Assessing the Flow



Facility Condition Assessments to Maintain Water Treatment and Prevent Failures

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What is a Facilities Condition Assessment?

A facilities condition assessment is a systematic evaluation of a building's physical condition, systems, and infrastructure to determine maintenance, repair, and replacement needs.

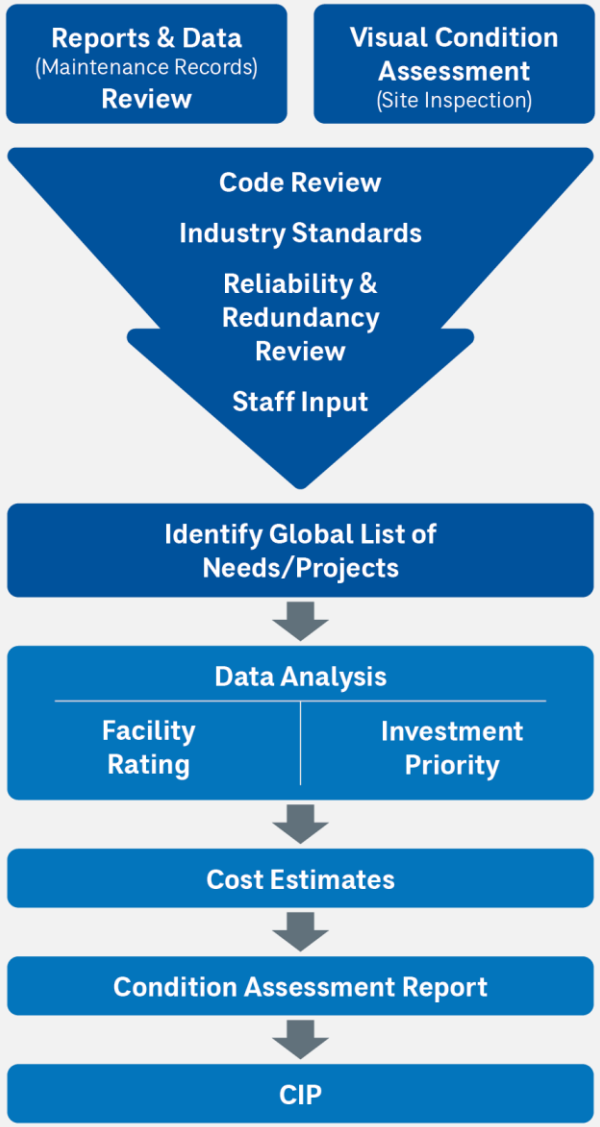


Why Do Facilities Condition Assessments Matter?

- Maintain operational reliability, safety, and compliance
- Avoid costly failures through proactive maintenance
- Budget/prepare Capital Improvements Plan (CIP)
- Assess critical systems (e.g., mechanical, electrical, structural) and their impact on facility performance



Phase 1 Data Collection and Review

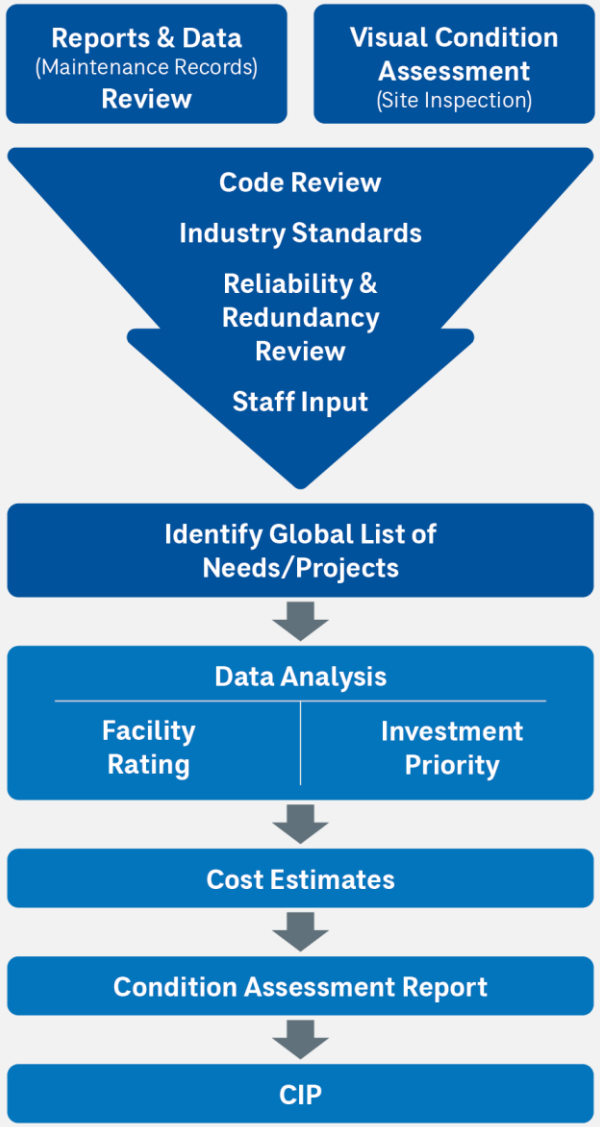


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Phase 2 Visual Condition Assessment

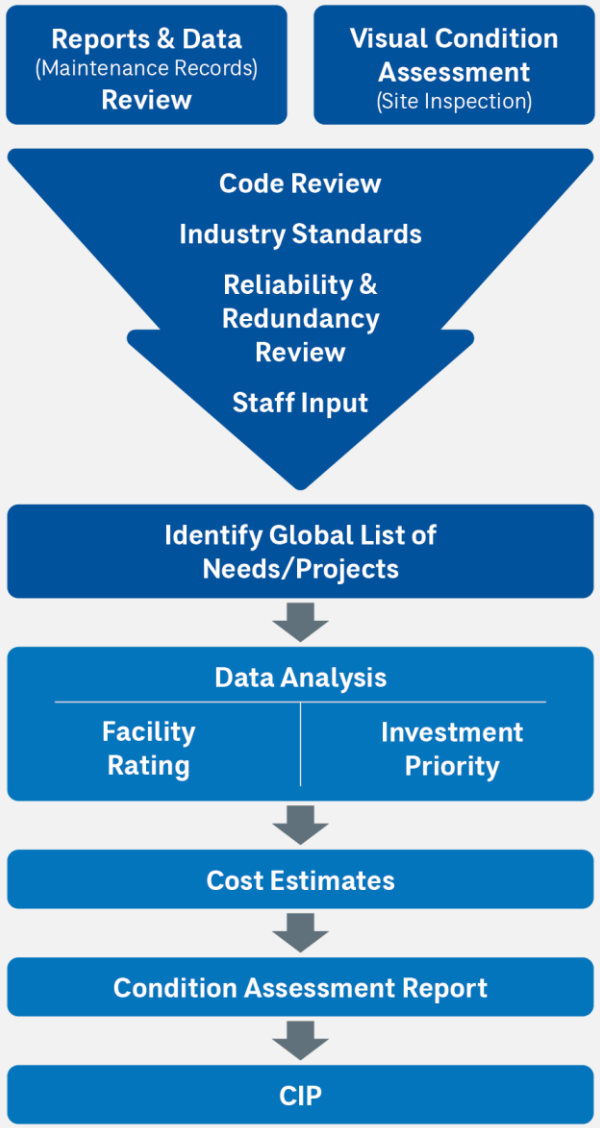


A multi-discipline team conducts a visual condition assessment

- Physical condition (based on visual observations)
- Performance (as based on visual observations and provided records)
- Operation and maintenance (O&M) based on interviews with users

Discipline/Area of Review	Checklist of Components to Observe/Assess	Issues to Consider During Site Visits
Fire Protection and Safety	• Fire protection equipment • Fire alarm system	• Visually apparent code violations • Check the visual condition of fire protection equipment (visible defects or wear) • Interview staff during site visits
Building Envelope/ Architectural	• Doors • Windows • Floors • Stairways • Elevators • Access hatches • Ladders • Guard rails • Walkways/bridges • Other architectural components • ADA • Exits	• Visually apparent code violations • Check the visual condition of assets (visible defects or wear) • Interview staff during site visits
HVAC/Building Mechanical	• Boilers and associated ancillary components • Air handling equipment • Air ducts, including dampers, splitters, turning vanes, diffusers, grills • Ventilation system • Controls for HVAC systems	• Visually apparent code violations • Check the visual condition of fire protection equipment (visible defects or wear) • Review for any signs of corrosion or deterioration • Check the condition of air ducts, screens and channels, and confirm flow is unrestricted • Interview staff during site visits
Plumbing	• Restrooms • Hot and cold water systems	• Visually apparent code violations • Check the visual condition of equipment (visible defects or wear) • Check for any signs of corrosion or deterioration, readily accessible only. Interview staff during site visits
Electrical	• Main building switchgear (as accessible) • Main panelboards • Lighting	• Check for code violations • Check for electrical hazards • Check the visual condition of equipment (visible defects or wear) • Interview staff during site visits

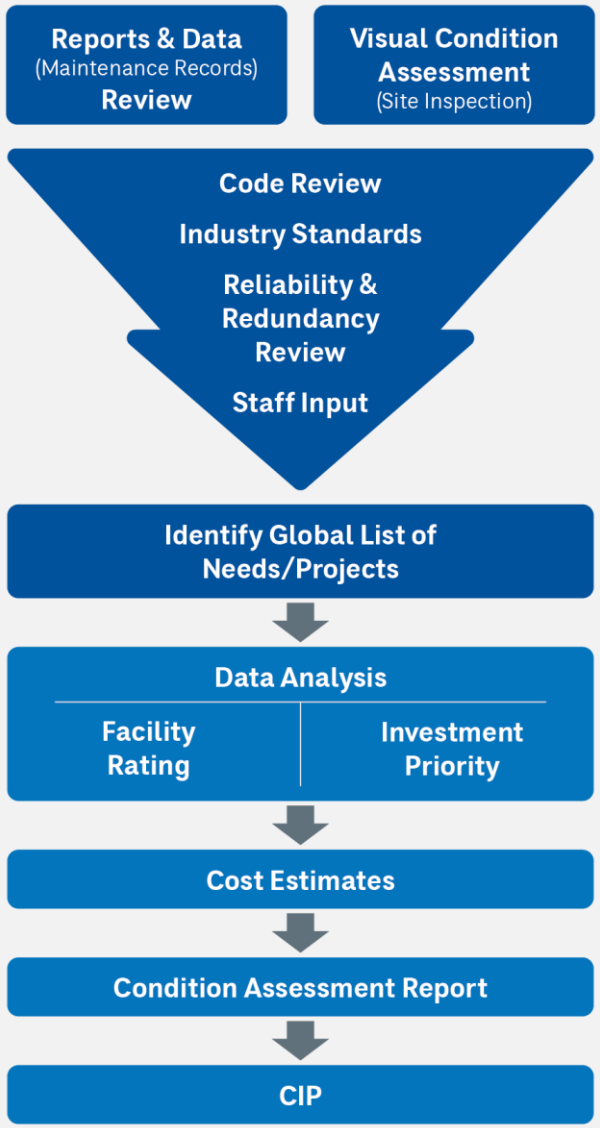
Phase 2 Visual Condition Assessment



Example of a critical issue identified during facility assessment

	A	B	C	D	E	F	G	H	I	J	K	L
1		**Fire Station #5**										661 Mason Ave.
2		**Building #**	10		**Area (SF)**	5,632					**Date Assessed**	1/19/2017
3		**Facilities Group**	Fire Stations		**Year Built**	1975					**Client Contact**	Ray Randich / Joe Formhals
4												
5						**Deferred Maintenance**						
6		**BUILDING SYSTEMS**	**ASSESSED ? (Y/N)**	**LIFE EXPECT. (YRS)**	**YRS IN SERVICE**	**Critical**	**1 Yr**	**5 Yrs**	**10 Yrs**	**20 Yrs**	**BUDGET ESTIMATE**	**COMMENTS**
42		**5. ELECTRICAL SYSTEMS**									**$227,400**	
43		ELECTRICAL SERVICE	Y	40	42						$57,600	good condition but old
44		LIGHTING	Y								~~$88,000~~	~~partial replacement, engineering study~~
45		EMERGENCY LIGHTING	Y								$15,000	C1: lacks illuminated exit signs
46		LIGHTING CONTROLS	Y								$0	switched inside, outside timer
47		EMERGENCY GENERATOR	Y		~20						$66,000	good condition
48		**6. PLUMBING SYSTEMS**									**$50,400**	

Phase 3 Data Analysis And Report Preparation

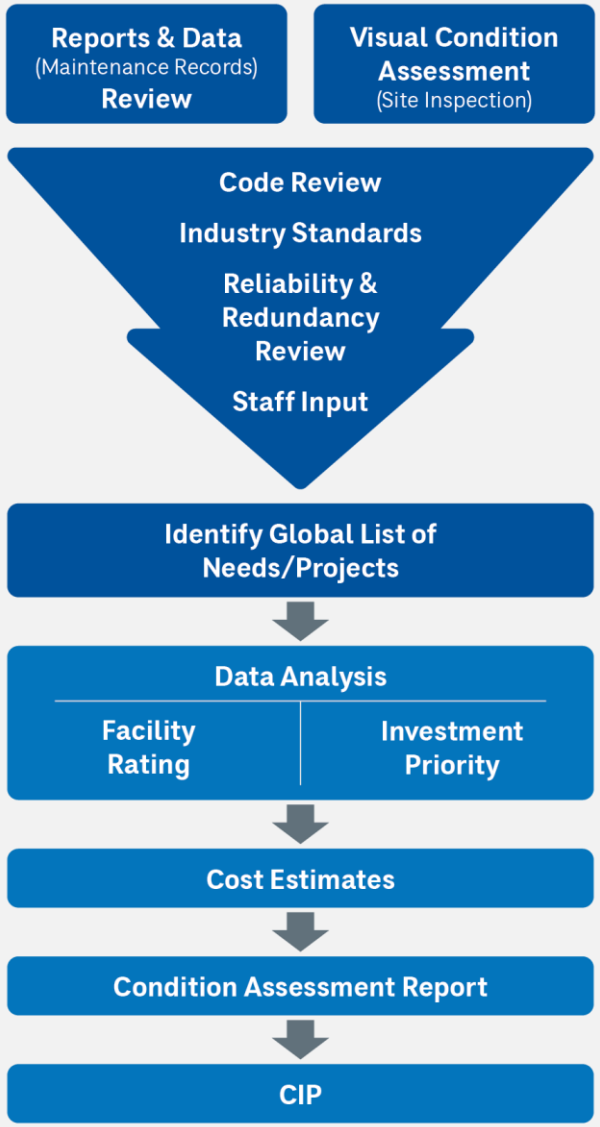


Categorize improvements based on a ranking system that considers the following:

- Cost estimates
- Benchmarks

ASHRAE Table of Equipment Useful Life Expectancy	
Chillers 30 Years	Ductwork 30 Years
HW Boilers 30 Years	DDC Temperature Controls 15 Years
Radiant/Unit Heaters 20 Years	Electrical Services 40 Years
Air Handling Units 25 Years	Electric Water Heater 7-15 Years
Exhaust Fans 20 Years	DW Piping 25 Years
VAV Boxes 20 Years	

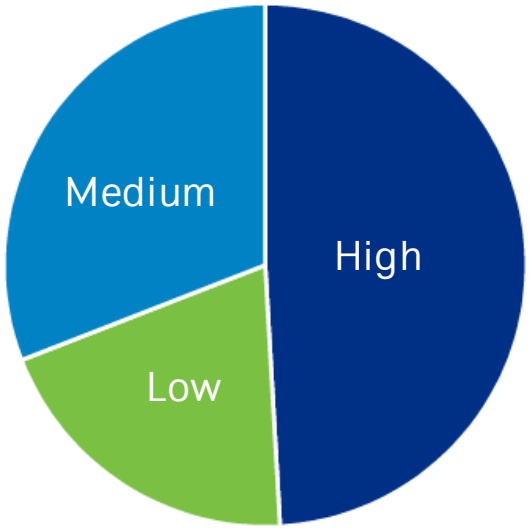
Capital Improvements Plan (CIP)



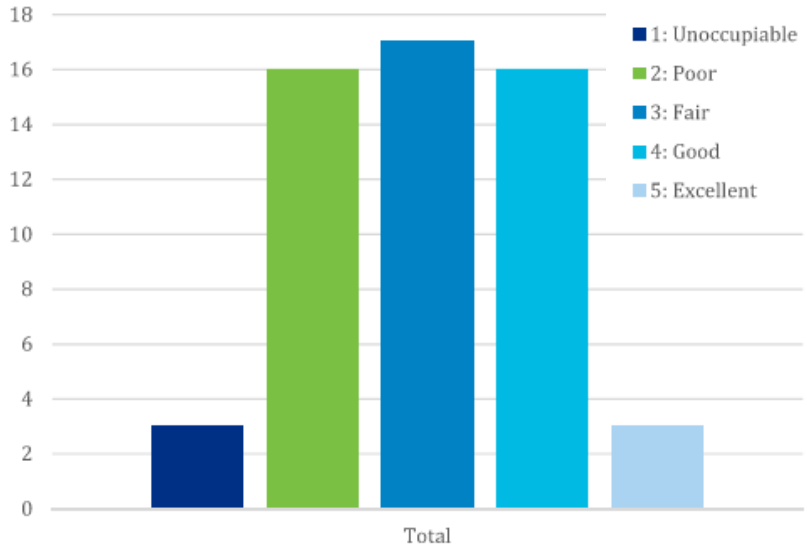
For each deficiency and associated recommended improvement, the following is documented:

- Definition of the problem, impact on operations, and associated recommended fix
- Assessment of level of priority
- Area of review (structural, process, electrical, etc.)
- Definition of functional category
- Planning level total project cost estimate and planning level construction cost estimate

Priority



Condition



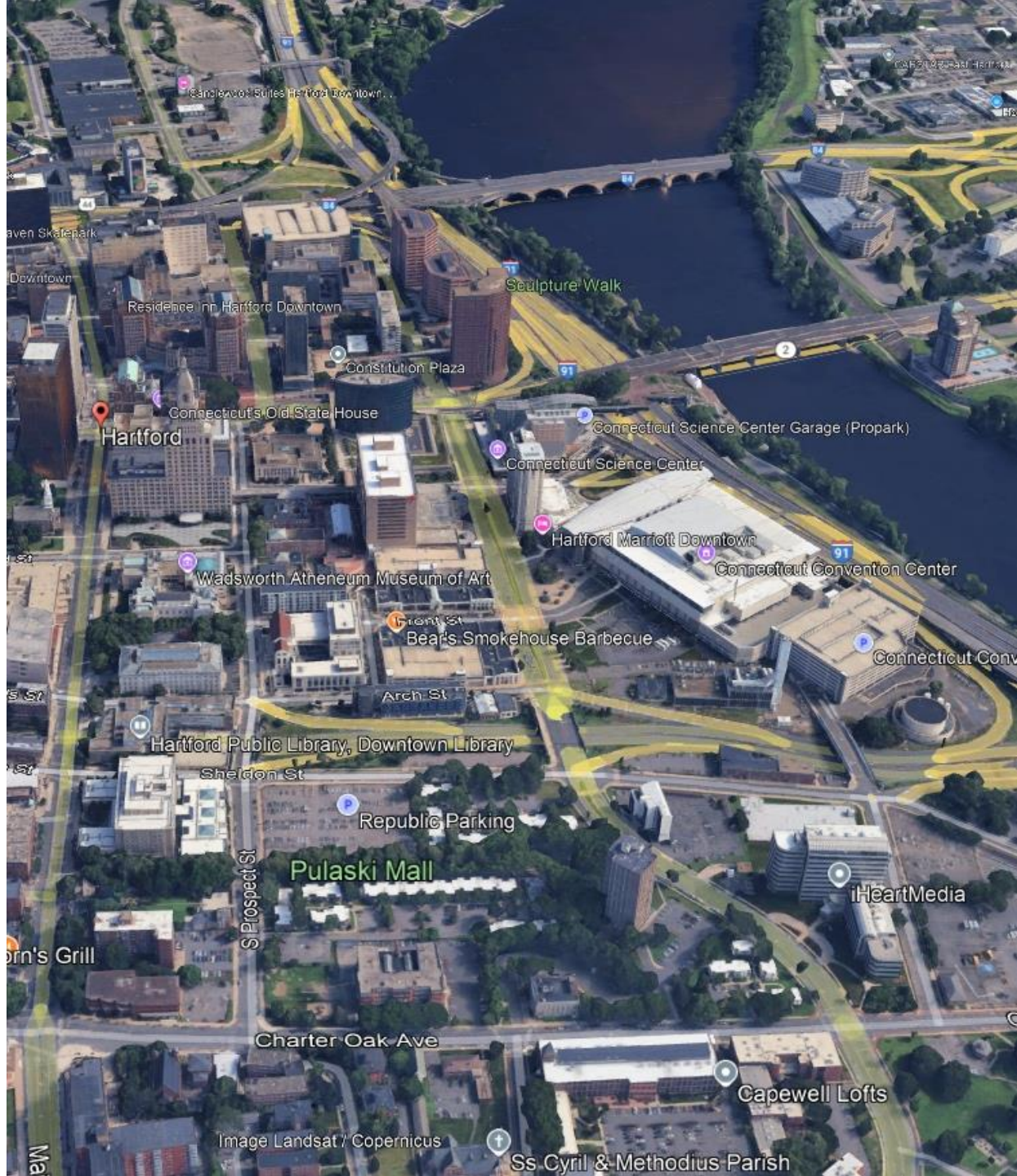
Case Study: City of Hartford

- This building assessment evaluated all City of Hartford owned facilities (63 buildings total).



Case Study: City of Hartford

The assessment and budgetary information compiled assisted the City in efficiently and logically allocating available municipal funding, maintaining a high level of service, and assessing the risk of failure of existing assets. The intent was to capture the existing condition of the system, the useful remaining life, the deferred maintenance, and the expected replacement cost.



Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
- **Phase 2 – Condition Assessment**
  - HW unit heaters observed in to be in poor condition
  - Insulation and piping connections are deteriorating, with visible rust
- **Phase 3 – Data Analysis and Report Preparation**
  - Critical condition
- **Capital Improvement Plan**
  - Replacement recommended within a year due to rust and deterioration





Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
- **Phase 2 – Condition Assessment**
  - The HW boiler and associated piping are in poor condition
  - Piping and connections show significant rust, risking leaks and failure
- **Phase 3 – Data Analysis and Report Preparation**
  - Critical condition
- **Capital Improvement Plan**
  - Replacement recommended within a year to provide system reliability



Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
- **Phase 2 – Condition Assessment**
  - Sidewall exhaust fans show visible rusting and heavy dirt buildup
  - Mesh and casing are deteriorating, affecting functionality and airflow
- **Phase 3 – Data Analysis and Report Preparation**
  - Critical condition
- **Capital Improvement Plan**
  - Critical replacement recommended within one year to prevent failure





Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
- **Phase 2 – Condition Assessment**
  - The sump pump enclosure is not airtight, compromising system protection
  - Leaks and gaps present a risk to equipment functionality and longevity
- **Phase 3 – Data Analysis and Report Preparation**
  - Replacement recommended within one year to continue proper containment



Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
  - The facility has a 30-kW emergency generator and three 215 hp diesel pumping engines
- **Phase 2 – Condition Assessment**
  - One engine was out of order at the time of inspection, and the systems show signs of aging
- **Phase 3 – Data Analysis and Report Preparation**
  - Full replacement of the generator and engines is recommended within one year





Case Study:
Armory Pump Station

- **Phase 1 – Data Collection and Review**
- **Phase 2 – Condition Assessment**
  - The facility's floor coating is deteriorating, exposing the concrete surface
  - Worn-out coating affects durability and maintenance
- **Phase 3 – Data Analysis and Report Preparation**
  - Recommend removal of existing coating and sealing concrete within 5 years



Case Study: Armory Pump Station

Capital Improvements Plan

Table 1. Opinion of Probable Construction Cost Summary

Facility	Address	Budget Cost Estimate	Renovations
1. Affleck Street Police Substation	134 Affleck St	$ 100,000	Electric Baseboard, HVAC Diffusers, Carpet Replacement, Asphalt Repair, EIFS Stucco Exterior Walls, Lighting System, Fire Alarm System
2. Armory Pump Station	Hungerford St	$ 448,000	Hot Water Heaters, Hot Water Boiler, Exhaust Fans, Electric Water Heater, Sump Pump, Doors, Painting Floors and Walls, Asphalt Repair, Emergency Generator, Diesel Pumping Engines

Conclusion

The results of the Hartford assessment will help the city manage facilities efficiently and plan maintenance and capital improvement projects.



Final Takeaways & Key Insights

- Facilities condition assessments help organizations plan smarter and spend wisely.
- A proactive approach reduces long-term costs and maintains operational reliability.
- Prioritizing maintenance and capital improvements leads to better resource allocation.
- Data-driven decisions help extend the lifespan of critical infrastructure.



Thank You



What happens **NEXT** is happening **NOW**.

Let’s shape your **NOW** together.

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