May. Except for occasional light drizzles from thick marine stratus clouds, summers are nearly completely dry.

The Wholesale Customers experience a climate similar to San Francisco, except for customers located in the southern and inland regions that tend to experience warmer temperatures in the summer months with less incidence of fog.

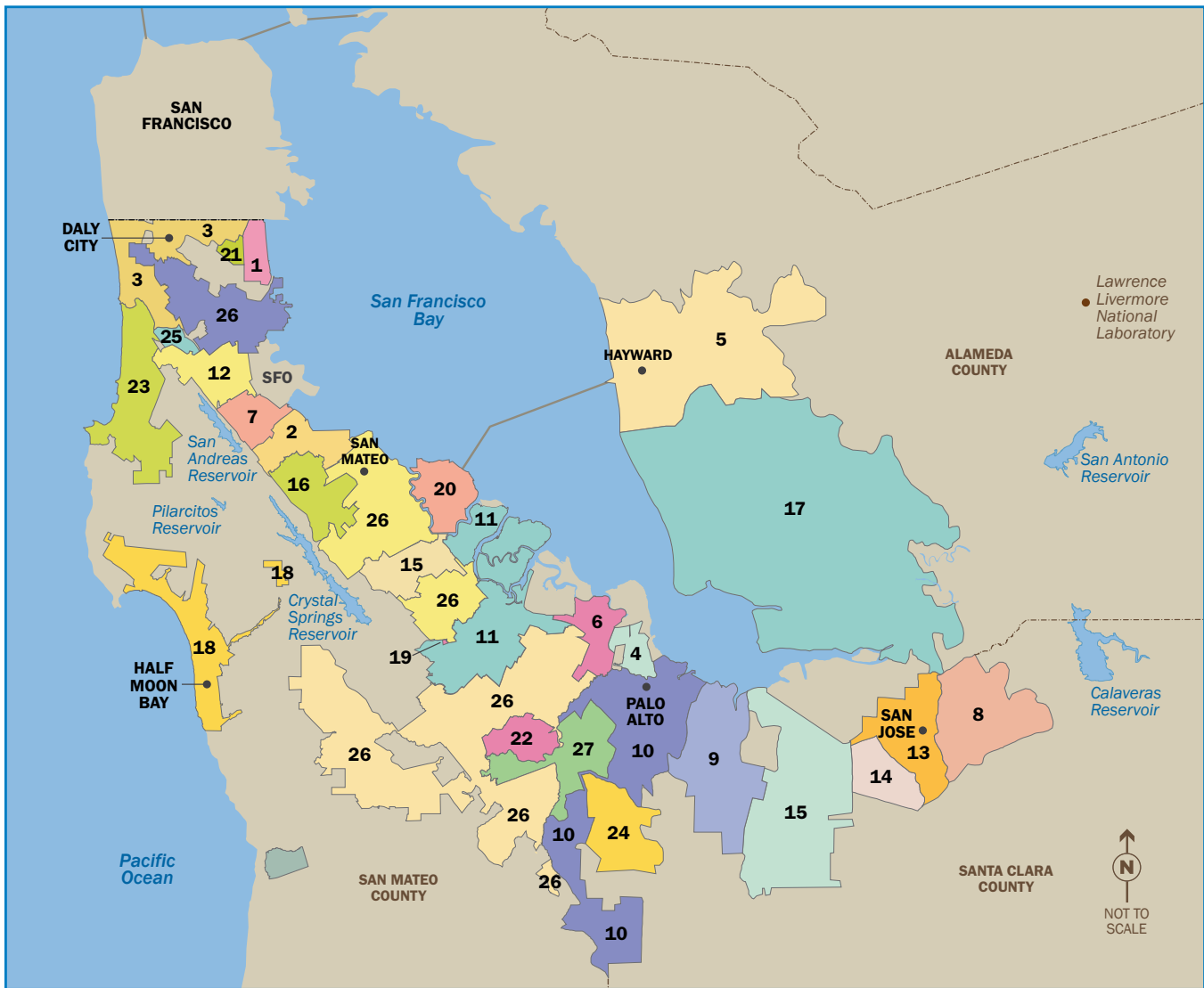
## 2.4 RETAIL CUSTOMER DEMOGRAPHIC AND ECONOMIC TRENDS

The retail water demand projections presented in this report are based on population and business trends forecast by the Association of Bay Area Governments (ABAG), the California Department of Finance, and the San Francisco Planning Department. ABAG's and Planning Department's projections are used in combination with an analysis of the characteristics of water use in the San Francisco retail service area to develop water demands.

3 Although these customers are located outside of the corporate boundaries of the City, for the purposes of water billing and accounting, they are considered SFPUC's Retail Customers, as shown in **Table 12**.

4 1971-2000 data from the two San Francisco monitoring stations (Mission Dolores/SF#047772 and Richmond/SF#047767). Source: [www.wrcc.dri.edu](http://www.wrcc.dri.edu).

**Figure 3: SFPUC Wholesale Customers**



**LEGEND**

**Municipalities**

- 1 City of Brisbane
- 2 City of Burlingame
- 3 City of Daly City
- 4 City of East Palo Alto
- 5 City of Hayward
- 6 City of Menlo Park
- 7 City of Millbrae
- 8 City of Milpitas
- 9 City of Mountain View
- 10 City of Palo Alto

- 11 City of Redwood City
- 12 City of San Bruno
- 13 City of San Jose<sup>2</sup>
- 14 City of Santa Clara<sup>2</sup>
- 15 City of Sunnyvale
- 16 Town of Hillsborough

**Water Purveying Districts**

- 17 Alameda County Water District
- 18 Coastside County Water District
- 19 Cordilleras Mutual Water Company

- 20 Estero Municipal Improvement District
- 21 Guadalupe Valley Municipal Improvement District
- 22 Mid-Peninsula Water District
- 23 North Coast County Water District
- 24 Purissima Hills Water District
- 25 Westborough Water District

**Private Entities**

- 26 CA Water Service Company<sup>1</sup>
- 27 Stanford University

1. California Water Service Company, an investor-owned utility, provides water service to four separate districts: Bear Gulch (Atherton vicinity), San Carlos/San Mateo, South San Francisco and Skyline County Water District.  
 2. The SFPUC provides water on an interruptible basis to fixed service areas in the northern portions of the Cities of San Jose and Santa Clara.



The following provides demographic estimates and projections for the SFPUC’s retail sector. This information is used as the basis for a detailed analysis of the SFPUC’s retail water demand projections provided later in this document. A brief discussion of job growth and population estimates and projections for the SFPUC’s Wholesale Customers is also included. Section 3 provides information on projected Retail and Wholesale Customer water demands.

**Population:** As shown in the table below, the current total population of San Francisco is estimated to be 856,095. The total population of San Francisco is projected to increase to 954,899 by year 2035, representing an average growth rate of 0.4% per year.

**Households, Household Population, and Household Size:** San Francisco projects water use within its residential sectors using factors such as household population<sup>5</sup>, households (occupied dwelling units), and persons per household (the household population divided by the number of households). These factors are important when projecting water use, which is based on end use of water within households. Population, household population, and housing trends for the 2010-2035 period are summarized in **Table 3**. Over the next 25 years, household units are projected to increase by approximately 0.7% per year. The majority of new housing will be multi-family units.

**Table 3: San Francisco County Demographic Trends**

DEMOGRAPHIC	2010	2015	2020	2025	2030	2035
Population <sup>1</sup>	856,095	875,856	895,617	915,377	935,138	954,899
Household Population <sup>2</sup>	835,021	854,755	874,956	895,633	916,800	941,263
Household Units <sup>3</sup>	350,758	363,213	376,109	389,463	403,292	415,000
Single-Family Units <sup>4</sup>	110,759	112,109	113,475	114,857	116,257	117,674
Persons per Single-Family Household <sup>5</sup>	3.2	3.1	3.1	3.1	3.1	3.1
Multi-Family Units <sup>6</sup>	239,999	251,104	262,634	274,606	287,035	297,326
Persons per Multi-Family Household <sup>5</sup>	2.0	2.0	2.0	2.0	2.0	2.0

- Population estimate for 2010 from California Department of Finance E-5 Housing and Population Estimates, dated May 2010. Population estimate for 2030 from ABAG Projections (2009). Population projections for 2015, 2020, and 2025 developed by interpolating between 2010 estimate and 2030 projection. 2035 projected by extrapolation.
- Household population for 2010 based on Department of Finance E-5 Housing and Population Estimates, dated May 2010. The 2030 population estimate was taken from the Citywide Projections, dated July 2009. Household populations for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of population is based on the 2035 forecast of housing units assuming average persons per household are unchanged between 2030 and 2035.
- Number of housing units for 2010 based on Department of Finance E-5 Housing and Population Estimates, dated May 2010. The 2030 housing unit estimate was taken from the Citywide Projections, dated July 2009. Housing unit projections for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of total housing units is taken from updated ABAG Projection 2009 developed as part of the Bay Area’s Sustainable Communities Strategy (SCS), December 2010.
- Single-family housing units in 2010 were set equal to the number of single-family residential accounts for those years. Single-family housing units for other years were interpolated using the average rate of single-family account growth from 1990 to 2010.
- Updated persons per household projection derived from Census 2000 data and then scaled so that household population computed by multiplying the number of housing units by persons per household equaled the updated population projection. Projected persons per household were assumed to be the same in 2030 and 2035.
- The number of multifamily housing units was calculated as the difference between the projection of total housing units and single-family housing units.

<sup>5</sup> All persons living in individual housing units, not including persons who reside in places such as nursing homes, military facilities or rooming houses.

**Industrial and Commercial Businesses:** The current number of people employed in San Francisco is estimated to be 544,056. This number is projected to increase to 698,790 by 2035, amounting to 1.01% growth per year over the next 25 years. **Table 4** shows the current and projected number of people employed in San Francisco.

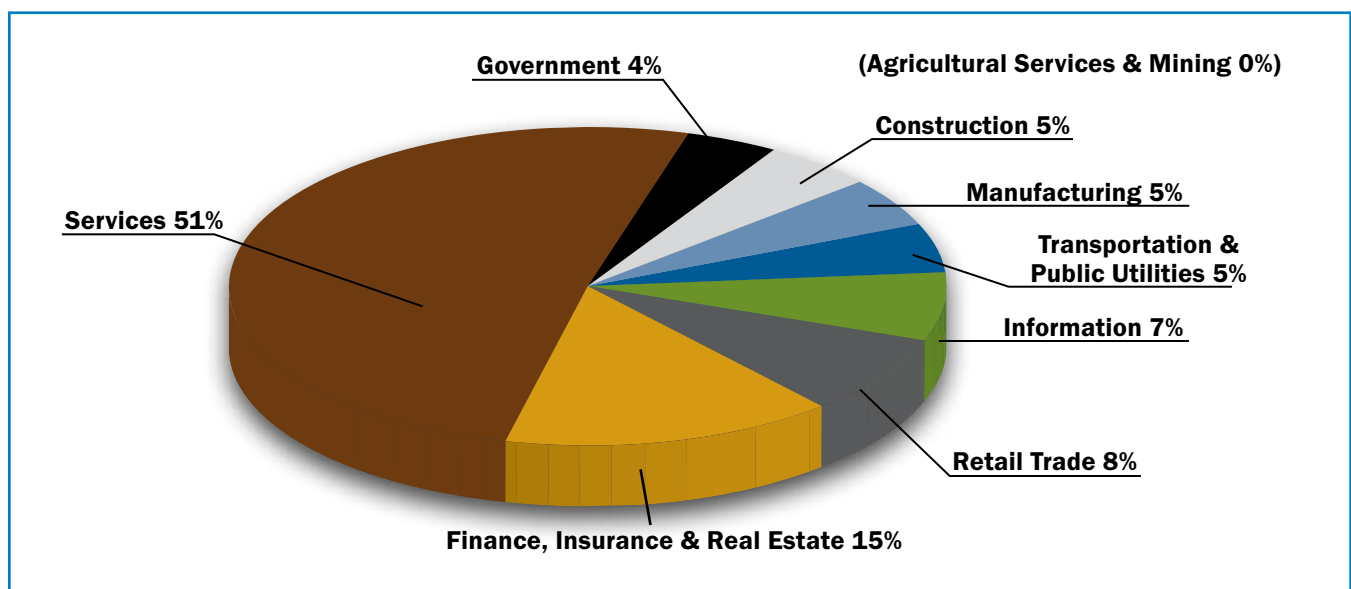
**Table 4: San Francisco County Number of Jobs in Industrial and Commercial Businesses<sup>1</sup>**

JOB SECTOR CATEGORY	2010	2015	2020	2025	2030	2035
Agricultural Services and Mining	1,020	958	944	927	907	953
Construction	27,060	27,606	29,444	32,316	34,687	36,448
Manufacturing	25,760	26,845	29,546	31,434	33,709	35,421
Transportation & Public Utilities	28,150	27,202	27,741	27,433	27,531	28,929
Information	36,860	36,877	38,497	41,436	43,932	46,163
Retail Trade	45,000	44,983	47,281	53,165	56,067	58,913
Finance, Insurance, Real Estate	79,720	78,722	82,594	87,836	91,918	96,585
Services	276,086	302,434	318,149	330,775	349,050	366,769
Government	24,400	24,093	24,862	26,469	27,229	28,611
<b>Total</b>	<b>544,056</b>	<b>569,720</b>	<b>599,060</b>	<b>631,790</b>	<b>665,030</b>	<b>698,790</b>

1. Based on updated ABAG Projection 2009 developed as part of the Bay Area's Sustainable Communities Strategy, December 2010.

**Figure 4** illustrates the current distribution of jobs among the various employment categories in San Francisco. The values have been delineated by job sectors as classified by Standard Industrial Classification (SIC) code. The majority of the job growth between now and 2035 is anticipated to occur in the construction and manufacturing sectors, as well as in the service sector.

**Figure 4: Number of Jobs in Industrial and Commercial Businesses, San Francisco County 2010**



## 2.5 WHOLESALE CUSTOMER POPULATION & JOB GROWTH ESTIMATES

**Table 5** provides estimates and projections of population for the Wholesale Customer service area. The population for the Wholesale Customers is expected to increase over the next 25 years. During this period, employment in the Wholesale Customer service area is projected to increase from 1,145,843 (2010) to 1,665,743 (2035). Water demands were determined by applying the growth rate in population and employment to the applicable water accounts. Section 4.3 provides information on projected Wholesale Customer water demands.

**Table 5: Wholesale Population Estimates and Projections**

WHOLESALE CUSTOMERS <sup>1</sup>	2010	2015	2020	2025	2030	2035
Total Population	1,745,292	1,819,263	1,906,202	1,982,976	2,054,820	2,124,854
Total Employment	1,145,843	1,242,146	1,355,199	1,455,465	1,559,154	1,665,743

1. Estimates and projections from BAWSCA 2009 Water Conservation Implementation Plan. ABAG (2007) population and employment projections were primarily used as a basis for projections.

## SECTION 3: SYSTEM SUPPLIES

**This section summarizes current and projected SFPUC water supplies and describes the various sources of water supplies available to meet the retail and wholesale water demands. This section also summarizes the options used, or being considered, by the SFPUC to maximize resources and minimize the need to import water from the RWS watersheds.**

### 3.1 SFPUC REGIONAL WATER SUPPLY SOURCES

The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from the Hetch Hetchy Project. The local watershed facilities are operated to conserve local runoff for delivery. Water demands that are not met by local runoff are met with water diverted from the Tuolumne River through the Hetch Hetchy Project. On average, the Hetch Hetchy Project provides over 85% of the water delivered by the SFPUC. During drought, the water received from the Hetch Hetchy Project can amount to over 93% of the total water delivered.

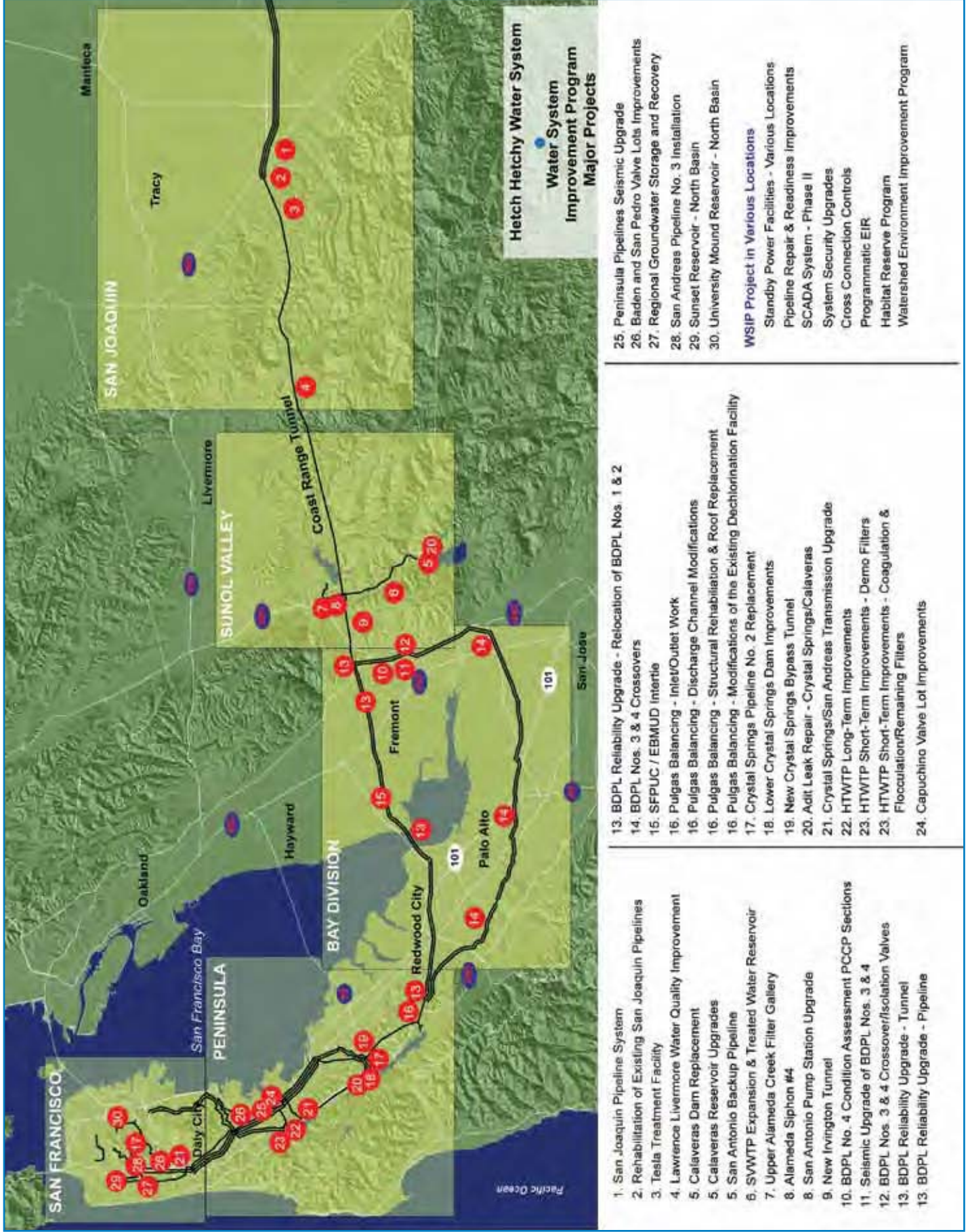
The amount of water available to the SFPUC is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to maximize the reliability of its water supplies. More importantly, reservoir storage provides water supply carry-over capability. During dry years, the SFPUC has a very small share of Tuolumne River runoff available and the local Bay Area watersheds produce very little water. Reservoir storage is critical during drought cycles because it enables the SFPUC to carry-over water supply from wet years to dry years.

#### 3.1.1 SFPUC Water System Improvement Program

To enhance the ability of the SFPUC water system to meet the service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC is undertaking the WSIP. The WSIP is a 4.6 billion dollar, multi-year, capital program to upgrade the RWS. The program will deliver improvements that enhance the SFPUC's ability to provide reliable, affordable, high-quality drinking water to its Wholesale Customers and Retail Customers in an environmentally sustainable manner. **Figure 5** lists the WSIP projects and their locations. The goals and objectives of the WSIP are presented in **Table 6**.



Figure 5: SFPUC Water System Improvement Program (WSIP)



**Table 6: WSIP Goals and Objectives**

PROGRAM GOAL	SYSTEM PERFORMANCE OBJECTIVE
<p><b>Water Quality:</b> maintain high water quality</p>	<ul style="list-style-type: none"> <li>• Design improvements to meet current and foreseeable future federal and state water quality requirements.</li> <li>• Provide clean, unfiltered water originating from Hetch Hetchy Reservoir and filtered water from local watersheds.</li> <li>• Continue to implement watershed protection measures.</li> </ul>
<p><b>Seismic Reliability:</b> reduce vulnerability to earthquakes</p>	<ul style="list-style-type: none"> <li>• Design improvements to meet current seismic standards.</li> <li>• Deliver basic service to the three regions in the service area (East/South Bay, Peninsula, and San Francisco) within 24 hours after a major earthquake. Basic service is defined as average winter-month usage, and the performance objective for design of the regional system is 229 mgd. The performance objective is to provide delivery to at least 70% of the turnouts in each region, with 104, 44, and 81 mgd delivered to the East/South Bay, Peninsula, and San Francisco, respectively.</li> <li>• Restore facilities to meet average-day demand of up to 300 mgd within 30 days after a major earthquake.</li> </ul>
<p><b>Delivery Reliability:</b> increase delivery reliability and improve ability to maintain the system</p>	<ul style="list-style-type: none"> <li>• Provide operational flexibility to allow planned maintenance shutdown of individual facilities without interrupting customer service.</li> <li>• Provide operational flexibility to minimize the risk of service interruption due to unplanned facility upsets or outages.</li> <li>• Provide operational flexibility and system capacity to replenish local reservoirs as needed.</li> <li>• Meet the estimated average annual demand of 300 mgd under the conditions of one planned shutdown of a major facility for maintenance concurrent with one unplanned facility outage due to a natural disaster, emergency, or facility failure/upset.</li> </ul>
<p><b>Water Supply:</b> meet customer water needs in non-drought and drought periods</p>	<ul style="list-style-type: none"> <li>• Meet average annual demand of 265 mgd from the SFPUC watersheds for Retail and Wholesale Customers during non -drought years for system demands through 2018.</li> <li>• Meet dry-year delivery needs through 2030 while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts.</li> <li>• Diversify water supply options during non-drought and drought periods.</li> <li>• Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.</li> </ul>
<p><b>Sustainability:</b> enhance sustainability in all system activities</p>	<ul style="list-style-type: none"> <li>• Manage natural resources and physical systems to protect watershed ecosystems.</li> <li>• Meet, at a minimum, all current and anticipated legal requirements for protection of fish and wildlife habitat.</li> <li>• Manage natural resources and physical systems to protect public health and safety.</li> </ul>
<p><b>Cost-effectiveness:</b> achieve a cost-effective, fully operational system</p>	<ul style="list-style-type: none"> <li>• Ensure cost-effective use of funds.</li> <li>• Maintain gravity-driven system.</li> <li>• Implement regular inspection and maintenance program for all facilities.</li> </ul>



### 3.1.2 Phased WSIP Variant

As required under the California Environmental Quality Act (CEQA), the San Francisco Planning Department prepared a Program Environmental Impact Report (PEIR) for the WSIP. The PEIR evaluated the potential environmental impacts of the proposed WSIP projects and identified potential mitigations to those impacts. The PEIR also evaluated several alternatives to meet the SFPUC service area's projected increase in water demand between now and 2030. The water supply improvement options investigated included 10 alternatives using various water supply combinations from the local watersheds; the Tuolumne and Lower Tuolumne River; ocean desalination; and additional recycled water, groundwater, and conservation. The PEIR was certified by the San Francisco Planning Commission on October 30, 2008. On the same day, the SFPUC adopted the Phased WSIP Variant option in Resolutions No. 08-200.

At the request of the SFPUC, the San Francisco Planning Department studied the Phased WSIP Variant as part of the environmental analysis. The SFPUC identified this variant to consider a program scenario that involved full implementation of all proposed WSIP facility improvement projects to achieve public health, seismic safety, and delivery reliability goals as soon as possible, but phased implementation of a water supply program to meet projected water purchases through 2030. Deferring the 2030 water supply element of the WSIP until 2018 would allow the SFPUC and its Wholesale Customers to focus first on implementing additional local recycled water, groundwater, and demand management actions while minimizing additional diversions from the watersheds.

The Phased WSIP Variant establishes a mid-term planning milestone in 2018 when the SFPUC would reevaluate water demands through 2030 in the context of then-current information, analysis, and available water resources. The SFPUC has historically made annual average deliveries ranging from 285 mgd in 1987 to 265 mgd in 2005 from local watersheds (Peninsula and Alameda Creek) and the Tuolumne River Watershed. Annual average deliveries in 2005 provided the baseline year for the Phased WSIP. The Phased WSIP Variant would meet the projected 2018 purchase requests of 285 mgd from the RWS by capping purchases from the watersheds at 265 mgd; the remaining 20 mgd would be met through water efficiencies and conservation, water recycling and local groundwater use: 10 mgd by Wholesale Customers and 10 mgd in the City. By December 31, 2018, the SFPUC will reevaluate water system demands and supply options and conduct additional studies and environmental reviews necessary to address water supply needs after 2018. Additionally, in response to the SFPUC's adoption of the Phased WSIP Variant, the Wholesale Customers, through the BAWSCA, an agency they elected to create, began developing a Long-Term Reliable Water Supply Strategy to meet the projected water needs of its member agencies and their customers through 2035 and to increase their water supply reliability under normal and drought conditions.

The Phased WSIP Variant includes the following water supply elements:

- Water supply delivery to RWS customers through 2018 only of 265 mgd average annual target delivery originating from the watersheds. This includes 184 mgd for the Wholesale Customers and 81 mgd for Retail Customers.

- Water supply sources include 265 mgd average annual from the Tuolumne River and local watersheds and 20 mgd of water conservation<sup>6</sup>, recycled water and local groundwater developed within the SFPUC’s service area (10 mgd Retail; 10 mgd Wholesale);
- Water supply projects to meet dry-year demands with no greater than 20% system-wide rationing in any one year:
  - Restoration of Calaveras Reservoir capacity;
  - Restoration of Crystal Springs Reservoir capacity;
  - Westside Basin Groundwater Conjunctive Use;
  - Water Transfer with Modesto Irrigation District (MID)/Turlock Irrigation District (TID); and
- Reevaluation of 2030 demand projections, potential RWS purchase requests, and water supply options by December 31, 2018 and a separate SFPUC decision no later than 2018 regarding RWS future water deliveries after 2018.

### 3.1.3 Future Regional Supplies

In addition to the supply options discussed above, the SFPUC is exploring a range of additional options to improve water supply reliability in future years for the purposes of managing the water supply loss associated with instream flow release requirements (discussed further in Section 5). In adopting the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project, the SFPUC committed to providing instream flow releases below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam. The instream flow release requirements for Alameda Creek and San Mateo Creek represent a potential decrease in available water supply of an average annual 3.9 mgd and 3.5 mgd, respectively, for a total of 7.4 mgd average annually<sup>7</sup>. These instream flow release requirements could potentially create a shortfall in meeting the SFPUC demands of 265 mgd and slightly increase the SFPUC’s dry year water supply needs. If a shortfall occurs, it is anticipated at the completion of construction of both the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project in approximately 2015 and 2013, respectively, when the SFPUC will be required to provide instream flow releases.

The SFPUC is committed to meeting its contractual obligation to its Wholesale Customers of 184 mgd and its delivery reliability goal of 265 mgd with no greater than 20% rationing in any one year of a drought.

<sup>6</sup> Water conservation is accounted for as a demand reduction.

<sup>7</sup> This water supply decrease assumes the adopted WSIP program element of an average annual target delivery of 265 mgd. The analysis also assumes that all of the water supply components of the adopted WSIP are implemented and all WSIP projects are implemented, including the Upper Alameda Creek Filter Gallery project, which in accordance with the Program Environmental Impact Report (PEIR) assumptions is estimated to recapture up to 6300 acre-feet (AF) per year (5.6 mgd).

The following actions are currently being considered:

- Development of additional conservation and recycling
- Development of additional groundwater supply
- Water transfer from MID and/or TID
- Increase in Tuolumne River supply
- Revising the Upper Alameda Creek Filter Gallery Project capacity
- Development of a desalination project

These other future supplies have been included with projected RWS supplies to offset the instream flow release requirements, maintaining a total of 265 mgd from the RWS watersheds through 2035.

### 3.1.4. Summary of RWS Supplies

As discussed above, deliveries from the RWS watersheds are limited to an average annual of 265 mgd through 2018. As a decision on future water deliveries beyond 2018 has not yet been made, the 2010 UWMP assumes that the 265 mgd supply limitation extends to 2035.

**Table 7: SFPUC RWS Supplies to Retail and Wholesale Customers in Normal Years**

SFPUC RWS WATERSHEDS (MGD) <sup>1</sup>	2010	2015	2020	2025	2030	2035
Retail Customers	81.0	81.0	81.0	81.0	81.0	81.0
Wholesale Customers	184.0	184.0	184.0	184.0	184.0	184.0
<b>TOTAL (MGD)</b>	<b>265.0</b>	<b>265.0</b>	<b>265.0</b>	<b>265.0</b>	<b>265.0</b>	<b>265.0</b>

1. The RWS watershed supply reflects a 7.4-mgd reduction in total regional system supplies due to instream flow release requirements beginning in 2015, offset by other future supplies to be developed.

## 3.2 SFPUC RETAIL WATER SUPPLY SOURCES

The RWS provides more than 97% of the City’s retail water supplies. A small portion (less than 3%) of the retail water demand is met through locally produced groundwater and secondary treated recycled water.

### 3.2.1 Local Groundwater

San Francisco overlies all or part of seven un-adjudicated groundwater basins. These groundwater basins include the Westside, Lobos, Marina, Downtown, Islais Valley, South, and Visitation Valley basins. The Lobos, Marina, Downtown and South basins are located wholly within the City limits, while the remaining three extend south into San Mateo County. The portion of the Westside Basin aquifer located within San Francisco is referred to as the North Westside Basin. With the exception

of the Westside and Lobos basins, all of the basins are generally inadequate to supply groundwater for municipal supply due to low yield, contamination or potential subsidence concerns.

Early in its history, San Francisco made use of local groundwater, springs, and spring-fed surface water. By 1913, it was estimated that San Francisco was using approximately 8.5 mgd of groundwater from private and City wells, springs, and Lobos Creek, which is fed by springs. Prior to the completion of Calaveras Reservoir on Alameda Creek, part of the City's water supply was also from Lake Merced, which was significantly spring-fed at the time. Lake Merced was substantially lowered by diversions in the 1920s and early 1930s, the latter as a result of diverting from the lake for emergency water supply during drought conditions from 1929 to 1932.

In the 1930's, the Sunset well field was installed on the west side of San Francisco and groundwater was extracted for a short period of time, from late 1930 through mid-1935. Pumping rates were reported to be up to 6 mgd. After imports of water from the Hetch Hetchy Reservoir began in October, 1934, the municipal water supply system began to rely almost exclusively on surface water from the Alameda and Peninsula watersheds and from the Hetch Hetchy Water and Power Project.

Local groundwater use, however, has continued in the City. Since 1926, groundwater has been pumped from wells located in Golden Gate Park and the San Francisco Zoo. Based on flow meter data, about 1.5 mgd is produced by these wells. The groundwater is mostly used in the Westside Groundwater Basin by the City's Recreation and Park Department for irrigation in Golden Gate Park and at the Zoo. These wells are located in the North Westside Groundwater Basin. DWR has not identified this basin as overdrafted, or as projected to be overdrafted in the future. There is currently no adopted groundwater management plan for the SFPUC's groundwater basins.

About 0.7 mgd of groundwater is delivered to the Castlewood community in Pleasanton from a well field operated by the SFPUC. This groundwater is drawn from the Central Groundwater Sub Basin in the Livermore/Amador Valley. DWR has not identified this basin as over-drafted, nor as projected to be over-drafted in the future. These wells are metered and have been in operation for several decades. The system serving Castlewood is not connected to the RWS.

### **3.2.2 Local Recycled Water**

The following summarizes the quantity and quality of wastewater generated and disposed of in the retail system, and the past and current use of recycled water.

**Wastewater Generation, Collection, Treatment, and Disposal:** San Francisco's wastewater collection, treatment, and disposal system consists of a combined sewer system (which collects both sewage and storm water), three water pollution control plants (WPCPs) and outfalls to San Francisco Bay and the Pacific Ocean. The collection and conveyance system consists of approximately 900 miles of various sizes of underground sewer pipes, transport/storage structures, and pump stations located throughout the City. Two of the City's water pollution control plants, the Southeast WPCP and Oceanside WPCP, provide secondary treatment and operate

year-round, while the third plant, the North Point WPCP, operates only during wet weather and provides primary treatment. Ultimate disposal of treated wastewater effluent is currently through outfalls to both San Francisco Bay and the Pacific Ocean. **Table 8** and **Table 9** summarize the actual and projected volumes of San Francisco wastewater collected, treated and discharged to the Bay and Ocean.

**Table 8: Wastewater Collection and Treatment**

WASTEWATER	2005	2010	2015	2020	2025	2030	2035
Collected & treated (mgd)	106.9	96.0	98.1	96.3	95.8	96.7	98.2
Volume that will meet recycled water standard (mgd)	0	0	2	4	4	4	4

**Table 9: Disposal of Wastewater (non-recycled)**

DISPOSAL & TREATMENT METHOD	2010	2015	2020	2025	2030	2035
Secondary Effluent to Deep Water Outfalls (mgd)	80.3	82.5	80.6	80.1	81.0	82.6
Secondary Effluent to Islais Creek (mgd)	5.7	5.7	5.7	5.7	5.7	5.7
Primary Effluent to Deep Water Outfalls (mgd)	9.9	9.9	9.9	9.9	9.9	9.9
<b>TOTAL (MGD):</b>	<b>96.0</b>	<b>98.1</b>	<b>96.3</b>	<b>95.8</b>	<b>96.7</b>	<b>98.2</b>

**Past and Current Recycled Water Use:** From 1932 to 1981, the City’s McQueen Treatment Plant, using an activated sludge process, provided recycled water to Golden Gate Park for irrigation and flow augmentation of its streams and lakes. Due to changes in State regulations, the plant could no longer meet standards, and the City closed the McQueen plant and discontinued use of recycled water in Golden Gate Park.

In 1991, the San Francisco Board of Supervisors passed Ordinances 390-91 and 391-91 that outline specific components to be addressed in a Recycled Water Master Plan (RWMP), designate recycled water use areas within San Francisco, and require the installation of dual-plumbing systems for recycled water use within the designed recycled water use areas for the following situations:

- New or remodeled buildings and all subdivisions with a total area of 40,000 square feet or more
- New and existing irrigated areas of 10,000 square feet or more

The SFPUC first developed a RWMP that outlined a phased water recycling project for San Francisco in 1996. However, the Plan was not implemented due to limited funding. An updated RWMP was subsequently completed in 2006. The 2006 RWMP identifies recycled water project alternatives and a plan for implementation of recycled water projects in the City. These projects will help the City meet its long-term water demands with a local resource in a more reliable and sustainable manner.

Currently, recycled water use in San Francisco is limited, but the SFPUC is moving forward with expanding the use within the City. Disinfected secondary-treated recycled water from the SFPUC's Southeast WPCP is used on a limited basis for wash-down operations, and is provided to construction contractors for soil compaction and dust control and other nonessential construction purposes. Current use of recycled water for these purposes does not materially contribute to reducing the retail demands.

### **3.3 FUTURE RETAIL WATER SUPPLY SOURCES**

To reliably and sustainably meet the future water needs of its Retail Customers, the SFPUC is diversifying its water supply portfolio through the development of local water supplies such as increasing recycled water and groundwater production. Projects related to these efforts are described below.

#### **3.3.1 San Francisco Groundwater Supply Project**

The San Francisco Groundwater Supply Project proposes the construction of up to six wells and associated facilities in the western part of San Francisco to extract up to 4 mgd of groundwater from the northern Westside Basin for distribution in the City. The extracted groundwater, which would be used both for regular and emergency water supply purposes, would be disinfected and blended with imported surface water before entering the municipal drinking water system. The environmental review for this project began in December 2009. Construction is expected to be complete by 2015.

#### **3.3.2 Recycled Water Supply Projects**

Recycled water projects being developed in San Francisco (retail service area) are the Harding Park, Pacifica, and proposed Westside and Eastside Recycled Water Projects. These projects would provide up to 4 mgd of recycled water to a variety of users in San Francisco – primarily for landscape irrigation, toilet flushing, and industrial purposes – and are detailed below.

- The Harding Park Recycled Water Project would use available recycled water from the North San Mateo County Sanitation District (NSMCSD) located in Daly City, to irrigate Harding Park and Fleming Park golf courses in San Francisco. The SFPUC has partnered with the NSMCSD for this proposed project. The Harding Park Project has completed environmental review and design. Construction has begun and will be completed in June 2012.
- The Pacifica Recycled Water Project will provide recycled water to irrigate the Sharp Park Golf Course in Pacifica (which is owned by the City) and other nearby areas. When completed, the project will save approximately 40 million gallons of drinking water each year. SFPUC has partnered with the North Coast County Water District on this project. Construction has begun and will be completed by December 2011.



- The proposed Westside Project would construct a tertiary recycled water plant and associated pipelines to replace surface and groundwater currently used to irrigate Golden Gate Park, Lincoln Park and Golf Course, and the Presidio Golf Course. Additionally recycled water would be used for various non-potable uses in Golden Gate Park, including those at the California Academy of Sciences. The environmental review process was initiated with the release of the Notice of Preparation in September 2010.
- Currently, the SFPUC is conducting a recycled water demand assessment of potential users and uses in the Eastside of San Francisco. The assessment is examining the potential uses of recycled water for irrigation, toilet flushing, and various commercial and industrial applications. The WSIP contains funding for planning, design, and environmental review for the proposed Eastside Recycled Water Project.

In addition, the planned Candlestick Point-Hunters Point Shipyard Phase II, Treasure Island-Yerba Buena Island, and Parkmerced development projects may include the development of recycled water to help offset potable demand. These new projects could produce up to 1.5 mgd of recycled water. This represents additional recycled water supply and has not been included as part of SFPUC's local supplies. In the event that recycled water is produced at the project sites, recycled water could offset as much as 1.5 mgd in total San Francisco retail potable water demand.

**Regional Recycled Water Planning Efforts:** The SFPUC is working with local agencies to develop recycled water projects that will benefit the SFPUC and local partners by reducing demands for SFPUC regional system water, and/or freeing up groundwater that could be used for potable supplies. In addition, these projects would reduce wastewater discharges into San Francisco Bay and the Pacific Ocean.

- The SFPUC, the Cities of South San Francisco and San Bruno, and California Water Service Company (Bayshore District) are jointly pursuing a project to produce and distribute recycled water in the South San Francisco and San Bruno areas. Recycled water for the project will be produced at the South San Francisco/San Bruno Water Quality Control Plant jointly operated by the Cities of South San Francisco and San Bruno.
- The SFPUC is also exploring opportunities to partner with Daly City on a recycled water expansion project and with Redwood City to provide recycled water to the Menlo Country Club.

Additional regional recycled water partnership opportunities with other Bay Area agencies will be evaluated as opportunities arise.

The SFPUC is a member of the Bay Area Clean Water Agencies (BACWA) Recycled Water Committee. BACWA is composed of Bay Area wastewater agencies that discharge into the San Francisco Bay estuary. The purpose of the Recycled Water Committee is to further regional water recycling efforts from a wastewater agency perspective. The SFPUC is currently serving as the Chair of this committee.

The City is also an active member of the International, California Section, and Northern California

Chapter of the WaterReuse Association. The international organization is dedicated to increasing the amount of recycled water produced and used in a beneficial and efficient manner in the United States and abroad. The California Section focuses on promoting this mission in California.

### 3.3.3 Proposed Actions to Encourage Use of Recycled Water

To encourage the use of recycled water in San Francisco, the City adopted Ordinances 390-91 and 391-91<sup>8</sup>. As mentioned previously, these ordinances require the installation of dual-plumbing systems within a specific geographic area for the following situations:

- New or remodeled buildings and all subdivisions with a total of 40,000 square feet or greater, for uses such as irrigation, toilet flushing, and industrial processes
- New and existing landscaped areas of 10,000 square feet or larger, for irrigation

The City also passed Ordinance 175-91<sup>9</sup>, which requires the use of non-potable water for soil compaction and dust control for construction and demolition projects.

The SFPUC also initiated a Large Landscape Grant Program in 2009. Retail Customers in San Francisco with 2.5 acres or more of irrigated landscapes are eligible to apply. Grant funding is available for water-saving and recycled water retrofits that reduce potable water use for landscape irrigation.

### 3.3.4 Recycled Water Optimization Plan

As mentioned in the above section, the San Francisco Board of Supervisors passed Ordinances 390-91 and 391-91, which require the installation of dual-plumbing systems in buildings and subdivisions and landscaped areas within a specific geographic area. In addition, Ordinance 175-91 was also passed requiring the use of non-potable water for soil compaction and dust control for construction and demolition projects.

Also, as discussed previously in Section 3.2.2, the 2006 RWMP identifies recycled water project alternatives and a plan for implementation of recycled water projects in the City. The SFPUC is working with retail customers located outside San Francisco to develop recycled water projects that will benefit the SFPUC and local partners by reducing demands for SFPUC Regional System water, and/or freeing up groundwater that could be used for potable supplies. In addition, these projects would reduce wastewater discharges into San Francisco Bay and the Pacific Ocean. Examples of these projects are described below.

**Table 10** summarizes the current and projected uses of recycled water in San Francisco, assuming the proposed projects described above are developed.

<sup>8</sup> San Francisco Public Works Code, Article 22, Sections 1200-1210. Note that this Ordinance was amended in 1994 by Ordinance 393-94, which expanded the designated recycled water use area to include Treasure Island, Yerba Buena Island, and Hunters Point Shipyard4. .

<sup>9</sup> San Francisco Public Works Code, Article 21, Sections 1100-1107.

**Table 10: Recycled Water Uses - Current and Projected**

USE TYPE <sup>1</sup>	2005 <sup>2</sup>	2010 <sup>2</sup>	2015	2020	2025	2030	2035
Irrigation (mgd) <sup>3</sup>	0	0	0.3	2.68	2.68	2.68	2.68
Lake Fill (mgd) <sup>4</sup>	0	0	0	0.4	0.4	0.4	0.4
Com/Ind (mgd) <sup>5</sup>	0	0	0	1.0	1.0	1.0	1.0
<b>TOTAL (MGD)</b>	<b>0</b>	<b>0</b>	<b>0.30</b>	<b>4.08</b>	<b>4.08</b>	<b>4.08</b>	<b>4.08</b>

1. Indirect potable reuse has been evaluated and determined to be economically infeasible at this time.
2. 2005 and 2010 reflect actual values.
3. Includes landscape irrigation. Demand for agricultural irrigation for the SFPUC's retail service area is negligible, and therefore economically infeasible.
4. Includes wildlife habitat enhancement, wetland recharge, and groundwater recharge.
5. Com / Ind = Commercial / Industrial.

### 3.3.5 Summary of Current and Future Retail Water Supplies

**Table 11** provides a breakdown of current and projected water supply sources for meeting SFPUC retail water demand over the next 25 years.

**Table 11: SFPUC Retail Water Supplies 2010 – 2035 (Normal Year)**

CURRENT AND FUTURE WATER SUPPLY SOURCES	2010	2015	2020	2025	2030	2035
RWS Watersheds – Retail Supply <sup>1</sup>	<b>81</b>	<b>81</b>	<b>81<sup>1</sup></b>	<b>81<sup>1</sup></b>	<b>81<sup>1</sup></b>	<b>81<sup>1</sup></b>
Groundwater Sources <sup>2</sup>						
In-City Irrigation Purposes	1.5	1.5	0.3	0.3	0.3	0.3
Groundwater at Castlewood and Sunol	0.7	0.7	0.7	0.7	0.7	0.7
Treated for Potable (previously used for in-City irrigation purposes)	0.0	0.0	1.2	1.2	1.2	1.2
<b>Groundwater Subtotal</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
Future Water Supply Sources						
Groundwater: Potable from North Westside Groundwater Basin	0.0	2.8	2.8	2.8	2.8	2.8
Recycled Water	0.0	0.3	4.0	4.0	4.0	4.0
<b>Future Supply Subtotal</b>	<b>0.0</b>	<b>3.1</b>	<b>6.8</b>	<b>6.8</b>	<b>6.8</b>	<b>6.8</b>
<b>TOTAL SUPPLY</b>	<b>83.2</b>	<b>86.3</b>	<b>90.0</b>	<b>90.0</b>	<b>90.0</b>	<b>90.0</b>

1. Assumes 2018 supply limitation extends to 2035.
2. Groundwater currently serves irrigation to Golden Gate Park, the San Francisco Zoo, and the Great Highway median. A groundwater reserve of 0.3 mgd for irrigation purposes will remain as part of the SFPUC's non-potable groundwater supply (SFPUC 2008 Phased WSIP Variant). Castlewood and Sunol projected supplies remain unchanged over the 20-year planning horizon.

## 3.4 WATER QUALITY

As discussed previously, the SFPUC's retail demand is primarily met with water from the RWS watersheds, with a small portion (less than 3%) from local groundwater supplies and recycled water. Each of these sources delivers high-quality water relative to its intended use. Supplies from the RWS are of extremely high quality, used for both potable and non-potable uses. Existing groundwater and recycled water supplies are currently used for non-potable applications.

It has been assumed in this UWMP that these existing supplies will be available in the future. The SFPUC does not anticipate that future, water quality issues will alter the SFPUC's current water management strategies or supply reliability. This section provides information on the water quality of the SFPUC's existing retail water supplies.

### 3.4.1 Quality of Regional Water System Supplies

The SFPUC RWS watersheds deliver high-quality water. The current surface water supplies available to the RWS include the Tuolumne River and supplies from local Bay Area reservoirs. The majority of the water supply originates in the upper Tuolumne River watershed high in the Sierra Nevada, remote from human development and pollution. This pristine water, referred to as Hetch Hetchy water, is protected in pipes and tunnels as it is conveyed to the Bay Area, requiring only primary disinfection and pH adjustment to control corrosion in the pipelines.

The USEPA and the DHS have approved the use of this drinking water source without requiring filtration at a treatment plant. However, local water from the Alameda and Peninsula Watersheds requires filtration to meet drinking water quality requirements. The filtered and treated water from the local watersheds is blended with Hetch Hetchy water, and most customers receive water from a blended source. System water quality, including both raw water and treated water, is continuously monitored and tested to assure that water delivered to customers meets or exceeds federal and State drinking water/public health requirements.

The SFPUC will continue to rely on these high-quality water sources. No degradation of water quality is anticipated in the future.

### 3.4.2 Quality of Local Water Supplies

Quality of local groundwater and recycled water supplies is discussed in the following paragraphs.

**Groundwater Supplies:** Based on semi-annual monitoring, the groundwater currently used for irrigation and other non-potable uses in San Francisco meets or exceeds the quality needed for these end uses.

Plans for development of additional groundwater in San Francisco include plans for potable supply in the North Westside Groundwater Basin. As part of this effort, the groundwater quality at new

proposed well sites is being sampled for all drinking water parameters. The groundwater would be disinfected and blended with imported surface water before entering the municipal drinking water system. Based on information collected to date, the water quality of this blended water would meet drinking water standards.

**Recycled Water Supplies:** Recycled water in San Francisco is currently being used on a limited basis for in-plant wash-down purposes. This recycled water undergoes secondary treatment at SFPUC's Southeast Water Pollution Control Plant and meets the Title 22 California Code of Regulation requirements for recycled water use for non-potable uses.

Recycled water projects being developed in San Francisco (retail service area) are the Harding Park, Pacifica, and proposed Westside and Eastside recycled water projects. These projects would provide up to 4 mgd of recycled water to a variety of users in San Francisco primarily for landscape irrigation and toilet flushing. This recycled water will undergo tertiary treatment, which will result in water quality sufficient to meet the needs and requirements associated with each end use.

## SECTION 4: SYSTEM DEMANDS

This section focuses on the projection of the SFPUC's water demands. Retail demands are based on recent demographic information and a detailed analysis of the SFPUC's retail water use characteristics. Wholesale Customer demands for SFPUC supplies are based on projections developed by Wholesale Customers. This section also presents the baseline and target per capita water consumption rate, as required by SB X7-7.

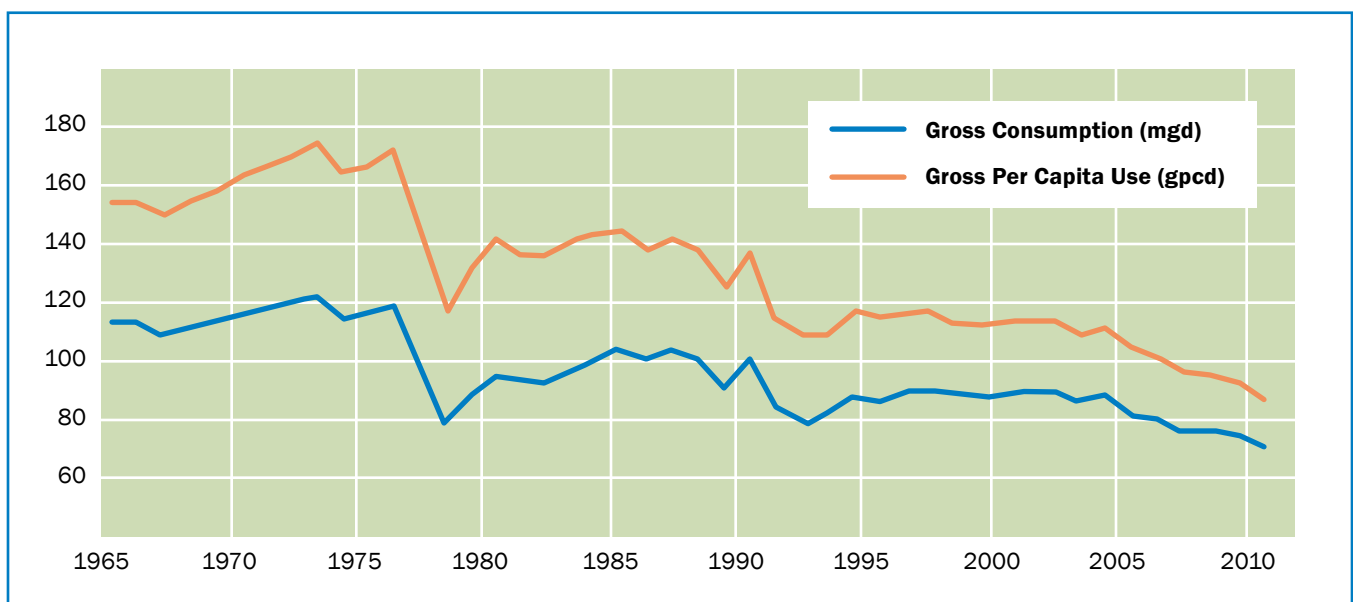
### 4.1 RETAIL WATER DEMANDS

Water use within San Francisco is currently below historic consumption. Both the total consumption and the per capita use of water have been on a general decline in San Francisco since the mid-1970s. Many factors have contributed to this reduction in water use, including significant changes to the mix of industrial and commercial businesses and their associated water demand, and the general characteristics of water use by San Francisco water customers. In particular, the severe droughts of 1976-77 and 1987-92, changes in plumbing codes, and conservation programs (either voluntarily embraced by residents and businesses or mandated by San Francisco), have apparently affected water demands.

**Figure 6** shows the historical record of retail water deliveries by San Francisco for the 1965 through 2010 period in terms of both total deliveries and gross per capita consumption (gallons per capita per day, or gpcd).

While the gross per capita consumption is not a true measure of the water used by an individual (since it includes water use by all categories of customers, e.g., industrial, commercial and losses), it does provide insight when comparing water use among regions. The current per capita consumption rate by San Francisco in-City water customers is 85.6 gpcd, one of the lowest in the state.

**Figure 6: Historical San Francisco Water Consumption**





### 4.1.1 Current Retail Demand

All of the SFPUC's Retail Customers have been metered since 1916. In 2010, total SFPUC retail water use was 77.7 mgd. Of this demand, in-City Retail Customers used approximately 71 million gallons per day (mgd)<sup>10</sup>. Water use by suburban Retail Customers totaled approximately 4.1 mgd, and groundwater irrigation use was approximately 2.2 mgd.

Water use in 2010 was lower than expected. This decreased demand can be attributed to three main reasons. First, the very wet spring and cool summer California experienced in 2010 depressed urban water demand across the state. Second, 2008 and 2009 were both dry and the SFPUC asked its customers to reduce their water consumption by 10%. While rainfall returned to normal or above normal in 2010, the reductions in water use have continued. Third, the sharp economic decline which started in 2008 pushed down commercial and industrial demands. When preparing the 2005 UWMP, the number of jobs in 2010 was projected to be 692,420. According to the 2010 estimates from the California Employment Development Department, the number of jobs in 2010 was closer to 545,000.

**Residential Water Use:** Single-family units comprise approximately 32% of the total households in San Francisco, and use approximately 40% of the total water delivered to the residential sector. The remainder of residential water (60%) is used by multi-family units such as apartments.

Combined, the single-family and multi-family residential sectors have a current per capita consumption rate of approximately 50 gpcd. Due to San Francisco's moderate climate and high density housing, residential water use is used almost entirely indoors. For multi-family units, the average outdoor water use is considered negligible. Outdoor water use makes up less than 10% of single-family residential uses, on average.

**Non-residential Water Use:** Non-residential water use accounts for approximately 30% of San Francisco's retail water demands. This includes all sectors of water users not designated as residential, such as manufacturing, transportation, trade, finance, and government employment sectors, and the large services sector.

**Unaccounted for Water Loss:** Unaccounted for Water Loss represents both unbilled authorized consumption (including metered high pressure fire fighting consumption, unmetered main flushing, street cleaning and dust control and low pressure fire hydrant use) and unbilled unauthorized consumption (including water lost to the system through all types of leaks, breaks and overflows). These losses are assumed to be approximately 6.9% of total in-City demand. Meter under-registration is also considered unbilled unauthorized consumption and is captured in the demand calculations for each billing sector. It is assumed that meter under-registration is 2.2% of residential demand and 2.1% of non-residential demand. Total loss in the City due to meter under-registration, unbilled authorized consumption and unbilled unauthorized consumption is approximately 9% of in-City demand.

<sup>10</sup> This only refers to in-City retail demand, not total retail demand (which includes Retail Customers outside of the city and county boundary, such as Lawrence Livermore National Laboratory), and this does not include groundwater.

## 4.1.2 Projected Retail Water Demands

Projected water use for the SFPUC's in-City Retail Customers was estimated using the City's Retail Water Use Models. The models were first developed in 2004 and updated in 2010. These models have incorporated economic and demographic forecast data, including projections of population, housing stock and employment. These forecast data were based on the ABAG reports *Projections 2002*, *Projections 2009*, and *Draft Projections 2011* (developed as part of the Bay Area's Sustainable Communities Strategy). These reports summarize demographic projections for the City at 5-year intervals as well as California Department of Finance estimates and projections 10-year intervals. These projections were reviewed and refined by the San Francisco Planning Department using up-to-date planning information for the City.

Results of the water demand forecasts show that SFPUC's in-City retail water demand will only slightly increase (**Table 12**), even though the household population in San Francisco is expected to increase by nearly 12% for the same period (year 2010 through year 2035). The projected increase in in-City retail water demands is due to estimated growth in business and industry, which will translate into a commensurate increase in water use. The expected increase in water use in the non-residential sector, however, is expected to be partially balanced by decreases in water use in the residential sector.

The decreased water use forecast for the residential sectors is attributed primarily to market penetration of current plumbing codes within the residential sectors. Market penetration will increase as time progresses, resulting in an increase in water savings due to the installation of more water-efficient fixtures.

A decrease in water use can also be expected, in both the residential and non-residential sectors, as a result of water conservation programs. The SFPUC has increased its water conservation programs in an effort to achieve new water savings by 2018. The SFPUC's conservation program is based on the SFPUC Retail Demand Model Update and Calibration Technical Memorandum (The Demand Study) (**Appendix D**), which identified water savings and implementation costs associated with a number of water conservation and efficiency measures. The Demand Study evaluated the costs and benefits of implementing various conservation measures using an end-use model. These estimates include new conservation programs such as high-efficiency toilet replacement in low-income communities and water-efficient irrigation systems for large irrigators (e.g., municipal parks and commercial landscaping). Through its conservation program, the SFPUC anticipates reducing gross per capita consumption to 82 gpcd by 2020 for an average daily savings of approximately 6 mgd.<sup>11</sup> Demand reduction due to local conservation is accounted for in the demand projection shown in **Table 12**.

11. Per capita estimates were calculated based on household population. SBX7-7 per capita estimates contained in Section 4.1.5 were calculated based on the total population data obtained from the Department of Finance.

**Table 12: San Francisco Retail Water Demands**

WATER USE ENTITY	2005 <sup>1</sup> (mgd)	2010 <sup>1</sup> (mgd)	2015 (mgd)	2020 (mgd)	2025 (mgd)	2030 (mgd)	2035 (mgd)
<b>IN-CITY CUSTOMERS</b>							
Single-Family Residential <sup>2</sup>	18.4	16.4	17.9	17.1	16.5	16.0	15.8
Multi-Family Residential <sup>2</sup>	27.7	25.1	28.9	28.4	28.2	28.3	28.6
Non Residential <sup>2</sup>	24.8	23.5	25.6	26.5	27.5	28.7	29.9
Other In-City Demands <sup>2,3</sup>	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Losses <sup>4</sup>	8.2	6.3	5.0	4.9	5.0	5.0	5.1
<b>In-City Subtotal <sup>5</sup></b>	<b>79.3</b>	<b>71.4</b>	<b>77.7</b>	<b>77.1</b>	<b>77.3</b>	<b>78.2</b>	<b>79.7</b>
<b>In-City Subtotal w/Conservation<sup>6</sup></b>	<b>79.3</b>	<b>71.4</b>	<b>73.6</b>	<b>71.7</b>	<b>71.2</b>	<b>72.1</b>	<b>73.7</b>
<b>SUBURBAN RETAIL CUSTOMERS <sup>7</sup></b>							
Other Retail Customers <sup>8</sup>	4.4	3.0	3.8	3.8	3.8	3.8	3.8
Lawrence Livermore Lab	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Groveland CSD	0.4	0.7	0.8	0.8	0.8	0.8	0.8
<b>Suburban Retail Subtotal</b>	<b>5.2</b>	<b>4.1</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>
<b>GROUNDWATER CUSTOMERS</b>							
City Irrigation Uses <sup>9</sup>	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Castlewood & Sunol Golf Course <sup>10</sup>	0.7	0.7	0.7	0.7	0.7	0.7	0.7
<b>Groundwater Subtotal</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
<b>Total Retail Demand <sup>11</sup></b>	<b>86.7</b>	<b>77.7</b>	<b>80.7</b>	<b>78.9</b>	<b>78.5</b>	<b>79.2</b>	<b>80.9</b>

- 2005 and 2010 data are based on actual billing data (SFPUC, 2010). 2015-2035 are projections from the SFPUC Retail Demand Model Update and Calibration Technical Memorandum (April 2011).
- Water demands reflect the adjusted demand, taking into consideration the potential savings due to plumbing codes.
- Builders and Contractors, Docks & Shipping
- Losses reported for 2005 and 2010 include meter under-registration. Losses in 2015 – 2035 exclude meter under-registration because they are included in the retail demand projections for residential and non-residential sectors. Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses excluding meter under-registration estimated at 6.86% of sector demand.
- “In-City subtotal” refers to demand that includes code-driven savings from changes in state and federal plumbing codes and regulations.
- “In-City Subtotal with Conservation” refers to demand that includes code-driven savings plus savings from SFPUC-initiated conservation programs.
- Suburban retail customer future demands do not include active conservation savings. The SFPUC plans on working with the suburban Retail Customers on conservation activities, but has not yet quantified the savings. Accordingly, demands are kept constant through 2035, but will be adjusted as more information becomes available.
- The San Francisco County Jail, San Francisco International Airport, and other suburban or municipal accounts.
- Irrigation at Golden Gate Park, the Great Highway median, and the San Francisco Zoo.
- 100% of Castlewood demand (0.4 mgd) is met by groundwater wells in Pleasanton and 75% of Sunol Golf course demand (0.3 mgd) met by subsurface diversions of surface water at the Sunol Filter Galleries. Projected demands are based on average use from 2000-2010 and remain unchanged over the 25 year planning horizon.
- This refers to the sum of “in-City subtotal with conservation”, suburban retail subtotal, and groundwater subtotal.

### 4.1.3 Non-residential Water Demands

Average employee-use rates, gallons per employee-day (GED), have been estimated for the various employment categories in the development of the end-use study. These values range from approximately 18 GED for the government category to approximately 94 GED for the agriculture and mining category.

**Table 13** provides a breakdown by industry type of the SFPUC’s projected water demands for the retail non-residential sector for 2005 through 2035 in 5-year increments.

**Table 13: SFPUC Projected Retail Non-Residential Water Demands**

INDUSTRY <sup>1</sup>	2005 (mgd)	2010 (mgd)	2015 (mgd)	2020 (mgd)	2025 (mgd)	2030 (mgd)	2035 (mgd)
Ag. & Mining	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Construction	0.5	0.5	0.5	0.6	0.6	0.7	0.7
Manufacturing	2.0	2.1	2.1	2.4	2.5	2.7	2.8
Transportation	0.7	0.6	0.6	0.6	0.6	0.6	0.7
Information	1.5	1.5	1.5	1.6	1.7	1.8	1.9
Retail Trade	2.5	2.4	2.4	2.5	2.9	3.0	3.2
F.I.R.E. <sup>2</sup>	1.5	1.5	1.4	1.5	1.6	1.7	1.8
Services	15.7	15.4	16.9	17.8	18.5	19.5	20.5
Government	0.5	0.4	0.4	0.5	0.5	0.5	0.5
<b>Total without Conservation <sup>3</sup></b>	<b>25.0</b>	<b>24.6</b>	<b>26.1</b>	<b>27.5</b>	<b>29.0</b>	<b>30.5</b>	<b>32.1</b>
<b>Total with Conservation</b>	<b>24.8</b>	<b>23.5</b>	<b>25.6</b>	<b>26.5</b>	<b>27.5</b>	<b>28.7</b>	<b>29.9</b>

1. Projections from the SFPUC Retail Demand Model Update and Calibration Technical Memorandum.
2. FIRE = finance, insurance, and real estate.
3. Totals calculated using gallon-per-day equivalents (GED) and employment estimates and projections and do not include passive or active conservation savings.

#### 4.1.4 Water Demands of Lower Income Households

The future water use of planned lower income housing (less than 80% of the AMI) is estimated by multiplying the planned future housing units for lower income residents by the average number of persons per household and the estimated per capita water use.

As described in Section II.A of the 2009 San Francisco Housing Element (page 1.41), ABAG, in coordination with the California State Department of Housing and Community Development (HCD), determine the Bay Area’s regional housing need based on regional trends, projected job growth and existing needs. San Francisco’s fair share of the regional housing need for January 2007 through June 2014 was calculated as 31,190 units, or about 4,160 units per year total. This estimate includes units for all adjusted median income (AMI) categories: extremely low (less than 30% of AMI), very low (31% - 50% of AMI), low (51% - 80% of AMI), moderate (81% - 120% of AMI), and above moderate (greater than 120% of AMI) categories. Planned housing units for the extremely low, very low, and low categories total 3,294, 3,295, and 5,535, respectively, for a total number of planned lower housing units of 12,124 units between 2007 and 2014. Assuming a consistent number of units are build per year, approximately 1,617 units will be built per year between 2007 and June of 2014. It is assumed that approximately 4,851 of the planned 12,124 units were built between 2007 and 2010, leaving 7,273 additional units to be constructed in between January of 2011 and June of 2014.

As described in the SFPUC Retail Demand Model Update and Calibration Technical Memorandum (**Appendix D**), the average persons per household in single-family and multi-family households are estimated to be approximately 3.1 and 2.0, respectively, by 2015. Because the distribution of single-family versus multi-family planned housing units is currently unknown, it is assumed that the planned units will house approximately 2.55 persons per household, the average of the projected values for single- and multi-family households. As a result, it is estimated that approximately 18,546 residents will occupy planned lower income housing units by June of 2014.

As described in Section 4.2, per capita water use in the SFPUC's retail water service area is currently approximately 85.6 gpcd. Water use in planned lower income housing units is therefore estimated to be approximately 1.6 mgd (18,546 people x 85.6 gpcd) by June of 2014.

This estimated future lower income water demand is included in the retail water demand projections presented in **Table 12**, which include all demands of existing and planned lower-income housing. The SFPUC has always included lower income households as part of the overall city demand in its planning efforts, and all demands presented in Section 4 include lower income demands. Updates to the Urban Water Management Planning Act require that entities separately calculate the water demands for lower income households in this UWMP, and this estimate reflects the SFPUC's best effort to do so. Please note that the SFPUC does not use this number for any planning purposes.

#### 4.1.5 Methodology Used to Project Retail Water Demands

The SFPUC uses disaggregated end-use models to project its retail water demands. San Francisco's water demand is segregated into three distinct categories of water use: non-residential (industrial, commercial and municipal uses); multi-family residential (e.g. townhouses and apartments); and single-family residential. The remainder of San Francisco's water demands such as unaccounted for water and minor uses such as docks and shipping are forecast through trend analysis.

Future non-residential water use is projected using relationships between employment within San Francisco and employee use of water. These coefficients are segregated by type of business or service enterprise, which is based on SIC codes. Appropriate employee-use rates within San Francisco's model were determined by extensive review of industry literature.

Two separate end-use models estimate multi-family and single family residential water use. These models rely on a disaggregation of household end-use of water, such as the number and volume of toilet flushes, duration of showering, and the size and frequency of use of washing machines and dishwashers. These data were derived from available residential end-use monitoring studies.<sup>12</sup>

The models have been verified with water delivery records for historical periods, including periods of time when water demands were affected by drought-induced rationing programs. Water use projections through the year 2035 were developed using these models. The water use projections incorporate the effects of water-saving plumbing code requirements, among other factors. **Appendix D** contains a detailed discussion of the methodology.

<sup>12</sup> End-use studies include the Residential End Uses of Water Study (American Water Works Association Research Foundation, 1999) and the California Single-Family Water Use Efficiency Study (Prepared by Aquacraft, Inc. with Stratus Consulting & the Pacific Institute. Sponsored by the California Department of Water Resources, Draft Final April 2011).

## 4.1.6 Differences between 2005 and 2010 Water Demand Projections

Although the SFPUC used the same methodology to project retail water demands in the 2005 UWMP, a few key assumptions were updated in the models used for the 2010 UWMP, resulting in lower projected water demands. The SFPUC Retail Demand Model Update and Calibration Technical Memorandum in **Appendix D** contains a detailed description of these changes. **Table 14** contains a summary of these key changes.

**Table 14: Updated Demand Model Assumptions**

UPDATED ASSUMPTIONS	CHANGES FROM 2005
Population, housing, and employment projections	Since the 2005 UWMP, new population, employment and housing projections were released. Updates were primarily based on data obtained from Association of Bay Area Governments (ABAG), California Department of Finance, and the City’s Planning Department. The updated projections resulted in increased water demands in the multi family sector in 2030 due to a projected increase of 37,081 households. However, the revised projections decreased the employment projections in 2030 by 130,370 jobs, which resulted in decreased water demands in the non-residential sector.
Water Loss	The model was updated to more accurately account for water loss due to meter under-registration. The original model specification included water losses due to customer meter under-registration, both within each billing sector’s projected water demand and as a component of the Unaccounted-for-Water causing the model to overestimate in-City retail demands.
Conservation Savings	The original model projected 4.5 mgd of active water conservation savings by 2030. The suite of conservation measures included in the 2004 model was updated to better reflect the mix of conservation measures and technologies that the SFPUC expects to implement in the near future. Additionally savings from new regulations were added into the model, including the City’s 2009 Retrofit on Resale (ROR) ordinance, the phase-in of high-efficiency toilet standards under AB 715, California Energy Commission’s (CEC) proposed efficiency standards for residential clothes washers, and California’s and the City’s green building standards. These changes resulted in 2.0 mgd of additional conservation savings.
Other Retail Customer Demands	The demands associated with “other Retail Customers” were updated to reflect a decrease in water use over the past 10 years by these customers. Additionally the groundwater demands of Castlewood and Sunol were removed from this category as these demands are already captured under the groundwater demands.
City Irrigation Demands	City Irrigation demands were updated based on new data. In 2005, City irrigation demands were projected to be 2.5 mgd. Based on the latest metered data, city irrigation demands have been decreased to 1.5 mgd.

The changes summarized above result in decrease in demand of nearly 9.0 mgd in 2030 between the 2005 UWMP and the 2010 UWMP. The 2005 UWMP did not project 2035 demands.



## 4.2 PER CAPITA WATER USE: BASELINE AND TARGET

SBx7-7 (California Water Code section 10608 [e]) requires the SFPUC to include the following in its UWMP.

- Baseline daily per capita water use: how much water is used within an urban water supplier's distribution system area on a per-capita basis. It is determined using water use and population estimates from a defined range of years.
- Urban water use target: how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are and plan to be implemented.
- Interim urban water use target: the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

In 2015 and 2020, the SFPUC will report on daily per capita water use to assess progress toward meeting the interim and 2020 urban water use targets developed herein.

### 4.2.1 Baseline Daily Per Capita Water Use

As described in *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009)*, the Water Conservation Bill of 2009 requires each urban retail water supplier to include in its UWMP an estimate of base daily per capita water use, expressed in gpcd, for a continuous multiyear base period. The Water Code specifies two different base periods for calculating Base Daily Per Capita Water Use:

- A 10- to 15-year continuous period used to calculate baseline per capita water use per Section 10608.20.
- A continuous 5-year period used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirement per Section 10608.22.

Because the SFPUC's current and past recycled water use is minimal (<1 mgd; much less than the 10% of 2008 water use needed to justify a 15-year baseline), the SFPUC will utilize a 10-year baseline. Water use data from fiscal year (FY) 2000/01 to FY 2009/10 have been used for this analysis.

Base Daily Per Capita Water Use has been calculated for the 10-year period as follows:

- Step 1: Estimate distribution system area
- Step 2: Estimate Service Area Population for each year in the base period
- Step 3: Calculate Gross Water Use for each year in the base period (in gallons/day)
- Step 4: Calculate Annual Daily Per Capita water use for each year in the base period by dividing Gross Water Use by Service Area Population
- Step 5: Calculate Base Daily Per Capita Water Use as the average per capita water use

**Step 1: Estimate Distribution System Area (10-Year Baseline).** The distribution system area is the SFPUC's in-City Retail System, shown in **Figure 7**.

**Figure 7: Distribution System Area and Metering Locations**



**Step 2: Estimate Service Area Population for Base Period (10-Year Baseline).** As shown in **Table 15**, the retail population was developed for the period from FY 00/01 to FY 09/10 based on Department of Finance total population data for the City and County of San Francisco (2000 – 2009).

**Step 3: Calculate Gross Water Use (10-Year Baseline).** Gross water use for the City is provided in **Table 15**. Gross water use was developed by compiling water from the SFPUC’s own sources delivered to Retail Customers (total production minus deliveries to Wholesale Customers). Changes in in-City storage were then factored in to develop gross water use. The SFPUC compiles daily flow data for the County-line meters, System Input and In-Line Meters, and daily reservoir water level data. The meters, water level sensors, and associated metering equipment are all inspected, tested, calibrated, and maintained according to the applicable meter calibration and maintenance frequency by an independent metering consultant. These include annual pitot tube tests, quarterly secondary meter equipment testing and calibration, cleaning, flushing, inspecting, and lubricating. The flow quantities are expected to be accurate and no meter error adjustment is necessary. Gross water use is shown in rows 1 through 5 in **Table 15**.

**Step 4: Calculate Annual Daily Per Capita Water Use (10-Year Baseline).** Annual Daily Per Capita Water Use was calculated by dividing gross water use by population. Annual Daily Per Capita Water Use is shown on the last row in **Table 15**.

**Step 5: Calculate Base Daily Per Capita Water Use (10-Year Baseline).** Base Daily Per Capita Water Use is calculated as the average of per capita water use, or 98.4 gpcd.

**Table 15: SFPUC In-City Retail Gross Water Use from FY 00/01 to FY 09/10 (mgd)**

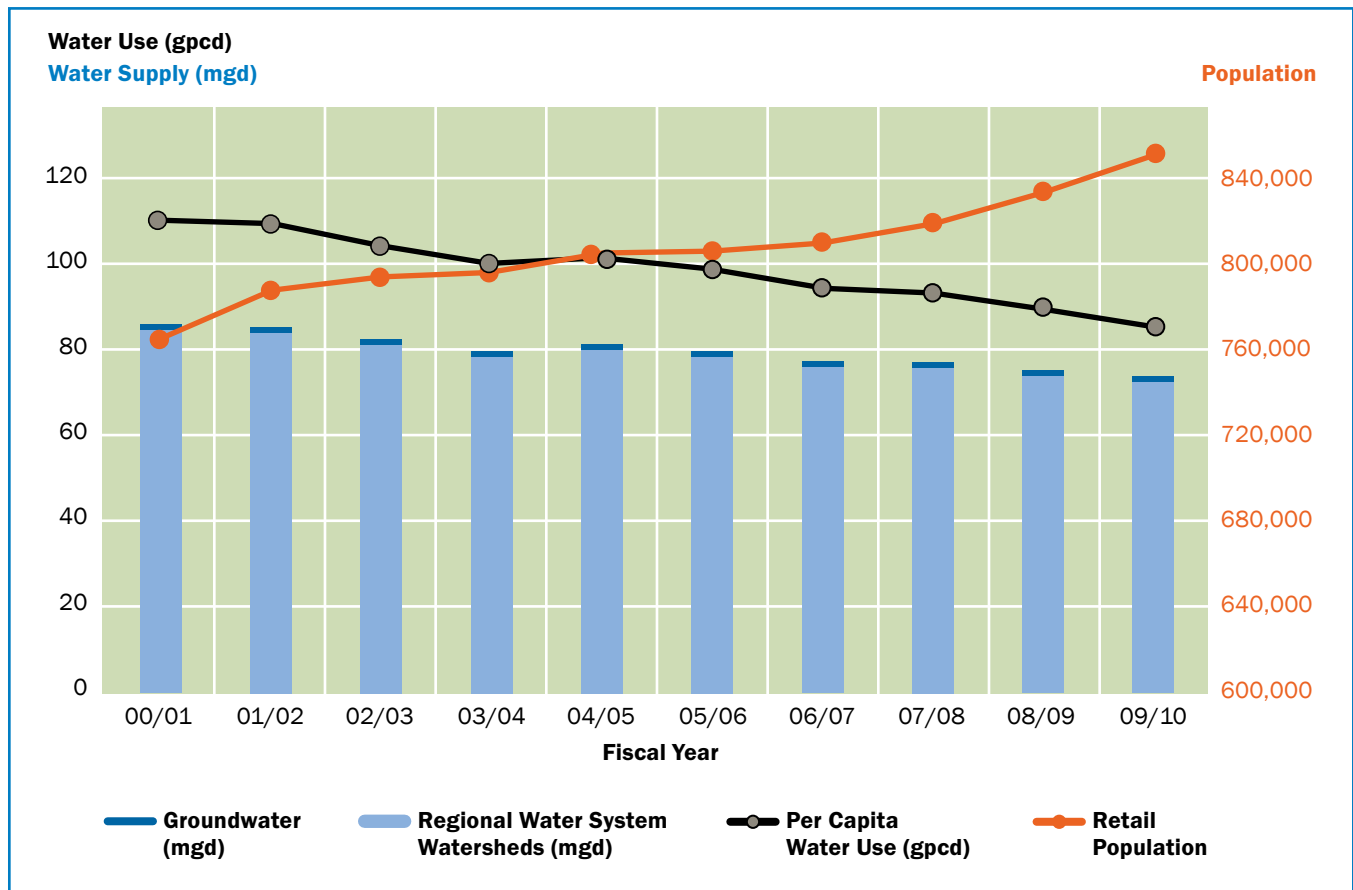
	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Own Sources <sup>1</sup>	85.4	85.4	82.5	79.6	80.6	79.4	76.8	76.7	75.0	72.5
Imported Sources	0	0	0	0	0	0	0	0	0	0
Volume Exported	0	0	0	0	0	0	0	0	0	0
Change in Storage	-0.01	0.00	0.15	0.02	-0.09	0.00	0.03	0.00	-0.01	0.06
Gross Water Use	85.4	85.4	82.3	79.6	80.7	79.4	76.8	76.7	75.0	72.4
Retail Population <sup>2</sup>	776,733	785,654	793,462	798,574	802,512	807,382	813,929	823,940	836,360	846,601
<b>Per Capita Use (gpcd) <sup>3</sup></b>	<b>110.0</b>	<b>108.7</b>	<b>103.8</b>	<b>99.6</b>	<b>100.6</b>	<b>98.3</b>	<b>94.3</b>	<b>93.1</b>	<b>89.7</b>	<b>85.6</b>

1. All sources are metered, and all meters are calibrated annually.

2. Population data from California Department of Finance for City and County of San Francisco (<http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/view.php>), 2000-2001 / 2008-2009.

3. Per capita water use has been calculated in compliance with the requirements of the Water Conservation Bill of 2009.

**Figure 8: SFPUC In-City Retail 10-Year Gross Water Use**



### 4.2.2 Urban Water Use Target

The SFPUC has elected to use Method 3 of the four approved methods provided for by the Water Conservation Bill of 2009 for determining urban water use targets. The SFPUC in-City Retail distribution system is contained entirely within the San Francisco Bay hydrologic region. The hydrologic region baseline, interim, and 2020 targets are 157, 144, and 131 gpcd, respectively. To calculate the SFPUC urban water use targets using Method 3, 95% of the interim and 2020 targets are calculated, yielding interim and 2020 urban water use targets of 136.8 and 124.5 gpcd, respectively.

### 4.2.3 Confirmation of Urban Water Use Target

California Water Code Section 10608.22 requires confirmation of the base daily per capita water use using a 5-year base period to assure that the use target meets a minimum threshold. The 5-year continuous base period is to end no earlier than December 31, 2007, and no later than December 31, 2010. The SFPUC has used the 5-year period from FY 05-06 to FY 09/10 for calculation of the 5-year baseline.

Calculation of Base Daily Per Capita Water Use for the 5-year period is calculated in the same way as for the 10-year period (see above):

Step 1b: Estimate distribution system area

Step 2b: Estimate Service Area Population for each year in the base period

Step 3b: Calculate Gross Water Use for each year in the base period  
(expressed in gallons per day)

Step 4b: Calculate Annual Daily Per Capita water use for each year in the base period by dividing Gross Water Use by Service Area Population

Step 5b: Calculate Base Daily Per Capita Water Use as the average per capita water use

Each calculation step for determining Base Daily Per Capital Water Use for the 5-year period is shown below.

**Step 1: Estimate Distribution System Area (Five-Year Baseline).** The distribution system area is the SFPUC's in-City retail distribution system, shown previously in **Figure 7**.

**Step 2: Estimate Service Area Population for Base Period (5-Year Baseline).** As shown in **Table 16**, the retail population was developed for the period from FY 00/05 to FY 09/10 based on Department of Finance total population data for the City and County of San Francisco (2005 – 2009).

**Step 3: Calculate Gross Water Use (5-Year Baseline).** Gross water use for the City of San Francisco is provided in **Table 16**. As discussed previously, gross water use was developed by compiling water from the SFPUC's own sources delivered to Retail Customers (total production minus deliveries to Wholesale Customers). Changes in in-City storage were then factored in to develop gross water use.

The SFPUC compiles daily flow data for the County-line meters, System Input and In-Line Meters, and daily reservoir water level data. The meters, water level sensors, and associated metering equipment are all inspected, tested, calibrated, and maintained according to the applicable meter calibration and maintenance frequency by an independent metering consultant. These include annual pitot tube tests, quarterly secondary meter equipment testing and calibration, cleaning, flushing, inspecting, and lubricating. The flow quantities are expected to be accurate and no meter error adjustment is necessary.

**Step 4: Calculate Annual Daily Per Capita Water Use (5-Year Baseline).** Annual Daily Per Capita Water Use was calculated by dividing gross water use by population. Annual Daily Per Capita Water Use is shown on the last row in **Table 16**.

**Step 5: Calculate Base Daily Per Capita Water Use (5-Year Baseline).** Base Daily Per Capita Water Use is calculated as the average of per capita water use, or 92.2 gpcd.

**Table 16: SFPUC In-City Retail Gross Water Use from FY 00/05 to FY 09/10**

	05/06	06/07	07/08	08/09	09/10
Own Sources (mgd) <sup>1</sup>	79.4	76.8	76.7	75.0	72.5
Imported Sources (mgd)	0	0	0	0	0
Volume Exported (mgd)	0	0	0	0	0
Change in Storage (mgd)	0.00	0.03	0.00	-0.01	0.06
Gross Water Use (mgd)	79.4	76.8	76.7	75.0	72.4
Retail Population <sup>2</sup>	807,382	813,929	823,940	836,360	846,601
<b>Per Capita Use (gpcd)<sup>3</sup></b>	<b>98.3</b>	<b>94.3</b>	<b>93.1</b>	<b>89.7</b>	<b>85.6</b>

1. All sources are metered, and all meters are calibrated annually.

2. Population data from California Department of Finance for City and County of San Francisco (<http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/view.php>), 2005 - 2009.

3. Per capita water use has been calculated in compliance with the requirements of the Water Conservation Bill of 2009.

The SFPUC’s in-City Retail Base Daily Per Capita Water Use for the 5-year period from 05/06 to 09/10 is 92.2 gpcd. Because this is below 100 gpcd, no adjustments to the urban water use target are needed (California Water Code Section 10608.22).

#### 4.2.4 Water Use Reduction Plan

The SFPUC’s in-City Retail current Base Daily Per Capita Water Use is 92.2 gpcd, which is below both the interim and 2020 urban water use targets of 136.8 and 124.5 gpcd, respectively; therefore, the SFPUC is already in compliance with the requirements of the Water Conservation Bill of 2009.

Although it is already in compliance with the Water Conservation Bill, the SFPUC remains committed to implementing conservation as an important component of its water supply portfolio, and will continue its efforts to minimize retail water demands through conservation. In 2010, the SFPUC conducted a detailed analysis on the effectiveness of its water conservation measures. The analysis projected a total savings potential of 5.0 mgd by 2018 and 6.0 mgd by 2035 from active conservation. Detail of the analysis is documented in the SFPUC Retail Demand Model Update and Calibration Technical Memorandum (**Appendix D**), which was developed as part of the 2011 Retail Water Conservation Plan. This Plan is intended to serve as a living document that will be reviewed and updated periodically as part of the SFPUC’s adaptive management approach.

### 4.3 WHOLESALE WATER DEMANDS

The SFPUC provides water to 27 Wholesale Customers in San Mateo, Alameda and Santa Clara Counties under contractual agreements. These entities receive over two-thirds of the SFPUC’s RWS watershed supply. Of the 27 Wholesale Customers (**Figure 3**), 14 derive 100% of their water from the SFPUC.



### 4.3.1 Wholesale Water Contractual Obligations and Demands

The following sections describe the various water supply contracts and other contractual obligations that the SFPUC has entered into with its Wholesale Customers.

**1984 Settlement Agreement and Master Water Sales Contract:** Between 1984 and 2009, the SFPUC provided water to its Wholesale Customers under the terms of the 1984 Settlement Agreement and Master Water Sales Contract (1984 Agreement). The 1984 Agreement created a total “Supply Assurance” of 184 mgd (measured on an annual average basis) for 25 of the Wholesale Customers. The Cities of San Jose and Santa Clara are served wholesale water on an interruptible basis and such sales are not deemed to be within the Supply Assurance. The Supply Assurance is not a guarantee of water delivery in every year, but may be reduced due to emergencies, water shortages, drought, or system maintenance and repair. Of the 25 Wholesale Customers within the Supply Assurance, 24 have Individual Supply Guarantees (ISG) within the 184 mgd. The City of Hayward does not have an ISG because it had previously negotiated a permanent, all requirements individual contract. The City of Hayward continues to receive water under a contract entered into in 1960 with no expiration date or limitation in supply. Under the 184 mgd Supply Assurance, the 24 Wholesale Customers with ISGs would be required to reduce their allocation to accommodate the needs of the City of Hayward in the event that Hayward’s water use exceeds its estimated share of the Supply Assurance.

**2009 Water Supply Agreement:** The 1984 Agreement expired on June 30, 2009. In July 2009, the SFPUC entered into the Water Supply Agreement (WSA) with the Wholesale Customers. The WSA continues the existing 184 mgd Supply Assurance. The WSA includes an “Interim Supply Limitation”, which limits water sales to Retail and Wholesale Customers from the RWS watersheds to 265 mgd through 2018 based upon the water supply variant adopted by the SFPUC in its approval of the WSIP in Res. No. 08-200. Under the Interim Supply Limitation, Retail Customers receive 81 mgd and the Wholesale Customers receive 184 mgd from the RWS. The 184 mgd Interim Supply Limitation includes 9 mg of demand allocated to the Cities of San Jose and Santa Clara, but both cities retain their temporary, interruptible status.

As part of the implementation of the Interim Supply Limitation, on December 14, 2010 the SFPUC established each individual Wholesale Customer’s share of the Interim Supply Limitation, referred to as “Interim Supply Allocations” (ISAs – see SFPUC Res. No. 10-0213). The ISAs are effective until December 31, 2018 and do not affect the Supply Assurance or the ISGs. The ISGs and ISAs are listed in **Table 17**.

**Environmental Enhancement Surcharge:** If combined sales to Wholesale and Retail Customers exceed the Interim Supply Limitation of 265 mgd, the SFPUC will impose an Environmental Enhancement Surcharge on Retail Customers if sales exceed 81 mgd and on individual Wholesale Customers whose purchases exceed their ISAs. As described in Section 4.04 of the WSA, the SFPUC plans to establish the Environmental Enhancement Surcharge concurrently with the budget-coordinated rate process to be effective for water sales in FY 2011/12 through 2017/18. The SFPUC is in the process of developing the methodology and amount of this volume-based charge.

**2018 Water Supply Decisions:** Subject to completion of necessary CEQA review and the exercise of retained discretion by the SFPUC to reject or modify proposed projects, the WSA requires the SFPUC to make the following decisions by December 31, 2018:

- Whether to make San Jose and Santa Clara permanent customers, to the extent that the SFPUC determines that long-term water supplies are available.
- Whether to provide water in excess of the supply assurance to meet wholesale demands through the year 2030, and whether to offer a corresponding increase in the supply assurance.

**Wholesale Demands:** **Table 17** and **Table 18** show the demands of the Wholesale Customers on the SFPUC RWS. **Table 17** shows the unrestricted purchase projections of the Wholesale Customers through 2035 assuming the 265 mgd supply limitation from the RWS watersheds ends in 2018. **Table 18** shows the wholesale customer demands for the same time period, assuming the 265 mgd supply limitation extends beyond 2018.

**Table 17: SFPUC Wholesale Customer Water Demands (mgd)<sup>1</sup>**

Wholesale Customer	ISG <sup>2</sup>	ISA <sup>3</sup>	2005	2010	2015	2020	2025	2030	2035
Alameda County Water District	13.76	13.76	10.80	10.81	13.76	13.76	13.76	13.76	13.76
City of Brisbane / Guadalupe Valley Municipal Improvement District	0.98	0.96	0.68	0.58	0.98	1.02	1.04	1.06	1.07
City of Burlingame	5.23	4.97	4.52	3.93	4.69	4.84	4.94	5.05	5.24
California Water Service Company	35.68	35.68	34.83	32.57	33.70	31.73	32.43	33.16	33.91
Coastside County Water District	2.18	2.18	1.75	1.82	2.18	2.18	2.18	2.18	2.18
Cordilleras Mutual Water Association	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
City of Daly City	4.29	4.29	6.94	3.21	4.29	4.29	4.59	4.89	5.37
City of East Palo Alto	1.96	1.96	2.02	1.81	2.37	2.48	2.64	2.82	3.04
Estero Municipal Improvement District	5.90	5.85	5.21	4.9	5.70	5.30	5.40	5.40	5.90
City of Hayward	22.08	22.92	18.51	17.25	22.00	23.60	25.80	28.10	30.70
Town of Hillsborough	4.09	3.72	3.37	2.97	3.72	4.09	4.09	4.09	4.09
City of Menlo Park	4.46	4.1	3.38	3.04	3.96	4.13	4.44	4.62	4.46
Mid-Peninsula Water District	3.89	3.71	3.30	2.87	3.70	3.80	3.80	3.90	3.89
City of Millbrae	3.15	3.13	2.43	2.24	3.20	3.30	3.30	3.40	3.41
City of Milpitas	9.23	8.96	6.67	6.28	7.07	7.69	8.25	8.80	8.90
City of Mountain View	13.46	11.43	10.53	8.95	10.64	10.72	11.16	11.62	12.11
North Coast County Water District	3.84	3.67	3.42	3.02	3.62	3.70	3.70	3.70	3.76
City of Palo Alto	17.08	14.7	12.08	10.99	12.67	12.91	13.12	13.84	13.90
Purissima Hills Water District	1.63	1.63	2.01	1.75	1.74	1.74	1.80	1.84	1.84
City of Redwood City	10.93	10.88	11.11	9.61	11.20	11.40	11.50	11.60	11.62
City of San Bruno	3.25	2.65	3.11	1.46	2.65	3.25	3.25	3.25	3.28
City of San Jose <sup>4,5</sup>	0.00	4.13	4.40	4.13	4.50	6.34	6.34	6.34	6.34

Wholesale Customer	ISG <sup>2</sup>	ISA <sup>3</sup>	2005	2010	2015	2020	2025	2030	2035
City of Santa Clara <sup>4</sup>	0.00	4.13	4.14	2.35	4.50	4.50	4.50	4.50	4.50
Stanford University	3.03	2.91	2.32	2.14	2.70	2.90	3.10	3.30	3.50
City of Sunnyvale	12.58	10.59	8.76	9.92	8.93	8.93	8.93	8.93	8.93
Westborough County Water District	1.32	1.08	1.06	0.84	0.89	0.88	0.87	0.85	0.84
<b>Total:</b>	<b>184.0</b>	<b>184.0</b>	<b>167.4</b>	<b>149.5</b>	<b>175.4</b>	<b>179.5</b>	<b>184.9</b>	<b>191.0</b>	<b>196.5</b>

1. Projections reflect SFPUC unrestricted purchase projections provided by Wholesale Customers, regardless of ISG or ISA. Italicized values indicate interpolation or extrapolation. Wholesale Customers projections are currently being updated through individual Urban Water Management Planning processes, and therefore may change.
2. Individual Supply Guarantee (ISG) refers to each Wholesale Customer's share of the 184 mgd Supply Assurance as defined in section 3.01 of the 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers (2009 WSA). The Supply Assurance is the 184 mgd maximum annual average metered supply of water dedicated by San Francisco to public use in the wholesale service area (not including the cities of San Jose and Santa Clara). Hayward's ISG value was calculated as 184 mgd less the total of permanent customer ISG values (161.91 mgd).
3. ISA refers to each Wholesale Customer's share of the 265 mgd Interim Supply Limitation through 2018.
4. The Cities of San Jose and Santa Clara are provided water by the SFPUC on a temporary, interruptible basis. Subject to the process requirements for interruption or reduction of supply provided in Section 4.06 of the WSA, the SFPUC will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by the Commission, pursuant to Section 4.05H of the WSA, as to whether to make San Jose and Santa Clara permanent customers of the RWS. Per the WSA, the combined annual average water usage of San Jose and Santa Clara shall not exceed 9 mgd average annual supply.
5. In a letter to BAWSCA, the City of San Jose indicated a desire to purchase between 4.50 and 6.34 mgd from the SFPUC between 2020 and 2035; however, pending the 2018 decisions by the SFPUC regarding whether to (1) grant permanent status to San Jose and Santa Clara, and (2) increase the Supply Assurance, the WSA limits combined purchases to the cities to 9.0 mgd on a temporary, interruptible basis.

For the purposes of the supply and demand comparisons provided in Section 5.7, it is assumed that the 265 mgd supply limitation extends beyond 2018. Projected Wholesale Customer demands have been limited to 184 mgd. Prior to 2018, this 184 mgd includes the demands of San Jose and Santa Clara. After 2018, subject to the process requirements for interruption or reduction of supply provided in Section 4.06 of the WSA, the SFPUC will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by the Commission, pursuant to Section 4.05H of the WSA, as to whether to make San Jose and Santa Clara permanent customers of the RWS. Per the WSA, the combined annual average water usage of San Jose and Santa Clara shall not exceed 9 mgd average annual supply.

**Table 18** presents wholesale demands under this assumption.

**Table 18: SFPUC Wholesale Customer Purchase Projections with Extended 265 mgd Supply Limitation<sup>1</sup>**

Purchase Projections (mgd)	2005	2010	2015	2020	2025	2030	2035
Wholesale Customer Purchase Projections	167.4	149.5	175.4	177.6	183.1	184.0	184.0

1. Projected Wholesale Customer demands limited to 184 mgd. Prior to 2018, 184 mgd includes the demands of San Jose and Santa Clara. After 2018, San Jose and Santa Clara will be supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2018).

## SECTION 5: WATER SUPPLY RELIABILITY

This section addresses the reliability of both the SFPUC RWS and deliveries to the SFPUC’s Retail Customers. As previously described, the Retail Customers’ water supply comes from the SFPUC RWS watersheds and local water supply sources (groundwater and recycled water). Approximately 32% of the SFPUC’s RWS supply is delivered to Retail Customers, and the remaining 68% is delivered to Wholesale Customers.

### 5.1 RWS SUPPLY RELIABILITY

The SFPUC’s regional water supply system reliability is expressed in terms of the system’s ability to deliver water during droughts. Reliability is defined by the amount and frequency of water delivery reductions (deficiencies) required to balance customer demands with available supplies in droughts. The SFPUC plans its water deliveries anticipating that a drought more severe than the worst drought ever experienced may occur. This section discusses both system-wide deficiencies and anticipated retail deficiencies that the City may experience.

The SFPUC’s RWS watershed supplies have experienced infrequent, short-term outages as a result of water quality events. Because Hetch Hetchy water is not filtered, it is subject to strict water quality standards set by the California Department of Public Health. However, as a result of weather events, turbidity levels can exceed standards requiring the Hetch Hetchy supply to be diverted to local storage (in the case of short-term events) or shut off (in the case of longer-term events) until turbidity levels drop to within standards. During these periods, the SFPUC’s entire supply comes from the Sunol Valley Water Treatment Plant and the Harry Tracy Water Treatment Plant, both of which are supplied by local Bay Area reservoirs.

**Table 19** summarizes the legal, environmental, water quality, climatic, and other factors potentially resulting in inconsistency of supply. As described previously, the RWS may be subject to volume reductions due to required instream flow releases as well as climatic variation. Groundwater supplies are typically limited by the quality and quantity of available supplies. Institutional arrangements governing potential water transfers may affect their availability, and climatic variability may impact the availability of surface water in some years. Recycled water is limited by water quality requirements that legally restrict recycled water supply for some uses.

**Table 19: Factors Potentially Affecting Consistency of Supplies**

WATER SUPPLY SOURCES	LEGAL	ENVIRONMENTAL	WATER QUALITY	CLIMATIC	OTHER (SPECIFY)
Regional Water System		✓		✓	
Groundwater			✓	✓	
Water Transfer				✓	Institutional
Recycled Water	✓		✓		

### 5.1.1 Estimating the Frequency and Magnitude of SFPUC RWS Supply Deficiencies

The total amount of water the SFPUC has available to deliver to Retail and Wholesale Customers during a defined period of time depends on several factors, including the amount of water that is available to SFPUC from natural runoff, the amount of water in reservoir storage, and the amount of that water that must be released from the SFPUC's system for purposes other than customer deliveries (e.g., releases below Hetch Hetchy reservoirs to meet Raker Act and instream flow release requirements, and future releases from Lower Crystal Springs and Calaveras Reservoirs to support anadromous fisheries).

The 1987-92 drought profoundly highlighted the shortfall between the SFPUC's water supplies and its demands. Other than during the drought of 1976-77, drought sequences in the past did not seriously affect the ability of the SFPUC RWS to sustain full deliveries to its Retail and Wholesale Customers. Based on the 1987-92 drought experience, the SFPUC assumes its "firm" capability to be the amount the system can be expected to deliver during historically experienced drought periods. In estimating this firm capability, the SFPUC assumes the potential recurrence of a drought such as that which occurred during 1987-92, plus an additional 2-year period of limited water availability. This drought sequence is referred to as the "design drought" and serves as the basis for planning and modeling of future drought scenarios.

### 5.1.2 SFPUC's Normal Year and Design Drought

For planning purposes, the SFPUC "normal year" is based on historical hydrology under conditions that allow the reservoirs to be filled over the course of the snowmelt season, allowing full deliveries to customers.

The SFPUC Design Drought, used for planning and modeling of future drought scenarios, is based on historic droughts and hydrology. As detailed below, it is a drought sequence that is more severe than what the SFPUC RWS has historically experienced.

The 1987-92 drought defines the most extreme recorded drought for SFPUC water deliveries, and establishes the basis for the Design Drought sequence. The drought covered a 6½-year period from July 1986 (when the SFPUC reservoirs were full) to about November/December 1992 (when the SFPUC reservoirs reached minimum storage). Although the SFPUC reservoir system began to recover with precipitation during the last 6 months of the drought, from July 1992 through December 1992, SFPUC customer purchases exceeded SFPUC inflow and the SFPUC system storage continued to decline through November/December 1992. Because the last 6 months of the 1987-92 drought includes the beginning of this recovery period, it has been removed from the SFPUC's Design Drought.

In summary, the design drought sequence used by the SFPUC for reliability planning totals an 8½-year period and is based on the following factors:

- **Historical Hydrology:** The 6 years of hydrology from the historical drought (July 1986 to June 1992);

- **Prospective Drought:** A 2½-year period which includes the 1976-1977 drought (to represent a drought sequence worse than historical); and
- **System Recovery Period:** The last 6 months of the Design Drought are the beginning of the system recovery period. The precipitation begins in the fall, and by approximately the month of December the SFPUC reservoir inflow exceeds customer demands and SFPUC system storage begins to recover.

For the purposes of the required UWMP 3-year drought sequence for 2010, years two through four of the SFPUC Design Drought sequence are used. **Table 20** summarizes the expected reductions in available water supply in normal, single dry, and multiple dry years. Section 5.2.5 describes the available water supply for years 2015-2035.

**Table 20: Year 2010 SFPUC System Water Availability During Normal and Drought Scenarios**

	AVERAGE / NORMAL WATER YEAR	SINGLE DRY WATER YEAR <sup>2</sup>	MULTIPLE DRY YEARS <sup>1</sup>		
			YEAR 1	YEAR 2	YEAR 3
Regional Water System Watersheds	100%	90%	90%	80%	80%
Groundwater <sup>3</sup>	100%	100%	100%	100%	100%
Recycled Water <sup>3</sup>	100%	100%	100%	100%	100%

1. The multiple dry years shown in this table reflect years 2-4 of the SFPUC 8.5-year design drought for year 2010, and years 6-8 of the SFPUC 8.5-year design drought for years 2015 through 2035.
2. Measured as percentage of normal year availability.
3. Groundwater and recycled water are San Francisco local supplies and are only available for use in the retail service area.

At current delivery levels, the SFPUC RWS can be expected to experience up to a 25% shortage 15 to 20% of the time during multiple-year drought sequences. Therefore, the SFPUC is faced with the necessity to develop a long-term strategy to accommodate or rectify the potential of future water shortages throughout its wholesale and retail operations.

## 5.2 DRY YEAR WATER SUPPLY OPTIONS

As an established major water supplier for the Bay Area region, the SFPUC is responsible for securing and managing its existing system supplies and planning for future needs, as well as securing its own retail supply.

The WSIP water supply program includes development of dry year supplies for the RWS. The PEIR included an analysis of dry year water supply transfers from the senior water rights holders on the Tuolumne River, MID and TID; a groundwater conjunctive use project (the Groundwater Storage and Recovery Project); and a regional desalination project. The SFPUC is investigating the possibility of a dry year water transfer with MID and TID for 2 mgd, and the SFPUC is implementing the Groundwater Storage and Recovery Project.



The SFPUC’s WSIP provides goals and objectives to improve the supply reliability and delivery reliability of the RWS. The goals and objectives of the WSIP related to water supply are presented in **Table 21**.

**Table 21: WSIP System Performance Objectives**

PROGRAM GOAL	SYSTEM PERFORMANCE OBJECTIVE
<p><b>Water Supply:</b> meet customer water needs in non-drought and drought periods</p>	<ul style="list-style-type: none"> <li>• Meet average annual water demand of 265 mgd from the SFPUC watersheds for Retail and Wholesale Customers during non-drought years for system demands through 2018.</li> <li>• Meet dry year delivery needs through 2018 while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts.</li> <li>• Diversify water supply options during non-drought and drought periods.</li> <li>• Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.</li> </ul>

The adopted WSIP included several water supply elements to address the WSIP water supply goals and objectives, which together will allow the SFPUC to meet at least 80% of its customer demand during droughts. The SFPUC will continue to rely on rationing up to no more than 20% in any one year of a drought.

The following describes the dry year projects of the adopted WSIP to augment all year type water supplies during drought:

- Restoration of Calaveras Reservoir capacity
- Restoration of Crystal Springs Reservoir capacity
- Groundwater Storage and Recovery Project
- Water transfer with MID/TID

### 5.2.1 Restoration of Calaveras Reservoir Capacity

The adopted WSIP includes the Calaveras Dam Replacement Project, which restores the reservoir capacity of Calaveras Dam from 38,100 acre-feet to 96,850 acre-feet, returning about 60,000 acre-feet of reservoir storage to the SFPUC water system. The restored capacity provides storage for emergency and drought water supplies, providing up to 7 mgd over the SFPUC design drought. In general, a restored Calaveras Reservoir provides 40% of the SFPUC’s local system storage capacity. Nearly 66% of local water system yield comes through Calaveras Reservoir from the Alameda Creek watershed. The Environmental Impact Report (EIR) was certified and the project was adopted by the SFPUC in January 2011. Construction is expected to be completed in 2015.

## 5.2.2 Restoration of Crystal Springs Reservoir Capacity

The adopted WSIP includes the Lower Crystal Springs Dam Improvements Project, which will increase the average storage of the reservoir from 15.4 billion gallons to 17.8 billion gallons with a maximum normal operating level of 287.8 feet, providing an additional 2.4 billion gallons of storage to the SFPUC water system. The restored capacity provides storage for emergency and drought water supplies, providing up to an additional 0.5 mgd over the SFPUC design drought. The Project EIR was certified and the project was adopted by the SFPUC in October 2010. Construction is expected to be completed in 2013.<sup>13</sup>

## 5.2.3 Regional Groundwater Storage and Recovery Project

The proposed Regional Groundwater Storage and Recovery Project is an in-lieu conjunctive use project that would balance the use of both groundwater and surface water to increase water supply reliability during dry years or in emergencies. The proposed project is located in the South Westside Basin in northern San Mateo County and is sponsored by the SFPUC in coordination with its partner agencies, the California Water Service Company, the City of Daly City and the City of San Bruno. The partner agencies currently purchase wholesale surface water from the SFPUC and also independently operate groundwater production wells for drinking water and irrigation.

The proposed Regional Groundwater Storage and Recovery Project would extract stored groundwater from the South Westside Basin groundwater aquifer in San Mateo County for delivery to the RWS and the partner agencies. During years of normal or heavy precipitation, the proposed project would provide surface water to the partner agencies to reduce the amount of groundwater pumped (sometimes called “in lieu recharge”). Over time, the reduced pumping would result in the storage of approximately 61,000 acre-feet of water (more than the supply contained in the Crystal Springs Reservoir on the SFPUC Peninsula Watershed). The project would consist of installing up to 16 new wells to pump the stored groundwater during a drought. The new wells would allow recovery of the stored water at a rate of up to 7.2 mgd for a 7.5-year dry period. The water would be in compliance with the California DPH requirements for drinking water supplies. The proposed project would include construction of well pump stations, disinfection units, and piping. The proposed project is currently undergoing environmental review. EIR certification is expected in September 2012, and construction is expected to begin in May 2013.<sup>13</sup>

## 5.2.4 Water Transfer with Modesto Irrigation District/Turlock Irrigation District

The adopted WSIP includes a water transfer between the SFPUC and its partners on the Tuolumne River. Certification of the WSIP PEIR, in October 2008, has allowed the SFPUC to move forward in securing a dry year water transfer in the Tuolumne River basin from the senior water rights holders: MID and TID. The water transfer would yield an average of 2 mgd over the design drought.

<sup>13</sup> This UWMP reflects that this supply will be available during the 2015-2020 time increment because information in this document is presented in 5-year increments and this supply will be available during the majority of this time period. The SFPUC believes there will be sufficient supply for the three-year drought period analyzed in this document.

## 5.2.5 Summary of Dry Year Supplies

The dry year water supplies described above will allow the SFPUC to meet at least 80% of its customer demand during droughts. The SFPUC will continue to rely on rationing up to no more than 20% in any one year of a drought. This UWMP assumes that these resources will be available to the RWS in the volumes and timeframes indicated in **Table 22**.

**Table 22: Dry Year Water Supply Reliability Water Supply Options (2010 to 2035)**

SUPPLY OPTION <sup>1</sup>	SUPPLY AVAILABLE(MGD)					
	2010	2015	2020	2025	2030	2035
Crystal Springs Reservoir Storage Recovered to 22.1 bg <sup>2,3</sup>	0	0.5	0.5	0.5	0.5	0.5
Regional Groundwater Storage and Recovery (mgd)	0	7.2	7.2	7.2	7.2	7.2
Calaveras Reservoir Storage Recovered to 31.5 bg	0	7	7	7	7	7
Water Transfers (mgd)	0	2.0	2.0	2.0	2.0	2.0

1. Water supply option schedule information from SFPUC WSIP, as adopted by the SFPUC on 11/29/05.  
 2. bg = Billion gallons  
 3. Crystal Springs Reservoir has a maximum storage capacity of 22.1 billion gallons (at 291.8 feet). When the Lower Crystal Springs Dam Improvement is complete, the reservoir will be operated normally at 287.8 feet (4 feet below capacity) based on permit conditions.

With current water supplies, the SFPUC experiences shortages between 10% and 25% at the planning level demand of 265 mgd. **Table 23** illustrates the delivery reduction sequence over the design drought. Implementation of the WSIP water supply projects will improve the SFPUC's water supply reliability, particularly in the earlier years of the drought, however, as the drought progresses the SFPUC continues to experience multiple years of 20% rationing as shown in **Table 23**. For the purposes of the UWMP multiple dry-year sequence, the SFPUC uses years 2-4 of the design drought for year 2010 supply and demand comparisons and uses years 6-8 for the supply and demand comparisons for 2015-2035. Any sequence of years can be used in the analysis, however, the SFPUC chose to use the worst sequence of years from 2015-2035 to demonstrate that even with the WSIP water supply projects in place the SFPUC system is still subject to multiple years of 20% shortage at a planning level demand of 265 mgd.

**Table 23: SFPUC Design Drought Water Delivery Reduction Sequence**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 8.5
	% REDUCTION OVER DESIGN DROUGHT								
RWS Watersheds 2010 (pre-WSIP)	0%	10%	20%	20%	20%	20%	20%	25%	25%
RWS Watersheds 2015-2035 (post-WSIP)	0%	0%	10%	10%	20%	10%	20%	20%	20%

Continued progress on the dry year supply projects is an important component of the SFPUC's dry year water supply program. As discussed previously, in adopting the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements project, the SFPUC agreed to provide instream flow releases below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam, to obtain required federal and state resource agency permits for construction of these projects. The instream flow release requirements for Alameda Creek and San Mateo Creek represent a potential decrease in available annual average water supply of 3.9 mgd and 3.5 mgd, respectively, for a total shortfall of 7.4 mgd on an average annual basis.<sup>14</sup> These instream flow releases could potentially create a shortfall in meeting the SFPUC demands of 265 mgd and slightly increase the SFPUC's dry year water supply needs. The effects of such a shortfall, if any, would occur upon the completion of construction of both the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements project in approximately 2015 and 2013, respectively, at the time when the SFPUC will be required to provide the instream flow releases.

The SFPUC is currently exploring other future supplies to offset the 7.4 mgd in instream flow release requirements. These projects may include:

- Development of additional conservation and recycling
- Development of additional groundwater supplies
- Additional water transfer volumes from MID and/or TID
- Increase in Tuolumne River supply
- Revising the Upper Alameda Creek Filter Gallery Project capacity
- Development of a desalination project

Section 3.3 provides additional information on the SFPUC's planned future water supply projects.

### **5.3 BAY AREA REGIONAL EFFORTS TO IMPROVE WATER SUPPLY RELIABILITY**

The following projects and efforts currently underway or completed will help the SFPUC RWS meet its water supply reliability needs. Some of these projects are reflected in the SFPUC's current strategy for meeting water supply needs. As the remainder of these projects move through the planning stages they will continue to inform the SFPUC water supply strategy.

<sup>14</sup> This water supply decrease assumes the adopted WSIP program element of an average annual target delivery of 265 mgd. The analysis also assumes that all of the water supply components of the adopted WSIP are implemented and all WSIP projects are implemented, including the Upper Alameda Creek Filter Gallery project, which in accordance with the Program Environmental Impact Report (PEIR) assumptions is estimated to recapture up to 6300 acre-feet (AF) per year (5.6 mgd).

### 5.3.1 Desalination

The SFPUC's investigations of desalination as a water supply source have focused primarily on the potential for regional facilities. The proposed Bay Area Regional Desalination Project is a joint venture between the SFPUC, CCWD, EBMUD, SCVWD, and Zone 7 Water Agency.

The regional desalination project would provide an additional source of water during emergencies, provide a supplemental water supply source during extended droughts, allow other major water facilities to be taken out of service for maintenance or repairs, and increase supply reliability by providing water supply from a regional facility. The Bay Area Regional Desalination Project will produce 10 to 50 mgd.

### 5.3.2 Regional Interties

Regional interties help increase the reliability of the SFPUC RWS by allowing for water exchanges during emergencies, water shortages or maintenance.

- **EBMUD-Hayward SFPUC Intertie:** In 2002, the SFPUC formed a partnership with EBMUD and the City of Hayward to construct Skywest Pump Station and 1.5 miles of pipeline to link their systems. These facilities are now completed and can convey up to 30 mgd among these three agencies to boost water supply reliability when needed. EBMUD and the SFPUC own these facilities jointly, while the City of Hayward maintains and operates them in coordination with EBMUD and the SFPUC.
- **Milpitas Intertie:** The SFPUC and SCVWD constructed a 40 mgd intertie between their two systems to exchange water during emergencies and planned maintenance. The intertie was recently used during maintenance of one of SCVWD's water treatment plants.
- **South Bay Aqueduct Interties:** The SFPUC has in the past used one permanent and one temporary intertie to the SBA for water transfers, which if reactivated would enable the SFPUC to receive SWP water.

### 5.3.3 Bay Area Integrated Regional Water Management Plan

The SFPUC is an active participant in the nine-county Bay Area Integrated Regional Water Management planning process. The Integrated Regional Water Management Plan (IRWMP) was first completed in November 2006 and most recently amended in December 2010. The IRWMP covers water supply and water quality, wastewater and water recycling, storm water and flood protection, and habitat protection and ecosystem restoration objectives and efforts in the Bay Area. The IRWMP also identifies integrated and collaborative projects among Bay Area agencies. DWR has recently recommended over \$800,000 in Proposition 84 grant funding for the Bay Area region to be used to update the Bay Area IRWMP.

## 5.4 DROUGHT RESPONSE

This section presents the SFPUC's water shortage contingency plan and includes the following information:

- An overview of SFPUC's response to past water shortage experiences;
- A summary of the procedures for allocating reduced deliveries from the SFPUC RWS; and
- A summary of the SFPUC's retail plan for responding to water shortages.

### 5.4.1 Past Experience with Water Shortages

Every water system has vulnerabilities in terms of its ability to provide a safe and reliable supply of water. Water shortages can occur in a number of ways. Very localized shortages can occur due to distribution system problems and system shortages can occur due to major facility failures. Yet, beyond system facility contingencies, there exists the potential vulnerability to drought, which limits the amount of water that is available over a series of years. This latter type of contingency is not necessarily caused by physical facility limitations. Within the past 25 years, San Francisco has experienced both localized shortages due to earthquakes and system-wide shortages due to drought.

The SFPUC's past experiences with water shortages, due to drought and earthquakes, have helped shape its current plans and policies relative to water shortage preparedness and response:

- In 1987-92 San Francisco experienced a serious drought. This 6-year drought provides an example of how various stages of action were taken in times when the operational capabilities of Hetch Hetchy and other water supplies available to the SFPUC were taxed to a point that forced drastic actions to avoid running out of water.
- Following the October 17, 1989 Loma Prieta earthquake, the SFPUC worked with the Mayor's Office of Emergency Response to reconnect service to those who were impacted by the earthquake. Most of the homes that lost water service were reconnected to the water system's lines within 72 hours.
- In April 2007, below normal precipitation and snow pack caused the SFPUC to initiate a 10% voluntary reduction in water use in the service area. The call for a voluntary reduction continued through 2009.

The 1987-92 drought illustrated the deficit between the SFPUC's water supplies and its demands. Other than the 1976-77 drought, drought sequences in the past did not seriously affect the ability of the SFPUC to maintain full deliveries to its customers. As the SFPUC progressed into the drought and reservoir storage continued to decline, it became evident that full water deliveries could not be sustained without a risk of running out of water before the drought was over. This circumstance became a reality in early 1991 when the Hetch Hetchy Reservoir became so depleted (less than 25,000 acre-feet of storage in a reservoir with over 360,000 acre-feet of capacity)



that minimum instream flow releases and anticipated demands required the SFPUC to initiate programs to achieve a 45% reduction in system-wide water deliveries to balance water supplies with deliveries. Fortunately, unexpected runoff provided relief from the severity of that instance of water shortage; however, the drought was far from over. **Appendix E** provides a more detailed summary of San Francisco’s 1987-92 drought experience and the actions taken at the time.

### 5.4.2 Water Shortage Allocation Plan

As the 1987-1992 drought progressed and reservoir storage continued to decline, it became apparent that continued full deliveries could not be sustained without the risk of running out of water before the drought ended.

To provide some level of assurance that water could be delivered continuously throughout a drought (although at reduced levels), the SFPUC adopted a drought planning sequence and associated operating procedures that trigger different levels of water delivery reduction rationing relative to the volume of water actually stored in SFPUC reservoirs. Each year, during the snowmelt period, the SFPUC evaluates the amount of total water storage expected to occur throughout the RWS. If this evaluation finds the projected total water storage to be less than an identified level sufficient to provide sustained deliveries during drought, the SFPUC may impose delivery reductions or rationing.

SFPUC’s response to water shortages also included the adoption of new agreements regarding how water would be allocated in future drought periods. In connection with the adoption of the WSA, the Wholesale Customers and San Francisco adopted the Water Shortage Allocation Plan (WSAP) which outlines procedures for allocating water from the RWS to retail and Wholesale Customers during system-wide shortages of 20% or less.

In connection with the adoption of the WSA, the Wholesale Customers and San Francisco adopted the Water Shortage Allocation Plan (WSAP) which outlines procedures for allocating water from the RWS to retail and Wholesale Customers during system-wide shortages of 20% or less (Tier 1 Plan). Section 3.11.C of the WSA authorizes the Wholesale Customers to adopt a methodology for allocating the collective wholesale allocation among the individual Wholesale Customers (see “Tier 2 Drought Implementation Plan” discussion).

For shortages in excess of 20%, the SFPUC will meet with the wholesale customers to determine if modifications to the Tier 1 Plan can be agreed upon by the SFPUC and the wholesale customers. If they cannot agree, the SFPUC may allocate water in its discretion, subject to challenge by the wholesale customers, unless all of the wholesale customers direct that a particular Tier 2 allocation methodology be used.

**Regional Water Shortage Allocations:** During a drought, it is expected that the Retail and Wholesale Customers would experience a reduction in the amount of water received from the RWS. The WSAP provides specific allocations of the available water supply between the Retail and Wholesale Customers collectively associated with varying system-wide shortages of up to 20%, as shown in **Table 24**.

**Table 24: Retail / Wholesale Water Allocation during System-wide Water Shortage**

LEVEL OF SYSTEMWIDE REDUCTION IN WATER USE REQUIRED	SFPUC SHARE OF AVAILABLE WATER	WHOLESALE CUSTOMERS SHARE (COLLECTIVELY)
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

In addition to providing an allocation method, the WSAP also includes provisions for transfers, banking and excess use charges. See **Appendix G** for the full text of the WSAP.

According to the WSAP allocations presented above in **Table 24**, **Table 25** and **Table 26** show SFPUC RWS Retail and Wholesale supply schedules during normal, single dry year, and multiple dry year periods. For the purposes of this analysis, the SFPUC assumed a delivery goal of 265 mgd. System-wide shortages were applied to a demand of 265 mgd and the subsequent allocations between retail and wholesale collectively.

**Table 25: SFPUC Retail RWS Allocations in Normal, Dry and Multiple Dry Years**

	NORMAL YEAR		SINGLE DRY YEAR		MULTIPLE DRY YEARS <sup>1</sup>					
					YEAR 1		YEAR 2		YEAR 3	
	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)
2010	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1
2015	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1
2020	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1
2025	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1
2030	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1
2035	81.0	100	81.0	100.0	81.0	100.0	79.5	98.1	79.5	98.1

1. Under the WSAP, the SFUPC retail allocations at a 10% shortage are 85.86 mgd. However, due to the Phased WSIP Variant, only 81 mgd of RWS supply is shown.

**Table 26: SFPUC Wholesale RWS Allocations in Normal, Dry and Multiple Dry Years**

	NORMAL YEAR		SINGLE DRY YEAR		MULTIPLE DRY YEARS <sup>1</sup>					
					YEAR 1		YEAR 2		YEAR 3	
	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)
2010	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0
2015	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0
2020	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0
2025	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0
2030	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0
2035	184.0	100	152.6	83.0	152.6	83.0	132.5	72.0	132.5	72.0

1. Under the WSAP, the SFUPC wholesale allocations at a 10% shortage are 64% of available supply or 152.6 mgd; at a 20% shortage, the SFPUC wholesale allocations are 62.5% of available supply or 132.5 mgd.

**Retail Water Shortage Allocation Plan:** The RWSAP was adopted to formalize a three-stage program of action to be taken in San Francisco to reduce water use during a drought. In accordance with the RWSAP, prior to the initiation of any water delivery reductions in San Francisco, whether it be initial implementation of reduction delivery or increasing the severity of water shortage, the SFPUC will outline a drought response plan to address the following: the water supply situation; proposed water use reduction objectives; alternatives to water use reductions; methods to calculate water use allocations and adjustments; compliance methodology and enforcement measures; and budget considerations.

This drought response plan will be presented at a regularly scheduled SFPUC Commission meeting for public input. The meeting will be advertised in accordance with the requirements of California Water Code Section 6066 of the Government Code, and the public will be invited to comment on the SFPUC’s intent to reduce deliveries.

Depending on the level of water demand and the desired objective for water use reduction, one, two or all three stages of the RWSAP may be required. **Table 27** identifies the water shortage stages of action. Additional information is provided in **Appendix F**.

**Table 27: SFPUC Retail Water Shortage Stages of Action**

STAGE	ACTIONS	TRIGGER PT. (% SYSTEM SHORTAGE)	TARGET WATER USE REDUCTION (%)
<b>1 - Voluntary</b>	<ul style="list-style-type: none"> <li>Voluntary rationing request of customers</li> <li>Customers are alerted to water supply conditions</li> <li>Remind customers of existing water use prohibitions</li> </ul>	10-20%	5 - 10%
	<ul style="list-style-type: none"> <li>Customers are alerted to water supply conditions</li> </ul>		
	<ul style="list-style-type: none"> <li>Remind customers of existing water use prohibitions</li> </ul>		
	<ul style="list-style-type: none"> <li>Education on, and possible acceleration of, incentive programs (e.g., toilet rebates)</li> </ul>		
<b>2 - Mandatory</b>	<ul style="list-style-type: none"> <li>All Stage 1 actions implemented</li> </ul>	21-50%	11 - 20%
	<ul style="list-style-type: none"> <li>All customers receive an “allotment” of water based on the Inside/Outside allocation method (based on base year water usages for each account)</li> </ul>		
	<ul style="list-style-type: none"> <li>Water use above the “allocation” level will be subject to excess use charges, installation of flow restrictor devices and shut-off of water</li> </ul>		
<b>3 - Mandatory</b>	<ul style="list-style-type: none"> <li>Same actions as in Stage 2 with further reduced allocations</li> </ul>	>50%	>20%

**Table 28** summarizes potential prohibitions that may be enforced during a drought. **Appendix E** discusses various measures employed during the 1987-92 drought in an attempt to achieve a 45% reduction in Retail Customer demands (as applied to the pre-drought demand). These measures included absolute limitations on water use based on residential customer classification and a proportion of historical use within the non-residential sectors. Although not anticipated to be required in the near-term, San Francisco would employ similar procedures to accommodate system-wide water shortages in excess of 20%, if necessary.

The Retail Water Shortage Allocation plan is provided in **Appendix F**.

**Table 28: Potential Prohibitions That May Be Enforced During a Drought**

#	WATER SHORTAGE CONTINGENCY – MANDATORY PROHIBITIONS <sup>1</sup>	STAGE
1	Water waste, including but not limited to, any flooding or runoff into the street or gutters, was prohibited.	2, 3
2	Hoses could not be used to clean sidewalks, driveways, patios, plazas, homes, businesses, parking lots, roofs, awnings or other hard surfaces areas.	2, 3
3	Hoses used for any purpose had to have positive shutoff valves.	2, 3
4	Restaurants served water to customers only upon request.	2, 3
5	Potable water was not to be used to clean, fill or maintain levels in decorative fountains.	2, 3
6	Use of additional water was not allowed for new landscaping or expansion of existing facilities unless low water use landscaping designs and irrigation systems were employed.	2, 3
7	Water service connections for new construction were granted only if water saving fixtures or devices were incorporated into the plumbing system.	2, 3
8	Use of potable water for consolidation of backfill, dust control or other non-essential construction purposes was prohibited.	2, 3
9	Irrigation of lawns, play fields, parks, golf courses, cemeteries, and landscaping of any type with potable water would be reduced by at least the amount specified for outside use in the adopted rationing plan.	2, 3
10	Verified water waste as determined by the Water Department would serve as prima facie evidence that the allocation assigned to the water account is excessive; therefore, the allocation was subject to review and possible reduction, including termination of service.	2, 3
11	Water used for all cooling purposes was to be recycled.	2, 3
12	The use of groundwater and/or reclaimed water for irrigation of golf courses, median strips, and similar turf areas was strongly encouraged.	2, 3
13	The use of groundwater and/or reclaimed water for street sweepers/washers was strongly encouraged.	2, 3

1. Prohibitions prescribed in the 1987-92 drought that **may be** enforced during a future drought.

**Wholesale Customer Water Shortage Plan (Tier 2 Drought Implementation Plan, or DRIP):**

Section 3.11.C of the WSA authorizes the Wholesale Customers to adopt a methodology for allocating the collective wholesale allocation among the individual Wholesale Customers. In 2000, the Wholesale Customers adopted the Interim Water Shortage Allocation Plan among Suburban Customers, which details how the SFPUC water allocated to wholesale customers collectively was to be allocated to each individual Wholesale Customer. The Tier 2 Drought Implementation Plan (DRIP), which was adopted by the Wholesale Customers, provides an update to the 2000 Interim Water Shortage Allocation Plan Among Suburban Customers. The allocation included in the DRIP is based on a formula that takes two primary factors into account: (1) each agency’s Supply Assurance from SFPUC, with certain exceptions, and (2) each agency’s purchases from SFPUC during the 3 years preceding adoption of the Plan. **Appendix G** contains a copy of the Tier 1 WSAP.

### **5.4.3 Mechanisms to Determine Reductions in Water Use**

All SFPUC Retail and Wholesale Customers are metered. Monthly water use reports are prepared by the SFPUC's Customer Service Bureau. Based on a comparison between months the SFPUC is able to determine reductions in water use for both wholesale and Retail Customers.

### **5.4.4 Revenue and Expenditure Impacts During Water Shortages**

If the SFPUC declares a water shortage emergency under Water Code section 350 and implements the WSAP, the SFPUC may raise water rates independently of coordination with the annual budget process to make up for lost revenue due to reduced water use (WSA Section 6.03C). The SFPUC also maintains an unappropriated fund balance that can be used to offset the effects of revenue shortfalls caused by drought.

## **5.5 PREPARATION FOR CATASTROPHIC WATER SUPPLY INTERRUPTION**

The SFPUC has various planning documents which, in combination, address its emergency preparedness and planned response in case of a catastrophic interruption of water supplies due to power outages, earthquakes or other disasters. Additionally, the SFPUC WSIP, previously discussed in this document, includes capital projects related to seismic reliability and overall system reliability.

### **5.5.1 Emergency Preparedness Plans**

Following the 1989 Loma Prieta Earthquake, the SFPUC created a departmental SFPUC Emergency Operations Plan (EOP). The SFPUC EOP was originally released in 1992, and has been updated approximately every 2 years. The latest EOP update will be released in Spring 2011. The EOP addresses a broad range of potential emergency situations that may affect the SFPUC and supplements the City and County of San Francisco's EOP, which was prepared by the Department of Emergency Management and most recently updated in 2008. Specifically, the purpose of the SFPUC EOP is to describe its emergency management organization, roles and responsibilities, and emergency policies and procedures.

In addition, SFPUC divisions and bureaus have their own EOPs (in alignment with the SFPUC EOP), which detail that entity's specific emergency management organization, roles and responsibilities, and emergency policies and procedures. The SFPUC tests its EOPs on a regular basis by conducting emergency exercises. Through these exercises, the SFPUC learns how well the plans and procedures will or will not work in response to an emergency. EOP improvements are based on the results of these exercises and real-world event response and evaluation. The SFPUC also has an emergency response training plan that is based on federal, State and local standards and exercise and incident improvement plans. SFPUC employees have emergency training requirements that are based on their emergency response roles.



## 5.5.2 Emergency Drinking Water Planning

In February 2005, the SFPUC Water Quality Bureau published the *City Emergency Drinking Water Alternatives* report. The purpose of this project was to develop a plan for supplying emergency drinking water in the City after damage and/or contamination of the SFPUC raw and/or treated water systems resulting from a major disaster. Since the publication of this report, the SFPUC has implemented a number of projects to increase its capability to support the provision of emergency drinking water during an emergency. These projects include:

- Completion of many WSIP projects and other capital upgrades to improve security, detection, and communication
- Public Information and materials for home and business
- Designation and identification of 67 emergency drinking water hydrants throughout San Francisco
- Construction of a disinfection and fill station at the existing San Francisco Zoo well, and obtaining a permit to utilize this well as a standby emergency drinking water source
- Purchase of emergency-related equipment, including water bladders and water bagging machines, to help with distribution post-disaster
- Coordination of planning with City departments, neighboring jurisdictions and other public and private partners to maximize resources and supplies for emergency response

With respect to emergency response for the SFPUC RWS, the SFPUC has prepared the SFPUC Regional Water System Emergency Response and Recovery Plan (ERRP), completed in 2003 and updated in 2006. The purpose of the ERRP is to describe the SFPUC RWS emergency management organizations, roles and responsibilities within those organizations, and emergency management procedures. This contingency plan addresses how to respond to and to recover from a major RWS seismic event, or other major disaster. The ERRP complements the other SFPUC emergency operations plans at the department, division and bureau levels for major system emergencies.

The SFPUC has also prepared in the *SFPUC Regional Water System Notification and Communications Plan*. This plan, which has been updated several times since it was first prepared in 1996 (most recently in July of 2010), provides contact information, procedures and guidelines to be implemented by the following entities when a potential or actual water quality problem arises: the SFPUC Water Supply and Treatment Division, Water Quality Division, SFPUC wholesale customers, BAWSCA, and City Distribution Division (considered to be a customer for the purposes of this plan). The plan treats water quality issues as potential or actual supply problems, which fall under the emergency response structure of the ERRP.

### 5.5.3 Power Outage Preparedness and Response

The SFPUC's water transmission system is primarily gravity fed, from the Hetch Hetchy Reservoir to the City. Within San Francisco's in-City distribution system, the key pump stations have generators in place and all others have connections in place that would allow portable generators to be used.

Although water conveyance throughout the RWS would not be greatly impacted by power outages because it is gravity fed, the SFPUC has prepared for potential regional power outages as follows:

- The Tesla Treatment Facility, the Sunol Valley Water Treatment Plant, and the San Antonio Pump Station, have back-up power in place in the form of generators or diesel powered pumps.
- Both the Harry Tracy Water Treatment Plant and the Baden Pump Station have back-up generators in place.
- Administrative facilities that will act as emergency operation centers also have back-up power.
- Additionally, as described in the next section, the WSIP includes projects which will expand the SFPUC's ability to remain in operation during power outages, seismic and other emergency situations.

### 5.5.4 Capital Projects for Seismic Reliability and Overall System Reliability

As discussed previously, the SFPUC is also undertaking a WSIP to enhance the ability of the SFPUC water system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply.

As illustrated previously, the WSIP projects include several projects located in San Francisco to improve the seismic reliability of the in-City distribution system, including more wells that can be used as emergency drinking water sources. The WSIP also incorporates many projects related to the SFPUC RWS to address both seismic reliability and overall system reliability. All WSIP projects are expected to be completed by 2016.

In addition to the improvements that will come from the WSIP, San Francisco has already constructed the following system interties for use during catastrophic emergencies, short-term facility maintenance and upgrade activities, and in times of water shortages:

- A 40 mgd system intertie between the SFPUC and SCVWD (Milpitas Intertie);
- A 35 mgd intertie with EBMUD allowing EBMUD to serve the City of Hayward's demand and/or supply the SFPUC directly (and vice versa); and,
- One permanent and one temporary intertie to the South Bay Aqueduct, which would enable the SFPUC to receive State Water Project water.

The WSIP intertie projects include the EBMUD-Hayward-SFPUC Intertie. The WSIP also includes projects related to standby power facilities at various locations. These projects will provide for standby electrical power at 6 critical facilities to allow these facilities to remain in operation during power outages and other emergency situations. Permanent engine generators will be provided at 4 locations (San Pedro Valve Lot, Millbrae Facility, Alameda West, and Harry Tracy Water Treatment Plant), while hookups for portable engine generators will be provided at 2 locations (San Antonio Reservoir and Calaveras Reservoir).

## 5.6 SUPPLY & DEMAND COMPARISON OF THE RETAIL WATER SYSTEM

This section provides an assessment of the reliability of the SFPUC retail water supply during normal, dry and multiple dry years.

The Tier 1 allocation in the WSAP translates to 81 mgd of available retail water supplies from the RWS in year 2 of a drought and 79.5 mgd of retail water supplies from the RWS in years 3 and 4 of a multi-year drought.

The following tables for supply and demand comparison assume that the recycled water and groundwater projects in San Francisco are adopted and constructed. Currently, the Planning Department is undertaking environmental review for the Westside Recycled Water project and the San Francisco Groundwater Project. The SFPUC is undertaking feasibility studies for recycled water projects on the Eastside of San Francisco and anticipates that those projects have the potential to develop an additional 2 mgd of water supply. The tables below assume these projects come on line prior to 2020; however, the SFPUC might need to rely on the full 81 mgd supply from the SFPUC watersheds. In addition, ABAG and the Metropolitan Transportation Authority are required under SB375 to allocate additional growth in the nine county Bay Area in a manner that limits GHG emissions. ABAG has recently released its draft Vision Scenario to meet these objectives. The Vision Scenario places additional housing units and jobs in San Francisco through 2035 beyond what the SFPUC included in its demand projection analysis. The Vision Scenario currently reflects 19,000 more housing units and 16,000 more jobs than were included in the demand projections. If the growth in the Vision Scenario is promoted, it could result in increased retail demands on the RWS.

**Normal Years: Table 29** compares current and projected supply and demand of the SFPUC retail system. It indicates that during normal precipitation years, the SFPUC has adequate supplies to meet its projected retail water demands.

**Single Dry Year: Table 30** illustrates the level of single dry year water delivery shortage that could occur with the projected 5-year increments of water demands. As shown in this table, the SFPUC is projected to have sufficient supply to meet demands in a single dry year in all scenarios.

**Table 29: Projected Normal Year Retail System Water Supply and Demand Comparison**

SUPPLY / DEMAND	2010	2015	2020	2025	2030	2035
<b>Demands (mgd)</b>						
Retail System Demand	77.7	80.7	78.9	78.5	79.2	80.9
<b>Supplies (mgd)</b>						
Groundwater	2.2	5.0	5.0	5.0	5.0	5.0
Recycled Water	0.0	0.3	4.0	4.0	4.0	4.0
SFPUC RWS Watersheds <sup>1</sup>	75.5	75.4	69.9	69.5	70.2	71.9
<b>Supply and Demand Comparison</b>						
Demand Totals (mgd)	78	81	79	79	79	81
Supply Totals (mgd)	78	81	79	79	79	81
<b>Difference (mgd)</b>	0	0	0	0	0	0
<b>Difference as % of Demand</b>	0%	0%	0%	0%	0%	0%
<b>Difference as % of Supply</b>	0%	0%	0%	0%	0%	0%
1. Assumes groundwater and recycled water are used before RWS watershed supplies to meet retail demand. However, if these supplies are not available, additional RWS watershed supply could be used up to 81 mgd.						

**Table 30: Projected Single Dry Year Retail System Supply and Demand Comparison**

SUPPLY / DEMAND	2010 (mgd)	2015 (mgd)	2020 (mgd)	2025 (mgd)	2030 (mgd)	2035 (mgd)
<b>Demands (mgd)</b>						
Retail System Demand	77.7	80.7	78.9	78.5	79.2	80.9
<b>Supplies (mgd)</b>						
Groundwater	2.2	5.0	5.0	5.0	5.0	5.0
Recycled Water	0.0	0.3	4.0	4.0	4.0	4.0
SFPUC RWS Watershed <sup>1</sup>	75.5	75.4	69.9	69.5	70.2	71.9
<b>Supply and Demand Comparison</b>						
Demand Totals (mgd)	78	81	79	79	79	81
Supply Totals (mgd)	78	81	79	79	79	81
<b>Difference (mgd)</b>	0	0	0	0	0	0
<b>Difference as % of Demand</b>	0%	0%	0%	0%	0%	0%
<b>Difference as % of Supply</b>	0%	0%	0%	0%	0%	0%
1. Assumes groundwater and recycled water are used before RWS watershed supplies to meet retail demand. However, if these supplies are not available, additional RWS watershed supply could be used up to 85.86 mgd. Due to the Phased WSIP Variant, it is assumed that only 81 mgd would be used.						

**Multiple Dry Years:** Table 31 illustrates the level of water delivery shortages that would be anticipated

if a three-year dry hydrologic condition occurred, for each year of the 5-year intervals shown. It attempts to illustrate a theoretical application of how the different water supplies may be used in multiple dry years per the UWMP requirements. As described previously, in the event of a multi-year drought, no cutbacks are anticipated in year 1. Therefore, the dry year sequences shown below begin in year 2 of a multi-year drought.

**Table 31: Projected Multiple Dry Year Retail System Supply and Demand Comparison** <sup>1,2</sup>

YEAR1	SFPUC SUPPLY AND DEMAND <sup>2,3</sup>	MULTIPLE DRY YEAR EVENT (MGD)		
		YEAR 1	YEAR 2	YEAR 3
2010	Total Retail Demand	77.7	77.7	77.7
	Groundwater	2.2	2.2	2.2
	Recycled Water	0.0	0.0	0.0
	RWS Watersheds <sup>3</sup>	75.5	75.5	75.5
	Total Retail Supply	77.7	77.7	77.7
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
2015	Total Retail Demand	80.7	80.7	80.7
	Groundwater	5.0	5.0	5.0
	Recycled Water	0.3	0.3	0.3
	RWS Watersheds <sup>3</sup>	75.4	75.4	75.4
	Total Retail Supply	80.7	80.7	80.7
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
2020	Total Retail Demand	78.9	78.9	78.9
	Groundwater	5.0	5.0	5.0
	Recycled Water	4.0	4.0	4.0
	RWS Watersheds <sup>3</sup>	69.9	69.9	69.9
	Total Retail Supply	78.9	78.9	78.9
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

YEAR1	SFPUC SUPPLY AND DEMAND <sup>2,3</sup>	MULTIPLE DRY YEAR EVENT (MGD)		
		YEAR 1	YEAR 2	YEAR 3
2025	Total Retail Demand	78.5	78.5	78.5
	Groundwater	5.0	5.0	5.0
	Recycled Water	4.0	4.0	4.0
	RWS Watersheds <sup>3</sup>	69.5	69.5	69.5
	Total Retail Supply	78.5	78.5	78.5
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
2030	Total Retail Demand	79.2	79.2	79.2
	Groundwater	5.0	5.0	5.0
	Recycled Water	4.0	4.0	4.0
	RWS Watersheds <sup>3</sup>	70.2	70.2	70.2
	Total Retail Supply	79.2	79.2	79.2
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
2035	Total Retail Demand	80.9	80.9	80.9
	Groundwater	5.0	5.0	5.0
	Recycled Water	4.0	4.0	4.0
	RWS Watersheds	71.9	71.9	71.9
	Total Retail Supply	80.9	80.9	80.9
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

1. The multiple dry years shown in this table reflect years 2-4 of the SFPUC's 8.5-year design drought for 2010, and years 6-8 of the SFPUC's 8.5-year design drought for years 2015 through 2035.
2. Under the WSAP, the SFPUC Retail allocations at a 10% shortage are 85.86 mgd. However, due to the Phased WSIP Variant (see Section 3.1.2, only 81 mgd of RWS watershed supply is shown.
3. Assumes groundwater and recycled water are used before RWS watershed supplies to meet retail demand. However, if these supplies are not available, additional RWS watershed supply could be used up to 79.5 mgd.



## 5.7 SUPPLY AND DEMAND COMPARISON OF THE WHOLESALE WATER SYSTEM

This section provides an assessment of the reliability of the SFPUC water supply during normal, dry and multiple dry years for the SFPUC’s Wholesale Customers. The reliability analysis included in the following tables does not reflect decisions that may be made by 2018 regarding serving the Wholesale Customers additional water supplies in excess of the Supply Assurance or converting San Jose and Santa Clara to permanent customers. In either case, the SFPUC would serve more than 184 mgd to the Wholesale Customers which in combination with the Retail Customers may result in a watershed demand above 265 mgd. If the SFPUC were to take on serving more than 265 mgd within the service area, the SFPUC would need to develop the additional water supplies identified in Section 3.2 to continue meeting the water supply objectives of the adopted WSIP (see **Table 21**). The SFPUC is required by the WSA to consider meeting Wholesale Customer demands beyond the Supply Assurance and converting San Jose and Santa Clara to permanent customers. As those decisions have not yet been made, the SFPUC’s reliability analysis carries the current Supply Assurance forward through 2035 and does not factor either the development of additional water supplies beyond those necessary to meet demands through 2018 or meeting demands in excess of the Supply Assurance. Future UWMPs will include additional information and analysis related to decisions regarding post-2018 water supply and demand comparisons.

**Normal Years:** **Table 32** compares current and projected supply and demand of the SFPUC wholesale system. It indicates that during normal precipitation years, the SFPUC has adequate supplies to meet its projected wholesale water demands.

**Table 32: Projected Normal Year Wholesale Water Supply and Demand Comparison**

SUPPLY / DEMAND	2010	2015	2020	2025	2030	2035
<b>Demands (mgd)</b>						
SFPUC Wholesale Demand <sup>1</sup>	149.5	175.4	177.6	183.1	184.0	184.0
<b>Supplies</b>						
SFPUC RWS Watershed Supplies to Wholesale Customers	149.5	175.4	177.6	183.1	184.0	184.0
<b>Supply and Demand Comparison</b>						
Demand Totals	149	175	178	183	184	184
Supply Totals	149	175	178	183	184	184
<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Difference as % of Supply</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
<b>Difference as % of Demand</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

1. Assumes that the 265 mgd supply limitation extends beyond 2018, and projected Wholesale Customer demands are limited to 184 mgd. Prior to 2018, 184 mgd includes the demands of San Jose and Santa Clara. After 2018, San Jose and Santa Clara will be supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2018).

**Single Dry Year:** Given the additional supplies assumed to be available, **Table 33** illustrates the level of first dry year water delivery shortage that could occur with the projected 5-year increments of water demands. As shown in this table, the maximum projected shortage of 17% (calculated as % of demand) would occur in 2035.

**Table 33: Projected Single Dry Year Wholesale Water Supply and Demand Comparison**

SUPPLY / DEMAND	2010 (mgd)	2015 (mgd)	2020 (mgd)	2025 (mgd)	2030 (mgd)	2035 (mgd)
<b>Demands (mgd)</b>						
SFPUC Wholesale Demands <sup>1</sup>	149.5	175.4	177.6	183.1	184.0	184.0
<b>Supplies (mgd)</b>						
SFPUC RWS Watershed Supplies to Wholesale Customers	149.5	152.6	152.6	152.6	152.6	152.6
<b>Supply and Demand Comparison</b>						
Demand Totals (mgd)	149	175	178	183	184	184
Supply Totals (mgd)	149	153	153	153	153	153
<b>Difference (mgd)</b>	<b>0</b>	<b>23</b>	<b>25</b>	<b>30</b>	<b>31</b>	<b>31</b>
<b>Difference as % of Supply</b>	<b>0%</b>	<b>15%</b>	<b>16%</b>	<b>20%</b>	<b>21%</b>	<b>21%</b>
<b>Difference as % of Demand</b>	<b>0%</b>	<b>13%</b>	<b>14%</b>	<b>17%</b>	<b>17%</b>	<b>17%</b>
1. Assumes that the 265 mgd supply limitation extends beyond 2018, and projected Wholesale Customer demands are limited to 184 mgd. Prior to 2018, 184 mgd includes the demands of San Jose and Santa Clara. After 2018, San Jose and Santa Clara will be supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2018).						

**Multiple Dry Years:** Multiple-year drought sequences could subject the SFPUC customers to greater levels of shortage. **Table 34** illustrates the level of water delivery shortages that would be anticipated if a 3-year dry hydrologic condition occurred, for each year of the 5-year intervals shown. It attempts to illustrate a theoretical application of how the different water supplies may be used in multiple dry years per UWMP requirements. As described previously, in the event of a multi-year drought, no cutbacks are anticipated in year 1. Therefore, the dry year sequences shown below begin on year 2 of a multi-year drought.

**Table 34: Projected Multiple Dry Year Wholesale Water Supply and Demand Comparison**

YEAR	SFPUC SUPPLY AND DEMAND (MGD)	MULTIPLE DRY YEAR EVENT <sup>1</sup>		
		YEAR 1	YEAR 2	YEAR 3
<b>2010</b>	SFPUC Wholesale Demands <sup>2</sup>	149.5	149.5	149.5
	RWS Watershed Supplies to Wholesale Customers	149.5	132.5	132.5
	<b>Difference</b>	<b>0</b>	<b>17</b>	<b>17</b>
	<b>Difference as % of Supply</b>	<b>0%</b>	<b>13%</b>	<b>13%</b>
	<b>Difference as % of Demand</b>	<b>0%</b>	<b>11%</b>	<b>11%</b>
<b>2015</b>	SFPUC Wholesale Demands <sup>2</sup>	175.4	175.4	175.4
	RWS Watershed Supplies to Wholesale Customers	152.6	132.5	132.5
	<b>Difference</b>	<b>23</b>	<b>43</b>	<b>43</b>
	<b>Difference as % of Supply</b>	<b>15%</b>	<b>32%</b>	<b>32%</b>
	<b>Difference as % of Demand</b>	<b>13%</b>	<b>24%</b>	<b>24%</b>
<b>2020</b>	SFPUC Wholesale Demands <sup>2</sup>	177.6	177.6	177.6
	RWS Watershed Supplies to Wholesale Customers	152.6	132.5	132.5
	<b>Difference</b>	<b>25</b>	<b>45</b>	<b>45</b>
	<b>Difference as % of Supply</b>	<b>16%</b>	<b>34%</b>	<b>34%</b>
	<b>Difference as % of Demand</b>	<b>14%</b>	<b>25%</b>	<b>25%</b>
<b>2025</b>	SFPUC Wholesale Demands <sup>2</sup>	183.1	183.1	183.1
	RWS Watershed Supplies to Wholesale Customers	152.6	132.5	132.5
	<b>Difference</b>	<b>30</b>	<b>51</b>	<b>51</b>
	<b>Difference as % of Supply</b>	<b>20%</b>	<b>38%</b>	<b>38%</b>
	<b>Difference as % of Demand</b>	<b>17%</b>	<b>28%</b>	<b>28%</b>
<b>2030</b>	SFPUC Wholesale Demands <sup>2</sup>	184.0	184.0	184.0
	RWS Watershed Supplies to Wholesale Customers	152.6	132.5	132.5
	<b>Difference</b>	<b>31</b>	<b>52</b>	<b>52</b>
	<b>Difference as % of Supply</b>	<b>21%</b>	<b>39%</b>	<b>39%</b>
	<b>Difference as % of Demand</b>	<b>17%</b>	<b>28%</b>	<b>28%</b>
<b>2035</b>	SFPUC Wholesale Demands <sup>2</sup>	184.0	184.0	184.0
	RWS Watershed Supplies to Wholesale Customers	152.6	132.5	132.5
	<b>Difference</b>	<b>31</b>	<b>52</b>	<b>52</b>
	<b>Difference as % of Supply</b>	<b>21%</b>	<b>39%</b>	<b>39%</b>
	<b>Difference as % of Demand</b>	<b>17%</b>	<b>28%</b>	<b>28%</b>

1. The multiple dry years shown in this table reflect years 2-4 of the SFPUC's 8.5-year design drought for year 2010, and years 6-8 of the SFPUC's 8.5-year design drought for years 2015 through 2035.
2. Assumes that the 265 mgd supply limitation extends beyond 2018, and projected Wholesale Customer demands are limited to 184 mgd. Prior to 2018, 184 mgd includes the demands of San Jose and Santa Clara. After 2018, San Jose and Santa Clara will be supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2018).

## 5.8 FUTURE ACTIONS AFFECTING WATER SUPPLY AND DEMAND

The previous supply and demand comparison is based on assumptions that reflect decisions made to date. There are a multitude of upcoming actions that affect the SFPUC's water supply and may increase SFPUC water demands. These actions include:

- **Securing an additional 7.4 mgd annual average in water supply to meet the shortfall in current watershed supplies resulting from instream flow requirements in San Mateo and Alameda Creeks.** The 7.4 mgd shortfall also assumes that the Upper Alameda Creek Filter Gallery Project is able to provide an annual average water supply of approximately 5.4 mgd. Additional supplies will be necessary to resolve this shortfall long-term.
- **Resolving the status of San Jose and Santa Clara as temporary, interruptible customers.** Converting San Jose and Santa Clara to permanent, non-interruptible customers would require the SFPUC to secure 9 mgd of additional water supply. Currently, San Jose and Santa Clara are temporary customers with an interruptible status. The SFPUC will continue to meet the two cities' demands up to 9 mgd through 2018, but may issue a conditional five-year notice of termination or reduction in supply to San Jose and Santa Clara if water use by the Wholesale Customers is projected to exceed 184 mgd before June 30, 2018. Development of additional supplies would be necessary to offer San Jose and Santa Clara permanent status.
- **Resolving the additional unmet needs of the Wholesale Customers beyond 2018.** Demand projections indicate an unmet need of 5 mgd in 2035 beyond the needs of San Jose and Santa Clara. Currently, the SFPUC is obligated to meet the Wholesale Customers' Supply Assurance of 184 mgd. The SFPUC has limited its deliveries from the watersheds to the Wholesale Customers collectively to 184 mgd through 2018. The Wholesale Customers have projected an increased need for water from the SFPUC greater than 184 mgd through 2035. Development of additional supplies would be necessary to meet Wholesale Customer demands beyond 184 mgd.
- **Incorporating the results of SB 375 in demand projections for the retail and wholesale customers.** SB 375 requires ABAG and MTC to develop a Bay Area Sustainable Communities Strategy (SCS) which 1) achieves a greenhouse gas emissions reduction target set by the California Air Resources Board by reducing vehicle travel, and 2) identifies a strategy to meet the Bay Area's entire housing need by income level within the Bay Area. The SCS is scheduled to be adopted by April 2013. Results of the SCS planning effort to-date suggest an increase of 903,000 more housing units and 1,222,000 more jobs in the nine-county Bay Area by 2035 which is 269,000 more housing units and 92,900 more jobs than under ABAG Projections 2009. Of this total increase, the SCS currently proposes that San Francisco would accommodate 19,000 more housing units and 16,000 more jobs than were included in this UWMP's 2035 demand projections. Wholesale Customers in the SFPUC service are expected to absorb much of this additional growth in housing and jobs under the SCS as well. If the adopted SCS places more growth in the SFPUC service area, water demand may increase.

- **Resolving additional potential shortfalls attributed to State and Federal regulatory actions or proceedings that may affect SFPUC water supplies from the Tuolumne River and local watersheds including the following:**
  - Federal Energy Regulatory Commission (FERC) relicensing of the Don Pedro Project
    - State Water Resources Control Board (SWRCB) 401 Certification of FERC relicense
    - Endangered Species Act (ESA) Section 7 consultation for FERC relicense
  - Central Valley Total Maximum Daily Load regulations
  - Bay- Delta proceedings (SWRCB, Legislative actions)
  - ESA Habitat Conservation Plans for SFPUC local watersheds

## SECTION 6: DEMAND MANAGEMENT MEASURES

This section describes the SFPUC's water demand management measures (DMMs). The SFPUC is currently implementing various conservation measures and is meeting the 14 DMMs identified under the Urban Water Management Planning Act, which also correspond to the Best Management Practices (BMPs) developed by the California Urban Water Conservation Council (CUWCC). The SFPUC is preparing its 2008-2009 and 2009-2010 BMP Reports, and expects to be in compliance with the BMP requirements.

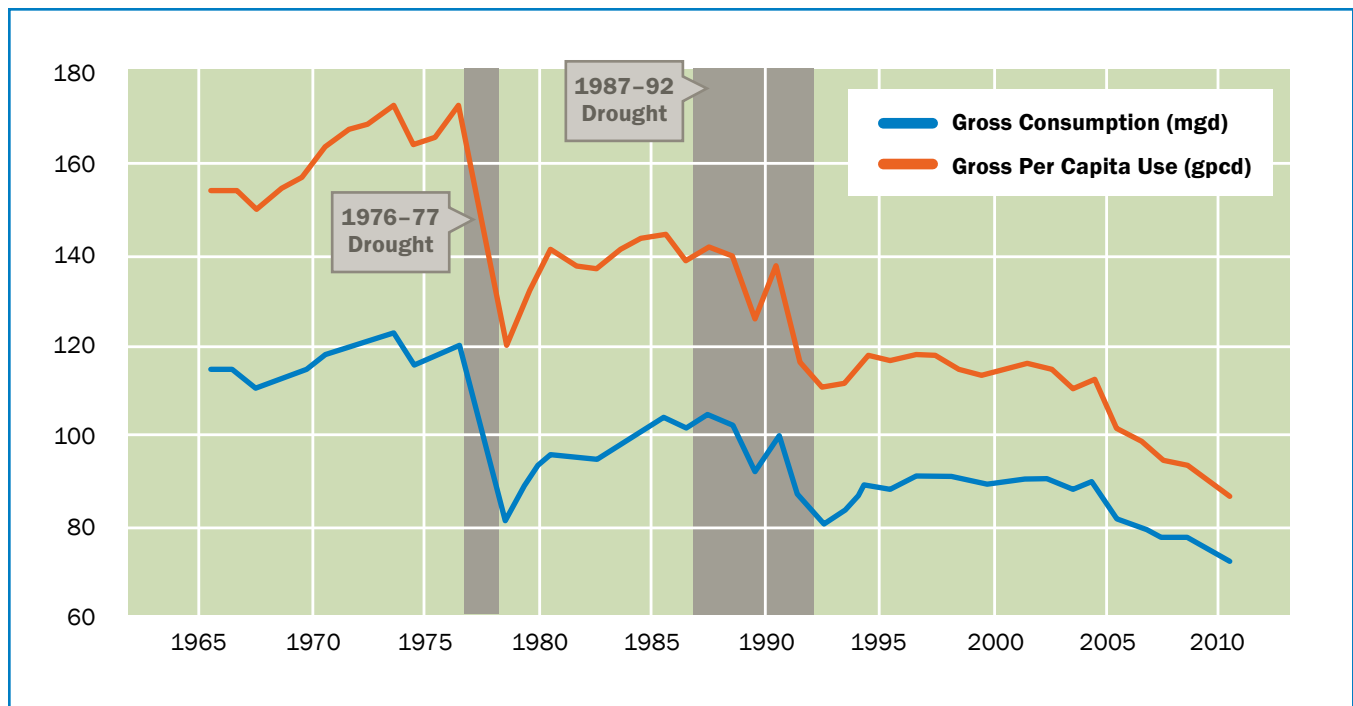
### 6.1 INTRODUCTION

The SFPUC has been implementing conservation programs for over 20 years. Through its continuous promotion and effort in educating San Franciscans on efficient and appropriate use of water, its conservation efforts have helped to reduce per capita water use by over one-third since 1965.

As illustrated in **Figure 9**, the first substantial decrease occurred after the 1976-77 drought in which gross per capita water use dropped from over 160 to below 120 gpcd. Despite continuous growth in San Francisco since then, total water demand remains lower than the pre-drought levels.

A second substantial decrease in water use occurred as a result of the 1987-92 drought when a new level of conservation activities resulted in a further reduction in water use. Through the continuation and expansion of these programs, per capita water use is anticipated to decrease well into the future. Today, the City's gross per capita water use is about 85.6 gpcd, one of the lowest of major urban areas in the state.

**Figure 9: SFPUC Water Use During Historic Drought Periods**





## 6.2 DEMAND MANAGEMENT BMPS

The conservation programs implemented by the SFPUC are based on the 14 BMPs identified by signatories of the CUWCC Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) in 1991. The BMPs describe actions and activities that encourage water conservation and are a result of balanced collaboration between urban water agencies, public interest organizations, and private entities. These 14 BMPs also correspond to the 14 DMMs identified in the Urban Water Management Planning Act. The SFPUC is in process of compiling its 2008-2009 and 2009-2010 BMP reports to the CUWCC and expects to be on track to comply with BMP goals.

Under the MOU, the CUWCC was created and charged with responsibilities and authorities, including but not limited to recommending study methodologies for BMPs, collecting and summarizing information on implementation of BMPs and submitting annual reports to the State Water Resources Control Board. Signatories of the MOU are required to submit bi-annual reports to the CUWCC outlining progress toward implementing the BMPs.

The CUWCC amended the MOU in 2008, re-organizing the 14 BMPs into five categories and offering its signatories more flexible options for meeting the BMP requirements. The new BMP structure and compliance options reflect the evolutionary nature of water conservation measures as new implementation strategies are developed and new plumbing codes and technology advancements take place. **Table 35** summarizes the re-structured BMPs and the corresponding DMMs, and also lists some of the conservation measures implemented by the SFPUC that correspond to each BMP/DMM, as well as the year that each measure was implemented. A more detailed discussion of each BMP/DMM is provided in the subsequent subsections.

**Table 35: SFPUC Conservation Programs and BMP/DMM Compliance**

DMM <sup>1</sup>	BMP Categories <sup>2</sup>	BMP/DMM DESCRIPTION	SFPUC MEASURES, PROGRAMS, OR ORDINANCES (Implementation Year) <sup>3</sup>
A	P-Residential (3.1)	Residential Assistance Program: Water survey programs for SFR and MFR customers <sup>4</sup>	<ul style="list-style-type: none"> <li>Water Wise Evaluations (1920s*)</li> <li>Water Audits for Direct Install Program (2008*)</li> <li>Leak Allowance Program (1960s*)</li> <li>Distribution of free devices (1990s*)</li> </ul>
A	P-Residential (3.2)	Landscape Water Survey: Water survey programs for SFR and MFR customers	<ul style="list-style-type: none"> <li>Water Wise Evaluations (1920s*)</li> <li>Water Audits for Direct Install Program (2008*)</li> </ul>
B	P-Residential (3.1)	Residential Assistance Program: Residential Plumbing Retrofit	<ul style="list-style-type: none"> <li>Ordinance 392-90 (1990)</li> <li>Ordinance 359-91, 185-91 and 346-91 (1991)</li> <li>Ordinance 76-09 (2009)</li> </ul>

<b>DMM<sup>1</sup></b>	<b>BMP Categories<sup>2</sup></b>	<b>BMP/DMM DESCRIPTION</b>	<b>SFPUC MEASURES, PROGRAMS, OR ORDINANCES (Implementation Year)<sup>3</sup></b>
C	F-Operations (1.2)	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	<ul style="list-style-type: none"> <li>• 2-Tier water and wastewater rate structure (2009)</li> </ul>
D	F-Operations (1.3)	Water Loss Control	<ul style="list-style-type: none"> <li>• Unaccounted for Water Study (2005)</li> <li>• Automated Water Meter Program (2010-2012)</li> <li>• Pipeline Inspection Program (1990s*)</li> </ul>
E	P-Landscape (5)	Large Landscape Conservation Programs and Incentives	<ul style="list-style-type: none"> <li>• Large Landscape Audits (2008*)</li> <li>• Large Landscape Grant Program (2009*)</li> <li>• Ordinance 92-91 (1991), amended by Ordinance 192-00 (2000)</li> <li>• Ordinance 301-10 (2010)</li> </ul>
F	P-Residential (3.3)	High-Efficiency Clothes Washing Machine Financial Incentive Programs	<ul style="list-style-type: none"> <li>• Bay Area Clothes Washer Rebate Program (2006)</li> <li>• PG&amp;E Water and Energy Rebate Program (2008*)<sup>7</sup></li> <li>• Smart Rebates Program (2008*)</li> </ul>
G	F-Education (2.1)	Public Information Programs	<ul style="list-style-type: none"> <li>• Multiple Ongoing Activities *</li> <li>• “Water Conservation Starts with You” Newsletter (2008)</li> <li>• Garden for the Environment Workshops and Tours (2008*)</li> </ul>
H	F-Education (2.2)	School Education Programs	<ul style="list-style-type: none"> <li>• Conservation Connection Program (2008*)</li> <li>• Garden for the Environment School Field Trips (2009*)</li> <li>• Water Resources Curriculum and Classroom Presentations (2009*)</li> </ul>
I	P-CII <sup>5</sup> (4)	Conservation Programs for CII Accounts <sup>5</sup>	<ul style="list-style-type: none"> <li>• Water Wise Evaluations (1989*)</li> <li>• Water Savers Pilot Program (2005)</li> <li>• Large Municipal Facilities Audits (2009*)</li> <li>• SFUSD<sup>8</sup> Green Team School Audits (2009*)</li> <li>• Leak Allowance Program (1960s*)</li> </ul>
J	F-Operations (1.1.3)	Wholesale Agency Assistance Programs	<ul style="list-style-type: none"> <li>• As-needed staff resource to collaborate on regional efforts through BAWSCA*</li> </ul>
K	F-Operations (1.4)	Retail Conservation Pricing	<ul style="list-style-type: none"> <li>• 2-Tier water and wastewater rate structure (2009)</li> </ul>

DMM <sup>1</sup>	BMP Categories <sup>2</sup>	BMP/DMM DESCRIPTION	SFPUC MEASURES, PROGRAMS, OR ORDINANCES (Implementation Year) <sup>3</sup>
L	F-Operations (1.1.1)	Conservation Coordinator	<ul style="list-style-type: none"> <li>Full-Time position(s) for Water Conservation Administrators (1986)</li> </ul>
M	F-Operations (1.1.2)	Water Waste Prohibition	<ul style="list-style-type: none"> <li>SFPUC's Rules and Regulations for Water Service, Section E (original requirement 1960s, amendments made later)</li> <li>SFPUC's Rules and Regulations for Water Service, Section F (2010, pertains to irrigation)</li> <li>Ordinance 301-10 (2010)</li> </ul>
N	P-Residential (3.4)	WaterSense Specification toilets, Residential ULFT <sup>6</sup> Replacement Programs	<ul style="list-style-type: none"> <li>ULFT Rebate Programs (1995-2008)</li> <li>HET<sup>9</sup> Rebate Programs (2006*)</li> <li>Direct Install Program (2009*)</li> </ul>

1. The Urban Water Management Planning Act identified 14 DMMs that agencies need to evaluate in each UWMP.
2. F = foundational BMPs; P = programmatic BMPs. Foundational BMPs are considered to be essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits.
3. Many conservation programs listed in this table are ongoing efforts and are active to date. They are marked with an asterisk (\*) after the implementation year.
4. SFR = single-family residential; MFR = multi-family residential
5. CII = commercial, industrial, and institutional
6. ULFT = ultra-low-flush toilet
7. PG&E = Pacific Gas and Electric Company
8. SFUSD = San Francisco Unified School District
9. HET = high-efficiency toilet

## DMM A (BMP 3.1 & 3.2): Water Survey Programs for Residential Customers

San Francisco has provided water survey programs to its single- and multi-family residential accounts since the 1920s, focusing on the identification and repair of leaks, as well as promoting ongoing rebate programs for water-efficient fixtures. Since approximately 1989, the SFPUC has conducted conservation audits for over 30,000 single-family and 30,000 multi-family residential customers.

On average, SFPUC conducts over 600 residential water survey programs every year. Between 2007 and 2009, SFPUC conservation staff conducted 1,619 and 487 water surveys for single- and multi-family customers respectively, corresponding to an estimated water savings of over 5 acre-feet<sup>15</sup>. In 2008, Section staff also identified and contacted the top 5% of residential water users to encourage them to take advantage of the free water surveys program to help reduce their water use.

The surveys (also referred to as water audits) are conducted by the Section's inspectors and focus on educating customers about leak detection and water-efficient practices. During each audit, an inspector monitors the site's meter, laundry area, water heater, and plumbing fixtures, as well as landscape if applicable. In larger multi-unit buildings, the inspector will then typically inspect

<sup>15</sup> SFPUC Water Conservation Report 2007-2010 (SFPUC, 2010). Savings were estimated for single-family water survey programs. SFPUC is currently refining its method for attributing savings to multi-family surveys

25-50% of the building's apartments or flats to identify additional leaks. For each site, the inspector will create a checklist for needed repairs and give a copy of the checklist to the owner or manager. A written summary is then returned to the owner or manager. At the request of the customer, the inspectors will mark the building's water shut-off valve with a plastic tag to improve its visibility in case of an emergency.

Starting in 2010, SFPUC inspectors also conducted thorough water surveys for single family homes that participate in the SFPUC's low-income Community Assistance Program (CAP). Free devices such as showerheads and faucet aerators are provided during the surveys, and customers found to have toilets eligible for replacement are scheduled for free installation of high-efficiency models (more details are available below under DMM N). To date, the SFPUC has conducted over 3,000 water surveys at CAP participant homes under this program and replaced over 2,000 toilets. The program also includes a multi-family component for which over 700 free toilets were provided to 28 buildings in 2010, and starting 2011 is expanding to include free toilets and installations to qualifying low-income multi-family buildings as part of coordination with the Mayor's Office of Housing for properties undergoing energy and water retrofits.

### **DMM B (BMP 3.1): Residential Plumbing Retrofit**

Beginning with the adoption of *Ordinance 392-90*<sup>16</sup> in 1990, the City began efforts to require customers to install water-conserving devices. This ordinance changed the City's plumbing codes to require all new buildings (including any buildings in which the water drainage system is substantially altered, modified or renovated) to retrofit toilets and urinals with fixtures using no more than 1.6 gallons per flush (gpf) and 1 gpf, respectively. *Ordinance 359-91*<sup>17</sup>, passed in 1991, requires the same plumbing retrofit requirements for commercial buildings, including hotels and motels.

The City then adopted a series of additional ordinances to address conservation within existing dwellings. In May and September 1991, San Francisco adopted *Ordinance 185-91* and *Ordinance 346-91*<sup>18</sup>. Together, these ordinances require water conservation device retrofits within single- and multi-family residential buildings upon sale, transfer of title, or major improvement to a dwelling. In 2009, an updated Residential Water Conservation Ordinance, *Ordinance 76-09*, was adopted, which requires homeowners to comply with more restrictive requirements before selling a home, including:

- Replace toilets exceeding 1.6 gpf;
- Replace showerheads with flow rate exceeding 2.5 gallons per minute (gpm);
- Replace faucets and faucet aerators having a flow rate exceeding 2.2 gpm; and
- Locate and repair all leaks.

<sup>16</sup> San Francisco Plumbing Code sections 905 and 1001.1

<sup>17</sup> San Francisco Building Code, Chapter 53B, Sections 53B01-53B15

<sup>18</sup> San Francisco Housing Code, Chapter 12A, Section 12A01-12A14

## DMM C (BMP 1.2): Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

All of San Francisco’s Retail Customers have been metered since 1916, and are billed by volume for both water and sewer use. There are approximately 178,000 existing water meters in San Francisco. A vast majority (close to 90%) of these meters are small meters (2-inch or less) used for residential and some small commercial accounts. The remaining are large meters (3-inch or greater) used for commercial, industrial or irrigation accounts.

Since 2009, the SFPUC has implemented a 2-tier water and wastewater rate structure and a 5-year rate increase<sup>19</sup> for its residential accounts that promotes conservation practices by sending appropriate price signals. The rate structures are summarized in **Table 36** and **Table 37**. Non-residential sewer rates vary by the type and concentration of pollutants discharged, with more polluted the sewage being assessed a greater sewer service charge per hundred cubic foot (CCF).

**Table 36: Residential 2-Tier Water Rate Structure (\$/CCF)**

ACCOUNT TYPE	WATER USE	EFFECTIVE 7/1/2009	EFFECTIVE 7/1/2010	EFFECTIVE 7/1/2011	EFFECTIVE 7/1/2012	EFFECTIVE 7/1/2013
Single Family Residential	≤ 3 CCF	\$2.61	\$3.09	\$3.50	\$3.90	\$4.20
	>3 CCF	\$3.48	\$4.12	\$4.60	\$5.20	\$5.50
Multi-Family Residential	≤ 3 CCF	\$2.87	\$3.28	\$3.70	\$4.20	\$4.50
	>3 CCF	\$3.82	\$4.37	\$4.90	\$5.50	\$5.90

**Table 37: Residential 2-Tier Wastewater Rate Structure (\$/CCF)**

ACCOUNT TYPE	WATER USE	EFFECTIVE 7/1/2009	EFFECTIVE 7/1/2010	EFFECTIVE 7/1/2011	EFFECTIVE 7/1/2012	EFFECTIVE 7/1/2013
Single Family Residential	≤ 3 CCF	\$6.05	\$6.91	\$7.16	\$7.52	\$7.90
	>3 CCF	\$8.35	\$9.21	\$9.55	\$10.03	\$10.53
Multi-Family Residential	≤ 3 CCF	\$5.66	\$6.51	\$7.49	\$7.86	\$8.25
	>3 CCF	\$7.45	\$8.68	\$9.99	\$10.49	\$11.01

## DMM D (BMP 1.3): Water Loss Control

An efficient distribution system is a key factor in ensuring efficient water use. The difference between the amount of water produced or purchased by an agency and the amount recorded as sold at customers’ meters is referred to as “unaccounted for water. Some amount of loss in distribution is unavoidable due to necessary but un-metered uses such as fire fighting, main flushing, and storage facility cleaning. However, a portion of a system’s losses can be controlled.

<sup>19</sup> The SFPUC was previously bound by Proposition H, passed in 1998, which restricted the SFPUC’s ability to increase or restructure water rates. Proposition H expired in 2006.

**Retail Service Area:** The SFPUC has an ongoing program to minimize the loss of water within its distribution system. Measures include regular investments in repair and replacement of old, leak-prone mains, systematic leak detection programs and regular meter calibration and repair programs. Since the 1970s, the SFPUC has implemented system-wide leak inspection and repair programs to reduce distribution system losses. From the use of advanced pitometer measurements and system zone analysis in the 1990s to the use of Permaloggers in 2005, the SFPUC has continuously enhanced its practices to identify leaks and reduce the unaccounted for water. In 2005, the SFPUC also completed an independent Unaccounted for Water Study to identify and quantify water losses. The study results indicate that the SFPUC leak management program is one of the most effective out of a nationwide sample. The SFPUC's system water loss is estimated to be less than 9% of total in-City demand (7% from unbilled authorized and unauthorized consumption, 2% from meter under-registration).

In Spring 2010, the SFPUC began deployment of the Automated Water Meter Program (AWMP), which will upgrade all of San Francisco's approximately 178,000 retail water meters with wireless advanced metering technology. Full deployment is anticipated by the end of 2012. The new system will measure, collect and analyze water usage more accurately and more frequently (on an hourly basis), which allows the SFPUC and customers to monitor water use and detect leaks faster and without the need for physical field visits and manual meter readings.

**Wholesale Customer Service Area:** The SFPUC initiated a Pipeline Inspection Program in the early 1990s on its RWS's 350 miles of water transmission lines. Routine inspections are considered preventive maintenance measures, but they also provide information on pipeline leaks. These inspections are usually conducted year-round with no more than one section of a major pipeline out of service at any time. The Pipeline Inspection Program covers the entire water transmission system over a 20-year period and then repeats. The SFPUC has a goal to inspect one section per quarter (4 inspections per year), with each section averaging 4-6 miles. Technically, the regional system does not have any distribution system components, only transmission system components. SFPUC staff perform meter calculations that estimate the leakage rate by comparing customer usage, plant production and water crossing the San Francisco County line.

## **DMM E (BMP 5): Large Landscape Conservation Programs and Incentives**

In 2007, the SFPUC teamed with the City Department of Recreation and Parks to conduct a study that provided detailed audits and improvement recommendations to 12 of the highest water using parks in the City.

Recognizing that irrigation of large landscapes contributes significantly to the City's water use, the SFPUC initiated a Large Landscape Grant Program in 2009. This program provides large water users the financial incentives to implement retrofits and install fixtures to maximize the use of non-potable water or to reduce irrigation water use through conservation measures and innovative practices. The program was open to all SFPUC Retail Customers with landscape size greater than or equal to 2.5 acres. The SFPUC posted notice of the grant program on its website and mailed letters to notify a number of Retail Customers with large landscapes. In response, the SFPUC received a total of eight proposals from five



organizations. The proposals were evaluated based on a number of factors such as funding availability, estimated water savings, and community use and benefits. In FY 2009/10 and 2011/12, the program provided a total of over \$4 million in funding for six projects. Upon completion of these projects, the SFPUC expects to achieve a water savings of over 20 million gallons per year.

To promote efficient irrigation water use and to comply with the State's Water Conservation in Landscaping Act (Assembly Bill 1881), the SFPUC replaced the existing irrigation ordinance (*Ordinance 92-91* Chapter 63 of the San Francisco Administration Code) with a new Water Efficient Irrigation Ordinance, adopted in 2010, *Ordinance 301-10*. Beginning in January 2011, new landscape projects or landscape modification projects between 1,000 and 2,500 square feet are required to increase their water-efficient plantings and limit turf plantings. Landscape projects greater than 2,500 square feet must demonstrate that their irrigation water use will stay within their assigned water budget, and must also obtain approval from the SFPUC Conservation Administrator of their landscape, irrigation, and soil management plans prior to any landscape installation. Owners of large landscaped areas greater than 10 acres must work with SFPUC staff to develop a compliance plan that lays out an implementation strategy and schedule for improving landscape water use efficiency.

### **DMM F (BMP 3.3): HECW Financial Incentive Programs**

The SFPUC has offered a clothes washer rebate program for residential customers since 1999, and expanded the program to commercial customers in 2004.

In 2006 and 2007, the SFPUC partnered with six water agencies to implement the Bay Area Clothes Washer Rebate Program, which offered rebates of up to \$150 per residential clothes washer depending on the efficiency level. The program was co-funded by a grant from the State of California, and was featured in San Francisco's local retail appliance stores and in larger regional stores through store visits, direct mailings, and bill inserts.

Starting in 2008, the SFPUC and over 20 local water agencies have partnered with Pacific Gas and Electric Company (PG&E) to provide a combined water and energy rebate for high-efficiency clothes washing (HECW) machines. Rebate amounts for qualifying machines have ranged from \$200 for the first year (\$125 from the SFPUC and \$75 from PG&E) to \$125 as of 2011 (\$75 from the SFPUC and \$50 from PG&E).

To date, the SFPUC has provided almost 15,000 residential HECW rebates through both programs. Total water savings from these rebates is estimated to be more than 7,000 acre-feet over the lifetime of the machines.

The SFPUC also provides HECW rebate programs to non-residential customers. In 2008, the SFPUC partnered with the CUWCC and 36 California water agencies in the Smart Rebates Program, which received grant funding from the State to provide commercial, industrial, and institutional (CII) customers with financial incentives for fixture upgrades, including HECWs. CII customers purchasing HECWs for common area laundry facilities (such as laundromats) are eligible. To date, approximately

280 commercial HECW rebates have been provided, corresponding to an estimated lifetime savings of 1,354 acre-feet. The SFPUC also extended the rebate program in 2010 to business owners with leased washers.

## **DMM G (BMP 2.1): Public Information Programs**

Retail Service Area: The SFPUC works hard to promote conservation initiatives and educate the public about efficient and appropriate use of water. Ongoing activities include:

- Newspaper advertisements;
- Direct mailings;
- Distribution of educational materials and brochures to libraries and community centers,
- Participation in community events (the SFPUC staffed more than 115 events between 2007 and 2009); and
- SFPUC websites and newsletters.

In 2008, the SFPUC also created a series of direct-mailed newsletters entitled “Water Conservation Starts with You.” These newsletter series addressed the need to implement voluntary cutbacks in response to historic dry winter conditions. A total of more than 350,000 newsletters were mailed to residential and commercial accounts, informing them of dry year conditions, simple conservation practices and SFPUC conservation program incentives.

Since 2008, the SFPUC has provided funding and is working with the Garden for the Environment, a public demonstration garden in San Francisco, to offer environmental education programs to interested San Francisco residents on organic gardening, urban compost systems and sustainable food systems. The partnership includes free workshops focused on climate appropriate plant selection, efficient watering practices, and pollution prevention strategies, and compliance with local irrigation ordinance requirements.

The SFPUC has also been reaching out to customers and the public directly through its billing process. On each bill, the account’s current average daily water use is shown in comparison to its water use during the same period of the previous year. The bill also provides water-saving tips for home and business owners. This information helps customers recognize their water use trends and alerts them to any significant leakage issues. Conservation-related articles and tips are also included in most of the SFPUC’s bi-monthly *Currents* newsletters that are mailed to customers with their bills, e-mailed, and posted on the SFPUC’s web site.

In addition, the SFPUC maintains a close relationship with high-efficiency toilet and clothes washer vendors. The SFPUC staff routinely visits plumbing and appliance retail outlets to educate vendors about the SFPUC’s rebate programs. A close relationship with vendors assures that the most efficient models are available to customers and that rebate program information is accurate.

**Wholesale Customer Service Area:** The SFPUC provides technical and administrative assistance for public information to its Wholesale Customer agencies, as requested. In addition, the SFPUC completed a series of comprehensive water demand and conservation potential studies with its Wholesale Customers in 2004. These conservation studies evaluated the cost-effectiveness of 32 conservation measures and the resulting water savings potential for each individual Wholesale Customer. These studies provided informative and educational data for the Wholesale Customers about water conservation measures and associated water savings.

The SFPUC has also been active in many regional activities to promote water conservation in the Bay Area. Recently, the SFPUC along with BAWSCA and several other Bay Area water agencies submitted a proposal for implementation grant funding through Proposition 84 for regional water conservation activities, including public information and outreach in the Bay Area.

## **DMM H (BMP 2.2): School Education Programs**

**Retail Service Area:** The SFPUC's water conservation education program enriches the knowledge of students to encourage protection and preservation of our water resources. To assist with this learning, the SFPUC offers a variety of education resources developed in partnership with the San Francisco Unified School District (SFUSD), municipal departments, community gardens and non-profit education organizations.

The SFPUC provides annual funding to the SFUSD's Conservation Connection Program for the design and implementation of a comprehensive environmental education program for underserved communities. This program provides environmentally-themed workshops for educators and field trips for students.

The SFPUC also provides funding to the Garden for the Environment, an organic community garden, to offer field trips to San Francisco schools. Each field trip includes a pre-trip classroom visits in which students are introduced to water conservation and pollution prevention concepts that they can practice at the garden.

The SFPUC's education programs also bring water conservation to San Francisco classrooms. In 2009, the SFPUC partnered with the San Francisco Department of Environment (SFE) to develop a water resources curriculum for San Francisco's 4<sup>th</sup> and 5<sup>th</sup> grade students that covers the history of San Francisco's water supply, the water cycle, drought, alternative water resources, and the importance of water conservation. The curriculum includes fact sheets, lesson plans, and activity sheets that meet State of California curriculum standards. Each year the curriculum is marketed to a wide network of educators and the SFPUC and SFE also provide classroom presentations. In 2011, the SFPUC established a partnership with the Tuolumne River Trust to conduct annual presentations on source water and conservation to City elementary schools.

Together, the SFPUC's school education programs are expected to reach over 4,000 educators and students each year throughout San Francisco's public and private schools.

**Wholesale Customer Service Area:** The SFPUC is available to provide technical and administrative assistance for school education to its Wholesale Customer agencies, as requested. In several instances, the SFPUC has provided information packets on the SFPUC water system, such as the two-piece map series of the Hetch Hetchy/Peninsula Water Supply System and San Francisco's Water Distribution System to Wholesale Customers for inclusion in their school education programs.

## **DMM I (BMP 4): Conservation Programs for CII Accounts**

Similar to the residential water survey program, San Francisco offers a commercial and industrial audit program to identify and repair leaks for its non-residential customers. Since 1989, the SFPUC has conducted conservation audits on over 15,000 CII accounts.

From 2007 to 2009, the SFPUC conducted 429 water audits in large commercial buildings, corresponding to an estimated lifetime savings of over 560 acre-feet. The audits are tailored to specific business operations and provide recommendations for increasing efficiency of processes on site, including cooling towers; meter(s); laundry facilities; restrooms; boilers; landscapes; and food service equipment such as ice machines, food steamers, and pre-rinse spray valves. The SFPUC inspector also reviews water consumption history, assesses fixture efficiencies, and informs the customers of possible financial incentives for which the property may qualify. Free water-saving devices and materials are provided as needed.

The SFPUC also launched a Water Savers Pilot Program in 2005 to pursue long-term, verifiable savings for large CII customers through incentives based on the volume of water saved. Participants included hotels, hospitals, colleges, and urban food harvesters. The potential lifetime water savings from the 2-year pilot were estimated at 566 acre-feet.

In response to Mayor Gavin Newsom's Executive Directive in 2009 to reduce municipal water use by 10%, San Francisco's municipal departments have implemented measures and sought assistance from the SFPUC to reduce water use. Comparison of FY 2008/2009 water consumption data to 2007/2008 data reveals that City departments met the savings goal, achieving a total savings of over 700 acre-feet for the City.

In addition, the SFPUC provided technical support and conducted detailed audits on a number of large municipal facilities, including:

- City Hall
- War Memorial and Performing Arts Center (War Memorial Opera House, Louise M. Davies Symphony Hall, War Memorial Veteran's Building)
- Main Library
- San Francisco Zoo

- Police Department (10 police stations, stables, shooting range, police academy)
- Fire Department (42 fire stations, headquarters, arson unit)
- Combined Emergency Communications Center
- 25 Van Ness (Department of Public Health, Office of Housing, and others)
- 30 Van Ness (Departments of Public Health, Public Works, Parks and Recreation, etc.)
- 1650 Mission (San Francisco Planning Department, Code Enforcement Section, etc.)
- 1660 Mission (Department of Building Inspection)

The SFPUC also partnered with the SFUSD to conduct water audits at San Francisco’s Green Team schools. Audits were conducted at nine schools in 2009. The program continued in 2010 with audits for additional four schools. The SFPUC inspectors were also able to perform on-site fixture retrofits such as installing 0.5 gpm aerators on lavatory faucets and 1.5 gpm aerators on classrooms and break room faucets, helping the schools realize significant instant water savings. Together, these audits represent a potential savings of over 15 acre-feet of water annually.

### **DMM J (BMP 1.1.3): Wholesale Agency Assistance Programs**

Under the terms of the long-term WSA with its Wholesale Customers, the SFPUC cannot provide direct financial assistance for conservation programs to a Wholesale Customer and subsequently add this expense to the suburban wholesale rate base for that year. The SFPUC can provide staff to assist Wholesale Customer conservation efforts and through agreement with BAWSCA can develop service area-wide conservation programs that can be funded as a joint expense by its Retail and Wholesale Customers.

### **DMM K (BMP 1.4): Conservation Pricing**

**Retail Service Area:** For many years, the SFPUC has used conservation pricing as an incentive to conserve water. To promote the installation of efficient plumbing fixtures, the SFPUC implemented an incentive rate structure for its Retail Customers.

Water and wastewater rates were last revised in 2009 with the introduction of the 2-tier rate structure and a 5-year rate increase schedule for single- and multi-family residential accounts. The rate structures are summarized previously in **Table 2** and **Table 3**. Non-residential sewer rates vary by the quantity and type of pollutants in the wastewater discharged, with more polluted wastewater assessed a greater sewer service charge per CCF.

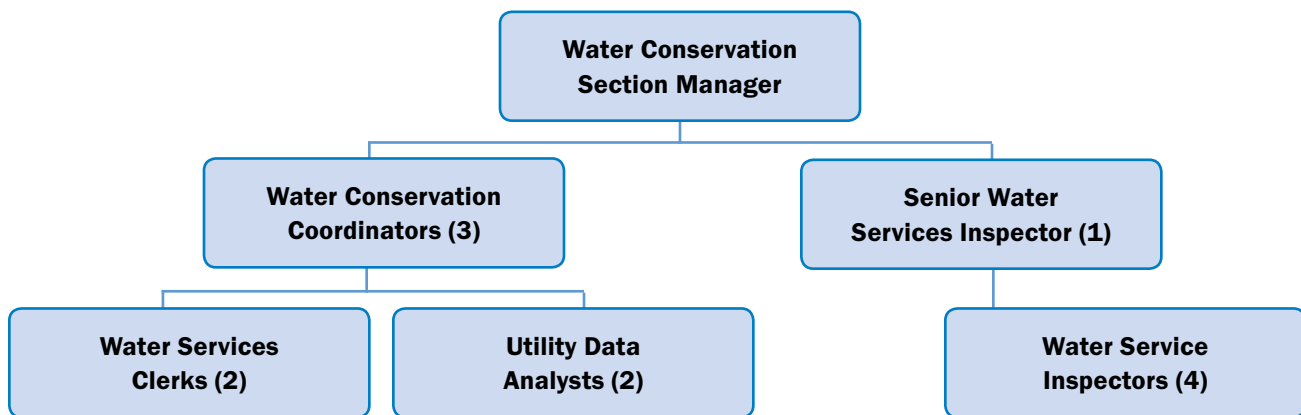
The SFPUC also addresses water use violations through its rate schedule. Violations of any water use restriction may result in the discontinuance of water service or the installation of flow restricting devices. The costs of these actions are borne by the customer.

**Wholesale Customer Service Area:** The SFPUC’s wholesale rate structure complies with conservation pricing principles and is designed to recover the cost of providing service. Billing is based on meter readings, and utilizes an uniform rate structure. In addition, the SFPUC assesses excess use surcharges during drought periods.

### DMM L (BMP 1.1.1): Water Conservation Coordinator

**Retail Service Area:** The SFPUC Water Conservation Section currently has 3 full-time Water Conservation Coordinators and 2 Utility Analysts. Under the direction of the Water Conservation Section Manager, these staff positions conduct implementation of various residential, landscape, and CII conservation programs. The Section also has its own inspection team and 2 water services clerks. **Figure 10** presents the current organizational chart of the SFPUC Water Conservation Section.

**Figure 10: SFPUC Water Conservation Section Organization Chart (2010)**



### DMM M (BMP 1.1.2): Water Waste Prohibition

Section E of the SFPUC’s Rules and Regulations for Water Service includes a provision regarding water waste prohibition. During the 1987-92 drought, the SFPUC enacted numerous water use restrictions and prohibitions in response to the severe water shortage. These measures are discussed in the Water Shortage Contingency Planning section of this report. With the end of the drought in 1993, the SFPUC elected to continue certain water use restrictions to further long-term conservation program. These measures are listed below and included in Section E of the SFPUC’s Rules and Regulations for Water Service:

- Water waste shall be avoided, including (but not limited to) flooding or runoff into the sewers or gutters.
- Hoses used for any purpose must have positive shutoff valves.
- Restaurants shall serve water to customers only upon request.
- Decorative fountains must recycle water.



- Use of potable water for consolidation of backfill, dust control or other non-essential construction purposes is prohibited if other sources such as groundwater or reclaimed water are available and approved by the Department of Health.
- Water used for all cooling purposes and commercial car washes must be recycled.

Violation of any water use restriction may result in the installation of a flow-restricting device in the service line of the customer. Continued violation could result in termination of service. The customer bears the cost of any enforcement action.

Effective 2010, Section F of the SFPUC's Rules and Regulations for Water Service includes additional water waste prevention measures specific to irrigation, these measures are also now in the City's Water Efficient Irrigation Ordinance, *Ordinance 301-1* and include prohibition of water runoff from landscapes of all size in caused by low head drainage, overspray, broken irrigation hardware, or other conditions where water flows onto adjacent property, walks, roadways, parking lots or other structures.

### **DMM N (BMP 3.4): WaterSense Specification Toilets & ULFT Replacement Program**

Between 2005 and 2008 the SFPUC conducted a highly visible ultralow-flush toilet (ULFT) residential rebate program providing rebates for replacement of inefficient toilets with that flush at 3.5 gpf or higher with toilets that flush at 1.6 gpf. Starting in 2006 and continuing, San Francisco has been offering rebates for replacement of 3.5 gpf or higher model toilets with High Efficient Toilets (HETs) that flush as 1.28 gpf or lower. The goal is to catalyze a market transformation toward HETs, which, unlike ULFTs, until July 2011 were not captured in the plumbing codes. Since ULFT and HET rebate program inception, San Francisco has replaced over 30,000 inefficient toilets.

Also, under the 2009 Residential Water Conservation Ordinance, residential buildings are required to install water conservation devices upon sale, transfer of title, or major improvement. This is expected to accelerate the replacement of inefficient devices (The Commercial Water Conservation Ordinance requires the same installation of efficient fixtures in all commercial properties by 2017).

San Francisco's water use patterns reveal that the highest household density and water consumption occur in the lower-income residential population. To assist these residential customers in overcoming the financial burden of initial fixture and installation costs, the SFPUC launched a high-efficiency toilet direct installation and water survey program in 2008. In this program, the SFPUC originally partnered with a local nonprofit organization to conduct water efficiency surveys, provide free high-efficiency devices, and identify potential households for the direct toilet install program. In 2010, the program was shifted mainly to recipients of the SFPUC's low-income CAP, which provides discounted water and wastewater to single family homes. Customers found to have toilets eligible for replacement are scheduled for free installation of high-efficiency models. Under the program, the SFPUC also delivered free HETs to more than 30 multi-family properties and starting in 2011 will be expanding free toilets and installations to low-income multi-family buildings. These toilet replacements represent a lifetime savings of over 3,000 acre-feet of water.

### 6.3 BEYOND BMPS AND DMMS

In addition to the 14 BMPs/DMMS, the SFPUC also seeks water savings through innovative programs that encourage the use of graywater and rainwater.

The SFPUC Water Enterprise teamed with the SFPUC Wastewater Enterprise in 2009 to develop a framework to promote safe use of graywater in the City. This effort included development of a guidance manual for customers on how to design simple graywater systems and launched a small laundry-to-landscape pilot program in 2011 for residential customers.

The Wastewater Enterprise also administers a rain barrel and cistern discount program and provides technical assistance related to rain barrel installation. The program also developed stormwater design guidelines and provided technical assistance on swales, rainwater gardens, stormwater planters, green roofs, and permeable pavement that captures rainwater for irrigation and recharge purposes.

Like many other water utilities, the SFPUC provides free conservation fixtures and devices to its residents during water audits and for pick up at its customer service office, such as 1.5-gpm showerheads, 0.5-gpm faucet aerators, garden spray nozzles, and toilet replacement parts (e.g. flappers and fill valves). Conservation device giveaways are a simple and cost-effective way to help customers reduce their water use. From July 2007 to June 2010, the SFPUC estimated that it distributed nearly 100,000 water-efficient devices to both residential and commercial customers.

### 6.4 REGIONAL COORDINATION

The SFPUC seeks opportunities to work with BAWSCA and its member agencies and other water agencies, including the SCVWD, to leverage available resources on an ongoing basis. The SFPUC's commitment to regional coordination is evident in many of its conservation programs, such as the Bay Area Clothes Washer Rebate Program in 2006 and the PG&E HECW Water and Energy Rebate Program in 2008 (both programs are discussed in previous subsections).

In 2007, the SFPUC, BAWSCA, and five other Bay Area water agencies secured \$1 million in grant funding for a regional "Water Saving Hero" public education campaign. This campaign provided a consistent message about water supply conditions and long-term challenges, and informed customers across the region via simple and effective water conservation examples. The integrated advertising and marketing program included regional print, transit and radio ads, marketing materials, and a new website. Throughout the campaign, the SFPUC reduced systemwide water usage by more than 13% compared to historic consumption under similar hydrologic conditions.

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## SECTION 7: CLIMATE CHANGE

The issue of climate change has become an important factor in water resources planning in the State, and it is being considered during planning for the RWS. There is evidence that increasing concentrations of greenhouse gases have caused and will continue to cause a rise in temperatures around the world, which will result in a wide range of changes in climate patterns. These changes will have a direct effect on water resources in California, and numerous studies on climate change have been conducted to determine the potential impacts on water resources. Based on these studies, climate change could result in the following types of water resource impacts, including impacts on the RWS and associated watersheds:

- Reductions in the average annual snowpack due to a rise in the snowline and a shallower snowpack in the low- and medium-elevation zones, such as in the Tuolumne River basin, and a shift in snowmelt runoff to earlier in the year,
- Changes in the timing, intensity, and variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow,
- Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality,
- Sea level rise and an increase in saltwater intrusion,
- Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality,
- Increases in evaporation and concomitant increased irrigation need, and
- Changes in urban and agricultural water demand.

However, other than the general trends listed above, there is no clear scientific consensus on exactly how global warming will quantitatively affect the state's water supplies, and current models of State water systems generally do not reflect the potential effects of global warming.

The SFPUC performed an initial assessment of the potential effects of climate change on the RWS. This initial assessment evaluated a temperature rise of 1.5-degrees Celsius ( $^{\circ}\text{C}$ ) between 2000 and 2025 with no change in precipitation. The temperature rise of  $1.5^{\circ}\text{C}$  is based on a consensus among many climatologists that current global climate modeling suggests a  $3^{\circ}\text{C}$  rise may occur between 2000 and 2050. The evaluation predicts that an increase in temperature of  $1.5^{\circ}\text{C}$  will raise the snowline approximately 500 feet. The elevation of the watershed draining into Hetch Hetchy Reservoir ranges from 3,800 to 12,000 feet above mean sea level, with about 87% of the watershed area above 6,000 feet. In 2000 (a normal hydrologic year in the 82-year period of historical record), the average snowline in this watershed was approximately 6,000 feet during the winter months. Therefore, the SFPUC evaluation indicates that a rise in temperature of  $1.5^{\circ}\text{C}$  between 2000 and 2025 will result in less or no snowpack between 6,000 and 6,500 feet and faster melting of the snowpack above 6,500 feet. Statistical modeling of a  $1.5^{\circ}\text{C}$  increase indicates that about 7% of the runoff currently draining into Hetch Hetchy Reservoir will shift from the spring/ summer seasons to the fall/winter seasons in the Hetch Hetchy basin by 2025. This percentage is within the current interannual variation in runoff and is within the range accounted for during normal runoff forecasting and existing reservoir management practices. The predicted shift in

runoff timing is similar to the results found by other researchers modeling water resource impacts in the Sierra Nevada due to warming trends associated with climate change.

The SFPUC is currently planning two additional assessment analyses. The first will utilize a newly calibrated hydrologic model of the Hetch Hetchy watershed to explore sensitivities to different climate change scenarios involving changes in air temperature and precipitation. The hydrologic model, HFAM II, simulates hydrologic processes using hourly input meteorological data to produce runoff into Hetch Hetchy Reservoir under varying conditions. Climate change parameters will be fed into the model to gauge sensitivity of runoff to those changing parameters. Because 85% of the SFPUC's supply derives from the Hetch Hetchy basin, this is an important part of understanding the potential effects of climate change on our system.

In addition, the SFPUC is project manager of a national pilot project under the auspices of the Water Utility Climate Alliance, a national coalition of drinking water providers chaired by the SFPUC general manager since its founding in 2007. The project, Piloting Utility Modeling Applications for Climate Change (PUMA) is a partnership between five water utilities, four Regional Integrated Sciences and Assessment (RISA) programs, and selected climate science experts. The project has five primary objectives:

1. Identify state-of-the-art climate modeling tools and techniques for use in assessment;
2. Articulate the uncertainties embedded in modeling results, as well as how to best use down-scaled and other climate modeling data in planning;
3. Acquire climate projection data utilizing the identified modeling tools and translate that data into a form and scale that can be used by utility hydrologic models to generate watershed and/or urban runoff information;
4. Build a national collaboration with the RISA program by engaging RISA experts from the northwest, California-Nevada, southeast, and northeast regional RISA enterprises;
5. Inform developing conversations between climate science users and providers regarding how existing research meets or does not meet the needs of the adaptation community, how future investment in research might better serve society, and the nature of climate services needed on the ground in communities facing adaptation challenges.

Three utilities – the SFPUC, Seattle Public Utilities, and Tampa Bay Water – are committed to conducting pilot project assessment in conjunction with the PUMA project. Two others, Portland Water Bureau and New York City Department of Environmental Protection, are active with the project and are currently considering participating at the pilot level. Given the level of collaboration between utilities facing adaptation challenges, RISA leaders, and other climate science experts in the PUMA project, the SFPUC expects both enhancement of the collective understanding of best practices in this arena, as well as a more detailed and robust assessment of the SFPUC's potential vulnerability to climate change, to emerge from the project. Thus, the SFPUC will be better equipped to make risk-based decisions in the future. A team of top climate scientists and the California RISA program, under the management of SFPUC staff, is currently developing a workplan for the SFPUC's assessment, which will encompass both Hetch Hetchy and local watersheds.

# SECTION 8: UWMP CHECKLIST

This section provides the UWMP checklist to facilitate DWR’s review of the completeness of this document. The tables are organized according to subject matter.

## Contingency

# <sup>20</sup>	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-% water supply reduction, and an outline of specific water supply conditions at each stage.	10632 (a)	Table 27 (p.61)
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency’s water supply.	10632 (b)	Table 31 (p.68), Table 34 (p.72)
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632 (c)	Section 5.5 (p.63)
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632 (d)	Table 28 (p.62)
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50% reduction in water supply.	10632 (e)	Section 5.4.2 (p.58), Table 27 (p.61)
40	Indicated penalties or charges for excessive use, where applicable.	10632 (f)	Table 28 (p.62)
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632 (g)	Section 5.4.4 (p.63)
42	Provide a draft water shortage contingency resolution or ordinance.	10632 (h)	Appendix H
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632 (i)	Section 4.2.4 (p.45)

20 Numbers are according to Table I-2 of the 2010 UWMP Draft Guidebook



## Demand Management Measures (DMMs)

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631 (f) (1)	Table 35, Section 6.2 (p.76)
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631 (f) (3)	Section 6.2 (p.76)
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631 (f) (4)	Section 6.2 (p.76)
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631 (g)	N/A All 14 DMMs are being implemented (see Section 6.2, p.76)
30	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631 (j)	N/A - Section completed in lieu of attaching BMP Report (currently under development)

## Reliability

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631 (c) (1)	Section 5 (p.49)
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631 (c) (2)	Table 19 (p.49)
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635 (a)	Section 5.7 (p.70), Section 5.6 (p.66)

## External Coordination and Outreach

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620 (d) (2)	Section 1.1 (p.3)
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621 (b)	Section 1.2 (p.4)
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621 (c)	Appendix B
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635 (b)	Appendix B
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Appendix B
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642	Appendix B
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642	Section 1.3 (p.5), Appendix C
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643	Section 1.3 (p.5)
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644 (a)	Section 1.3 (p.5), Appendix B
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645	Section 1.3 (p.5), Appendix B

## Service Area

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
8	Describe the water supplier service area.	10631 (a)	Section 2.1 (p.7)
9	Describe the climate and other demographic factors of the service area of the supplier	10631 (a)	Section 2.3 (p.14), Section 2.4 (p.14)
10	Indicate the current population of the service area	10631 (a)	Section 2.4 (p.14), Section 2.5 (p.18), Table 3 (p.16), Table 5 (p.18)
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631 (a)	Section 2.4 (p.14), Section 2.5 (p.18), Table 3 (p.16), Table 5 (p.18)
12	Describe other demographic factors affecting the supplier's water management planning.	10631 (a)	Section 2.4 (p.14), Section 2.5 (p.18)

## Water Conservation

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20 (e)	Section 4.2 (p.40)
-	Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions.	10608.36	Section 4.2.4 (p.45)
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	N/A. Does not apply until 2015 UWMP

## Water Demands

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631 (e)(1)	Table 12 (p.36), Table 13 (p.37), Table 17 (p.47)
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	Section 4.1.4 (pg.37)

## Recycled Water

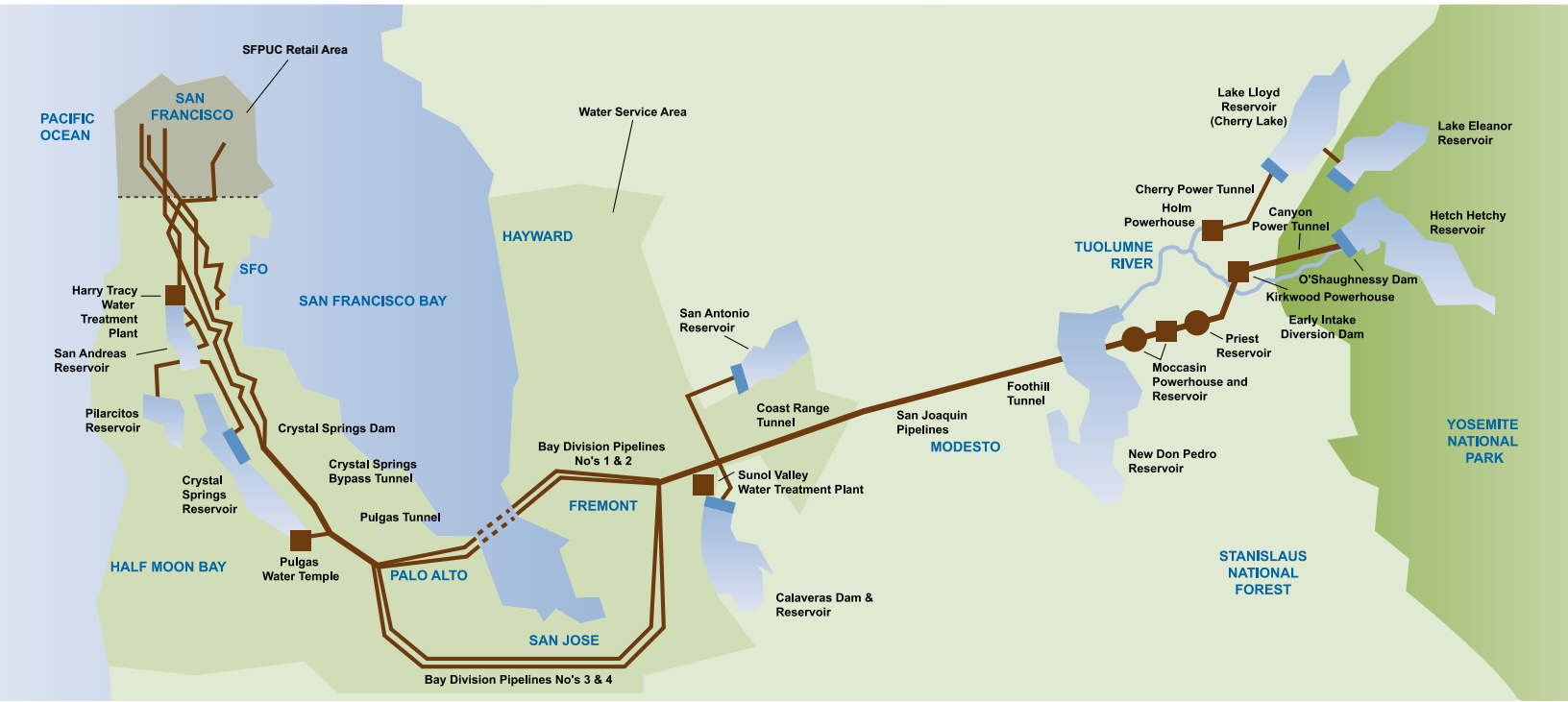
#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633	Section 3.3.2 (p.27)
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633 (a)	Section 3.2.2 (p.25), Table 9 (p.26)
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633 (b)	Table 8 (p.26)
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633 (c)	Section 3.2.2 (p.25)
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633 (d)	Table 10 (p.30)
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633 (e)	Table 10 (p.30)
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633 (f)	Section 3.3.3 (p.29)
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote re-circulating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633 (g)	Section 3.3.4 (p.29)

## Water Supply

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620 (f)	Section 3.3 (p.27)
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631 (b)	Sections 3.1, 3.2 (p.19-26)
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate “not applicable” in lines 15 through 21 under the UWMP location column.	10631 (b)	Yes
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631 (b) (1)	Section 3.2 (p.24)
16	Describe the groundwater basin.	10631(b) (2)	Section 3.2 (p.24)
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631 (b) (2)	Section 3.2 (p.24)
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631 (b) (2)	Not Applicable
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631 (b) (2)	Section 3.2 (p.24)
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.	10631 (b) (3)	Section 3.2 (p.24)
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631 (b) (4)	Section 3.2 (p.24), Section 3.3.1 (p.27)
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631 (d)	Section 5.2.4 (p.53)
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631 (h)	Section 5.2 (p.51)
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and GW.	10631 (i)	Section 5.3.1 (p.56)

#	UWMP REQUIREMENT	CA WATER CODE	2010 UWMP LOCATION
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban Retail Customers with future planned and existing water source available to it from the wholesale agency during the required water-year types.	10631 (k)	Appendix G
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability.	10634	Section 3.4 (p.31)





# 2010 Urban Water Management Plan for the City and County of San Francisco

Prepared by: The San Francisco Public Utilities Commission



**San Francisco**  
**Water Power Sewer**  
Services of the San Francisco Public Utilities Commission

# 2010 Urban Water Management Plan for the City and County of San Francisco

## APPENDICES

Prepared by: The San Francisco Public Utilities Commission  
June 2011



San Francisco  
**Water Power Sewer**

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# **Appendix A**

## **California Urban Water Management Planning Act of 1983 (Last revised: 2009)**

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# CALIFORNIA WATER CODE DIVISION 6

## PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.

CHAPTER 1.	GENERAL DECLARATION AND POLICY	<a href="#">10610-10610.4</a>
CHAPTER 2.	DEFINITIONS	<a href="#">10611-10617</a>
CHAPTER 3.	URBAN WATER MANAGEMENT PLANS	
Article 1.	General Provisions	<a href="#">10620-10621</a>
Article 2.	Contents of Plans	<a href="#">10630-10634</a>
Article 2.5.	Water Service Reliability	<a href="#">10635</a>
Article 3.	Adoption and Implementation of Plans	<a href="#">10640-10645</a>
CHAPTER 4.	MISCELLANEOUS PROVISIONS	<a href="#">10650-10656</a>

### WATER CODE

#### SECTION 10610-10610.4

**10610.** This part shall be known and may be cited as the "Urban Water Management Planning Act."

**10610.2.** (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact



on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

**10610.4.** The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

## **WATER CODE**

### **SECTION 10611-10617**

**10611.** Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

**10611.5.** "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

**10612.** "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

**10613.** "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

**10614.** "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

**10615.** "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

**10616.** "Public agency" means any board, commission, county, city

and county, city, regional agency, district, or other public entity.

**10616.5.** "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

**10617.** "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

## **WATER CODE**

### **SECTION 10620-10621**

**10620.** (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

**10621.** (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water

supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

## **WATER CODE**

### **SECTION 10630-10634**

**10630.** It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

**10631.** A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (A) An average water year.
- (B) A single dry water year.
- (C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.

- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.
- (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
- (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
- (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
  - (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
  - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
  - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
  - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
  - (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
  - (j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California,"

dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

**10631.1.** (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

**10631.5.** (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall



determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of

the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

**10631.7.** The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

**10632.** (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic

sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

**10633.** The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's

service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

**10634.** The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

## **WATER CODE**

### **SECTION 10635**

**10635.** (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

## **WATER CODE**

### **SECTION 10640-10645**

**10640.** Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

**10641.** An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

**10642.** Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

**10643.** An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

**10644.** (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section

10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

**10645.** Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.



## **WATER CODE**

### **SECTION 10650-10656**

**10650.** Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

**10651.** In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

**10652.** The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

**10653.** The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

**10654.** An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the

"Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

**10655.** If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

**10656.** An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

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# **Appendix B**

## **Evidence of Compliance with Outreach Requirements**

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## Summary Table of SFPUC Compliance with Public Notification Elements of the Urban Water Management Plan Act

June 14, 2011

Code Section	Code Requirement	Summary of Actions Taken	Related Attached Documentation
Water Code Section 10620	Notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes.	<ul style="list-style-type: none"> <li>• March 11, 2011 letter sent to City agencies, wholesale customers of the SFPUC Regional Water System, large retail customers (e.g., SFO), large regional water agencies (e.g. EBMUD), and the Bay Area Water Supply Conservation Agency (BAWSCA).</li> <li>• April 27, 2011 email regarding availability of Public Draft sent to parties listed above.</li> </ul>	<p style="text-align: center;"><u>Attachment A:</u></p> <ul style="list-style-type: none"> <li>○ Example of 3/11/11 letter</li> <li>○ Example of 4/27/11 email</li> <li>○ Recipient list for cited letters</li> </ul>
Water Code Section 10642	Encourage the active involvement of diverse social, cultural and economic elements of the population within the service area prior to and during the preparation of the plan.	<ul style="list-style-type: none"> <li>• Web postings on 2010 UWMP update</li> <li>• Notification of Public Hearing in local community newspapers (run May 9, 2011 and May 16, 2011)</li> </ul>	<p style="text-align: center;"><u>Attachment B:</u></p> <ul style="list-style-type: none"> <li>○ Copy of online posting</li> <li>○ Copy of ads run in local papers in Chinese and Spanish</li> <li>○ Declaration of ad publication</li> </ul>
Water Code Section 10642	Prior to the required hearing publish the notice of time and place of hearing within the jurisdiction of the supplier pursuant to Section 6066 of the Gov't Code.	<ul style="list-style-type: none"> <li>• Notification of Public Hearing in local newspapers meeting requirements of Section 6066 of the Gov't Code (run May 9, 2011 and May 16, 2011)</li> </ul>	<p style="text-align: center;"><u>Attachment B:</u></p> <ul style="list-style-type: none"> <li>○ Copy of ads run in local papers</li> <li>○ Declaration of ad publication</li> </ul>
Water Code Section 10642	Prior to the required hearing provide notice of time and place of hearing to any city or county within which the supplier provides water.	<ul style="list-style-type: none"> <li>• March 11, 2011 and April 27, 2011 letters sent to City agencies, wholesale customers of the SFPUC Regional Water System, large retail customers (SFO), large regional water agencies (e.g. EBMUD), and the Bay Area Water Supply Conservation Agency (BAWSCA).</li> </ul>	<p style="text-align: center;"><u>Attachment A:</u></p> <ul style="list-style-type: none"> <li>○ Example of 3/11/11 letter</li> <li>○ Example of 4/27/11 letter</li> </ul>
Water Code Section 10642	Prior to adoption - make the plan available for public inspection	<ul style="list-style-type: none"> <li>• Public Draft posted on www.sfwater.org</li> <li>• Copy hand delivered to Main Library branch.</li> </ul>	<p style="text-align: center;"><u>Attachment C:</u></p> <ul style="list-style-type: none"> <li>○ Transmittal letter to Public Library dated 4/26/11</li> <li>○ Copy of web posting of Public Draft (see Attachment B)</li> </ul>



<b>Code Section</b>	<b>Code Requirement</b>	<b>Summary of Actions Taken</b>	<b>Related Attached Documentation</b>
Water Code Section 10642	Prior to adoption, hold a public hearing	<ul style="list-style-type: none"> <li>Public Hearing held on 5/27/11 during the meeting of the San Francisco Public Utilities Commission.</li> </ul>	<p><u>Attachment D:</u></p> <ul style="list-style-type: none"> <li>Copy of SFPUC Agenda of 5/24/11; Item #10 is Public Hearing</li> </ul>
Water Code Section 10642	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	<ul style="list-style-type: none"> <li>Plan adopted (as amended) on 6/14/11</li> </ul>	<p><i>(On file with the SFPUC):</i></p> <ul style="list-style-type: none"> <li>Resolution to Adopt the UWMP</li> </ul>
Water Code Section 10644(a)	Within 30 days of plan adoption, submit a copy to DWR.	<ul style="list-style-type: none"> <li>Letter of transmittal to DWR</li> </ul>	<p><i>(On file with the SFPUC):</i></p> <ul style="list-style-type: none"> <li>Copy of transmittal letter to DWR</li> </ul>
Water Code Section 10644(a)	Within 30 days of plan adoption, submit a copy to the CA State Library within 30 days	<ul style="list-style-type: none"> <li>Copy of adopted 2010 UWMP mailed to CA State Library</li> </ul>	<p><i>(On file with the SFPUC):</i></p> <ul style="list-style-type: none"> <li>Copy of transmittal letter to CA State Library</li> </ul>
Water Code Section 10644(a)	Within 30 days of plan adoption, submit a copy to any city or county within which the supplier provides water.	<ul style="list-style-type: none"> <li>Copy of adopted 2010 UWMP mailed to all wholesale customers of the SFPUC Regional Water System</li> </ul>	<p><i>(On file with the SFPUC):</i></p> <ul style="list-style-type: none"> <li>Example of letter</li> </ul>

**Note:** Along with the letters sent to provide notice of the pending UWMP revision, availability of the Public Draft and date of public hearing, and availability of Final Draft, email notifications were also sent to a large distribution list of parties known by the SFPUC to be interested in water supply planning issues.



## SAN FRANCISCO PUBLIC UTILITIES COMMISSION

1145 Market St., 4th Floor, San Francisco, CA 94103 • Tel. (415) 554-3271 • Fax (415) 554-3161 • TTY (415) 924-5770



March 10, 2011

**Subject: Notice of Urban Water Management Plan 2010 Update,  
City and County of San Francisco and Public Hearing**

**EDWIN M. LEE**  
MAYOR

**FRANCESCA VIETOR**  
PRESIDENT

**ANSON MORAN**  
VICE PRESIDENT

**ANN MOLLER CAEN**  
COMMISSIONER

**ART TORRES**  
COMMISSIONER

**VINCE COURTNEY**  
COMMISSIONER

**ED HARRINGTON**  
GENERAL MANAGER

The Urban Water Management Planning Act (Water Code Section 10610 – 10657) requires the City and County of San Francisco to update its Urban Water Management Plan (UWMP). We are reviewing our current UWMP, which was last updated in 2005, and will be considering revisions to it. The UWMP will include county-wide demand projections to the year 2035, compare available water supplies to meet demands and present water demand management measures to reduce long-term water demand. Additionally, the UWMP update will include a discussion of the conservation requirement set forth in Senate Bill 7 (SBx7-7) as passed in November 2009. SBx7-7 mandates a statewide 20% reduction in per capita water use by 2020. The updated UWMP will include a quantification of the SFPUC's water use reduction targets and plan for meeting these objectives. We invite your agency's participation in this process.

Proposed revisions to our UWMP will be available for public review and comment from April 27, 2011 to May 27, 2011. The Draft 2010 UWMP update will be available on the SFPUC website at [www.sfwater.org](http://www.sfwater.org) (enter "UWMP" in the site Search field located in the upper right hand corner of the homepage). A copy of the document will also be available for review at the San Francisco Public Library:

*San Francisco Public Library  
Gov't Information Center, 5th floor  
100 Larkin Street  
San Francisco, CA 94102  
(415) 557-4400*

**Notice of Public Hearing**

A public hearing will be held on May 24, 2011 to allow interested members of the public to participate in the review process for the UWMP, including the SBx7-7 conservation requirement. The hearing will be held at the Commission meeting which begins at 1:30 p.m. in City Hall, Room 400, 1 Dr. Carlton B. Goodlett Place, San Francisco, California. All interested parties are invited to attend the public hearing and present their views. Persons who are unable to attend the public hearing may also submit to the City, by the time the proceedings begin, written comments regarding the subject of the hearing. These comments will be brought to the attention of the Commission and will become part of the official public record. Written comments can be sent to Mike Housh, Commission Secretary, San Francisco Public Utilities Commission, 1155 Market Street 11th Floor, San Francisco, CA 94103.

In the meantime, if you have any questions about our UWMP, or the process for updating it, please contact:

Ms. Molly Petrick  
San Francisco Public Utilities Commission  
1145 Market Street, 4th Floor  
San Francisco, CA 94103  
(415) 934-5767  
MPetrick@sfgwater.org

Sincerely,

A handwritten signature in black ink that reads "Paula Kehoe". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

Paula Kehoe  
Director of Water Resources



**From:** Suzanne Gautier

**To:** Jennifer Clary

**Cc:**

**Date:** Wed, 27 Apr 2011 10:25:49 -0700

**Subject:** **Draft Urban Water Management Plan - Public Hearing Scheduled for May 24, 2011**

The Draft 2010 Urban Water Management Plan (UWMP) for the City and County of San Francisco, prepared by the San Francisco Public Utilities Commission (SFPUC), is now available for review and comment. This Draft 2010 UWMP update includes county-wide demand projections to the year 2035, compares available water supplies to meet demands and presents water demand management measures to reduce long-term water demand. Additionally, the UWMP update includes a discussion of the conservation requirement set forth in Senate Bill 7 (SBx7-7) as passed in November 2009 mandating a statewide 20% reduction in per capita water use by 2020. The updated UWMP includes a quantification of the SFPUC's water use reduction targets and plan for meeting these objectives.

The Draft 2010 UWMP update can be viewed or printed from the SFPUC website [www.sfwater.org](http://www.sfwater.org) (enter "UWMP" in the site Search field located in the upper right hand corner of the homepage).

A copy of the document is also available for review at the following location:

San Francisco Public Library  
Gov't Information Center, 5th floor  
100 Larkin Street  
(415) 557-4400

The public review and comment period for this document begins on Wednesday, April 27, 2011 and ends close of business Friday, May 27, 2011. Please send any comments or questions to:

Molly Petrick  
San Francisco Public Utilities Commission  
[MPetrick@sfwater.org](mailto:MPetrick@sfwater.org)

A public hearing will be held on May 24, 2011 to allow interested members of the public to participate in the review process for this document, including the SBx7-7 conservation requirement. The hearing will be held at the Commission meetings which begin at 1:30 p.m. in City Hall, Room 400, 1 Dr. Carlton B. Goodlett Place, San Francisco, California.

**Recipient List: Notice of UWMP 2010 Update (sent March 11, 2011)**

#	Organization2	Contact
1	California Water Service Company	Darin Duncan
2	Mid-Peninsula Water District	Paul Regan
3	Mid-Peninsula Water District	Jeanette Kalabolas
4	City of Brisbane	Jerry Flanagan
5	City of Brisbane	Randy Breault
6	City of Brisbane	Clayton Holstine
7	City of Burlingame	Syed Murtuza
8	City of Burlingame	Jim Nantell
9	City of Burlingame	George J. Bagdon
10	City of Santa Clara	Robin Saunders
11	Contra Costa Water District	Jerry Brown
12	Marin Municipal Water District	Paul Helliker
13	Coastside County Water District	David Dickson
14	City of Daly City	Patricia Martel
15	Department of Water and Wastewater Resou	Patrick Sweetland
16	Westlake Community Center	
17	Westlake Library	
18	City of East Palo Alto	Alvin D. James
19	East Palo Alto Water District	Anthony Docto
20	City of Foster City	Ray Towne
21	Estero Municipal Improvement District	Jim Hardy
22	Alameda County Water District	Walt Wadlow
23	Alameda County Water District	Paul Piraino
24	Groveland Community Service	Shane Warner
25	City of Hayward	Robert A. Bauman
26	City of Hayward	Robert Bauman
27	City of Hayward	Alex Ameri
28	Town of Hillsborough	Martha DeBry
29	Town of Hillsborough	Cyrus Kianpour
30	Town of Hillsborough	Anthony Constantouros
31	Purissima Hills Water District	Patrick Walter
32	Purissima Hills Water District	Phil Witt
33	City of Menlo Park	David Boesch
34	City of Menlo Park	Kent Steffens
35	Ctiy of Menlo Park	Ruben Nino
36	City of Millbrae	Marcia L. Raines
37	City of Millbrae	Ron Popp
38	City of Milpitas	Kathleen Phalen
39	City of Milpitas	Greg Armendariz
40	City of Milpitas	Thomas Williams
41	City of Mountain View	Kevin C. Duggan
42	City of Mountain View	Cathy Lazarus
43	City of Mountain View	Linda Forsberg
44	Calif State Coastal Conservancy	Patrycja Bossak
45	East Bay Municipal Utility District	Alexander Coate
46	North Coast County Water District	Kevin O'Connell
47	North Coast County Water District	Cari Lemke
48	City of Palo Alto	Glenn Roberts

**Recipient List: Notice of UWMP 2010 Update (sent March 11, 2011)**

#	Organization2	Contact
49	City of Palo Alto	Nicolas Procos
50	City of Palo Alto	Jane Ratchye
51	Castlewood Country Club	
52	Zone 7 Water Agency	Dale Myers
53	Los Trancos County Water District	Stanley R. Gage
54	City of Redwood City	Ed Everett
55	City of Redwood City	Justin Ezell
56	City of Redwood City	Peter Ingram
57	Cal. State Seismic Safety Commission	Fred Turner
58	California State Assembly, AD12	Fiona Ma
59	California Waterfowl Association	David Golden
60	City of San Bruno	Connie Jackson
61	American True / True Youth	Ward Latimer
62	Arc Ecology	Sy Allen
63	Bayview Hunters Point Cmmunity	Karen Pierce
64	Bayview Merchants Association	Al Norman
65	CA Native Plant Soc.-YB Chpt	Randy Zebell
66	California Dragon Boat Association	Brian Danforth
67	California Dragon Boat Association	Hans Wu
68	Citizens' Advisory Committee	Winchell Hayward
69	City and County of San Francisco	Joanne Hayes-White
70	City and County of San Francisco	John Rahaim
71	City and County of San Francisco	Dennis Herrera
72	City College of San Francisco	Robert Gabriner
73	Coalition for a Better Wastewater Soluti	Jeff Marmer
74	Coalition For San Francisco Neighborhood	Joan Girardot
75	Dolphin Swimming & Boating Club	Gary Ehram
76	Friends of Islais Creek	Robin Chiang
77	Friends of Ocean Beach	Lara Trupelli
78	Friends of Stern Grove and Pine Lake	Dylan Hayes
79	GG Heights Neighborhood Assoc	Frank Noto
80	GG Heights Neighborhood Assoc.	Dick Allen
81	GIS Services, Towill Inc.	Brian K. Young
82	Golden Gate Audubon Society	Craig Spriggs
83	Golden Gate Restaurant Association	Kevin Westlye
84	Greater West Portal Neighborhood Assoc.	Bud Wilson
85	Greater West Portal Neighborhood Associa	
86	Lake Merced Hill	Joan Cooper
87	Lake Shore Acres Improvement Club	Jim Stark
88	Lake Shore Acres Improvement Club	Flora Zagorites
89	Lakewood Tenants Association	Mona Cereghino
90	Mayor's Office of Neighborhood Services	David Gutierrez
91	MWH Americas	Sandy Lawson
92	National Park Service GGNRA	Richard Weideman
93	Neighborhood Parks Council	Meredith Thomas
94	Olympic Club and Country Club	Dennis Bouey
95	Olympic Club Rifle Team	Stephen Goth
96	Olympic Club Rifle Team	Alex Takaoka



**Recipient List: Notice of UWMP 2010 Update (sent March 11, 2011)**

#	Organization2	Contact
97	OMI-NIA	Eloise Banks
98	Pacific Rod & Gun Club	Ed Figone
99	Pacific Rowing Club	Eric Martinez
100	PAR	Ray Holland
101	Parkmerced	Pauletta Burroughs
102	Planning Association of the Richmond (PA	Ron Miguel
103	Plumbers Union Local 38	Larry Mazzola Jr.
104	Port of San Francisco	Monique Moyer
105	Presidio Trust	Mark Hurley
106	Public Transportation Contract Complianc	Alberta O. Grant
107	Rec & Park- West Sunset Playground	
108	Rec & Park-JP Murphy Playground	
109	Rec & Park-Sunset Rec Center	
110	San Francisco Beautiful	Marcie Keever
111	San Francisco Board of Supervisors	Carmen Chu
112	San Francisco Board of Supervisors	Malia Cohen
113	San Francisco Board of Supervisors	David Chiu
114	San Francisco Board of Supervisors	Sean Elsbernd
115	San Francisco Board of Supervisors	Ross Mirkarimi
116	San Francisco Board of Supervisors	Mark Farrell
117	San Francisco Board of Supervisors	John Avalos
118	San Francisco Board of Supervisors	David Campos
119	San Francisco Board of Supervisors	Eric Mar
120	San Francisco Board of Supervisors	Jane Kim
121	San Francisco Board of Supervisors	Scott Wiener
122	San Francisco Democratic Central Committ	Leslie Katz
123	San Francisco Department of Public Healt	Barbara Garcia
124	San Francisco Department of Public Works	Edward Reiskin
125	San Francisco International Airport	John Martin
126	San Francisco Parks Trust	Amy Jean Boebel
127	San Francisco Public Library	Luis Herrera
128	San Francisco Public Library, Merced Bra	
129	San Francisco Recreation and Park Dept.	Phil Ginsburg
130	San Francisco Redevelopment Agency	Fred Blackwell
131	San Francisco Redevelopment Agency	Gaynell Armstrong
132	San Francisco Republican Central Committ	Mike Denunzio
133	San Francisco Rifle Association	Maurice Milam
134	San Francisco Small Business Network	Pat Christensen
135	San Francisco State University	Ryszard Dziadur
136	San Francisco State University	Ryszard Dziadur
137	San Francisco State University	Barbara Holzman
138	San Francisco Tomorrow	Dennis Antenore
139	San Francisco Tomorrow	Jennifer Clary
140	Save our Richmond Environment	Owen Brady
141	SF Airport	Jon Ballesteros
142	SF Bay Guardian	Bruce Bruggmann
143	SF Chamber of Commerce	Roberta Achtenberg
144	SF Council of District Merchants	Stephen Cornell

**Recipient List: Notice of UWMP 2010 Update (sent March 11, 2011)**

#	Organization2	Contact
145	SF Redevelopment Commission	Dar Singh
146	SF Republican Central Committee	Chris Bowman
147	SF SAFE	Michael Wong
148	SF State	Erik Elder
149	SF State	Erik Elder
150	SF Zoo	John Biale
151	SFPL- Ortega Branch	Pat Dimmick
152	SFPL- Parkside Branch	Jane Hudson
153	Sierra Club	Becky Evans
154	Sierra Club	Howard Strassner
155	Sierra Club	Ruth Gravanis
156	Small Business Commission	Regina Dick-Endrizzi
157	Small Merchant/Business Network	Cliff Waldeck/Syndi Seed
158	South End Rowing Club	Diane Davis
159	South End Rowing Club	Leslie Steele
160	Southeast Community Facility	Toye Moses
161	SPEAK	Marc Duffet
162	SPUR	Dick Morten
163	Sunset Beacon/Richmond Review	Carol Dimmick
164	Sunset District Neighborhood Coalition	
165	Sunset Neighborhood Beacon Center	
166	Sunset Parkside Edu. & Action Committee	Carolyn Gates
167	Sunset Residents Association	Johnson Kwong
168	Sunset Youth Services	Dawn Steukle
169	Sunshine Ordinance Task Force	David Pilpel
170	Taraval Parkside Merchants Association	Scott Hauge
171	The Villas Park Merced	Margarita Gonzalez
172	The Villas Park Merced	Mary Ann Nielsen
173	Tuolumne River Trust	Peter Drekmeier
174	Tuolumne River Trust	Jessie Raeder
175	U.S. EPA Region 9	Jacqueline Ann
176	UCSF Rowing Club	Mary Allen
177	Urban Resource Systems	Isabel Wade
178	West of Twin Peaks Central Council	Barbara Chionsini
179	West of Twin Peaks Central Council	Rae Doyle
180	West of Twin Peaks Observer	Phyllis Sherman
181	Westwood Park Association	Greg Clinton
200	California Trout	Mondy Lariz
201	California Water Service Co.	Rob Guzzetta
202	California Water Service Co.	Robert Guzzetta
203	California Water Service Company	Peter Nelson
204	City of San Jose	Mansour Nasser
205	Santa Clara Valley Water Dist.	Beau Goldie
206	BAWSCA	Rosalie O'Mahony
207	BAWSCA	Tom Piccolotti
208	BAWSCA	Chris Reynolds
209	BAWSCA	John H. Weed
210	BAWSCA	Art Jensen

**Recipient List: Notice of UWMP 2010 Update (sent March 11, 2011)**

#	Organization2	Contact
211	BAWSCA	John Ummel
212	BAWSCA	Nicole Sandkulla
213	City of San Mateo	Rajeev Batra
214	BAWSCA	Patricia Mahan
215	City of Santa Clara	Jennifer Sparacino
216	City of Santa Clara	Alan Kurotori
217	Committee to Save Lake Merced	Kristin Cadagan
218	BAWSCA	Robert Craig
219	Westborough Water District	Darryl Barrow
220	Stanford University	Mike Goff
221	Stanford University	Marty Laporte
222	City of Sunnyvale	James Craig
223	City of Sunnyvale	Marvin Rose
224	Sunol Valley Golf Club	
225	Turlock Irrigation District	Robert Nees
226	Olympic Club	Robert Maddow
227	Olympic Golf Club	Bob Maddow
228	City of East Palo Alto	M.L. Gordon
229	City of Hayward	David Fran
230	City of San Bruno	Mark Reinhardt
231	City of San Jose	Debra Figone
232	Consultant	Peter Young
233	Cordilleras Water District	Richard Thall
234	Lawrence Livermore Lab	Ellen Raber
235	Restore Hetch Hetchy	Jerry Meral
236	San Francisco Neighborhood Parks Council	Rachel Russell
237	SF Department of Building Inspections	Vivian Day
238	SF Sheriff Office	Michael Hennessey
239	Sunset District Neighborhood Coalition	Susan Suval
240	Westborough Water District	Darryl Barrow

## ATTACHMENT B



SAN FRANCISCO **Public Utilities Commission**

### Urban Water Management Plan

The Draft 2010 Urban Water Management Plan (UWMP) for the City and County of San Francisco, prepared by the San Francisco Public Utilities Commission (SFPUC), is now available for review and comment. This Draft 2010 UWMP update includes county-wide demand projections to the year 2035, compares available water supplies to meet demands and presents water demand management measures to reduce long-term water demand. Additionally, the UWMP update includes a discussion of the conservation requirement set forth in Senate Bill 7 (SBx7-7) as passed in November 2009 mandating a statewide 20% reduction in per capita water use by 2020. The updated UWMP includes a quantification of the SFPUC's water use reduction targets and plan for meeting these objectives.

The Draft 2010 UWMP update can be viewed or printed from the attachments below. A copy of the document is available for review at the following location:

San Francisco Public Library  
Government Information Center, 5th Floor  
100 Larkin Street  
(415) 557-4400

The public review and comment period for this document begins on Wednesday, April 27, 2011 and ends close of business Friday, May 27, 2011. Please send any comments or questions to

Molly Petrick  
San Francisco Public Utilities Commission  
[MPetrick@sfgwater.org](mailto:MPetrick@sfgwater.org)

A public hearing will be held on May 24, 2011 to allow interested members of the public to participate in the review process for this document, including the SBx7-7 conservation requirement. The hearing will be held at the Commission meetings which begin at 1:30 p.m. in City Hall, Room 400, 1 Dr. Carlton B. Goodlett Place, San Francisco, California.

#### Attachments:



[Draft - 2010 Urban Water Management Plan \(1 MB\)](#)



[Draft - 2010 Urban Water Management Plan Appendices \(2.3 MB\)](#)

*On December 13, 2005, the SFPUC adopted the 2005 Urban Water Management Plan for the City and County of San Francisco. A Public Draft of the document was released in October 2005 and a Public Hearing was held on November 9, 2005.*



[2005 Urban Water Management Plan \(1.1 MB\)](#)



[2005 UWMP Appendices A-G \(3.5 MB\)](#)



[2005 UWMP Errata Sheet \(89 KB\)](#)

ATTACHMENT B

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**Location:**

[http://sfwater.org/mto\\_main.cfm/MC\\_ID/13/MSC\\_ID/165/MTO\\_ID/286](http://sfwater.org/mto_main.cfm/MC_ID/13/MSC_ID/165/MTO_ID/286)

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**NOTICE OF PUBLIC HEARING  
TO CONSIDER THE DRAFT 2010 URBAN WATER  
MANAGEMENT PLAN  
FOR THE CITY AND COUNTY OF SAN FRANCISCO**

Notice is hereby given that the San Francisco Public Utilities Commission (SFPUC) will conduct a public hearing to consider the Draft 2010 Urban Water Management Plan (UWMP), including the SBx7-7 conservation requirement, on Tuesday, May 24, 2011 at the Commission meeting which begins at 1:30 p.m. in City Hall, Room 400, 1 Dr. Carlton B. Goodlett Place, SF, CA.

All interested parties are invited to attend the public hearing and present their views. Persons who are unable to attend the public hearing may also submit to the City, by the time the proceedings begin, written comments regarding the subject of the hearing. These comments will be brought to the attention of the Commission and will become part of the official public record. Written comments can be sent to Mike Housh, Commission Secretary, SFPUC, 1155 Market St., 11<sup>th</sup> Floor, SF, CA 94103.

The Draft 2010 UWMP update can be viewed or printed from the SFPUC website at [www.sfwater.org](http://www.sfwater.org) (enter "UWMP" in the site Search field located in the upper right hand corner of the homepage). A copy of the document is also available for review at the SF Public Library, Government Information Center, 5th Floor (100 Larkin Street, S.F., CA).

For more information, please call 415 554-3289  
or email [feedback@sfwater.org](mailto:feedback@sfwater.org)

Notificación es dado que la Comisión de Servicios Públicos de San Francisco (SFPUC) tendrá un audiencia publica para considerar el borrador del plan de administración urbano de agua (UWMP), incluso la exigencia de conservación SBx7-7, el martes, 24 de mayo de 2011 en la reunión de la Comisión que comienza a las 13h30 en el Ayuntamiento, Cuarto 400, 1Dr. Carlton B. Goodlett Place, SF, CA.

Para más información, llame a 415-554-3289 o por correo electrónico en [feedback@sfwater.org](mailto:feedback@sfwater.org)

考慮採納三藩市城市水利管理草案公聽會通知

公告：三藩市水利局委員將在5月24日的例會上考慮是否採納三藩市城市管理草案和SBx7-7省水法令。公聽會將會在下午1:30開始，地址在市政廳 400號房, City Hall, #1 Dr. Carlton B. Goodlett Place, Room 400, San Francisco, CA.

有關草案詳情請洽：415 554-3289，或電郵：[feedback@sfwater.org](mailto:feedback@sfwater.org)

CNS#2096865

← as posted  
in SF Chronicle  
5.9.2011 +  
5.16.2011



# DECLARATION OF PUBLICATION OF SAN FRANCISCO CHRONICLE

Lori Gomez

Declares that:  
The annexed advertisement has been regularly published  
In the  
**SAN FRANCISCO CHRONICLE**

Which is an was at all times herein mentioned  
established as newspaper of general circulation in the  
City and County of San Francisco, State of California, as  
the term is defined by Section 6000 of the Government  
Code

**SAN FRANCISCO CHRONICLE**

(Name of Newspaper)

901 Mission Street

San Francisco, CA 94103

From

5/9/11

To

5/16/11

Namely on

5/9 5/16 2011

(Dates of Publication)

I declare under penalty of perjury that the foregoing is  
true and correct.

Executed on

5/25/11

At San Francisco, California

**NOTICE OF PUBLIC HEARING  
TO CONSIDER THE DRAFT 2010 URBAN WATER  
MANAGEMENT PLAN  
FOR THE CITY AND COUNTY OF SAN FRANCISCO**

Notice is hereby given that the San Francisco Public Utilities Commission (SFPUC) will conduct a public hearing to consider the Draft 2010 Urban Water Management Plan (UWMP), including the SBx7-7 conservation requirement, on Tuesday, May 24, 2011 at the Commission meeting which begins at 1:30 p.m. in City Hall, Room 400, 1 Dr. Carlton B. Goodlett Place, SF, CA.

All interested parties are invited to attend the public hearing and present their views. Persons who are unable to attend the public hearing may also submit to the City, by the time the proceedings begin, written comments regarding the subject of the hearing. These comments will be brought to the attention of the Commission and will become part of the official public record. Written comments can be sent to Mike Housh, Commission Secretary, SFPUC, 1155 Market St., 11<sup>th</sup> Floor, SF, CA 94103.

The Draft 2010 UWMP update can be viewed or printed from the SFPUC website at [www.sfwater.org](http://www.sfwater.org) (enter "UWMP" in the site Search field located in the upper right hand corner of the homepage). A copy of the document is also available for review at the SF Public Library, Government Information Center, 5th Floor (100 Larkin Street, S.F., CA).

For more information, please call 415 554-3289  
or email [feedback@sfwater.org](mailto:feedback@sfwater.org)

Notificación es dado que la Comisión de Servicios Públicos de San Francisco (SFPUC) tendrá un audiencia pública para considerar el borrador del plan de administración urbano de agua (UWMP), incluso la exigencia de conservación SBx7-7, el martes, 24 de mayo de 2011 en la reunión de la Comisión que comienza a las 13h30 en el Ayuntamiento, Cuarto 400, 1Dr. Carlton B. Goodlett Place, SF, CA.

Para más información, llame a 415-554-3289 o por correo electrónico en [feedback@sfwater.org](mailto:feedback@sfwater.org)

考慮採納三藩市城市水利管理草案公聽會通知

公告：三藩市水利局委員將在5月24日的例會上考慮是否採納三藩市城市管理草案和SBx7-7省水法令。公聽會將會在下午1:30開始。地址在市政廳 400號房, City Hall, #1 Dr. Carlton B. Goodlett Place, Room 400, San Francisco, CA.

有關草案詳情請洽：415 554-3289。或電郵：[feedback@sfwater.org](mailto:feedback@sfwater.org)

CNS#209865





## Transmittal Letter

**Date:** April 27, 2011  
**To:** San Francisco Public Library  
**Address:** Government Information Center  
 5<sup>th</sup> Floor  
 100 Larkin St.  
 San Francisco, CA 94102  
**Subject:** SFPUC 2010 Urban Water  
 Management Plan –  
 Public Review Draft

**From:** Alyson Watson  
**Project No.:** 0092-008.26 Task 1

### The following items are:

Requested       Attached       Sent Separately Via

Copies:	Description:
2	San Francisco Public Utilities Commission 2010 Urban Water Management Plan – Public Review Draft

### This information is submitted:

At your request       For your action  
 For your approval       For your files  
 For your review       For your information

### General Remarks:

Please find enclosed two copies of the Public Review Draft of the San Francisco Public Utilities Commission's 2010 Urban Water Management Plan. We would appreciate it if you could make these copies available for public review from April 27, 2011 through May 27, 2011 in the Government Information Center on the 5<sup>th</sup> Floor. Please contact me with any questions you may have.

Best regards,

Alyson Watson  
 RMC Water and Environment  
 (415)404-6442  
 awatson@rmcwater.com

## ATTACHMENT D



SAN FRANCISCO **Public Utilities Commission**

## 5/24/2011 San Francisco Public Utilities Commission Agenda

Published: 05/20/2011 | Updated: 05/20/2011

Published By: Commission

### DEPARTMENTS AND ENTERPRISES

#### AGENDA

#### REGULAR MEETING

Tuesday, May 24, 2011

**1:30 P.M.**

City Hall, Room 400

1 Dr. Carlton B. Goodlett Place

Water Enterprise  
Wastewater Enterprise  
Power Enterprise  
Infrastructure  
Business Services  
External Affairs

#### COMMISSIONERS

Francesca Vietor, President

Anson B. Moran, Vice President

Ann Moller Caen, Commissioner

Art Torres, Commissioner

Vince Courtney, Commissioner

Edwin M. Lee

#### MAYOR

Ed Harrington

#### GENERAL MANAGER

Michael Housh

#### SECRETARY

#### Disability Access

The Public Utilities Commission meeting will be held in Room 400, City Hall, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA. The Commission meeting room is wheelchair accessible. The closest accessible BART station is the Civic Center Station at United Nations Plaza and Market Street. Accessible MUNI lines serving this location are: #47 Van Ness, and #71 Haight/Noriega and the F Line to Market and Van Ness and the Metro Stations at Van Ness and Market and at Civic Center. For information about MUNI accessible services call (415) 923-6142. There is accessible curbside parking adjacent to City Hall on Grove Street and Van Ness Avenue and in the vicinity of the Veterans Building at 401 Van Ness Avenue adjacent to Davies Hall and the War Memorial Complex.

City Hall is accessible to persons using wheelchairs and other disabilities. The Polk Street/Carlton B. Goodlett entrance is accessible via a ramp and a wheelchair lift. The other three entrances are accessible via ramps. Assistive listening devices are available and meetings are open captioned in the hearing room and closed captioned on SFGTV. Materials in alternative formats, American Sign Language interpreters, and other accommodations will be made available upon request. Please contact Michael Housh, Commission Secretary, at (415) 554-3165 or by Email [mhoush@sfgwater.org](mailto:mhoush@sfgwater.org) to make arrangements for any of these services. Providing at least 48 hours notice prior to the meeting will help to ensure availability.

In order to assist the City's efforts to accommodate persons with severe allergies, environmental illnesses, multiple chemical sensitivity or related disabilities, attendees at public meetings are

## ATTACHMENT D

reminded that other attendees may be sensitive to various chemical based products. Please help the City accommodate these individuals. Individuals with chemical sensitivity or related disabilities should call our accessibility hotline at (415) 554-6060.

**Know your rights under the Sunshine Ordinance  
(Chapter 67 of the San Francisco Administrative Code)**

Government's duty is to serve the public, reaching its decisions in full view of the public. Commissions, boards, councils, and other agencies of the City and County exist to conduct the people's business. This ordinance assures that deliberations are conducted before the people and that City operations are open to the people's review. For more information on your rights under the Sunshine Ordinance or to report a violation of the ordinance, contact the Sunshine Ordinance Task Force, City Hall, Room 409, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102-4683 at Phone No.: (415) 554-7724; Fax No.: (415) 554-7854; E-mail: [sotf@sfgov.org](mailto:sotf@sfgov.org). Copies of the Sunshine Ordinance can be obtained from the Clerk of the Sunshine Task Force, the San Francisco Public Library and on the City's website at [www.sfgov.org](http://www.sfgov.org)

The ringing of and use of cell phones, pagers and similar sound-producing electronic devices are prohibited at this meeting. Please be advised that the Chair may order the removal from the meeting room of any person(s) responsible for the ringing or use of a cell phone, pager, or other similar sound-producing electronic devices.

**Lobbyist Registration and Reporting Requirements**

Individuals and entities that influence or attempt to influence local legislative or administrative action may be required by the San Francisco Lobbyist Ordinance [SF Campaign & Governmental Conduct §Code 2.100] to register and report lobbyist activity. For more information about the Lobbyist Ordinance, please contact the San Francisco Ethics Commission at 30 Van Ness Avenue, Suite 3900, San Francisco, CA 94102; telephone (415) 581-2300; fax (415) 581-2317; web site at [www.sfgov.org/ethics](http://www.sfgov.org/ethics).

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**ORDER OF BUSINESS:**

1. Call to Order
2. Roll Call
3. Approval of Minutes
  - a) Minutes of the May 6, 2011 Special Joint Meeting
4. Public Comments

Members of the public may address the Commission on matters that are within the Commission's jurisdiction and are not on today's agenda.

5. Communications

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- a) Letter Summary
- b) Advance Calendar
- c) Staff Reports (*written reports sent to the Commissioners*)

1. WSIP Construction Change Order Update (Jan-March 2011) (*Labonte*)

6. Other Commission Business

7. Report of the General Manager

- a)  WSIP Quarterly Update Report (*Labonte*)

8. Bay Area Water Supply & Conservation Agency (BAWSCA) General Manager's Report (*Jensen*)


- a) BAWSCA Update Report


THE FOLLOWING MATTERS BEFORE THE PUBLIC UTILITIES COMMISSION ARE RECOMMENDED FOR ACTION AS STATED BY THE GENERAL MANAGER OF PUBLIC UTILITIES AND CITY ATTORNEY WHERE APPLICABLE.

Explanatory documents provided to the Commission in connection with this agenda are available for public inspection and copying at the Office of the Commission Secretary, 1155 Market Street, 11th Floor, San Francisco, CA 94103, Telephone: (415) 554-3165, Fax: (415) 554-3424.

### CONSENT CALENDAR


9. All matters listed hereunder constitute a Consent Calendar, are considered to be routine by the San Francisco Public Utilities Commission, and will be acted upon by a single vote of the Commission. There will be no separate discussion of these items unless a member of the Commission or the public so requests, in which event the matter will be removed from the Consent Calendar and considered as a separate item.


a) **Approve** the selection and **award** of Infrastructure Operating Budget-funded As-needed Engineering Design Services to Kennedy/Jenks Consultants-Water Resources Engineering, JV (KJ-WRE)  (CS-128A), MWH/Tuan and Robinson Structural Engineers Inc., JV (MWH-TRSE) (CS-128B), and URS Corporation (URS) (CS-128C), to provide specialized engineering design services on an as-needed basis; and **authorize** the General Manager of the San Francisco Public Utilities Commission to negotiate and execute professional services agreements with KJ-WRE, MWH-TRSE and URS each for an amount not-to-exceed \$3,000,000 and each with a term of five years. (*Kelly*)


b) **Approve** Amendment No.1 to Power Enterprise-funded Agreement No.  CS-134, Street Light Asset Survey Services, with AGS, Inc. to continue to identify, quantify, catalogue, and locate cobra head street lights as well as other electrical related assets within San Francisco; and **authorize** the General Manager of the San Francisco Public Utilities Commission to execute this amendment, increasing the agreement duration by one year, for a total agreement duration of two years. No additional funds are being requested under this


## ATTACHMENT D


amendment. (*Hale*)

c) **Accept** work performed by Shaw Pipeline, Inc. for Water Enterprise Local Water Repair and Replacement (R&R) Program-funded Contract No.  [WD-2561](#), 8" Ductile Iron Main (DIM) Installation in Laguna Street from Clay to Jackson, Broadway to Union and Greenwich to Bay Streets; **approve** Modification No. 4 (Final), to reconcile the final contract amount with the actual quantities of labor and materials required to complete the project, decreasing the contract by \$76,705, for a total contract amount of \$1,402,240, with a total contract duration of 240 consecutive calendar days; and **authorize** final payment, in the amount of \$70,587, to the Contractor, Shaw Pipeline, Inc. (*Ritchie*)

d) **Accept** work performed by Ranger Pipelines Inc. for Water Enterprise, Water System Improvement Program-funded Contract No.  [WD-2589](#), SCADA System Phase II to install flow and pressure monitoring devices on water mains within the City of San Francisco as well as install communication panels at existing pressure regulating valve sites in the Peninsula; **approve** Modification No. 10 (Final), with a time extension of 62 consecutive calendar days to complete the installation of power and phone lines for a total contract duration of 442 consecutive calendar days and with a final contract amount of \$2,169,927; and **authorize** final payment, in the amount of \$15,635 to the contractor. (*Kelly*)

e) **Accept** work performed by NTK Construction, Inc., for Water Enterprise, Water System Improvement Program-funded Contract No.  [WD-2597](#), Lawrence Livermore and Phase II Thomas Shaft Improvement Project; **approve** Modification No. 9 (Final) to address for unanticipated conditions encountered during facility testing and start-up, increasing the contract by \$67,784, for a total contract amount of \$3,440,719 and extend it by 162 consecutive calendar days, for a total contract duration of 563 consecutive calendar days; and **authorize** final payment, to the contractor in the amount of \$186,625. (*Labonte*)

f) **Approve** the plans and specifications, and **award** Wastewater Enterprise Capital Improvement Program-funded (CIP) Contract No.  [WW-515](#), Southeast Plant Northside Facility Reliability Upgrades Phase I, to upgrade various mechanical and electrical systems, and for the repair of areas with concrete corrosion, in the amount of \$7,847,000 to the lowest, qualified, responsible, and responsive bidder, Cal State Constructors. (*Moala*)



g) **Approve** the plans and specifications, and **award** Wastewater Enterprise, Capital Improvement Program (CIP) - funded Contract No.  [WW-519](#), Channel Pump Station Odor Control and Facility Improvement Phase III, to correct electrical and mechanical system deficiencies, and improve system reliability and facility operational safety, in the amount of \$4,048,000; to the lowest, qualified, responsible, and responsive bidder, NTK Construction, Inc. (*Moala*)

### PUBLIC HEARING


(Persons who are unable to attend the public hearings may submit to the City, by the time the proceedings begin, written comments regarding the subject of the hearing. These comments will be brought to the attention of the Commission and will become a part of the official public record. Written comments can be sent to Michael Housh, Commission Secretary, San Francisco Public Utilities Commission, 1155 Market Street, 11th Floor, San Francisco, California, 94103).





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10. Public Hearing - Staff presentation and discussion of the  [Draft 2010 Urban Water Management Plan \(UWMP\)](#) for the City and County of San Francisco. The Commission will consider approval of the  [UWMP](#) at the June 14, 2011 Commission meeting. (*Ritchie*)


**REGULAR BUSINESS**

11. Discussion and possible action to **authorize** the General Manager of the San Francisco Public Utilities Commission (SFPUC) to execute on behalf of the City and County of San Francisco, a  [Memorandum of Agreement](#) with East Bay Municipal Utility District (EBMUD), Contra Costa Water District (CCWD), Santa Clara Valley Water District (SCVWD), and Alameda County Flood Control and Water Conservation District - Zone 7 (Zone 7) for an amount not to exceed \$200,000 (SFPUC share over an estimated duration of 18 months) to conduct Site Specific Analysis to further develop the Bay Area Regional Desalination Project. The proposed Site Specific Analysis will provide information necessary to proceed with Project design, permitting, and environmental review. (*Ritchie*)

12. Discussion and possible action to **approve** the plans and specifications, and **award** Water Enterprise Water System Improvement Program-funded Contract No.  [WD-2551](#), Calaveras Dam Replacement Project, in the amount of \$259,571,850 to the lowest, qualified, responsible and responsive bidder, Dragados-USA, Inc./Flatiron West, Inc./Sukut Construction, Inc., Joint Venture, to construct a new earth and rock-fill dam to replace the existing Calaveras Dam in Alameda County, and perform project- related work in Santa Clara County. (*Labonte*)

13. Discussion and possible action to **approve** additional increases to the cost and schedule contract contingencies in the amount of \$339,000 and by 186 consecutive calendar days for Water Enterprise, Water System Improvement Program (WSIP) funded Construction Contract No.  [HH-914R](#) - Roselle Crossover Improvements; and authorize the General Manager to consider, and if appropriate, to approve future modifications to the contract amount and duration for a total contract amount of \$3,498,693 and 705 consecutive calendar days.


The increased contingencies are needed to fund unexpected cost overruns and provide time extensions related to the repairs to City-furnished valves, revisions to correct conflicts between new and existing electrical, mechanical and controls equipment, and provide proper drainage, weather proofing of building and additional fencing. The funds for the requested increased cost contingency are available as part of the remaining amount held in reserve for continuing pipelines rehabilitation in Project CUW37302, Rehabilitation of Existing San Joaquin Pipelines. (*Labonte*)

14. Discussion and possible action to **approve** increases to the existing contract cost and schedule contingency threshold (10%) in the amount of \$3,700,000 and 45 consecutive calendar days for Water Enterprise, Water System Improvement Program (WSIP) funded Construction Contract No.  [HH-935A](#) - San Joaquin Pipeline (SJPL) System – Crossovers; and **authorize** the General Manager to consider, and if appropriate, to approve modifications to the contract amount and duration for a total contract up to \$16,596,199 and 621 consecutive calendar days.

The increased contingencies are needed to fund cost overruns and time extensions resulting from necessary modifications to steel reinforcement of fabricated pipes and bypass piping around valves, extra work required due to unanticipated conditions encountered during excavation, and extra work required by shutdown schedule re-sequencing. The project team has identified a number of potential change orders that will require future modifications. The contract value is still well under

## ATTACHMENT D

the project budget due to the \$5.7 million savings realized by the awarded contract amount.  
(*Labonte*)

15. Discussion and possible action to **approve** Modification No. 9 to Water Enterprise, Water System Improvement Program (WSIP)-funded Contract No.  WD-2556, Baden and San Pedro Valve Lot Improvements, with JMB Construction, Inc., with a time extension of 229 consecutive calendar days for a total contract duration of 997 consecutive calendar days. The time extension is to complete the removal, repair, delivery, installation, testing and start-up of the damaged Generator (G2) enclosure and its related electrical appurtenances. The requested time extension is greater than 10% of the original contract duration. (*Labonte*)

## CLOSED SESSION

16. Public comments on matters to be discussed in Closed Session.

17. Motion on whether to assert the attorney-client privilege regarding the matters listed below as Conference with Legal Counsel.

THE PUBLIC UTILITIES COMMISSION WILL GO INTO CLOSED SESSION TO DISCUSS THE FOLLOWING ITEMS:

18. Threat to Public Services or Facilities – Pursuant to California Government Code Section 54957 and San Francisco Administrative Code Section 67.10(a). (*Ambrose*)

Consultation with: Agency Chief of Security concerning security of S.F.P.U.C. Water and Power Systems.

FOLLOWING THE CLOSED SESSION, THE PUBLIC UTILITIES COMMISSION WILL RECONVENE IN OPEN SESSION.

19. Announcement following Closed Session.

20. Motion regarding whether to disclose the discussions during Closed Session.0

21. Other New Business

## ADJOURNMENT

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**Location:**

[http://sfwater.org/detail.cfm/MC\\_ID/18/MSC\\_ID/113/MTO\\_ID/340/C\\_ID/5498](http://sfwater.org/detail.cfm/MC_ID/18/MSC_ID/113/MTO_ID/340/C_ID/5498)

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# **Appendix C**

## **Resolution to Adopt the 2010 Urban Water Management Plan**

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**PUBLIC UTILITIES COMMISSION**

City and County of San Francisco

RESOLUTION NO. 11-0089

WHEREAS, The Urban Water Management Planning Act of 1983, amended through 2010, (the Act) requires that an urban water supplier serving 3,000 customers or 3,000 acre-feet per year must prepare an Urban Water Management Plan (Plan) update every five years beginning in 1985; and

WHEREAS, The SFPUC, in compliance with the Act, has prepared a 2010 update to its Plan; and

WHEREAS, The preparation of the Plan update has been coordinated with the City's wholesale water customers and other public agencies to the extent practicable, and staff has encouraged the active involvement of diverse social, cultural and economic elements of the population within the SFPUC's retail water service area during preparation of the Plan; and

WHEREAS, On May 24, 2011, a Draft Plan was presented to the Commission and a Public Hearing was held during the Commission meeting in order to receive public comment on the Draft Plan; and

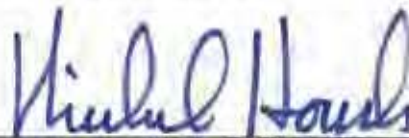
WHEREAS, Minor revisions to the Draft Plan have been made based on public comments received at the Public Hearing and during the public comment period of April 27, 2011 through May 27, 2011; and

WHEREAS, Preparation and adoption of Urban Watershed Management Plans pursuant to the provisions of Section 10652 of the State Water Code is a statutory exemption under CEQA Guidelines Section 15282(v); and

WHEREAS, A Final 2010 Urban Water Management Plan update is today presented to the Commission for consideration; now, therefore, be it

RESOLVED, That this Commission has reviewed and considered the Final 2010 Plan update, and hereby adopts the Plan.

*I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of* \_\_\_\_\_ *June 14, 2011*



\_\_\_\_\_  
*Secretary, Public Utilities Commission*



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# **Appendix D**

## **SFPUC Retail Demand Model Update and Calibration Technical Memorandum**

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5358 MILES AVENUE  
OAKLAND, CA 94618  
PH: 510-547-4369  
FX: 510-547-3002  
MITCHELL@MCUBED-ECON.COM

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**Date:** April 21, 2011

**From:** David Mitchell

**To:** RMC

**Technical Memorandum:** SFPUC Retail Demand Model Update and Calibration

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## 1 TM OVERVIEW

This technical memorandum (TM) describes updates made to the SFPUC Retail Demand Model, model calibration, and demand projections with and without SFPUC conservation programming. Model background and the need to update the model are described in Section 2. Updates to the structure of the model, projections of population, housing, and employment, specification of conservation programs, codes, and ordinances, and model calibration are described in Section 3. Updated projections of retail demands, conservation program water savings, conservation program expenditure, and conservation program unit costs are presented in Section 4. This TM only addresses the model update process, assumptions, and results. The Conservation Implementation Plan, which is being prepared as a separate document, will provide more detailed information on proposed conservation programs, costs, and expected water savings.

## 2 BACKGROUND

The SFPUC Retail Demand Model was originally developed in 2004 and used by SFPUC to forecast in-city retail water demands through 2030 with and without conservation programs. The original specification of the model and the data used to implement it are described in the 2004 report “City and County of San Francisco Retail Water Demands and Conservation Potential.”<sup>1</sup> The model includes modules to estimate and forecast water use for single-family, multi-family, and non-residential in-city retail customer

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<sup>1</sup> “City and County of San Francisco Retail Water Demands and Conservation Potential,” prepared for San Francisco Public Utilities Commission Planning Bureau by Margaret A. Hannaford, P.E. and Hydroconsult, Inc., November 2004; “SFPUC City and County of San Francisco, Retail Water Demands and Conservation Potential Errata Sheet,” prepared by Margaret A. Hannaford, August 28, 2005.

sectors. In addition the model estimates changes in retail demands due to codes and ordinances affecting water fixture efficiency and water use behavior.

SFPUC retained RMC to update the model and use it to prepare new in-city retail demand forecasts with and without conservation. The following elements of the model were the primary targets for the update:

- Population, Housing, and Employment Projections – The model uses projections of population, housing, and employment to forecast residential and non-residential retail water demands. SFPUC wished to update these projections so that they matched current forecasts from ABAG, California Department of Finance, and the City.
- Unaccounted Water Loss – The original model specification double counts water losses due to customer meter under-registration, causing the model to overestimate in-city retail demands (see Attachment 2). Unaccounted-for-Water represents unbilled authorized consumption (including metered high pressure fire fighting consumption, unmetered main flushing, street cleaning and dust control and low pressure fire hydrant use) and unbilled unauthorized consumption (including water lost to the system through all types of leaks, breaks and overflows). These losses are assumed to be approximately 6.9% of total in-city demand. Meter under-registration is also considered unbilled unauthorized consumption and is captured in the demand calculations for each billing sector. It is assumed that meter under-registration is 2.2% of residential demand and 2.1% of non-residential demand. Total loss in the City due to meter under-registration, unbilled authorized consumption and unbilled unauthorized consumption is approximately 9.0% of in-city demand.
- Codes and Ordinances – The original model needed updating to incorporate current and anticipated codes and ordinances impacting retail water demand, including the City’s 2009 Retrofit on Resale (ROR) ordinance, the phase-in of high-efficiency toilet standards under AB 715, California Energy Commission’s (CEC) proposed efficiency standards for residential clothes washers, and California’s and the City’s green building standards.
- Conservation Program Specification – The conservation program specifications in the original model were out of date and did not accurately reflect the mix of conservation programs and technologies SFPUC expects to implement over the next 10 to 20 years. Additionally, the assumptions of program water savings, implementation costs, and activity levels needed to be revised.
- Model Structure – A number of changes to the model’s structure were required to make water savings and device inventory and saturation calculations more transparent.
- Forecast Period – The model was extended to forecast through 2035 in order to support SFPUC UWMP demand projections.
- Financial Assumptions – discount rate and inflation assumptions and the derivation of conservation program unit costs of saved water were updated to

conform to those currently being used by SFPUC for long-range water supply planning.

### **3 MODEL UPDATE**

#### **3.1 File Structure**

The update maintained the basic file structure of the original model. The model consists of five linked Excel workbooks, whose file names are identical to the original model, except that each file name ends with “\_v2.xls” to distinguish it from the original file. The five workbook files are the following:

*Master\_v2.xls* – This workbook is used to:

- Specify costs, savings, and production assumptions of conservation programs and code/ordinance requirements;
- Specify other common assumptions used throughout the model, such as interest and inflation rate assumptions;
- Define conservation program portfolios or “packages”;
- Summarize economic measures of expected performance, including unit cost of water savings and benefit-cost ratio for both individual programs and program portfolios.

*RetailConservation\_v2.xls* – This workbook is used to:

- Specify service area population, housing, and employment assumptions and projections;
- Generate projections of SFPUC retail water demands with and without conservation programs;
- Break down SFPUC retail water demand projections by customer class and residential end use (The model includes 4 retail demand classes – single-family, multi-family, non-residential, and other); and
- Calibrate the model.

*1-RSFConsMeas\_v2.xls* – This workbook is used to:

- Calculate expected water savings for conservation programs, codes, and ordinances affecting single-family water demands;
- Calculate unit costs of water savings for conservation programs and ordinances affecting single-family water demands; and
- Summarize projected single-family water demands for 2005 to 2030 with and without conservation.

*2-RMFConsMeas\_v2.xls* – This workbook is used to:

- Calculate expected water savings for conservation programs, codes, and ordinances affecting multi-family water demands;



- Calculate unit costs of water savings for conservation programs and ordinances affecting multi-family water demands; and
- Summarize projected multi-family water demands for 2005 to 2030 with and without conservation.

*3-NRConsMeas\_v2.xls* – This workbook is used to:

- Calculate expected water savings for conservation programs, codes, and ordinances affecting non-residential water demands;
- Calculate unit costs of water savings for conservation programs and ordinances affecting non-residential water demands; and
- Summarize projected non-residential water demands for 2005 to 2030 with and without conservation.

It is best to have all five workbooks open when working with the model to ensure that all formulas and links are updated correctly when model inputs are changed.

## **3.2 Population, Housing, and Employment Projection Update**

Population, housing, and employment projections used in the model to forecast future retail demands were updated to reflect current projections. The forecast period was extended from 2030 to 2035 in order to support SFPUC UWMP demand projections.

### **3.2.1 Population Projection Update**

Forecasted household population for 2000, 2005, and 2010 were updated with Department of Finance E-5 Housing and Population Estimates, dated May 2010. The 2030 population estimate was taken from the Citywide Projections, dated July 2009. Household populations for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of population is based on the 2035 forecast of housing units assuming average persons per household are unchanged between 2030 and 2035.

The model's original and updated population projections are shown in Table 1. As shown in this table, the percent change in population projections continues to increase with time; updated 2030 projections are about 7.9 percent greater than what was used in the original model.

Year	Original	Updated <sup>1</sup>	% Change
2000	756,976	756,976	0.0%
2005	772,470	787,033	1.9%
2010	787,965	835,021	6.0%
2015	803,459	854,755	6.4%
2020	818,954	874,956	6.8%
2025	834,448	895,633	7.3%
2030	849,942	916,800	7.9%
2035	N/A	941,263	N/A

<sup>1</sup>Updated population estimates for 2000 thru 2010 are from Department of Finance's E-5 Housing and Population Estimates, dated May 2010. The 2030 population estimate is from the Citywide Projections, dated July 2009. Household populations for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of population is based on the 2035 forecast of housing units assuming average persons per household are unchanged between 2030 and 2035.

### 3.2.2 Household Projection Update

The projected total number of housing units for 2000, 2005, and 2010 were updated with Department of Finance E-5 Housing and Population Estimates, dated May 2010. The 2030 housing unit estimate was taken from the Citywide Projections, dated July 2009. Housing unit projections for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of total housing units is taken from ABAG's Projections 2009.

Single family housing units in 2000 and 2010 were set equal to the number of single family residential accounts for those years. Single family housing units for other years were interpolated using the average rate of single family account growth from 1990 to 2010.<sup>2</sup> The number of multi family housing units was imputed as the difference between the projection of total housing units and single family housing units.

The model's original and updated projections for total, single, and multi family housing units are shown in Table 2, Table 3, and Table 4. As shown in Table 2, the percent change in total housing units continue to increase with time, with 2030 total housing unit projections being about 8 percent higher than the original model projections. The number of single family households projected for 2030 increased by 4 percent (see

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<sup>2</sup> Single family accounts grew at an average annual rate of 0.24% between 1990 and 2010.

Table 3) and the number of multi-family household projected for 2030 increased by 9.7 percent (See Table 4).

Year	Original	Updated <sup>1</sup>	% Change
2000	329,703	329,700	0.0%
2005	337,005	338,024	0.3%
2010	344,306	350,758	1.9%
2015	351,608	363,213	3.3%
2020	358,909	376,109	4.8%
2025	366,211	389,463	6.4%
2030	373,513	403,292	8.0%
2035	N/A	415,000	N/A

<sup>1</sup> Projected total number of housing units for 2000, 2005, and 2010 were updated with Department of Finance E-5 Housing and Population Estimates, dated May 2010. The 2030 housing unit estimate was taken from the Citywide Projections, dated July 2009. Housing unit projections for 2015, 2020, and 2025 were interpolated using the 2010 and 2030 projections. The 2035 projection of total housing units is taken from ABAG's Projections 2009.

<b>Table 3</b>			
<b>SFPUC Retail Demand Model Updated Single Family Housing Unit Projection</b>			
<b>Year</b>	<b>Original</b>	<b>Updated<sup>1</sup></b>	<b>% Change</b>
2000	108,255	108,255	0.0%
2005	109,985	109,500	-0.4%
2010	111,410	110,759	-0.6%
2015	111,725	112,109	0.3%
2020	111,745	113,475	1.5%
2025	111,765	114,857	2.8%
2030	111,785	116,257	4.0%
2035	N/A	117,674	N/A

<sup>1</sup>Updated single family housing unit projection for 2000 and 2010 are from SFPUC single family account data. Single family housing unit projections for other years were interpolated using the average rate of single family account growth from 1990 to 2010.

<b>Table 4</b>			
<b>SFPUC Retail Demand Model Updated Multi Family Housing Unit Projection</b>			
<b>Year</b>	<b>Original</b>	<b>Updated<sup>1</sup></b>	<b>% Change</b>
2000	221,448	221,445	0.0%
2005	227,020	228,524	0.7%
2010	232,896	239,999	3.0%
2015	239,883	251,104	4.7%
2020	247,164	262,634	6.3%
2025	254,446	274,606	7.9%
2030	261,728	287,035	9.7%
2035	N/A	297,326	N/A

<sup>1</sup>Updated multi family housing units were imputed as the difference between the projection of total housing units and single family housing units.

### **3.2.3 Persons Per Household Projection Update**

Projected persons per household for single and multi family housing units were derived from Census 2000 data and then scaled so that household population computed by multiplying the number of housing units by persons per household equaled the updated population projection in Table 1. Projected persons per household were assumed to be the same in 2030 and 2035.

The model's original and updated persons per household projections for single and multi family housing units are shown in Table 5 and Table 6. As shown in Table 5, single family persons per household increased from 2.7 in the original model to about 3.1 in the updated model. As shown in Table 6, multi-family persons per household *decreased* from 2.1 in the original model to about 2.0 persons per household in the updated model.

<b>Year</b>	<b>Original</b>	<b>Updated<sup>1</sup></b>	<b>% Change</b>
2000	2.7	3.0	11.3%
2005	2.7	3.1	13.1%
2010	2.7	3.2	16.2%
2015	2.7	3.1	15.2%
2020	2.7	3.1	14.3%
2025	2.7	3.1	13.3%
2030	2.7	3.1	12.4%
2035	N/A	3.1	N/A

<sup>1</sup>Updated persons per household projection derived from Census 2000 data and then scaled so that household population computed by multiplying the number of housing units by persons per household equaled the updated population projection in Table 1. Projected persons per household were assumed to be the same in 2030 and 2035.

<b>Year</b>	<b>Original</b>	<b>Updated<sup>1</sup></b>	<b>% Change</b>
2000	2.1	1.9	-7.2%
2005	2.1	2.0	-5.7%
2010	2.1	2.0	-3.1%
2015	2.1	2.0	-3.9%
2020	2.1	2.0	-4.7%
2025	2.1	2.0	-5.5%
2030	2.1	2.0	-6.3%
2035	N/A	2.0	N/A

<sup>1</sup> Updated persons per household projection derived from Census 2000 data and then scaled so that household population computed by multiplying the number of housing units by persons per household equaled the updated population projection in Table 1. Projected persons per household were assumed to be the same in 2030 and 2035.

### 3.2.4 Employment Projection Update

The model's 2010 employment projection is based on EDD employment estimates for City of San Francisco. Projections for 2015 through 2035 were updated to reflect



ABAG’s 2009 and draft 2011 employment projections for San Francisco. Total employment levels are based on ABAG’s draft 2011 projections while sector shares are based on ABAG’s 2009 projections. This was necessary because the draft 2011 projections are not yet available by sector.

The model’s original and updated employment projections are shown in Table 7. As shown in this table, current and future employment projections are consistently lower than what the original model included.

Year	Original	Updated <sup>1</sup>	% Change
2000	634,430	642,500	1.3%
2005	656,480	553,090	-15.7%
2010	690,420	544,056	-21.2%
2015	719,810	569,720	-20.9%
2020	745,600	599,060	-19.7%
2025	770,500	631,790	-18.0%
2030	795,400	665,030	-16.4%
2035	N/A	698,790	N/A

<sup>1</sup> 2010 employment updated to match EDD employment estimates for City of San Francisco. Projections for 2015 through 2035 were updated to reflect ABAG’s 2009 and draft 2011 employment projections for San Francisco. Total employment levels are based on ABAG’s draft 2011 projections while sector shares are based on ABAG’s 2009 projections.

### 3.2.5 GED Projection Update

The model estimates baseline non-residential water demand as the product of projected employment and average gallons per employee-day (GED) for nine commercial and industrial sectors. The original model’s commercial and industrial sectors were based on how ABAG classified employment at the time the model was developed. ABAG’s 2009 projections reclassified employment in some sectors, combining the wholesale sector with manufacturing and adding a new Information sector. GED estimates for the new Information sector were not available. Therefore, the GED for this new sector was set to the average GED for the other sectors, 40.9.

The model’s original and updated GED estimates are shown in Table 8.

**Table 8**  
**SFPUC Retail Demand Model Updated GED Estimates**

<b>Employment Sector</b>	<b>Original GED</b>	<b>Updated GED<sup>1</sup></b>
Agric., Mining	93.8	93.8
Construction	19.1	19.1
Manufacturing	80.1	80.1
Transportation	22.8	22.8
Wholesale	58.7	Not In Model
Information	Not In Model	40.9
Retail Trade	53.9	53.9
F.I.R.E.	18.3	18.3
Services	55.8	55.8
Government	18.3	18.3

<sup>1</sup> GED for Information sector set to the average GED for the other sectors. GEDs for other sectors are the same as in the original model.

### 3.3 Code/Ordinance Update

The model was updated to account for expected water savings resulting from the following state/city codes and ordinances:

- *AB 715 and California 2010 Green Building Standards Code (Cal Green)* – These requirements prohibit the sale or installation of non high-efficiency toilets (HETs) and urinals starting in 2014. The model assumes that toilets replaced naturally or in response to city ordinances will convert to ULFTs prior to 2014 and HETs thereafter. Similarly, the model assumes that urinals replaced naturally or in response to city ordinances will convert to 1.0 gpf urinals prior to 2014 and 0.5 gpf urinals thereafter.
- *City Retrofit-On-Resale Ordinance* – Starting in 2009, this city ordinance requires replacement of non-ULFT/HET toilets and urinals in residential properties upon resale and replacement of non-ULFT/HET toilets and urinals in commercial properties not later than 2017. Because of AB 715 and Cal Green, the model assumes toilets will convert to ULFTs prior to 2014 and HETs thereafter, and urinals will convert to 1.0 gpf prior to 2014 and 0.5 gpf thereafter.<sup>3</sup> The model

<sup>3</sup> The ordinance also requires the replacement of showerheads with flow rates greater than 2.5 gpm and faucet aerators with flow rates greater than 2.2 gpm. Studies of residential water use in San Francisco have estimated average flow rates for showerheads and faucets below these thresholds. Ordinance

does not assume complete retrofit of toilets and urinals in commercial properties by 2017. Rather, it assumes replacement rates of 4 percent a year in commercial properties, similar to current rates of natural replacement of commercial plumbing fixtures.<sup>4</sup>

- *CEC Clothes Washer Water Efficiency Standards* – CEC has proposed a statewide water efficiency standard for clothes washers of 8.5 WF effective January 1, 2007, and 6.0 WF effective January 1, 2010.<sup>5</sup> However, the federal government has acted to block implementation of the standards, which have yet to take effect. The years in which the standards are assumed to take effect are specified in the “Master\_v2.xls” workbook. For the preliminary model run, discussed below, they were set to 2010 (8.5 WF) and 2015 (6.0 WF).

Two ordinances affecting landscape water use were not directly modeled. These were the City’s Green Landscaping Ordinance and the Water Efficient Landscape Ordinance. The former is intended to support the use of landscape for screening and greening front setback areas. While the ordinance is designed to encourage responsible water use through “climate appropriate” plantings, lack of implementation data make its potential impact on water demand impossible to predict at this time. San Francisco also recently adopted new requirements for new or modified landscape projects over 1,000 square feet. The ordinance requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by SCPUC that establish a water budget for outdoor water consumption. As with the Green Landscaping Ordinance, data limitations prevented inclusion of this ordinance in the demand model. Because landscape water use is very small relative to the City’s overall retail water demand, excluding these two ordinances from the model is not expected to significantly impact its results.

### 3.4 Conservation Program Update

The model update included reorganizing and adding to the set of conservation programs in the model. In some cases, the way in which the model tracks plumbing fixture inventories and calculates conservation program water savings was also updated.

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requirements for showerheads and aerators are not expected generate significant incremental water savings and therefore are not modeled directly.

<sup>4</sup> This results in an expected compliance rate of approximately 70 percent by 2017.

<sup>5</sup> WF stands for Water Factor, which measures water use per washer cycle per cubic foot of capacity. Thus an 8.5 WF efficiency standard means that washers cannot exceed 8.5 gallons of water per cycle per cubic foot of capacity, or about 25 gallons per load for a typical washer with 3 cubic feet of capacity.

### 3.4.1 Single Family Residential Programs

The updated model includes seven different categories of single family residential conservation programs. The original programs and subsequent changes made in the model update are summarized in Table 9.

<b>Program Category</b>	<b>Programs Included</b>	<b>Updated Model Functionality</b>
RSF-1 Clothes Washers	Rebate programs for CEE Tier 1, 2, and 3 washers, plus discontinued rebate program for 8.5 WF washers.	Added rebate programs for Tier 2 and 3 washers. Added CEC washer efficiency standards to model.
RSF-2 Single Family Toilets	Rebate, voucher, and direct install programs for ULFT and HET toilets	Added rebate, voucher, and direct install programs for HETs. Added AB 715 requirements. Updated Retrofit on Resale (ROR) savings calculation to reflect current ordinance requirements.
RSF-3 Public Information	Public outreach and school education programs	Model no longer assigns direct water savings to this program. Instead, it is assumed savings associated with public information are subsumed in the savings estimates of the other programs.
RSF-4 Leak Detection	Residential leak detection and response assistance programs	Unchanged
RSF-5 Surveys	Residential indoor/outdoor surveys/audits	Unchanged
RSF-6 Showerheads	Showerhead distribution/installation programs	Added give-away and direct installation programs for 1.5 gpm showerheads. Added direct installation program for 1.5 gpm showerheads.
RSF-7 Dishwashers	Rebate programs for residential dishwashers	Unchanged

### 3.4.2 Multi Family Residential Programs

The updated model includes six different categories of multi family residential conservation programs. These programs and changes made during this model update are summarized in Table 10.

<b>Table 10</b>		
<b>Multi Family Residential Conservation Programs Included in SFPUC Demand Model</b>		
<b>Program Category</b>	<b>Programs Included</b>	<b>Updated Model Functionality</b>
RMF-1 Clothes Washers	Rebate programs for CEE Tier 1, 2, and 3 washers, plus discontinued rebate program for 8.5 WF washers.	Added rebate programs for CEE Tier 2 and 3 washers. Added CEC washer efficiency standards to model.
RMF-2 Multi Family Toilets	Rebate, voucher, and direct install programs for ULFT and HET toilets	Added rebate, voucher, and direct install programs for HETs. Added AB 715 requirements. Updated ROR savings calculation to reflect current ordinance requirements. Costs and savings calculated separately for tank and flushometer toilets
RMF-3 Submetering-Existing	Incentives for submetering existing multi family buildings	Unchanged
RMF-4 Submetering-Existing	Incentives for submetering new multi family buildings	Unchanged
RMF-5 Surveys	Residential indoor/outdoor surveys/audits	Unchanged
RMF-6 Showerheads	Showerhead distribution/installation programs	Added give-away and direct installation programs for 1.5 gpm showerheads. Added direct installation program for 1.5 gpm showerheads.

### 3.4.3 Non-Residential Programs

The updated model includes 21 different categories of non-residential conservation programs. These programs and changes made as part of this model update are summarized in Table 11.<sup>6</sup>

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<sup>6</sup> Program numbering for non-residential programs follows the numbering in the original SFPUC demand model and therefore is not sequential.

<b>Table 11</b>		
<b>Non-Residential Conservation Programs Included in SFPUC Demand Model</b>		
<b>Program Category</b>	<b>Programs Included</b>	<b>Updated Model Functionality</b>
NR-1 Landscape Audits	Site surveys for large landscape customers	Unchanged
NR-3 Landscape Grants	Customized grants for large landscape efficiency improvements	Updated calculation of water savings
NR-4 CII Audits	Staff and consultant audits of CII facilities	Updated model to separately calculate water savings and program expenditure for staff and consultant audits
NR-5 CII Urinals	CII urinal rebate, voucher, and direct install programs	Added rebate, voucher, and direct install programs for 0.5 gpf and 0.25 gpf urinals. Added AB 715 and Cal Green requirements.
NR-6 CII Toilets	CII toilet rebate, voucher, and direct install programs	Added rebate, voucher, and direct install programs for HETs. Added AB 715 requirements. Costs and savings calculated separately for tank and flushometer toilets.
NR-7 Innovative Incentives – Existing CII	Customized incentives for efficiency improvements to existing CII water uses	Unchanged
NR-8 Innovative Incentives – New CII	Customized incentives for efficiency improvements to new CII water uses	Unchanged
NR-11 Hospital Audits	Hospital water efficiency audit programs	Unchanged
NR-12 Coin Laundries	Rebate programs for CEE Tier 1, 2, and 3 washers, plus discontinued rebate program for 8.5 WF washers.	Added rebate programs for CEE Tier 2 and 3 washers. Added CEC washer efficiency standards to model.
NR-13 School Audits	School/University indoor water efficiency audit programs	Unchanged
NR-14 School Toilets	School/University toilet rebate, voucher, and direct install programs	Added rebate, voucher, and direct install programs for HETs. Added AB 715 requirements. Costs and savings calculated separately for tank and flushometer toilets.
NR-15 School Landscape Audits	School/University outdoor water efficiency audit programs	Unchanged
NR-16 School Artificial Turf Incentives	Customized incentives for replacement of school turf with artificial turf	Unchanged
NR-18/19 Spray Rinse Valve Distribution	Spray rinse valve distribution to restaurants, groceries, and flower shops	Unchanged



<b>Table 11</b>		
<b>Non-Residential Conservation Programs Included in SFPUC Demand Model</b>		
<b>Program Category</b>	<b>Programs Included</b>	<b>Updated Model Functionality</b>
NR-19a Food Steamer Incentives	Rebate programs for high-efficiency food steamers	Unchanged
NR-20 Cooling Tower Incentives	Financial incentives for cooling tower efficiency improvements	Unchanged
NR-21 City Landscape Efficiency	Grant program for upgrading city landscape systems	Unchanged
NR-22 Water Broom Rebates	Rebate programs for water brooms	Unchanged
NR-23 Hotel Audits	Hotel audit programs	Unchanged
NR-24 Hotel WAVE	EPA-sponsored hotel water use efficiency program (note: program has been discontinued)	Unchanged
NR-25 Hotel Toilets	Hotel toilet rebate, voucher, and direct install programs	Added rebate, voucher, and direct install programs for HETs. Added AB 715 requirements. Costs and savings calculated separately for tank and flushometer toilets.

### 3.4.4 Program Water Savings and Cost Assumptions

Updated program water savings and cost assumptions for single family residential, multi family residential, and non residential conservation programs included in the model are summarized in Table 12, Table 13, and Table 14. Dollar amounts in these tables are in 2010 dollars. The model requires cost inputs to be expressed in 2005 dollars. Therefore these values were converted to 2005 dollars before they were input into the model.

**Table 12**  
**Updated Cost and Savings Assumptions for Single Family Residential Programs**

<b>Program Measure</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
RSF-1 SF 8.5 WF Rebate	NA	NA	Program no longer offered by SFPUC
RSF-1 SF CEE Tier 1 (WF 6.0) Rebate (a)	NA	NA	Program no longer offered by SFPUC
RSF-1 SF CEE Tier 1 (WF 6.0) Rebate (b)	NA	NA	Program no longer offered by SFPUC
RSF-1 SF CEE Tier 2 (WF 4.5) Rebate	Not In Original Model	\$75: Incentive \$10: Admin	Changed incentive to \$75 based on current proposal Changed admin cost to 13% which translates to current level of \$10
RSF-1 SF CEE Tier 3 (WF 4.0) Rebate	Not In Original Model	\$75: Incentive \$10: Admin	Replicated SF CEE Tier 2 (WF 4.5) Rebate
RSF-2 SF HET Rebate	\$100: Incentive \$30: Admin \$100: Customer	\$100: Incentive \$66: Admin \$100: Customer	Changed admin cost to 66% or current internal cost of \$66 Changed customer costs to \$100
RSF-2 SF HET Voucher	See above	\$214: Incentive \$0: Admin \$100: Customer	Changed incentive cost to \$214 to reflect current rate being charged by the vendor implementing the voucher program Incentive includes vendor admin fees Changed customer cost to \$100 to reflect price of installation
RSF-2 SF Direct Install	Not in Original	\$632: Utility \$45: Admin	Used current cost of \$632 for outsourced install fee Changed admin cost to 7% or approximately \$45 Changed customer cost to \$100
RSF-2 SF ULFT Rebate	NA	NA	No longer available
RSF-2 SF Retrofit on Resale	\$10: Utility \$2: Admin \$65: Customer	\$0: Utility \$0: Admin \$200: Customer	Eliminated costs with understanding that costs are not incurred by PUC Increased customer costs to \$200 based on \$100 for product and \$100 for installation
RSF-3 Public Information	\$2: Utility	\$2: Utility	Did not change
RSF-4 Leak Detection/Repair	NA	NA	Not implemented Changed measure life to 2 years
RSF-5 Water Surveys	\$50: Utility \$13: Admin \$15: Customer	\$250: Utility \$0: Admin \$50: Customer	Increased utility costs to \$250 based on current utility costs Reduced measure life to 2 years based on results from surveys done in early 1990s Increased customer one-time fixed costs to \$50 based

**Table 12**  
**Updated Cost and Savings Assumptions for Single Family Residential Programs**

<b>Program Measure</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
			upon making some repairs and/or upgrades to achieve savings Admin costs now included in utility cost.
RSF-6 SF 1.75 gpm showerheads – give away	NA	NA	No longer available
RSF-6 SF 1.75 gpm showerheads – direct install	NA	NA	No longer available
RSF-6 SF 1.5 gpm showerheads – give away	\$15: Utility \$0: Admin \$10: Customer	\$15: Utility \$0: Admin \$0: Customer	Removed customer costs – assumes customer self installs and has no associated costs
RSF-6 SF 1.5 gpm showerheads – direct install	NA	\$15: Utility \$0: Admin \$0: Customer	Removed customer costs - assumes labor is absorbed in survey costs.
RSF-7 SF Dishwasher	NA	NA	Not implemented

**Table 13**  
**Updated Cost and Savings Assumptions for Multi Family Residential Programs**

<b>Program Measure</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
RMF-1 MF 8.5 WF Rebate	NA	NA	Program no longer offered by SFPUC
RMF-1 MF CEE Tier 1 (WF 6.0) Rebate (a)	NA	NA	Program no longer offered by SFPUC
RMF-1 MF CEE Tier 1 (WF 6.0) Rebate (b)	NA	NA	Program no longer offered by SFPUC
RMF-1 MF CEE Tier 2 (WF 4.5) Rebate	NA	\$75: Incentive \$10: Admin	Changed incentive to \$75 based on current proposal Changed admin cost to 13% which translates to current level of \$10
RMF-1 MF CEE Tier 3 (WF 4.0) Rebate	Not in Original	\$75: Incentive \$10: Admin	Replicated MF CEE Tier 2 (WF 4.5) Rebate
RMF-2 MF HET Rebate - Tank	\$100: Incentive \$25: Admin \$100: Customer	\$100: Incentive \$35: Admin \$100: Customer	Changed admin cost to current internal cost of \$35, or 35% of incentive cost.
RMF-2 MF HET Rebate - Flushometer	Not in Original	\$300: Incentive \$35: Admin \$250: Customer	Increased incentive cost to \$300 to cover high cost of product and make all flush valves – toilets or urinals, in multi-family or commercial properties Changed admin cost to \$35 based upon SFPUC internal costs Changed customer cost to \$250 based on an average product and installation cost of \$550
RMF-2 MF HET Voucher - Tank	Not in Original	\$214: Incentive \$0: Admin \$100: Customer	Changed incentive cost to \$214 to reflect current rate being charged by the vendor implementing the voucher program Incentive includes vendor admin fees Changed customer cost to \$100 to reflect price of installation
RMF-2 MF HET Voucher - Flushometer	Not in Original	\$367: Incentive \$0: Admin \$250: Customer	Changed incentive cost to \$350 to reflect current rate being charged by the vendor implementing the voucher program Incentive includes vendor admin fees Changed customer cost to \$250 to reflect price of installation
RMF-2 MF Direct Install – Tank	Not in Original	\$531: Utility \$45: Admin \$0: Customer	Used current cost of \$531 for outsourced install fee for MF tank toilets Changed admin cost to 8% or approximately \$45
RMF-2 MF Direct Install – Flushometer	Not in Original	\$931: Utility	Used current cost of \$931 for outsourced install fee for MF

**Table 13**  
**Updated Cost and Savings Assumptions for Multi Family Residential Programs**

Program Measure	Original Assumption	Updated Assumption	Basis for Update
		\$45: Admin \$0: Customer	flushometer toilets Changed admin cost to 5% or approximately \$45
RMF-2 MF ULFT Rebate – Tank	NA	NA	Program no longer offered by SFPUC
RMF-2 MF ULFT Rebate – Flushometer	NA	NA	Program no longer offered by SFPUC
RMF-2 MF Retrofit on Resale	\$10: Utility \$2: Admin \$65: Customer	\$0: Utility \$0: Admin \$0: Customer	Eliminated costs with understanding that costs are not incurred by PUC
RMF-3 Submetering Retrofit Incentive	\$1,000: Utility \$250: Admin \$60 per year: Customer	\$725: Utility \$72.50: Admin \$500 Fixed: Customer plus \$60 per year: Customer	Changed utility costs to \$725 and customer costs to \$500 based upon National Submetering and Allocation Billing Program Study (2004) Changed admin to 10%
RMF-4 Submetering Reqt. For New Units	\$10: Utility \$1: Admin \$60 per year: Customer	NA	Eliminated costs with understanding that costs are not incurred by PUC
RMF-5 MF Surveys	Not in Original	\$362 per Account: Utility \$0: Admin \$50: Customer	Changed utility cost to \$362 to reflect actual costs, including admin. Based upon contractor fees of \$50 per unit multiplied by the average number of units in MF sites Changed customer one-time fixed costs to \$50 based upon making some repairs and/or upgrades to achieve savings Downgraded savings to 10%
RMF-6 MF 1.75 gpm showerheads – give away	NA	NA	Program no longer offered by SFPUC
RMF-6 MF 1.75 gpm showerheads – direct install	NA	NA	Program no longer offered by SFPUC
RMF-6 MF 1.5 gpm showerheads – give away	\$15: Utility \$4: Admin \$5: Customer	\$15: Utility \$0: Admin \$0: Customer	Removed customer costs – assumes customer self installs and has not associated costs.

<b>Table 13</b>			
<b>Updated Cost and Savings Assumptions for Multi Family Residential Programs</b>			
<b>Program Measure</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
RMF-6 MF 1.5 gpm showerheads – direct install	Not in Original	\$15: Utility \$: Admin \$0: Customer	Removed customer costs - assumes labor is absorbed in survey costs.

<b>Table 14</b>			
<b>Updated Cost and Savings Assumptions for Non Residential Programs</b>			
<b>Program</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
NR-1 Landscape Audits	\$800: Utility \$240: Admin \$200: Customer	\$1,000: Utility \$0: Admin \$100: Customer	Increased utility cost to \$1,000 based upon current market rates Reduced measure life to 5 years Eliminated admin costs Decreased customer one-time fixed costs to \$100 based upon making some repairs and/or upgrades to achieve savings
NR-3 Landscape Grants	Not in Original	\$271,719: Utility \$8,151: Admin \$35,000: Customer	Based upon SFPUC current Grant Program statistics
NR-4 SFPUC Staff Water Audits	Not in Original	\$328: Utility \$0: Admin \$0: Customer	Based upon SFPUC internal costs. Utility cost includes admin.
NR-4 Consultant Water Audits	\$4,000: Utility \$1,000: Admin \$2,000: Customer	\$10,000: Consultant \$0: Admin \$0: Customer	Based upon SFPUC current Consultant water audits
NR-5 CII Urinal 0.5 gpf Rebate	Not in Original	\$300: Incentive \$36: Admin \$500: Customer	Increased incentive cost to \$300 to cover high cost of product and make all flush valves – toilets or urinals, in multi-family or commercial properties Changed admin cost to \$36 based upon SFPUC internal costs Changed customer one-time fixed cost to \$500 based upon \$400 product costs and \$400 install costs



**Table 14**  
**Updated Cost and Savings Assumptions for Non Residential Programs**

<b>Program</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
NR-5 CII Urinal 0.5 gpf Voucher	See Above	See Above	Replicated CII Urinal 0.5 gpf Rebate
NR-5 CII Urinal 0.5 gpf Direct Install	Not in Original (\$200 for ULF)	\$1,000: Utility \$40: Admin \$0: Customer	Used install cost of \$1,000 based upon current market rates with an additional \$200 to cover for union rates
NR-5 CII Urinal 0.25 gpf Rebate	Not in Original	\$300: Incentive \$36: Admin \$500: Customer	Eliminated zero consumption urinals Replicated CII Urinal 0.5 Rebate
NR-5 CII Urinal 0.25 gpf Voucher	See Above	See Above	Replicated CII Urinal 0.25 gpf Rebate and/or Voucher
NR-5 CII Urinal 0.25 gpf Direct Install	Not in Original	\$1,000: Utility \$40: Admin \$0: Customer	Replicated CII Urinal 0.5 gpd Direct Install
NR-6 CII HET Rebate - Tank	Not in Original (\$60 for ULFT)	\$200: Incentive \$36: Admin \$75: Customer	Changed incentive to \$200 to reflect average incentive for commercial sites. Tank type incentives will typically be \$100-\$200 while valve type incentives will be \$300. Changed customer costs to \$75 Changed admin cost to current internal cost of \$36
NR-6 CII HET Rebate - Flushometer	Not in Original	\$200: Incentive \$36: Admin \$185: Customer	Changed incentive to \$200 to reflect average incentive for commercial sites. Tank type incentives will typically be \$100-\$200 while valve type incentives will be \$300. Changed customer costs to \$185 Changed admin cost to current internal cost of \$36
NR-6 CII HET Voucher - Tank	See Above	See Above	Replicated CII HET Rebate – Tank
NR-6 CII HET Voucher - Flushometer	See Above	See Above	Replicated CII HET Rebate – Flushometer
NR-6 CII Direct Install – Tank	Not in Original	\$692: Utility \$45: Admin \$0: Customer	Used current cost of \$692 for outsourced install fee for MF tank toilets Changed admin cost to 7% or approximately \$45
NR-6 CII Direct Install – Flushometer	Not in Original	\$920: Utility \$45: Admin \$0: Customer	Used current cost of \$920 for outsourced install fee for MF flushometer toilets Changed admin cost to 5% or approximately \$45
NR-6 CII ULFT Rebate – Tank	NA	NA	Program no longer offered by SFPUC

**Table 14  
Updated Cost and Savings Assumptions for Non Residential Programs**

<b>Program</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
NR-6 CII ULFT Rebate – Flushometer	NA	NA	Program no longer offered by SFPUC
NR-6 CII Retrofit on Resale	\$10: Utility \$2: Admin \$150: Customer	NA	Not in new model
NR-7 Large Innovative Retrofits Incentive	\$2,700: Utility \$4,000: Consultant \$2,700: Admin \$50,000: Customer	\$153,666: Utility \$1,536: Admin \$150,000: Customer	Used numbers from the Water Saver Program includes audits and incentives including average savings of 14,730 gpd
NR-8 Large New Project Incentives	NA	NA	Same as Large Innovative Project Retrofits but for new construction Program no longer offered by SFPUC
NR-11 Audits-Hospital	\$2,300: Utility \$575: Admin \$5,000: Customer	\$3,000: Utility \$300: Admin \$300: Customer	Changed audit costs to \$3,000 based upon current market rates Reduced measure life to 2 years Increased customer one-time fixed costs to \$300 based upon making some repairs and/or upgrades to achieve savings Changed admin costs to 10%
NR-12 Coin-Op 8.5 WF Rebate	NA	NA	Program no longer offered by SFPUC
NR-12 Coin-Op CEE Tier 1 (WF 6.0) Rebate (a)	NA	NA	Program no longer offered by SFPUC
NR-12 Coin-Op CEE Tier 1 (WF 6.0) Rebate (b)	NA	NA	Program no longer offered by SFPUC
NR-12 Coin-Op CEE Tier 2 (WF 4.5) Rebate	Not In Original	\$75: Incentive \$10: Admin	Changed incentive to \$75 based on current proposal Changed admin cost to 13% which translates to current level of \$10
NR-12 Coin-Op CEE Tier 3 (WF 4.0) Rebate	Not in Original	\$75: Incentive \$10: Admin	Changed incentive to \$75 based on current proposal Changed admin cost to 13% which translates to current level of \$10
NR-13 Audits-Schools/Universities	\$1,000: Utility \$150: Admin \$2,000: Customer	\$3,000: Utility \$300: Admin \$450: Customer	Changed audit costs to \$3,000 based upon current market rates Reduced measure life to 2 years Decreased customer one-time fixed costs to \$300 based upon making some repairs and/or upgrades to achieve savings Changed admin costs to 15%
NR-14 SCH HET Rebate - Tank	\$400: Incentive \$120: Admin \$100: Customer	\$265: Incentive \$66: Admin \$0: Customer	Changed incentive to proposed incentive of \$265 Changed customer costs to \$0 which assumes customer can procure product and installation cost of \$165

**Table 14**  
**Updated Cost and Savings Assumptions for Non Residential Programs**

Program	Original Assumption	Updated Assumption	Basis for Update
			Changed admin cost to 40% or current internal cost of \$66
NR-14 SCH HET Rebate - Flushometer	\$400: Incentive \$120: Admin \$100: Customer	\$530: Incentive \$66: Admin \$0: Customer	Changed incentive to proposed incentive of \$530 Changed customer costs to \$0 which assumes customer can procure product and installation cost of \$530 Changed admin cost to 40% or current internal cost of \$66
NR-14 SCH HET Voucher - Tank	See Above	See Above	Replicated CII HET Rebate – Tank
NR-14 SCH HET Voucher - Flushometer	See Above	See Above	Replicated CII HET Rebate – Flushometer
NR-14 SCH Direct Install – Tank	Not in Original	\$692: Utility \$45: Admin \$0: Customer	Used current cost of \$692 for outsourced install fee for MF tank toilets Changed admin cost to 7% or approximately \$45
NR-14 SCH Direct Install – Flushometer		\$920: Utility \$45: Admin \$0: Customer	Used current cost of \$920 for outsourced install fee for MF flushometer toilets Changed admin cost to 5% or approximately \$45
NR-14 SCH ULFT Rebate – Tank	NA	NA	Program no longer offered by SFPUC
NR-14 SCH ULFT Rebate – Flushometer	NA	NA	Program no longer offered by SFPUC
NR-15 Audits-Schools/University Landscaping	\$1,000: Utility \$150: Admin \$2,000: Customer	\$800: Utility \$80: Admin \$100: Customer	Increased costs to \$800 based upon current market costs Reduced measure life to 2 years Reduced savings to 10% Changed admin to 10% Increased customer one-time fixed costs to \$100 based upon making some repairs and/or upgrades to achieve savings
NR-16 School/University Artificial Turf	NA	NA	Program no longer offered by SFPUC
NR-18 Low Flow Sprayers-Grocery Flower	\$130: Utility \$20: Admin \$75: Customer	\$140: Utility \$0: Admin \$0: Customer	Changed cost to \$140 to reflect current SFPUC costs and assumes self installed Reduced savings to 60 gpd based upon current CUWCC studies and assumes 50% install rate
NR-19 Low Flow Sprayers-Restaurants	\$130: Utility \$20: Admin \$75: Customer	\$140: Utility \$0: Admin \$0: Customer	Replicated Low Flow Sprayers-Grocery Flower Program
NR-19a Steamers-Restaurants	\$300: Utility	\$300: Utility	Reduced incentive to \$300 based upon incentive offered by other

**Table 14**  
**Updated Cost and Savings Assumptions for Non Residential Programs**

Program	Original Assumption	Updated Assumption	Basis for Update
	\$45: Admin -\$300: Customer	\$30: Admin \$0: Customer	utilities Changed admin cost to 10% or \$30 Changed customer cost to \$0 because currently the product costs the same as a standard steamer
NR-20 Cooling Towers	NA	NA	Program no longer offered by SFPUC
NR-21 City/PUC Landscape	\$800: Utility \$240: Admin \$200: Customer	\$800: Utility \$80: Admin \$100: Customer	Reduced measure life to 2 years Changed savings to 10% Changed admin to 10% Decreased customer one-time fixed costs to \$100 based upon making some repairs and/or upgrades to achieve savings
NR-22 Water Broom	NA	NA	Not implemented
NR-23 Audits-Hotels/Motels	\$3,000: Utility \$750: Admin \$2,000: Customer	\$3,000: Utility \$300: Admin \$300: Customer	Reduced measure life to 2 years Changed savings to 10% Decreased customer one-time fixed costs to \$300 based upon making some repairs and/or upgrades to achieve savings Changed admin costs to 10%
NR-24 WAVE Program	NA	NA	Program no longer offered by SFPUC
NR-25 HTL HET Rebate - Tank	Not in Original	\$165: Incentive \$66: Admin \$0: Customer	Changed incentive to proposed incentive of \$165 Changed customer costs to \$0 which assumes customer can procure product and installation cost of \$165 Changed admin cost to 40% or current internal cost of \$66
NR-25 HTL HET Rebate - Flushometer	Not in Original	\$165: Incentive \$66: Admin \$185: Customer	Changed incentive to proposed incentive of \$165 Changed customer costs to \$185 based upon bulk purchasing of tank flushometer toilet for \$200 and paying \$150 for installation Changed admin cost to current internal cost of \$66
NR-25 HTL HET Voucher - Tank	Not in Original	See Above	Replicated CII HET Rebate – Tank
NR-25 HTL HET Voucher - Flushometer	Not in Original	See Above	Replicated CII HET Rebate – Flushometer
NR-25 HTL Direct Install – Tank	Not in Original	\$692: Utility \$45: Admin \$0: Customer	Used current cost of \$692 for outsourced install fee for MF tank toilets Changed admin cost to 7% or approximately \$45

**Table 14**  
**Updated Cost and Savings Assumptions for Non Residential Programs**

<b>Program</b>	<b>Original Assumption</b>	<b>Updated Assumption</b>	<b>Basis for Update</b>
NR-25 HTL Direct Install – Flushometer	Not in Original	\$920: Utility \$45: Admin \$0: Customer	Used current cost of \$920 for outsourced install fee for MF flushometer toilets Changed admin cost to 5% or approximately \$45
NR-25 HTL ULFT Rebate – Tank	Not in Original	NA	Program no longer offered by SFPUC
HTL ULFT Rebate – Flushometer	Not in Original	NA	Program no longer offered by SFPUC

### 3.4.5 Model Calibration

The updated model was calibrated to actual customer class demands (with meter correction)<sup>7</sup> for 2000 and 2005. Table 15 shows the percentage difference between actual and predicted demands in each year. In 2000, the model slightly under predicted multi family demand and over predicted non-residential demand. The model closely tracked single family demand in both calibration years. Other demands, which consist of Builders and Contractors (B&C) and Docks and Shipping (D&S) customers, are fixed in the model at their historic average of 0.2 mgd, and are not adjusted as part of model calibration. Overall, the updated model closely tracks actual demands in 2000 and 2005. It is within about 2 percent of actual retail demand in 2000 and within about 1 percent of actual retail demand in 2005.

<b>Table 15</b>			
<b>SFPUC Model Calibration</b>			
<b>Demand Class</b>	<b>Actual (mgd)</b>	<b>Model (mgd)</b>	<b>% Difference</b>
Year: 2000			
Single Family	19.4	19.3	-0.5%
Multi Family	29.4	28.6	-2.7%
Non-Residential	28.1	30.9	+9.9%
Other*	0.3	0.2	-33.3%
<b>Retail Demand</b>	<b>77.2</b>	<b>79.0</b>	<b>+2.3%</b>
Year: 2005			
Single Family	18.8	18.7	-0.5%
Multi Family	28.3	28.4	+0.4%
Non-Residential	25.3	25.9	+2.4%
Other*	0.2	0.2	+0.0%
<b>Retail Demand</b>	<b>72.6</b>	<b>73.2</b>	<b>+0.8%</b>

\*Other (B&C, D&S): Builders and Contractors, Docks and Shipping.

The calibrated model over predicts 2010 retail demand by about 7 percent. This over prediction was expected for three reasons. First, the very wet spring and cool summer California experienced in 2010 depressed urban water demand across the state. Second, 2008 and 2009 were both dry and households and businesses were encouraged to conserve water, and while rainfall returned to normal or above normal in 2010, conservation messaging continued through most of the year. Third, the sharp economic decline which started in 2008 pushed down commercial and industrial demands. While the model does a good job of capturing employment-related changes in demand, it may not be picking up changes in the residential sector related to the home foreclosure crisis.

<sup>7</sup> SFPUC estimates that residential retail meters under-read consumption by 2.2 percent on average while non-residential meters under-read by about 2.1 percent. Metered sales were therefore increased accordingly to estimate actual water demand.



This is not cause for concern about the model's calibration. The model is calibrated to long-term weather and economic conditions and is not going to precisely mirror temporary perturbations in demand caused by unusual weather or economic circumstances.

## **4 MODEL RESULTS**

### **4.1 In-City Demand Projections**

In-city retail water demand projections are summarized in Tables 16 and 17. Table 16 shows projected demands in five year increments between 2005 and 2035. Table 17 shows projected demands in two years increments between 2010 and 2020.

Three projections are presented in the tables:

1. Baseline demands excluding plumbing efficiency codes and SFPUC conservation programs.
2. Baseline demands adjusted for plumbing efficiency codes but excluding SFPUC conservation programs.
3. Demands adjusted for plumbing efficiency codes and including SFPUC conservation programs

Separate demands are estimated for single-family, multi-family, non-residential, and "other" customer segments.<sup>8</sup> Additionally, system losses are estimated at 6.9% of the adjusted baseline demand.<sup>9</sup>

#### **4.1.1 Baseline In-City Demands Excluding Plumbing Efficiency Codes and SFPUC Conservation Programs**

This projection is generated by turning off all the plumbing efficiency codes and conservation programs in the model. It provides a reference demand from which the impact of plumbing efficiency codes can be measured. Demand under this projection is driven by population and employment growth only. Residential end use efficiency and water use per employee-day estimates are fixed at initial model levels. The result is projected demand assuming no changes in water use efficiency over time. Under this projection, total in-city retail demand is projected to increase from 80.2 mgd in 2005 to 96.8 mgd in 2035, an increase of 20.7%. The fluctuations in per capita demand under this projection are caused by variation in the employment forecast.

#### **4.1.2 Adjusted Baseline In-City Demands Including Plumbing Efficiency Codes**

The effects of plumbing efficiency codes over time are shown in the second demand projection. This projection shows expected in-city retail demands given projected population and

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<sup>8</sup> Other demands consist of demands from the Builders & Contractors (B&S) and Docks & Shipping (D&S) customer accounts.

<sup>9</sup> System losses do not include meter under-registration losses, which are included in the customer demands.

employment growth, codes and ordinances, but not implementation of SFPUC conservation programs. Under the adjusted baseline demand projection:

- Single-family residential demand decreases by approximately 15% between 2005 and 2035. The reduction is driven by increased water use efficiency of toilets, clothes washers, and showerheads coupled with very limited growth in the number of single-family residential accounts.
- Multi-family residential demands do not change significantly over the forecast period. While per capita demand falls as a result of code effects, this is offset by projected growth in the number of multi-family residential customers.
- Non-residential demands are projected to increase by 17% between 2005 and 2035. The increase is driven by projected increases in employment. While water use per employee is expected to decrease by 14% over the forecast period, total employment is projected to increase by 26%.
- Overall, adjusted baseline in-city retail demand is projected to increase from 78.0 mgd in 2005 to 79.7 mgd in 2035, an increase of 1.7 mgd, or 2.2%.
- The impact of plumbing efficiency codes is measured as the difference between the unadjusted and adjusted baseline demand projections. Code savings are 10.9 mgd by 2020 and 17.1 mgd by 2035.

Under the original model specification, baseline retail demands were 82.5 mgd in 2020 and 83.8 mgd in 2030.<sup>10</sup> However, this included double counting water losses associated with customer meter under-registration. After correcting for the double counting, baseline demands under the original model specification are 80.8 mgd and 82.1 mgd in 2020 and 2030, respectively. Using the updated model, baseline demands adjusted for codes are 77.1 mgd and 78.2 mgd in 2020 and 2030, respectively. The reduction in projected demands is primarily a consequence of the lower employment forecast in the updated model.

#### **4.1.3 In-City Demand Including SFPUC Conservation Programs**

This projection includes actual and projected conservation program implementation for the period 2005 to 2035. The conservation programs, program durations, and annual levels of activity used to generate the projection are summarized in Table 18. Program durations and annual levels of activity were provided by SFPUC staff. Conservation programs are assumed to operate through 2035 with the exception of single-family toilet programs, non-residential toilet and urinal programs, and single-family washer rebate programs, which end earlier because full market penetration is realized.

The impact of SFPUC conservation programs is measured as the difference between this projection and the adjusted baseline projection. Conservation program water savings over the forecast period are as follows:

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<sup>10</sup> These values are taken from Table 13 in "City and County of San Francisco Retail Water Demands and Conservation Potential."

- Single-family demands are reduced by 2.0 mgd by 2020 and by 1.8 mgd by 2035.<sup>11</sup>
- Multi-family demands are reduced by 1.7 mgd by 2020 and by 2.2 mgd by 2035.
- Non-residential demands are reduced by 1.7 mgd by 2020 and by 2.0 mgd by 2035.
- Total conservation program water savings in 2020 are 5.4 mgd in 2020 and 6.0 mgd in 2035.

Updated conservation programs water savings are approximately 30% higher in 2020 and 35% higher in 2030 than under the original model specification. The difference reflects changes in the mix, duration, and level of implementation of conservation programs in the updated model.

#### **4.1.4 In-City Retail Water Sales**

Projected in-city retail water sales with and without SFPUC conservation programs for the period 2010 to 2030 are shown in Table 19 and Table 20. Retail sales are calculated as total projected demands less system losses and meter under-registration. Together, system losses and meter under-registration are approximately 9 to 10% of retail demand. Thus, projected sales are about 90 to 91% of projected retail demand.

## **4.2 Total Retail Demand Projections**

Total retail demands are the sum of the following demands:

- In-city retail demand, including system losses
- Other retail customer demands, including SFO, the US Navy, and other suburban/municipal accounts.
- Groveland Community Services District
- Lawrence Livermore Laboratory
- City irrigation demand served by groundwater, including irrigation at Golden Gate Park, Great Highway Median, SF Zoo
- Castlewood & Sunol Golf Course demands served by groundwater

The projections of total retail demands for the period 2010 to 2035 with and without SFPUC conservation are shown in Table 21 and Table 22. In-city retail demands are estimated with the demand model. The projections for the other categories of retail demand were provided by SFPUC and are based on historic deliveries.

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<sup>11</sup> The reduction in active program water savings is a consequence of ending single-family toilet and washer programs prior to 2035 due to market saturation. Overall savings – the sum of code and program savings – between 2020 and 2035 increases, however, from 5.4 to 6.8 mgd.

<b>Single Family In-City Retail Demand</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>19.6</b>	<b>20.3</b>	<b>20.4</b>	<b>20.5</b>	<b>20.5</b>	<b>20.6</b>	<b>20.9</b>
<i>Less Savings from Codes</i>	<i>0.9</i>	<i>1.6</i>	<i>2.5</i>	<i>3.4</i>	<i>4.1</i>	<i>4.6</i>	<i>5.0</i>
<b>Adjusted Baseline Demand</b>	<b>18.7</b>	<b>18.7</b>	<b>17.9</b>	<b>17.1</b>	<b>16.5</b>	<b>16.0</b>	<b>15.8</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.0</i>	<i>0.6</i>	<i>1.5</i>	<i>2.0</i>	<i>2.2</i>	<i>2.1</i>	<i>1.8</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>18.7</b>	<b>18.1</b>	<b>16.4</b>	<b>15.1</b>	<b>14.3</b>	<b>14.0</b>	<b>14.0</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>0.9</i>	<i>2.2</i>	<i>4.0</i>	<i>5.4</i>	<i>6.3</i>	<i>6.7</i>	<i>6.8</i>
<b>Multi Family In-City Retail Demand</b>							
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>29.7</b>	<b>32.0</b>	<b>33.1</b>	<b>34.3</b>	<b>35.5</b>	<b>36.8</b>	<b>38.1</b>
<i>Less Savings from Codes</i>	<i>1.3</i>	<i>2.6</i>	<i>4.2</i>	<i>5.9</i>	<i>7.3</i>	<i>8.5</i>	<i>9.5</i>
<b>Adjusted Baseline Demand</b>	<b>28.4</b>	<b>29.3</b>	<b>28.9</b>	<b>28.4</b>	<b>28.2</b>	<b>28.3</b>	<b>28.6</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.0</i>	<i>0.2</i>	<i>1.2</i>	<i>1.7</i>	<i>2.0</i>	<i>2.1</i>	<i>2.2</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>28.4</b>	<b>29.2</b>	<b>27.8</b>	<b>26.7</b>	<b>26.2</b>	<b>26.2</b>	<b>26.4</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>1.3</i>	<i>2.8</i>	<i>5.4</i>	<i>7.6</i>	<i>9.3</i>	<i>10.6</i>	<i>11.7</i>
<b>Non Residential In-City Retail Demand</b>							
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>25.7</b>	<b>25.3</b>	<b>26.7</b>	<b>28.1</b>	<b>29.5</b>	<b>31.0</b>	<b>32.5</b>
<i>Less Savings from Codes</i>	<i>0.1</i>	<i>0.6</i>	<i>1.1</i>	<i>1.6</i>	<i>2.0</i>	<i>2.3</i>	<i>2.6</i>
<b>Adjusted Baseline Demand</b>	<b>25.6</b>	<b>24.6</b>	<b>25.6</b>	<b>26.5</b>	<b>27.5</b>	<b>28.7</b>	<b>29.9</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.0</i>	<i>0.7</i>	<i>1.4</i>	<i>1.7</i>	<i>1.9</i>	<i>2.0</i>	<i>2.0</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>25.6</b>	<b>24.0</b>	<b>24.3</b>	<b>24.8</b>	<b>25.5</b>	<b>26.7</b>	<b>27.9</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>0.1</i>	<i>1.3</i>	<i>2.5</i>	<i>3.3</i>	<i>3.9</i>	<i>4.3</i>	<i>4.6</i>
<b>Other (mgd)</b>							
Builders & Contractors, Docks & Shipping	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<b>System Losses Excluding Meter Under-Registration<sup>1</sup></b>							
<b>Calculated as % of Adjusted Baseline Demand</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>4.9</b>	<b>5.0</b>	<b>5.0</b>	<b>5.1</b>
<b>Total In-City Retail Demand</b>							
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>80.2</b>	<b>82.7</b>	<b>85.5</b>	<b>88.0</b>	<b>90.7</b>	<b>93.7</b>	<b>96.8</b>
<i>Less Savings from Codes</i>	<i>2.2</i>	<i>4.9</i>	<i>7.8</i>	<i>10.9</i>	<i>13.4</i>	<i>15.4</i>	<i>17.1</i>
<b>Adjusted Baseline Demand</b>	<b>78.0</b>	<b>77.9</b>	<b>77.7</b>	<b>77.1</b>	<b>77.3</b>	<b>78.2</b>	<b>79.7</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.0</i>	<i>1.4</i>	<i>4.1</i>	<i>5.4</i>	<i>6.1</i>	<i>6.2</i>	<i>6.0</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>78.0</b>	<b>76.4</b>	<b>73.6</b>	<b>71.7</b>	<b>71.2</b>	<b>72.1</b>	<b>73.7</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>2.3</i>	<i>6.3</i>	<i>11.8</i>	<i>16.3</i>	<i>19.5</i>	<i>21.6</i>	<i>23.1</i>
<b>Per Capita Demand (Gal/Day/Person)</b>							
Baseline Demand <u>without</u> Codes or SFPUC Conservation	102	99	100	101	101	102	103
Baseline Demand Adjusted for Codes Only	99	93	91	88	86	85	85
Baseline Demand Adjusted for Codes and SFPUC Conservation	99	92	86	82	80	79	78
<sup>1</sup> Meter under-registration losses are included in the retail demands for residential and non-residential sectors. Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses excluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.							

<b>Table 17</b>						
<b>SFPUC In-City Retail Demand Projections: 2010 – 2020</b>						
<b>(mgd)</b>						
<b>Single Family In-City Retail Demand</b>						
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>20.1</b>	<b>20.3</b>	<b>20.3</b>	<b>20.4</b>	<b>20.4</b>	<b>20.4</b>
<i>Less Savings from Codes</i>	<i>1.5</i>	<i>1.8</i>	<i>2.1</i>	<i>2.5</i>	<i>2.8</i>	<i>3.2</i>
<b>Adjusted Baseline Demand</b>	<b>18.7</b>	<b>18.5</b>	<b>18.2</b>	<b>17.9</b>	<b>17.6</b>	<b>17.2</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.6</i>	<i>1.1</i>	<i>1.5</i>	<i>1.8</i>	<i>2.0</i>	<i>2.2</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>18.1</b>	<b>17.4</b>	<b>16.7</b>	<b>16.1</b>	<b>15.6</b>	<b>15.1</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>2.1</i>	<i>2.9</i>	<i>3.6</i>	<i>4.2</i>	<i>4.8</i>	<i>5.3</i>
<b>Multi Family In-City Retail Demand</b>						
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>31.5</b>	<b>32.2</b>	<b>32.7</b>	<b>33.1</b>	<b>33.6</b>	<b>34.1</b>
<i>Less Savings from Codes</i>	<i>2.4</i>	<i>2.9</i>	<i>3.6</i>	<i>4.2</i>	<i>4.9</i>	<i>5.6</i>
<b>Adjusted Baseline Demand</b>	<b>29.2</b>	<b>29.3</b>	<b>29.1</b>	<b>28.9</b>	<b>28.7</b>	<b>28.5</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.0</i>	<i>0.6</i>	<i>1.0</i>	<i>1.4</i>	<i>1.6</i>	<i>1.8</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>29.2</b>	<b>28.6</b>	<b>28.0</b>	<b>27.6</b>	<b>27.1</b>	<b>26.7</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>2.3</i>	<i>3.6</i>	<i>4.6</i>	<i>5.6</i>	<i>6.5</i>	<i>7.4</i>
<b>Non Residential In-City Retail Demand</b>						
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>25.3</b>	<b>25.6</b>	<b>26.1</b>	<b>26.7</b>	<b>27.3</b>	<b>27.8</b>
<i>Less Savings from Codes</i>	<i>0.5</i>	<i>0.7</i>	<i>0.9</i>	<i>1.1</i>	<i>1.3</i>	<i>1.5</i>
<b>Adjusted Baseline Demand</b>	<b>24.8</b>	<b>24.8</b>	<b>25.2</b>	<b>25.6</b>	<b>26.0</b>	<b>26.3</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>0.9</i>	<i>0.8</i>	<i>1.0</i>	<i>1.3</i>	<i>1.4</i>	<i>1.5</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>24.0</b>	<b>24.1</b>	<b>24.2</b>	<b>24.4</b>	<b>24.6</b>	<b>24.8</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>1.4</i>	<i>1.5</i>	<i>2.0</i>	<i>2.4</i>	<i>2.7</i>	<i>3.1</i>
<b>Other</b>						
Builders & Contractors, Docks & Shipping	0.2	0.2	0.2	0.2	0.2	0.2
<b>System Losses Excluding Meter Under-Registration<sup>1</sup></b>						
Calculated as % of Adjusted Baseline Demand	5.0	5.0	5.0	5.0	5.0	5.0
<b>Total In-City Retail Demand</b>						
<b>Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs</b>	<b>82.2</b>	<b>83.3</b>	<b>84.4</b>	<b>85.5</b>	<b>86.5</b>	<b>87.5</b>
<i>Less Savings from Codes</i>	<i>4.3</i>	<i>5.4</i>	<i>6.6</i>	<i>7.8</i>	<i>9.0</i>	<i>10.3</i>
<b>Adjusted Baseline Demand</b>	<b>77.9</b>	<b>77.8</b>	<b>77.8</b>	<b>77.7</b>	<b>77.5</b>	<b>77.2</b>
<i>Less Savings from 2005-30 SFPUC Conservation Programs</i>	<i>1.5</i>	<i>2.5</i>	<i>3.6</i>	<i>4.4</i>	<i>5.0</i>	<i>5.5</i>
<b>Demand with Codes &amp; SFPUC Conservation Programs</b>	<b>76.4</b>	<b>75.3</b>	<b>74.2</b>	<b>73.3</b>	<b>72.5</b>	<b>71.8</b>
<i>Savings from Codes &amp; SFPUC Conservation Programs</i>	<i>5.8</i>	<i>8.0</i>	<i>10.2</i>	<i>12.2</i>	<i>14.0</i>	<i>15.8</i>
<b>Per Capita Demand (Gal/Day/Person)</b>						
Baseline Demand <u>without</u> Codes or SFPUC Conservation Programs	98	99	99	100	100	100
Adjusted Baseline Demand	93	92	91	90	89	88
Demand with Codes & SFPUC Conservation Programs	92	89	87	85	84	82
<sup>1</sup> Meter under-registration losses are included in the retail demands for residential and non-residential sectors. Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses excluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.						

**Table 18**  
**Conservation Program Durations and Activity Levels Used to**  
**Generate Conservation Demand Projection**

<b>RESIDENTIAL SINGLE FAMILY (1-RSFConsMeas.xls)</b>		<b>Program</b>	<b>Program</b>	<b>Program</b>	<b>Units Per</b>	
		<b>Start Year</b>	<b>End Year</b>	<b>Length</b>	<b>Year</b>	
RSF-1	d	SF CEE Tier 2 (WF 4.5) Rebate	2010	2011	2	4,240
RSF-1	e	SF CEE Tier 3 (WF 4.0) Rebate	2011	2030	20	5,300
RSF-2	a	SF HET Rebate	2011	2025	15	1,600
RSF-2	c	SF HET Direct Install	2011	2025	15	2,000
RSF-2	e	SF Retrofit on Resale <sup>1</sup>	2009	2035	27	3.2%
RSF-3	a	Public Information	2005	2035	31	NA
RSF-5	a	Water Surveys <sup>1</sup>	2011	2035	25	2.0%
RSF-6	c	SF 1.5 gpm showerheads - give away	2011	2035	25	1,000
RSF-6	d	SF 1.5 gpm showerheads - direct install	2011	2035	25	2,400
<b>RESIDENTIAL MULTI FAMILY (1-RMFConsMeas.xls)</b>						
RMF-1	d	MF CEE Tier 2 (WF 4.5) Rebate	2010	2011	2	480
RMF-1	e	MF CEE Tier 3 (WF 4.0) Rebate	2011	2035	25	600
RMF-2	a	MF HET Rebate - Tank	2011	2035	25	1,300
RMF-2	b	MF HET Rebate - Flushometer	2011	2035	25	100
RMF-2	c	MF HET Voucher - Tank	2011	2035	25	1,000
RMF-2	d	MF HET Voucher - Flushometer	2011	2035	25	1,000
RMF-2	e	MF HET Direct Install - Tank	2011	2035	25	300
RMF-2	f	MF HET Direct Install - Flushometer	2011	2035	25	200
RMF-2	i	MF Retrofit on Resale <sup>1</sup>	2009	2035	27	1.1%
RMF-5	a	Water Surveys	2011	2035	25	
RMF-6	c	MF 1.5 gpm showerheads - give away	2011	2035	25	1,500
RMF-6	d	MF 1.5 gpm showerheads - direct install	2011	2035	25	500
<b>NON-RESIDENTIAL MEASURES (3-NRConsMeas.xls)</b>						
NR-1	a	Lscape-Audits <sup>2</sup>	2011	2035	25	5.0%
NR-3	a	Lscape-Grants	2011	2035	25	4
NR-4	a	SFPUC Staff Water Audits <sup>3</sup>	2011	2035	25	1.0%
NR-4	b	Consultant Water Audits	2011	2035	25	7
NR-5	a	CII Urinal 0.5 gpf Rebate	2011	2034	24	200
NR-5	d	CII Urinal 0.25 gpf Rebate	2011	2035	25	100
NR-6	a	CII HET Rebate - Tank	2011	2027	17	1,500
NR-6	b	CII HET Rebate - Flushometer	2011	2033	23	400
NR-7	a	Large Innovative Retrofit Incentives	2011	2035	25	1
NR-12	d	Coin-Op CEE Tier 2 (WF 4.5) Rebate	2011	2012	2	54
NR-12	e	Coin-Op CEE Tier 3 (WF 4.0) Rebate	2011	2035	25	60
NR-19	a	Low Flow Sprayers-Restaurants	2011	2035	25	60
<sup>1</sup> Percent of residential housing units.						
<sup>2</sup> Percent of accounts with large landscapes.						
<sup>3</sup> Percent of CII accounts.						



<b>In-City Retail Demand</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
Single Family Demand Projection	18.7	17.9	17.1	16.5	16.0	15.8
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>0.6</i>	<i>0.6</i>	<i>0.6</i>	<i>0.5</i>	<i>0.5</i>	<i>0.5</i>
<b>Single Family Sales Projection</b>	<b>18.1</b>	<b>17.3</b>	<b>16.5</b>	<b>15.9</b>	<b>15.5</b>	<b>15.3</b>
Multi Family Demand Projection	29.3	28.9	28.4	28.2	28.3	28.6
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>1.0</i>	<i>1.0</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>
<b>Multi Family Sales Projection</b>	<b>28.4</b>	<b>28.0</b>	<b>27.4</b>	<b>27.3</b>	<b>27.4</b>	<b>27.7</b>
Non Residential Demand Projection	24.6	25.6	26.5	27.5	28.7	29.9
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>0.8</i>	<i>0.8</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>1.0</i>
<b>Non Residential Sales Projection</b>	<b>23.8</b>	<b>24.8</b>	<b>25.6</b>	<b>26.5</b>	<b>27.7</b>	<b>28.9</b>
<b>Other Sales (D&amp;C, B&amp;S)<sup>2</sup></b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>In-City Retail Sales Projection</b>	<b>70.5</b>	<b>70.3</b>	<b>69.8</b>	<b>70.0</b>	<b>70.8</b>	<b>72.1</b>
<i>Meter Under-Registration<sup>1</sup></i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	<i>2.5</i>
<i>Other System Losses<sup>3</sup></i>	<i>5.0</i>	<i>5.0</i>	<i>4.9</i>	<i>5.0</i>	<i>5.0</i>	<i>5.1</i>
<b>Total In-City Retail Demand</b>	<b>77.9</b>	<b>77.7</b>	<b>77.1</b>	<b>77.3</b>	<b>78.2</b>	<b>79.7</b>
<sup>1</sup> Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. <sup>2</sup> Docks & Shipping (D&C), Builders & Contractors (B&C) <sup>3</sup> Other system losses excluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.						

<b>Table 20</b>						
<b>SFPUC In-City Retail Sales Projection <u>With</u> SFPUC Conservation</b>						
<b>(mgd)</b>						
<b>In-City Retail Demand</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
Single Family Demand Projection	18.1	16.4	15.1	14.3	14.0	14.0
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>0.6</i>	<i>0.5</i>	<i>0.5</i>	<i>0.5</i>	<i>0.5</i>	<i>0.5</i>
<b>Single Family Sales Projection</b>	<b>17.5</b>	<b>15.8</b>	<b>14.6</b>	<b>13.8</b>	<b>13.5</b>	<b>13.6</b>
Multi Family Demand Projection	29.2	27.8	26.7	26.2	26.2	26.4
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>1.0</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>
<b>Multi Family Sales Projection</b>	<b>28.2</b>	<b>26.8</b>	<b>25.8</b>	<b>25.4</b>	<b>25.3</b>	<b>25.5</b>
Non Residential Demand Projection	24.0	24.3	24.8	25.5	26.7	27.9
<i>Less Meter Under-Registration<sup>1</sup></i>	<i>0.8</i>	<i>0.8</i>	<i>0.8</i>	<i>0.8</i>	<i>0.9</i>	<i>0.9</i>
<b>Non Residential Sales Projection</b>	<b>23.2</b>	<b>23.5</b>	<b>23.9</b>	<b>24.7</b>	<b>25.8</b>	<b>27.0</b>
<b>Other Sales (D&amp;C, B&amp;S)<sup>2</sup></b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>In-City Retail Sales Projection</b>	<b>69.1</b>	<b>66.4</b>	<b>64.6</b>	<b>64.1</b>	<b>64.8</b>	<b>66.3</b>
<i>Meter Under-Registration<sup>1</sup></i>	<i>2.3</i>	<i>2.3</i>	<i>2.2</i>	<i>2.2</i>	<i>2.2</i>	<i>2.3</i>
<i>Other System Losses<sup>3</sup></i>	<i>5.0</i>	<i>5.0</i>	<i>4.9</i>	<i>5.0</i>	<i>5.0</i>	<i>5.1</i>
<b>Total In-City Retail Demand</b>	<b>76.4</b>	<b>73.6</b>	<b>71.7</b>	<b>71.2</b>	<b>72.1</b>	<b>73.7</b>
<sup>1</sup> Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. <sup>2</sup> Docks & Shipping (D&C), Builders & Contractors (B&C) <sup>3</sup> Other system losses excluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.						

<b>Table 21</b>						
<b>SFPUC Total Retail Demands <u>Without</u> SFPUC Conservation</b>						
<b>(mgd)</b>						
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
<b>In-City Retail Demands</b>						
Single Family <sup>1</sup>	18.7	17.9	17.1	16.5	16.0	15.8
Multi Family <sup>1</sup>	29.3	28.9	28.4	28.2	28.3	28.6
Non Residential <sup>1</sup>	24.6	25.6	26.5	27.5	28.7	29.9
Other In-City Sales (D&C, B&S) <sup>2</sup>	0.2	0.2	0.2	0.2	0.2	0.2
<b><i>In-City Subtotal</i></b>	<b>72.9</b>	<b>72.7</b>	<b>72.2</b>	<b>72.4</b>	<b>73.2</b>	<b>74.6</b>
<i>Unaccounted-for System Losses</i> <sup>3</sup>	5.0	5.0	4.9	5.0	5.0	5.1
<b>Total In-City Retail Demand<sup>4</sup></b>	<b>77.9</b>	<b>77.7</b>	<b>77.1</b>	<b>77.3</b>	<b>78.2</b>	<b>79.7</b>
<b>Other Retail Customers</b>						
Other Retail Demands <sup>5</sup>	3.8	3.8	3.8	3.8	3.8	3.8
Groveland Community Services District	0.4	0.4	0.4	0.4	0.4	0.4
Lawrence Livermore Laboratory	0.8	0.8	0.8	0.8	0.8	0.8
<b>Total Other Retail Demand</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>
<b>Total Retail RWS Watershed Demand</b>	<b>82.9</b>	<b>82.7</b>	<b>82.1</b>	<b>82.3</b>	<b>83.2</b>	<b>84.7</b>
<b>Groundwater Demand</b>						
City Irrigation Demand <sup>6</sup>	1.5	1.5	1.5	1.5	1.5	1.5
Castlewood & Sunol Golf Course Demand <sup>7</sup>	0.7	0.7	0.7	0.7	0.7	0.7
<b>Total Groundwater Demand</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
<b>Total Retail RWS Demand</b>	<b>85.1</b>	<b>84.9</b>	<b>84.3</b>	<b>84.5</b>	<b>85.4</b>	<b>86.9</b>
<sup>1</sup> Includes the impact of water savings due to water efficiency codes and ordinances. <sup>2</sup> Docks & Shipping (D&S), Builders & Contractors (B&S) <sup>3</sup> Unaccounted-for system losses estimated at 6.9% of total in-city demand, excluding SFPUC conservation program savings. <sup>4</sup> Actual in-city use in FY 09/10 was 71.4 mgd. <sup>5</sup> US Navy, SFO, and other suburban/municipal accounts. Does not include groundwater at Sunol and Castlewood. Demands are based on average use from 2000-2010. <sup>6</sup> City irrigation at Golden Gate Park, Great Highway Median, and SF Zoo.						

	2010	2015	2020	2025	2030	2035
<b>In-City Retail Demands</b>						
Single Family <sup>1</sup>	18.1	16.4	15.1	14.3	14.0	14.0
Multi Family <sup>1</sup>	29.2	27.8	26.7	26.2	26.2	26.4
Non Residential <sup>1</sup>	24.0	24.3	24.8	25.5	26.7	27.9
Other In-City Sales (D&C, B&S) <sup>2</sup>	0.2	0.2	0.2	0.2	0.2	0.2
<b><i>In-City Subtotal</i></b>	<b>71.4</b>	<b>68.6</b>	<b>66.8</b>	<b>66.3</b>	<b>67.0</b>	<b>68.6</b>
<i>Unaccounted-for System Losses</i> <sup>3</sup>	5.0	5.0	4.9	5.0	5.0	5.1
<b>Total In-City Retail Demand</b> <sup>4</sup>	<b>76.4</b>	<b>73.6</b>	<b>71.7</b>	<b>71.2</b>	<b>72.1</b>	<b>73.7</b>
<b>Other Retail Customers</b>						
Other Retail Demands <sup>5</sup>	3.8	3.8	3.8	3.8	3.8	3.8
Groveland Community Services District	0.4	0.4	0.4	0.4	0.4	0.4
Lawrence Livermore Laboratory	0.8	0.8	0.8	0.8	0.8	0.8
<b>Total Other Retail Demand</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>
<b>Total Retail RWS Watershed Demand</b>	<b>81.4</b>	<b>78.6</b>	<b>76.7</b>	<b>76.2</b>	<b>77.1</b>	<b>78.7</b>
<b>Groundwater Demand</b>						
City Irrigation Demand <sup>6</sup>	1.5	1.5	1.5	1.5	1.5	1.5
Castlewood & Sunol Golf Course Demand <sup>7</sup>	0.7	0.7	0.7	0.7	0.7	0.7
<b>Total Groundwater Demand</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
<b>Total Retail RWS Demand</b>	<b>83.6</b>	<b>80.8</b>	<b>78.9</b>	<b>78.4</b>	<b>79.3</b>	<b>80.9</b>
<sup>1</sup> Includes the impact of water savings due to water efficiency codes and ordinances and SFPUC conservation programs.						
<sup>2</sup> Docks & Shipping (D&S), Builders & Contractors (B&S)						
<sup>3</sup> Unaccounted-for system losses estimated at 6.9% of total in-city demand, excluding SFPUC conservation program savings.						
<sup>4</sup> Actual in-city use in FY 09/10 was 71.4 mgd.						
<sup>5</sup> US Navy, SFO, and other suburban/municipal accounts. Does not include groundwater at Sunol and Castlewood. Demands are based on average use from 2000-2010.						
<sup>6</sup> City irrigation at Golden Gate Park, Great Highway Median, and SF Zoo.						

### **4.3 Program Water Savings**

Water savings for single family, multi family, and non residential conservation programs are summarized in Tables 23 thru 25. The values shown in these tables are net of expected savings from state/federal plumbing codes and building standards. They are the savings directly attributable to SFPUC retail conservation programs. As noted earlier, conservation programs are assumed to operate through 2035 with the exception of single-family toilet programs, non-residential toilet and urinal programs, and single-family washer rebate programs, which end earlier because full market penetration is realized.

<b>Table 23</b>							
<b>Single Family Retail Conservation Program Water Savings</b>							
<b>(AF/Yr)</b>							
<b>Program Category</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
RSF-1 Clothes Washer Rebates	0	417	917	1,078	1,141	1,158	983
RSF-2 HET Rebates/Direct Install/ROR	0	227	737	1,052	1,206	975	795
RSF-5 Home Water Surveys	0	2	7	7	7	7	7
RSF-6 Showerhead Distribution/Direct Install	0	40	95	149	202	253	307
<b>Total Savings</b>	0	687	1,756	2,285	2,555	2,393	2,092
<i>% of Adjusted Baseline Demand</i>	0.0%	3.3%	8.8%	11.9%	13.8%	13.3%	11.8%

<b>Table 24</b>							
<b>Multi Family Retail Conservation Program Water Savings</b>							
<b>(AF/Yr)</b>							
<b>Program Category</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
RSF-1 Clothes Washer Rebates	0	4	685	977	1,118	1,185	1,226
RSF-2 HET Rebates/Direct Install/ROR	0	179	571	835	1,003	1,100	1,153
RSF-5 Home Water Surveys	0	0	5	5	5	5	5
RSF-6 Showerhead Distribution/Direct Install	0	5	31	56	80	104	129
<b>Total Savings</b>	0	189	1,292	1,873	2,205	2,394	2,513
<i>% of Adjusted Baseline Demand</i>	0.0%	0.6%	4.0%	5.9%	7.0%	7.6%	7.8%

<b>Table 25</b>							
<b>Non Residential Retail Conservation Program Water Savings</b>							
<b>(AF/Yr)</b>							
<b>Program Category</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
NR-1 Landscape Audits	0	17	84	84	84	84	84
NR-3 Landscape Grants	0	58	203	290	290	290	290
NR-4 CII Water Audits	0	141	287	292	297	302	307
NR-5 Urinal Rebates	0	10	64	98	122	140	145
NR-6 HET Rebates	0	176	406	574	709	701	601
NR-7 Innovative Retrofit Incentives	0	0	82	165	247	330	412
NR-11 Hospital Audits	2	0	0	0	0	0	0
NR-12 Coin-Op Clothes Washer Rebates	21	391	400	343	301	271	252
NR-13 School Audits	0	2	0	0	0	0	0
NR-19 Pre-Rinse Spray Valves	10	10	20	30	40	50	60
NR-21a City/PUC Landscape Grants	1	0	0	0	0	0	0
<b>Total Savings</b>	35	805	1,547	1,876	2,091	2,168	2,152
<i>% of Adjusted Baseline Demand</i>	0.1%	3.0%	5.6%	6.6%	7.1%	7.0%	6.7%



#### **4.4 Program Unit Cost of Water Savings**

The present value of SFPUC retail conservation program expenditures and the unit costs of program water savings are summarized in Table 26. Present value and unit cost calculations assume a nominal discount rate of 5% and a long-term inflation rate of 3%.

The updated model uses two alternative methods for calculating unit cost of water savings. The first method, which follows the original model, divides the present value of program costs by cumulative water savings. This method understates the actual unit cost of water savings. It was included in the model update and is shown in Table 24 to provide continuity with the original model. The second method, which provides an accurate estimate of the cost of program water savings, divides the present value of program costs by the discounted cumulative water savings. This is equivalent to dividing the annualized cost of a program by its annualized water savings (see Attachment 1), which is how SFPUC calculates unit costs for other water supply investments. The discussion of unit costs that follows is based on the latter method for calculating unit cost.

The average unit cost of water savings across all programs is \$860/AF. Unit costs for single family programs average \$1,009/AF. Unit costs for multi family programs average \$609/AF. Unit costs for non-residential programs average \$952/AF.

Unit costs are not calculated directly for public information and residential survey programs. These programs generate water savings primarily in conjunction with the other conservation programs, particularly plumbing fixture replacement programs, and the water savings are captured primarily through these programs. Costs for public information and residential survey programs, however, are incorporated into the average unit costs for single- and multi-family programs. This is why the average unit cost for single-family programs exceeds the highest unit cost of single-family programs listed in Table 26.

**Table 26**  
**Estimated Program Unit Costs by Customer Class<sup>1</sup>**

<b>Single Family Programs</b>					
ID	Program Name	Cum. Savings (Thou. AF)	SFPUC PV Cost (Thou. \$)	PV/ Savings <sup>2</sup> (\$/AF)	Unit Cost <sup>3</sup> (\$/AF)
RSF-1	Washer Rebates	26.7	\$10,433	\$391	\$498
RSF-2	HET Rebates/Direct Install/ROR	35.5	\$22,084	\$622	\$911
RSF-3	Public Information <sup>4</sup>	N/A	\$3,411	N/A	N/A
RSF-5	Residential Surveys <sup>5</sup>	0.2	\$11,963	N/A	N/A
RSF-6	Showerhead Replacement	4.6	\$1,291	\$282	\$378
<b>RSF - Total<sup>6</sup></b>		<b>66.9</b>	<b>\$49,182</b>	<b>\$735</b>	<b>\$1,009</b>
<b>Multi Family Programs</b>					
ID	Program Name	Cum. Savings (Thou. AF)	SFPUC PV Cost (Thou. \$)	PV/ Savings <sup>1</sup> (\$/AF)	Unit Cost <sup>2</sup> (\$/AF)
RMF-1	Washer Rebates	24.0	\$1,045	\$44	\$58
RMF-2	HET Rebates/Direct Install/ROR	40.1	\$23,486	\$586	\$911
RMF-5	Residential Surveys <sup>7</sup>	0.1	\$2,428	N/A	N/A
RMF-6	Showerhead Replacement	1.8	\$620	\$353	\$482
<b>RMF - Total<sup>8</sup></b>		<b>66.0</b>	<b>\$27,579</b>	<b>\$418</b>	<b>\$609</b>
<b>Non-Residential Programs</b>					
ID	Program Name	Cum. Savings (Thou. AF)	SFPUC PV Cost (Thou. \$)	PV/ Savings <sup>1</sup> (\$/AF)	Unit Cost <sup>2</sup> (\$/AF)
NR-1	Landscape-Audits	2.0	\$1,933	\$956	\$1,228
NR-3	Landscape-Grants	6.5	\$24,272	\$3,715	\$4,826
NR-4a	SFPUC Staff Water Audits	3.0	\$1,155	\$387	\$464
NR-4b	Consultant Water Audits	4.9	\$1,487	\$301	\$384
NR-5	CII Urinal Rebates	4.8	\$1,799	\$377	\$588
NR-6	HET Rebates/Direct Install	24.0	\$8,041	\$335	\$501
NR-7	Large Innovative Retrofit Incentives	5.4	\$3,051	\$569	\$784
NR-11	Audits-Hospitals	0.0	\$4	\$756	\$693
NR-12	Coin-Op Washer Rebates	9.2	\$239	\$26	\$31
NR-13	Audits-Schools/Universities	0.0	\$24	\$6,083	\$6,141
NR-19	Low Flow Sprayers-Restaurants	1.0	\$209	\$220	\$289
NR-21a	City/PUC Landscape	0.0	\$2	\$864	\$792
<b>NR - Total</b>		<b>51.6</b>	<b>\$42,217</b>	<b>\$819</b>	<b>\$952</b>
<b>All Programs</b>		<b>193.7</b>	<b>\$118,978</b>	<b>\$614</b>	<b>\$860</b>
<sup>1</sup> Cumulative savings, present value cost, and unit costs inclusive of historical program activity occurring between 2005 and 2010 and projected activity occurring between 2010 and 2035. <sup>2</sup> Present value of program costs divided by cumulative program water savings. <sup>3</sup> Annualized program costs divided by annualized program water savings. <sup>4</sup> Savings from public information assumed to be included in savings estimates of other programs. <sup>5</sup> Single-family surveys support plumbing fixture rebate programs. Savings mostly counted in those programs. <sup>6</sup> Unit cost for combined single-family programs incorporates costs for public information and single-family surveys. <sup>7</sup> Multi-family surveys support plumbing fixture rebate programs. Savings mostly counted in those programs. <sup>8</sup> Unit cost for combined multi-family programs incorporates costs for multi-family surveys.					

#### **4.5 Annual Program Expenditure**

Projected annual program expenditures for the period 2011 to 2035 are summarized in Table 27. Expenditures are listed in nominal dollars and assume program costs escalate at 3% per year. The drop in program expenditures starting in 2026 reflects the discontinuation of single-family and non-residential toilet replacement programs, which reach full market penetration in 2025.

<b>Table 27</b>				
<b>Projected SFPUC Conservation Program Expenditures: 2011-2035<sup>1</sup></b>				
<b>(\$000, nominal dollars<sup>2</sup>)</b>				
<b>Year</b>	<b>Residential</b>		<b>Non-Residential</b>	<b>Total</b>
	<b>Single Family</b>	<b>Multi Family</b>		
<b>2011</b>	\$2,525	\$1,428	\$2,095	\$6,047
<b>2012</b>	\$2,557	\$1,428	\$2,151	\$6,136
<b>2013</b>	\$2,635	\$1,472	\$2,203	\$6,311
<b>2014</b>	\$2,716	\$1,517	\$2,263	\$6,496
<b>2015</b>	\$2,799	\$1,564	\$2,324	\$6,687
<b>2016</b>	\$2,885	\$1,612	\$2,387	\$6,884
<b>2017</b>	\$2,973	\$1,662	\$2,453	\$7,088
<b>2018</b>	\$3,065	\$1,713	\$2,520	\$7,298
<b>2019</b>	\$3,159	\$1,766	\$2,590	\$7,514
<b>2020</b>	\$3,256	\$1,820	\$2,662	\$7,737
<b>2021</b>	\$3,356	\$1,876	\$2,736	\$7,968
<b>2022</b>	\$3,459	\$1,934	\$2,812	\$8,205
<b>2023</b>	\$3,565	\$1,994	\$2,891	\$8,450
<b>2024</b>	\$3,675	\$2,055	\$2,973	\$8,703
<b>2025</b>	\$2,983	\$2,119	\$3,057	\$8,158
<b>2026</b>	\$1,305	\$2,184	\$3,144	\$6,632
<b>2027</b>	\$1,347	\$2,251	\$3,233	\$6,831
<b>2028</b>	\$1,390	\$2,321	\$2,725	\$6,436
<b>2029</b>	\$1,435	\$2,392	\$2,802	\$6,630
<b>2030</b>	\$1,481	\$2,466	\$2,882	\$6,829
<b>2031</b>	\$1,430	\$2,542	\$2,964	\$6,936
<b>2032</b>	\$1,476	\$2,620	\$2,856	\$6,952
<b>2033</b>	\$1,524	\$2,700	\$2,937	\$7,162
<b>2034</b>	\$1,573	\$2,783	\$2,830	\$7,187
<b>2035</b>	\$1,624	\$2,869	\$2,912	\$7,405

<sup>1</sup>Draft program plan as of 01-05-2011.  
<sup>2</sup>Program costs escalated at 3% per year.

## Attachment 1

### SFPUC Retail Demand Model Unit Cost Derivation

This attachment shows the mathematical derivation of unit cost used in the model and provides a simple example illustrating it.

Define the following variables:

$Y_t$  = program yield (e.g. savings) in year t

$C_t$  = program cost in year t

T = program cost recovery period

r = cost of capital

U = Unit cost of project yield

To fully recover the present value of the program, the unit cost of program yield U must satisfy the following equation:

$$(1) \quad \sum_{t=1}^T \frac{C_t}{(1+r)^t} = \sum_{t=1}^T \frac{UY_t}{(1+r)^t}$$

Because U is constant, equation (1) can be rearranged and solved for U:

$$(2) \quad U = \frac{\sum_{t=1}^T \frac{C_t}{(1+r)^t}}{\sum_{t=1}^T \frac{Y_t}{(1+r)^t}}$$

Let  $PV_C$  equal the present value cost of the program (i.e. the numerator in equation 2). Let C be the annualized cost of the program, which is given by:

$$(3) \quad C = PV_C \left[ \frac{r}{\left(1 - \frac{1}{(1+r)^T}\right)} \right]$$

Similarly, let  $PV_Y$  equal the present value yield of the program (i.e. the denominator in equation 2). The annualized yield of the program,  $Y$ , is:

$$(4) \quad Y = PV_Y \left[ \frac{r}{\left(1 - \frac{1}{(1+r)^T}\right)} \right]$$

Dividing equation (3) by equation (4) gives:

$$(5) \quad \frac{C}{Y} = \frac{PV_C \left[ \frac{r}{\left(1 - \frac{1}{(1+r)^T}\right)} \right]}{PV_Y \left[ \frac{r}{\left(1 - \frac{1}{(1+r)^T}\right)} \right]} = \frac{PV_C}{PV_Y} = \frac{\sum_{t=1}^T \frac{C_t}{(1+r)^t}}{\sum_{t=1}^T \frac{Y_t}{(1+r)^t}} = U$$

Equation (5) and equation (2) show that calculating unit cost by dividing the annualized cost of the program by the annualized yield is mathematically equivalent to dividing the present value cost of the program by the present value yield of the program. Both formulations result in the unit cost that will fully recover the present value cost of the program.

### Unit Cost Calculation Example

The following simple example illustrates the unit cost calculation and demonstrates that it results in a unit cost that fully recovers the present value cost of the conservation measure. For this example, it is assumed that the real cost of capital (i.e. the project discount rate) is 3%.

Assume a conservation program to replace toilets has a per toilet cost of \$400. This program incurs this cost in the year a toilet is replaced. Replaced toilets save, on average, 13,000 gallons of water per year. However, over time these toilets eventually would have been replaced by the plumbing code. Past studies have indicated that roughly 4% of the existing stock of non-efficient toilets is replaced each year with efficient toilets because of the plumbing code. This effectively means that the water savings attributed to the program decays at a rate of 4% per year. The following table shows the projected costs and water savings over 30 years from replacing one toilet. In the year the toilet is installed only half the annual water savings are



counted because the month the toilet was replaced is assumed to be unknown. Therefore, the mid-point of the year is used.

In the following table, the present value of annual program cost is calculated in column (5) and the present value of annual saved water is calculated in column (6). The sum of column (5) divided by the sum of column (6) yields the unit cost, per equation (2).

Column (7) is the product of column (4) – annual saved water – and the calculated unit cost. Column (8) is the present value of column (7). The sum of column (8) is exactly \$400, thus showing that the calculated unit cost fully recovers the present value cost of the program.

**Example Unit Cost Calculation**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Toilets Replaced	Program Cost	Water Saved (af/yr)	Pres. Val. Col (3)	Pres. Val. Col (4)	Col (4) X Unit Cost	Pres. Val. Col (7)
0	1	\$400	0.0230	\$400.00	0.0230	\$18.27	\$18.27
1			0.0383	\$0.00	0.0372	\$30.40	\$29.52
2			0.0368	\$0.00	0.0347	\$29.19	\$27.51
3			0.0353	\$0.00	0.0323	\$28.02	\$25.64
4			0.0339	\$0.00	0.0301	\$26.90	\$23.90
5			0.0325	\$0.00	0.0281	\$25.82	\$22.27
6			0.0312	\$0.00	0.0262	\$24.79	\$20.76
7			0.0300	\$0.00	0.0244	\$23.80	\$19.35
8			0.0288	\$0.00	0.0227	\$22.85	\$18.03
9			0.0276	\$0.00	0.0212	\$21.93	\$16.81
10			0.0265	\$0.00	0.0197	\$21.05	\$15.67
11			0.0255	\$0.00	0.0184	\$20.21	\$14.60
12			0.0244	\$0.00	0.0171	\$19.40	\$13.61
13			0.0235	\$0.00	0.0160	\$18.63	\$12.68
14			0.0225	\$0.00	0.0149	\$17.88	\$11.82
15			0.0216	\$0.00	0.0139	\$17.17	\$11.02
16			0.0208	\$0.00	0.0129	\$16.48	\$10.27
17			0.0199	\$0.00	0.0121	\$15.82	\$9.57
18			0.0191	\$0.00	0.0112	\$15.19	\$8.92
19			0.0184	\$0.00	0.0105	\$14.58	\$8.32
20			0.0176	\$0.00	0.0098	\$14.00	\$7.75
21			0.0169	\$0.00	0.0091	\$13.44	\$7.22
22			0.0163	\$0.00	0.0085	\$12.90	\$6.73
23			0.0156	\$0.00	0.0079	\$12.38	\$6.27
24			0.0150	\$0.00	0.0074	\$11.89	\$5.85
25			0.0144	\$0.00	0.0069	\$11.41	\$5.45
26			0.0138	\$0.00	0.0064	\$10.96	\$5.08
27			0.0133	\$0.00	0.0060	\$10.52	\$4.74
28			0.0127	\$0.00	0.0056	\$10.10	\$4.41
29			0.0122	\$0.00	0.0052	\$9.69	\$4.11
30			0.0117	\$0.00	0.0048	\$9.31	\$3.83
			<b>Sum:</b>	<b>\$400.00</b>	<b>0.5039</b>		<b>\$400.00</b>
			<b>Unit Cost (\$/AF):</b>	<b>\$793.78</b>			

## Attachment 2

### Original SFPUC Retail Demand Model

#### Double Counting of Water Losses Due to Meter Under-Registration

This attachment explains how the original retail demand model double counted meter under-registration in the demand projections.

- Total in-city retail water production is the sum of in-city retail demands and in-city system losses.
- Under the original model specification, in-city retail demands are the sum of water end uses in the single-family, multi-family, and non-residential customer segments.
- The sum of these end uses, in turn, is equal to metered water sales plus unregistered water delivery due to meter under-registration error.
- Under the original model specification, system losses are equal to physical water losses due to leaks, breaks, fire flow, and system flushing plus unregistered water delivery due to meter under-registration error.
- Thus the original model specification, which sums in-city retail demands and system losses, double counts water losses due to meter under-registration error.
- SFPUC estimates total system losses of 9.0%, of which roughly 2.1% are attributed to meter under-registration error. Thus, under the original model specification, approximately 23% (2.1/9.0) of the system loss estimate is already counted within the retail demand estimate.

The following equations demonstrate this algebraically.

Define the following variables:

T = total in-city retail water production, including system losses

R = in-city retail demands

$L_T$  = in-city system losses, including losses due to meter under-registration

$L_M$  = in-city system losses due to meter under-registration

$L_O$  = in-city system losses from other sources

S = metered retail sales

E = end uses of water by retail customers

Under the original model specification, total in-city retail water production, including system losses are defined as in equation (1):

$$(1) \quad T = R + L_T = R + L_M + L_O$$

The original model specification defines in-city retail demands as in equation (2):

$$(2) \quad R = E$$

End uses of water by retail customers, E, must equal metered retail sales plus losses due to meter under-registration, as in equation (3):

$$(3) \quad E = S + L_M$$

Substituting equation (3) into (2) and (2) into (1) gives:

$$(4) \quad T = S + 2L_M + L_O$$

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# **Appendix E**

## **Summary of San Francisco's Response to 1987-92 Drought Experience**



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# Summary of San Francisco's Response to 1987-92 Drought Experience

## **Background:**

The 1987-92 six year drought provides an example of how the near-term drought management process works in times when the operational capabilities of Hetch Hetchy and other water supplies available to the SFPUC are taxed to a point that forces drastic actions to avoid running out of water. By the sixth year of that drought period, many of the programs and actions identified in San Francisco's current Retail Water Shortage Allocation Plan (adopted in December 2001) had been implemented. The following describes some of the major actions that occurred.

## **Demand Reductions:**

The extended drought forced San Francisco to adopt a mandatory rationing program, enforced by stiff excess use charges and the threat of shut-off for continued violations of water use prohibitions. Mandatory rationing was in effect May of 1988 through May of 1989, re-instituted in May of 1990, and continued until March of 1993. A Water Shortage Emergency Resolution was passed by the SFPUC on April 28, 1988 declaring these rationing periods (Resolution No. 88-0155). A copy of this resolution can be found at the end of this appendix.

The SFPUC's water rationing program was one of the toughest in the state and the most stringent imposed by any major urban water supply agency. Although the specifics of the program varied over time, the basic outline of the mandatory rationing program was to achieve a 25 percent reduction to 1987 (pre-drought) consumption (system-wide), with water allocations set on an account-by-account basis.

To provide a strong incentive for customers to use no more water than their allotment, the SFPUC adopted a rate structure that incorporated excess use charges. Any customer that used less water than its allotment was charged the normal rate per unit of water consumption, while any customer who used more than its allotment was charged a multiple of the normal rate for every unit of consumption above its allotment. As of January 1, 1992 (the last year of the rationing program), the rate structure shown in the table below applied to SFPUC customers.

<b>Excess Use Charges</b>	
If Water Consumption Is (Over Allotment)	Excess Use Charge Will Be (Times Normal Rate)
Up to 10%	2
10.01 - 20%	8
20.01% or over	10

In the event that water was used in excess of the customer's specified allotment, the SFPUC could, after one written warning, install a flow restrictor on the customer's service line. The charge to install and remove the restricting device is shown in the table below. If a customer continued to consume water in excess of its allotment, the SFPUC had the authority to discontinue the customer's water service and require the customer to bear the cost for the re-connection of water service.

<b>Fee For Installing Flow Restricting Devices</b>	
Meter Size	Installation/Removal Cost
to 1"	\$95
1" to 2"	\$149
3" and larger	Actual cost

In addition to pricing disincentives for excess water use, numerous water use restrictions were adopted and enforced. San Francisco retail customers were required to comply with the following water use prohibitions and restrictions:

- Water waste, including but not limited to, any flooding or runoff into the street or gutters, was prohibited.
- Hoses could not be used to clean sidewalks, driveways, patios, plazas, homes, businesses, parking lots, roofs, awnings or other hard surfaces areas.
- Hoses used for any purpose had to have positive shutoff valves.
- Restaurants served water to customers only upon request.
- Potable water was not to be used to clean, fill or maintain levels in decorative fountains.
- Use of additional water was not allowed for new landscaping or expansion of existing facilities unless low water use landscaping designs and irrigation systems were employed.
- Water service connections for new construction were granted only if water saving fixtures or devices were incorporated into the plumbing system.
- Use of potable water for consolidation of backfill, dust control or other non-essential construction purposes was prohibited.
- Irrigation of lawns, play fields, parks, golf courses, cemeteries, and landscaping of any type with potable water would be reduced by at least the amount specified for outside use in the adopted rationing plan.
- Verified water waste as determined by the Water Department would serve as prima facie evidence that the allocation assigned to the water account is excessive; therefore, the allocation was subject to review and possible reduction, including termination of service.
- Water used for all cooling purposes was to be recycled.
- The use of groundwater and/or reclaimed water for irrigation of golf courses, median strips, and similar turf areas was strongly encouraged.
- The use of groundwater and/or reclaimed water for street sweepers/washers was strongly encouraged.

In addition to water use prohibitions and directives specifically responsive to the drought, the SFPUC coincidentally was implementing long-term conservation programs, which also lowered water demands during the drought period (refer to the Demand Management discussion). Following the drought, several of the measures described above were adopted by San Francisco into permanent, on-going programs.

**Water Management:**

In addition to effecting reductions to water demands, the SFPUC also employed water management activities to control the severity of water shortages to its customers.

During the drought and for the first time in history, the SFPUC utilized a Delta supply within its system. The SFPUC imported water from the Delta through use of State Water Project South Bay Aqueduct facilities. The sources of water transferred included transfers via the California Emergency Water Bank, Placer County and the Modesto Irrigation District. The waters were diverted from the South Bay Aqueduct into the SFPUC's San Antonio Reservoir and then treated and integrated into SFPUC's water distribution system.

The amount of water actually delivered to the SFPUC was constrained due to numerous factors including the lack of willing sellers, allocation procedures, lack of priority in use of the State transmission facilities, storage constraints in San Antonio Reservoir, and water treatment constraints within the SFPUC's system. The total water that was imported into the SFPUC's system amounted to a maximum of approximately 31,000 acre-feet in one year, and in total for the drought period amounted to 59,000 acre-feet.

The importation of additional water into the SFPUC's system allowed the continuation of a 25 percent system-wide rationing program as compared to a potentially higher level of rationing had the transfers not occurred.

**System Response and Effects:**

The system-wide goal of reducing water use by 25 percent was achieved. However, the reduction was not accomplished without cost or hardship.

To achieve its annual 25 percent system-wide rationing goal, the SFPUC targeted a reduction of indoor consumption by 10 percent and outdoor consumption by 60 percent.

Due to the nature of the allocation formula for water allotments and the level of system-wide reduction goals, instances occurred where individual users or wholesale water customers were burdened with up to twice the system-wide average in delivery reductions.

Some of the costs incurred by individuals, property owners and renters include:

- The cost of installing low-flow toilets, retrofit kits for toilets and showerheads, and special low-water use landscaping and irrigation systems
- The financial losses resulting from loss of lawns, plants and trees due to the 60 percent reduction in water available for irrigation
- The cost of excess use charges (\$12,300,000 in excess use charges was billed to retail accounts in fiscal year 1991-92 alone)

The ability of SFPUC's retail customers to achieve a 25 percent reduction in the future is highly unlikely due to the "hardening" of water demands that occurred during and subsequent to the drought. The rationing programs implemented by San Francisco during the 1987-92 drought were measured by comparison to calendar year 1987 water deliveries, i.e., pre-drought conditions.

During the 1987-92 drought San Francisco's retail and wholesale water customers implemented numerous conservation measures that have led to permanent per capita water usage savings. San Francisco's current

water demand is likely hardened as compared to the 1987 level of water demand. This situation leads to a conclusion that comparable rationing goals (e.g., up to 25 percent reduction) would be more difficult to achieve since the drought, and would require measures in excess of those implemented during the 1987-92 drought to achieve a comparable percentage of delivery reduction.

As the level of rationing increases, the economic and societal impacts become more severe. The SFPUC has first hand experience in attempting to employ rationing to levels, which are intolerable to citizens and businesses.

In 1991, water storage had deteriorated and the SFPUC was forced to immediately adopt a 45 percent system-wide rationing plan. It was proposed the reduction would be achieved through a 33 percent reduction to inside water use and a 90 percent reduction to outside water use.

San Francisco's plan for meeting its rationing goal included the following minimum and maximum criteria:

- Maximum Allocation for Single and Multi-family Residences. No single-family residence shall receive an allocation of more than 300 gallons per day; no multi-family residence shall receive an allocation of more than 150 gallons per day times the number of living units in the building.
- Minimum Allocation for All Residential Accounts. A minimum of 50 gallons per day per documented resident will be allowed. However, a minimum allocation will not be approved to increase an allocation above current usage absent a documented change in circumstances.
- Irrigation Services. Accounts classified for irrigation only will be reduced by 90 percent.
- Commercial/Industrial Allocations. Commercial and industrial allocations will be reduced by 32 percent. Hospitals and other health care facilities may be subject to lesser restrictions subject to verification that all conservation measures are in place; such approval shall require an on-site conservation inspection.
- Allocations for New Accounts. Initial allocations will be established at 50 gallons per day. These allocations will be re-evaluated after customers have installed retrofit kits provided by the San Francisco Water Department. After verification of installation, allocations will be calculated on the basis of the number of documented residents within a household, or, in the case of commercial or industrial customers, on the basis of business data supplied to the Department.

Additional water use restrictions and prohibitions were enforced:

- The washing of all automobiles, motorcycles, RVS, trucks, transit vehicles, trailers, boats, trains and airplanes was prohibited outside of a commercial washing facility.
- Exceptions to the above use restriction were windows on all vehicles and such commercial or safety vehicles requiring cleaning for health and safety reasons.
- Water used for all cooling purposes or for commercial car washes had to be recycled.
- The use of potable water on golf courses was limited to the irrigation of putting greens. The use of groundwater and reclaimed water was permitted when approved by the Department of Health.

- The filling of new swimming pools, spas, hot tubs or the draining and refilling of existing pools, etc., was prohibited; topping off was allowed to the extent that the designated allocation was not exceeded.
- The irrigation of median strips with potable water was prohibited. The use of groundwater and reclaimed water was permitted when approved by the Department of Health.
- The use of potable water for street sweepers/washers was prohibited. The use of groundwater and reclaimed water was permitted when approved by the Department of Health.

Public and commercial response to 45 percent rationing was overwhelmingly negative. During the first weeks after notification of the program, SFPUC received over 2,000 appeal letters per day. In the month before rationing was returned to 25 percent, 19,000 appeals, 12,000 telephone calls, and 1,500 walk-in complaints occurred.

Both the allocation levels and new prohibitions required to meet this level of rationing would have had a devastating effect on commercial enterprises. Some water uses would have simply been prohibited. Simply put, rationing had been taken to a level that was considered intolerable to citizens and had become economically disastrous.



RESOLUTION No. 88-0155

WHEREAS, The San Francisco Water Department obtains water from the reservoirs operated by the Hetch Hetchy Water and Power and from local Bay Area reservoirs; and

WHEREAS, Due to critically low supplies of water within the reservoirs and anticipated low levels of inflow into the reservoirs, such that unless consumption is decreased there may be insufficient water supplies for human consumption, sanitation and fire protection; and

WHEREAS, Decreases in water consumption may be accomplished by reducing allocations to the Water Department's wholesale customers and by imposing water use restrictions on the Water Department's retail customers, as set forth in the Water Rationing Rules and Regulations, issued on April 21, 1988 and attached hereto as Water Rationing Rules and Regulations; and

WHEREAS, This Commission recognizes the need to declare a Water Shortage Emergency (Water Code Sec. 350, et. seq.) due to critically low water supplies now available, and the need for a reduction in water use by the San Francisco Water Department's Suburban Wholesale Customers; and

WHEREAS, This Commission recognizes the need to adopt a Water Conservation Program (Water Code Sec. 375, et. seq.) due to the critically low water supplies now available, and the need for a reduction in water use by the San Francisco Water Department's retail customers; and

WHEREAS, The City of San Jose is, by Resolution 85-0256, a temporary and interruptible wholesale customer of the Water Department, and the Settlement Agreement and Master Water Sales Contract between the City and County of San Francisco and certain Suburban Purchasers in San Mateo County, Santa Clara County and Alameda County (Settlement Agreement) requires action by the Commission to interrupt service to the City of San Jose (Section 8.17); and

WHEREAS, The City of Santa Clara is, by Resolution 85-0257, a temporary and interruptible wholesale customer of the Water Department, and the Settlement Agreement requires action by the Commission to interrupt service to the City of Santa Clara (Section 8.17); and

WHEREAS, Additional funding in the amount of \$648,780 for FY 1988/89 has been identified by the Water Department for implementation of a mandatory water rationing program; and

WHEREAS, on April 21, 1988, the Water Department submitted to this Commission a Water Conservation Program; and

WHEREAS, The Conservation Program shall cease to exist in whole or in part at such time as the Commission finds that the supply of water available to the Water Department's service area has been replenished or augmented so that there are sufficient supplies to meet the needs of the Water Department's customers without the continued implementation of these measures; and

0019E

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission  
at its meeting of APRIL 22 1988

  
Secretary, Public Utilities Commission

PUBLIC UTILITIES COMMISSION  
CITY AND COUNTY OF SAN FRANCISCO

RESOLUTION No. 89-0155

WHEREAS, The recommended Water Conservation Program has received wide-spread public distribution; and

WHEREAS, Members of the public have been given an opportunity to, and have expressed their views on the recommended Water Conservation Program in a public hearing; now, therefore be it

RESOLVED, That this Commission declares a Water Shortage Emergency; and

BE IT FURTHER RESOLVED, That this Commission adopts a Water Conservation Program; and

BE IT FURTHER RESOLVED, That this Commission approves the Water Conservation Program dated April 21, 1988 as amended April 28, 1988, and directs that it be placed in force on May 1, 1988; and

BE IT FURTHER RESOLVED, That it is not the Commission's intention to interrupt water service to the cities of San Jose and/or Santa Clara; however, pursuant to its obligation under the Settlement Agreement and Master Water Sales Contract this Commission authorizes the General Manager of the Water Department to interrupt water service to the cities of San Jose and/or Santa Clara if necessary to achieve the required water saving, however, prior to actual interruption of service to either the City of San Jose or Santa Clara, the General Manager of the Water Department shall report to the Commission the need for interruption and receive affirmation from the Commission prior to institution of the interruption; and the Commission further directs the General Manager of the Water Department to mitigate the effect of the interruptions to the extent possible and consistent with the needs of San Francisco's permanent customers; and

BE IT FURTHER RESOLVED, That this Commission hereby authorizes the additional budget needs to be added to the Water Department's Conservation Programmatic Budget, thus amending the Water Department's budget request for FY 1988/89; and

BE IT FURTHER RESOLVED, That this Commission hereby designates Tuesday, May 24, 1988 as the date for a public hearing by the Public Utilities Commission for considering proposals for rate increases and additional charges for water service and water supplied by the San Francisco Water Department to retail customers; and

BE IT FURTHER RESOLVED, That this Commission hereby designates Tuesday, May 24, 1988 as the date for a public hearing by the Public Utilities Commission for considering proposals for rate structure adjustments for water service and water supplied by the San Francisco Water Department to wholesale customers; and

BE IT FURTHER RESOLVED, That the revenue requirements and an analysis of the rate increases, rate structure adjustments and additional charges be made available for public inspection and review beginning Monday, May 16, 1988 in Room 287, City Hall, San Francisco.

0019f

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission  
at its meeting of APRIL 23 1988

  
Secretary, Public Utilities Commission

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# **Appendix F**

## **Retail Water Shortage Allocation Plan**

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# **RETAIL WATER SHORTAGE ALLOCATION PLAN**

December 11, 2001



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## **I. Introduction**

### **A. Purpose and Need for Retail Water Shortage Allocation Plan**

The intent of the Retail Water Shortage Allocation Plan (Plan) is to provide the San Francisco Public Utilities Commission (SFPUC) with a guidance tool to be used for allocating water amongst the City and County San Francisco retail customers (“retail customers”) in the event of a water shortage due to drought. Additionally, the Plan provides retail customers with a framework for understanding how the SFPUC intends to allocate water resources during times of water shortage due to drought. The expectation is that this Plan can help retail customers better anticipate how their individual water supply will be affected during a drought.

The need for this Plan has come about as a result of a series of actions and experiences including the SFPUC’s adoption of the Interim Water Shortage Allocation Plan and the drought of 1987-1992. At the time of the 1987-1992 drought, the SFPUC, in the absence of a drought plan, reacted to the drought by adopting a short-term approach for allocating water resources amongst both retail and wholesale customers. This Plan in combination with the Interim Water Shortage Allocation Plan puts in place a long-term plan for responding to levels of water shortage due drought. The following sections describe these actions and experiences in more detail.

#### **1. *Interim Water Shortage Allocation Plan***

In October 2000, the SFPUC adopted an Interim Water Shortage Allocation Plan (IWSAP) that provides a method and process by which the SFPUC intends to allocate water resources between its collective retail customers and wholesale customers during system-wide water shortages of up to 20 percent resulting from drought. The IWSAP was subsequently adopted by all 29 wholesale customers between October 2000 and June 2001 thereby officially activating the allocation method and process outlined in the IWASP.

The allocation method adopted in the IWSAP relies on a percentage decrease of inside and outside water use and provides a notification schedule for informing customers of an upcoming drought. The IWSAP also outlines a structure for water transfers between the retail and wholesale customers. Finally, the IWSAP identifies an enforcement process for ensuring that the allocations are adhered to through the application of excess use charges.

This Retail Plan is consistent with the IWSAP in its methodology, schedule and enforcement process.

#### **2. *Past Drought Experience***

The SFPUC, along with the entire State of California, experienced a significant drought from 1987 to 1992. During this time the SFPUC experienced system-wide shortages of 25 to nearly 45 percent. In response to the drought, the SFPUC instituted mandatory rationing which required retail customers to reduce indoor and outdoor consumption based on specified allocations for those use types. As the drought progressed, SFPUC

retail customers were required to reduce total consumption by 14 percent, up to approximately 32 percent. If customers consumed beyond their allotted amount they were faced with excess use charges. For the most part, customers were able to reduce their indoor use through installation of water-conserving devices such as low-flow toilets, showerheads and faucet aerators.

The Customer Service Bureau of the SFPUC created a short-term rationing unit to implement the drought program. The rationing unit's primary responsibility was to enforce mandatory rationing and manage the allocation and appeal process. Throughout the drought, the rationing unit received 131,000 requests for modified allocations. In general, allocations were modified on the basis of increased occupancy, medical exemptions, allowances for past conservation, increased business, and other miscellaneous reasons. Modifications were based on a per capita allotment.

The rationing unit also performed audits on those customers who consumed water beyond their allocations. This was done in an effort to identify the presence of leaks or other system failures that resulted in excess use.

## **B. Long-term Conservation Programs and Existing Demand Reduction Policies/Ordinances**

### ***1. Long-term Conservation Programs***

In 1986, prior to the 1987-1992 drought, the SFPUC established a long-term conservation program. A conservation administrator was hired to implement the program. The programs, at that time, included public information and education; a conservation device retrofit program; landscape water audit program; and a low-use landscaping program. During the drought the long-term conservation program continued.

In 1991, the SFPUC elevated its long-term conservation program when it became a signatory to the *Memorandum of Understanding Regarding Urban Water Conservation in California*. This MOU outlined water-conserving Best Management Practices (BMPs) that all signatories agreed to implement. Today's BMPs include:

- Interior and Exterior Water Audits and Incentive for Single Family Residential and Multi-family Residential Customers
- Residential Plumbing Retrofit
- System Water Audits, Leak Detection and Repair
- Metering with Commodity rates for all New Connections and Retrofit of Existing Connections
- Large Landscape Conservation Programs and Incentives
- Horizontal Axis Washer Rebate Programs
- Public Information
- School Education Programs
- Commercial, Industrial and Institutional Water Conservation
- Wholesale Agency Assistance Programs
- Conservation Pricing
- Conservation Coordinator
- Water Waste Prohibition

- Residential Ultra Low Flush Toilet Replacement Programs

Through the implementation of the long-term conservation program, the SFPUC retail residential customers have reduced their per capita per day (pcpd) demand by 12 gallons. That is, prior to the 1987-1992 drought per capita residential demand was at 73 gallons per capita per day (gpcpd) while current demand is at 61 gpcd. Approximately 95 percent of SFPUC retail customers have signed affidavits confirming that they have installed water-conserving devices in their homes to eliminate water waste. Such devices include low flush toilets, faucet aerators and low flow showerheads.

## **2. Existing Demand Reduction Policies/Ordinances**

In addition to the long-term conservation programs in place, the SFPUC and Board of Supervisors have implemented several demand reduction policies and ordinances that encourage the reduction of potable water use. These policies and ordinances range from requiring installation of conservation devices at the time of residential resale to development of groundwater and recycled water sources. The following summarizes measures adopted through 2001.

### Water Conservation Ordinances

*Ordinance 392-90: Water Conservation Fixtures in New and Renovated Buildings*<sup>1</sup>. This ordinance changed San Francisco plumbing codes to require all new buildings (and all buildings in which the water drainage system is substantially altered modified or renovated) to install/retrofit toilets and urinals with fixtures using no more than 1.6 gallons per flush and 1 gallon per flush, respectively.

*Ordinance 185-91 and Ordinance 346-91: Plumbing Fixture Retrofit in Multi-family Residential Buildings and Single-Family Residential Buildings*<sup>2</sup>. Collectively these ordinances require water conservation device retrofits within multi-family and single-family residential buildings upon sale, transfer of title, or major improvement to a dwelling. The ordinance also required all applicable fixtures within multi-family residential units to be retrofitted within three years subsequent to the effective date of the ordinances (by the end of 1994).

Retrofit requirements include:

- Installation of Showerheads with a capacity not exceeding 2.5 gallons per minute;
- Installation of aerators attached to sinks and basins where possible; and
- Installation of flush reducers, flow restrictors, volume reducers, or toilets with a capacity not exceeding 3.5 gallons per flush.

*Ordinance 359-91: Plumbing Fixture Retrofit of Commercial Buildings, including Tourist Hotels and Motels*<sup>3</sup>. This ordinance required the same plumbing retrofit requirements for commercial buildings, including tourist hotels and motels as was required for single and multi-family residential buildings. Compliance of this ordinance was also required by 1994.

<sup>1</sup> San Francisco Plumbing Code sections 905 and 1001.1

<sup>2</sup> San Francisco Housing Code, Chapter 12A, Section 12A01-12A14

<sup>3</sup> San Francisco Building Code, Chapter 53B, Sections 53B01-53B15

*Ordinance 92-91(as amended by Ordinance 192-00): Water Use for Landscaping in New Developments*<sup>4</sup>. This ordinance requires particular water-conserving landscape strategies be employed for any new commercial, governmental or residential (two or more units) building on a lot exceeding 3,500 square feet or with a landscaping area of more than 1,000 square feet. The specific requirements of the ordinance include:

- Total area devoted to turf grass; decorative water use and water intensive planting must be limited to 15% of the parcel area. The limitation does not apply to children’s play areas, public recreation areas or other such areas;
- Strips of turf less than 8 feet wide are prohibited;
- Water intensive plants must be grouped together and must be irrigated on a separate cycle from turf grass;
- Slopes exceeding 10% adjacent to the hardscape cannot consist of turf grass;
- All large areas must have separately metered irrigation systems;
- Valves and circuits shall be separated based on water use and must be set to operate between 5 p.m. and 10 a.m.; and
- A soil analysis must be done on the soil used for the landscape. A report specifying how the soil deficiencies will be meet must accompany the application for the meter.

*Ordinance 148-99: Plumbing Retrofit of Municipal Buildings*<sup>5</sup>. This ordinance requires all municipal buildings to replace their water-inefficient toilets with 1.6 gallons per flush toilets and showerheads with 1.5 gallons per minute showerheads by June 6, 2005.

#### Recycled Water Ordinances

*Ordinances 390-91 and 391-91(as amended by Ordinance 393-94): Mandatory Use of Reclaimed Water*<sup>6</sup>. These ordinances require the development of a Recycled Water Master Plan including the designation of recycled (or reclaimed) water use areas within San Francisco and requires the installation of dual plumbing systems within the recycled water use areas for the following situations:

- New or remodeled buildings and all subdivisions (except condominium conversions) with a total area of 40,000 square feet or more; and
- New and existing irrigated areas of 1,000 square feet or more.

*Ordinance 175-91: Mandatory Use of Non-Potable Water for Soil Compaction and Dust Control*<sup>7</sup>. This ordinance requires the use of non-potable water for soil compaction and dust control during construction and demolition projects.

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<sup>4</sup> San Francisco Administrative Code, Chapter 63, 63-63.11

<sup>5</sup> San Francisco Administrative Code, Chapter 82, Section 4.

<sup>6</sup> San Francisco Public Works Code, Article 22, Sections 1200-1210

<sup>7</sup> San Francisco Public Works Code, Article 21, Sections 1100-1107

### Water Waste Prohibitions

The Customer Service Bureau currently enforces several water waste prohibitions through a complaint/inspection process. The following prohibitions are subject to that process:

- Water waste, including but not limited to, any flooding or runoff into the street or gutters is prohibited;
- Hoses used for any purpose must have positive shut-off valves;
- Restaurants shall serve water to customers only upon request; and
- Water used for all cooling purposes and commercial car washes must be recycled.

### **3. *Relationship between Future Demand Reductions and Existing Long-term Conservation Programs***

The SFPUC retail customers are facing a hardened demand as a result of long-term conservation programs and installation of water-conserving devices during the 1987-92 drought. As a result of these factors, residential demand has been reduced by 12 gallons per capita per day (gpcpd) since pre-drought demand levels. In addition, approximately 95 percent of residential customers have signed affidavits attesting to the fact that they have installed low-flush toilets, faucet aerators and low-flow showerheads. Furthermore, the SFPUC's consistent implementation of BMPs for water conservation, as identified above, has resulted in hardened demand for commercial, industrial and institutional customers.

This hardened demand means that reducing demand during future droughts will be challenging. As mentioned previously, during the 1987-92 drought there was an opportunity to reduce demand by installing low-flush toilets, faucet aerators and low-flow showerheads. That opportunity has been significantly reduced. This means that during the next drought demand reduction will most likely come from changing the frequency in which water-consuming devices are used. For example, reducing the number of times the toilet is flushed or running the washing machine less frequently.

Despite the challenge, there is a need for the SFPUC to adopt a plan to be implemented during droughts that will result in reducing water delivery from the SFPUC reservoir system. This includes adopting a water shortage allocation plan, the principal objective of this Retail Plan.

### **C. Components of the Plan**

The Retail Plan consists of two primary sections: (1) Declaring a water shortage and (2) Allocation method and process. The former section describes the process for identifying and declaring a water shortage due to drought. The latter section describes the process of allocating water amongst retail customers during a drought, the process of appealing those allocations and enforcement of allocations.



## II. Process for Declaring Shortage

### A. Timing and Assessment of Water System Conditions

The SFPUC water supply system relies on precipitation and snowmelt stored in its reservoirs from one year to the next. It is this “carry-over” storage that the SFPUC relies on to be able to meet wholesale and retail demand. Because of the importance of “carry-over” storage, the water supply condition of the SFPUC system is constantly monitored and evaluated. Look-ahead forecasts are updated as a year’s hydrology and operations change. Generally in early winter of any year, SFPUC staff can begin providing a forecast of water supply conditions for the upcoming year based on known and anticipated winter and spring precipitation and snowpack. The annual precipitation, snowmelt, and “carry-over” storage together constitute the SFPUC’s reservoir storage condition. Using data for each of these factors, SFPUC staff is able to determine whether the reservoir system will be capable of serving full deliveries to the SFPUC customers.

Consistent with the Interim Water Shortage Allocation Plan, if the SFPUC reservoir system appears incapable of meeting system-wide demand due to drought, the SFPUC is expected to declare a water shortage by March 31 of that drought year. The General Manager, or designee, is responsible for declaring such a shortage.

### B. Delivery Reduction Levels

To aid in balancing the SFPUC supplies with demands during drought, the SFPUC has developed a general protocol that links anticipated total<sup>8</sup> reservoir storage conditions to suggested delivery reductions. The SFPUC total reservoir system has the capacity to store up to 1,627,000 acre-feet. In relation to this storage capacity and a current system-wide demand of 260 million gallons per day (mgd), when it appears the total system storage will not reach above approximately 1,000,000 acre-feet at the end of the spring-summer snowmelt, the SFPUC may begin to evaluate whether the reservoir system will be capable of serving full deliveries to its customers.<sup>9</sup> If the reservoir system is determined incapable of serving full deliveries to SFPUC customers, the SFPUC may impose a level of delivery reduction. As anticipated reservoir storage becomes more depleted during drought, a greater level of delivery reduction may be required. There are three stages of water delivery reduction that correspond to the SFPUC protocol. The three stages are:

- (1) Stage 1 – requires system-wide demand reduction of 5 to 10 percent. This stage results in a voluntary rationing request of customers. At this stage, it is likely that retail water customers will be alerted to the status of water supply conditions and reminded of water use prohibitions as well as informed of any incentives and programs available to reduce water demand (i.e. acceleration of long-term conservation programs such as toilet rebate programs, leak detection audits, and the like)

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<sup>8</sup> “total reservoir storage” includes all system reservoirs (Lloyd, Eleanor, Hetch Hetchy, San Anotonio, Calaveras, Crystal Springs, Pilarcitos, and San Andreas) and the water bank at New Don Pedro Reservoir.

<sup>9</sup> This reduction point is subject to change as total system-wide demand increases over time.

- (2) Stage 2 – requires system-wide demand reduction of 11 to 20 percent. This stage results in mandatory rationing programs. In addition to implementing Stage 1 actions, all customers will receive an allocation of water. Any use beyond that allocation will become subject to excess use charges, installation of flow restrictor devices or shut-off of water. The latter two consequences may also be imposed if water waste prohibitions are violated.
- (3) Stage 3 – requires system-wide demand reduction of 20 percent or greater. This stage results in mandatory rationing programs and results in the same actions identified under Stage 2 with further reduced allocations.

### **C. Initiation of Delivery Reduction Program**

Prior to the initiation of any of water delivery reductions, whether it be initial implementation of reduced delivery or increasing the severity of water shortage, the SFPUC will outline the water supply situation, proposed water use reduction objectives, alternatives to water use reductions, methods to calculate water use allocations and adjustments, compliance methodology and enforcement measures, and budget considerations at a regularly scheduled Commission meeting for public input. The meeting will be advertised and the public will be invited to comment on the SFPUC's intent to reduce deliveries in accordance with the requirements of California Water Code Section 6066 of the Government Code.

**Revenue and Expenditure Impacts During Water Shortages.** The SFPUC uses a uniform volume charge. As a result, as sales decrease revenues are lost on a per unit basis. Because the marginal cost of water production is miniscule, as production is reduced the cost of service remains the same. Therefore, during a water shortage, as occurred during the 1987-92 drought, the SFPUC may need to raise water rates to make up for lost revenue due to less water use. The SFPUC retail rates, however, are frozen until 2006 due to Proposition H. As a result, retail rates cannot be adjusted to make up for revenue shortfalls unless voters repeal the Proposition or the Mayor declares an emergency as provided for in the City's Charter. The SFPUC does maintain an unappropriated fund balance that can be used to offset the effects of revenue shortfall. Budget considerations will be discussed at the time a drought is declared and revisited as the drought progresses.

### III. Allocation Method and Process

#### A. Types of Allocation Methods

In the event of a mandatory rationing program, the SFPUC must adopt a system for allocating water amongst its retail customers. During the 1987-1992 drought four allocation methods were considered. They were the inside/outside or seasonal allocation method, the per capita allocation method, the uniform allocation method, and the percentage allocation method. The following provides a description of each method and potential advantages or disadvantages of applying each method.

**Inside/Outside allocation method.** The Inside/Outside method, also referred to as seasonal method, applies a percent reduction to both indoor and outdoor use. To determine an individual's allocation, a base year is used and reductions are made to both inside and outside usage. Winter usage is identified as typically reflecting inside use. The average of the winter months (November, December, January, February) of the base year is used as the baseline for determining inside use for all 12 months. Usage in excess of the baseline is considered outside use. The monthly or bi-monthly inside/outside allocation is a composite of the inside use and the outside use reduced by their respective percentages. This method distributes water equitably and has been proven effective in achieving prior system-wide consumption goals. However, because this method reduces water allocations for all customers regardless of their current use, there is concern that water users consuming very low amounts of water will be affected disproportionately.

**Per capita allocation method.** The per capita allocation method applies a fixed amount of daily water for each resident. The allocation method requires that each residential occupant receives a fixed daily amount of water. To implement this method a census of the service area is required. Conducting a census is highly time consuming and the response to the survey is often statistically low and inaccurate. The method does not allow for differences in dwelling type, existing landscaping needs or special individual circumstances. A per capita allocation would prove unworkable with commercial and industrial customers and would require a different method for determining allocations.

**Uniform allocation method.** The uniform allocation method applies a fixed daily amount per dwelling unit for all residential customers. This method does not distribute water equitably to all customers, especially since it does not take into considerations the number of individuals living in the dwelling unit. As in the per capita plan, this method would prove unworkable for commercial and industrial customers.

**Percentage allocation method.** The method requires water allocation to be based on a straight percent reduction of past use. As an example to achieve a specified reduction goal, all customers would be allotted a percentage of the amount used in each billing period in the base year. The method requires a much greater reduction in inside use and could cause hardship on residential and commercial customers.

**B. Preferred Allocation Method: Inside/Outside Method**

During the 1987-92 drought the Inside/Outside method was implemented because it was found to be the most fair and reasonable method amongst the alternatives. At that time for those customers that appealed their allocations a per capita allocation was applied to the account.<sup>10</sup>

The Inside/Outside method will be applied to allocating water amongst retail customers during a water shortage due to drought. The allocation method will be applied to all accounts using more than 3 units of water per two-month billing period. A percentage reduction of inside and outside use will be applied to all accounts using more than 3 units of water during a two-month billing period. The appropriate percentage reductions to inside and outside use will be determined by the General Manager, or designee. The per capita allocation method will be used for customers who appeal their allotments. The formula will be similar in structure to that used during the 1987-92 drought. The General Manager, or designee, will determine at the time of the drought the number of gallons per capita per day to be used for the per capita method.

**C. Allocation Process**

As discussed previously, if the SFPUC anticipates that the reservoir system will be incapable of serving full deliveries to its customers, the SFPUC will announce a drought by March 31<sup>st</sup>. Consistent with the Interim Water Shortage Allocation Plan, the SFPUC will inform its retail customers of a water shortage by March 31<sup>st</sup>. The SFPUC will determine water allocations for each retail customer account using the Inside/Outside allocation method. Average winter and summer use factored into the Inside/Outside methodology will be based on water use for each retail customer from the previous year. For drought periods covering consecutive years, allocations will be based on water use for the last year prior to the drought declaration. The SFPUC will provide water use allocations to all retail customers by May 1<sup>st</sup> of the drought year. The water use allocations will become effective July 1<sup>st</sup>.

**D. Appeal Process**

On or before May 1<sup>st</sup>, retail customers will be notified of their reduced water allocations. Each retail customer will have the opportunity to appeal the allocation based on increased occupancy, medical exemptions, increased business, or other miscellaneous reasons. The SFPUC will provide retail customers with instructions on how to file appeals at the time the customers are notified of the water use allocations. The SFPUC will also inform customers of the methodology to be used in modifying allocations if they are granted.

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<sup>10</sup> For illustration purposes the following describes how the per capita method was applied to appeals. The per capita allocation was calculated based on the number of occupants and a formula of 63 gpcpd for the first occupant, 55 gpcpd for the second occupant and 50 gpcpd for each additional occupant with a maximum total of 498 gpd per dwelling unit. As the 1987-92 drought worsened, the per capita allocation was based on the number of occupants and a formula of 50 gpcpd and a maximum total of 300 gpd for single family residences. It is important to note that at the time of the drought the average residential use was 74 gpcpd. Current average demand is 61 gpcpd.

## **E. Enforcement**

The primary methods of enforcing mandatory rationing include excess use charges; installation of flow restrictors and/or shut-off of water.

During the 1987-92 drought excess use charges were applied as follows:

- If a customer consumed up to 10% over their allotment they would be charged 2 times the normal rate;
- If a customer consumed 10.01% to 20% over their allotment they would be charged 8 times the normal rate; and
- If a customer consumed 20.01% or over their allotment they would be charged 10 times the normal rate.

In the event of mandatory rationing, the SFPUC will impose excess use charges similar to those described above. The General Manager, or designee, will inform retail customers of the multiplier rate that will be applied for determining excess use charges. The SFPUC will also offer an audit at the first run-over of the allocation to determine if there are any leaks. In some cases, excess use charges may be reversed if leaks are found and repaired immediately.

In the event that water is used in excess of the customer's specified allotment, the SFPUC could, after one written warning, install a flow restrictor on the customer's service line. The customer may be charged to install and remove the flow restrictor, as was done in the 1987-92 drought. The General Manager, or designee, will determine the relevant charge at the time of the drought. If a customer continues to consume water in excess of its allotment, the SFPUC has the authority to discontinue the customer's water service and require the customer to bear the cost for the re-connection of water service.

The Landlord Pass-through Ordinance<sup>11</sup> allows landlords to pass up to 50 percent of excess use charges on to their tenants under the following conditions:

- (a) the landlord must provide written certification that permanently-installed retrofit devices to reduce water use in toilet flushing or low-flow toilets (1.6 gallons per flush), low flow showerheads (no more than 2.5 gallons per minute), and faucet aerators (where installation is physically feasible);
- (b) the landlord provides written certification that there are no plumbing leaks in the building and that any reported leaks have been fixed; and
- (c) the landlord provides a copy of the water bill for the period in which the penalty was charged.

Under mandatory rationing, the SFPUC will also specify waste water prohibitions that if violated may result in installation of a flow restrictor and shut-off of water, if the violation continues.

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<sup>11</sup> San Francisco Administrative Code Section 37.3

All or some of the following water waste prohibitions may be enforced during a drought. The General Manager, or designee, will declare and inform customers of all water waste prohibitions at the time of a drought.

***Water Waste Prohibitions***

- Water waste, including but not limited to, any flooding or runoff into the street or gutters, shall be prohibited.
- Hoses shall not be used to clean sidewalks, driveways, patios, plazas, homes, businesses, parking lots, roofs, awnings or other hard surfaces areas.
- Hoses used for any purpose shall have positive shutoff valves.
- Restaurants shall serve water to customers only upon request.
- Potable water shall not to be used to clean, fill or maintain levels in decorative fountains.
- Use of additional water shall not be allowed for new landscaping or expansion of existing facilities unless low water use landscaping designs and irrigation systems are employed.
- Water service connections for new construction shall be granted only if water saving fixtures or devices are incorporated into the plumbing system.
- Use of potable water for consolidation of backfill, dust control or other non-essential construction purposes shall be prohibited.
- Irrigation of lawns, play fields, parks, golf courses, cemeteries, and landscaping of any type with potable water shall be reduced by at least the amount specified for outside use in the adopted rationing plan.
- Verified water waste as determined by the Water Department would serve as prima facie evidence that the allocation assigned to the water account is excessive; therefore, the allocation shall be subject to review and possible reduction, including termination of service.
- Water used for all cooling purposes shall be recycled.
- The use of groundwater and/or reclaimed water for irrigation of golf courses, median strips, and similar turf areas shall be strongly encouraged.
- The use of groundwater and/or reclaimed water for street sweepers/washers shall be strongly encouraged.



- The washing of all automobiles, motorcycles, RVS, trucks, transit vehicles, trailers, boats, trains and airplanes shall be prohibited outside of a commercial washing facility.
- Exceptions to the above use restriction will apply to windows on all vehicles and such commercial or safety vehicles requiring cleaning for health and safety reasons.
- Water used for all cooling purposes or for commercial car washes shall be recycled.
- The use of potable water on golf courses shall be limited to the irrigation of putting greens. The use of groundwater and reclaimed water shall be permitted when approved by the Department of Health.
- The filling of new swimming pools, spas, hot tubs or the draining and refilling of existing pools, etc., shall be prohibited; topping off shall be allowed to the extent that the designated allocation is not exceeded.
- The irrigation of median strips with potable water shall be prohibited. The use of groundwater and reclaimed water shall be permitted when approved by the Department of Health.
- The use of potable water for street sweepers/washers shall be prohibited. The use of groundwater and reclaimed water shall be permitted when approved by the Department of Health.

# **Appendix G**

## **Water Shortage Allocation Plan**

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## WATER SHORTAGE ALLOCATION PLAN

This Interim Water Shortage Allocation Plan ("Plan") describes the method for allocating water between the San Francisco Public Utilities Commission ("SFPUC") and the Wholesale Customers collectively during shortages caused by drought. The Plan implements a method for allocating water among the individual Wholesale Customers which has been adopted by the Wholesale Customers. The Plan includes provisions for transfers, banking, and excess use charges. The Plan applies only when the SFPUC determines that a system-wide water shortage due to drought exists, and all references to "shortages" and "water shortages" are to be so understood. This Plan was adopted pursuant to Section 7.03(a) of the 1984 Settlement Agreement and Master Water Sales Contract and has been updated to correspond to the terminology used in the June 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County ("Agreement").

### SECTION 1. SHORTAGE CONDITIONS

**1.1. Projected Available SFPUC Water Supply.** The SFPUC shall make an annual determination as to whether or not a shortage condition exists. The determination of projected available water supply shall consider, among other things, stored water, projected runoff, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, allowance for carryover storage, and water bank balances, if any, described in Section 3.

**1.2 Projected SFPUC Purchases.** The SFPUC will utilize purchase data, including volumes of water purchased by the Wholesale Customers and by Retail Customers (as those terms are used in the Agreement) in the year immediately prior to the drought, along with other available relevant information, as a basis for determining projected system-wide water purchases from the SFPUC for the upcoming year.

**1.3. Shortage Conditions.** The SFPUC will compare the available water supply (Section 1.1) with projected system-wide water purchases (Section 1.2). A shortage condition exists if the SFPUC determines that the projected available water supply is less than projected system-wide water purchases in the upcoming Supply Year (defined as the period from July 1 through June 30). When a shortage condition exists, SFPUC will determine whether voluntary or mandatory actions will be required to reduce purchases of SFPUC water to required levels.

**1.3.1 Voluntary Response.** If the SFPUC determines that voluntary actions will be sufficient to accomplish the necessary reduction in water use throughout its service area, the SFPUC and the Wholesale Customers will make good faith efforts to reduce their water purchases to stay within their annual shortage allocations and associated monthly water use budgets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits, or impose a ceiling on further accumulation of bank credits, consistent with Section 3.2.1 of this Plan.



**1.3.2 Mandatory Response.** If the SFPUC determines that mandatory actions will be required to accomplish the necessary reduction in water use in the SFPUC service area, the SFPUC may implement excess use charges as set forth in Section 4 of this Plan.

**1.4. Period of Shortage.** A shortage period commences when the SFPUC determines that a water shortage exists, as set forth in a declaration of water shortage emergency issued by the SFPUC pursuant to California Water Code Sections 350 et seq. Termination of the water shortage emergency will be declared by resolution of the SFPUC.

## SECTION 2. SHORTAGE ALLOCATIONS

**2.1. Annual Allocations between the SFPUC and the Wholesale Customers.** The annual water supply available during shortages will be allocated between the SFPUC and the collective Wholesale Customers as follows:

Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The water allocated to the SFPUC shall correspond to the total allocation for all Retail Customers.

**2.2 Annual Allocations among the Wholesale Customers.** The annual water supply allocated to the Wholesale Customers collectively during system wide shortages of 20 percent or less will be apportioned among them based on a methodology adopted by all of the Wholesale Customers, as described in Section 3.11(C) of the Agreement. In any year for which the methodology must be applied, the Bay Area Water Supply and Conservation Agency (“BAWSCA”) will calculate each Wholesale Customer’s individual percentage share of the amount of water allocated to the Wholesale Customers collectively pursuant to Section 2.1. Following the declaration or reconfirmation of a water shortage emergency by the SFPUC, BAWSCA will deliver to the SFPUC General Manager a list, signed by the President of BAWSCA’s Board of Directors and its General Manager, showing each Wholesale Customer together with its percentage share and stating that the list has been prepared in accordance with the methodology adopted by the Wholesale Customers. The SFPUC shall allocate water to each Wholesale Customer, as specified in the list. The shortage allocations so established may be transferred as provided in Section 2.5 of this Plan. If BAWSCA or all Wholesale Customers do not provide the SFPUC with individual allocations, the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers.

The methodology adopted by the Wholesale Customers utilizes the rolling average of each individual Wholesale Customer’s purchases from the SFPUC during the three immediately



preceding Supply Years. The SFPUC agrees to provide BAWSCA by November 1 of each year a list showing the amount of water purchased by each Wholesale Customer during the immediately preceding Supply Year. The list will be prepared using Customer Service Bureau report MGT440 (or comparable official record in use at the time), adjusted as required for any reporting errors or omissions, and will be transmitted by the SFPUC General Manager or his designee.

### **2.3. Limited Applicability of Plan to System Wide Shortages Greater Than Twenty**

**Percent.** The allocations of water between the SFPUC and the Wholesale Customers collectively, provided for in Section 2.1, apply only to shortages of 20 percent or less. The SFPUC and Wholesale Customers recognize the possibility of a drought occurring which could create system-wide shortages greater than 20 percent despite actions taken by the SFPUC aimed at reducing the probability and severity of water shortages in the SFPUC service area. If the SFPUC determines that a system wide water shortage greater than 20 percent exists, the SFPUC and the Wholesale Customers agree to meet within 10 days and discuss whether a change is required to the allocation set forth in Section 2.1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or Retail Customers. Following these discussions, the Tier 1 water allocations set forth in Section 2.1 of this Plan, or a modified version thereof, may be adopted by mutual written consent of the SFPUC and the Wholesale Customers. If the SFPUC and Wholesale Customers meet and cannot agree on an appropriate Tier 1 allocation within 30 days of the SFPUC's determination of water shortage greater than 20 percent, then (1) the provisions of Section 3.11(C) of the Agreement will apply, unless (2) all of the Wholesale Customers direct in writing that a Tier 2 allocation methodology agreed to by them be used to apportion the water to be made available to the Wholesale Customers collectively, in lieu of the provisions of Section 3.11(C).

The provisions of this Plan relating to transfers (in Section 2.5), banking (in Section 3), and excess use charges (in Section 4) shall continue to apply during system-wide shortages greater than 20 percent.

**2.4. Monthly Water Budgets.** Within 10 days after adopting a declaration of water shortage emergency, the SFPUC will determine the amount of Tier 1 water allocated to the Wholesale Customers collectively pursuant to Section 2.1. The SFPUC General Manager, using the Tier 2 allocation percentages shown on the list delivered by BAWSCA pursuant to Section 2.2, will calculate each Wholesale Customer's individual annual allocation. The SFPUC General Manager, or his designee, will then provide each Wholesale Customer with a proposed schedule of monthly water budgets based on the pattern of monthly water purchases during the Supply Year immediately preceding the declaration of shortage (the "Default Schedule"). Each Wholesale Customer may, within two weeks of receiving its Default Schedule, provide the SFPUC with an alternative monthly water budget that reschedules its annual Tier 2 shortage allocation over the course of the succeeding Supply Year. If a Wholesale Customer does not deliver an alternative monthly water budget to the SFPUC within two weeks of its receipt of the Default Schedule, then its monthly budget for the ensuing Supply Year shall be the Default Schedule proposed by the SFPUC.

Monthly Wholesale Customer water budgets will be derived from annual Tier 2 allocations for purposes of accounting for excess use. Monthly Wholesale Customer water budgets shall be adjusted during the year to account for transfers of shortage allocation under Section 2.5 and



transfers of banked water under Section 3.4.

**2.5. Transfers of Shortage Allocations.** Voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customers, and between any Wholesale Customers, will be permitted using the same procedure as that for transfers of banked water set forth in Section 3.4. The SFPUC and BAWSCA shall be notified of each transfer. Transfers of shortage allocations shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC. Transfers of shortage allocations shall be in compliance with Section 3.05 of the Agreement. The transferring parties will meet with the SFPUC, if requested, to discuss any effect the transfer may have on its operations.

### SECTION 3. SHORTAGE WATER BANKING

**3.1. Water Bank Accounts.** The SFPUC shall create a water bank account for itself and each Wholesale Customer during shortages in conjunction with its resale customer billing process. Bank accounts will account for amounts of water that are either saved or used in excess of the shortage allocation for each agency; the accounts are not used for tracking billings and payments. When a shortage period is in effect (as defined in Section 1.4), the following provisions for bank credits, debits, and transfers shall be in force. A statement of bank balance for each Wholesale Customer will be included with the SFPUC's monthly water bills.

**3.2. Bank Account Credits.** Each month, monthly purchases will be compared to the monthly budget for that month. Any unused shortage allocation by an agency will be credited to that agency's water bank account. Credits will accumulate during the entire shortage period, subject to potential restrictions imposed pursuant to Section 3.2.1. Credits remaining at the end of the shortage period will be zeroed out; no financial or other credit shall be granted for banked water.

**3.2.1. Maximum Balances.** The SFPUC may suspend the prospective accumulation of credits in all accounts. Alternatively, the SFPUC may impose a ceiling on further accumulation of credits in water bank balances based on a uniform ratio of the bank balance to the annual water allocation. In making a decision to suspend the prospective accumulation of water bank credits, the SFPUC shall consider the available water supply as set forth in Section 1.1 of this Plan and other reasonable, relevant factors.

**3.3. Account Debits.** Each month, monthly purchases will be compared to the budget for that month. Purchases in excess of monthly budgets will be debited against an agency's water bank account. Bank debits remaining at the end of the fiscal year will be subject to excess use charges (see Section 4).

**3.4. Transfers of Banked Water.** In addition to the transfers of shortage allocations provided for in Section 2.5, voluntary transfers of banked water will also be permitted between the SFPUC and any Wholesale Customer, and among the Wholesale Customers. The volume of transferred water will be credited to the transferee's water bank account and debited against the transferor's water bank account. The transferring parties must notify the SFPUC and BAWSCA of each transfer in writing (so that adjustments can be made to bank accounts), and will meet with the SFPUC, if requested, to discuss any affect the transfer may have on SFPUC operations. Transfers of banked water shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC.



If the SFPUC incurs extraordinary costs in implementing transfers, it will give written notice to the transferring parties within ten (10) business days after receipt of notice of the transfer. Extraordinary costs means additional costs directly attributable to accommodating transfers and which are not incurred in non-drought years nor simply as a result of the shortage condition itself. Extraordinary costs shall be calculated in accordance with the procedures in the Agreement and shall be subject to the disclosure and auditing requirements in the Agreement. In the case of transfers between Wholesale Customers, such extraordinary costs shall be considered to be expenses chargeable solely to individual Wholesale Customers and shall be borne equally by the parties to the transfer. In the case of transfers between the SFPUC and a Wholesale Customer, the SFPUC's share of any extraordinary transfer costs shall not be added to the Wholesale Revenue Requirement.

**3.4.1. Transfer Limitations.** The agency transferring banked water will be allowed to transfer no more than the accumulated balance in its bank. Transfers of estimated prospective banked credits and the "overdrafting" of accounts shall not be permitted. The price of transfer water originally derived from the SFPUC system is to be determined by the transferring parties and is not specified herein. Transfers of banked water shall be in compliance with Section 3.05 of the Agreement.

## SECTION 4. WHOLESALE EXCESS USE CHARGES

**4.1. Amount of Excess Use Charges.** Monthly excess use charges shall be determined by the SFPUC at the time of the declared water shortage consistent with the calendar in Section 6 and in accordance with Section 6.03 of the Agreement. The excess use charges will be in the form of multipliers applied to the rate in effect at the time the excess use occurs. The same excess use charge multipliers shall apply to the Wholesale Customers and all Retail Customers. The excess use charge multipliers apply only to the charges for water delivered at the rate in effect at the time the excess use occurred.

**4.2 Monitoring Suburban Water Use.** During periods of voluntary rationing, water usage greater than a customer's allocation (as determined in Section 2) will be indicated on each SFPUC monthly water bill. During periods of mandatory rationing, monthly and cumulative water usage greater than a Wholesale Customer's shortage allocation and the associated excess use charges will be indicated on each SFPUC monthly water bill.

**4.3. Suburban Excess Use Charge Payments.** An annual reconciliation will be made of monthly excess use charges according to the calendar in Section 6. Annual excess use charges will be calculated by comparing total annual purchases for each Wholesale Customer with its annual shortage allocation (as adjusted for transfers of shortage allocations and banked water, if any). Excess use charge payments by those Wholesale Customers with net excess use will be paid according to the calendar in Section 6. The SFPUC may dedicate excess use charges paid by Wholesale Customers toward the purchase of water from the State Drought Water Bank or other willing sellers in order to provide additional water to the Wholesale Customers. Excess use charges paid by the Wholesale Customers constitute Wholesale Customer revenue and shall be included within the SFPUC's annual Wholesale Revenue Requirement calculation.



## **SECTION 5. GENERAL PROVISIONS GOVERNING WATER SHORTAGE ALLOCATION PLAN**

**5.1. Construction of Terms.** This Plan is for the sole benefit of the parties and shall not be construed as granting rights to any person other than the parties or imposing obligations on a party to any person other than another party.

**5.2. Governing Law.** This Plan is made under and shall be governed by the laws of the State of California.

**5.3. Effect on Agreement.** This Plan describes the method for allocating water between the SFPUC and the collective Wholesale Customers during system-wide water shortages of 20 percent or less. This Plan also provides for the SFPUC to allocate water among the Wholesale Customers in accordance with directions provided by the Wholesale Customers through BAWSCA under Section 2.2, and to implement a program by which such allocations may be voluntarily transferred among the Wholesale Customers. The provisions of this Plan are intended to implement Section 3.11(C) of the Agreement and do not affect, change or modify any other section, term or condition of the Agreement.

**5.4. Inapplicability of Plan to Allocation of SFPUC System Water During Non-Shortage Periods.** The SFPUC's agreement in this Plan to a respective share of SFPUC system water during years of shortage shall not be construed to provide a basis for the allocation of water between the SFPUC and the Wholesale Customers when no water shortage emergency exists.

**5.5. Termination.** This Plan shall expire at the end of the Term of the Agreement.. The SFPUC and the Wholesale Customers can mutually agree to revise or terminate this Plan prior to that date due to changes in the water delivery capability of the SFPUC system, the acquisition of new water supplies, and other factors affecting the availability of water from the SFPUC system during times of shortage.

## **SECTION 6. ALLOCATION CALENDAR**

**6.1. Annual Schedule.** The annual schedule for the shortage allocation process is shown below. This schedule may be changed by the SFPUC to facilitate implementation.

**6.1.1**

**In All Years**

1. SFPUC delivers list of annual purchases by each Wholesale Customer during the immediately preceding Supply Year
2. SFPUC meets with the Wholesale Customers and presents water supply forecast for the following Supply Year
3. SFPUC issues initial estimate of available water supply
4. SFPUC announces potential first year of drought (if applicable)
5. SFPUC and Wholesale Customers meet upon request to exchange information concerning water availability and projected system-wide purchases
6. SFPUC issues revised estimate of available water supply, and confirms continued potential shortage conditions, if applicable
7. SFPUC issues final estimate of available water supply
  
8. SFPUC determines amount of water available to Wholesale Customers collectively

**Target Dates**

- November 1
- February
- February 1
- February 1
- February 1-May 31
- 
- March 1
- April 15<sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.
- April 15<sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.

**In Drought Years**

9. SFPUC formally declares the existence of water shortage emergency (or end of water shortage emergency, if applicable) under Water Code Sections 350 et. seq.
10. SFPUC declares the need for a voluntary or mandatory response
11. BAWSCA submits calculation to SFPUC of individual Wholesale Customers' percentage shares of water allocated to Wholesale Customers collectively
12. SFPUC determines individual shortage allocations, based on BAWSCA's submittal of individual agency percentage shares to SFPUC, and monthly water budgets (Default Schedule)
13. Wholesale Customers submit alternative monthly water budgets (optional)
14. Final drought shortage allocations are issued for the Supply Year beginning July 1 through June 30
15. Monthly water budgets become effective
  
16. Excess use charges indicated on monthly Suburban bills
  
17. Excess use charges paid by Wholesale Customers for prior year

**Target Dates**

- April 15-31
- April 15-31
- April 15- 31
- 
- April 25—May 10
- May 8-May 24
- June 1
- July 1
- 
- August 1 (of the beginning year) through June 30 (of the succeeding year)
- August of the succeeding year

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# **Appendix H**

## **Sample Water Shortage Contingency Resolution**



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# **SAMPLE WATER SHORTAGE CONTINGENCY RESOLUTION**

## **PUBLIC UTILITIES COMMISSION**

City and County of San Francisco

RESOLUTION NO. \_\_\_\_\_

WHEREAS, The San Francisco Public Utilities Commission (SFPUC) obtains water from the Hetch Hetchy Water and Power project and local Bay Area reservoirs; and

WHEREAS, The SFPUC has determined that a shortage condition exists because the projected available water supply is less than projected system-wide water purchases in the upcoming Supply Year beginning July 1; and

WHEREAS, In 2000 the SFPUC and Suburban Purchases adopted an Interim Water Shortage Allocation Plan (IWSAP or “Tier One Plan”) and an Interim Water Shortage Allocation Plan Among Suburban Purchasers (“Tier Two Plan”); and

WHEREAS, The Tier One Plan describes the method for allocating water between the SFPUC and the Suburban (wholesale) Purchasers collectively during shortages caused by drought; and

WHEREAS, The Tier Two Plan describes the method for allocating the water made available by the SFPUC during shortages caused by drought among the Suburban Purchasers (individually), when the SFPUC determines that a system-wide water shortage due to drought exists; and

WHEREAS, In 2001 the SFPUC adopted a Retail Water Shortage Allocation Plan (RWSAP) as a guidance tool to be used for allocating water amongst Retail customers in the event of a water shortage due to drought; and

WHEREAS, The RWSAP details a three-stage program of action to be taken to reduce Retail water use during drought, with Stage 1 consisting of voluntary measures, Stage 2 of mandatory measures and Stage 3 of more severe mandatory measures; and

WHEREAS, Depending on the level of water demand and the desired objective for water use reduction, one, two or all three stages of the RWSAP may be required; and

WHEREAS, Staff has made the final determination of available water supply required by the Tier One Plan with the SFPUC's suburban (wholesale) water customers, including, among other things, stored water, projected runoff, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, and an allowance for carryover storage; and

WHEREAS, The SFPUC has determined that the available water supply is insufficient and that unless water consumption is decreased there may be insufficient water supplies for human consumption, sanitation and fire protection needs; and

WHEREAS, Decreases in water consumption may be achieved by voluntary or mandatory conservation measures by Retail and Wholesale water customers; and

WHEREAS, Decreases in water consumption may be achieved by implementing the voluntary and/or mandatory shortage allocation provisions of the Tier One Plan and the RWSAP; and

WHEREAS, Staff has, in accordance with Section II.C of the RWSAP, presented the water supply situation and other required information at a regularly scheduled Commission meeting for public input, and advertised this the meeting in accordance with the requirements of California Water Code Section 6066 of the Government Code; now, therefore be it

RESOLVED, That the SFPUC declares a Water Shortage Emergency pursuant to sections 350 et. seq. of the California Water Code; and be it further

RESOLVED, That the SFPUC directs staff to determine the amount of water allocated to the Suburban Purchasers collectively pursuant to Section 2.1 of the Tier One Plan, and to allocate the available water supply among individual wholesale water customers based on information received from the Bay Area Water Supply and Conservation Agency in accordance with Section 2.2 of the Tier One Plan, and the Section 2 of the Tier Two Plan; and be it further

RESOLVED, That the SFPUC directs staff to take all other necessary steps to implement the Tier One Plan, including but not limited to provisions related to establishment of monthly water budgets and the creation of water shortage bank accounts; and be it further

RESOLVED, That the SFPUC directs staff to take all necessary steps to implement the RWSAP, including Stage 1, Stage 2 and/or Stage 3 measures, as required to meet water use reduction goals based on reduced water supplies from the Regional Water System; and be it further

FURTHER RESOLVED *[for mandatory rationing stages only]*, That, in accordance with the IWSAP (“Tier One Plan”) Section 4.1 and the RWSAP Section II.B, the SFPUC adopts the following schedule of excess use charges applicable to its suburban (Wholesale) and Retail customers:

If Water Purchases Exceed the Shortage Allocation by:	The Excess Use Charge Multiplier is:
Up to 10.00% 10.01% to 20.00% 20.01% or more	2 8 10

SAMPLE

*I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of* \_\_\_\_\_

\_\_\_\_\_  
*Secretary, Public Utilities Commission*

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# 2010 Urban Water Management Plan for the City and County of San Francisco

## APPENDICES

Prepared by: The San Francisco Public Utilities Commission



San Francisco  
**Water Power Sewer**  
Services of the San Francisco Public Utilities Commission



**Attachment Metis-H**

**Page & Turnbull Cultural  
Resources Memorandum**

## MEMORANDUM

DATE	August 19, 2020	PROJECT NO.	19406
TO	Michelle Lin	PROJECT	Baylands Specific Plan HRTR
OF	Universal Paragon Corporation 150 Executive Park Blvd., Suite 4000 San Francisco, CA 94134	FROM	Stacy Kozakavich, Page & Turnbull
CC	Christina Dikas, Page & Turnbull Peter Birkholz, Page & Turnbull		

**REGARDING:** Results of Archaeological Monitoring of Soil Characterization Studies, Baylands Specific Plan Area (Revised Summary)

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## INTRODUCTION

In August 2018, PaleoWest conducted archaeological monitoring of geotechnical coring at 146 locations within the San Mateo County portion of the Universal Paragon Corporation, Inc. Operable Unit (UPC OU-SM) area, performed by Geosyntec Consultants, Inc. (Geosyntec). Between November 2019 and February 2019, PaleoWest monitored excavation by Geosyntec of 566 geotechnical cores within the Universal Paragon Corporation, Inc. Operable Unit 2 (UPC OU-2) area. All cores were 2” in diameter, and spaced 100’ apart.<sup>1</sup> Both of the testing areas are within the Baylands Specific Plan (Specific Plan) Area, a 684-acre subarea of the Brisbane General Plan Area (Error! Reference source not found.). As noted in the draft Baylands Specific Plan, the surveys “serve as a preliminary phase of cultural resource identification efforts that would be required under the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) as part of any future development of the property.”<sup>2</sup> Page & Turnbull has prepared this memorandum at the request of Universal Paragon Corporation to assist with identifying locations within the Specific Plan Area which may require additional archaeological testing in response to developments proposed by the Specific Plan.

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<sup>1</sup> PaleoWest, “Memo Re: Results of Archaeological Monitoring of the Data Gap Investigation of the San Mateo County portion of the Universal Paragon Corporation, Inc. Operable Unit, Brisbane (Walnut Creek: Prepared for Universal Paragon, April 24, 2019); “Memo Re: Results of Archaeological Coring Plan, in conjunction, with the Data Gap Investigation of the Universal Paragon Corporation, Inc. Operable Unit 20Brisbane, California,” (Walnut Creek: Prepared for Universal Paragon, August 19, 2019).

<sup>2</sup> HDR, *The Baylands Specific Plan* (Draft) (Prepared for the City of Brisbane, 2020), Chapter 7, n.p.



Figure 1. Diagram showing the boundary of the Brisbane Baylands Specific Plan site, with notations indicating current ownership. Source: Universal Paragon Corporation.

## METHODOLOGY

To identify areas which may require additional testing, Page & Turnbull reviewed the results of monitoring as described in PaleoWest's April 2019 and August 2019 monitoring reports.

PaleoWest's findings were then compared to planned land use as described in the May 2019 draft Baylands Specific Plan, prepared by HDR for the City of Brisbane and provided to Page & Turnbull by HDR on May 14, 2020.

The purpose of this memorandum is to identify those development locations which intersect with monitored core locations that contained prehistoric archaeological materials, or those locations requiring further evaluation.

## FINDINGS

Of the 712 core locations monitored by PaleoWest archaeological field staff, a total of 23 core locations yielded evidence of prehistoric archaeological deposits. Three included intact shell midden between depths of 1'10" below ground surface (BGS) and 6'8" BGS. Fifteen cores included deposits that appeared to be redeposited or displaced shell midden material between the ground surface and a depth of 5'6". Both intact and displaced shell midden deposits are considered to be highly sensitive for the discovery of Native American human remains. An additional five cores produced what is described as shell fragments or burned shell fragments between 1'0" and 10'6" below ground surface. These intact and redeposited shell middens and fragments were generally located in the northern and western portions of the site.

A peaty, organic-rich layer was encountered between 5' and 19' in depth in an additional twelve cores. This layer is interpreted by PaleoWest as "likely deposits of native soils that may contain intact Native American archaeological deposits from the prehistoric era."<sup>3</sup>

Forty-nine cores in the OU-SM area and 127 cores in the OU-2 area yielded historic-period artifacts, ranging from ceramic and glass fragments to industrial and structural debris. As noted above, the focus of this memorandum is on archaeological sensitivity for prehistoric materials.

Archaeological monitoring of Geosyntec's cores, spaced 100' apart and dug to between 5' and 20' below surface, provides only a preliminary glance into the nature of buried archaeological deposits that may be present. Based on their previous experience working in the immediate vicinity, PaleoWest's April 2019 report states that portions of the site have "high archaeological sensitivity from ground surface to approximately 15' below ground surface (BGS), or the top of the underlying Bay Mud geological stratum."<sup>4</sup>

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<sup>3</sup> PaleoWest, Results of Archeological Coring, OU-2, 11

<sup>4</sup> PaleoWest, Results of Archaeological Coring, OU-SM, 1.

**Table 1. Monitored Cores Containing Archaeological Deposits**

Core #	Material Type	Material Depth (feet and inches)	Core Depth (feet)
A5	Shell/Charcoal	10'3"-10'6"	20'
A8	Intact Midden	6'4"-6'8"	20'
B10	Intact Midden	1'10"	5'
C8	Displaced Midden	2'2"-2'4"	5'
D9	Burned Shell Scatter	1'0" – 2'2"	10'
E5	Displaced Midden	2'7"-5'6"	10'
E6	Intact Midden	1'11"-2'3"	5'
F.5/9.5	Displaced Midden	1'2"-1'8"	10'
G3	Displaced Midden	0'0"-3'0"	15'
G6	Shell Fragments	3'2"-3'5"	5'
I12	Shell Fragments	1'0" and 1'8"	5'
M11	Shell Fragment Scatter	8'0"-10'0"	10'
M12	Displaced Midden	2'10"-3'1"	5'
N13	Displaced Midden	3'1"-3'9"	10'
P10	Displaced Midden	0'8"-0'11"	5'
Q10	Displaced Midden	0'9"-1'9"	5'
R14	Displaced Midden	1'4"	10'
S11	Displaced Midden	1'1"-1'9"	10'
S12	Displaced Midden	0'9"-1'9"	5'
S13	Displaced Midden	0'10"-2'1"	5'
T13	Displaced Midden	1'7"-2'0"	10'
U11	Displaced Midden	0'5"-0'10"	10'
X19	Displaced Midden	3'0"-3'3"	5'

## CONCLUSION

It is clear from review of PaleoWest’s April and August 2019 reports on archaeological monitoring of geotechnical coring and comparison to HDR’s draft Specific Plan that additional archaeological testing will be necessary. The purpose of this testing should be to more clearly identify the horizontal extent and character of the deposits identified during monitoring of Geosyntec’s cores, as well as to provide more reliable negative findings in potentially sensitive areas where few cores were dug to greater depths than 5’ BGS. A program of intensive subsurface testing with more closely spaced cores dug consistently to the top of the Bay Mud within the northern and western portions of the site would provide greater clarity on the nature and extent of subsurface archaeological remains within the Specific Plan Areas to be subject to soil remediation and grading in preparation for development.

The results of this testing would guide subsequent decisions regarding the necessity for archaeological data recovery in advance of further ground disturbance and/or monitoring during soil remediation or other activities.

### PREPARER'S QUALIFICATIONS

This memorandum was prepared by Stacy Kozakavich, Ph.D. of Page & Turnbull. Ms. Kozakavich is an Archaeologist and Cultural Resources Planner who has worked in the cultural resources field in California for 18 years. She meets the Secretary of the Interior's Professional Qualifications Standards in History and Archaeology, with a focus on historical archaeology.





**EDUCATION**

Ph. D, Anthropology, 2007  
University of California, Berkeley  
Berkeley, California

M.A., Anthropology and Archaeology,  
1998, B.A., Anthropology and  
Archaeology, 1994 University  
of Saskatchewan, Saskatoon,  
Saskatchewan

**AFFILIATIONS**

Register of Professional Archaeologists  
Society for Historical Archaeology  
California Preservation Foundation  
Oakland Heritage Alliance

Stacy is a historian and archaeologist with over twenty years of experience, including more than ten years of experience working in California. She is experienced in the cultural resources review process for Section 106 of the National Historic Preservation Act and the California Environmental Quality Act, and has conducted records searches and archival research at numerous repositories, undertaken oral history interviews, and completed map and aerial photograph analyses, in addition to field recording of architectural and archaeological resources.

Stacy meets the Secretary of the Interior’s Professional Qualification Standards for archaeology, history, and architectural history and the requirements for the California Council for the Promotion of History Register of Professional Historians.

Select Project Experience

**HISTORIC RESOURCE EVALUATIONS (HRE)**

- 1020 North 4th Street, San Jose
- 37433-37447 Fremont Boulevard, Fremont
- 37463-37477 Fremont Boulevard, Fremont
- 3735 Eggers Drive, Fremont
- 4170 Central Avenue, Fremont
- 35858 Mission Boulevard, Fremont
- 3411 Capitol Avenue, Fremont
- 43442 Bryant Street, Fremont
- 43341-43353 Mission Boulevard, Fremont
- 3793 Woodside Road, Woodside
- 1548 Howard Avenue, Burlingame
- 160 Pepper Avenue, Burlingame
- Mid Valley Shopping Center, Carmel Valley
- 952 Carolina Street, San Francisco
- 1049 Golden Gate Avenue, San Francisco
- 1525 Pine Street Oral History Project, San Francisco
- 788-796 San Antonio Road, Palo Alto
- Webb Schools Hooper Student Center Renovation, Claremont

**PROJECT DESIGN CONSULTATION AND IMPACTS ANALYSIS**

- 37737 Fremont Boulevard Project Analysis, Fremont
- 43536 Ellsworth Street Project Analysis, Fremont
- 601 Townsend Street Design Consultation, San Francisco
- Treasure Island Buildings 2 and 3 Landscaping Standards Analysis, San Francisco

**CEQA CONSULTATION AND EVALUATION**

- California College of the Arts Campus CEQA Technical Report, Oakland
- 719-725 Bridgeway, CEQA Technical Report, Sausalito
- Head-Royce South Campus CEQA Technical Report, Oakland

**SECTION 106 CONSULTATION AND EVALUATION**

- San Francisco VA Medical Center Section 106 Consultation, San Francisco
- 900 Innes Avenue Section 106 Consultation, San Francisco
- Planetary Ventures NAVAIDS Section 106 Consultation, Santa Clara County
- Moffett Federal Airfield Section 106 Programmatic Agreement, Santa Clara County
- Access Parks Broadband Installation Section 106 Consultation, Park County, Wyoming

**PEER REVIEWS**

- 1110 Old County Road Historic Resource Evaluation Peer Review, Belmont
- 1211 Broadway Historic Resource Evaluation Peer Review, Sonoma
- 880 Westridge Drive Historic Resource Evaluation Peer Reviews, Portola Valley
- 1450 Hawthorne Terrace Peer Review and Character-Defining Features Memorandum, Berkeley
- 770 Woolsey Street Historic Resource Evaluation Peer Review, San Francisco

**OTHER HISTORIC RESOURCE CONSULTATION**

- University of California, Berkeley LRDP Historical Resources Assessment
- Hotel Whitcomb Historic Resource Consultation, San Francisco
- 659 Union Street / 1656 Powell Street Historic Resource Memorandum, San Francisco
- 779 Bush Street Historic Research Memorandum, San Francisco
- 1100 Valencia Street Historic Use Memorandum, San Francisco

**COMMEMORATION PLANNING**

- East Campus, Agnews Developmental Center CEQA Mitigation Commemoration Plan, Santa Clara County

# CITY OF BRISBANE POLICE DEPARTMENT

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ELIZABETH MACIAS  
CHIEF OF POLICE

September 4, 2020

Northern California Regional Office  
CALIFORNIA HIGH-SPEED RAIL AUTHORITY  
100 Paseo de San Antonio, Suite 300  
San Jose, California 951413

Re: Comments by the City of Brisbane Police Department on the Draft Environmental Impact Report / Environmental Impact Statement for the San Francisco to San Jose Section of the California High-Speed Rail Project (Draft EIR/EIS)


To Whom It May Concern:

Working in partnership with our community, it is the mission of the Brisbane police department to provide highly effective and responsive police services and continue to make our community a safe place to live and work. It was therefore with great dismay that I learned the California High-Speed Rail Authority intends to temporarily close the Tunnel Avenue bridge for a 1-3 month period during construction of its proposed Brisbane light maintenance facility.

This temporary closure would have a dramatic adverse effect on the ability of this Department to respond quickly to emergencies within those portions of our community east of the Caltrain railroad right-of-way. During the temporary closure of the Tunnel Avenue bridge, our officers would be required to travel north into San Francisco or south into the City of South San Francisco to respond to emergencies in the Sierra Point portion of our community, as well as to businesses along Tunnel Avenue.

While the Draft EIR/EIS acknowledges the temporary closure of the Tunnel Avenue bridge to be a significant and unavoidable impact, it does not acknowledge that this temporary road closure represents a serious and unacceptable public safety risk. To be able to continue to make our community a safe place to live and work, the Tunnel Avenue bridge and Tunnel Avenue must remain open for emergency access at all times.

Sincerely,

  
Chief Elizabeth Macias



# North County Fire Authority

Serving the Cities of Brisbane, Daly City, Pacifica

Ron D. Myers  
Fire Chief

10 Wembley Drive  
Daly City, California 94015-4314

Administration  
Phone 650-991-8138  
Fax 650-991-8090

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September 4, 2020

Northern California Regional Office  
CALIFORNIA HIGH-SPEED RAIL AUTHORITY  
100 Paseo de San Antonio, Suite 300  
San Jose, California 951413

Re: Comments by the North County Fire Authority on the Draft Environmental Impact Report /  
Environmental Impact Statement for the San Francisco to San Jose Section of the California High-Speed Rail Project (Draft EIR/EIS)

To Whom It May Concern:

The North County Fire Authority provides emergency and non-emergency services to the City of Brisbane from our existing NCFA Fire Station 81 located at 3445 Bayshore Boulevard at Valley Drive within the City of Brisbane. It is our understanding that the California High Speed Rail Authority's proposed Brisbane light maintenance facility requires relocation of the City's existing Tunnel Avenue bridge that conflicts with the current location of Fire Station 81. The Authority's Draft EIR/EIS states that the Authority plans to relocate NCFA Fire Station 81 to the south to provide for the relocated bridge that will move the connection of Tunnel Avenue to Bayshore Boulevard from Old County Road to Valley Drive.

## **Description of the Existing Station 81**

NCFA Fire Station 81 is a one-story, one company fire station designed for staffing of four firefighters. The fire station has two drive through apparatus bays; firefighter living quarters including a combined dayroom, dining area and kitchen, six firefighter bunk rooms and three gender neutral restrooms. The fire station includes two offices and an open work area for firefighters. There is an existing secured reception vestibule with an ADA restroom and a training classroom that can seat 12 people comfortably. The fire station is located on an approximately 94,000 s.f. site with ample visitor and personnel parking. The front apron of the station directly aligns the apparatus bays with the Valley Drive intersection, making response times very efficient. There is also a short depth rear apron at the backside of the apparatus bays. Outdoor areas south of the existing station are currently used for training purposes.



**The proposed relocation of Fire NCFA Station 81 as described in the Draft EIR/EIS is poorly designed and unacceptable to the North County Fire Authority.**

The Draft EIR/EIS proposes two options for relocation of NCFA Fire Station 81, both which are poorly designed and unacceptable. Alternative A proposes relocating the station approximately 600 feet south, with two driveways connecting to Bayshore Boulevard. The southerly driveway for the relocated fire station would connect to the east leg of the signalized Bayshore Boulevard/Old County Road intersection, providing full access to Bayshore Boulevard. A second northerly driveway would connect to Bayshore Boulevard approximately 400 feet north of Old County Road, providing a mid-block location with right-in, right-out only access to northbound Bayshore Boulevard that would require fire companies heading south on Bayshore boulevard to make a U-turn at the signalized Bayshore Boulevard/Valley Drive intersection. The Draft EIR/EIS does, however propose a “mitigation measure” to provide for a new mid-block signalized intersection for the station provide a break in the raised median to allow fire companies movements and a short southbound left-turn pocket where inbound fire trucks could wait for the fire station signal to be triggered.

Both of these poorly designed alternatives are infeasible and unacceptable. Both alternatives described in the Draft EIR/EIS require placement of the relocated fire station with its apparatus bays facing parallel to Bayshore Boulevard instead of perpendicular, which would increase response times. Emergency vehicles leaving the fire station’s apparatus bays would be forced to travel down a long driveway before having to slow down to make a 90-degree turn before reaching Bayshore Boulevard. Elimination of a short perpendicular access to Bayshore Boulevard in favor of a longer driveway parallel to Bayshore Boulevard would increase emergency response times from the fire station. In addition, Alternative B provides only a single access point that would require fire companies returning to the fire station to stop on Bayshore Boulevard and back into and along the driveway to the fire station’s apparatus bays. In addition, by moving the existing fire station to the south, much of the site’s existing training areas and outdoor space would be lost.

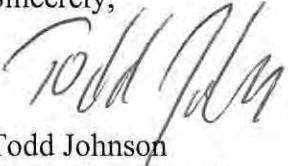
If the Tunnel Avenue bridge relocation cannot be designed so as to allow our existing fire station to remain in place with its current access, the only realistic solution would be for the California High Speed Rail Authority to secure a location and construct a new fire station within the City of Brisbane that is acceptable the North County Fire Authority and the City of Brisbane.

**The proposed temporary closure of the Tunnel Avenue bridge would result in unacceptable public safety impacts.**

The proposed 1-3 month closure of the Tunnel Avenue bridge during construction of the Brisbane light maintenance facility would adversely affect emergency response times to those portions of the City of Brisbane east of the Caltrain railroad right-of-way, including emergency response to facilities such as Golden State Lumber and the Kinder Morgan tank farm, where even minor delays in emergency response could have disastrous consequences.

During the temporary closure of the Tunnel Avenue bridge, response from NCFA Fire Station 81 would be required to travel north into San Francisco or south into the City of South San Francisco to reach Golden State Lumber, the Kinder Morgan tank farm, and the Brisbane Marina and other portions of the Sierra Point area. Temporary closure of the Tunnel Avenue bridge would have a serious and unacceptable risk to public safety. The Tunnel Avenue bridge and Tunnel Avenue must remain open for emergency access at all times.

Sincerely,

A handwritten signature in black ink, appearing to read "Todd Johnson". The signature is written in a cursive, flowing style.

Todd Johnson  
Deputy Fire Chief  
Operations Bureau