



Public Works Building Facility Conditions Assessment Follow-Up

AB 6477 | May 21, 2024



Presentation Overview

- Long-Range Facilities Planning
- Public Works Building Background
- Facility Conditions Assessment Critical Findings
- Seismic Assessment & Recommendations
- Summary of Recommended Actions
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- Next Steps

Long Range Facilities Planning

- In early 2023 the City began work on a Long-Range Facilities Plan to guide decisions about use and improvements to City facilities.
- The first phase of the project included Facilities Conditions Assessments (FCA) for the following buildings:
 - City Hall
 - **Public Works Building**
 - MICEC Annex Building
 - Luther Burbank Administration Building
 - Mercer Island Thrift Shop
 - Former Tully's Building
- The purpose of an FCA is to inventory and evaluate building and site infrastructure conditions, document observed deficiencies, and develop a recommended strategy for **renovation or replacement** to extend the life of the asset and ensure continuity of services.



Public Works Building Summary

- The Public Works Building houses many essential services.
- It was constructed primarily as a workshop and mechanic facility in 1981.
- The facility operates under an approved Conditional Use permit originally issued in 1979.



Public Works Building Summary

The Public Works Building is 15,350 square feet and currently houses the following operational and administrative teams:

- Right-of-Way & Stormwater Team (10 FTEs)
- Water Utility (8.5 FTEs, 3 LTEs)
- Sewer Utility (6.5 FTEs)
- Parks Maintenance (10 FTEs)
- Support Services Team (3 FTEs, 1 LTE)
- Public Works Engineering and Administration Teams (19 FTEs)
- Following the closure of City Hall in April 2023, the City's Utility Billing Team was re-located at the Public Works Building (3 FTEs).



Public Works Building Summary

- In total, there are 64 employees (FTE and LTE equivalents) and 15 to 20 seasonal employees who currently operate out of this facility.
- In addition to the primary building, the site also includes the City warehouse and the “yard,” which accommodates the storage of City vehicles, equipment, and materials.
- Due to the complex equipment and critical-response teams operating out of this area, access is restricted to staff only. There is no public access or public meeting space at the building or yard.



Public Works Building Summary

- An FCA was recently completed for the Public Works Building and has identified multiple systems that are failing or in need of significant repair or investment.
- The City Manager is recommending the City Council prioritize the Public Works Building for replacement.
- Staff will present the capital reinvestment strategies to the City Council as part of the upcoming 2025-2026 Biennial Budget Development process.





Public Works Building Critical Issues



FCA Findings

- The results of the Public Works Building FCA confirms that the **facility has reached the end of its useful life.**
- It remains necessary to **keep the building operational for about five years** while a new facility is planned and constructed.
- Capital investment is needed to keep the building operational on a short-term basis and address items ranging from minor safety and efficiency improvements to structural repairs. They are summarized on the following slides.
- Staff are working on cost estimates for these projects and will include these recommendations as part of the capital budget discussion this fall.

Roofing and Water Intrusion



- The roofing membrane over the warehouse and operations spaces is more than 10 years beyond end-of-life and leaking profusely.
- The flat roofs over the administrative offices and the mechanic's shop are not properly sloped, resulting in standing water.

Roofing and Water Intrusion: Recommendation

- The roof leaks need to be addressed to extend the life of the building and provide reasonable workspace for City staff.
- In the development of the roof replacement scope of work, structural deficiencies were also identified. (More on that later.)
- The existing green roof soil must be removed in order to address the roof leaks and structural concerns.

Heating, Cooling & Ventilation

- There is no cooling in the lower level of the building where the operations teams work.
- The HVAC system on the upper level is at the end of its useful life.
- There is a lack of adequate ventilation to address vehicle exhaust, the welding hood, and the fluid storage room.
- The exterior walls are concrete block with minimal insulation value.
- The aluminum-framed windows are not insulated and the double panes are unsealing.



Heating, Cooling & Ventilation: Recommendation

- The existing engine exhaust system is now operational.
- Air quality monitors have been installed throughout the building.
- Installing a new HVAC system would likely cost hundreds of thousands of dollars and require extensive electrical modifications. Given the building's short-term expected occupancy, we are not proceeding with this recommendation.
- The existing HVAC systems will be run to failure and components replaced or repaired if necessary.

Fall Protection Railings



- Accessible roofs on top of the Public Works Building and outbuildings have no railing system to protect against falls.
- Several of these areas are used for material storage (benches, holiday displays, plants, etc.)
- A railing system must be installed on all edges to meet code requirements.

Fall Protection Railings: Recommendation

- Include fall restraint guards at the Public Works building and select outbuildings.
- This project will be completed this year.

Wired Glass



- The glass installed on the interior windows and doors includes wired glass, which is now considered a potential safety hazard.
- Wire mesh weakens the glass and creates jagged glass shards when broken.
- The windows can be covered with a protective film to contain glass if broken.

Wired Glass: Recommendation

- Given the expected lifespan of the building, the windows will be treated with a safety film to prevent shattering rather than being replaced.
- This work will be completed this year.

Electrical Service & Distribution



- There is not enough electrical capacity currently, circuits are tripping regularly.
- The electrical system must be assessed and updated before any modifications can be made to the HVAC or lighting systems.

Electrical Service & Distribution: Recommendation

- The findings of the FCA include a recommendation to engage an electrical contractor to fully review the existing system and develop a work package to address observed deficiencies and code-based upgrades.
- If long-term occupancy of this building was anticipated, the electrical panels and distribution system should be replaced.
- Due to the expected short-term occupancy, we are not moving forward with this recommendation.
- Operational changes have been made to distribute the loads that were causing breakers to trip.

Insufficient Restroom Capacity



- The Public Works Building only has 5 restroom stalls, which is insufficient for current staffing needs as determined per WAC 296-800-23020.
- Two portable toilets are on-site to meet needs.
- There are no restrooms on the second floor of the building.

Insufficient Restroom Capacity: Recommendation

- Staff will continue to provide on-site portable restrooms to address the capacity needs for the current workforce.

Fire Suppression System



- The building does not have a fire suppression system.
- The existing system is comprised of fire/heat detection only.
- This is of particular concern in the Mechanic's Shop and Warehouse where flammable materials and liquids are stored.

Fire Suppression System: Recommendation

- The existing fire suppression system meets the code requirements for this building.
- Additional fire extinguishers have been procured for the facility.



Seismic Assessment & Recommended Retrofits



Structural Deficiencies



- The Public Works Building was not designed to meet the seismic resilience required for a building that must operate as an essential facility following an earthquake.
- ASCE 41-17 seismic evaluation found that the existing building structure is inadequate to remain operational as a Seismic Risk Category II building.
- A standalone Public Works' operations facility should meet Seismic Risk Category III or preferably Category IV to ensure that it can perform essential functions following a seismic event.

Seismic Assessment



- Quantum Consulting Engineers conducted a detailed seismic analysis of specific issues identified as priorities from prior structural reports and the building's FCA.
- The report includes specific structural retrofits required for the building to meet code-based seismic performance.

Roofing and Walls



- The weight of the green roof's soil and vegetation must be addressed as soon as possible to reduce weight on the structure and allow for membrane replacement.
- The existing shear walls are adequate only if the green roof and soil on the roof is completely removed.

Wall Anchoring



- There is no evident anchoring between the walls and the wood diaphragms at the two higher roofs: the office and the high-bay garage.
- The connection between the wood-framed roofs and the exterior walls is inadequate and must be retrofitted now, even with short-term occupancy.

High-Bay Doors and CMU Walls



- Inadequate foundations along the high-bay doors on both the east and west sides.
- The building has numerous unbraced interior Concrete Masonry Unit (CMU) walls. It is unclear if these are secured to the roof.

Structural Deficiencies: Recommendations

- Remove all of the green roof soil to reduce the weight on the structure. Remove roof decking material as needed to install seismic retrofits. Install new, short-term roof system.
- Install anchoring between the walls and the wood diaphragms at the second-floor office and high-bay garage roofs.
- Install a subsurface concrete-grade beam along the exterior at each end of the high-bay garage doors.
- Brace the internal non-bearing CMU walls to protect against potential collapse.

Structural Deficiencies: Recommendations Continued

- Staff and consultants are developing design and cost estimates for the short-term roof and structural repairs.
- The preliminary cost estimate is \$1 million, with work expected to be completed in 2025-2026. Further cost refinement will be completed thru the design process and this estimate will change.

Summary of Key Action Items

- Plan for structural improvements for the green roof removal and roof replacement, wall anchoring and reinforcement, and high-bay door support.
- Address immediate safety concerns for fall protection and wire glass replacement.
- Operate existing HVAC system to failure.
- Operate the electrical system as-is, with the understanding that no significant new loads can be added.
- Continue to offer mobile restroom facilities.



Preliminary Cost Estimates

- Preliminary Cost Estimates:
 - 2025-2026 Roof and Structural Repairs: \$1,000,000
 - 2027-2028 TBD: \$1,000,000
- Preliminary cost estimates are not equivalent to full construction costs.
- Cost estimates may not consider dependencies between components or unique circumstances uncovered during work.



Key Takeaways

- There will be several phases of work required to keep the existing Public Works Building operational.
- The most immediate phase will address basic safety improvements.
- Subsequent phases will address specific structural retrofits resulting from a seismic analysis of the building.
- If the Public Works Building is not replaced within approximately five years, the repairs and interventions necessary to address deferred maintenance will increase and become more costly.



Next Steps

- Staff will present scopes of work and cost estimates for the work necessary to extend the life of the Public Works building to the City Council as part of the 2025-2026 Biennial Budget Development process this fall.
- The second phase of Facility Condition Assessments will resume toward the end of 2024 and is anticipated to be completed by the end of 2026. City Council will receive updates and presentations as these are completed.

