



CITY OF HOUSTON

# General Services Department (GSD)

## State Energy Conservation Office (SECO) Loan Program and the 2022 Facility Condition Assessment (FCA)

**General Services Department**

**Enid Howard, Chief of Staff**

**Dimitri Karavias, Division Manager**

# Introductions / Topics



OVERVIEW OF FACILITIES



STATE ENERGY CONSERVATION OFFICE  
(SECO) LOAN PROGRAM AND FACILITY  
CONDITION ASSESSMENT (FCA)



DATA DRIVEN CAPITAL PLANNING

# Facility Condition Assessment (FCA) Overview

*The FCA is a detailed inspection of the physical condition of GSD-managed buildings and sites*



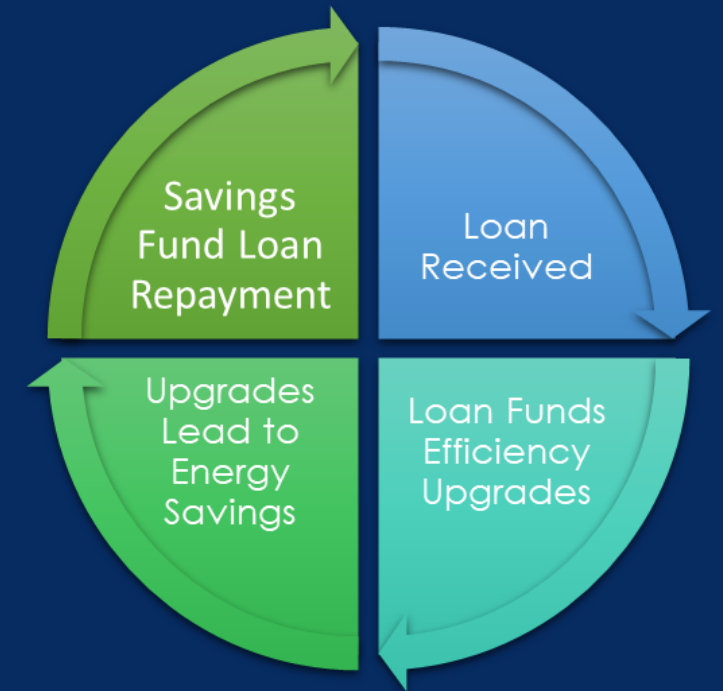
# State Energy Conservation Office (SECO) Loan

*The SECO loan funds State-approved energy efficiency upgrades at selected City-owned facilities.*

**OVERVIEW:** GSD has received funding to perform State-approved upgrades at four facilities: City Hall (CH), City Hall Annex (CHA), Houston Permitting Center (HPC), and Bob Lanier Public Works (BLPW).

**BENCHMARKS:** Four identified Utility Cost Reduction Measures will serve as benchmarks - LED Lighting Retrofits and Sensor Updates (CH, CHA, HPC), HVAC Commissioning (CH, CHA, HPC), Photovoltaic (PV or Solar Panel) system restoration (CHA, HPC), and ITT Data Control Room Optimization (BLPW).

**STATUS:** A Loan Agreement with SECO was approved by the state in March. Texas A&M Engineering Experiment Station (TEES) will commence work soon, with a scheduled completion of March 2023. The loan can be repaid through energy savings resulting from the efficiency upgrades. The loan's projected payback period is 8.7 years.



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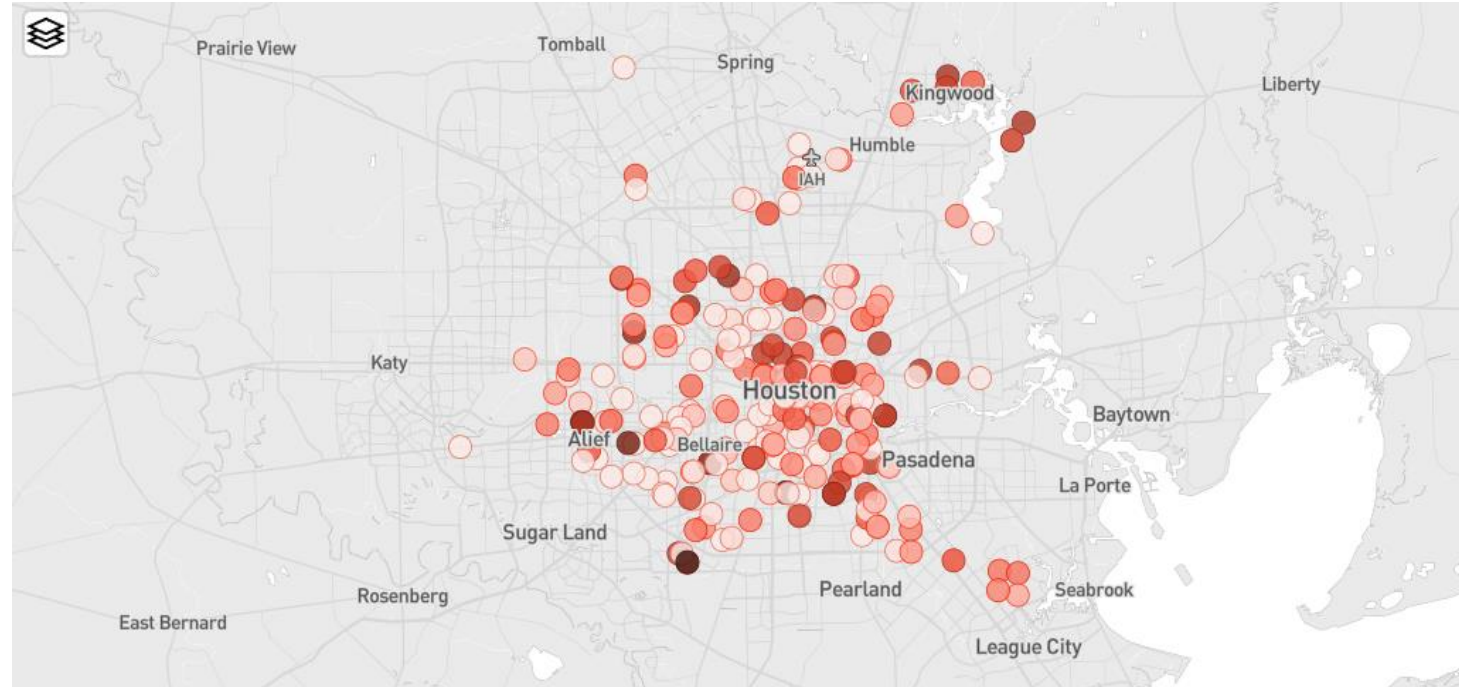


# General Service Department's Facilities Assessed



**ASSESSED**

**503 Assets**  
311 Buildings  
192 Site Developments  
6.36M Square Feet



# Facility Condition Assessment Systems

## Architectural

- Structure
- Roofs
- Doors
- Interior Finishes
- Casework



## Mechanical

- Elevators
- Plumbing Fixtures
- Piping
- HVAC
- Fire Protection



## Electrical

- Service
- Lighting
- Communication
- Fire Alarm
- Emergency Power



## Site Components

- Fixed Equipment
- Pathways
- Parking Lots and Roadways
- Lighting
- Mechanical Site Utilities



# Facility Condition Assessment Equipment

Over **7,000** unique barcodes were applied to major mechanical and electrical equipment (listed below) throughout the GSD portfolio:

- *Boilers*
- *Building electrical service entrances, transformers, panels and switchgear*
- *Chillers*
- *Condensing units*
- *Cooling towers*
- *Elevator equipment, pumps, motors, control*
- *Fire alarm systems and Fire suppression systems Generators*
- *Heat exchangers*
- *Hot water heaters*
- *Motor control centers*
- *Packaged roof top units*
- *Pumps, 5hp and above*
- *Return air fans, roof fans, and exhaust fans (excluding small in-line duct fans)*
- *Unit air conditioners (excluding window units)*
- *Variable speed drives*



▲ Figure 1: Tagged Centrifugal Chiller #2 at Jesse Jones Central Branch Library



# Prioritizing and Categorizing Requirements Identified in the Facility Condition Assessment

## Requirement Priorities (The When?)

Priority	Definition	Years Offset
Priority 1*	Due within 1 Year of Inspection	1
Priority 2*	Due within 2 Years of Inspection	2
Priority 3*	Due within 5 Years of Inspection	5
Priority 4	Due within 10 Years of Inspection	10
Priority 5	Not Time Based	Null



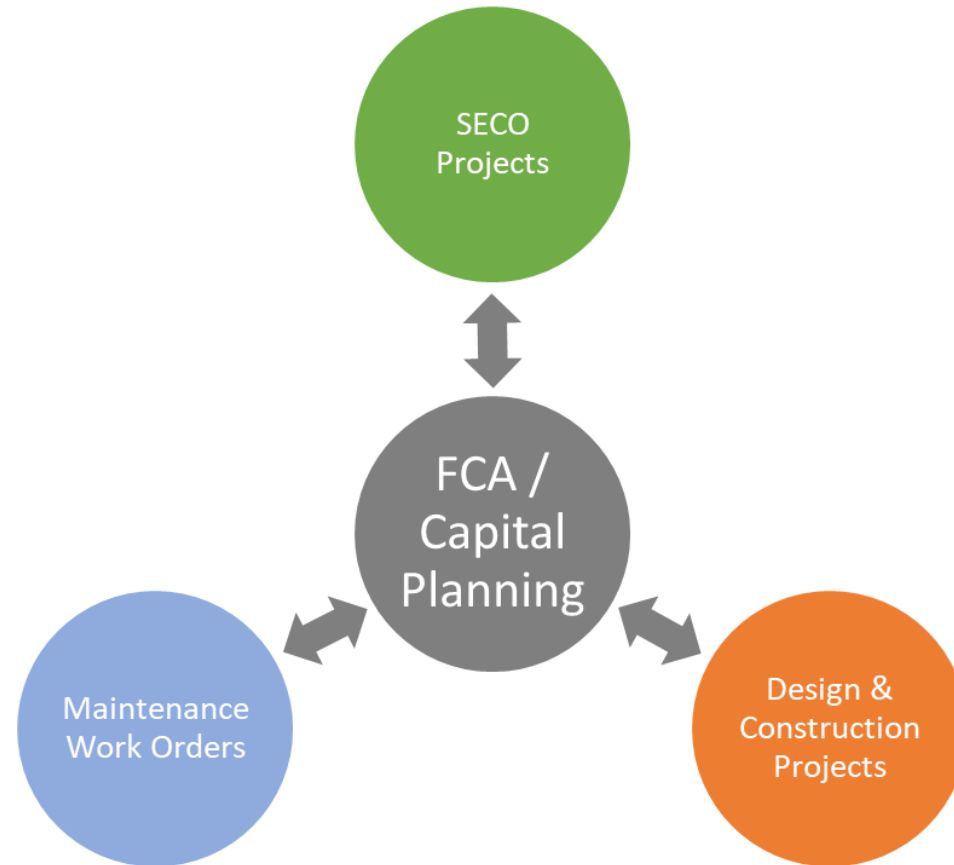
## Requirement Categories (The Why?)

Category	Sub-category
Integrity	<ul style="list-style-type: none"> <li>Lifecycle*</li> <li>Reliability*</li> </ul>
	<ul style="list-style-type: none"> <li>Life Safety*</li> <li>Building Code*</li> <li>HazMat*</li> <li>Accessibility*</li> </ul>
Optimization	<ul style="list-style-type: none"> <li>Technological Improvements</li> <li>Capacity</li> <li>Mission</li> <li>Maintenance</li> <li>Abandoned</li> <li>Energy</li> <li>Sustainability</li> </ul>





# Relationship between State Energy Conservation Office (SECO) projects and Facility Condition Assessment (FCA)



# Goal Alignment

Goals of the SECO and Facility Condition Assessment projects align directly with broader City of Houston initiatives, including the:

Climate Action Plan (CAP), Resilient Houston (RH) framework, and Municipal Building Decarbonization and Benchmarking (MBDB) Policy

GOALS	CAP	RH	MBDB
Reduce Emissions (SECO)	✓	✓	✓
Reinvest in Renewable Energy (SECO)	✓	✓	✓
Improve Energy Efficiency (SECO)	✓		✓
Optimize Building Performance (SECO)	✓	✓	✓
Lower Utility Bills (SECO)	✓		✓
Prioritize Maintenance Needs (FCA)		✓	✓
Identify Opportunities to Extend Building Life & Performance (FCA)	✓	✓	✓





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# Thank You!

## Q&A

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