



Building Efficiency Program Audits Webinar

July 18, 2019

Agenda

- Introductions
- Project Background & Goals
- Benchmarking in Brisbane
- Brisbane Building Stock
- Introduction to Concepts
- Building Auditing in Brisbane
- Compliance Pathways
- Focus Areas for Feedback
- Next Steps

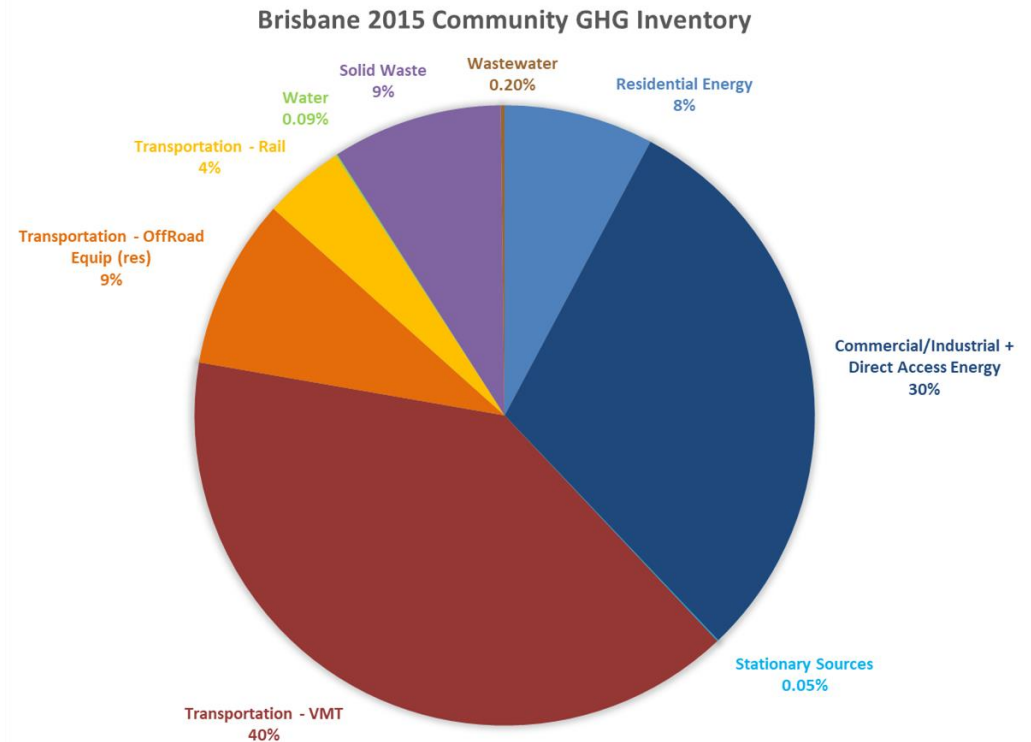
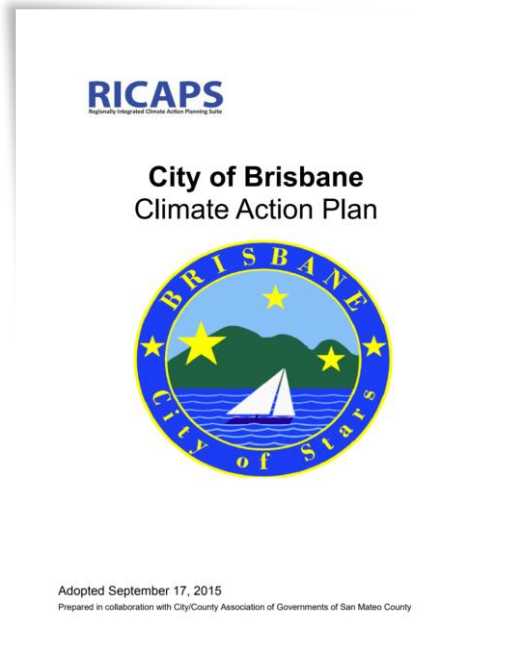


Preview of Focus Areas

- Area 1: What size of buildings need audits
- Area 2: What type of audit for small vs big buildings
- Area 3: Retrofits and Performance
- Area 4: Exemptions for efficient buildings



Background

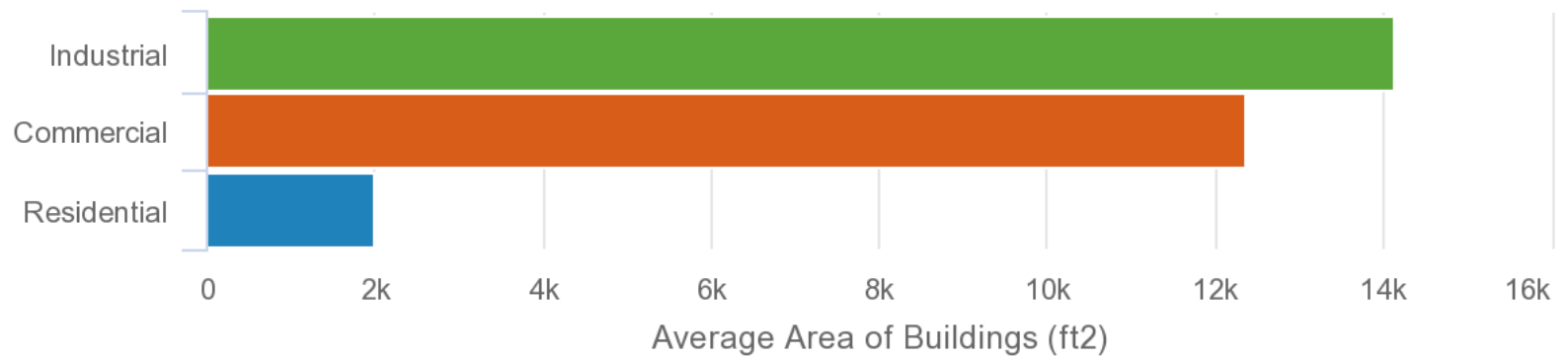


Proposed Benchmarking in Brisbane

- 10,000 sq ft cutoff
- Residential, Commercial and Industrial
- Use ENERGY STAR Portfolio Manager
- Annual Reporting
- Start May 1, 2021

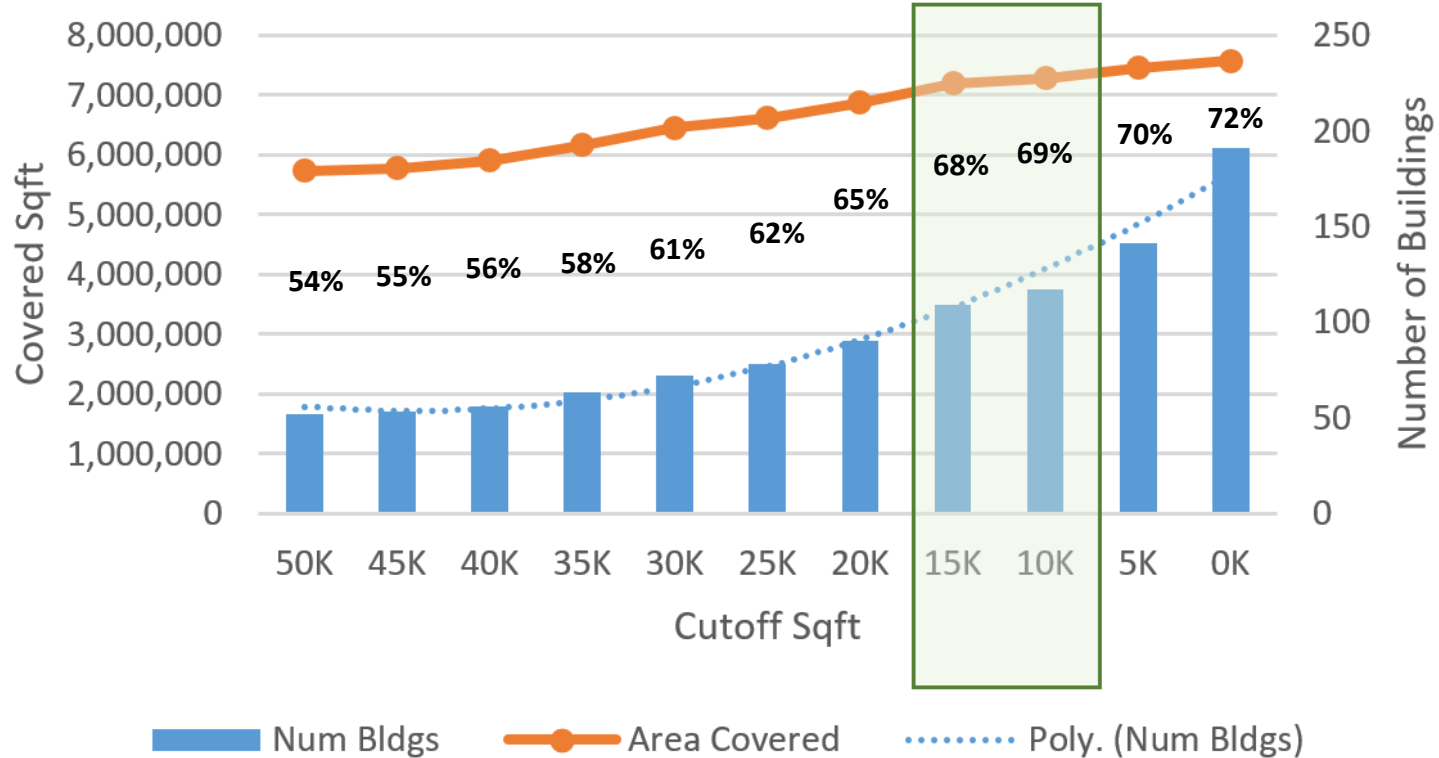


Building Stock Summary



Building Owners & Average Building Size

Number of Buildings vs Covered Sqft



What size of buildings should we look at?

We see that we can reach 69% of building area (residential, commercial and industrial) in Brisbane if we chose a 10,000 sq ft cutoff for the benchmarking requirement.

Audits & RCx Refresher

An **energy audit** is an assessment of a building's energy systems to identify opportunities to save energy and money

Think of energy audits as physical for your building



Benchmarking
Stepping on scale

Audit
Physical

RCx = Exercise
Retrofits = Diet

Saving Energy
Losing Weight



Audits & RCx Refresher

- Energy audits produce a list of energy conservation measures (ECMs) with associated costs and savings
- Different levels of audits give varying levels of detail

Level 1	<ul style="list-style-type: none">● Brief on-site survey of the building● Savings and cost analysis of low-cost/no-cost Energy Conservation Measures (ECMs)● Identification of potential capital improvements meriting further consideration
Level 2	<ul style="list-style-type: none">● More detailed building survey● Breakdown of energy use● Savings and cost analysis of all ECMs● Identification of ECMs requiring more thorough data collection and analysis (Level 3)



RCx Refresher



Retrocommissioning (RCx) typically refers to simple fixes to ensure a building's systems are operating the way they were designed to

Examples:

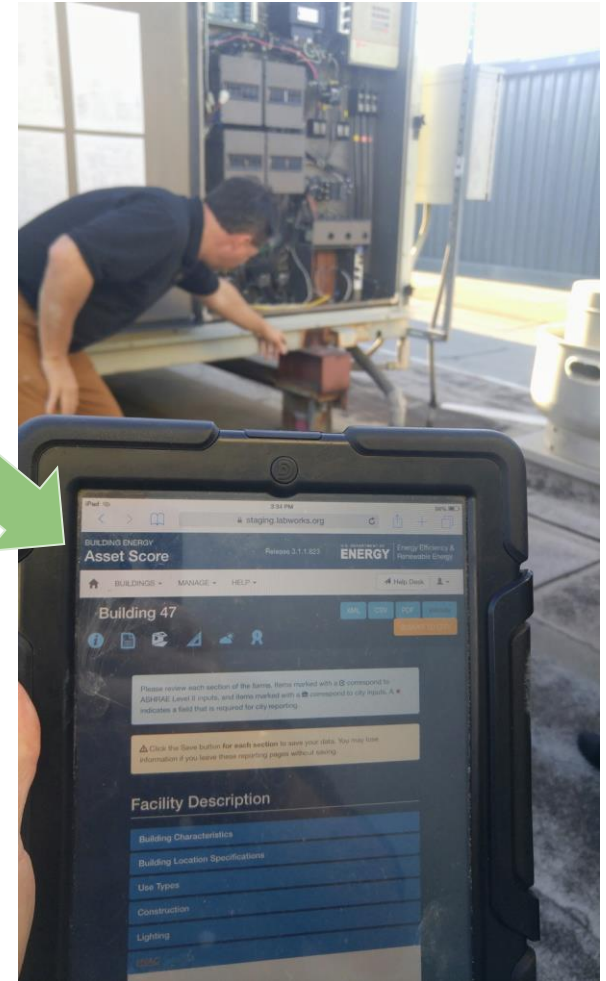
- checking your thermostat is programmed appropriately for temperature, timing
- making sure your AC isn't running all night
- making sure lights are on during the day

Building Asset Score Intro

Building Asset Score is a free software that people use to do audits and RCx.

The 'score' tells you if there is room for improvement and suggests ways to get there.

Asset Score Preview only requires 7 fields (whereas Asset Score Full requires 30).



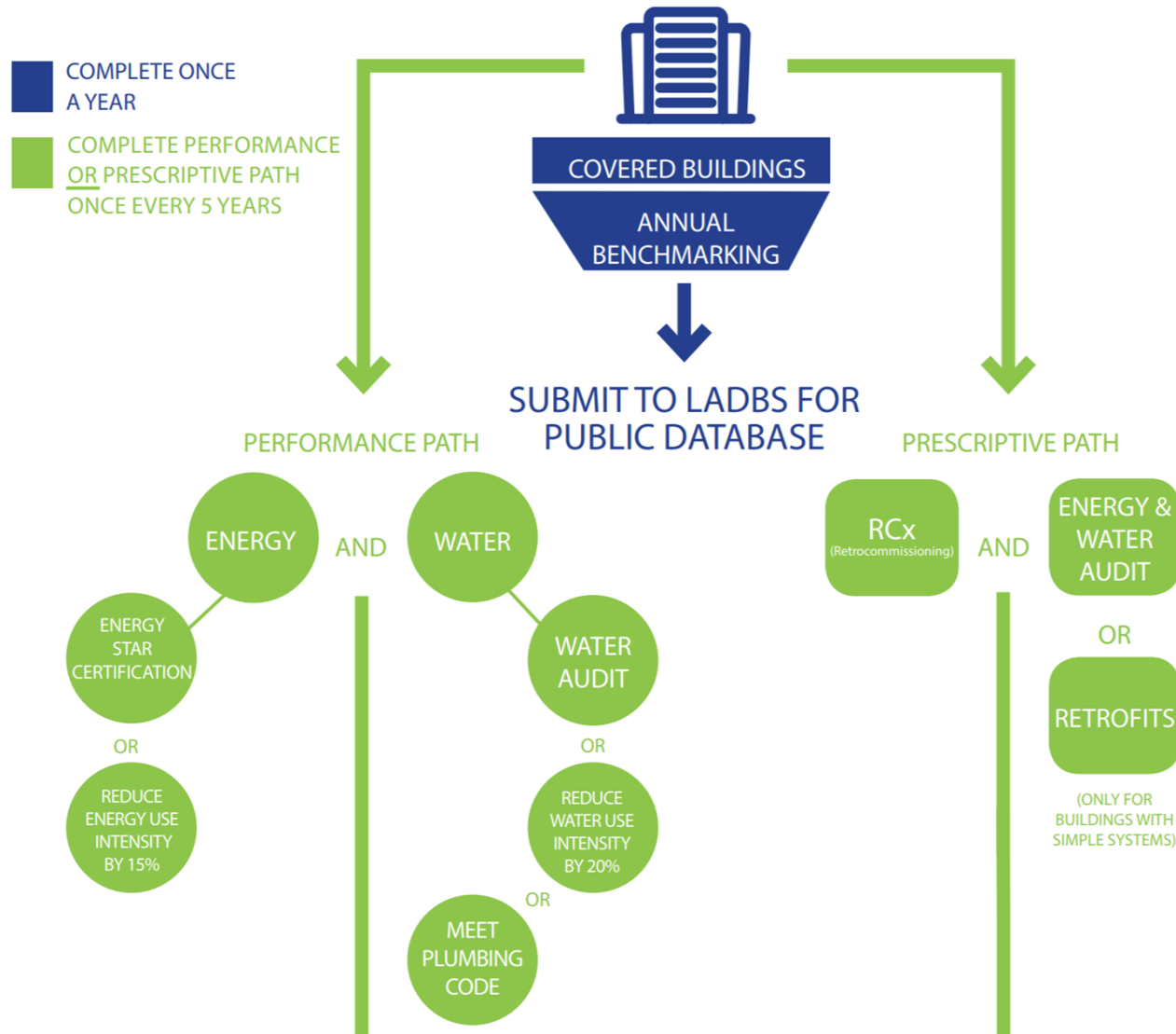
Neighboring Requirements

City	Cutoff	Audit	Retrofits
<u>San Francisco</u>	10k - 49,999 50k sf	ASHRAE Level I ASHRAE Level II	Not mandatory
<u>Berkeley</u>	25k and above plus ESPM Score <80	>50k ASHRAE Level II 5k-24,999 Level I	Not mandatory
<u>San Jose</u>	20k - 49,999 50k and above	ASHRAE Level II In 2022 Level II	Not Mandatory
<u>Los Angeles</u>	20k and above	ASHRAE Level II (all buildings)	15% reduction in energy use intensity over the prior 5 years, using ENERGY STAR Portfolio Manager

What are other cities doing?

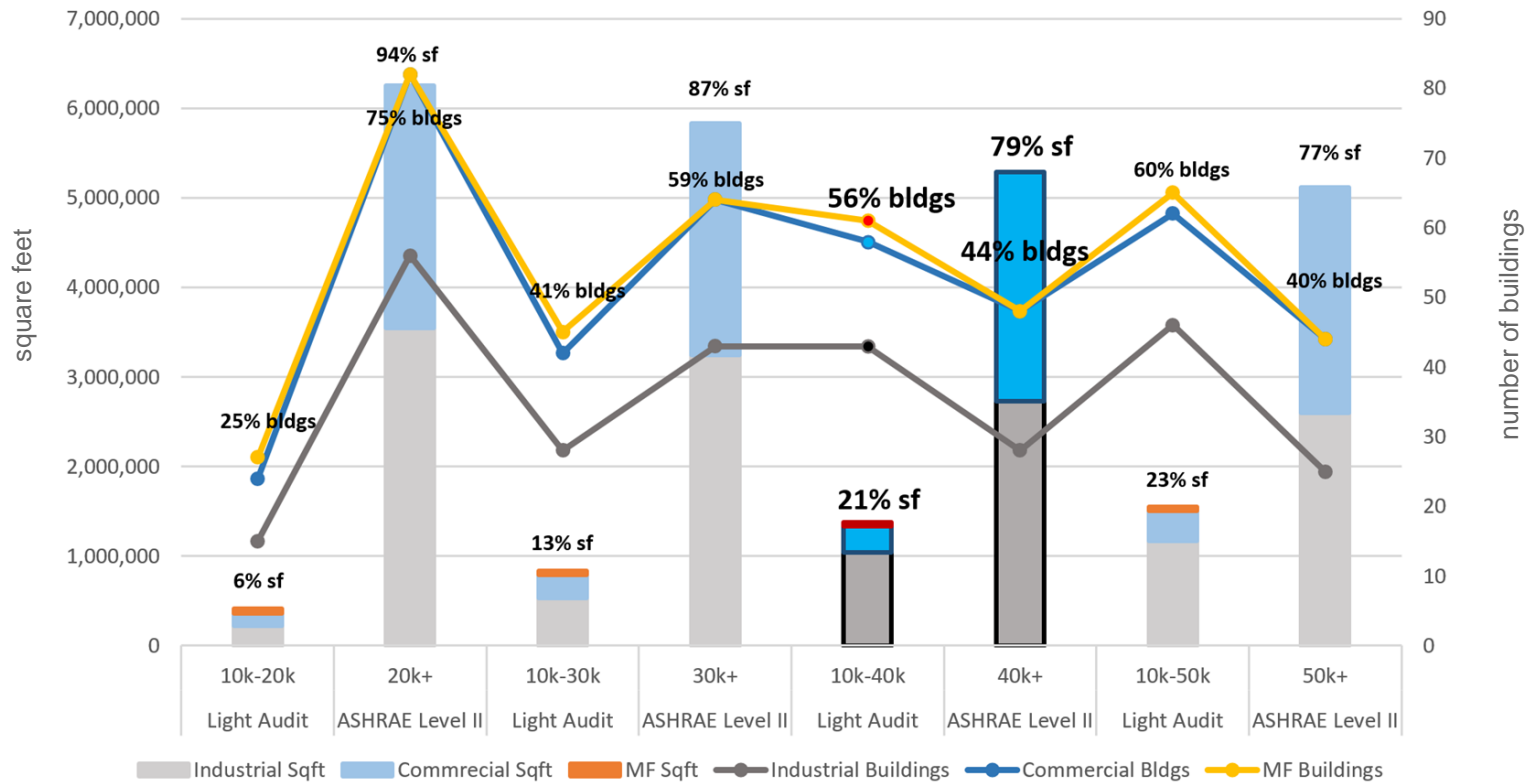
What level of alignment should we seek when considering level of audit, cutoffs and retrofits in the ordinance?

Audit Pathways (Los Angeles)



Either reduce by energy by 15% and water by 20% or do a RCx and an audit

Audit Cutoff Scenarios



Why 40,000 square feet?

Minimize number of buildings affected, maximize square footage captured.

Pros and Cons

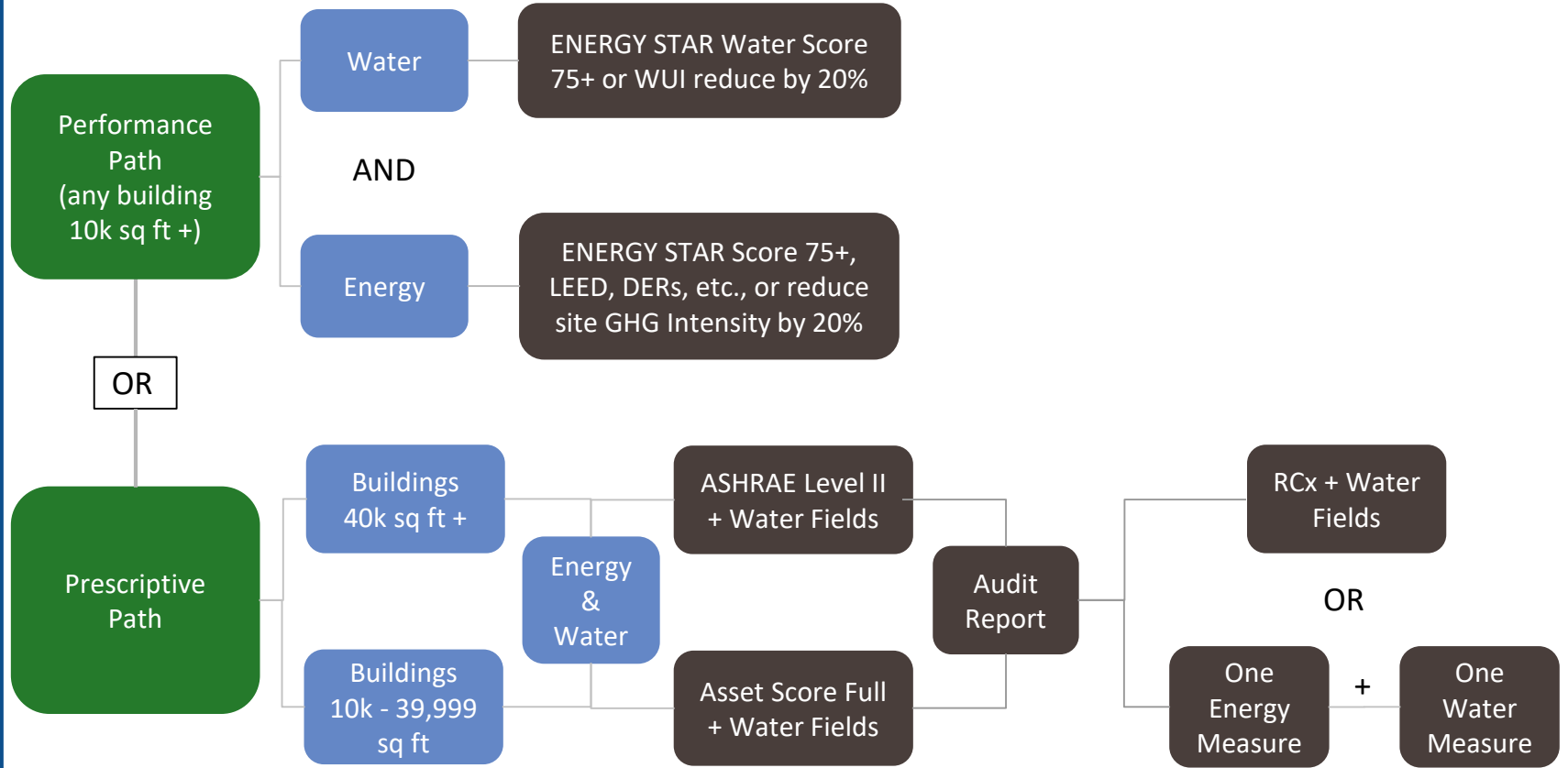
Scenario	Cutoff 1	Cutoff 2	Pro	Con
1	10,000-49,999	50,000+	Impacts the least amount of buildings	Might miss opportunities in medium size buildings
2	10,000-39,999	40,000+	Impacts the most square footage and least amount of buildings	Medium to large buildings may not know the full list of retrofits they can pursue
3	10,000-29,999	30,000+	The vast majority of sqft (87%) will have a full list of retrofit opportunities	Impacts over 50% of buildings with Level II audit and only 13% of sqft do a light audit
4	10,000-19,999	20,000+	The most energy savings can be found	Affects the most owners and Level II audits on small buildings may have lower value

What was the thought process in considering the cutoffs?

Compliance Pathways

Annual Benchmarking beginning 2021 - 10,000 sq ft or more

Every 5 years beginning:
2023 for commercial + residential
2024 industrial



Feedback Topics

1. What size of buildings need audits
1. What type of audit for small vs big buildings
1. Retrofits and Performance
1. Exemptions for efficient buildings



Next Steps

- ✓ Workshop 1: Goals and Outcomes
- ✓ Survey 1 - Benchmarking
- ✓ Workshop 2: Strategy and Options
- ✓ Survey 2 - Audits
- Study Session
- Planning Commission Feedback
- Open Space and Ecology Committee Feedback
- Council Presentation



Thank you!

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