Mastering Energy Compliance:

District of Columbia Benchmarking & BEPS Requirements

ejf

AGENDA

Energy Benchmarking Basics

Benchmarking Next Steps

BEPS Basics

BEPS Action Plans

BEPS Next Steps

Energy Audits: How They Can Help

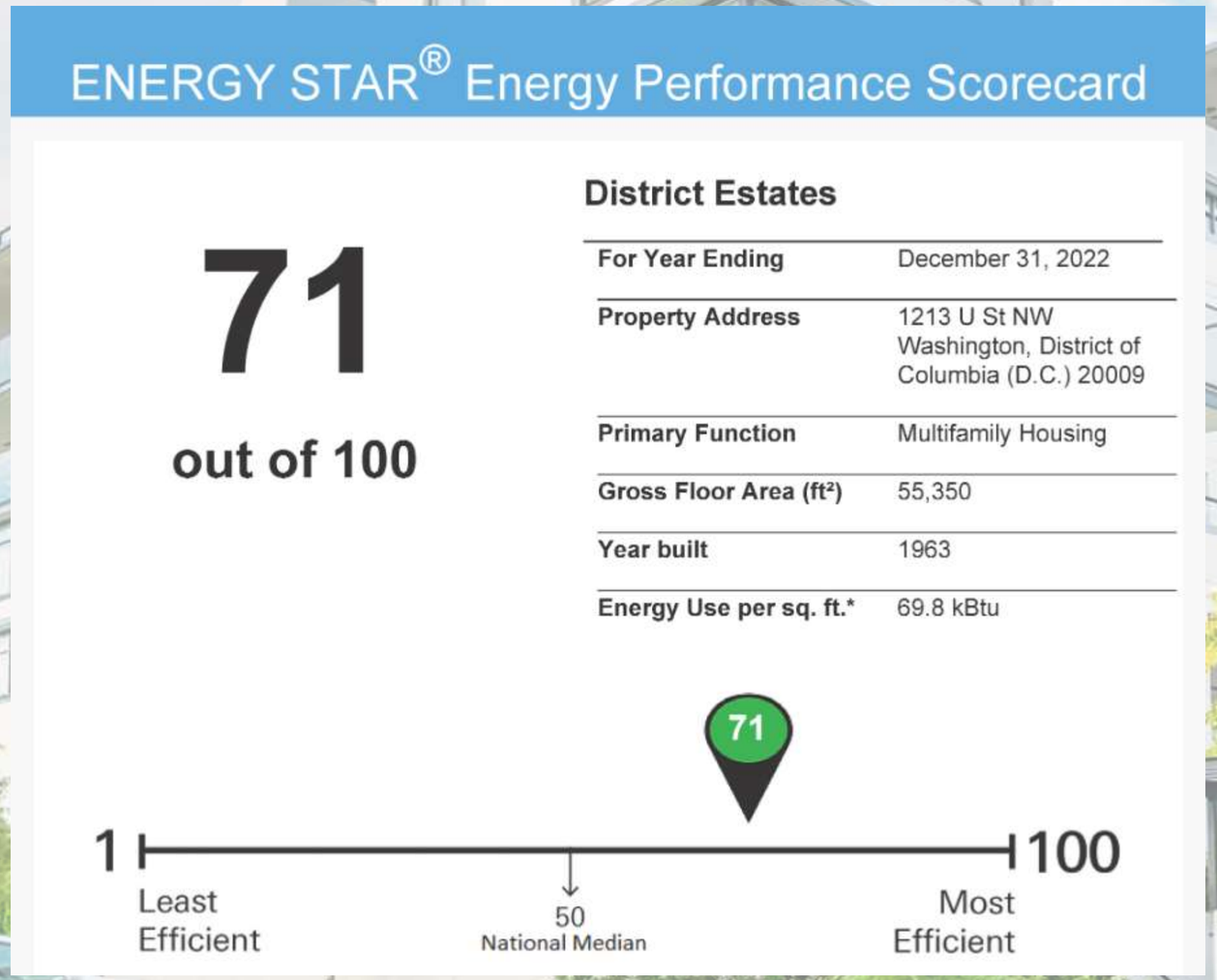
Energy Services & Reserve Study Integration

Q&A

What is Energy Benchmarking?

The process of assessing the energy use of a building and then comparing it to the building's **past performance** as well as with **similar buildings of the same type**, with the goal of *motivating performance improvement*.

What is Energy Benchmarking?



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What does the Benchmarking law require?

Privately owned buildings must complete an Energy Star benchmark of their energy and water performance for the previous year under the Clean and Affordable Energy Act of 2008 and the Clean Energy DC Omnibus Act of 2018.

2014	2022	2026
> 50K sq ft	**> 25K sq ft**	**> 10K sq ft**

When does this have to be completed?

It must be completed using the previous calendar year's utility usage and submitted by May 1st of each year, or first business day.

How is this done?

Utilizing your previous years energy and water usage, your square footage, and answering some other basic property questions (unit list, number of units, address, etc) you or your proxy must calculate your Energy Star Score utilizing Energy Star Portfolio Manager software.

This must be submitted to the Department of Energy and Environment (DOEE).

Who can do it?

You or an energy service provider such as Honeydew or Reserve Advisors can calculate your performance and submit it for you.

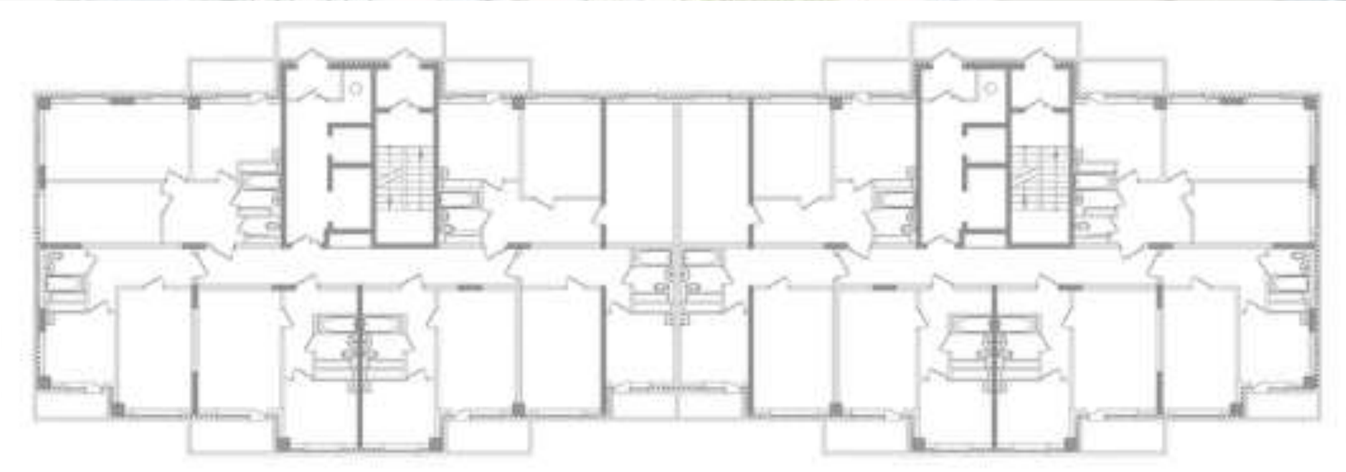
What do I have to do?

The questionnaire will ask for the following property details:

- Building square footage
- Address
- Unit list
- Number of units
- Number of bedrooms - this is critical, as it impacts the score
- Gas metering status (master-metered vs. individually): if individually metered photos of the meters are needed.
- Enclosed Garages: Gross Floor Area (GFA) or # of parking spaces

What is GFA Verification?

Gross Floor Area Verification: Third party measurements of the total property square footage, including basements, as measured between the exterior walls of the building.



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Once I have my benchmark, what should I do?

If your score is...

Above Average (66 for multi-family) **No Action Required**	**Below Average** **Must Take Action** Choose an action plan to comply with BEPS and submit it to the DOEE Should conduct an energy audit to determine cost-effective options

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BEPS - What it is and who needs one

BEPS stands for Building Energy Performance Standards.

It requires an improvement in energy performance such that your building's score is equal to or greater than the median score for your existing building type (DC score is 66).

This is part of a plan to reduce greenhouse gas emissions and energy consumption in Washington DC by 50% by 2032.

BEPS Action Plans

Your pathway is determined by the results of your energy audit and how much you need to improve.

Performance

20% reduction in energy useage

Standard Target

Meet the median Energy Star Score for building type

Prescriptive

Implement a group of energy efficiency measures identified through retro-commissioning and an energy audit that could save at least 25% in energy reductions

BEPS Action Plans

Extended Deep Energy Retrofit (EDER)

- Alternative Compliance Pathway by DOEE
- Allows phased, deep energy retrofits over multiple BEPS cycles
- Reduces short-term compliance pressure
- Requires more ambitious savings than standard compliance pathways

Benefits of EDER

Extended Compliance Timeline
which allows compliance across multiple cycles, avoiding immediate penalties

Phased Upgrades
supporting a step-by-step approach that aligns with capital planning

What if I don't do anything?

You will be fined $500- $2000 for failing to follow various steps of the law.

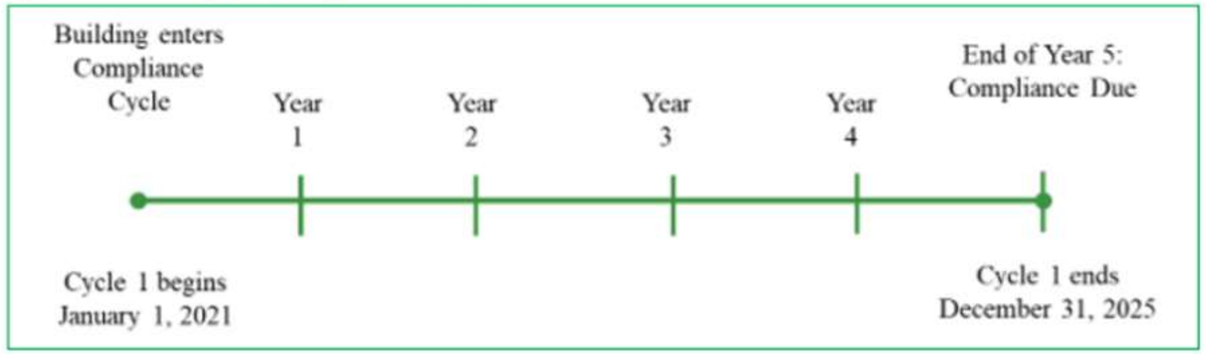
In addition, fines can compound at $100 per day for not benchmarking.

For not improving your Energy Star Score as required, fines will be $10 per sq. ft up to $7.5 million.

How long do I have to meet BEPS requirements?

Five years from your benchmark score that doesn't meet or exceed the average score for your building.

Figure 2 – Compliance Cycle Timeline



Energy Audits: How They Can Help

	Level I Energy Audit	Level II Energy Audit
Physical inspection of the property	✓	✓
Meeting/interview with property representatives and/or operations staff	✓	✓
Review of utility bills	✓	✓
Calculation of energy benchmark for the property	✓	✓
Qualitative summary of potential savings and costs to implement (Ranked by low, medium, and high ratings)	✓	
Quantitative and calculated energy savings opportunities		✓
Summary of energy end use breakdown - Where major areas of energy consumption occur		✓
Detailed financial analysis for energy savings including ROI and payback calculations		✓

Energy Audits: How They Can Help

Level I Audit

Summary of Proposed Cost Savings

Proposed Measure	Annual Cost Savings	Total Measure Cost	Estimated Incentive ($)
Replace Desktop Printer with Office Printer	Low	Low	240
Central Air Conditioning Tune Up	Medium	Low	540
Install Smart Thermostat	Medium	High	1,500
Install Kitchen Demand Ventilation Controls	Medium	Medium	400
Install Low Flow Showerheads	Medium	Medium	2,600
Install VFD on Irrigation System	Low	Medium	160
Install Low Flow Faucet Aerators	Medium	High	4,600
Replace Freezer/Refrigerator with EnergyStar	Medium	High	21,600
Replace Window in Common Area and Gym	Medium	High	3,960
Reduce Lighting System Wattage (simplified)	High	Medium	400

Energy Audits: How They Can Help

Level II Audit

Summary of Proposed Energy Savings

Proposed Measure	Est. Electric Savings (kWh)	Est. Gas Savings (therms)	Est. Water Savings (kGal)	Est. Energy Savings (kBtu)	Current Energy Star Score	Proposed Energy Star Score
Replace Desktop Printer with Office Printer	1,922	-	-	6,558	78	78
Central Air Conditioning Tune Up	28,197	-	-	96,208	78	78
Install Smart Thermostat	53,867	2,682	-	451,960	78	79
Install Kitchen Demand Ventilation Controls	6,662	794	-	102,106	78	79
Install Low Flow Showerheads	-	1,636	1.876	163,605	78	80
Install High Efficiency/Low Pressure Irrigation System	2,496	-	-	8,516	78	78
Install Low Flow Faucet Aerators	-	832	0.438	83,223	78	81
Replace Freezer/Refrigerator with EnergyStar	47,041	-	-	160,505	78	83
Replace Window in Common Area and Gym	10,435	6,921	-	727,530	78	80
Reduce Lighting System Wattage (simplified)	263,775	-	-	900,000	78	83
Total	**414,395**	**12,865**	**2.314**	**2,700,211**		

Energy Audits: How They Can Help

Level II Audit

Summary of Proposed Cost Savings

Proposed Measure	Annual Cost Savings ($)	Total Measure Cost ($)	Estimated Incentive ($)	Simple Payback (years)
Replace Desktop Printer with Office Printer	215	896	240	3.1
Central Air Conditioning Tune Up	2,211	1,440		0.7
Install Smart Thermostat	6,284	12,000	1,500	1.7
Install Kitchen Demand Ventilation Controls	1,998	4,000	400	1.8
Install Low Flow Showerheads	2,657	10,000	2,600	2.8
Install VFD on Irrigation System	197	3,000	160	14.5
Install Low Flow Faucet Aerators	1,352	38,480	4,600	> 20 years
Replace Freezer/Refrigerator with EnergyStar	5,250	69,120	21,600	9.1
Replace Window in Common Area and Gym	6,136	104,880	3,960	16.5
Reduce Lighting System Wattage (simplified)	20,739	12,495	400	8.5
Total	**45,687**	**217,831**	**31,388**	**4.8**

Energy Services and Reserve Studies: Working Together

Reserve Studies

Replacement Cost
Remaining Useful Life

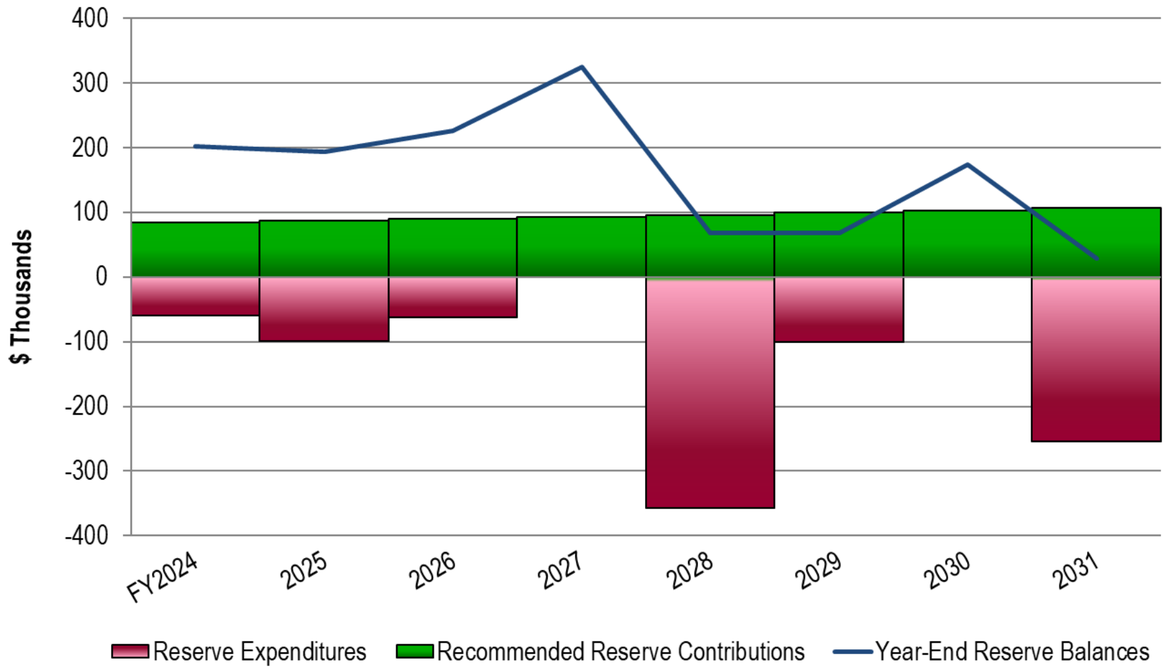
Cost Savings
Service Integration

Energy Services

Energy Savings
Payback Period

RESERVE EXPENDITURES

Total Quantity	Units	Reserve Component Inventory	Life Analysis, Years Useful	Remaining	Costs, $ Total (2024)	RUL = 0 FY2024	1 2025	2 2026	3 2027	4 2028	5 2029
		Exterior Building Elements									
4,800	Square Feet	Balconies, Con							3		
4,800	Square Feet	Roofs, Flat									
22,800	Square Feet	Walls, Masonry								104,654	
		Interic									
320	Square Yards	Floor Covering									
80	Each	Light Fixtures									
1	Allowance	Lobby, Renova								22,950	
11,200	Square Feet	Paint Finishes,									
		Buildir									
1	Each	Boiler, Building								229,505	
1	Each	Boiler, Domestic Hot Water	to 20	5	85,000						100,953
2	Each	Elevator, Traction, Modernization	to 30	7	200,000						
		Anticipated Expenditures, By Year ($3,894,977 over 30 years)				60,160	99,360	61,703	0	357,109	100,953



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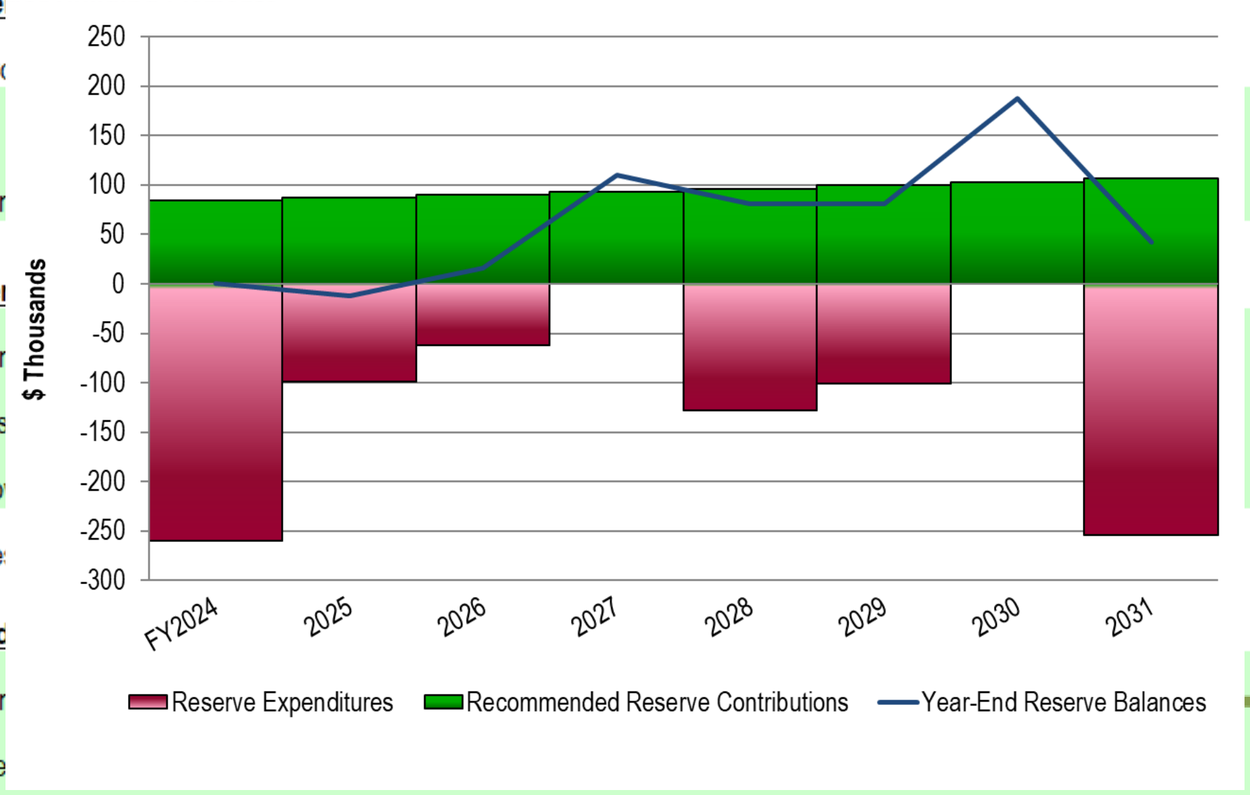

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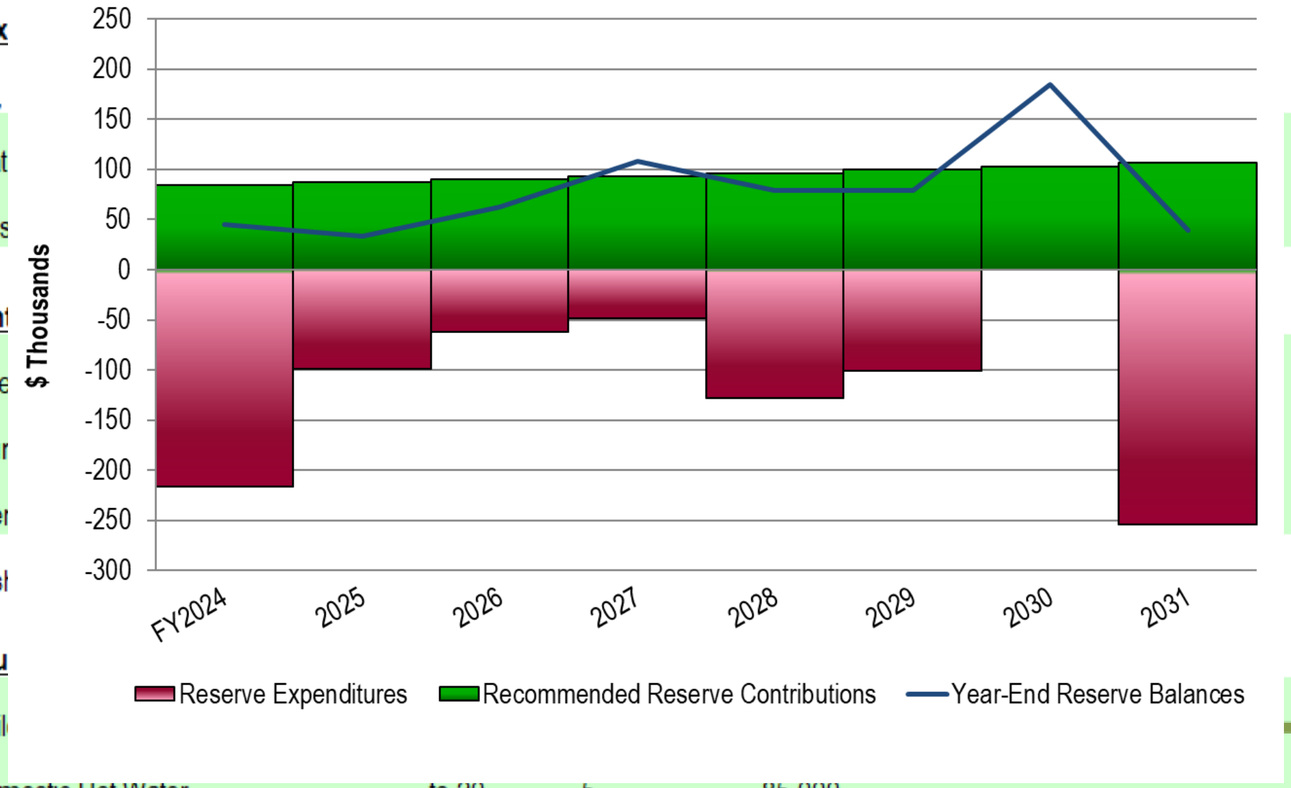

Energy Snapshot (coordinated with a RS)

Energy Audit Snapshot

Estimated Total Building Potential Energy Savings

$20,000 - $30,000

Summary of Proposed Cost Savings

Proposed Measure	Annual Cost Savings	Total Measure Cost
Upgrade Light Fixtures to LED Fixtures at the Common Areas	Medium	Low
Install Bi-level Occupancy Sensors at the Interior Common Areas	Low	Low
Replace Electric Water Heaters with Heat Pump Water Heaters	Medium	High
Replace Air Handling Unit Split Systems with Air Sourced Heat Pumps	Medium	High
Replace Packaged Terminal Air Conditioner (PTAC) System with Higher Efficiency Model	Medium	Medium
Replace Existing Roof with a Cool Roof	High	High
Update Refrigerators with High Efficiency Models at the Units	Low	Low

	Annual Cost Savings ($)	Total Measure Cost ($)
Low	Less than $2,500	Less than $5,000
Medium	$2,500 - $10,000	$5,000 - $30,000
High	Greater than $10,000	Greater than $30,000

Building Score: 6

1 2 3 4 5 6 7 8 9 10

Energy Audit Snapshot

Building Score: 6

Your building score indicates that your building's energy health is slightly above average as compared with other buildings of similar size and property type. We have identified multiple areas for additional energy savings improvement including capital projects as well as low-cost measures that can have a major impact on your property's overall energy efficiency. Implementing one or more of the measures outlined above will increase your Building Score and overall energy savings.

Recap

- ASHRAE Level 2 best to identify ways to achieve targets
- Think about cost of penalty vs cost of upgrades
- If score is well above the requirement, you can still consider an audit or a snapshot at a minimum to understand potential energy savings, which of course impacts your annual operating budget.

Thank You!

Q&A