# Transit Asset Management Plan

**October 1, 2022 – September 30, 2026**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

Rhode Island Public Transit Authority
705 Elmwood Avenue
Providence, RI 02907
(401) 784-9500 / www.ripta.com

# TABLE OF CONTENTS

## CEO Certification

The Rhode Island Public Transit Authority (RIPTA) is a designated Tier 1 provider as defined by the Federal Transit Administration. Per that designation, the agency is required to develop and implement a transit asset management plan to help address deferred maintenance through the use of performance-based assessment and planning. As the Chief Executive Officer for the Authority, it is my overall responsibility that the agency carries out this plan in coordination with other applicable departments and relevant staff. In response to the requirements set forth in Federal legislation and regulations pertaining to receiving Federal monies by way of Chapter 53 funds, do hereby approve, adopt, and certify the RIPTA's Transit Asset Management Plan for implementation.

Scott Avedisian

Date: 10/4/2022

**Scott Avedisian**
*Chief Executive Officer*
Accountable Executive

# Introduction

## *Background*

At the start of 2010, it was found that the national backlog on infrastructure maintenance exceeded $1 trillion, with transit accounting for over $78 billion. In response, Congress passed the 2012 *Moving Ahead for Progress in the 21st Century Act* (or MAP-21). This initial legislation set a requirement for the United States Department of Transportation (USDOT) to develop rules and create a national system to monitor and manage public transportation assets to improve safety and increase reliability and performance. This aim was reaffirmed in the 2015 *Fixing America's Surface Transportation Act* (FAST). The Federal Transit Administration (FTA) issued its final rule on transit asset management also known as 49 CFR 625 in July 2016 which proceeded to go into effect on October 1st, 2016.

Under this rule, every agency must develop a transit asset management plan if it owns, operates, or manages capital assets used to provide public transportation and receives federal financial assistance under 49 U.S.C. Chapter 53 as a recipient or subrecipient. FTA grantees are required to collect and use asset inventory and condition data, set state of good repair (SGR) performance targets, develop strategies to prioritize investments, and prepare a plan to meet those targets. These plans are required to be updated in their entirety at least once every four years. The first compliant TAM plans were due in October 2018 and are obligated to complete an updated every four years starting in October 2022, coinciding to the extent possible, with the State and metropolitan planning cycle for the development of the State Transportation Improvement Program (TIP) to set regional and statewide performance targets.

The Rhode Island Public Transit Authority (RIPTA) is the statewide transit operator for the Ocean State. It possesses five administrative/maintenance facilities in Providence and Newport, occupies three passenger facilities, and owns hundreds of millions of dollars' worth in vehicle and equipment assets. Today, RIPTA offers transit service in 36 of 39 municipalities; in FY 2020, RIPTA provided 13.4 million trips across its 53 fixed routes, assorted flex zones, and ADA paratransit operations.

RIPTA complied with the 2016 FTA final rule on transit asset management and composed its first plan in 2018. This final document consists of the Authority's established targets and actions to be carried out from October 2022 through until the next update in Fall 2026. The agency's organizational structure, maintenance practices, budget processes and information systems are all aligned on the goal of preserving and extending the useful life of its various assets. The Authority recently had its triennial review with the FTA in which it provided updated maintenance plans and programs for all relevant assets.

## *Scope*

This plan details RIPTA's approach to Transit Asset Management for the upcoming four-year period, and describes the following:

- The process for inventorying and determining the condition of transit assets, including rolling stock, facilities, and equipment
- The decision-making process, including methodology for determining capital needs over time and prioritizing investment in capital assets
- Our implementation strategy, including an annual/cyclical calendar of activities
- The agency's plan for monitoring and evaluating this plan
- The resources allocated toward the TAM process, including funding resources and agency personnel responsible for the implementation and oversight of this plan
- Our baseline and established targets to be achieved over the duration of this plan
- RIPTA's State of Good Repair Policy
- RIPTA's completed facility condition assessments (see appendix), and
- RIPTA's prioritized list of capital investments (see appendix)

### *Goals*

RIPTA has set the following goals for the 2022-2026 plan:

1. Minimize total costs and maximize the performance of all capital assets and facilities.
2. Ensure decision-making is based on data driven information and well-defined objectives.
3. Make transparent cost-effective decisions on the acquisition of capital assets and their maintenance (both vehicles and facilities) over their useful life.

## Inventory and Condition Assessments

As new assets are introduced – such as of new pieces of equipment, new facilities are opened, or new revenue vehicles brought into service – they will be added to the Authority's inventory of capital assets. This database will be maintained by the Finance Department. Per the final rule, equipment that is not a service vehicle or has an acquisition value less than $50,000 does not need to be incorporated into the database.

RIPTA will utilize the FTA's five-point Transit Economic Requirements Model (TERM) to assess the condition of facilities. To determine the condition of revenue vehicles and equipment, we will consider reports from regular preventive maintenance, specific repair events, the vehicle's or equipment's useful life, and other critical factors.

The condition of all facilities and vehicles will be submitted on annual basis through the National Transit Database.

## Decision-Making Process

RIPTA's transit asset management plan will be implemented through the agency's annual budgeting process. This involves the allocation of available funding from federal, state, and self-sourced streams to identified needs. The financial plan shall serve as the determined list of prioritized investments for the immediate fiscal year. Lower priorities will be evaluated and scheduled into outyears as feasible.

The Finance Department will maintain a full list of priorities that will be reviewed with respective departments during the start of the budgeting process.

## Implementation Strategy

The agency's implementation strategy includes our TAM-related objectives and performance targets as defined by the following manner:

- For rolling stock: the percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark (ULB) per FTA guidance.
- For facilities: the percentage of facilities within an asset class condition rated below 3.00 on the TERM scale.
- For equipment: the percentage of non-revenue, support-service and maintenance vehicles and relevant equipment that have either met or exceeded their ULB.

### *Calendar of Activities*

To effectively implement this plan, the Authority has established the following annual calendar of activities (note: RIPTA operates on a July-June fiscal year):

| Month | Activities |
|---|---|
| July | • Update all asset inventories.<br>  ○ If this is an identified year in which the TAM Plan needs to be fully updated, then new facility condition assessments will be completed. |
| August | • Review (and update if needed) the Agency Maintenance Plan. |
| September | • Review (and amend if needed) the Transportation Improvement Program/TIP.<br>• RIPTA's Board of Directors are presented with the revised capital financial plan for approval.<br>• If this is an identified year in which the TAM plan needs to be updated, it will be completed and signed by the CEO by |
| October | • Report all asset data to the National Transit Database by end of month. |
| March | • Review prioritization of projects at the start of agency budgeting process |
| May | • Review (and updated as needed) the TAM and the Agency Capital Plan. |

## Monitoring and Evaluation Plan

To monitor and evaluate the agency's assets on a yearly basis in accordance with each category's targets, the following performance measures will be used:

- Rolling stock
    - Measures related to the implementation of this plan
    - Labor hours per vehicle
    - Fuel economy
    - Safety risk: incidents per 1,000 miles
    - Capital cost: costs per mile, per passenger trip and per maintenance hour
    - Operational cost: costs per mile, per passenger trip per operational hour, and per maintenance hour
    - Maintenance cost: planned or unplanned preventive maintenance or repair

- Facilities
    - Measures related to the implementation of this plan
    - Energy use per square foot
    - Water use per square foot
    - Operating cost per square foot
    - Maintenance cost: planned or unplanned preventive maintenance or repair

- Equipment
    - Measures related to the implementation of this plan
    - Percentage of equipment with a rating of less than 3.00 on TERM scale
    - Age and mileage of equipment
    - Safety risk: incidents per 1,000 miles
    - Capital cost: per mile and per maintenance hour
    - Operation cost: per mile, per trip, per operation hour and per maintenance hour
    - Maintenance cost: planned or unplanned preventive maintenance or repair

## Transit Asset Management Resources

A cross-departmental committee oversees and implements RIPTA's transit assessment management program. It includes representation from the following areas:

| Position | Name | Role(s) |
|---|---|---|
| Chief Executive Officer | Scott Avedisian | Oversees all aspects of RIPTA and is the Accountable Executive for the implementation of this plan. |
| Chief of Strategic Advancement | Greg Nordin | Provides program support via Long-Range Planning staff and directs project management resources as needed to oversee and deliver SRG projects. |
| Chief Financial Officer | Chris Durand | Responsible for utilizing TAM data for integration into annual budgeting process, review prioritization lists against financial resources. Coordinates with Senior Financial Analyst and Grants Specialist as needed. |
| Chief of Security and Operations | Jamie Pereira | Responsible for designation of critical infrastructure and assessment of life safety issues in partnership with Director of Environmental Affairs and Safety. |
| Director of Accounting | Paul Dilorio | Responsible for integrating financial indicators into TAM program, provides administrative support to program, coordinates NTD submission. |
| Executive Director of Procurement and Inventory Control | John Chadwick | Responsible for asset inventory and provides support to TAM program as needed. |
| Chief Technology Officer | Gary Jarvis | Responsible for business process review of enterprise software, ensure that performance indicator data is available for asset management. |
| Director of Environmental Affairs and Safety | Peter Ginaitt | Responsible for Level of Care program, works with Chief of Security and Operations on designating critical infrastructure and assessment of life safety issues. |
| Executive Director of Facilities and Maintenance | Jamie Pereira (in acting capacity) | Responsible for overseeing maintenance of facilities and vehicles. Works with other RIPTA personnel (and any contracted engineers) to undertake condition assessments and establish quality indicators. |
| Director of Facilities Maintenance | Jim Cunningham | Responsible for facilities maintenance. |
| Vehicle Maintenance Manager | Joe Monti | Responsible for maintenance of all revenue and non-revenue/support vehicles and equipment. |

## Baselines and Targets

For each asset category, the performance measure is a characterization of the percentage of the number of assets that are *not* in a state of good repair. For **facilities**, the performance measure is the percentage of facilities within an asset class rated below a 3 on the TERM scale. For both **equipment and rolling stock**, the performance measure is the percentage having met or exceeded their useful life benchmark.

### *Facilities*

The FTA Facility Condition Assessment Guidebook provides examples of the rating scale established in the TERM model. These descriptions are helpful in offering clear guidance in what FTA considers an appropriate condition. These have been incorporated into our evaluation process. For the purposes of this plan (and the associated facility condition assessments undertaken) the following was used:

| Rating | Description | Condition |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may be slightly defective or deteriorated, but overall functional |
| 3 | Adequate | Moderately deteriorated or defective; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged or in need of immediate repair; well past useful life |

For the 2018-2022 TAM Plan, an inter-departmental committee of RIPTA personnel assessed each facility and assigned scores for the various components. An average score was applied to determine the condition of the facility. Although this fulfilled the requirement of the final rule issued by FTA, it only gave staff a high-level understanding of what should be prioritized.

Desiring a far more detailed assessment of the facilities including cost estimations to better assist relevant departments involved in determining project prioritization through the budget process for the 2022-2026 TAM plan, RIPTA brought in Michael Baker to carry out an impartial and data-driven assessment of each facility. Following extensive walkthroughs of each applicable building, the contracted engineers reviewed their notes, photos, and other documentation and proceeded to apply a weighed averaged score to determine the condition of the facility. In addition to the assessments, Michael Baker has produced a 20-year financial outlook and guidance on how RIPTA should consider prioritizing the expenditure of limited capital funds to bring each facility up to a state of good repair.

All the facility condition assessments and the 20-year financial outlook have been included in the TAM plan's appendix.

RIPTA currently utilizes five administrative or maintenance facilities that meet the threshold for inclusion for condition assessment. These consist of the following:

- 265 Melrose Street (Providence)
- 269 Melrose Street (Providence)
- 705 Elmwood Avenue (Providence)
- 750 Elmwood Avenue (Providence)
- 350 Coddington Highway (Middletown/Newport)

The Authority also possess one further property, 325 Melrose Street (Providence), but it is currently not used for public transportation functions; rather it is rented by the Registry of Motor Vehicles as a driver testing site. However, an assessment was done in conjunction with this TAM plan update in case RIPTA determines that the property may be needed for operations during the duration of this plan or for future TAM plans as RIPTA proceeds implementation of *Transit Forward RI 2040*, Rhode Island's Transit Master Plan.

Additionally, RIPTA has one passenger facility, Kennedy Plaza in Downtown Providence, that is also included in this plan.

The below table shows the facility condition scores of each of the five administrative/maintenance facilities included in the 2018 plan and the updated scores for each determined by Michael Baker in July 2022.

| Administrative/Maintenance Facility | TAM Score 2018 | TAM Score 2022 |
|---|---|---|
| 265 Melrose Street | 2 | 1.8 |
| 269 Melrose Street | 3 | 3.4 |
| 705 Elmwood Avenue | 3.5 | 3.7 |
| 750 Elmwood Avenue | 4 | 3.5 |
| 350 Coddington Highway | 3 | 3.13 |

The 2018-2022 Administrative/Maintenance Facility Condition Assessments found 20% of all facilities of this category to be rated below 3.0. This remains true in 2022. 265 Melrose Street, a facility built in 1905, continues to remain far below an adequate state of good repair. Bringing this building above a 3.0 or greater is a critical priority for RIPTA over the next four years.

The below table shows the condition score for each applicable passenger/parking facility directly owned by RIPTA:

| Passenger/Parking Facility | TAM Score 2018 | TAM Score 2022 |
|---|---|---|
| Kennedy Plaza | 2.5 | 3 |

The 2018-2022 Passenger/Parking Facility Condition Assessment found our only site to be below a 3.0, however, improvements have been made over the past four year which have increased its score to a 3.0.

The Authority is in the process of developing new passenger facilities throughout the state including on the Warwick campus of the Community College of Rhode Island (CCRI), the Kingston campus of the University of Rhode Island (URI), and numerous mobility hubs as recommended in *Transit Forward RI 2040.* As these are brought into active use, they will be added to the applicable list of facilities for TAM evaluation and facility condition assessments will be done ahead of the 2026 TAM plan

RIPTA has set a target of **0%** of its facilities to be below a 3.0 on the TERM scale.

## *Rolling Stock and Equipment*

A. Fixed-Route

FTA's useful life benchmark (ULB) of 14 years for fixed-route buses to does not reflect the utilization of RIPTA buses. We have experienced most buses reaching their 500,000-mile threshold at 12 years of age, and therefore, will be using this ULB for the purposes of this TAM plan. The 2022 baseline has been set to **10.13%**, a decrease from 16% (or a decline of 5.87% from four years' previous), due to the inclusion of newer vehicles into the fleet and the removal of older buses, particularly those from 2005 and earlier.

| Class | # of Vehicles | Bus Yr | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 40' bus | 24 | 2009 | 2010 | 2022 | 12 | 12 | 100% | |
| 35' bus | 10 | 2010 | 2011 | 2022 | 11 | 12 | 92% | |
| 40' hybrid | 40 | 2010 | 2011 | 2022 | 11 | 12 | 92% | |
| trolley replica | 10 | 2010 | 2011 | 2022 | 11 | 12 | 92% | |
| 40' bus | 50 | 2013 | 2013 | 2022 | 9 | 12 | 75% | 10.13% |
| 40' bus | 42 | 2016 | 2017 | 2022 | 5 | 12 | 42% | |
| 40' Bus | 33 | 2020 | 2020 | 2022 | 2 | 12 | 17% | |
| 40' Bus | 15 | 2021 | 2021 | 2022 | 1 | 12 | 8% | |
| 30' Bus | 9 | 2021 | 2021 | 2022 | 1 | 12 | 8% | |
| New Flyer Electric | 1 | 2022 | 2022 | 2022 | 0 | 12 | 0% | |
| Proterra Electric | 3 | 2018 | 2018 | 2022 | 4 | 12 | 33% | |
| | 237 | | | | | | | |

For 2024 and 2026, RIPTA's goal is reduce the number of fixed-route vehicles exceeding useful life.

Between the 2022 baseline and 2024, none of RIPTA's fleet will be exceeding useful life. RIPTA sets **0%** as the target in 2024.

| Class | # of Vehicles | Bus Yr | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 40' Diesel Bus | 0 | 2009 | 2010 | 2024 | 14 | 12 | 117% | |
| 35' Diesel Bus | 0 | 2010 | 2011 | 2024 | 13 | 12 | 108% | |
| 40' Hybrid Bus | 0 | 2010 | 2011 | 2024 | 13 | 12 | 108% | |
| 35' Trolley Replica | 0 | 2010 | 2011 | 2024 | 13 | 12 | 108% | |
| 40' Diesel Bus | 50 | 2013 | 2013 | 2024 | 11 | 12 | 92% | |
| 40' Diesel Bus | 42 | 2016 | 2017 | 2024 | 7 | 12 | 58% | |
| 40' Diesel Bus | 33 | 2020 | 2020 | 2024 | 4 | 12 | 33% | |
| 40' Diesel Bus | 15 | 2021 | 2021 | 2024 | 3 | 12 | 25% | 0% |
| 30' Diesel Bus | 9 | 2021 | 2021 | 2024 | 3 | 12 | 25% | |
| 40' New Flyer Electric | 1 | 2021 | 2021 | 2024 | 3 | 12 | 25% | |
| 40' Proterra Electric | 3 | 2022 | 2022 | 2024 | 2 | 12 | 17% | |
| 40' New Flyer Electric | 13 | 2023 | 2023 | 2024 | 1 | 12 | 8% | |
| 40' Diesel Bus | 28 | 2023 | 2023 | 2024 | 1 | 12 | 8% | |
| 35' Diesel Bus | 12 | 2023 | 2023 | 2024 | 1 | 12 | 8% | |
| 40' Diesel Bus | 24 | 2024 | 2024 | 2024 | 0 | 12 | 0% | |
| | 230 | | | | | | | |

RIPTA's fleet will be right sized with **0%** exceeding useful life by 2026 and sets this as the target.

| Class | # of Vehicles | Bus Yr | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 40' Diesel Bus | 0 | 2009 | 2010 | 2026 | 16 | 12 | 133% | |
| 35' Diesel Bus | 0 | 2010 | 2011 | 2026 | 15 | 12 | 125% | |
| 40' Hybrid Bus | 0 | 2010 | 2011 | 2026 | 15 | 12 | 125% | |
| 35' Trolley Replica | 0 | 2010 | 2011 | 2026 | 15 | 12 | 125% | |
| 40' Diesel Bus | 25 | 2013 | 2013 | 2026 | 13 | 12 | 108% | |
| 40' Diesel Bus | 42 | 2016 | 2017 | 2026 | 9 | 12 | 75% | |
| 40' Diesel Bus | 33 | 2020 | 2020 | 2026 | 6 | 12 | 50% | |
| 40' Diesel Bus | 15 | 2021 | 2021 | 2026 | 5 | 12 | 42% | |
| 30' Diesel Bus | 9 | 2021 | 2021 | 2026 | 5 | 12 | 42% | 0% |
| 40' New Flyer Electric | 1 | 2021 | 2021 | 2026 | 5 | 12 | 42% | |
| 40' Proterra Electric | 3 | 2022 | 2022 | 2026 | 4 | 12 | 33% | |
| 40' New Flyer Electric | 13 | 2023 | 2023 | 2026 | 3 | 12 | 25% | |
| 40' Diesel Bus | 28 | 2023 | 2023 | 2026 | 3 | 12 | 25% | |
| 35' Diesel Bus | 12 | 2023 | 2023 | 2026 | 3 | 12 | 25% | |
| 40' Diesel Bus | 24 | 2024 | 2024 | 2026 | 2 | 12 | 17% | |
| 35' Diesel Bus | 25 | 2025 | 2025 | 2026 | 1 | 12 | 8% | |
| 40' Diesel Bus | 25 | 2026 | 2026 | 2026 | 0 | 12 | 0% | |
| | 255 | | | | | | | |

B. Paratransit

RIPTA uses the FTA established 7-year ULB for paratransit vehicles. The 2022 baseline is **45%**, a decrease from 48% (or a 3% decline from four years' previous), due to the inclusion of newer vehicles into the fleet and the removal of older ones, particularly from 2011; some of which are still in operational service today but are expected to be taken off the road soon.

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2011 | 19 | 2011 | 2022 | 11 | 7 | 157% | |
| 2012 | 22 | 2013 | 2022 | 9 | 7 | 129% | 45% |
| 2015 | 25 | 2016 | 2022 | 6 | 7 | 86% | |
| 2022 | 25 | 2022 | 2022 | 0 | 7 | 0% | |
| | 91 | | | | | | |

For 2024 and 2026, RIPTA's goal is to reduce the number of paratransit vehicles exceeding useful life.

Between the 2022 baseline and 2024, none of RIPTA's paratransit fleet will be exceeding their useful life. This is due to an aggressive fleet replacement program that is scheduled to be carried out in 2023 and 2024. RIPTA sets a **0%** target for 2024.

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2011 Cutaway | 0 | 2011 | 2024 | 13 | 7 | 186% | |
| 2012 Cutaway | 0 | 2013 | 2024 | 11 | 7 | 157% | |
| 2015 Cutaway | 0 | 2016 | 2024 | 8 | 7 | 114% | |
| 2019 Dodge Caravan | 5 | 2019 | 2024 | 5 | 7 | 71% | 0% |
| 2022 Cutaway | 25 | 2022 | 2024 | 2 | 7 | 29% | |
| 2023 Cutaway | 50 | 2023 | 2024 | 1 | 7 | 14% | |
| 2024 Cutaway | 25 | 2024 | 2024 | 0 | 7 | 0% | |
| | 105 | | | | | | |

In 2026, due to continued fleet replacement activities, RIPTA's paratransit fleet will continue to have none exceeding useful life. RIPTA sets a **0%** target for 2026.

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2011 Cutaway | 0 | 2011 | 2026 | 15 | 7 | 214% | |
| 2012 Cutaway | 0 | 2013 | 2026 | 13 | 7 | 186% | |
| 2015 Cutaway | 0 | 2016 | 2026 | 10 | 7 | 143% | |
| 2019 Caravan | 0 | 2019 | 2026 | 7 | 7 | 100% | |
| 2022 Cutaway | 25 | 2022 | 2026 | 4 | 7 | 57% | 0% |
| 2023 Cutaway | 25 | 2023 | 2026 | 3 | 7 | 43% | |
| 2024 Cutaway | 25 | 2024 | 2026 | 2 | 7 | 29% | |
| 2025 Caravan | 5 | 2024 | 2026 | 2 | 7 | 29% | |
| 2025 Cutaway | 25 | 2024 | 2026 | 2 | 7 | 29% | |
| | 105 | | | | | | |

C. Flex

RIPTA uses the FTA established 7-year ULB for Flex vehicles. The 2022 baseline is **21%**, a decrease from 32% (or a 11% decline from four years' previous), due to the removal of several 2011 and 2012 vehicles from operations.

| Class | # of Vehicles | | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 2011 Flex | 1 | 2011 | 2011 | 2022 | 11 | 7 | 157% | |
| 2012 Flex | 2 | 2012 | 2013 | 2022 | 9 | 7 | 129% | 21% |
| 2015 Flex | 11 | 2015 | 2016 | 2022 | 6 | 7 | 86% | |
| | 14 | | | | | | | |

For 2024 and 2026, RIPTA's goal is to reduce the number of Flex vehicles exceeding useful life.

Between the 2022 baseline and 2024, there is an expected reduction of 21% to 0%. This is due to the removal of all remaining 2011 and 2012 Flex vehicles and the introduction of new 2023 and 2024 Flex vehicles in their place. RIPTA sets a **0%** target of all Flex vehicles exceeding their useful life in 2024.

| Class | # of Vehicles | | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 2011 Flex | 0 | 2011 | 2011 | 2024 | 13 | 7 | 186% | |
| 2012 Flex | 0 | 2012 | 2013 | 2024 | 11 | 7 | 157% | |
| 2015 Flex | 0 | 2015 | 2016 | 2024 | 8 | 7 | 114% | 0% |
| 2023 Flex | 10 | 2023 | 2023 | 2024 | 1 | 7 | 14% | |
| 2024 Flex | 5 | 2023 | 2024 | 2024 | 0 | 7 | 0% | |
| | 15 | | | | | | | |

In 2026, the Flex fleet will consist of only 2023 and 2024 vehicles. RIPTA sets a target of **0%** of all Flex vehicles exceeding useful life.

| Class | # of Vehicles | | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|---|
| 2011 Flex | 0 | 2011 | 2011 | 2026 | 15 | 7 | 214% | |
| 2012 Flex | 0 | 2012 | 2013 | 2026 | 13 | 7 | 186% | |
| 2015 Flex | 0 | 2015 | 2016 | 2026 | 10 | 7 | 143% | 0% |
| 2023 Flex | 10 | 2023 | 2023 | 2026 | 3 | 7 | 43% | |
| 2024 Flex | 5 | 2023 | 2024 | 2026 | 2 | 7 | 29% | |
| | 15 | | | | | | | |

D. Equipment

The baseline for equipment in 2022 is 41%.

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2001 Ford Explorers | 0 | 2001 | 2022 | 21 | 8 | 263% | 41% |
| 2004 Chev. Express | 9 | 2004 | 2022 | 18 | 8 | 225% | |
| 2007 GMC Trucks | 2 | 2007 | 2022 | 15 | 8 | 188% | |
| 2010 Ford F 250 | 6 | 2010 | 2022 | 12 | 8 | 150% | |
| 2010 Ford F 550 | 2 | 2010 | 2022 | 12 | 8 | 150% | |
| 2011 GMC Savana Van | 3 | 2011 | 2022 | 11 | 8 | 138% | |
| 2011 Ford Explorer | 3 | 2011 | 2022 | 11 | 8 | 138% | |
| 2014 Ford CMAX | 5 | 2014 | 2022 | 8 | 8 | 100% | |
| 2016 Ford Explorers | 4 | 2016 | 2022 | 6 | 8 | 75% | |
| 2017 Ford Explorers | 6 | 2017 | 2022 | 5 | 8 | 63% | |
| 2018 Chev Silverado | 5 | 2018 | 2022 | 4 | 8 | 50% | |
| 2019 Ford Explorers | 4 | 2019 | 2022 | 3 | 8 | 38% | |
| Bobcats | 2 | 2003 | 2022 | 19 | 25 | 76% | |
| Elgin Sweepers | 2 | 2010 | 2022 | 12 | 25 | 48% | |
| Caterpillar P5000 Forklift | 2 | 2011 | 2022 | 11 | 25 | 44% | |
| Caterpillar Forklift | 2 | 2011 | 2022 | 11 | 25 | 44% | |
| Caterpillar Skidsteer | 3 | 2011 | 2022 | 11 | 25 | 44% | |
| Yale Lift truck | 1 | 2013 | 2022 | 9 | 25 | 36% | |
| | 61 | | | | | | |

RIPTA will replace equipment as needed over the next four years as shown in the preceding two tables.

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2001 Ford Explorers | 0 | 2001 | 2024 | 23 | 8 | 288% | |
| 2004 Chev. Express | 9 | 2004 | 2024 | 20 | 8 | 250% | |
| 2007 GMC Trucks | 2 | 2007 | 2024 | 17 | 8 | 213% | |
| 2010 Ford F 250 | 6 | 2010 | 2024 | 14 | 8 | 175% | |
| 2010 Ford F 550 | 2 | 2010 | 2024 | 14 | 8 | 175% | |
| 2011 GMC Savana Van | 3 | 2011 | 2024 | 13 | 8 | 163% | |
| 2011 Ford Explorer | 3 | 2011 | 2024 | 13 | 8 | 163% | |
| 2014 Ford CMAX | 5 | 2014 | 2024 | 10 | 8 | 125% | |
| 2016 Ford Explorers | 4 | 2016 | 2024 | 8 | 8 | 100% | |
| 2017 Ford Explorers | 6 | 2017 | 2024 | 7 | 8 | 88% | 49% |
| 2018 Chev Silverado | 5 | 2018 | 2024 | 6 | 8 | 75% | |
| 2019 Ford Explorers | 4 | 2019 | 2024 | 5 | 8 | 63% | |
| Bobcats | 2 | 2003 | 2024 | 21 | 25 | 84% | |
| Elgin Sweepers | 2 | 2010 | 2024 | 14 | 25 | 56% | |
| Caterpillar P5000 Forklift | 2 | 2011 | 2024 | 13 | 25 | 52% | |
| Caterpillar Forklift | 2 | 2011 | 2024 | 13 | 25 | 52% | |
| Caterpillar Skidsteer | 3 | 2011 | 2024 | 13 | 25 | 52% | |
| Yale Lift truck | 1 | 2013 | 2024 | 11 | 25 | 44% | |
| | 61 | | | | | | |

| Class | Size | FY of Purchase | Today's Date | Vehicle Age | ULB | Useful life | % Exceeding ULB |
|---|---|---|---|---|---|---|---|
| 2001 Ford Explorers | 0 | 2001 | 2026 | 25 | 8 | 313% | |
| 2004 Chev. Express | 9 | 2004 | 2026 | 22 | 8 | 275% | |
| 2007 GMC Trucks | 2 | 2007 | 2026 | 19 | 8 | 238% | |
| 2010 Ford F 250 | 6 | 2010 | 2026 | 16 | 8 | 200% | |
| 2010 Ford F 550 | 2 | 2010 | 2026 | 16 | 8 | 200% | |
| 2011 GMC Savana Van | 3 | 2011 | 2026 | 15 | 8 | 188% | |
| 2011 Ford Explorer | 3 | 2011 | 2026 | 15 | 8 | 188% | |
| 2014 Ford CMAX | 5 | 2014 | 2026 | 12 | 8 | 150% | |
| 2016 Ford Explorers | 4 | 2016 | 2026 | 10 | 8 | 125% | |
| 2017 Ford Explorers | 6 | 2017 | 2026 | 9 | 8 | 113% | 66% |
| 2018 Chev Silverado | 5 | 2018 | 2026 | 8 | 8 | 100% | |
| 2019 Ford Explorers | 4 | 2019 | 2026 | 7 | 8 | 88% | |
| Bobcats | 2 | 2003 | 2026 | 23 | 25 | 92% | |
| Elgin Sweepers | 2 | 2010 | 2026 | 16 | 25 | 64% | |
| Caterpillar P5000 Forklift | 2 | 2011 | 2026 | 15 | 25 | 60% | |
| Caterpillar Forklift | 2 | 2011 | 2026 | 15 | 25 | 60% | |
| Caterpillar Skidsteer | 3 | 2011 | 2026 | 15 | 25 | 60% | |
| Yale Lift truck | 1 | 2013 | 2026 | 13 | 25 | 52% | |
| | 61 | | | | | | |

## Reporting

As a public transit operator who receives FTA financial assistance from sources including the Urbanized Area Formula Program (Section 5307), the Rural Area Formula Program (Section 5311), and the Bus & Bus Facilities Formula Program (Section 5339a), RIPTA is required by federal law to report to the National Transit Database.

Reporting will be done on an annual basis and submissions will occur no later than October 31st of each year.

## State of Good Repair Policy

The Rhode Island Public Transit Authority (RIPTA) has a responsibility to both its riders and the citizens of the State of Rhode Island in maintaining its assets in a State of Good Repair. This is defined as **the condition in which a capital asset can operate at a full level of performance.** This means that the asset is:

- Able to perform its designated function
- Does not pose an unacceptable safety risk, and
- Its lifecycle investments have been met or recovered.

RIPTA, as a Tier I provider, and as a recipient of federal financial assistance under 49 U.S.C. Chapter 53, should adhere to the established Transit Asset Management (TAM) Plan to guide the agency in reaching a State of Good Repair. To meet this, the following goals and objectives are adopted:

1) *Ensure that RIPTA's services are provided and maintained in a sustainable manner.*
    a. Consider the risks and consequences of action, and inaction, when prioritizing asset replacement or repair, and when identifying and allocating funding sources.
    b. Incorporate complete asset lifecycle costs into long-term financial planning to achieve cost-effective asset management planning.
    c. Inform decision-making by planning for, reporting, and considering future lifecycle costs of new services and assets including when considering upgrades and expansions of existing physical infrastructure.
2) *Safeguard assets, including employees and physical assets, by implementing asset management strategies and directing appropriate resources to these strategies.*
    a. Develop employee capacity and competency in asset management practices and promote agency-wide stewardship of asset management strategies and governance.
    b. Identify and apply consistent criteria in prioritizing funding of asset management projects throughout RIPTA.
    c. Annually allocate appropriate financial and operational resources to implement asset management strategies and devote resources to prioritized projects.
3) *Demonstrate transparent and responsible asset management processes that align with best practices and federal standards.*
    a. Annually review and update all asset management plans to ensure assets are managed, valued, and depreciated in accordance with Generally Accepted Accounting Principles (GAAP) and federal standards.
    b. Ensure alignment amongst RIPTA's annual operating and capital budgets, and Rhode Island's Transportation Improvement Program to inform decision-makers.
4) *Meet federal legislative requirements.*
    *a.* Develop Asset Management Plans that include, at a minimum:
        *i.* Capital asset inventories

*ii.* Condition assessments
*iii.* Risk-based decision-making, and
*iv.* Investment prioritization.

*b.* Establish performance targets in relation to State of Good Repair measures, as required by the FTA.

**Responsibility:** RIPTA's Chief Executive Officer has overall responsibility for developing an asset management and State of Good Repair Policy, plans, and procedures, the allocation of resources, and reporting to the Board of Directors on the status and effectiveness of asset management within RIPTA.

**Review of Policy:** This policy shall be in effect for four years and will be reviewed annually. At the end of the four-year duration, the CEO and other relevant senior and executive leadership will convene to revise or readopt this policy. This policy should reflect changes in transit asset management guidance and procedures set by FTA and respective federal law.

## Investment Prioritization

RIPTA prioritises investments through the annual budgeting process. Line items show those projects financed in the current and upcoming fiscal year along with the proceeding three outyears. The Capital Plan can be reviewed here: https://www.ripta.com/accountability-transparency/

# Appendix A : Facility Condition Assessments

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# RITPA Transit Asset Management Facility Condition Assessment

## FINAL ASSESSMENT REPORT

**TABLE OF CONTENTS**

## Table of Contents

# I. Executive Summary

The Rhode Island Public Transit Authority (RIPTA) has tasked Michael Baker International (MBI) to undertake a comprehensive assessment of all facilities that it owns and operates. Under this program each facility was assessed, and the condition of capital assets were determined regarding the state of good repair/functionality. Risks were identified, and a backlog of projects to be funded was forecasted over a twenty-year horizon.

The facility condition assessments were carried out and scored in accordance with the guidebook published by the USDOT in conjunction with the FTA. These assessments were completed through an on-site review by our team and focused on the observation of the primary and secondary level conditions assets. Assessments were limited to assets that were visible and accessible, with information on less easily accessible features like internal systems and wiring gained via record documentation and interview. Findings of these reports are contained in Appendix B. Overall, the portfolio of buildings was found to be adequate and the specific condition assessment for each facility is below:

| Facility | Rating Summary |
|---|---|
| 265 Melrose Street | 1.8 |
| 269 Melrose Street | 3.4 |
| 750 Elmwood Avenue | 3.5 |
| 325 Melrose Street | 2.6 |
| 1 Kennedy Plaza | 3.0 |
| 350 Coddington Highway | 3.1 |
| 705 Elmwood Avenue | 3.7 |

Included in this document is an overview of each facility and the drivers that contributed to each of the asset ratings. This understanding of the drivers behind the ratings in relationship to the remaining useful life of each asset were the contributing factors into the development of the 20-year project forecast. This 20-year projection has a total investment of approximately $31.5M in projects in 2022 dollars and includes maintenance as well as replace or repair projects. The Rhode Island Green Building Act (and LEED standards) went into the development of costs to replace during the initial assessments.

The costs that are shown in the 20-year forecast reflect the total value of the assets listed in the facility condition reports. This was done to remain consistent across reporting documents and provide a fair level of contingency. The value of proposed projects may differ in costs depending on the overall scope of the project and considerations into rehabilitation versus full replacement. Additional costs may be required for certain projects to account for extensive construction phasing to ensure the continuation of RIPTA operations. During the development

of the 20-year projection, the projects were prioritized using the consideration below. A full projection can be found in Appendix A.

1. Safety Issues
2. Service Disruptions
3. Strategic Pairings
4. State Of Good Repair, including watertight shell and environmental issues

In addition to the condition ratings, remaining useful life, and the prioritization factors, consideration went into ensuring a balanced level of investment over the 20-year forecast. Within each of the twenty years, there is a median value of approximately $1.4M worth of improvements across RIPTA's seven facilities. There are seven instances in which the yearly investment is over $2M, which are typically driven by one large project as evidenced in Appendix A.

This condition assessment and 20-year forecast follows FTA's Transit Asset Management plan program. The analysis and reporting support RIPTA in their mission to enhance passenger safety, improve system reliability, reduce maintenance costs, and bolster overall system performance.

# II. Facility Summaries

## A. 265 Melrose Street

### Facility Description

265 Melrose Street was built in 1922 for United Electric Railroads and is a mostly one-story vehicle maintenance facility with shops and storage. Over the years it has been consolidated with the 267 Melrose Street structure and now function as a single building with circulation connections to each other on the ground and upper floors. The facility is classified as General-Purpose Maintenance and is approximately 72,000 square feet and sits on 1.07 acres.

There is a partial second floor and two small partial basement areas, which were previously used for mechanical equipment. 267 Melrose Street houses vehicle storage and repair on the first level. The second level features an office area that has been vacant for more than 10 years. Both second floor levels previously housed RIPTA administrative offices and have now been abandoned due to disrepair, hazardous materials building components, leaking roofs, and inefficient and obsolete building systems.

The building is the lowest rated in RIPTA's facility portfolio. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. Based on our team's assessment, the building is in a poor condition. There is approximately $8.8M of improvements that fall within the 20-year forecast for 265 Melrose. Because of the existing condition of the building, there is a concentrated effort to get it into a state of good repair. Proposed projects span across the category of assets.

### Overall Condition Assessment

| Components | Rating |
|---|---|
| Substructure | 3.0 |
| Shell | 1.6 |
| Interiors | 1.0 |
| Conveyance | 1.0 |
| Plumbing | 2.4 |
| HVAC | 2.1 |
| Fire Protection | 1.0 |
| Electrical | 2.5 |
| Equipment | *N/A* |
| Site | 2.0 |
| **Total** | **1.8** |

*Substructure (3.0)*

The building foundations and substructure were not directly observable less a few instances of below grade spaces. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc.

The concrete slabs on grade appear very worn. There is evidence of staining, pitting, spalling, and some cracks in the slabs. Overall, they appear to be performing as intended but have undergone decades of continuous wear and tear.

*Shell (1.61)*

The primary structural frame of the building appears in fair condition albeit with obvious signs of wear. Concrete columns and beams appear to be the assets in best condition considering their age. Concrete slabs and decks are in fair condition with signs of staining, wear, and cracking. Exterior brick walls are in poor condition. Spalling, mortar gaps, cracking, and staining are all evident on the exterior brick.

Window lintels and sill stones are similarly beyond their useful life. Exposed rebar protruding through the lintels can be observed at most locations. The windows on the building are beyond their useful life. Beyond poor energy efficiency, windows and sealants are cracked and damaged. Exterior man doors and frames are in poor condition, many with signs of intense rust damage and wear. Overhead garage doors appear in better condition than man doors.

The ballasted roof is in very poor condition. Evidence of extreme ponding, damage to the membrane layer, and leaking can be observed. On the roof is a headhouse which includes cladding and glazing in disrepair.

*Interiors (1.03)*

Inside the building, office and administration spaces are not occupied and have been neglected. Almost every asset on the interior receives a score of one. Interior doors, partitions, ceilings, lighting fixtures, etc. are all in disrepair.

Carpet and vinyl flooring are severely stained and damaged. There is a significant amount of asbestos around and under the VCT flooring. Paint is peeling off many walls and ceilings. There is also a lot of debris and abandoned furniture inside the building. Interior fire doors and toilet partitions appear to be newer than other interior assets.

*Conveyance (1.0)*

The elevator in 265 Melrose is in poor condition, based on our observations. It is operational and has been regularly serviced over the years but has not been inspected. It is no longer in use since the second floor in unoccupied. The elevator equipment will need significant upgrades or full replacement if it returns to full time service.

*Plumbing Systems (2.4)*

The plumbing is comprised of domestic hot- and cold-water systems, waste & vent systems, storm drainage systems, and compressed air systems. The domestic water piping is comprised of copper piping, which withstands the test of time well. There are minimal hot-water systems, but a newly installed gas-fired tank water heater in the boiler room brings up the weighted score of the hot-water system. The plumbing fixtures are dated and obsolete. The compressed air system is rather new, and the piping has held up over time. Overall, the poor condition of the plumbing fixtures and the deteriorating cast-iron used in the waste & vent and storm systems bring the overall weighted score down, while the compressed air and domestic water system bring the weighted score up.

*HVAC Systems (2.1)*

The HVAC system is comprised of a steam heating system, an exhaust system, and an air-side mechanical system for comfort cooling. The steam heating system serves both the garage portion of the building and the office portion. The comfort cooling system only covers the office portion. As such, the steam system carries the bulk of the weighted score. The steam distribution system is in fair condition, but there has been a lack of maintenance over the years. The Cleaver Brooks Boiler was built in 2010, and the expected life is ~30 years. Given the recent build date of the boiler, the weighted score of the HVAC system is brought up by the boiler, while the exhaust and air-side mechanical systems bring the overall score down.

*Fire Protection Systems (1.0)*

The fire sprinkler system is a wet-pipe system, and not all portions of the building are protected. No backflow preventer or fire department connection exists. The sprinkler piping is rather rusted in the basement level. These attributed to the overall low score.

*Electrical Systems (2.5)*

The overall Electrical systems appeared to be in adequate to good condition, however the poor condition of the systems located in the un-used office/storage area contributed to the lower overall score.

*Site (2.0)*

The site comprising of sidewalks and a surface parking lot is in marginal condition. Based on our observation, these components have 5 years of useful life remaining and are included in the forecast.

## B. 269 Melrose Street

### Facility Description

269 Melrose Street was built in 1990 for the Rhode Island Public Transit Authority and is a one-story vehicle storage facility with administration spaces. The facility is classified as General-Purpose Maintenance and includes office space, restrooms, an employee lounge, meeting space, mechanical service space, vehicle storage, and two wash bays. 269 Melrose is approximately 94,400 square feet and sits on 2.16 acres.

The building is approaching 30 years in age and would benefit from the rehabilitation of critical building components to ensure a prolonged life. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. Based on our team's assessment, the building is in an adequate condition. There is approximately $4.9M of improvements that fall within the 20-year forecast for 269 Melrose. The most imminent projects center around equipment, plumbing, HVAC, and electrical components. The bulk of the proposed improvement projects (roughly $3.6M) land in the second half of the 20-year forecast and primarily fall within fire protection, plumbing, and shell component categories.

### Overall Condition Assessment

| Components | Rating |
|---|---|
| Substructure | 3.8 |
| Shell | 4.0 |
| Interiors | 3.8 |
| Conveyance | *N/A* |
| Plumbing | 3.5 |
| HVAC | 3.2 |
| Fire Protection | 3.0 |
| Electrical | 3.9 |
| Equipment | 2.0 |
| Site | 3.0 |
| **Total** | **3.4** |

*Substructure (3.8)*

The building foundation walls are only observable in a few places around the building perimeter. Overall, the foundations appear in good condition. There are no apparent structural cracks, pitting, or major spalling. Slabs on grade are in good condition as well. Slabs appear to have greater wear at highly trafficked areas which is to be expected. There is little evidence of major staining or cracking. However, there are some areas where water ponds on the slabs on

grade. This correlates to some parts of the slabs on grade which are not level which can lead to future maintenance issues or potential safety issues in the short term.

*Shell (4.0)*

The primary structural frame of the building is in good condition. There are some signs of rust and coatings peeling/chipping on steel primary structure, but this wear does not appear structurally detrimental. Steel columns, beams, joists, and bracing generally appear to be performing as intended with normal wear evident.

Interior CMU walls are also in good condition. Mortar joints are still intact and there doesn't appear to be and major water infiltration withing wall cavity (exterior walls), however there are some signs of efflorescence on the interior which may require further investigation. The exterior split-face CMU is also in generally good condition. Control joints appear to be performing as intended with little wear. Exterior brick accent bands are in good condition with little spalling, cracking, mortar gaps, etc.

The membrane roofing is performing well with little wear. There is some evidence of minor ponding but generally the tapered insulation is pitched correctly and creating positive drainage. Roof drains look to be clear of debris but should be checked regularly. There is a small amount of pitched standing seam metal roof with snow guards that appears to be in good condition with little wear and tear. At the roof's edge, the long expanses of roof coping are performing well with no signs of oil canning. Exterior man doors are functional but are not in perfect condition. There are signs of rust and deterioration at exterior doors and frame which may be due to winter salting. Overhead garage doors are in good condition with some minor denting and wear.

Exterior windows/aluminum curtainwall is performing well with little wear evident. Sealants remain intact and system appears watertight.

*Interiors (3.8)*

There are some overhead garage doors inside the building which are in good working order. Interior doors and frames are in above average condition with some observable wear. Kick plates, hinges, and all hardware is in working condition. Acoustic ceilings and grids are in fair condition but there is some evidence of staining on some tiles. The ceramic tile flooring and bases show little wear or grout deterioration. Carpet tile flooring shows more evidence of wear which is expected. Rubber flooring within the building shows little wear and is performing well.

Restroom fixtures and accessories may require some cleaning but are generally in good condition. Ceramic wall tile in the restrooms similarly requires cleaning and maintenance but is functioning without issues. Interior drywall partitions are in good condition. There is a section of drywall missing near one of the curtainwall portions which requires maintenance.

*Plumbing Systems (3.5)*

The plumbing is comprised of domestic hot- and cold-water systems, waste & vent systems, storm drainage systems, and compressed air systems. The domestic water piping is comprised of copper piping, which withstands the test of time well. There are minimal hot-water systems for domestic use, but the existing water heaters appear in good condition. The plumbing fixtures are dated but are not obsolete. The compressed air system is rather new, and the piping has held up over time. Overall, the poor condition of the plumbing fixtures and the deteriorating cast-iron used in the waste & vent and storm systems bring the overall weighted score down, while the compressed air and domestic water system bring the weighted score up.

*HVAC Systems (3.2)*

The HVAC system is comprised of comfort cooling and heating for the office portion of the building, and the garage/repair portion is served by Makeup Air Units and an Exhaust System. The comfort heating system is a hydronic water heating system with terminal units. The system is rather modern with a boiler from 2006. The cooling system is composed of a large rooftop unit with VAV boxes. Conditions vary amongst the MAUs and exhaust fans, but overall, they are adequate. The systems overall aren't in great condition but are adequate.

*Fire Protection Systems (3.0)*

The fire sprinkler system is composed of wet-pipe and dry-pipe systems. The service is complete with backflow preventers and fire department connections. There was recent maintenance on the dry-system and the air-compressors appear rather new. The system is in adequate condition.

*Electrical Systems (3.9)*

All the Electrical systems appeared to be in adequate to good condition, hence the overall high score.

*Equipment (2.0)*

Inside the storage area there are two bus washes that are in marginal condition. The moisture is also impacting the steel in the building frame. These washes are nearing their useful life due to their operational importance; they have been prioritized in the 20-year forecast.

*Site (3.0)*

The site comprising of sidewalks and a surface parking lot is in adequate condition. Based on our observation, these components have 50 years of useful life remaining.

## C. 750 Elmwood Avenue

### Facility Description

750 Elmwood Avenue was built in 2000 for the Rhode Island Public Transit Authority and is primarily a one-story heavy maintenance facility for the authority. The first floor contains maintenance areas, paint bays, parts storage, and administrative space. There is a partial second floor that includes office space, restrooms, employee lounge, meeting space, and storage. 750 Elmwood is approximately 94,760 square feet and sits on 3.36 acres.

The building is approximately 21 years in age and has undergone a reasonable level of routine maintenance. This facility could benefit from some rehabilitation of components to ensure a prolong life. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. Based on our team's assessment, the building is in an adequate to good condition. There is approximately $5.9M of improvements that fall within the 20-year forecast for 750 Elmwood. There is a balanced distribution of projects over the 20-years, but the bulk of the investment is during Years 7 through 13. The core of the proposed projects is focused on the shell, electrical, HVAC, and plumbing components.

### Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.7 |
| Interiors | 2.7 |
| Conveyance | 3.0 |
| Plumbing | 3.7 |
| HVAC | 3.7 |
| Fire Protection | 4.0 |
| Electrical | 4.0 |
| Equipment | 3.0 |
| Site | 3.0 |
| **Total** | **3.5** |

*Substructure (4.0)*

The building foundations and substructure were not directly observable less a few instances. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc. The fieldstone portion of the foundation is not waterproofed and is an issue.

The concrete slabs on grade are in good condition. There is little evidence of water ponding, and they seem level. There is normal wear and tear evident. Coatings and striping are in good condition and seems to be maintained.

*Shell (3.7)*

Steel girders, joists, beams, and columns make up the primary structure of the building. Overall, the structure is in very good condition with little wear. Coatings and painted surfaces look to be maintained. CMU structural walls show little signs of deterioration and mortar joints are intact. The exterior brick of the original building façade shows signs of wear normal for a building of this age. There are some mortar cracks and spalling as well as some staining on the exterior. It was noted on site that the original exterior brick walls do not have insulation.

The exterior brick veneer (North and South facades) is in good condition. There is little evidence of significant deterioration or wear. The exterior metal wall panels on the upper portion of the building show some signs of wear. There are some issues at material intersections and some of the panel joints.

The flat membrane roof is a recently installed asset which has some leaking issues. It was noted that the roof over compressor room leaks due to nails from the membrane roof above. The standing seam metal roof has some repairs done with sealant which appears to be potentially failing. Rust and staining can be seen on the standing seam roof especially at penetrations. The existing granite cornice which was incorporated into the new building is stained and cracked. It requires some repairs and maintenance to return it to its original form. On the other hand, the newer metal cornice which extends around most of the building is in good shape with no signs of oil canning, dents, or staining.

Overhead coiling doors show signs of normal wear and some discoloration. Exterior man doors are of similar condition with some normal wear. Glazed aluminum storefront is in very good condition with no signs of water intrusion or sealant failure. There is an exterior aluminum storefront door which shows signs of frequent usage. The insulated translucent panel system on the upper roof has some normal wear but appears in good working condition.

*Interiors (2.7)*

Inside the building, doors and frames show less wear than exterior and are functionally operational. There is a large amount of acoustic ceiling tiles and grid system which is not in optimal condition. Stained and cracked tiles as well as bowed grids need repair. The VCT flooring is still in useful condition but is heavily trafficked. In the restrooms and maintenance spaces, poured epoxy flooring is still in fair condition but may require some cleaning.

Restroom and locker room fixtures are in fair condition with normal everyday wear evident. There are no major issues in the restrooms and locker room spaces.

*Conveyance (3.0)*
The elevators in 750 Elmwood are in adequate condition, based on our observations. They are over halfway through their expected useful life and are included in the 20-year forecast.

*Plumbing Systems (3.7)*
The plumbing is comprised of domestic hot- and cold-water systems, waste & vent systems, storm drainage systems, and compressed air systems. The domestic water piping is comprised of copper piping, which withstands the test of time well. The hot water system is a boiler-storage tank system, and it appears to be at the end of its useful life. The plumbing fixtures are dated but are not obsolete. The compressed air system is rather new, and the piping has held up over time. Overall, the systems are good, but the domestic water heating system brings the weighted overall score down.

*HVAC Systems (3.7)*
The HVAC system is comprised of comfort cooling and heating for the office portion of the building, and the garage/repair portion is served by Makeup Air Units and an Exhaust System. Hydronic boilers distribute hot water to the makeup air units and to terminal units. The comfort heating system is comprised of split direct-expansion and rooftop units. The systems date to 2002, but the systems appear to be well maintained.

*Fire Protection Systems (4.0)*
The fire sprinkler system is composed of a wet-pipe system with a fire pump for pressure. The service is complete with backflow preventers and fire department connections. Maintenance appears rather good, and the pump is tested regularly. The system is in good condition.

*Electrical Systems (4.0)*
All the Electrical systems appeared to be in good condition, with exceptions for the exterior lighting; which appeared to be adequate, and the fire alarm system; which appeared to be excellent, as it was recently installed. Overall, the systems averaged to good condition.

*Equipment (3.0)*
Inside the storage area there are 22 vertical lifts in adequate condition. These components are all nearing their useful life and due to their operation importance; they have been prioritized in the 20-year forecast.

*Site (3.0)*
The site comprising of surface lot is in adequate condition. Based on our observation, these components have 10 years of useful life remaining and are included in the forecast.

## D. 325 Melrose Street

### Facility Description

325 Melrose Street is owned by RIPTA but operated by RIDOT DMV. The facility is used partially for road testing (DMV) and houses administrative functions for RIDOT DMV. The vehicle garage bays of the facility serve as inspection garages for vehicles. The facility is classified as a General-Purpose Maintenance and includes office space, restrooms, employee lounge, mechanical service space, and vehicle maintenance bays. The site is approximately 15,243 square feet and sits on 1.07 acres and is directly adjacent to a surface parking for RIPTA bus storage.

The building is well over 60+ years in age, is in marginal condition and includes a newer addition which is in better condition than the older portion. A 2002 building assessment identified various building component failures, some of which continue to exist today. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. There is approximately $2.3M of improvements that fall within the 20-year forecast for 325 Melrose. The core of the proposed projects is focused on the shell, electrical, HVAC, and interior components.

### Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.0 |
| Interiors | 2.7 |
| Conveyance | *N/A* |
| Plumbing | 3.0 |
| HVAC | 2.0 |
| Fire Protection | 1.0 |
| Electrical | 3.1 |
| Equipment | 3.0 |
| Site | 2.2 |
| **Total** | **2.6** |

*Substructure (4.0)*

The building foundations and substructure were not directly observable. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc.

The slabs on grade appear to be in good condition with signs of normal wear given the age of the building. There is some staining but no signs of major structural damage.

*Shell (3.03)*

Overall, the steel superstructure of the building is in fair condition. Observable steel columns, beams, and joists did not show signs of major structural deterioration. There appears to be a fireproofing coating cracking and crumbling off some of the steel columns in the maintenance garage.

The CMU structural walls do not appear in good condition. There are multiple instances of cracking, moisture damage, failing expansion joints, and missing mortar. The moisture infiltration through the CMU walls can be seen on the interior where latex paint seems to be bubbling. Also, efflorescence was observed on the interior of one of the maintenance garages. Penetrations through the CMU walls have created some staining on the exterior.

Steel roof decking over the newer portion of the building appears to be in good condition. There is little signs of water infiltration from roofing nails, penetrations, etc. There were some concrete plank flooring members which also appeared in fair condition. However, the joints between the planks were not sealed and there was visibility through to the floor above.

The newer membrane roofing appeared to be fairly weathered considering its age. Ponding, staining, and potentially clogged roof drains can be observed on the white roof. The membrane itself may not be adhered properly as there was also some bubbling over the surface. Coping around the perimeter of the roof appears in fair condition but it is lapped over an older fascia which may compromise water tightness. A pitched batten seam metal roof in poor condition covers the large maintenance garage. Multiple repairs/patches have been done over the years and there are signs of leaks on the interior. The roof insulation under this roof is highly damaged and stained with signs of leaking and staining. Fasteners rely on sealant to stop water infiltration, and many are failing. A fair amount of rust is also on this roof. Metal gutters and downspouts around the perimeter of the roof are in fair condition, however there may be issues with how the gutters are adhered to the building.

Exterior steel doors and frames are in poor condition. Some frames were seen completely rusted and deteriorated at the base, most likely from salting adjacent exterior surfaces. A lot of staining and heavy wear was documented. There are a few exterior louvers which are in poor condition as well. One instance in the boiler room appeared to be a newer set of louvers but installation was poor and there are gaps around the perimeter. The overhead garage doors in the newer portion of the building are in better condition than the older wood garage doors. There is denting, chipping, warping, and corroded lintels. Exterior windows are not in good condition. There is compromised sealants and damage to some of the glazing itself.

*Interiors (2.72)*

Through-wall piping and conduit penetrations were observed on the interior without proper sealing. While this is not a major maintenance concern, there are potentially firestopping issues between rated assemblies. Interior steel doors and frames are in better condition than exterior. There was some damage documented to door frames. Acoustic ceiling tiles and grids are in poor shape inside the building. Roof leaks have led to significant staining and water damage on the ceiling. The small amount of plaster ceilings appears in slightly better condition than the ACT ceilings. Drywall partitions on the interior show signs of heavy wear, patches, and repairs.

Floor finishes of VCT and carpet are in poor condition. Cracked and missing tiles along with extensive staining and damage can be seen on the tile floors. The carpet is beyond its useful life and poses interior air quality issues. Restroom fixtures and accessories are in fair condition but require some maintenance.

*Plumbing Systems (3.0)*

The plumbing systems for the building are overall adequate. The copper piping for the water appears okay. The plumbing fixtures are dated, but do not appear obsolete. A gas-fired water heater appears in good working order for the office portion. The overall weighted score of 3.0 reflects the plumbing is adequate.

*HVAC Systems (2.0)*

The HVAC system is comprised of an air-side cooling system and a hydronic heating system for comfort heating. Localized exhaust fans are not functioning. The comfort heating system appears to be repaired ad hoc as a condenser for a VRF unit is in the garage. Abandoned equipment remains in place. Equipment is rather old overall, but the RTU over the office portion appears to be in good working order. Overall, the system for the building is marginal.

*Fire Protection Systems (1.0)*

The fire sprinkler system is a wet-pipe sprinkler system. The system has a fire department connection and a backflow preventer, which appear in working order. The building is not fully sprinklered and as such, the system is rated as marginal.

*Electrical Systems (3.1)*

The overall Electrical systems appeared to be in marginal condition, however the good condition of the lighting systems contributed to a higher overall adequate score.

*Equipment (3.0)*

There are four vertical lifts in adequate condition. These components are all nearing their useful life and due to their operation importance; they have been prioritized in the 20-year forecast.

*Site (2.2)*

The site comprising of sidewalks and a surface parking lot is in marginal condition and are included in the 20-year forecast.

## E. 1 Kennedy Plaza

### Facility Description

The Kennedy Plaza Passenger terminal is a single-story transit hub. The facility is classified is a Passenger Facility and includes a main concourse waiting space, police space, vending space, public and private restrooms, ticketing offices, and administration areas. The building is approximately 6,661 square feet and sits on a 2.25-acre site which also includes an expansive plaza with eight bus shelters, trees, a pavilion, benches, a historical statue, and trash receptacles.

This facility appears to be in adequate condition. The building is approaching 22 years in age and could benefit from some rehabilitation of components to ensure a prolonged life. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. There is approximately $1.6M of improvements that fall within the 20-year forecast for 1 Kennedy Plaza. The investment driver for this project is an HVAC improvement proposed in Year 1. The remaining projects focus on electrical, interiors and plumbing/fire protection.

### Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.6 |
| Interiors | 3.2 |
| Conveyance | *N/A* |
| Plumbing | 3.0 |
| HVAC | 2.0 |
| Fire Protection | 3.0 |
| Electrical | 2.2 |
| Equipment | *N/A* |
| Site | 3.0 |
| **Total** | **3.0** |

*Substructure (4.0)*

The building foundations and substructure were not directly observable less a few instances. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc. Observable concrete slabs on grade appeared in good condition. There was some minor chipping and cracking but no indication of structural failure.

*Shell (3.6)*

Observable steel columns and beams were documented in good condition. Some minor evidence of rust was seen on beams in the mechanical room. Wood roof structure in the police area was documented in good condition. The structure appears to have been upkept and coatings were seen in good standing. Structural CMU walls were in very good condition with little signs of mortar damage, chipping, cracking, or notable moisture infiltration.

The exterior metal roof is in fair condition. Considering its age, the roof appears to have weathered as expected. There is some staining and denting due to the high traffic nature of this building. Metal downspouts had some issues at connection points to the building and were in poorest condition of all roof elements. Observable roof decking was in good condition with little to no documentation of damage or wear.

The exterior ornamental wood soffits and molding are in fair condition. There is more wear to these elements than the metal roof due to the nature of the material. Paint chipping and some damage to moldings can be seen. Exterior ornamental metal work in the police area is in fair condition but shows signs of wear. Coatings appear to have been maintained but there are potentially some corrosion issues. Also in this area are exterior steel wall panels which look to have once been used as doors. These are corroded at the base most likely due to salt applications and high public traffic in the area.

Exterior granite cladding and base in generally in good condition. However, there is a significant number of foreign substances and staining on the exterior which pose hygienic risk to the public. The large skylight glazing system appears in good condition. There were no noted incidents of water infiltration. Aluminum automatic entrances and storefronts are in fair condition but show signs of frequent usage, typical of the facility. Windows and storefront similarly show signs of wear inherent to the high traffic nature of the building. No failures reported, but sealants and flashings will need to be maintained.

*Interiors (3.2)*

The building interior is generally in fair condition albeit with evidence of high usage. Currently many of the administration and office spaces are not occupied. Interior gypsum board partitions appear to have a fair amount of scuff marks, discoloration, and light damage. Epoxy flooring in the restrooms is in poor condition. There is a lot of staining, unlevel surfaces, and damage to the integral cove base. The fixtures and toilet accessories in the restrooms are in fair condition but are used very frequently and will require regular maintenance. Stone wall tile in the public restrooms is in good condition but requires cleaning. There is a fair amount of staining evident, but the material does not seem to have major failures.

Gypsum board ceilings do not appear in good standing. There are multiple penetrations which have not been sealed properly in back-of-house spaces. In public spaces such as restrooms, there is a fair amount of staining and some damage. Interior doors in high traffic public areas

such as public restrooms show heavy signs of wear. Additionally, some of the accessible push button operators for these doors are not functional. In the main public atrium space, the epoxy terrazzo flooring shows signs of heavy wear but is in adequate condition. In the waiting spaces, the wood benches are still functional but show signs of wear.

In the office and administration spaces, wood doors and HM frames are in good condition. Most of the interior millwork and office equipment appears to have signs of heavy usage but is otherwise still usable. There is a raised flooring system in the IT/communications space which requires some repair. There were missing and damaged floor tiles documented in the report.

*Plumbing Systems (3.0)*

The plumbing systems is adequate, but due to wear and tear, plumbing fixtures do not work as designed. The domestic electric water heater appears in good condition. Overall, the plumbing system is rated as adequate.

*HVAC Systems (2.0)*

The HVAC system is comprised of comfort cooling and heating systems, radiant heating, and accompanying exhaust systems. The comfort cooling is accomplished via direct-expansion split systems, and hydronic boilers provide hydronic heating to the various coils in the facility. Abandoned hydronic radiant heating systems were to heat the local sidewalk and plaza. Through patch repairs, the comfort cooling and heating systems are somewhat adequate, but do not work as designed. Given the radiant heating system is abandoned, and three of the four boilers are out of service, the overall score of the HVAC system is poor.

*Fire Protection Systems (3.0)*

The fire sprinkler system is a wet-pipe system with a dry-pipe pre-action system for the IT room. This system is adequate.

*Electrical Systems (2.2)*

All the Electrical systems appeared to be in marginal to adequate condition, hence the overall lower score.

*Site (4.0)*

The site comprising of sidewalks and eight bus shelters in adequate condition. Based on our observation, these components have more than 20 years of useful life remaining.

## F. 350 Coddington Highway

### Facility Description

The facility at 350 Coddington Highway was built in 1993 for the Rhode Island Public Transit Authority and is one-story vehicle storage facility with administration space. The facility is classified as a General-Purpose Maintenance and includes office space, restrooms, employee lounge, meeting space, mechanical service space, vehicle storage, and two wash bays. 350 Coddington is approximately 39,217 square feet and sits on 3.42 acres.

This facility appears to be in adequate condition. The building is approaching 30 years in age and could benefit from some rehabilitation of components to ensure a prolonged life. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. Based on our team's assessment, the building is in an adequate condition. There is approximately $2.0M of improvements that fall within the 20-year forecast for 350 Coddington. The focus for this facility is concentrated in the first few years and will address the HVAC, equipment and fire protection. There will be a concentrated effort on electrical and interior projects towards the end of the 20-year forecast.

### Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.53 |
| Interiors | 3.22 |
| Conveyance | *N/A* |
| Plumbing | 3.00 |
| HVAC | 2.00 |
| Fire Protection | 2.00 |
| Electrical | 3.31 |
| Equipment | 2.51 |
| Site | 4.00 |
| **Total** | **3.13** |

*Substructure (4.0)*

The building foundations and substructure were not directly observable less a few instances. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc. Slabs on grade were in good condition and did not appear to show signs of structural cracking. Striping patterns in the large garage area need to be reapplied.

*Shell (3.53)*

Steel beams, girders, columns, and joists were all in good working condition. There was a fair amount of paint and coating wear and peeling documented, especially in the bus wash area.

Structural CMU walls appeared in fair condition, however there is evidence of potential moisture buildup and efflorescence staining. Weep holes were not observed on the exterior, which are called for in the original construction documents. This moisture buildup can potentially lead to deterioration of insulation within the cavity walls as well as damage to the CMU walls. This efflorescence and staining are evident on most of the exterior split face CMU as well. Investigative demolition may need to be done to pinpoint moisture issues in the wall and potentially installation of weep holes. Exterior brick appears in fair condition, however there was documentation of potential moisture buildup and efflorescence staining. The same issues seen in CMU walls with lack of weep holes and moisture are seen in the exterior brick, mainly at wall penetrations and accents.

Most of the roofing is a white membrane on rigid insulation and is in good condition. There is evidence of some bubbling and staining, but the roof appears to be performing as intended. Pitches appear to be adequate to drain the roof. The roof does require some cleaning and general maintenance. The small section of pitched standing seam metal roof over the building vestibule is in good condition however there is some small amounts of rust accumulation in the gutter system. Metal roof coping around the perimeter of the building is in good condition. There is no sign of oil canning and only minor signs of dents.

Exterior steel man doors and frames are in good working order but show signs of heavy wear. Frames show signs of rust at the base and require some repairs. Exterior overhead coiling doors appear to be working but there is a fair amount of denting and deformation to the housing and tracks. All doors were in the open position at time of visit. Glazed aluminum curtainwall system showed no signs of failure, and all sealants were in working order. Lack of weep holes in surrounding brick may be an issue with moisture.

*Interiors (3.22)*

There are some overhead garage doors on the interior of the building which have some damage due to vehicle collisions. They appear to be in working order but with some notable damage. Interior steel doors and frames in maintenance areas show signs of typical wear considering the locations. In employee spaces, most of the ceilings are acoustic tiles in grids which are in poor condition. Many tiles are not seated properly and there are some cracked / stained tiles. The ceramic tile flooring and base in the entry and other employee spaces shows signs of typical wear but is in overall above average condition considering the age of the building. Restroom fixtures and accessories show signs of heavy wear, and the restrooms require some general cleaning and maintenance. Ceramic wall tile in the restrooms looked to be in above average condition.

*Plumbing Systems (3.0)*

The plumbing systems for the building are overall adequate. The copper piping for the water appears okay. The plumbing fixtures are dated, but do not appear obsolete. A gas-fired water heater appears in good working order for the office portion.

*HVAC Systems (2.0)*

For comfort heating and cooling, the HVAC system largely consists of Rooftop Units with electric baseboard units for perimeter heating. The exhaust system is comprised of rope-and-pulley localized exhaust fans with Makeup Air Units. The rooftop units are past their useful life, and the exhaust system controls do not function.

*Fire Protection Systems (2.0)*

The fire sprinkler system is a wet-pipe sprinkler system. The system has a fire department connection and a backflow preventer, which appear in working order. The system appears to be past it's useful life of 20 years where sprinklers need to be tested.

*Electrical Systems (3.3)*

All the Electrical systems appeared to be in adequate to good condition, hence the overall high score.

*Equipment (2.5)*

Inside the storage area there are two bus washes that are in marginal condition and three vertical lifts in adequate condition. These components are all nearing their useful life and due to their operation importance; they have been prioritized in the 20-year forecast.

*Site (4.0)*

The site comprising of sidewalks and a surface parking lot is in good condition. Based on our observation, these components have more than 20 years of useful life remaining.

## G. 705 Elmwood Avenue

### Facility Description

705 Elmwood Avenue was built in 2012 for the Rhode Island Public Transit Authority and is primarily a two-story administrative facility. Both the first and second floor levels house RIPTA administrative and operations offices. This facility is classified as an administrative facility, but also serves as a General-Purpose Maintenance building. Portion of this facility houses indoor storage for the authority's paratransit fleet.

The building is approximately 10 years in age and is the Authority's headquarters and newest facility. Photos showing the current condition of the exterior and interior of the building are enclosed in Appendix B. Based on our team's assessment, the building is in an adequate to good condition. There is approximately $6.1M of improvements that fall within the 20-year forecast for 705 Elmwood. The bulk of the projects are between years 5 and 11 and primarily concentrated on equipment, plumbing, HVAC, and electrical components.

### Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.7 |
| Interiors | 3.6 |
| Conveyance | 3.0 |
| Plumbing | 4.9 |
| HVAC | 4.2 |
| Fire Protection | 4.0 |
| Electrical | 4.0 |
| Equipment | 3.0 |
| Site | 3.0 |
| **Total** | **3.7** |

*Substructure (4.0)*

The building foundations and substructure were not directly observable less a few instances. Further invasive demolition would be required to ascertain the condition of the building foundations, column footings, etc. Concrete slabs on grade appear in good condition, however there were some observable patches and repairs.

*Shell (3.74)*

Primary structural members including steel columns, beams, joists, and trusses are in very good condition. General cleaning and debris removal is recommended but overall, the superstructure is above average condition. CMU structural walls are also in good condition. From observing the interior and exterior, there are no major structural deficiencies detected in the CMU walls. Exterior brick veneer is in above average condition. There is very little wear documented and mortar joints appear to maintain their integrity.

Regarding roofing, the membrane on rigid insulation roof is in above average condition. There is little to no wear detected and the roof can be considered close to new condition. At the top level of the building is a parking deck. The coating and striping shows signs of continuous wear which is natural. There is also evidence of some staining on the deck. Metal roof coping at the same level can be seen in good condition however there was a section missing at the time of site visit.

At the ground level, 12 overhead coiling doors remain in average condition. They appear to show normal signs of wear. Exterior metal doors and frames show signs of wear typical of their location and lifespan. They are average condition. Exterior glazing does not seem to indicate any major deficiencies and is above average condition. Aluminum automatic entries indicate a lot of usage but are in overall good condition.

*Interiors (3.6)*

Interior wood doors and frames are in above average condition. There is little wear observable less some higher traffic areas. Acoustic ceiling tiles and grids are in good condition however there are some ceiling tiles that show signs of staining. VCT flooring is in good working condition with signs of wear in heavily trafficked areas and where furniture is moved frequently. Ceramic tile floor and base in restrooms and back-of-house spaces shows signs of heavy traffic and may not be level based on water pooling seen in documentation. Restroom fixtures and accessories are overall in average condition.

*Conveyance (3.0)*

The elevators in 705 Elmwood are in adequate condition, based on our observations. They are over halfway through their expected useful life and are included in the 20-year forecast.

*Plumbing Systems (4.9)*

The plumbing is comprised of domestic hot- and cold-water systems, waste & vent systems, storm drainage systems, and compressed air systems. The domestic water piping is comprised of copper piping, and much of it has the gleam of new piping. The hot-water systems for domestic use appear in good condition. The plumbing fixtures are dated but are not obsolete. The compressed air system is rather new. Overall, the systems are “Good.”

*HVAC Systems (4.2)*

The HVAC system is comprised of comfort cooling and heating for the office portion of the building, and the garage/repair portion is served by Makeup Air Units and an Exhaust System. Comfort cooling and base comfort heating is composed of a several constant-air-volume rooftop units. The makeup air units and exhaust fans are in good working order. The systems are rather new, and all have useful life remaining. Overall, the systems are "Good."

*Fire Protection Systems (4.0)*

The fire sprinkler system is composed of a wet-pipe system. The service is complete with backflow preventers and fire department connections. The system is "Good."

*Electrical Systems (4.0)*

All the Electrical systems appeared to be in good condition, hence the overall high score.

*Equipment (3.0)*

Inside the storage area there are two bus washes that are in Marginal condition and three vertical lifts in adequate condition. These components are all nearing their useful life and due to their operation importance; they have been prioritized in the 20-year forecast.

*Site (3.0)*

The site comprising of sidewalks and a surface parking lot is in adequate condition. Based on our observation, these components have more than 20 years of useful life remaining.

# III. Appendix A - 20-Year Facility Cost Projection

| Location | Cost By Fiscal Year<br>1 Kennedy Plaza | 269 Melrose St | 350 Coddington Ave | 705 Elmwood Ave | 750 Elmwood Ave | 265 Melrose St | 325 Melrose St | Grand Total |
|---|---|---|---|---|---|---|---|---|
| **FY 2024** | **$1,000,000** | | **$150,000** | | **$96,000** | **$1,185,000** | **$570,000** | **$3,001,000** |
| *Fire Protection* | | | *$150,000* | | | *$355,000* | *$200,000* | *$705,000* |
| Fire Sprinklers | | | $150,000 | | | $355,000 | $200,000 | $705,000 |
| *HVAC* | *$1,000,000* | | | | *$96,000* | *$830,000* | *$370,000* | *$2,296,000* |
| AC, Boilers, Radiant Heating | $1,000,000 | | | | | | | $1,000,000 |
| Comfort Cooling | | | | | $96,000 | | | $96,000 |
| Comfort Heating and Cooling | | | | | | | $350,000 | $350,000 |
| Exhaust System | | | | | | $278,000 | $20,000 | $298,000 |
| Air-Side Mechanical System | | | | | | $552,000 | | $552,000 |
| **FY 2025** | **$100,530** | **$110,000** | **$580,188** | | **$57,500** | **$1,900,194** | | **$2,748,412** |
| *Electrical* | *$100,530* | | *$37,188* | | *$7,500* | | | *$145,218* |
| Exterior Lighting System | $7,500 | | | | $7,500 | | | $15,000 |
| Office/Storage Lighting System | $93,030 | | | | | | | $93,030 |
| Service and Distribution | | | $37,188 | | | | | $37,188 |
| *HVAC* | | | *$543,000* | | | | | *$543,000* |
| MAU and Exhaust System | | | $375,000 | | | | | $375,000 |
| Office Area Comfort Heating and Cooling | | | $168,000 | | | | | $168,000 |
| *Plumbing* | | *$110,000* | | | *$50,000* | *$556,000* | | *$716,000* |
| Hot-Water System | | | | | $50,000 | $16,000 | | $66,000 |
| Plumbing Fixtures | | $110,000 | | | | $132,500 | | $242,500 |
| Sanitary Drainage | | | | | | $257,500 | | $257,500 |
| Storm Drainage | | | | | | $150,000 | | $150,000 |
| Shell | | | | | | $1,344,194 | | $1,344,194 |
| Roofing – ballasted | | | | | | $1,344,194 | | $1,344,194 |
| **FY 2026** | | **$70,000** | **$99,172** | | **$170,691** | **$2,109,111** | **$47,566** | **$2,496,541** |
| *Equipment* | | *$70,000* | *$99,172* | | | | | *$169,172* |
| Bus wash | | | $99,172 | | | | | $99,172 |
| Bush Wash | | $70,000 | | | | | | $70,000 |
| Plumbing | | | | | | $413,000 | | $413,000 |
| Compressed Air | | | | | | $200,000 | | $200,000 |
| Domestic Water | | | | | | $213,000 | | $213,000 |
| Shell | | | | | $170,691 | $1,696,111 | $47,566 | $1,914,369 |
| Membrane roofing + rigid insulation | | | | | $170,691 | | | $170,691 |
| Exterior Walls, Brick | | | | | | $789,600 | | $789,600 |
| Exterior office windows | | | | | | $489,600 | | $489,600 |
| Exterior steel windows | | | | | | $350,096 | | $350,096 |
| Roof head houses and EQ | | | | | | $25,248 | | $25,248 |
| Storefront, Metal-framed with Glazing | | | | | | $14,090 | | $14,090 |
| Roof Skylight | | | | | | $8,250 | | $8,250 |
| Roof access ladder, steel | | | | | | $2,297 | | $2,297 |
| Steel exterior doors, frames, and hardware | | | | | | $16,931 | | $16,931 |
| Exterior louvers, frames, and bird/insect screens | | | | | | | $2,290 | $2,290 |
| Roof insulation | | | | | | | $45,276 | $45,276 |
| **FY 2027** | | **$466,000** | | | **$770,000** | **$886,215** | **$148,474** | **$2,270,689** |
| Electrical | | | | | | $886,215 | $148,474 | $1,034,689 |
| Exterior Lighting System | | | | | | | $7,500 | $7,500 |
| Fire Alarm System | | | | | | $287,448 | $7,625 | $295,073 |
| Garage Lighting System | | | | | | | $110,722 | $110,722 |
| Office/Storage Lighting System | | | | | | $553,540 | | $553,540 |
| Service and Distribution | | | | | | $45,227 | $22,627 | $67,854 |
| Equipment | | | | | $770,000 | | | $770,000 |
| Vehicle Lifts | | | | | $770,000 | | | $770,000 |
| *HVAC* | | *$466,000* | | | | | | *$466,000* |
| Exhaust System | | $466,000 | | | | | | $466,000 |
| **FY 2028** | **$33,863** | **$436,358** | | **$40,000** | **$50,120** | **$848,071** | **$3,384** | **$1,411,796** |
| *Electrical* | *$21,518* | *$38,858* | | | *$50,120* | | | *$110,496* |
| Exterior Lighting System | | $7,500 | | | | | | $7,500 |
| Fire Alarm System | $3,500 | $31,358 | | | | | | $34,858 |
| Service and Distribution | $18,018 | | | | $50,120 | | | $68,138 |
| *Interiors* | *$12,345* | | | | | | *$3,384* | *$15,729* |
| Gypsum ceilings | $12,345 | | | | | | | $12,345 |
| Carpet flooring | | | | | | | $3,384 | $3,384 |
| *Plumbing* | | *$397,500* | | *$40,000* | | | | *$437,500* |
| Hot-Water System | | | | $40,000 | | | | $40,000 |
| Sanitary Drainage | | $397,500 | | | | | | $397,500 |
| Interior | | | | | | $848,071 | | $848,071 |
| Acoustic ceiling tile and grid systems. | | | | | | $237,160 | | $237,160 |
| Interior gypsum partitions/walls | | | | | | $221,088 | | $221,088 |
| Carpet flooring | | | | | | $95,634 | | $95,634 |
| Interior F2 Doors | | | | | | $91,402 | | $91,402 |
| Vinyl tile flooring | | | | | | $81,000 | | $81,000 |
| Interior stairs, Fire Exit | | | | | | $33,825 | | $33,825 |
| Interior gypsum board ceilings | | | | | | $20,262 | | $20,262 |
| Ceramic wall tile | | | | | | $18,000 | | $18,000 |
| Interior steel doors | | | | | | $37,039 | | $37,039 |
| Interior fire rated doors | | | | | | $12,662 | | $12,662 |

| Location | Cost By Fiscal Year<br>1 Kennedy Plaza | 269 Melrose St | 350 Coddington Ave | 705 Elmwood Ave | 750 Elmwood Ave | 265 Melrose St | 325 Melrose St | Grand Total |
|---|---|---|---|---|---|---|---|---|
| **FY 2029** | | | | **$478,810** | **$272,356** | $281,115 | **$351,955** | **$1,384,236** |
| Electrical | | | | | | $7,500 | | $7,500 |
| Exterior Lighting System | | | | | | $7,500 | | $7,500 |
| Shell | | | | | | $175,935 | $331,175 | $507,110 |
| Overhead steel garage doors | | | | | | $153,063 | | $153,063 |
| Roof – Membrane | | | | | | $22,872 | | $22,872 |
| Exterior steel doors and frames. | | | | | | | $4,373 | $4,373 |
| Pitched roof metal fascia | | | | | | | $4,530 | $4,530 |
| Windows and frames | | | | | | | $45,210 | $45,210 |
| Batten seam metal roof | | | | | | | $277,063 | $277,063 |
| *Site* | | | | *$478,810* | *$272,356* | *$97,680* | *$20,780* | *$869,625* |
| Roadways and paving | | | | | $272,356 | | | $272,356 |
| Site work and parking lot | | | | $478,810 | | $97,680 | | $576,489 |
| Exterior concrete pads and walking surfaces. | | | | | | | $20,780 | $20,780 |
| **FY 2030** | | **$216,000** | **$350,000** | **$550,000** | **$380,000** | | **$250,000** | **$1,746,000** |
| *Plumbing* | | *$216,000* | *$350,000* | *$550,000* | *$380,000* | | *$250,000* | *$1,746,000* |
| Compressed Air | | $200,000 | | $350,000 | $300,000 | | | $850,000 |
| Hot-Water System | | $16,000 | | | | | | $16,000 |
| Plumbing Fixtures | | | | $200,000 | $80,000 | | | $280,000 |
| Plumbing System | | | $350,000 | | | | $250,000 | $600,000 |
| **FY 2031** | | | | **$628,500** | **$104,280** | **$5,290** | **$275,542** | **$1,013,612** |
| *Conveyance* | | | | *$453,500* | *$104,280* | | | *$557,780* |
| Elevator | | | | | $104,280 | | | $104,280 |
| Elevator | | | | $453,500 | | | | $453,500 |
| *Equipment* | | | | *$175,000* | | | *$140,000* | *$315,000* |
| Vehicle Lifts | | | | $175,000 | | | $140,000 | $315,000 |
| Interiors | | | | | | | $135,542 | $135,542 |
| Acoustic ceiling tiles and grids | | | | | | | $80,850 | $80,850 |
| Through-wall piping and conduit penetrations. | | | | | | | $2,567 | $2,567 |
| VCT Flooring and rubber base. | | | | | | | $52,125 | $52,125 |
| Interior | | | | | | $5,290 | | $5,290 |
| Toilet partitions - metal | | | | | | $5,290 | | $5,290 |
| **FY 2032** | | | | | **$2,070,000** | | | **$2,070,000** |
| *HVAC* | | | | | *$2,070,000* | | | *$2,070,000* |
| Comfort Heating | | | | | $1,600,000 | | | $1,600,000 |
| Exhaust System | | | | | $470,000 | | | $470,000 |
| **FY 2033** | **$65,869** | **$13,169** | **$353,142** | **$1,750,000** | | **$27,226** | | **$2,209,405** |
| *Electrical* | | | *$199,439* | | | | | *$199,439* |
| Exterior Lighting System | | | $7,500 | | | | | $7,500 |
| Fire Alarm System | | | $67,925 | | | | | $67,925 |
| Office/Storage Lighting System | | | $124,014 | | | | | $124,014 |
| *Equipment* | | | *$105,000* | | | | | *$105,000* |
| Vehicle lifts | | | $105,000 | | | | | $105,000 |
| HVAC | | | | $1,750,000 | | | | $1,750,000 |
| Comfort Heating and Cooling | | | | $350,000 | | | | $350,000 |
| Exhaust System and MAU | | | | $1,400,000 | | | | $1,400,000 |
| *Interiors* | *$65,869* | *$13,169* | | | | | | *$79,038* |
| Carpet tile flooring and base | | $13,169 | | | | | | $13,169 |
| Interior casework, millwork, office furniture and equipment | $65,869 | | | | | | | $65,869 |
| *Shell* | | | *$48,703* | | | | | *$48,703* |
| Exterior overhead coiling doors | | | $48,703 | | | | | $48,703 |
| Interior | | | | | | $27,226 | | $27,226 |
| Ceramic tile flooring | | | | | | $27,226 | | $27,226 |
| **FY 2034** | | **$906,129** | | **$750,891** | **$502,740** | | | **$2,159,760** |
| *Electrical* | | *$906,129* | | *$750,891* | *$502,740* | | | *$2,159,760* |
| Exterior Lighting System | | | | $15,000 | | | | $15,000 |
| Fire Alarm System | | | | $19,483 | | | | $19,483 |
| Garage Lighting System | | $906,129 | | | $502,740 | | | $1,408,869 |
| Office/Storage Lighting System | | | | $716,409 | | | | $716,409 |
| **FY 2035** | | | | **$1,223,334** | | | | **$1,223,334** |
| Electrical | | | | $1,223,334 | | | | $1,223,334 |
| Garage Lighting System | | | | $1,223,334 | | | | $1,223,334 |
| **FY 2036** | | **$335,567** | | | **$269,596** | **$537,650** | **$179,901** | **$1,322,713** |
| *Electrical* | | *$335,567* | | | *$179,901* | *$537,650* | *$179,901* | *$1,233,018* |
| Garage Lighting System | | | | | | $537,650 | | $537,650 |
| Office/Storage Lighting System | | $254,416 | | | $179,901 | | $179,901 | $614,217 |
| Service and Distribution | | $81,151 | | | | | | $81,151 |
| Interiors | | | | | $89,695 | | | $89,695 |
| Acoustic ceiling tiles and grids | | | | | $89,695 | | | $89,695 |
| **FY 2037** | | **$1,182,000** | **$396,685** | **$158,606** | | | | **$1,737,291** |
| *Electrical* | | | *$396,685* | *$158,606* | | | | *$555,291* |
| Garage Lighting System | | | $396,685 | | | | | $396,685 |
| Service and Distribution | | | | $158,606 | | | | $158,606 |
| HVAC | | $1,182,000 | | | | | | $1,182,000 |
| MAUs | | $832,000 | | | | | | $832,000 |
| Office Area Comfort Heating and Cooling | | $350,000 | | | | | | $350,000 |

| Location | Cost By Fiscal Year<br>1 Kennedy Plaza | 269 Melrose St | 350 Coddington Ave | 705 Elmwood Ave | 750 Elmwood Ave | 265 Melrose St | 325 Melrose St | Grand Total |
|---|---|---|---|---|---|---|---|---|
| **FY 2038** | **$42,610** | | **$86,404** | **$128,822** | | | **$397,390** | **$655,225** |
| *Equipment* | | | | *$99,172* | | | | *$99,172* |
| Bus Wash | | | | $99,172 | | | | $99,172 |
| *Interiors* | *$42,610* | | *$86,404* | | | | *$341,740* | *$470,753* |
| Acoustic ceiling tiles and grids | | | $60,638 | | | | | $60,638 |
| Interior Steel doors and frames | | | $25,766 | | | | $23,212 | $48,978 |
| Interior wood benches | $2,000 | | | | | | | $2,000 |
| Public restroom fixtures, toilet partitions, and accessories | $21,622 | | | | | | | $21,622 |
| Raised flooring system | $2,268 | | | | | | | $2,268 |
| Restroom fixtures and accessories | | | | | | | $3,348 | $3,348 |
| Stone wall tile | $16,720 | | | | | | | $16,720 |
| Plaster ceilings | | | | | | | $6,012 | $6,012 |
| Interior drywall Partitions | | | | | | | $15,700 | $15,700 |
| Interior furniture and fixtures | | | | | | | $293,468 | $293,468 |
| *Shell* | | | | *$29,650* | | | *$55,650* | *$85,300* |
| Aluminum automatic entrances | | | | $29,650 | | | | $29,650 |
| Overhead garage doors | | | | | | | $55,650 | $55,650 |
| **FY 2039** | $150,000 | $475,000 | | | $462,225 | | | $1,087,225 |
| Electrical | | | | | $22,225 | | | $22,225 |
| Fire Alarm System | | | | | $22,225 | | | $22,225 |
| Fire Protection | $150,000 | $475,000 | | | $440,000 | | | $1,065,000 |
| Fire Sprinklers | $150,000 | $475,000 | | | $440,000 | | | $1,065,000 |
| **FY 2040** | $200,000 | $490,178 | | | $88,000 | | | $778,178 |
| Interiors | | $15,178 | | | | | | $15,178 |
| Restroom fixtures and accessories | | $15,178 | | | | | | $15,178 |
| Plumbing | $200,000 | $475,000 | | | $88,000 | | | $763,000 |
| Domestic Water | | $237,500 | | | | | | $237,500 |
| Natural Gas | | $95,000 | | | $88,000 | | | $183,000 |
| Plumbing System | $200,000 | | | | | | | $200,000 |
| Storm Drainage | | $142,500 | | | | | | $142,500 |
| **FY 2041** | | | | $226,000 | $352,000 | | | $578,000 |
| Plumbing | | | | $226,000 | $352,000 | | | $578,000 |
| Storm and Drainage | | | | $226,000 | $352,000 | | | $578,000 |
| **FY 2042** | $12,451 | $55,660 | | | $176,465 | $994,000 | $29,568 | $1,268,144 |
| HVAC | | | | | | $994,000 | | $994,000 |
| Steam System | | | | | | $994,000 | | $994,000 |
| Interiors | $12,451 | | | | | | | $12,451 |
| Epoxy flooring and cove base | $12,451 | | | | | | | $12,451 |
| Shell | | $55,660 | | | $176,465 | | $29,568 | $261,693 |
| Existing relocated granite cornice | | | | | $58,188 | | | $58,188 |
| Exterior overhead coiling doors | | $55,660 | | | | | | $55,660 |
| Overhead coiling doors | | | | | $118,278 | | | $118,278 |
| Membrane roofing | | | | | | | $29,568 | $29,568 |
| **FY 2043** | | $136,906 | $15,284 | $158,686 | $32,598 | | $6,346 | $349,820 |
| Interiors | | $136,906 | $15,284 | $65,196 | $32,598 | | $6,346 | $256,330 |
| Acoustic ceiling tiles and grids | | $136,906 | | | | | | $136,906 |
| Overhead garage doors | | | $8,695 | | | | | $8,695 |
| Restroom & locker room fixtures and accessories | | | | | $32,598 | | | $32,598 |
| Restroom fixtures and accessories | | | $6,589 | | | | | $6,589 |
| Restroom fixtures and accessories | | | | $65,196 | | | | $65,196 |
| Interior lighting fixtures | | | | | | | $6,346 | $6,346 |
| Shell | | | | $93,490 | | | | $93,490 |
| Overhead coiling doors | | | | $93,490 | | | | $93,490 |
| **Grand Total** | **$1,605,323** | **$4,892,966** | **$2,030,874** | **$6,093,649** | **$5,854,570** | **$8,773,872** | **$2,260,126** | **$31,511,379** |

# IV. Appendix B - Facility Condition Assessments

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 265 MELROSE STREET, PROVIDENCE, RI 02907

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

Although two separate buildings, 265 and 267 Melrose Street function as a single building with circulation connections to each other on the ground and upper floors. 265 Melrose Street (Building 265) was built in 1922 for United Electric Railroads and is a mostly one-story vehicle maintenance facility with shops and storage. There is a partial second floor and two small partial basement areas, which were previously used for mechanical equipment. The exact construction date of 267 Melrose Street (Building 267) is unknown and was likely built between 1935 and 1950. It is a two-story building with a mezzanine. 267 Melrose Street houses vehicle storage and repair on the first level. The second level features an office area that has been vacant for more than 10 years. Both second floor levels previously housed RIPTA administrative offices and have now been abandoned due to disrepair, hazardous materials building components, leaking roofs, and inefficient and obsolete building systems.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 265 Melrose St, Providence, RI 02907 |
| Property Type | General Purpose Maintenance |
| Year Built | 1927 |
| Number of Vehicles Stored | 15 |
| Year of Latest Major Renovation | 1997 |
| Number of Stories | 2 (Does not Include Basements, Mezzanines, or MEP Penthouses) |
| Occupied | No (Used as vehicle storage) |
| Land Area | 1.07 Acre |
| Gross Building Area (GSF) | 72,000 |
| Total Parking Count (Including ADA) | 0 Parking Spaces |
| ADA Compliant (Total Count) | 0 Total ADA Spaces |
| ADA Compliant for Vans | 0 Van Parking Spaces |

### C. Summary of Findings

The building is beyond its useful life in its current condition. An in-depth 2016 building assessment identified structural deficiencies, system performance failures, accessibility challenges not meeting ADA, UFAS, and other related requirements, and the presence of hazardous materials including asbestos. Based on our team's assessment, the building remains in a poor condition. Please refer to the overall facility condition in Section D.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 3.0 |
| Shell | 1.61 |
| Interiors | 1.03 |
| Conveyance | 1.0 |
| Plumbing | 2.39 |
| HVAC | 2.09 |
| Fire Protection | 1.0 |
| Electrical | 2.52 |
| Equipment | *N/A* |
| Site | 2.0 |
| **Total** | **1.8** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section B. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section C.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rain water drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**E. EQUIPMENT**
E10 Equipment

**G. SITEWORK**
G10 Site Preparation
G20 Site Improvements
G30 Site Mechanical Utilities
G40 Site Electrical Utilities
G90 Other Site Construction

# A. Substructure

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Foundations, concrete |
| Condition | 3 |
| Quantity | ~1,400 linear ft. |
| Unit Cost | Total: $287,448 |
| Year in Service | 1922 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Foundations not visually accessible.

# B. Shell

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Superstructure, concrete/steel. |
| Condition | 3 |
| Quantity | 72,000 sq. ft. |
| Unit Cost | Total: $972,000 |
| Year in Service | 1922 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Structural Floor/Decking |
| Condition | 3 |
| Quantity | ~25,000 sq. ft. |
| Unit Cost | Total: $325,056.26 |
| Year in Service | 1922 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Upper floors |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof access ladder, steel |
| Condition | 1 |
| Quantity | 1 |
| Unit Cost | $2,296.85 |
| Year in Service | N/A |
| Expected Useful Life | N/A |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior Walls, Brick |
| Condition | 1 |
| Quantity | ~17,000 sq. ft. |
| Unit Cost | Total: $789,600 |
| Year in Service | 1922 |
| Expected Useful Life | 100 |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior office windows |
| Condition | 1 |
| Quantity | ~50 |
| Unit Cost | Total: $489,600 |
| Year in Service | 1975 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior steel windows |
| Condition | 1 |
| Quantity | ~29 |
| Unit Cost | Total: $350,096 |
| Year in Service | 1975 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Storefront, Metal-framed with Glazing |
| Condition | 1 |
| Quantity | ~500 sq. ft. |
| Unit Cost | Total: $14,090 |
| Year in Service | 1985 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

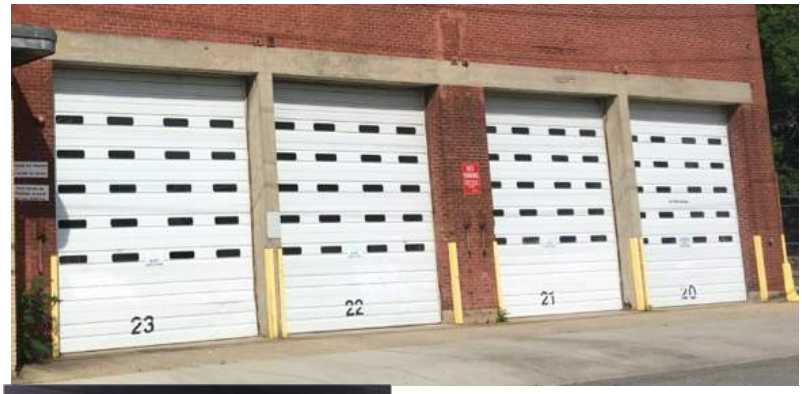
**Pictures:**

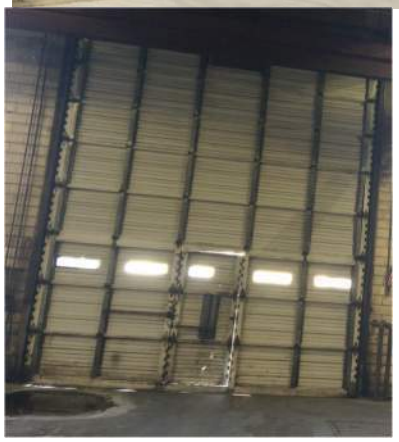
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel exterior doors, frames, and hardware |
| Condition | 1 |
| Quantity | 8 |
| Unit Cost | Total: $16,931 |
| Year in Service | 1997 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 1 year, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead steel garage doors |
| Condition | 2 |
| Quantity | 22 |
| Unit Cost | Total: $153,063 |
| Year in Service | 1995 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roofing – ballasted |
| Condition | 1 |
| Quantity | ~43,500 sq. ft. |
| Unit Cost | Total: $1,344,194 |
| Year in Service | 1995 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof head houses |
| Condition | 1 |
| Quantity | ~600 sq. ft. |
| Unit Cost | $25,248 |
| Year in Service | N/A |
| Expected Useful Life | N/A |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof – Membrane |
| Condition | 2 |
| Quantity | ~3,000 sq. ft. |
| Unit Cost | Total: $22,872 |
| Year in Service | 2005 |
| Expected Useful Life | 20 |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

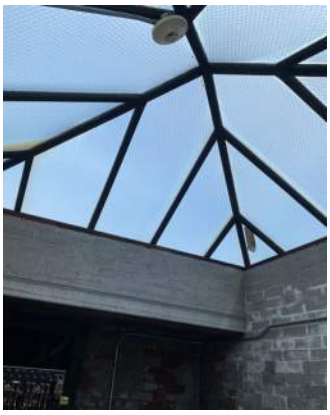
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof Skylight |
| Condition | 1 |
| Quantity | ~160 sq. ft. |
| Unit Cost | Total: $8,250 |
| Year in Service | 1975 |
| Expected Useful Life | 30 |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Ada push buttons not operable on some doors.

**Pictures:**



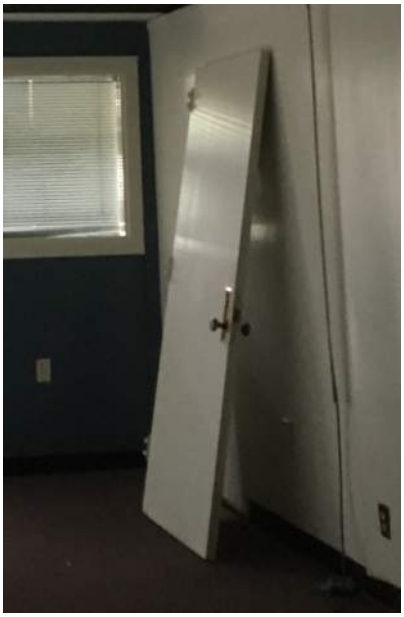
# C. Interior

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior steel doors |
| Condition | 1 |
| Quantity | 23 |
| Unit Cost | Total: $37,039.20 |
| Year in Service | 2010 |
| Expected Useful Life | 20 |
| Remaining Useful Life | 2 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior F2 Doors |
| Condition | 1 |
| Quantity | 74 |
| Unit Cost | Total: $91,402 |
| Year in Service | 1985 |
| Expected Useful Life | 25 |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior fire rated doors |
| Condition | 2 |
| Quantity | 6 |
| Unit Cost | $12,662.40 |
| Year in Service | 1985 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 2 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Toilet partitions - metal |
| Condition | 3 |
| Quantity | 5 |
| Unit Cost | $5289.84 |
| Year in Service | 2010 |
| Expected Useful Life | 15 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior stairs, Fire Exit |
| Condition | 1 |
| Quantity | ~2,000 sq. ft. |
| Unit Cost | $33,825 |
| Year in Service | 1927 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior gypsum partitions/walls |
| Condition | 1 |
| Quantity | ~25,000 sq. ft. |
| Unit Cost | $221,087.50 |
| Year in Service | N/A |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

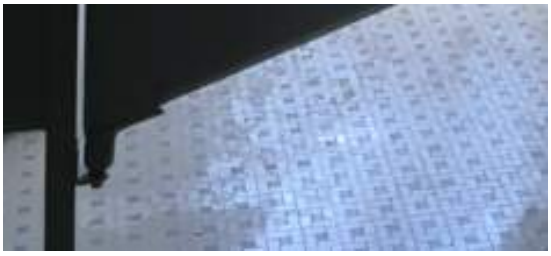
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vinyl tile flooring |
| Condition | 1 |
| Quantity | ~12,000 sq. ft. |
| Unit Cost | $81,000 |
| Year in Service | 1975 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic tile flooring |
| Condition | 1 |
| Quantity | 2,000 sq. ft. |
| Unit Cost | $27,226.41 |
| Year in Service | 1975 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic wall tile |
| Condition | 1 |
| Quantity | ~2,000 |
| Unit Cost | $18,000 |
| Year in Service | 1975 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Carpet flooring |
| Condition | 1 |
| Quantity | 14,000 sq. ft. |
| Unit Cost | $95,634 |
| Year in Service | 1975 |
| Expected Useful Life | 10 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

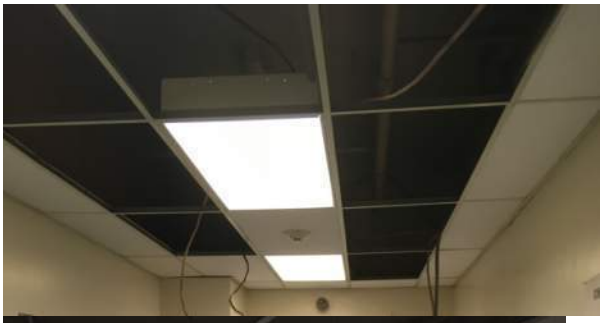
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior gypsum board ceilings |
| Condition | 1 |
| Quantity | ~2,000 sq. ft. |
| Unit Cost | $20,262 |
| Year in Service | 1927 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tile and grid systems. |
| Condition | 1 |
| Quantity | 22,000 sq. ft. |
| Unit Cost | $237,160.02 |
| Year in Service | 1975 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



# D. SERVICES

## Conveyance

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Elevator |
| Condition | 1 |
| Quantity | 1 |
| Unit Cost | $453,500 |
| Year in Service | 1964 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | 0 Years |
| Location | First and Second Floors |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

## Plumbing Systems

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Water Distribution | Domestic water service and piping distribution |
| Condition | 3-Maginal |
| Quantity | ~71,000 SF |
| Unit Cost | $3/square foot for distribution & Labor<br>Total: $213,000 |
| Year in Service | ~1960s with sporadic modifications through the years |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

## Domestic Water

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Water Distribution | Domestic water service and piping distribution |
| Condition | 3-Maginal |
| Quantity | ~71,000 SF |
| Unit Cost | $3/square foot for distribution & Labor<br>Total: $213,000 |
| Year in Service | ~1960s with sporadic modifications through the years |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The domestic water service is in a basement level. The service has a 2” copper line. There is a 2” water meter and a 2” reduced-pressure zone backflow preventer. The copper is slightly corroded but appears to be in fair condition. A pressure gauge at the service reads 78 psi. No pressure boosting pumps are present. The domestic water is

piped with copper throughout the building. Maintenance was performed in a few sections. The older fittings were soldered, and the newer fittings are press-fit fittings. No insulation is present on hot or cold water piping.

*Figure 1: Water Service Entrance*

## Hot Water System

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Hot Water Systems | Water heaters |
| Condition | 5-Excellent: Gas-Fired Tank Water Heater & Electric Tank Water Heater. 1- Poor: Abandoned Equipment |
| Quantity | ~1 Gas-Fired Water heater, ~1 Electric Water Heater |
| Unit Cost | $16,000 |
| Year in Service | ~November 2009 |
| Expected Useful Life (EUL) | ~15 Years |
| Remaining Useful Life (RUL) | ~2 Years |
| Location | Boiler Room and Garage Restroom |
| Basis of Costing | RMS Means Data with Contingencies Added |

A 65-gallon, 65,000 Btu/hr gas-fired water heater located in the boiler room provides hot water to a wash sink and several interior hose bibbs. A small, tank electric water heater provides hot water to the restroom. In the office area, a small tank electric water heater is abandoned in place under the vanity of a lavatory.

*Figure 2: Gas-Fired Water Heater in Boiler Room*

*Figure 3: Electric Water Heater in Garage Area*

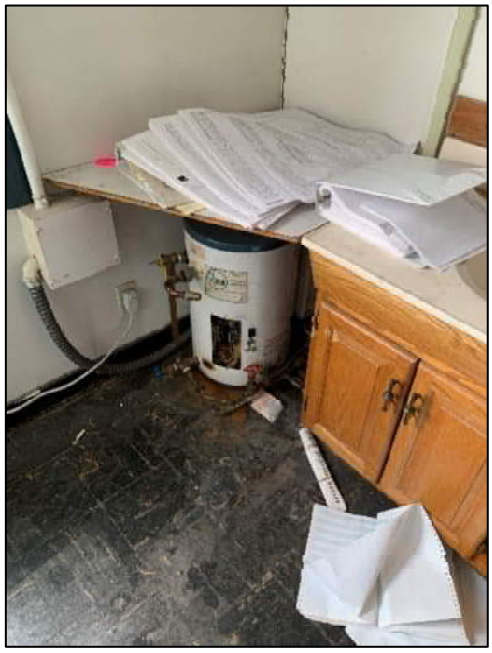


*Figure 4: Electric Water Heater in Office Area*

An abandoned, gas-fired water heater is in the abandoned boiler room. This water heater might have supplied hot water to the restrooms in the office area when the office portion of the building was operational.

*Figure 5: Abandoned Gas-Fired Water Heater in Abandoned Boiler Room*

## Plumbing Fixtures

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Fixtures | Water closets, lavatories, sinks, etc. |
| Condition | 1-Poor |
| Quantity | ~21,000 SF, ~20 Fixtures |
| Unit Cost | ~$4,000/Fixture and $2.50/SF. Total: $132,500 |
| Year in Service | ~1960s with sporadic modifications |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The observed abandoned plumbing fixtures are non-ADA compliant, are manually operated, and are not of the water-saving variety. There appeared to be no master mixing valve and no point-of-use mixing valves to provide scald protection.

*Figure 6: Abandoned Urinal*

*Figure 7: Abandoned Lavatory*

*Figure 8: Abandoned Lavatory*

*Figure 9: Garage Restroom*

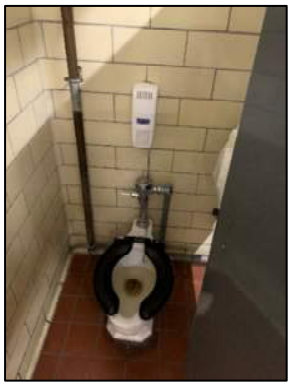


*Figure 10: Garage Restroom*

*Figure 11: Garage Restroom*

## Storm Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Storm Drainage Systems | Roof drains and Leaders |
| Condition | 1-Poor |
| Quantity | ~50,000 SF |
| Unit Cost | $3/SF. Total: $150,000 |
| Year in Service | ~1960s with sporadic modifications |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Facility Roof |
| Basis of Costing | RMS Means Data with Contingencies Added |

The storm drainage piping appeared to be original to the building. Most piping was bell and spigot cast iron, and some recent patching was done with PVC. The drains on the roof are original and some appear clogged. No secondary drainage was present.

*Figure 12: Clogged Roof Drain*

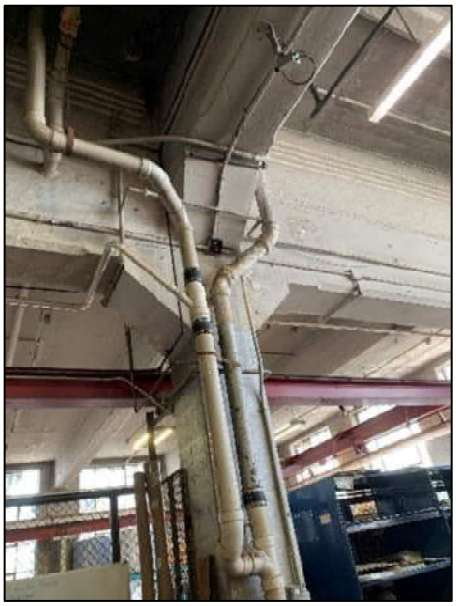


*Figure 13: Storm Leaders - PVC and Cast Iron*

## Sanitary Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Sanitary Drainage System | Sanitary Drainage Piping and Interceptors |
| Condition | 2-Marginal |
| Quantity | ~71,000 SF |
| Unit Cost | $2.50/SF. Total: $177,500. Oil Water Separator: $80,000 |
| Year in Service | ~1960s with sporadic modifications |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The sanitary piping is bell and spigot cast iron. The piping appeared to be original and is deteriorating in the basement, where one street lateral is observed.

*Figure 14: Pipe Chase in Water Service Area. Sanitary Lateral*

In the washroom, what appears to be a sand-oil separator is filled with concrete. No other oil separation system appears present in the building.

*Figure 15: Filled Sand-Oil Separator*

## Compressed Air System

| Coding / Field Name | Asset Description |
|---|---|
| Compressed Air Systems | Compressed Air System Equipment and Piping |
| Condition | 4-Good |
| Quantity | Qty (1) System |
| Unit Cost | Total: $200,000 |
| Year in Service | ~2010 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~8 Years |
| Location | Garage |
| Basis of Costing | Equipment |

A compressed air system is in a dedicated room. The system includes an air compressor, a filter, and a storage tank. The compressed air is only used for hand tools used by the technicians. Drops are located on columns in the garage bay. The compressed air system does not help control the steam system.

*Figure 16: Compressed Air Tank*

*Figure 17: Compressed Air Filter*


*Figure 18: Air Compressor*

*Figure 19: Compressed Air Drop for Hand Tools*

# HVAC Systems

## Overview

The building's mechanical systems are generally separated to accommodate the office portion and the garage portion of the building. However, steam does provide comfort heating for the garage and the office portion.

## Steam System

A Cleaverbrooks 150 hp, natural-gas fired, 15 psi steam boiler serves both the offices and the garage. The garage has unit heaters located throughout to provide comfort heating and to also provide freeze protection for the wet-pipe sprinkler system. Perimeter heat is provided for the offices with the use of two-pipe steam radiators. No building automation system is in place. It appears the steam unit heaters' fans in the garage are controlled with local thermostats.

| Coding / Field Name | Asset Description |
|---|---|
| Steam System | Steam boiler, piping, ancillary equipment, and terminal devices (radiators and fan coils). |
| Condition | Steam Boiler: 4-Good, Rest of System: 2-Marginal |
| Quantity | ~71,000 square feet |
| Unit Cost | $14/square foot for ~$994,000 |
| Year in Service | Boiler (2010), Other System Components ~1960s and 1997 |
| Expected Useful Life (EUL) | Boiler ~30 Years, Other System Components ~30 Years |
| Remaining Useful Life (RUL) | Boiler ~20 years, Other System Components ~0 Years |
| Location | Boiler Room. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

*Figure 20: Steam Radiator in Breakroom*

*Figure 21: Steam Radiator in Lobby*

*Figure 22: Steam Fan Coil in Garage*

The Cleaverbrooks boiler was manufactured in 2010. This system replaced the existing oil-fired steam boiler that was abandoned in place in the basement. The boiler room is clean and appears to be well maintained. The floor was recently painted. However, building maintenance mentioned that only recently has the boiler feed water been treated. There is a 5 gallon-bucket of treatment chemicals being dosed into the Shipco Water Feed Tank. There isn't a contract with a water treatment company. Building maintenance mentioned the steam system is very loud and condensate traps fail often. This is most likely due to the lack of water treatment. Air purge valves and condensate traps become stuck due to the corrosion effects of the inadequately treated water. Trapped air and cold condensate flash with the steam and knock pipes.

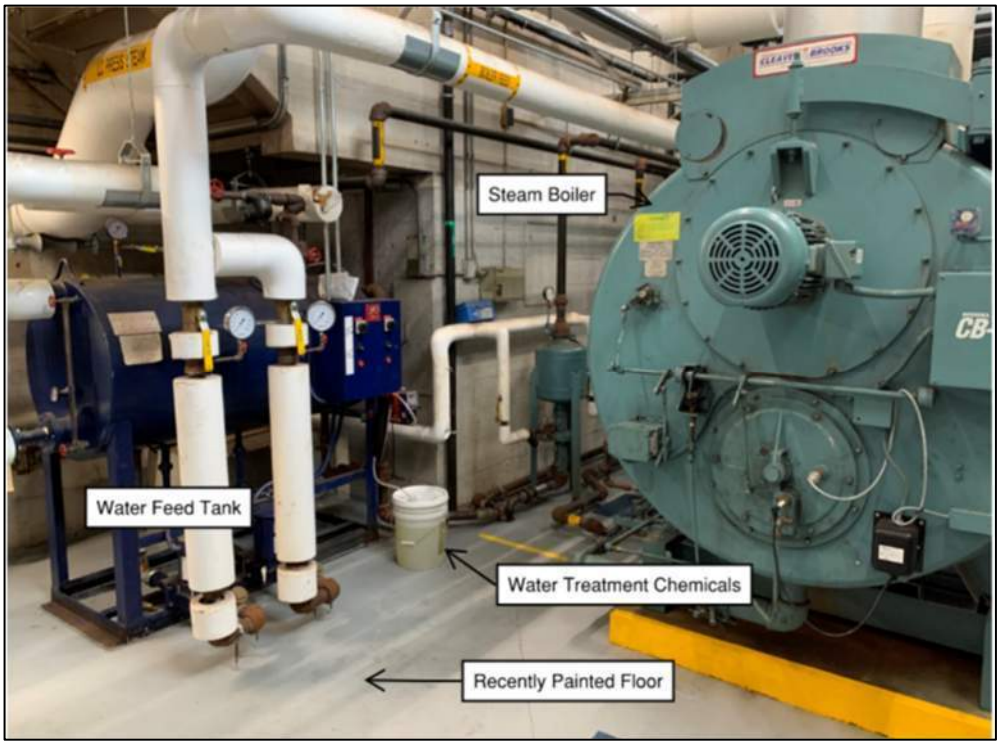



*Figure 23: Boiler Room*

*Figure 24: Abandoned Boiler in Abandoned Boiler Room*

The maintenance staff mentioned the unit heaters work well, but it is unclear how many are operational or how many are not being triggered due to condensate traps failing or bad thermostats. Also, in the boiler room, the maintenance staff mentioned the need to open the boiler room doors to provide enough combustion air for the boiler. There are fans to provide combustion air, but the staff feels these are insufficiently sized. The control boxes are open exposing wiring.

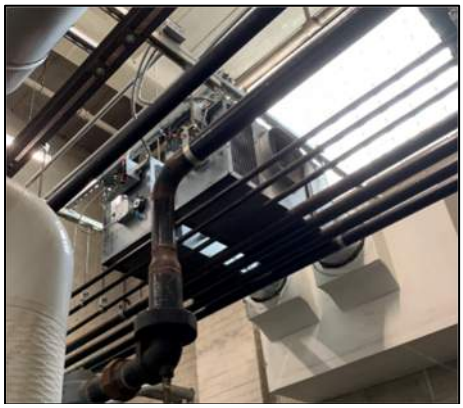


*Figure 25: Combustion Air Fans*

Condensate receivers are placed in various portions of the building. Some maintenance was observed, such as new pumps and motors.

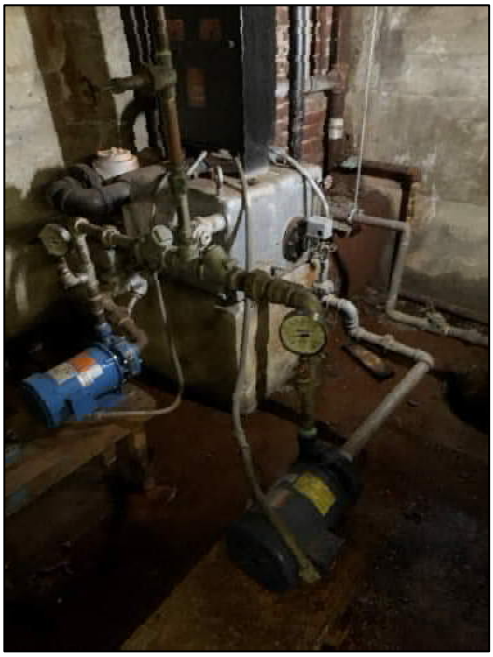


*Figure 26: Condensate Receiver in the Basement*

*Figure 27: Condensate Receiver in the Boiler Room*

## Exhaust System

| Coding / Field Name | Asset Description |
|---|---|
| Exhaust System | Motor driven fans, passive dampers, abandoned air handlers |
| Condition | 1-Poor |
| Quantity | ~32,000 square feet |
| Unit Cost | $4/square foot for distribution & Labor, ~$150,000 for Equipment Total: $278,000 |
| Year in Service | ~1960s with modifications around ~1997 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Garage Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

There is an abandoned paint booth on the North side of the building. The duct work in place feeds a large Air Handler that was abandoned in place on the roof. The sprinkler system was also disconnected for the penthouse where the air handler is housed (mentioned later in this report). Another large Air Handler was abandoned in place on the roof, and this air handler served the sheet metal shop and the glass shop.

*Figure 28: Abandoned Air Handler for Spray Booth, Located on Roof*

*Figure 29: Spray Booth and Duct Distribution*

The garage has motor-driven exhausts fans that have some branch ducting. It appears the branch ducting was intended for localized exhaust, but the flexible ducting used for this purpose is not in place. It is unclear how the exhaust fans are controlled as there are no visible CO or NO2 controls that are typically in place and are mandated by current building codes. It is unclear how many exhaust fans are operational.

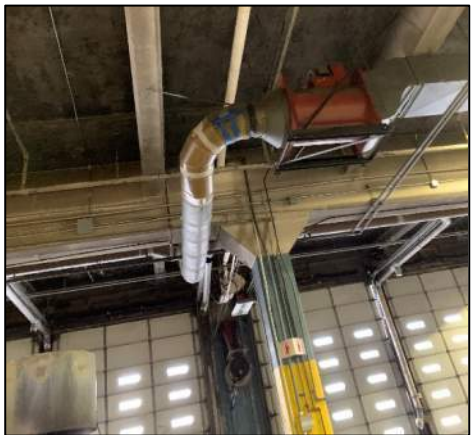


*Figure 30: Garage Exhaust Fan*

The garage also has exhaust ducts with dampers that lead to the roof. Some dampers are open, and some aren't. Some have strings tied to the damper levers. The mechanical exhaust fans were fitted to several of these ducts.

*Figure 31: Garage Exhaust Duct Closed*

*Figure 32: Garage Exhaust Duct Open*

*Figure 33: Garage Exhaust on Roof*

## Air-Side Mechanical Systems

| Coding / Field Name | Asset Description |
|---|---|
| Air-Side Mechanical Systems | Air Conditioning Systems |
| Condition | 1-Poor |
| Quantity | ~3 Split Systems, ~1 Rooftop Unit, ~5 Window Units, ~21,000 SF of Office Space |
| Unit Cost | $12/square foot for distribution & Labor, ~$300,000 for Equipment<br>Total: $552,000 |
| Year in Service | ~1980s with modifications around ~2000 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The office area provides cooling using qty (1) rooftop unit and (2) split systems with condensers on the roof and evaporators in mechanical areas. There appeared to be an

abandoned indoor unit as well, but it's difficult to determine which indoor unit is abandoned as none of the units appeared operational. Variable air volume boxes were not observed, though most of the drop ceiling was in place, obscuring views. The systems are most likely constant air-volume systems controlled by a single thermostat. Ventilation air was provided through mechanical means, but the windows are operable, meaning natural ventilation could be possible through this.

*Figure 34: Condenser*

*Figure 35: Condenser*

*Figure 36: Abandoned Rooftop Unit*

*Figure 37: Indoor Evaporator*

*Figure 38: Indoor Evaporator*

*Figure 39: Indoor Evaporator*

In addition, there are several window units located throughout the building that provide some spot cooling.

*Figure 40: Window Unit in the Office Area*

*Figure 41: Window Unit in the Garage Area*

# Fire Sprinkler Systems

## Overview

The fire sprinkler system is a wet-pipe sprinkler system. There isn't a central fire protection service room with a backflow preventer with risers coming off the main. The main sprinkler lines run underground, below the garage floor. There are Qty (3) risers: Qty (1) in the Boiler Room and Qty (2) in the Garage.

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Sprinklers, and Valving |
| Condition | 1-Poor, Incomplete Systems |
| Quantity | 71,000 SF |
| Unit Cost | $5.00/SF. Total: $355,000 |
| Year in Service | ~1960 with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

## Service Entrance

The sprinkler service enters the West side of the building into the Boiler Room. The main service is marked with a Post Indicator Valve (PIV). There is no Fire Department Connection, but there is an exterior bell.

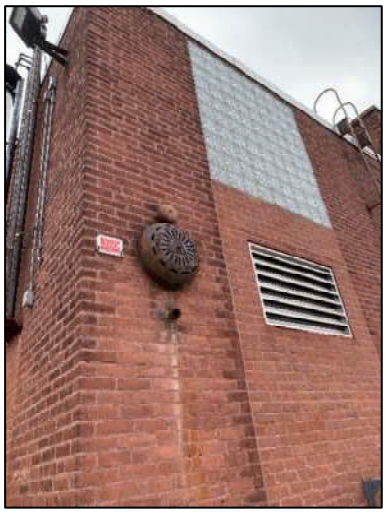


*Figure 42: Fire Sprinkler Service Alarm Bell*

*Figure 43: Post Indicator Valve*

## Risers and Sprinklers

The Risers for the zones appear rather new. There are new flow switches and tamper switches in place. The riser check assemblies appear in good condition. There is an abandoned riser that previously served the air handler houses on the roof.

*Figure 44: Fire Sprinkler Riser in Boiler Room*

*Figure 45: Fire Sprinkler Riser, West End of Garage*

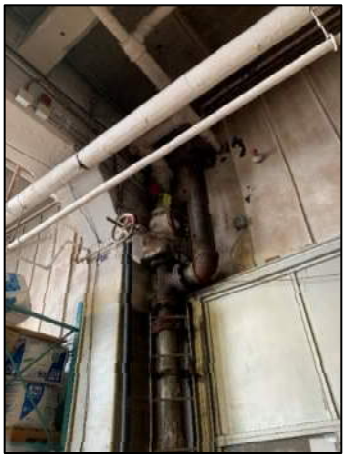


*Figure 46: Fire Sprinkler Riser, East End of Garage*

*Figure 47: Abandoned Fire Sprinkler Riser*

According to the maintenance team, sprinklers and branch piping have been replaced piecemeal. There are still very old sprinklers, which would require testing per NFPA 25 Table 5.1.1.2 to remain in use. Upright sprinklers are used in exposed areas. The piping is steel, which is in fair condition. The paint is gone for sprinkler piping in the basement and a good bit of corrosion is present.

*Figure 48: Rusted Fire Sprinkler Line, Basement*

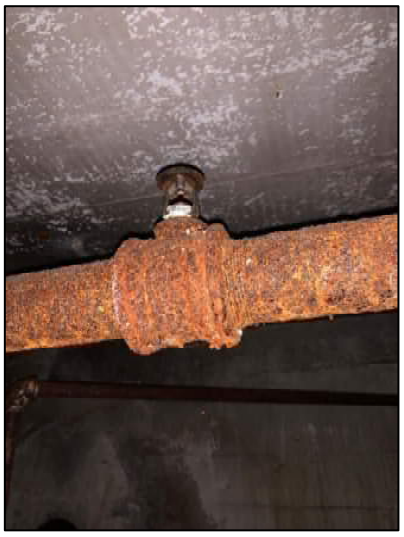


*Figure 49: Rusted Fire Sprinkler Line, Basement*

The office portion is not fully sprinklered. Sprinklers are present in the lobby and the corridor, but the offices, including a file storage area, do not have sprinklers.

*Figure 50: Sprinklered Corridor, Office Area*

*Figure 51: Unsprinklered Storage Room, Office*

## Electrical Systems

### Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 480V Service and Distribution | Service Disconnect, Main Distribution Panel, dry-type transformers and associated panelboards |
| Condition | Electrical Service/new panelboards: 5 – Excellent, Rest of System: 2/1 – Marginal/Poor |
| Quantity | Electrical Service/new panelboards ~ 71,000 square feet |
| Unit Cost | $.63/square foot for ~ $45,227 |
| Year in Service | Electrical Service/new panelboards ~3-4 years, Other System Components ~25+ years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years, Other System Components ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 15-25 years, Other System Components ~0 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Exterior of building. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

An existing 600V service was removed and replaced with a 600A, 480V service installed approximately 3-4 years ago. The service is fed from the main electrical room located in the building next door (269 Melrose) and enters a main disconnect located on the exterior (West side of the building) (*Figure 1*). Conduits enter building through boiler room and run to distribution panel on second floor mezzanine. The main objective of the new service was to feed new electrical vehicle charging stations and refeed existing Electrical distribution that was to remain. The new 480V, Main Distribution Panel 'DP' feeds an existing 600V elevator through a 30kVA step-up dry-type transformer. Additionally, Panel 'DP' (*Figure 2*) feeds a 120/208V Panelboard 'LP8' through a 75kVA step-down dry-type transformer. There was no access to Panel 'LP8', but it appears to feed the existing 120/208V panels throughout the building. Many older panelboards are deteriorating and/or are damaged (*Figure 3*) and several pieces of electrical equipment are longer in use and have been abandoned in place (*Figure 4*).

**Pictures:**

*Figure 1: Main Service Disconnect*

*Figure 2: Main Distribution Panel 'DP' (277/480V)*


*Figure 3: Deteriorating/Damaged Panelboard*

*Figure 4: Abandoned equipment/disconnect*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 – Good |
| Quantity | Garage Lighting System ~ 45,000 square feet |
| Unit Cost | $11.97/square foot for ~ $538,650 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

LED high-bay fixtures with integral occupancy sensors (*Figure 1*) are installed throughout the first-floor garage space. Smaller storage spaces consist of linear LED fixtures with ceiling mounted occupancy sensors (*Figure 2*) in combination with toggle switches. All exit signs throughout the space are illuminated and appear to be completely operational.

**Pictures:**

*Figure 1: LED High-bay fixtures*

*Figure 2: Linear LED fixture with ceiling mounted occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 1 – Poor |
| Quantity | Office/Storage Lighting System ~ 26,000 square feet |
| Unit Cost | $21.29/square foot for ~ $553,540 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 35 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0 years; Estimation contingent on equipment meeting the American Naitonal Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Second Floor, some rooms on first floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of fluorescent 2'X2' and 2'X4' troffer fixtures controlled by wall switch occupancy sensors (*Figure 4*). Some fixtures and controls are still operational, but the remaining system no longer in working condition. Older fixtures, before office fit-out were left abandoned in place above suspended ceiling (*Figure 3*). Some exit signs throughout the space were no longer illuminated (*Figure 5*) and are no longer operational. Emergency battery units (*Figure 6*) were observed throughout the space and appear to be operational, but are beyond their expected useful life.

**Pictures:**

*Figure 3: Existing and abandoned flourecent fixtures*

*Figure 4: Wall switch occupancy sensor*

*Figure 5: Unilluminated Exit sign*


*Figure 6: Emergency Battery Unit*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 3 – Adequate |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 15 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Approximately 15 wall packs (*Figure 7*) along perimeter of building. Emergency remote heads (*Figure 8*) are located above doors for emergency egress lighting.

**Pictures:**


*Figure 7: Exterior Wall packs*


*Figure 8: Emergency remote head*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 3 - Adequate |
| Quantity | Fire Alarm System ~ 71,000 square feet |
| Unit Cost | $.50/square foot for ~ $35,500 |
| Year in Service | Fire Alarm Control Panel ~ 10-12 years, Other System Components ~15-20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 3 years, Other System Components ~ 1-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Lobby/entrance from Melrose Street |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system (*Figure 1*) consists of an addressable Fire Alarm Control Panel, battery cabinet, and devices manufactured by Honeywell. Connection to local fire department is through a Gamewell Master Box. Fire Alarm system and associated devices and wiring appear to be in working condition, however they are approaching their expected useful life based on industry standards. The system was last inspected 3-2-22.

**Pictures:**

*Figure 52: Fire Alarm System*

# G. SITE

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Site work and parking lot |
| Condition | 2 |
| Quantity | ~ 18,535.47 sq. ft. |
| Unit Cost | $97,679.61 |
| Year in Service | |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building Exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 269 MELROSE STREET, PROVIDENCE, RI 02907

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

269 Melrose Street was built in 1990 for the Rhode Island Public Transit Authority and is one-story vehicle storage facility with administration space. The facility includes office space, restrooms, employee lounge, meeting space, mechanical service space, vehicle storage, and two wash bays.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 269 Melrose St, Providence, RI 02907 |
| Property Type | General Purpose Maintenance |
| Year Built | 1990 |
| Number of Vehicles Stored | 80 |
| Year of Latest Major Renovation | 1997 |
| Number of Stories | 1 |
| Occupied | Yes |
| Land Area | 2.16 Acre |
| Gross Building Area (GSF) | 94,402 |
| Total Parking Count (Including ADA) | 8 Parking Spaces |
| ADA Compliant (Total Count) | 2 Total ADA Spaces |
| ADA Compliant for Vans | 0 Van Parking Spaces |

## C. Summary of Findings

The building is approaching 30 years in age and could benefit from some rehabilitation of components to ensure a prolong life. Photos showing the current condition of the exterior and interior of the building are enclosed in the subsequent sections. Based on our team's assessment, the building is in an Adequate condition. Please refer to the overall facility condition in Section D.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 3.8 |
| Shell | 4.0 |
| Interiors | 3.8 |
| Conveyance | *N/A* |
| Plumbing | 3.5 |
| HVAC | 3.2 |
| Fire Protection | 3.0 |
| Electrical | 3.9 |
| Equipment | 2.0 |
| Site | 3.0 |
| **Total** | **3.4** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section B. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section C.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rain water drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**E. EQUIPMENT**
E10 Equipment

**G. SITEWORK**
G10 Site

# A.Substructure

| B. Coding / Field Name | Asset Description |
|---|---|
| System Name | Foundations |
| Condition | 4 |
| Quantity | ~1,801 linear ft. at varying depths (accounted for in unit cost) |
| Unit Cost | Total: $369,775.20 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| A. Coding / Field Name | Asset Description |
|---|---|
| System Name | Spread footings |
| Condition | N/A |
| Quantity | 78 |
| Unit Cost | Total: $92,664 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:** Spread footings not observable.

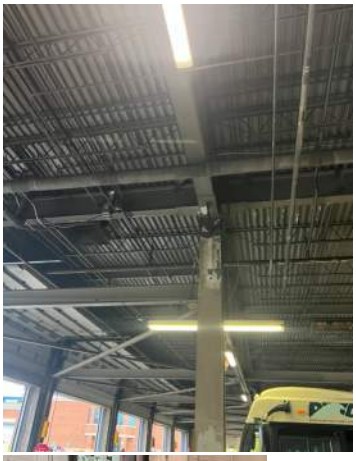
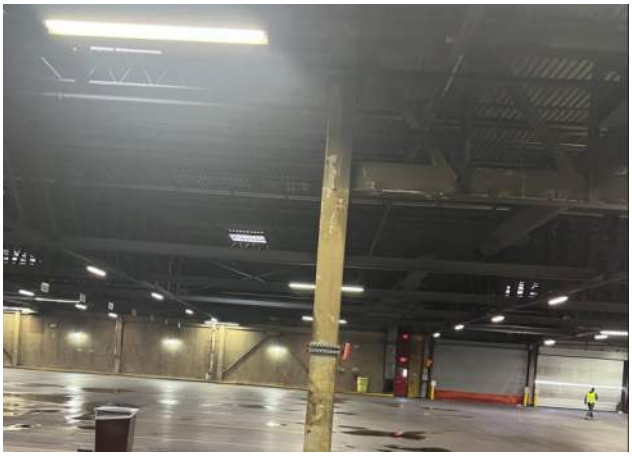
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Slabs on grade |
| Condition | 4 |
| Quantity | ~94,402 sq. ft. |
| Unit Cost | Total: $1,889,928.04 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

## B. Shell

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure and metal roof decking. |
| Condition | 4 |
| Quantity | ~94,402 sq. ft. |
| Unit Cost | Total: $1,273,348.83 |
| Year in Service | 1990 |
| Expected Useful Life | 100 Years |
| Remaining Useful Life | 80 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | CMU Walls |
| Condition | 4 |
| Quantity | ~27,015 sq. ft. |
| Unit Cost | Total: $564,613.50 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building exterior / interior walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior split-face CMU |
| Condition | 4 |
| Quantity | ~25,000 sq. ft. |
| Unit Cost | Total: $520,000 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Exterior walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior brick |
| Condition | 4 |
| Quantity | ~3,176.66 sq. ft. |
| Unit Cost | Total: $91,487.81 |
| Year in Service | 1990 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Membrane roofing + rigid insulation |
| Condition | 4 |
| Quantity | ~93,686.44sq. ft. |
| Unit Cost | Total: $714,222.04 |
| Year in Service | 1990 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Flat Roofs |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Standing seam metal roof |
| Condition | 4 |
| Quantity | ~715.56 sq. ft. |
| Unit Cost | Total: $17,261.32 |
| Year in Service | 1990 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Entry roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Metal roof coping |
| Condition | 4 |
| Quantity | ~1,538.33 linear ft. |
| Unit Cost | Total: $45,073.06 |
| Year in Service | 1990 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building roof edge |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof hatch |
| Condition | 4 |
| Quantity | 1 |
| Unit Cost | Total: $3,085 |
| Year in Service | 1990 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Flat roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior steel doors and frames. |
| Condition | 3 |
| Quantity | 11 |
| Unit Cost | Total: $41,085 |
| Year in Service | 1990 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior overhead coiling doors |
| Condition | 3 |
| Quantity | 8 |
| Unit Cost | Total: $55,660 |
| Year in Service | 1990 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Glazed aluminum curtainwall system |
| Condition | 4 |
| Quantity | ~1,056.5 sq. ft. |
| Unit Cost | Total: $29,772.88 |
| Year in Service | 1990 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

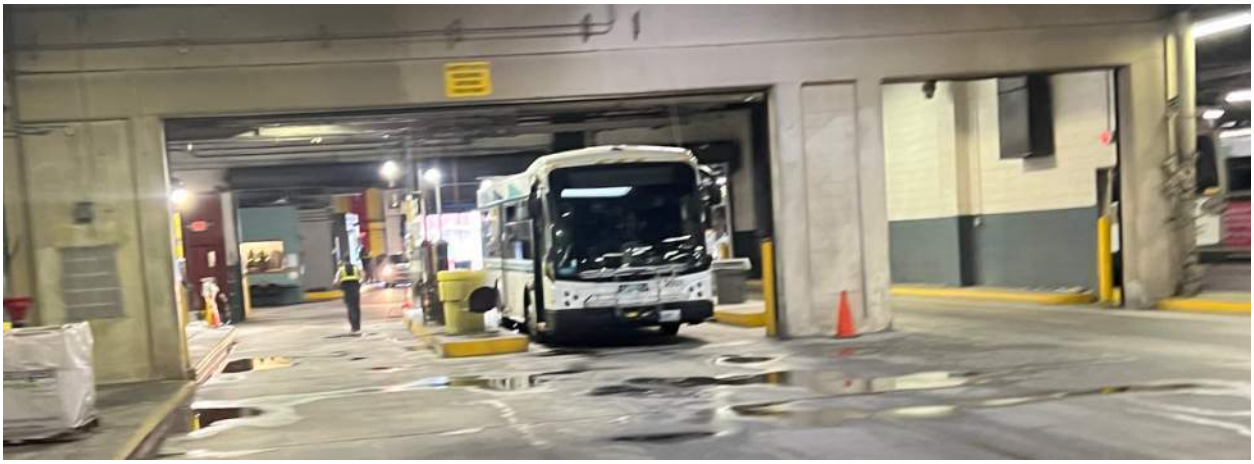
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior metal ceilings |
| Condition | 4 |
| Quantity | ~876 sq. ft. |
| Unit Cost | Total: $4,598 |
| Year in Service | 1990 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# C.Interiors

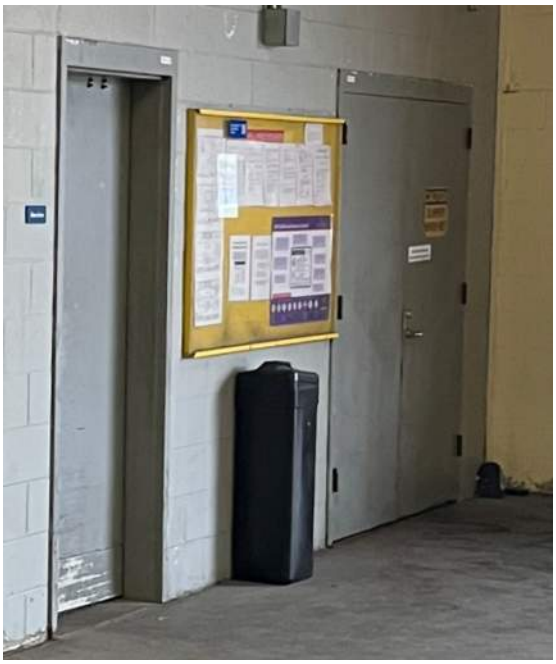
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead garage doors |
| Condition | 4 |
| Quantity | 4 |
| Unit Cost | Total: $58,100 |
| Year in Service | 1990 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Fueling / vacuum area |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior hm doors and frames |
| Condition | 4 |
| Quantity | 20 |
| Unit Cost | Total: $29,280 |
| Year in Service | 1990 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior wood doors and frames |
| Condition | 4 |
| Quantity | 30 |
| Unit Cost | Total: $39,303 |
| Year in Service | 1990 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tiles and grids |
| Condition | 4 |
| Quantity | ~12,700 sq. ft. |
| Unit Cost | Total: $136,906 |
| Year in Service | 1990 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

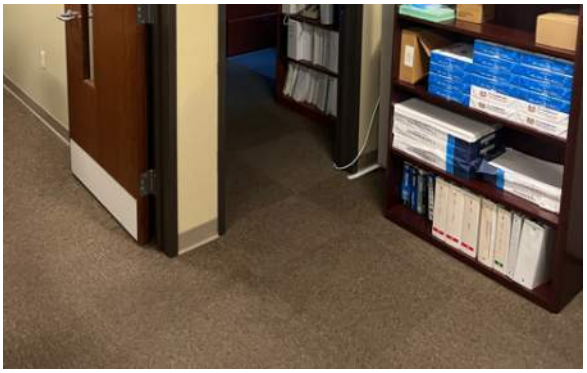
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic tile flooring and base |
| Condition | 4 |
| Quantity | ~1,680 sq. ft. |
| Unit Cost | Total: $22,870.18 |
| Year in Service | 1990 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

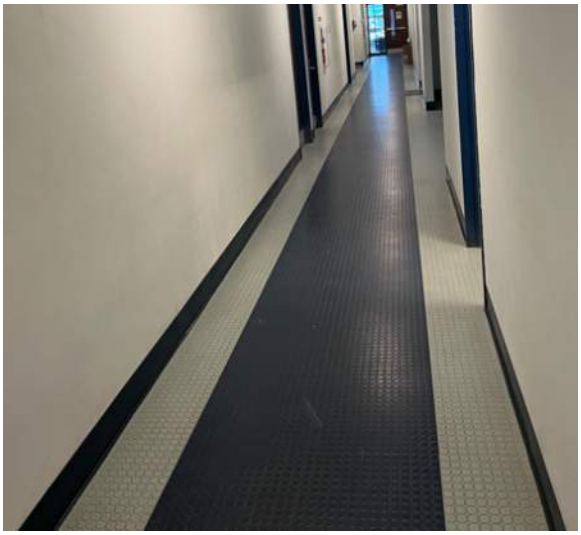
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Carpet tile flooring and base |
| Condition | 3 |
| Quantity | ~2,360 sq. ft. |
| Unit Cost | Total: $13,168.80 |
| Year in Service | 1990 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Rubber flooring and base |
| Condition | 4 |
| Quantity | ~4,480 sq. ft. |
| Unit Cost | Total: $38,080 |
| Year in Service | 1990 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Restroom fixtures and accessories |
| Condition | 4 |
| Quantity | 4 restrooms |
| Unit Cost | Total: $15,178 |
| Year in Service | 1990 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic wall tile |
| Condition | 3 |
| Quantity | ~1,593 sq. ft. |
| Unit Cost | Total: $14,337 |
| Year in Service | 1990 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior drywall partitions |
| Condition | 3 |
| Quantity | ~13,320 sq. ft. |
| Unit Cost | Total: $64,496 |
| Year in Service | 1990 |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# D. SERVICES

## Plumbing Systems

### Domestic Water

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Water Distribution | Domestic water service and piping distribution |
| Condition | 4-Good |
| Quantity | ~95,000 SF |
| Unit Cost | $2.50/square foot for distribution & Labor<br>Total: $237,500 |
| Year in Service | ~1990s with sporadic modifications through the years |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The domestic water service is in the boiler room. The domestic water service lateral is 4". The domestic water meter, the reduced-pressure zone backflow preventer, and valving is 2". No pressure boosting pumps are present. The domestic water piping is done with copper. Most fittings are soldered, but there are press fittings used in places where recent repairs or additions were performed. Insulation is present on hot and cold-water piping.

A separate set of reduced-pressure zone backflow preventers are located on a branch from the main service. This branch is labelled "nonpotable water" and is routed to the garage for the Bus Wash.

**Pictures:**

*Figure 1: Domestic Water Service*

*Figure 2: Non-Potable Water Backflow Preventers*

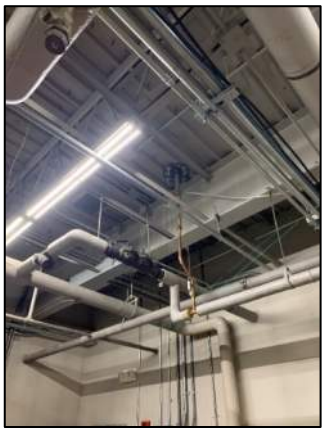


*Figure 3: Press-Connect Fittings on a Recently Installed Roof Hydrant*

## Domestic Hot-Water System

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Hot Water Systems | Water heaters |
| Condition | 4-Good: Gas-Fired Tank Water Heater & Electric Tank Water Heater. |
| Quantity | ~1 Gas-Fired Water heater, ~1 Electric Water Heater |
| Unit Cost | $16,000 |
| Year in Service | ~2016 |
| Expected Useful Life (EUL) | ~15 Years |
| Remaining Useful Life (RUL) | ~9 Years |
| Location | Boiler Room and Garage Janitor's Closet |
| Basis of Costing | RMS Means Data with Contingencies Added |

A 55-gallon, 60,000 BTU/hr water heater located in the boiler room provides hot water to the office area. A small, tank electric water heater in a janitor's closet provides hot water for the needs for the garage.

**Pictures:**

*Figure 4: Gas-Fired Water Heater for Office Area*

*Figure 5: Electric Water Heater for Garage Fixtures*

## Plumbing Fixtures

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Fixtures | Water closets, lavatories, sinks, etc. |
| Condition | 3-Adequate |
| Quantity | ~12,000 SF, ~20 Fixtures |
| Unit Cost | ~$4,000/Fixture and $2.50/SF. Total: $110,000 |
| Year in Service | ~1990s with sporadic modifications |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

Most of the fixtures in the facility appear in good, working order. The fixtures are a variety of makes of touchless and manual controls due to repairs over the years.

**Pictures:**

*Figure 6: Restroom Lavatories*

*Figure 7: Touchless Operated Urinals*

*Figure 8: Manual Operated Water Closet*

*Figure 9: High-Low Drinking Fountains*

## Storm Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Storm Drainage Systems | Roof drains and Leaders |
| Condition | 3-Adequate |
| Quantity | ~95,000 SF |
| Unit Cost | $1.50/SF. Total: $142,500 |
| Year in Service | ~1990s with sporadic modifications |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Facility Roof |
| Basis of Costing | RMS Means Data with Contingencies Added |

The storm drainage piping appeared to be original to the building and appeared in working order. Most piping was no-hub cast iron. The drains on the roof are original. There was some secondary drainage added recently, and the drains appear rather high. In addition, some scuppers are present.

*Figure 10: Scupper for Secondary Drainage*

*Figure 11: Added Secondary Drain Next to a Primary Drain*

*Figure 12: Storm Leader*

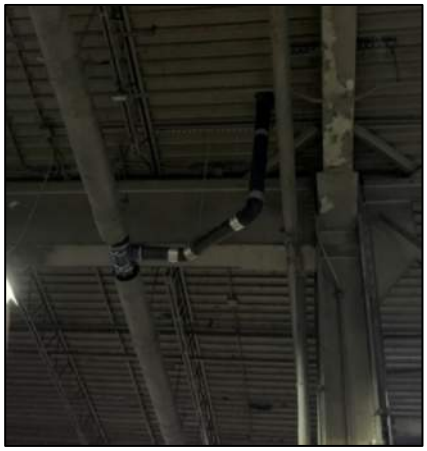


*Figure 13: New Piping for Secondary Drainage*

## Sanitary Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Sanitary Drainage System | Sanitary Drainage Piping and Interceptors |
| Condition | 3-Adequate |
| Quantity | ~95,000 SF |
| Unit Cost | $2.50/SF. Distribution: $237,500. Oil Water Separators: $160,000. Total: $397,500 |
| Year in Service | ~1990s |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~5 Years |
| Location | Garage |
| Basis of Costing | RMS Means Data with Contingencies Added |

The sanitary piping is no-hub cast iron. Qty (2) Oil water separators are in the garage near the bus wash. One separator handles the drainage from the trench drains from the floor, and the other separator handles drainage from the water reclamation room.

*Figure 14: Oil Interceptors in Garage*

*Figure 15: Trench Drain in Garage*

*Figure 16: Bus Wash Reclamation System*

*Figure 17: Bus Wash Water Reclamation Pit*

## Natural Gas System

| Coding / Field Name | Asset Description |
|---|---|
| Natural Gas System | Natural gas meters, regulators, and piping. |
| Condition | 4-Good |
| Quantity | ~95,000 SF |
| Unit Cost | $1.00/SF. Total: $95,000 |
| Year in Service | ~1990s with sporadic modifications |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The building is served by a natural-gas system on the North side of the facility. The incoming service is ~2" and increases to ~6" after the regulators. A few items requiring gas are the boiler, the domestic water heater, and the MAUs in the garage. The service meter has a capacity of 7,000 CFH. The piping is schedule 40 steel with welded and threaded fittings.

**Pictures:**

*Figure 18: Natural Gas Service*

## Compressed Air System

| Coding / Field Name | Asset Description |
|---|---|
| Compressed Air Systems | Compressed Air System Equipment and Piping |
| Condition | 4-Good |
| Quantity | Qty (1) System |
| Unit Cost | Total: $200,000 |
| Year in Service | ~2010 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~8 Years |
| Location | Garage |
| Basis of Costing | Equipment |

A compressed air system is located outside the Water Reclamation Room. The system

includes an air compressor, a filter/dryer, and a storage tank. The compressed air is routed to drops and cord reels. The compressed air used for hand tools and the air-operated diaphragm pumps pumping automotive fluids.

**Pictures:**


*Figure 19: Compressed Air System*

*Figure 20: Lube System with Air-Operated Diaphragm Pumps*

*Figure 21: Compressed Air Drop*

## HVAC Systems

### Office Area Comfort Heating and Cooling Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating and Cooling Systems | Air-Conditioning and Electric Heating Systems |
| Condition | 4-Good |
| Quantity | Qty (1) RTUs, Hydronic Boiler, and Various Supplemental Heat Devices |
| Unit Cost | ~$350,000 |
| Year in Service | ~2006 |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | 14 years |
| Location | Office Space |
| Basis of Costing | RMS Means Data with Contingencies Added |

Qty (1) Gas-Fired Boiler provides hot water for a hydronic heating system. The hot water is used for supplemental heating in the office space for two-pipe baseboard radiators, unit heaters, and panel radiators. The hydronic loops are served with Qty (2) pumps that are controlled with variable frequency drives (VFDs).

A 27.5-Ton Rooftop Unit mounted on the lower roof provides cooling and base heating. The unit uses R-410 and was manufactured in 2016. The office portion is zoned with variable-air-volume boxes. BMS controls for the office are done with Johnson Facility Explorer. The various zones are controlled with local thermostats.

The breakroom has a kitchenette equipped with a stove that has a recirculation hood.

The IT room has a Liebert Cooling split-system with air distribution from a raised floor.

**Pictures:**

*Figure 22: Hydronic Heating System Boiler*

*Figure 23: Hydronic Pumps*

*Figure 24: Baseboard Radiator in Conference Room*

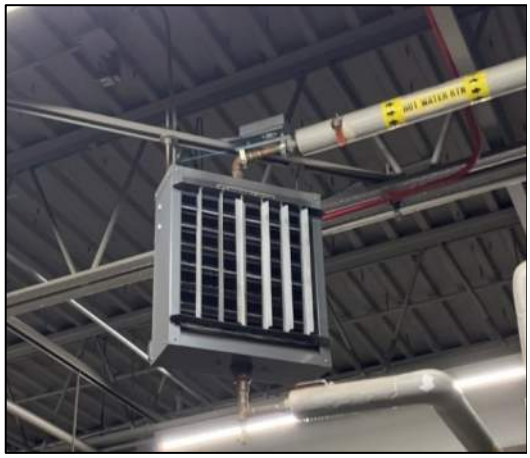


*Figure 25: Hot-Water Unit Heater*

*Figure 26: Panel Radiator*

*Figure 27: Baseboard Radiator in Lobby*

*Figure 28: Rooftop Unit for Office*

*Figure 29: Thermostat for a Zone in the Office*

*Figure 30: Johnson Controls BMS System Panel*

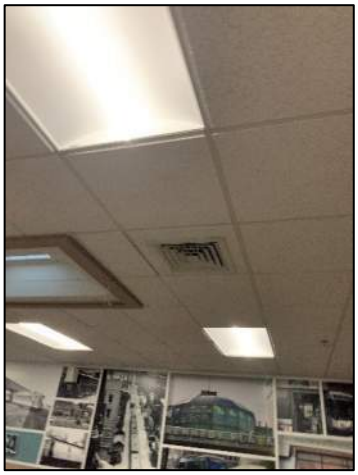


*Figure 31: HVAC Diffuser in Office*

*Figure 32: HVAC Diffuser in Lobby*

*Figure 33: Recirculation-Type Hoods Over Stoves*

*Figure 34: Condenser for Liebert System*

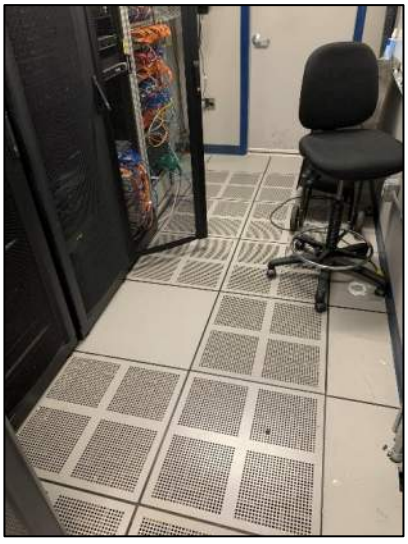


*Figure 35: Air Diffusers for IT Room*

## Exhaust Systems

| Coding / Field Name | Asset Description |
|---|---|
| Exhaust System | Motor driven fans, passive dampers, abandoned air handlers |
| Condition | 3-Adequate |
| Quantity | ~83,000 square feet |
| Unit Cost | $2/square foot for distribution & Labor, ~$300,000 for Equipment Total: $466,000 |
| Year in Service | ~2006 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~4 Years |
| Location | Garage Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The garage is equipped with centrifugal down-blast exhaust fans and mechanically operated dampers.

*Figure 36: Centrifugal Down-blast Exhaust Fan*

*Figure 37: Exhaust Damper*

## Garage Makeup-Air Systems

| Coding / Field Name | Asset Description |
|---|---|
| Makeup Air Systems | MAUs and Ductwork in Garage |
| Condition | 3-Adequate |
| Quantity | Qty (8) MAUs, ~83,000 square feet |
| Unit Cost | $4/square foot for distribution & Labor, ~$500,000 for Equipment Total: $832,000 |
| Year in Service | ~2014 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~ 14 Years |
| Location | Garage Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The garage is equipped with Qty (8) Make-up Air Units. The MAUs have gas-fired coils to provide tempered air to replace the air exhausted from the various exhaust fans. The MAUs are hung from the ceiling at locations on the perimeter of the garage area. These units are ducted across the garage and to various rooms along the perimeter. The exhaust fans and MAUs are controlled with CO2 and NO2 gas-monitoring systems. The maintenance team mentioned the gas burners in the MAUs were prone to clogging, which they believe is due to the various fumes from the buses. To remedy this, the burners were having to be redrilled due to the hardness of the buildup on the burners. The MAUs were installed within the last 10 years, but they have aged worse than MAUs in similar facilities, according to the maintenance team.

*Figure 38: Makeup Air Unit and ducting*

*Figure 39: Makeup Air Unit Termination*

*Figure 40: MAU Ducting to Other Spaces*


*Figure 41: CO and NO2 Controls*

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Sprinklers, and Valving |
| Condition | 3-Adequate |
| Quantity | 95,000 SF |
| Unit Cost | $5.00/SF. Total: $475,000 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

## Service Entrance

The fire sprinkler system is composed of wet-pipe and dry-pipe risers. The main service is a central system located in the boiler room. An 8" service lateral immediately reduces to 6" inside the building. The Double-Check Valve assembly is 6", and it includes a bypass meter. The system has Qty (4) risers: Qty (2) wet-pie and Qty (2) dry-pipe risers. A Fire Department Connection is located on the North side of the facility where the 8" service lateral enters.

*Figure 42: Fire Protection Service*

*Figure 43: Double-Check Valve Assembly*

## Risers and Sprinklers

The riser check valve assemblies for the wet zones appear original to the building. The riser check valve assemblies for the dry zones appear to be recently installed. The dry-system air compressors are both single-phase, riser-mounted air compressors with a 1 HP motor. There are new flow switches and tamper switches in place.

*Figure 44: Risers Off of Fire Service Mains*

*Figure 45: Riser-Mounted Air Compressor*

All sprinklers appear to be original to the building and appear in good, working order. Recessed sprinklers are in the office portion. Uprights and drops are in other areas.

A dry, chemical system is in place at the fuel station on the North side of the facility.

*Figure 46: Dry-Chemical Suppression System*

*Figure 47: Dry-Chemical Suppression System*

*Figure 48: Dry-Chemical Suppression System*

## Electrical Systems

## Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 480V Service and Distribution | Switchboard, Distribution panelboards, dry-type transformers and associated panelboards |
| Condition | Electrical Service/Distribution: 3 – Adequate, Rest of System: 4/1 – Good/Poor |
| Quantity | Electrical Service/Distribution ~<br>Office: 11,950 square feet<br>Garage: 75,700 square feet |
| Unit Cost | Office: $2.80/square foot for ~ $33,460<br>Garage: $.63/square foot for ~ $47,691 |
| Year in Service | Electrical Service ~30+ years, Other System Components ~5-30 years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years, Other System Components ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 0 years, Other System Components ~25-0 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Electrical Alcove. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

A 1,600A, 480V service installed approximately 33 years ago. The service is fed from the pad mounted transformer (North side of the building) (*Figure 4*) and enters the main switchboard (*Figure 2*) located in the Electrical Alcove. There is a PV Solar system (Figure 1) on the roof installed approximately 10 years ago. Maintenance mentioned shorting issues due to screws penetrating conduit when insulation was installed. Building has two backup generators. Many older panelboards are deteriorating and/or are damaged. Some panelboard covers are not secure and/or circuit breaker covers are missing leaving exposed live wires (*Figure 3*).

**Pictures:**

*Figure 1: PV Solar System*

*Figure 2: Switchboard (277/480V)*

*Figure 3: Deteriorating/Damaged Panelboard*

*Figure 4: Transformer and Generator*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 – Good |
| Quantity | Garage Lighting System ~<br>75,700 square feet |
| Unit Cost | $11.97/square foot for ~ $906,129 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

LED high-bay fixtures with integral occupancy sensors (*Figure 1*) are installed throughout the first-floor garage space. Older fluorescent fixtures were left in place (*Figure 2*). All exit signs throughout the space are illuminated and appear to be completely operational.

**Pictures:**

*Figure 1: LED High-bay fixtures*

*Figure 2: Fluorescent fixtures*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 - Good |
| Quantity | Office/Storage Lighting System ~ 11,950 square feet |
| Unit Cost | $21.29/square foot for ~ $254,415.50 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 7 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 13 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of LED 2'X2' troffer fixtures (Figure 3) controlled by a combination of toggle switches (Figure 7), ceiling mounted occupancy sensors (Figure 4), and wall switch occupancy sensors (*Figure 8*). Exit signs were observed throughout the space and appear to be fully operational (*Figure 5*). Emergency battery units (*Figure 6*) were observed throughout the space and appear to be fully operational. In addition to emergency battery units, lighting fixtures throughout the office space are on generator backup.

**Pictures:**

*Figure 3: LED 2'X2' troffer fixtures*

*Figure 4: Ceiling mounted occupancy sensor*


*Figure 5: Exit sign*

*Figure 6: Emergency Battery Unit*

*Figure 7: Toggle switches*

*Figure 8: Wall switch occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 3 – Adequate |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 15 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Wall packs (*Figure 9*) are installed along perimeter of building. Emergency remote heads (*Figure 9*) are located above doors for emergency egress lighting. LED highbay fixtures are installed under fuel canopy (Figure 10).

**Pictures:**

*Figure 9: Exterior Wall packs and remote heads*

*Figure 10: LED highbay under fuel canopy*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 4/3 – Good/Adequate |
| Quantity | Fire Alarm System ~ 62,715 square feet |
| Unit Cost | $.50/square foot for ~ $31,357.50 |
| Year in Service | Fire Alarm Control Panel ~ 6 years, Other System Components ~6-20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 9 years, Other System Components ~ 1-14 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Lobby/entrance from Melrose Street |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system (*Figure 1*) consists of an addressable Fire Alarm Control Panel (Simplex 4100ES) and associated devices manufactured by Simplex. Connection to local fire department is through a Gamewell Master Box. Most fire alarm devices were replaced along with new control panel approximately 6 years ago, however some older devices from previous system remain. A fire suppression system (Figure 2) was installed to serve IT room. Fire Alarm system and associated devices and wiring appear to be in working condition, however some devices are approaching their expected useful life based on industry standards.

**Pictures:**

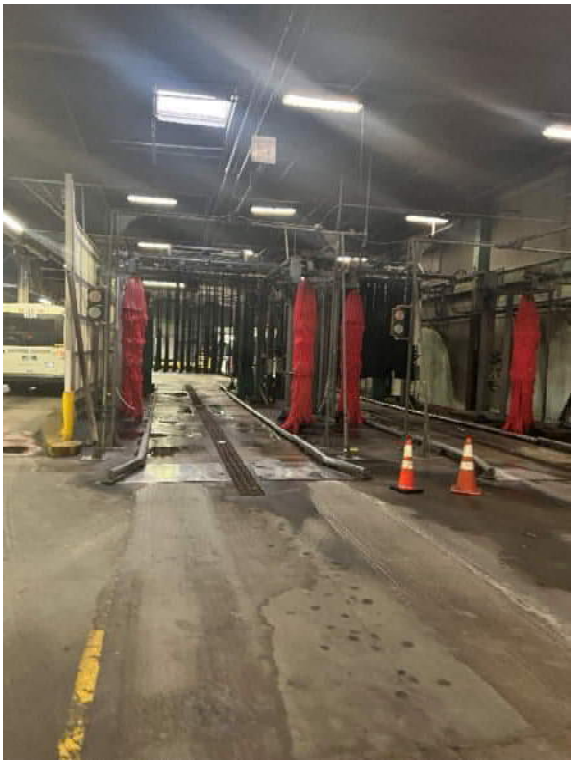

*Figure 1: Fire Alarm System*

*Figure 2: Fire Suppression System*

# E. Equipment

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Bus Wash |
| Condition | 2 |
| Quantity | 2 |
| Unit Cost | Total: $99,172 |
| Year in Service | 1993 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 4 years, Estimated, Based on Date of Observation |
| Location | Building exterior. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



# G.Site

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior concrete pads and walking surfaces. |
| Condition | 3 |
| Quantity | ~2,500 sq. ft. |
| Unit Cost | Total: $26,800 |
| Year in Service | 1993 |
| Expected Useful Life | 85 years |
| Remaining Useful Life | 50 years, Estimated, Based on Date of Observation |
| Location | Building exterior. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 750 ELMWOOD AVENUE, PROVIDENCE, RI 02907

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

750 Elmwood Avenue was built in 2000 for the Rhode Island Public Transit Authority and is primarily a one-story heavy maintenance facility for the authority. The first floor contains maintenance areas, paint bays, parts storage, and administrative space. There is a partial second floor that includes office space, restrooms, employee lounge, meeting space, and storage.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 750 Elmwood Ave, Providence, RI 02907 |
| Property Type | Heavy Maintenance |
| Year Built | 2000 |
| Number of Vehicles Stored | N/A |
| Year of Latest Major Renovation | N/A |
| Number of Stories | 1 |
| Occupied | Yes |
| Land Area | 3.36 Acres |
| Gross Building Area (GSF) | 94,760 sq. ft. |
| Total Parking Count (Including ADA) | N/A |
| ADA Compliant (Total Count) | N/A |
| ADA Compliant for Vans | N/A |

### C. Summary of Findings

The building is approximately 21+ years in age and has undergone a reasonable level of routine maintenance. This facility could benefit from some rehabilitation of components to ensure a prolong life. Photos showing the current condition of the exterior and interior of the building are enclosed in the subsequent sections. Based on our team's assessment, the building is in an Adequate condition. Please refer to the overall facility condition in Section D.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.7 |
| Interiors | 2.7 |
| Conveyance | 3.0 |
| Plumbing | 3.7 |
| HVAC | 3.7 |
| Fire Protection | 4.0 |
| Electrical | 4.0 |
| Equipment | 3.0 |
| Site | 3.0 |
| **Total** | **3.5** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section B. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section C.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rain water drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**E. EQUIPMENT**
E10 Equipment

**G. SITEWORK**
G10 Site Preparation
G20 Site Improvements
G30 Site Mechanical Utilities
G40 Site Electrical Utilities
G90 Other Site Construction

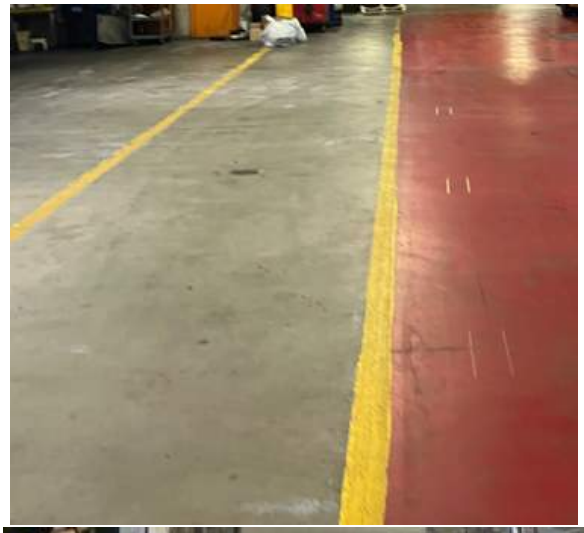
# A.Substructure

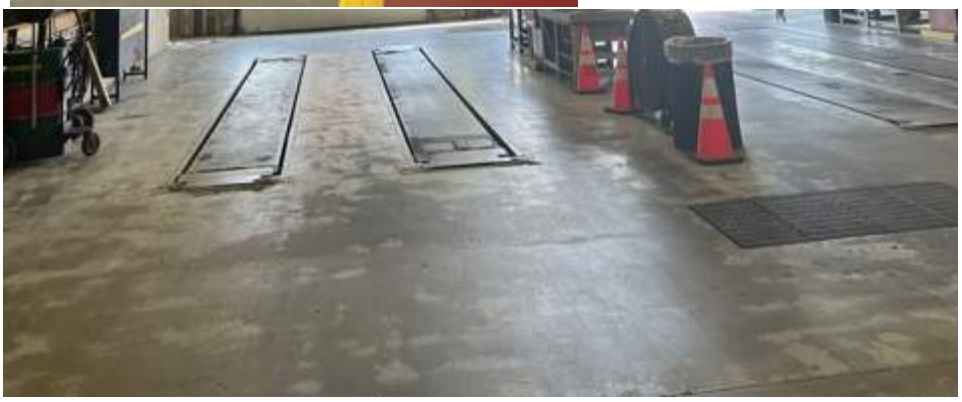
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Slabs on grade |
| Condition | 4 |
| Quantity | ~94,760 sq. ft. |
| Unit Cost | Total: $1,897,095.20 |
| Year in Service | 2000 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Foundations not observable.

**Pictures:**

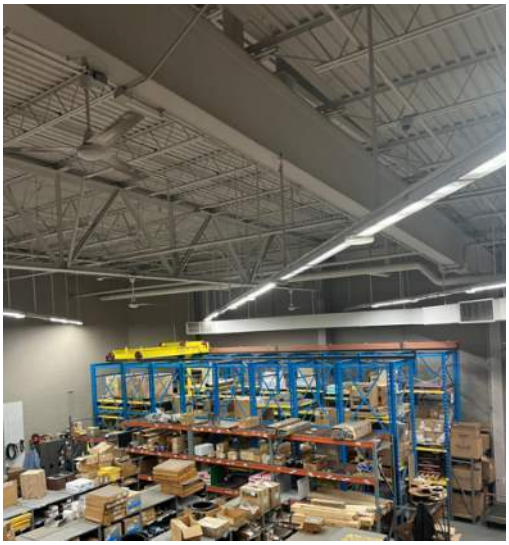


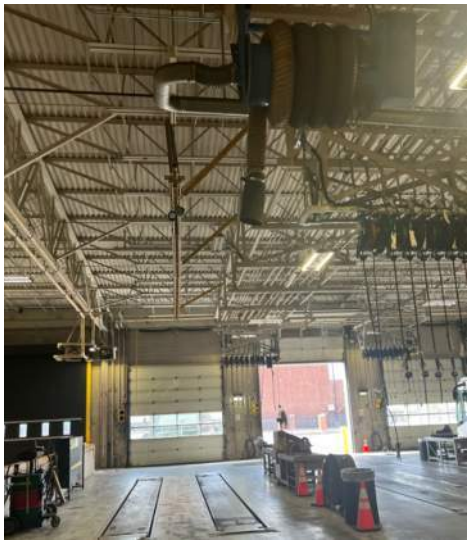


## B. Shell

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure and metal roof decking. |
| Condition | 4 |
| Quantity | ~94,760 sq. ft. |
| Unit Cost | Total: $1,278,177.74 |
| Year in Service | 2000 |
| Expected Useful Life | 100 Years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | CMU Walls |
| Condition | 4 |
| Quantity | ~88,182 sq. ft. |
| Unit Cost | Total: $ 1,843,003.80 |
| Year in Service | 2000 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building exterior / interior walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior brick (West elevation – original facade) |
| Condition | 3 |
| Quantity | ~9,230 sq. ft. |
| Unit Cost | Total: $265,824 |
| Year in Service | N/A |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Exterior walls – West Elevation |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

No insulation on existing wall. Some cracks, pitting, and efflorescence staining observed.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior brick veneer (North, south and east facades) |
| Condition | 4 |
| Quantity | ~14,500 sq. ft. |
| Unit Cost | Total: $ 417,600 |
| Year in Service | 2000 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Exterior – north, south, and east elevations |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior metal wall panels |
| Condition | 3 |
| Quantity | ~8,160 sq. ft. |
| Unit Cost | Total: $75,561.60 |
| Year in Service | 2000 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Membrane roofing + rigid insulation |
| Condition | 2 |
| Quantity | ~22,390 sq. ft. |
| Unit Cost | Total: $170,691 |
| Year in Service | 2020 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Flat Roofs |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Roof over compressor room leaking because EPDM roofing nails. Flat roof was just done.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Standing seam metal roof |
| Condition | 3 |
| Quantity | ~72,370 sq. ft. |
| Unit Cost | Total: $551,715.40 |
| Year in Service | 2000 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 50 years, Estimated, Based on Date of Observation |
| Location | Sloped roofs |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Rust / staining from roof elements. Sealants / joinery issues.

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Existing relocated granite cornice |
| Condition | 2 |
| Quantity | ~875 sq. ft. |
| Unit Cost | Total: $ 58,187.50 |
| Year in Service | N/A |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building roof edge |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Cracking and staining evident.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Prefinished metal cornice |
| Condition | 4 |
| Quantity | ~2,112 linear ft. |
| Unit Cost | Total: $ 68,217.59 |
| Year in Service | 2000 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 70 years, Estimated, Based on Date of Observation |
| Location | Building roof edge |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead coiling doors |
| Condition | 3 |
| Quantity | 17 |
| Unit Cost | Total: $118,277.50 |
| Year in Service | 2000 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Glazed aluminum storefront system |
| Condition | 4 |
| Quantity | ~1,229 sq. ft. |
| Unit Cost | Total: $34,634.05 |
| Year in Service | 2000 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Insulated translucent panel system |
| Condition | 4 |
| Quantity | ~960 sq. ft. |
| Unit Cost | Total: $12,480 |
| Year in Service | 2000 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Insulated metal clad doors |
| Condition | 3 |
| Quantity | 9 |
| Unit Cost | Total: $19,047.60 |
| Year in Service | 2000 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior aluminum storefront doors |
| Condition | 3 |
| Quantity | 1 |
| Unit Cost | Total: $2568 |
| Year in Service | 2000 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 45 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# C.Interiors

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior solid core doors |
| Condition | 4 |
| Quantity | 14 |
| Unit Cost | Total: $18,341.40 |
| Year in Service | 2000 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior hollow metal doors |
| Condition | 3 |
| Quantity | 25 |
| Unit Cost | Total: $40,260 |
| Year in Service | 2000 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

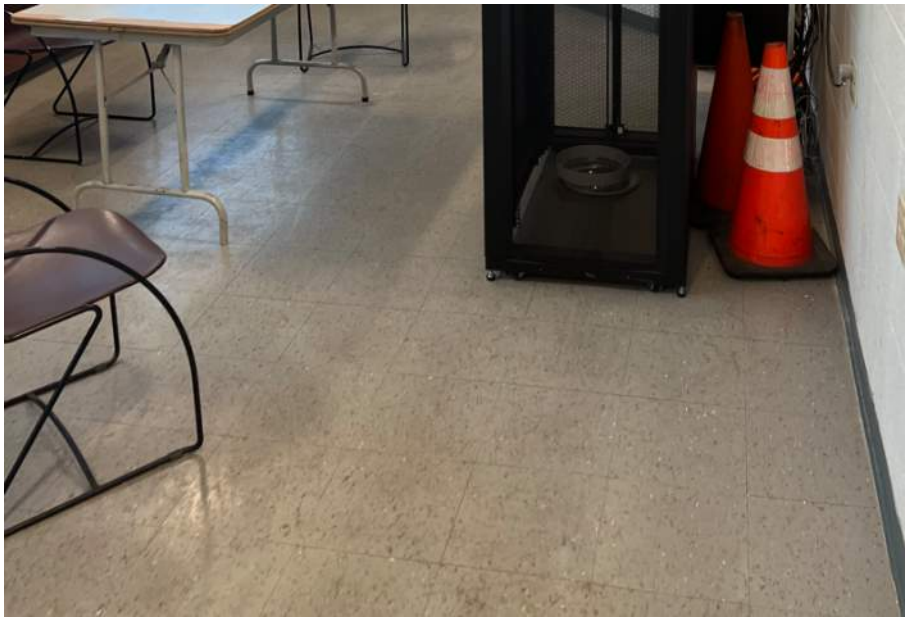
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tiles and grids |
| Condition | 2 |
| Quantity | ~ 8,320.5 sq. ft. |
| Unit Cost | Total: $89,695 |
| Year in Service | 2000 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vinyl composition tile |
| Condition | 3 |
| Quantity | ~3562 sq. ft. |
| Unit Cost | Total: $ 24,043.50 |
| Year in Service | 2000 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

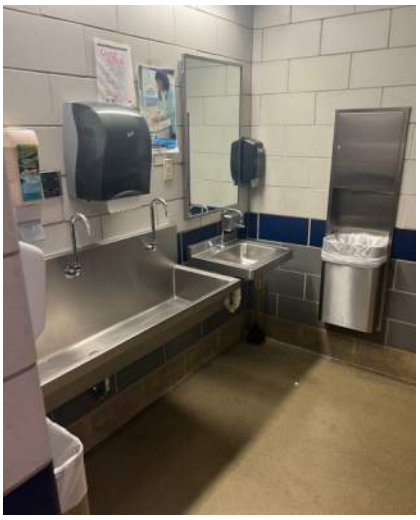


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Poured epoxy floor |
| Condition | 3 |
| Quantity | ~2025 sq. ft. |
| Unit Cost | Total: $23,188.28 |
| Year in Service | 2000 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Restroom & locker room fixtures and accessories |
| Condition | 3 |
| Quantity | 2 restrooms and locker rooms |
| Unit Cost | Total: $32,598 |
| Year in Service | 2000 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

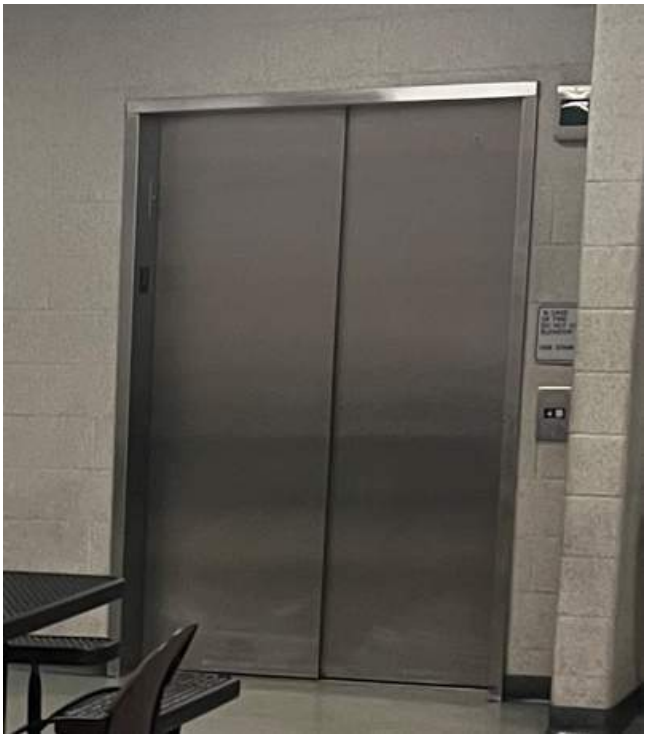




# D. Services

## Conveyance

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Elevator |
| Condition | 3 |
| Quantity | 1 |
| Unit Cost | $453,500 |
| Year in Service | 2000 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



## Plumbing Systems

### Domestic Water

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Water Distribution | Domestic water service and piping distribution |
| Condition | 3-Maginal |
| Quantity | ~80,000 SF |
| Unit Cost | $3/square foot for distribution & Labor<br>Total: $240,000 |
| Year in Service | ~2002 with sporadic modifications through the years |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~30 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The domestic water service is in the water room with the fire service equipment. The domestic water service lateral is 4". The domestic water meter is 1-1/2" and the reduced-pressure zone backflow preventer and valving match the lateral size of 4". No pressure boosting pumps are present. The domestic water is piped with copper throughout the building. The copper appears to be in fair condition. The fittings were soldered. Insulation is present on hot or cold-water piping.

*Figure 1: Domestic Water Service*

## Domestic Hot-Water System

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Hot Water Systems | Water heaters |
| Condition | 2-Marginal |
| Quantity | ~1 Gas-Fired Boiler and Storage Tank |
| Unit Cost | $50,000 |
| Year in Service | ~2002 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Boiler Room |
| Basis of Costing | RMS Means Data with Contingencies Added |

On the mechanical mezzanine, a gas-fired boiler with an accompanying 200-gallon tank provides the facility domestic hot water. Recirculation pumps provide recirculation through the facility.

*Figure 2: Domestic Water Boiler and Storage Tank*

## Plumbing Fixtures

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Fixtures | Water closets, lavatories, sinks, etc. |
| Condition | 4-Good |
| Quantity | ~20 Fixtures |
| Unit Cost | ~$4,000/Fixture. Total: $80,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

Most of the fixtures in the facility appear in good, working order. The sinks in the locker room are touchless and are equipped with pumice soap for deep cleaning. The water

closets and urinals are wall-mounted, low-flow fixtures. The showers are heavy-duty, public-use fixtures. Drinking fountains are provided in the office area. The breakroom is equipped with a kitchen sink and microwaves. No stovetops are present.

*Figure 3: Locker Room Sinks*

*Figure 4: Locker Room Water Closet*

*Figure 5: Drinking Fountain in Office Area*

*Figure 6: Urinal in Men's Locker Room*

*Figure 7: Shower in Locker Room*

*Figure 8: Break Room Kitchenette*

## Storm and Sanitary Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Storm and Sanitary Drainage Systems | Piping and Appurtenances, Not Fixtures |
| Condition | 4-good |
| Quantity | ~88,000 SF |
| Unit Cost | $2/SF. Total: $352,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The storm drainage piping appeared to be original to the building and appeared in working order. Most piping was no-hub cast iron. The drains on the roof are original. For secondary drainage, sporadic scuppers were present.

The sanitary piping is no-hub cast iron. The piping appears in good, working order. A water-oil separator is present in the garage. This separator handles the runoff from the parts cleaning room, the bus bays, and other areas that have drains that could be contaminated with oil.

*Figure 9: Sanitary Drainage Piping*

*Figure 10: Oil/Water Separator*

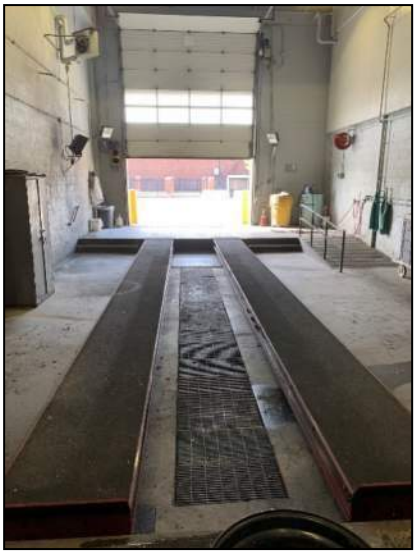


*Figure 11: Parts Cleaner Bay*

*Figure 12: Repair Bay*

## Natural Gas System

| Coding / Field Name | Asset Description |
|---|---|
| Natural Gas System | Natural gas meters, regulators, and piping. |
| Condition | 4-Good |
| Quantity | ~88,000 SF |
| Unit Cost | $1.00/SF. Total: $88,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The building is served by a natural-gas system on the North side of the facility. The incoming service is ~2" and increases to ~3" after the compressors. A few items requiring gas are the boilers for the hydronic and domestic water and the boilers in the water treatment room.

*Figure 13: Gas Service Meter and Regulator*

## Compressed Air System

| Coding / Field Name | Asset Description |
|---|---|
| Compressed Air Systems | Compressed Air System Equipment and Piping |
| Condition | 4-Good |
| Quantity | Qty (1) System |
| Unit Cost | Total: $300,000 |
| Year in Service | ~2002 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~8 Years |
| Location | Garage |
| Basis of Costing | Equipment |

A compressed air system is in a dedicated room. The system includes an air

compressor, a filter/dryer, and a storage tank. The compressed air is used for hand tools and the air-operated diaphragm pumps in the lube room.


*Figure 14: Air Compressor*


*Figure 15: Air Compressor Filter*

*Figure 16: Compressed Air Tank*

*Figure 17: Air-Operated Diaphragm Pumps in Lube Room*

## HVAC Systems

### Hot-Water for Comfort Heating Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating Systems | Hot-water boiler, piping, ancillary equipment, and terminal devices (radiators, MAUs, and fan coils). |
| Condition | 4-Good |
| Quantity | ~80,000 square feet |
| Unit Cost | $20/square foot for ~$1,600,000 |
| Year in Service | Boiler (~2002), Other System Components ~2002 |
| Expected Useful Life (EUL) | Boiler ~30 Years, Other System Components ~30 Years |
| Remaining Useful Life (RUL) | ~10 years |
| Location | Entire Facility. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

Qty (2) Gas-Fired Boilers provide hot water for a hydronic heating system. The hot water is used in the coils of the Makeup Air Units (MAUs), unit heaters, and fan coils.

The MAUs provide tempered air to replace the air exhausted from the various exhaust systems. Some MAUs are hung from the ceiling at locations on the perimeter of the garage area. These units are ducted across the garage and to various rooms along the perimeter. MAUs are also mounted on the flat roof and provide MAU to the exterior spaces, outside of the garage area. An additional Fan Coil Unit is in the parts storage area.

There are many small, hot-water unit heaters located throughout the facility. These heaters appear to be locally controlled with a thermostat mounted on the unit.

*Figure 18: Hydronic Heating System Boilers*

*Figure 19: Hot-Water Unit Heater*

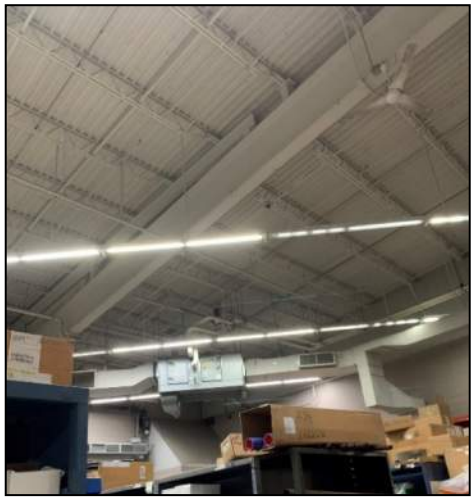


*Figure 20: Fan Coil Unit in Parts Storage*

*Figure 21: MAU on the Perimeter of the Garage*

*Figure 22: Makeup Air Unit Mounted on Roof*

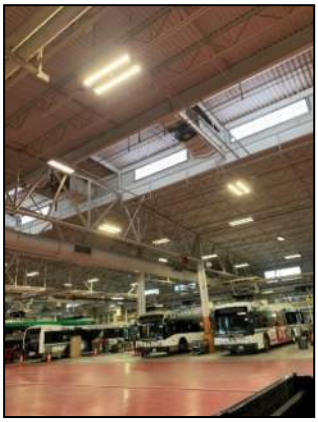


*Figure 23: MAU Ducting in the Garage*

*Figure 24: MAU Ducting from Garage to Surrounding Rooms*

*Figure 25: MAU Ducting from Garage to Surrounding Rooms*

## Exhaust Systems

| Coding / Field Name | Asset Description |
|---|---|
| Exhaust System | Motor driven fans |
| Condition | 3-Adequate |
| Quantity | ~80,000 square feet |
| Unit Cost | $4/square foot for distribution & Labor, ~$150,000 for Equipment Total: $470,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Service Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The garage is equipped with motor driven exhaust fans that have branch ducting with a rope-and-pulley system for localized exhaust. The local exhaust systems appear in good, working order. The fan drives for the exhaust systems are mounted on the roof. Some fans appear newer, and some appear to be original with the building.

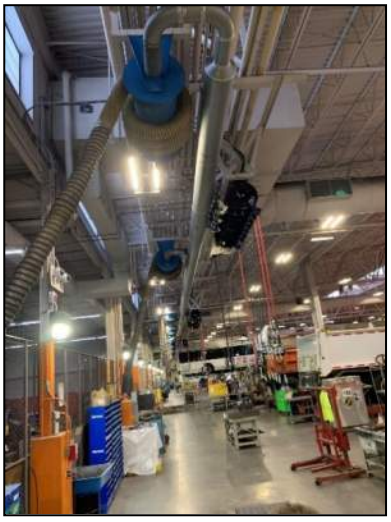


*Figure 26: Localized Exhaust Systems*

*Figure 27: Localized Exhaust System Hose Reel*

*Figure 28: Exhaust Fan on the Roof*

*Figure 29: Exhaust Fan on the Roof*

The main floor of the garage has exhaust fans mounted on both sides of the peak of the ceiling. These exhaust fans face one another and exhaust directly to the exterior. On the walls of the garage, there are control sensors that measure CO and NO2 and control the fans.

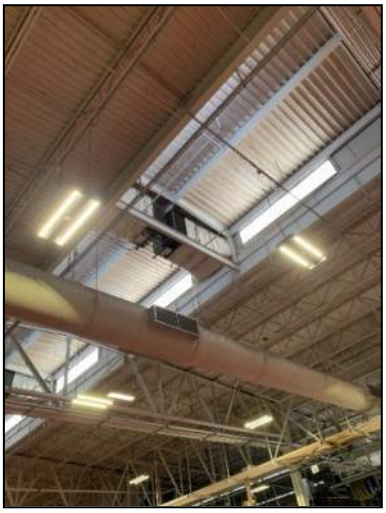


*Figure 30: Exhaust Fans at Ceiling Peak*

*Figure 31: Exhaust Fan Terminals on Peak of Roof*

The Body Shop is equipped with a localized smoke exhaust. The machine appears in working order.

*Figure 32: Smoke Exhaust System*

The facility has a paint booth that has an integral exhaust system. The interior of the paint booth has rows of filters. The exhaust terminates on the roof through exhaust stacks.

*Figure 33: Paint Booth Exhaust System (Interior to Building, Exterior to Booth)*

*Figure 34: Paint Booth Exhaust (Interior to Booth)*

*Figure 35: Paint Booth Exhaust Roof Terminations*

The battery storage room has makeup air to it, but there is not a control system in place to exhaust the room if there is a dangerous buildup of off gasses from the batteries.

*Figure 36: Battery Storage Room*

## Comfort-Cooling Mechanical Systems

| Coding / Field Name | Asset Description |
|---|---|
| Air-Side Mechanical Systems | Air Conditioning Systems |
| Condition | 3-Adequate |
| Quantity | ~8,000 Square Feet |
| Unit Cost | $12/square foot for a total of: $96,000 |
| Year in Service | ~2002 with Additions |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The main garage area is not equipped with a comfort cooling system. However, several

comfort cooling systems are in place around the facility. The office area is equipped with a standard split, direct expansion system. The condensers are located on the flat roof on the South Side of the building, above the office area. The indoor units are hung from the ceiling in a mechanical space adjacent to the office area.

*Figure 37: Air Conditioning Condensers on Flat Roof*

*Figure 38: AC Fan Coil Unit*

*Figure 39: Diffuser Setup Office Portion*

Several small VRF systems provide spot cooling for IT and computer rooms. The security room is equipped with one and various offices are as well.

*Figure 40: VRF Condenser for Security Room*

*Figure 41: VRF Evaporator for Security Room*

A roof top unit on the North side of the building provides local cooling for an occupied storage area.

*Figure 42: Roof Top Unit on Flat Roof*

*Figure 43: Ducting for Roof Top Unit*

## Controls System

An abandoned in-place BMS controls system panel is in the parts storage room. The abandoned system is JCI MetaSys system. The working controls system panel is in the boiler room. The working BMS controls system is JCI Facility Explorer.

*Figure 44: Abandoned BMS Control Panel*

*Figure 45: Working BMS Control Panel in Boiler Room*

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Sprinklers, Pumps, and Valving |
| Condition | 4-Good |
| Quantity | 88,000 SF |
| Unit Cost | $5.00/SF. Total: $440,000 |
| Year in Service | ~2002 with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

## Service Entrance

The fire sprinkler system is a wet-pipe sprinkler system. The system is a central system located in the water room. An 8" service lateral immediately reduces to 6" inside the building. A 40hp, double-suction pump provides boosted pressure for the system. A jockey pump maintains pressure. A hose station is located outside the water room. The system has qty (3) risers. There appear to be around qty (6) zones. A Fire Department Connection is located on the opposite side of the building along Thackery St. There is no exterior alarm bell.

*Figure 46: Fire Protection Service in the Water Room*


*Figure 47: Fire Department Connection*

*Figure 48: Hose Station Exterior to the Water Room*

## Risers and Sprinklers

The Risers for the zones appear rather new. There are new flow switches and tamper switches in place. The riser check assemblies appear in good condition.

*Figure 49: Fire Sprinkler Risers*

All sprinklers appear to be original to the building and appear in good, working order. Recessed sprinklers are in the office portion. Uprights and drops are in other areas. The mezzanine overlooking the garage floor was equipped with window sprinklers on both sides of the windows. The piping is steel, which is in fair condition.

*Figure 50: Recessed Sprinkler in Office*

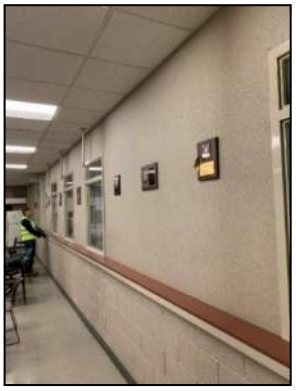


*Figure 51: Window Sprinklers in Breakroom*

*Figure 52: Window Sprinklers in Breakroom*

Electrical Systems

Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 480V Service and Distribution | Switchboard, Distribution panelboards, dry-type transformers and associated panelboards |
| Condition | Electrical Service/Distribution: 4 – Good, Rest of System: 4 – Good |
| Quantity | Electrical Service/Distribution ~<br>Office: 8,450 square feet<br>Garage: 42,000 square feet |
| Unit Cost | Office : $2.80/square foot for ~ $23,660<br>Garage : $.63/square foot for ~ $26,460 |
| Year in Service | Electrical Service ~20 years, Other System Components ~20 years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years, Other System Components ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 0-10 years, Other System Components ~0-10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Electrical Room. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

A 1,600A, 480V service installed approximately 20 years ago. The service is fed from the pad mounted transformer (South side of the building) (*Figure 2*) and enters the main switchboard (*Figure 1*) located in the Electrical Room. Building is served by a 265KW backup diesel generator (Figure 4). Many older panelboards are deteriorating and/or are damaged or abandoned in place (*Figure 3*).

**Pictures:**

*Figure 1: Switchboard (277/480V)*

*Figure 2: Transformer*


*Figure 3: Abandoned/Damaged Panelboard*

*Figure 4: Generator*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 – Good |
| Quantity | Garage Lighting System ~ 42,000 square feet |
| Unit Cost | $11.97/square foot for ~ $502,740 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

LED high-bay fixtures with integral occupancy sensors (*Figure 1*) are installed throughout the first-floor garage space. Older fluorescent fixtures were left in place (*Figure 2*). All exit signs throughout the space are illuminated and appear to be completely operational.

**Pictures:**

*Figure 1: LED High-bay fixtures with integral occupancy sensor*

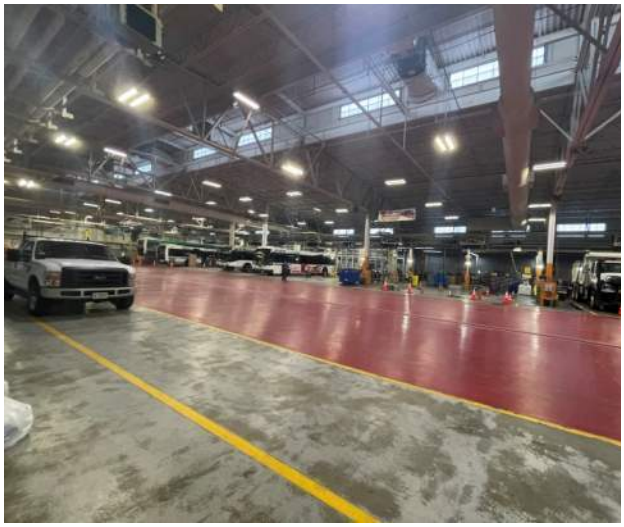


*Figure 2: LED High-bay and fluorescent fixtures*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 - Good |
| Quantity | Office/Storage Lighting System ~ 8,450 square feet |
| Unit Cost | $21.29/square foot for ~ $179,900.50 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 7 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 13 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First and second floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of LED 2'X2' and 2'X4' troffer fixtures (Figure 3) and linear LED fixtures controlled by a combination of toggle switches (Figure 7), ceiling mounted occupancy sensors (Figure 4), and wall switch occupancy sensors (*Figure 8*). Exit signs were observed throughout the space and appear to be fully operational (*Figure 5*). Emergency battery units were observed in some storage/mechanical/electrical rooms. In addition to emergency battery units, lighting fixtures throughout the office space are on generator backup. Fluorescent fixtures (Figure 6) are still operational throughout the office space and storage areas.

**Pictures:**

*Figure 3: LED 2'X2' troffer fixtures*

*Figure 4: Ceiling mounted occupancy sensor*


*Figure 5: Exit sign*

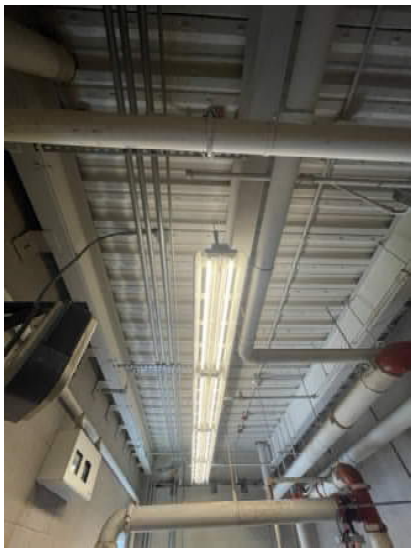


*Figure 6: Fluorescent Fixtures*

*Figure 7: Toggle switches*

*Figure 8: Wall switch occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 3 – Adequate |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Wall packs (*Figure 9*) are installed along perimeter of building. Emergency wall packs (*Figure 10*) are located above doors for emergency egress lighting.

**Pictures:**

*Figure 9: Exterior Wall pack*


*Figure 10: Emergency Wall packs*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 5 – Excellent |
| Quantity | Fire Alarm System ~ 50,450 square feet |
| Unit Cost | $.50/square foot for ~ $22,225 |
| Year in Service | Fire Alarm Control Panel ~ 6 months, Other System Components ~20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~ 1-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Second Floor Security Room above entrance |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system (*Figure 1*) consists of an addressable Fire Alarm Control Panel (Edwards EST-3) and associated devices manufactured by Edwards. Connection to local fire department is through a Gamewell Master Box. CO detection system is installed throughout the garage space (Figure 2). Fire Alarm system and associated devices and wiring appear to be in working condition, however some devices are approaching their expected useful life based on industry standards.

**Pictures:**

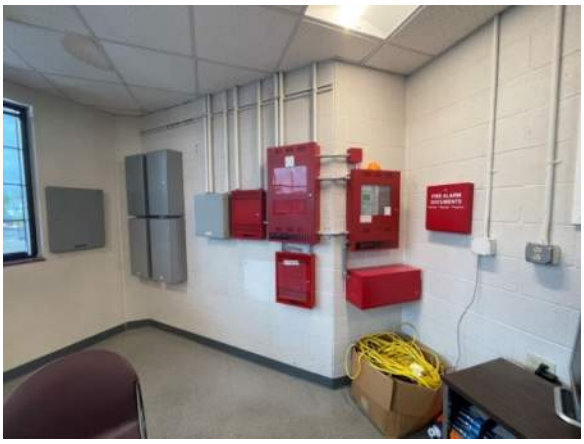


*Figure 1: Fire Alarm System*


*Figure 2: Amber Strobe for CO detection system*

# E. Equipment

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vehicle lifts |
| Condition | 3 |
| Quantity | 22 |
| Unit Cost | $770,000 |
| Year in Service | 2000 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# G.Site

| H. Coding / Field Name | Asset Description |
|---|---|
| System Name | Roadways and paving |
| Condition | 3 |
| Quantity | ~1,063.89 linear feet (50 ft wide roadway) |
| Unit Cost | $ 272,355.84 |
| Year in Service | 2000 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 325 MELROSE STREET, PROVIDENCE, RI 02907

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

The building at 325 Melrose Street is owned by RIPTA but operated by RIDOT DMV. The facility is used partially for road testing (DMV) and houses administrative functions for RIDOT. The vehicle garage bays of the facility serve as inspection garages for vehicles. The facility includes office space, restrooms, employee lounge, mechanical service space, and vehicle maintenance bays. The site also includes a neighboring surface parking for RIPTA bus storage.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 325 Melrose St, Providence, RI 02907 |
| Property Type | General Purpose Maintenance Facility |
| Year Built | 1960s |
| Number of Vehicles Stored | 0 |
| Year of Latest Major Renovation | 1990s |
| Number of Stories | 1 (Does not Include Basements, Mezzanines, or MEP Penthouses) |
| Occupied | Yes |
| Land Area | 1.07 Acre |
| Gross Building Area (GSF) | 15,243 |
| Total Parking Count (Including ADA) | 45 total parking spaces. 27 (RIPTA) 18 (DMV) |
| ADA Compliant (Total Count) | 6 Total ADA Spaces. 4 (RIPTA) 2 (DMV) |
| ADA Compliant for Vans | N/A |

### C. Summary of Findings

The building is in marginal condition and includes a newer addition which is in better condition than the older building. A 2002 building assessment identified various building component failures, some of which continue to exist today. Photos showing the current condition of the exterior and interior of the building are enclosed and labeled “Photos”.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.00 |
| Shell | 3.03 |
| Interiors | 2.72 |
| Conveyance | *N/A* |
| Plumbing | 3.00 |
| HVAC | 1.95 |
| Fire Protection | 1.00 |
| Electrical | 3.12 |
| Equipment | 3.00 |
| Site | 2.22 |
| **Total** | **2.6** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility’s classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section F. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section G.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rainwater drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement. exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**D. EQUIPMENT**
D10 Equipment

**G. SITEWORK**
G10 Site

# A. SUBSTRUCTURE

| B. Coding / Field Name | Asset Description |
|---|---|
| System Name | Slabs on grade |
| Condition | 4 |
| Quantity | ~15,198 sq. ft. |
| Unit Cost | Total: $258,366 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 85 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Foundations not visually accessible.

**Pictures:**

# B. SHELL

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure |
| Condition | 4 |
| Quantity | ~15,198 sq. ft. |
| Unit Cost | Total: $386,336 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 100 |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building Structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Fireproofing on columns deteriorating.

**Pictures:**





| Coding $ Field Name | Asset Description |
|---|---|
| System Name | CMU walls |
| Condition | 3 |
| Quantity | ~8,200 sq. ft. |
| Unit Cost | Total: $200,694.42 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Exterior and interior bearing walls. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Various cracks, moisture damage, failing expansion joints, chipping, and deterioration.

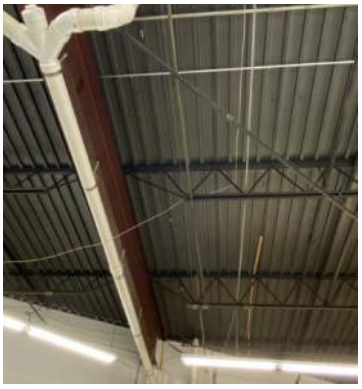
**Pictures:**






| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel roof decking |
| Condition | 4 |
| Quantity | 1680 sq. ft. |
| Unit Cost | Total: $25,160 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Inspection garage |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Concrete plank floor |
| Condition | 4 |
| Quantity | ~1600 sq. ft. |
| Unit Cost | Total: $28,480 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 85 years, Estimated, Based on Date of Observation |
| Location | Mezzanine floor |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Some gaps between planks but overall fair condition.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Membrane roofing |
| Condition | 3 |
| Quantity | ~7,500 sq. ft. |
| Unit Cost | Total: $29,568 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Flat roofs. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Evidence of ponding, membrane bubbling, staining, potentially blocked roof drains.

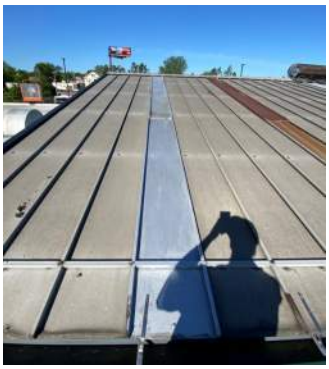
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Batten seam metal roof |
| Condition | 2 |
| Quantity | ~7,750 sq. ft. |
| Unit Cost | Total: $277,062.50 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Inspection garages. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Leaking through fasteners, various inconsistent spot patches and repairs, rust and corrosion.

**Pictures:**





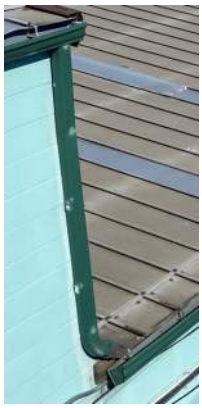



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Metal gutters and downspouts |
| Condition | 4 |
| Quantity | ~450 linear ft. |
| Unit Cost | Total: $8,752 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building roof edge. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Gutters and downspouts in fair condition but fasteners may require maintenance.

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Pitched roof metal fascia |
| Condition | 2 |
| Quantity | ~150 linear ft. |
| Unit Cost | Total: $4,530 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Inspection garage pitched roof. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Flat roof metal coping |
| Condition | 4 |
| Quantity | ~500 linear ft. |
| Unit Cost | Total: $9,175 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Flat roof perimeter |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

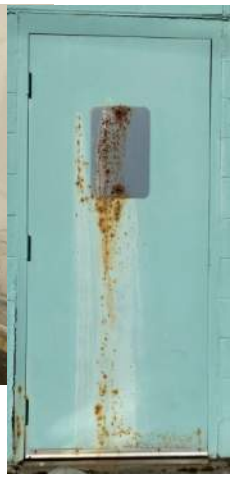
**Observations/Comments:**

Coping itself appears in fair condition but older fascia/coping and membrane flashing beneath top coping may have issues.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior steel doors and frames. |
| Condition | 2 |
| Quantity | 8 |
| Unit Cost | Total: $ 4,372.50 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior louvers, frames, and bird/insect screens |
| Condition | 2 |
| Quantity | 4 |
| Unit Cost | Total: $2,290.24 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 2 years, Estimated, Based on Date of Observation |
| Location | Exterior walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Louver blades missing / unseated. Screens pulled away from screen. Damage to openings.

**Pictures:**




| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof insulation |
| Condition | 1 |
| Quantity | ~4,200 sq. ft. |
| Unit Cost | Total: $45,276 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 2 years, Estimated, Based on Date of Observation |
| Location | Inspection Garage |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead garage doors |
| Condition | 3 |
| Quantity | 7 |
| Unit Cost | Total: $55,650 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Inspection garages, storage garage. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Inspection garage doors are better condition than storage garage. Denting, chipping, warping, corroded lintels.

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | Windows and frames |
| Condition | 2 |
| Quantity | 15 |
| Unit Cost | Total: $45,210 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 7 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Corroded sealant, damage to glazing.

**Pictures:**





# C. INTERIORS

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Through-wall piping and conduit penetrations. |
| Condition | 2 |
| Quantity | ~50 sq. ft. |
| Unit Cost | Total: $2,567 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Boiler / utility spaces. Inspection bays. Other. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Through-wall penetration sealants and sleeving deteriorating or not installed. Potential issues with penetration of fire-rated ceiling, wall, etc. assemblies.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior Steel doors and frames |
| Condition | 3 |
| Quantity | 14 |
| Unit Cost | Total: $23,212 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tiles and grids |
| Condition | 2 |
| Quantity | ~7,500 sq. ft. |
| Unit Cost | Total: $80,850 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Office and administrative spaces. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Water damage, missing tiles, corroded grids.

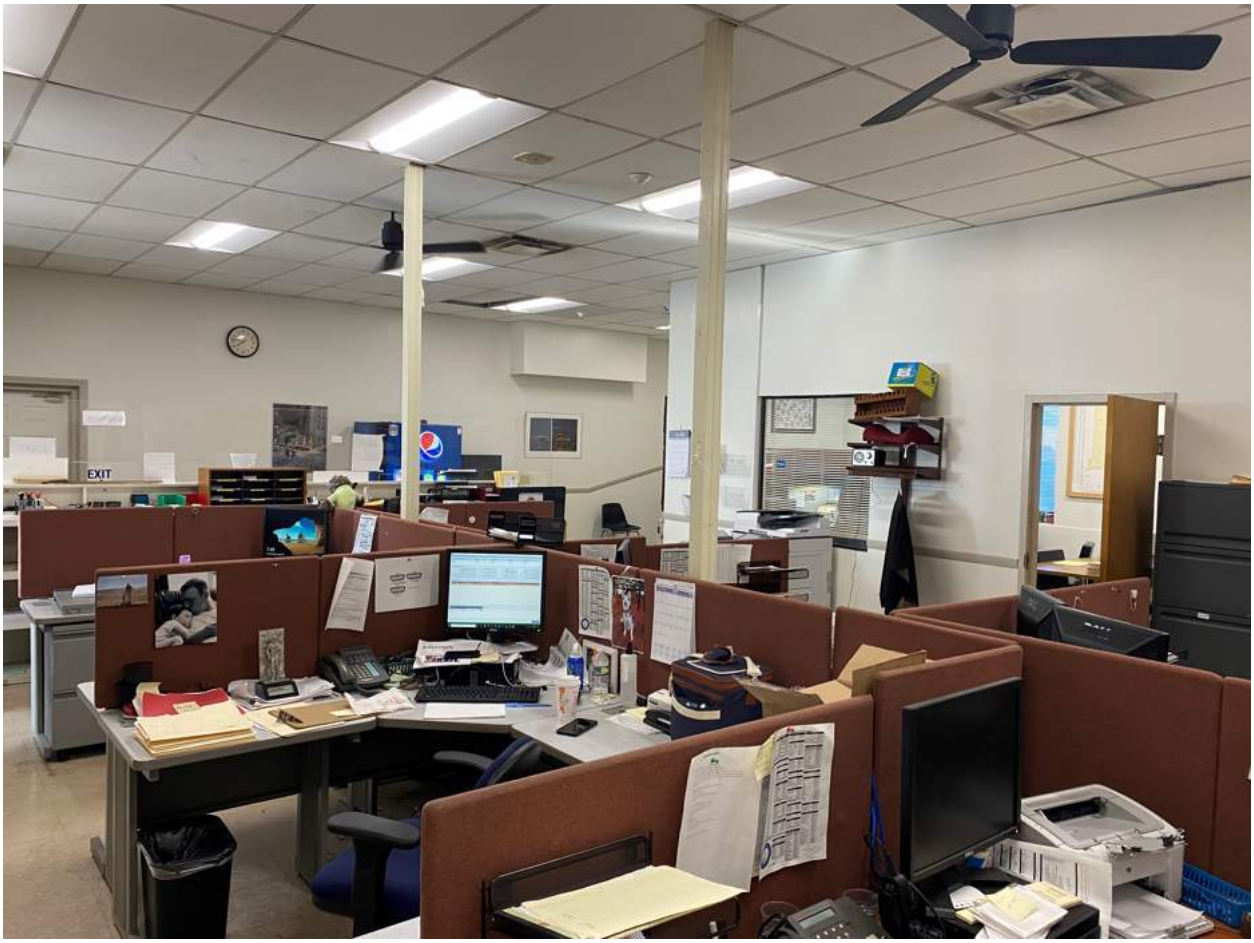
**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior furniture and fixtures. |
| Condition | 3 |
| Quantity | ~5,000 sq. ft. |
| Unit Cost | Total: $293,467.80 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 45 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Office and administrative areas. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | VCT Flooring and rubber base. |
| Condition | 2 |
| Quantity | ~7,500 sq. ft. |
| Unit Cost | Total: $52,125 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Office and administrative areas. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Cracked / missing tiles, damaged tiles, discoloration, staining.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Carpet flooring |
| Condition | 1 |
| Quantity | ~600 sq. ft. |
| Unit Cost | Total: $3,384 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 0 years, Estimated, Based on Date of Observation |
| Location | Office spaces. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Restroom fixtures and accessories |
| Condition | 3 |
| Quantity | 2 restrooms |
| Unit Cost | $3,348.10 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Plaster ceilings |
| Condition | 3 |
| Quantity | ~600 sq. ft. |
| Unit Cost | Total: $6,012 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Office / vending spaces. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior lighting fixtures |
| Condition | 4 |
| Quantity | ~50 |
| Unit Cost | Total: $6,346 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior drywall Partitions |
| Condition | 3 |
| Quantity | ~2000 sq. ft. |
| Unit Cost | Total: $15,700 |
| Year in Service | ~1960s with Sporadic Modifications |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# D. SERVICES

## Plumbing Systems

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Systems | Cold-and Hot-Water, Natural Gas, Storm, and Waste & Vent Systems. |
| Condition | 3-Adequate |
| Quantity | Qty (1) System |
| Unit Cost | Total: $250,000 |
| Year in Service | ~1990s |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

## Domestic Water

The building is served by a 1-1/2" domestic water line with a 1-1/2" water meter and reduced-pressure zone backflow preventer. The piping in the building predominantly employs solder fittings, but recent repairs are done with press-connect fittings.

*Figure 1: Water Service Entrance*

*Figure 2: Domestic Water Meter*

## Domestic Hot-Water System

A 40-gallon, 40,000 BTU/hr water heater located near the boiler provides hot water for the building.

*Figure 3: Gas-Fired Tank Water Heater*

## Plumbing Fixtures

The plumbing fixtures are dated. Most are manually operated, are not ADA compliant, and are not water-saving fixtures.

*Figure 4: Floor Mounted Water Closet*

*Figure 5: Piping Under Lavatory*

## Storm Drainage

A roof drain appears on the flat roof, but most of the storm drainage is handled with the use of downspouts and gutters.

*Figure 6: Roof Drains*

## Sanitary Drainage

The sanitary piping is no-hub cast iron, but a lot of the indoor, above ground piping was PVC.

*Figure 7: Floor Mounted Water Closet*

*Figure 8: Piping Under Lavatory*

## Natural Gas System

The building is served by Qty (2) natural-gas meters. The meters are 1,000 CFH each. The piping is schedule 40 steel threaded fittings.

*Figure 9: Gas Service Entrance*

## HVAC Systems

## Comfort Heating and Cooling Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating and Cooling Systems | Air-Conditioning Systems |
| Condition | 2-Poor |
| Quantity | ~10,000 square feet |
| Unit Cost | $20/square foot with equipment costs for a total of $350,000 |
| Year in Service | Office RTU ~2010. Other Air Conditioning Systems ~1995 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Varies |
| Basis of Costing | RMS Means Data with Contingencies Added |

A rooftop unit provides primary heating and cooling for the office portion of the building. The unit appears to be a constant-volume, single zone system. The RTU provides outdoor air with a damper and economizer.

*Figure 10: Rooftop Unit Over Office*

In the shop-side of the building, a 1,700 MBh hydronic boiler with Qty (6) zones provides heat. The hydronic loops are routed to the various unit heaters around the perimeter of the spaces. Qty (3) split system, direct expansion air conditioners equipped with gas-fired furnaces provide cooling and heating. A variable-refrigerant flow heat pump provides heating and cooling for a small office area of the shop. There is no mechanical ventilation present outside of the area served by the rooftop unit.

*Figure 11: Gas-Fired Boiler in Shop Area*

*Figure 12: Hydronic Pump Manifold*

*Figure 13: Hydronic Unit Heater*

*Figure 14: Hydronic Unit Heater*

*Figure 15: Indoor Evaporator with Gas-Fire Furnace*

*Figure 16: Abandoned Indoor Evaporator*

*Figure 17: Indoor, Wall-Mounted Unit*

*Figure 18: Mini-Split Condenser on Roof of Shop Office*

*Figure 19: Ground-Mounted Condensers*

*Figure 20: Roof-Mounted Condenser*

The IT room is equipped with a window-unit air conditioner.

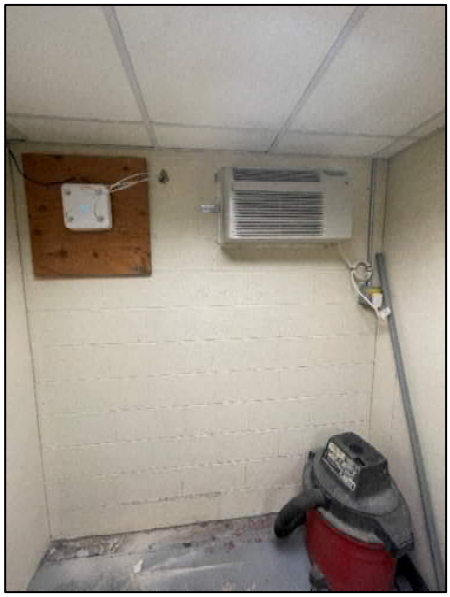


*Figure 21: Window-Unit in IT Room*

## Exhaust Systems

| Coding / Field Name | Asset Description |
|---|---|
| Exhaust System | Motor driven fans, passive dampers, abandoned air handlers |
| Condition | 1-Poor |
| Quantity | ~1 Exhaust Fan and Ducting |
| Unit Cost | $20,000 |
| Year in Service | ~1960s with modifications around ~1997 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Garage Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The shop is equipped with an exhaust fan that was ducted for use with trunks for local exhaust. These ducts are now missing, and it is not clear if the system is still operational.

Figure 22: Exhaust Fan

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Sprinklers, and Valving |
| Condition | 1-Poor, Incomplete Systems |
| Quantity | Qty (1) System |
| Unit Cost | $200,000 |
| Year in Service | ~1990s with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

The fire sprinkler system is a wet-pipe system served by a 6" lateral. A Fire Department Connection is located on the street side of the shop where an alarm bell is situated. The shop appears to be fully sprinklered, but the office areas are not sprinklered.

*Figure 23: Fire-Service Main*

*Figure 24: Alarm Bell and Fire-Department Connection*

# Electrical Systems

## Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 208V Service and Distribution | Distribution equipment and associated panelboards |
| Condition | Electrical Service/Distribution: 2 - Marginal |
| Quantity | Electrical Service/Distribution ~<br>Office: 6,000 square feet<br>Garage: 9,250 square feet |
| Unit Cost | Office : $2.80/square foot for ~ $16,800<br>Garage : $.63/square foot for ~ $5,827 |
| Year in Service | Electrical Service ~30+ years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 0-10 years, Other System Components ~0 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Electrical Room. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

A 400A, 3 phase service installed over 30 years ago. The service is fed from the pole mounted transformers (North side of the building) (*Figure 1*) and enters the main disconnect (Figure 3) and distribution equipment (*Figure 2*) located in the fenced off Electrical area. Building is served by a backup generator (Figure 4). Many older panelboards are deteriorating and/or are damaged or abandoned in place (*Figure 5*).

**Pictures:**

*Figure 1: Pole Mounted Transformers*

*Figure 2: Distribution Equipment*


*Figure 3: Main Disconnect*


*Figure 4: Generator*

*Figure 5: Deteriorating panelboard*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 2- Marginal |
| Quantity | Garage Lighting System ~<br>9,250 square feet |
| Unit Cost | $11.97/square foot for ~ $110,722 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fluorescent high-bay fixtures (*Figure 1*) are installed throughout the first floor garage space. All exit signs (Figure 2) throughout the space are illuminated and appear to be completely operational. Garage lighting has reached the end of the expected useful life.

**Pictures:**

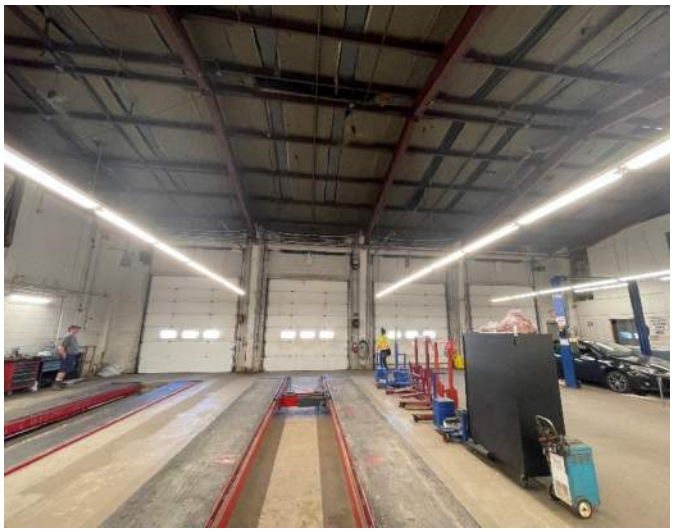


*Figure 1: Fluorescent High-bay fixtures*


*Figure 2: Exit Sign*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 - Good |
| Quantity | Office/Storage Lighting System ~ 8,450 square feet |
| Unit Cost | $21.29/square foot for ~ $179,900.50 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 7 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 13 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First and second floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of LED 2'X2' and 2'X4' troffer fixtures (Figure 3) and linear LED fixtures controlled by a combination of toggle switches, ceiling mounted occupancy sensors (Figure 4), and wall switch occupancy sensors (*Figure 8*). Exit signs were observed throughout the space and appear to be fully operational (*Figure 5*). Emergency battery units (Figure 6) were observed in some storage/mechanical/electrical rooms. In addition to emergency battery units, lighting fixtures throughout the office space are on generator backup. Fluorescent fixtures (Figure 7) are still operational throughout the office space and storage areas.

**Pictures:**

*Figure 3: LED 2'X2' troffer fixtures*

*Figure 4: Ceiling mounted occupancy sensor*


*Figure 5: Exit sign*

*Figure 6: Emergency Battery Unit*

*Figure 7: Fluorescent Fixture*

*Figure 8: Wall switch occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 2 - Marginal |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Wall packs (*Figure 9*) are installed along perimeter of building. Emergency wall packs (*Figure 10*) are located above doors for emergency egress lighting.

**Pictures:**

*Figure 9: Exterior Wall pack*

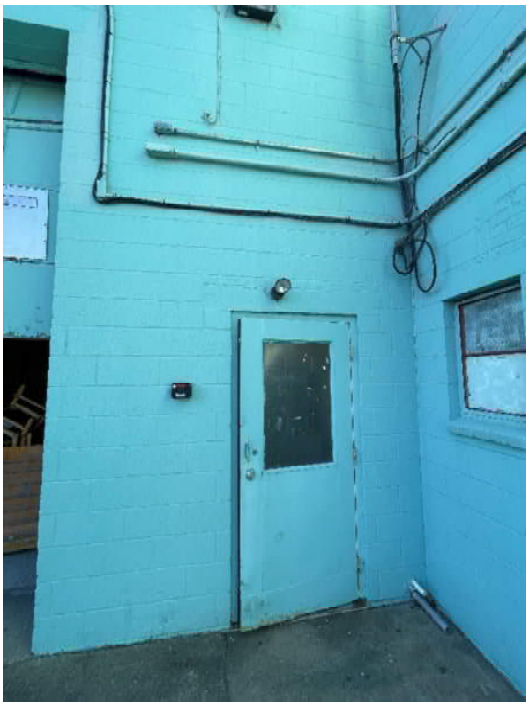


*Figure 10: Emergency remote heads*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 3 - Adequate |
| Quantity | Fire Alarm System ~ 15,250 square feet |
| Unit Cost | $.50/square foot for ~ $7,625 |
| Year in Service | Fire Alarm Control Panel ~ 15 years<br>Other System Components ~ 20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 1-5 years, Other System Components ~ 1-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Rear Garage Entrance |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system (*Figure 1*) consists of an addressable Fire Alarm Control Panel, battery cabinet, and associated devices manufactured by Honeywell. Connection to local fire department is through a Gamewell Master Box. Fire Alarm system and associated devices and wiring appear to be in working condition, however some devices are approaching their expected useful life based on industry standards.

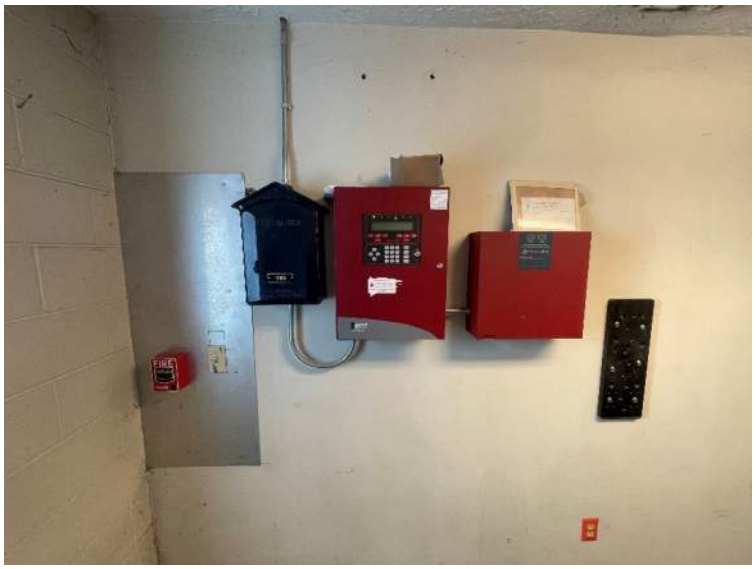
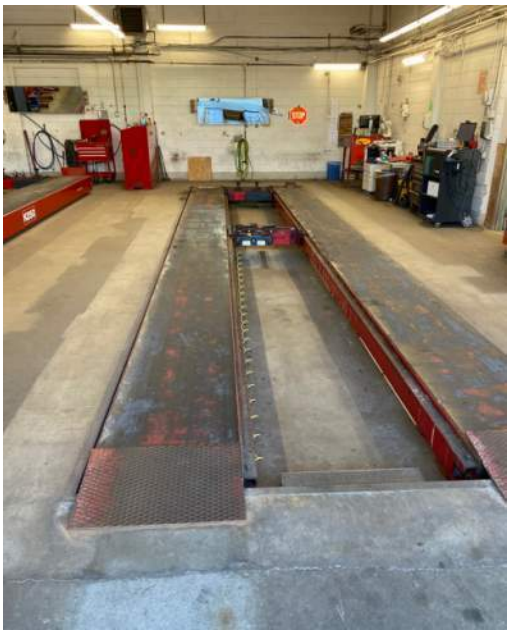


*Figure 1: Fire Alarm System*

# E. EQUIPMENT

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vehicle lifts |
| Condition | 3 |
| Quantity | 4 |
| Unit Cost | Total: $140,000 |
| Year in Service | N/A |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



# G. SITE

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior concrete pads and walking surfaces. |
| Condition | 2 |
| Quantity | ~2,000 sq. ft. |
| Unit Cost | Total: $20,780 |
| Year in Service | |
| Expected Useful Life | 85 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building exterior. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Cracking, settling, chipping.

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior lighting fixtures |
| Condition | 4 |
| Quantity | 10 |
| Unit Cost | $2,620 |
| Year in Service | |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Light fixtures in good working condition at time of inspection.

**Pictures:**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 1 KENNEDY PLAZA, PROVIDENCE, RI 02903

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

The Kennedy Plaza Passenger terminal is a single-story transit hub. It includes a main concourse waiting space, police space, vending space, public and private restrooms, ticketing offices, and administration areas. The building sits on a 2.25-acre site which also includes an expansive plaza with eight bus shelters, trees, a pavilion, benches, a historical statue, and trash receptacles.

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 1 Kennedy Plaza, Providence, RI 02903 |
| Property Type | Passenger Facility |
| Year Built | 2001 |
| Number of Vehicles Stored | 0 |
| Year of Latest Major Renovation | N/A |
| Number of Stories | 1 (Does not Include Basements, Mezzanines, or MEP Penthouses) |
| Occupied | Yes |
| Land Area | 2.25 Acres |
| Gross Building Area (GSF) | 6,661 |
| Total Parking Count (Including ADA) | 0 Parking Spaces |
| ADA Compliant (Total Count) | 0 Total ADA Spaces |
| ADA Compliant for Vans | 0 Van Parking Spaces |

### B. Summary of Findings

This facility appears to be in adequate condition. The building is approaching 22 years in age and could benefit from some rehabilitation of components to ensure a prolong life. Photos showing the current condition of the exterior and interior of the building are enclosed in the subsequent sections.

### C. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.6 |
| Interiors | 3.2 |
| Conveyance | *N/A* |
| Plumbing | 3.0 |
| HVAC | 2.0 |
| Fire Protection | 3.0 |
| Electrical | 2.2 |
| Equipment | *N/A* |
| Site | 3.0 |
| **Total** | **3.0** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section B. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section C.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D.1 | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| D.2 | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rain water drainage |
| D.3 | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| D.4 | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| D.5 | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| G. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**G. SITEWORK**
G10 Site

# A. Substructure

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Foundations, concrete |
| Condition | 4 |
| Quantity | ~743 linear ft. |
| Unit Cost | Total: $95,215.45 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 79 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Foundations not visually accessible.

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Concrete slab on grade |
| Condition | 4 |
| Quantity | ~6661 sq. ft. |
| Unit Cost | Total: $82,576.42 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 79 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Asset review based on observable slab locations.

**Pictures:**

# B. Shell

| C. Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure |
| Condition | 4 |
| Quantity | 6661 sq. ft. |
| Unit Cost | Total: $223,032.35 |
| Year in Service | 2001 |
| Expected Useful Life | 100 |
| Remaining Useful Life | 79 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| D. Coding / Field Name | Asset Description |
|---|---|
| System Name | Wood roof structure |
| Condition | 4 |
| Quantity | ~773 sq. ft. |
| Unit Cost | Total: $35,465 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 70 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | CMU Walls |
| Condition | 4 |
| Quantity | ~7,500 sq. ft. |
| Unit Cost | Total: $183,562.50 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 79 years, Estimated, Based on Date of Observation |
| Location | Building structure / interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

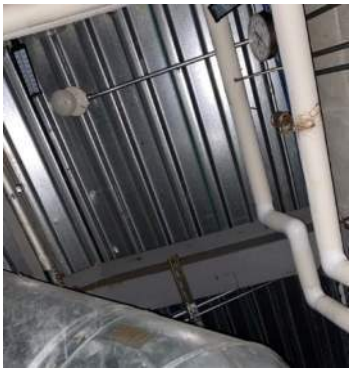
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Metal roof, insulation, and decking. Fascias, soffits, and downspouts |
| Condition | 3 |
| Quantity | ~5,000 sq. ft. |
| Unit Cost | Total: $255,458.50 |
| Year in Service | 2001 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 49 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Roof and accessories in fair condition. Some staining evident.

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior ornamental wood soffits and molding. |
| Condition | 3 |
| Quantity | ~70 linear ft. |
| Unit Cost | Total: $2500 |
| Year in Service | 2001 |
| Expected Useful Life | 45 years |
| Remaining Useful Life | 24 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior ornamental metal work |
| Condition | 3 |
| Quantity | ~650 sq. ft. |
| Unit Cost | Total: $32,500 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior granite cladding and base |
| Condition | 4 |
| Quantity | ~1,300 sq. ft. |
| Unit Cost | Total: $110,500 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 79 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Generally in fair condition. Regular maintenance and cleaning are crucial to prolonging life of this exterior in high traffic site.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior Steel Wall Panels |
| Condition | 3 |
| Quantity | 12 |
| Unit Cost | Total: $8423.54 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Rust and wear evident.

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Skylight glazing system |
| Condition | 4 |
| Quantity | ~1,000 sq. ft. |
| Unit Cost | Total: $56,879.32 |
| Year in Service | 2001 |
| Expected Useful Life | 50 |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Roof level |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Aluminum Automatic entrances and storefronts |
| Condition | 3 |
| Quantity | ~220 sq. ft. |
| Unit Cost | Total: $20,856 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building exterior/interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Windows and storefront |
| Condition | 3 |
| Quantity | ~656 sq. ft. |
| Unit Cost | Total: $36,736.69 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**


# C. Interiors

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior gypsum board partitions |
| Condition | 3 |
| Quantity | ~2,000 sq. ft. |
| Unit Cost | Total: $17,687 |
| Year in Service | 2001 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 54 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | Epoxy flooring and cove base |
| Condition | 2 |
| Quantity | ~1000 sq. ft. |
| Unit Cost | Total: $12,451 |
| Year in Service | 2001 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Restrooms / maintenance areas. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Public restroom fixtures, toilet partitions, and accessories |
| Condition | 3 |
| Quantity | ~1000 sq. ft. |
| Unit Cost | Total: $21,622 |
| Year in Service | 2001 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

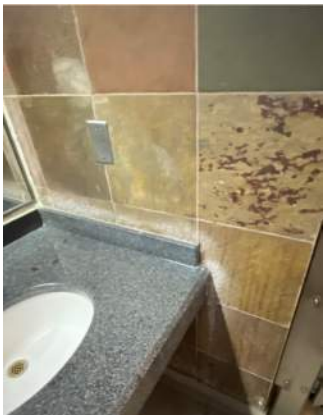
**Pictures:**





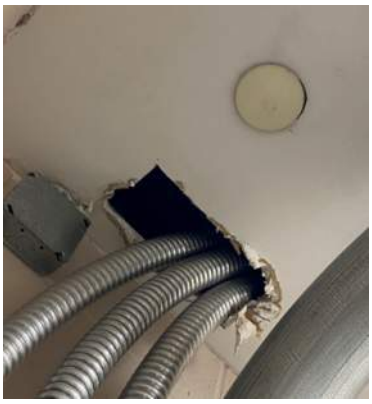
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Stone wall tile |
| Condition | 4 |
| Quantity | 1,520 sq. ft. |
| Unit Cost | Total: $16,720 |
| Year in Service | 2001 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Public restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Gypsum ceilings |
| Condition | 2 |
| Quantity | ~1000 sq. ft. |
| Unit Cost | Total: $12,345 |
| Year in Service | 2001 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior steel doors and frames. |
| Condition | 3 |
| Quantity | ~10 |
| Unit Cost | Total: $28,820 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Ada push buttons not operable on some doors.

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Epoxy terrazzo flooring and base |
| Condition | 3 |
| Quantity | ~4,000 sq. ft. |
| Unit Cost | Total: $101,200 |
| Year in Service | 2001 |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 45 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior wood doors and frames |
| Condition | 4 |
| Quantity | ~10 |
| Unit Cost | Total: $62,920 |
| Year in Service | 2001 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 29 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior casework, millwork, office furniture and equipment. |
| Condition | 3 |
| Quantity | 1,128 sq. ft. |
| Unit Cost | Total: $65,869 |
| Year in Service | 2001 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

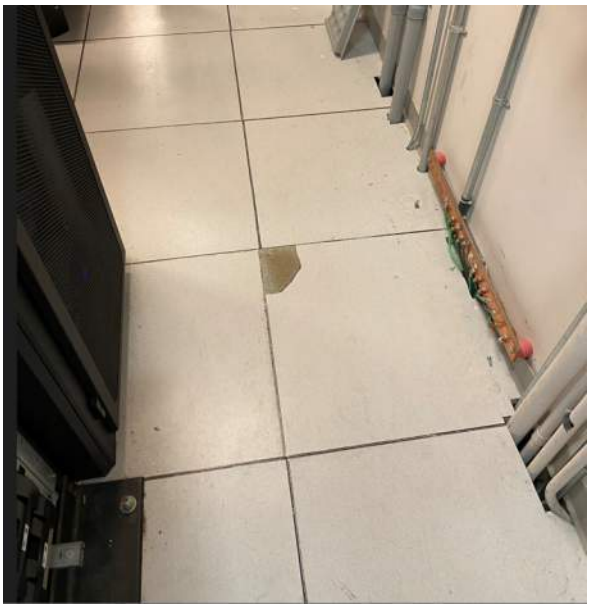
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior wood benches |
| Condition | 3 |
| Quantity | 2 |
| Unit Cost | Total: $2000 |
| Year in Service | 2001 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building Interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Raised flooring system |
| Condition | 3 |
| Quantity | ~120 sq. ft. |
| Unit Cost | Total: $2,268 |
| Year in Service | 2001 |
| Expected Useful Life | 35 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



# D. Services

## Plumbing Systems

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Systems | Cold-and Hot-Water, Natural Gas, Storm, and Waste & Vent Systems. |
| Condition | 3-Adequate |
| Quantity | Qty (1) System |
| Unit Cost | Total: $200,000 |
| Year in Service | ~2002 |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

### Domestic Water

The building is served by a 2” domestic water line with a 1-1/2” water meter and 2” reduced-pressure zone backflow preventer. The piping in the building predominantly employs solder fittings, but recent repairs are done with press-connect fittings.

*Figure 1: Domestic Water Meter and Backflow Preventer*

A 40-gallon, 4,500 W dual-element, water heater located near the boiler provides hot water for the building.

*Figure 2: Electric Water Heater*

The plumbing fixtures are sparse, vandal-proof, touchless fixtures. There is wear and tear due to the transient population using the fixtures.

*Figure 3: Public Water Closet*

*Figure 4: Public Lavatory*

Storm drainage is handled with the use of downspouts and gutters.

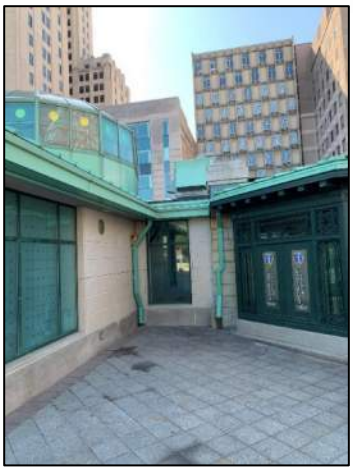


*Figure 5: Gutters and Downspouts*

The building is served by a 4" natural gas service and a 3" gas meter for 5,000 CFH. The piping is schedule 40 steel threaded fittings.

*Figure 6: Gas Service*

## HVAC Systems

## Comfort Heating and Cooling Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating and Cooling Systems | Air-Conditioning, Boilers, and Radiant Heating Systems |
| Condition | 2-Poor |
| Quantity | Qty (1) HVAC System |
| Unit Cost | $1,000,000 |
| Year in Service | ~2000 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | 0 years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The Kennedy Plaza Intermodal Transit Center has undergone several mechanical modifications since its dedication in 2002. The original mechanical design was conscious of aesthetics. For instance, the Qty (2) unitary air conditioning units and the condensing units for the VRF system were mounted in the attic with louvered wall to the exterior. This was done in lieu of roof-mounted equipment. According to the RIPTA maintenance teams, this arrangement was troublesome as the air conditioning units were not able to reject enough heat causing the respective units to freeze up. Subsequent modifications to the building's comfort-cooling system addressed these issues.

Originally, Qty (2) unitary air-conditioning units mounted in the attic provided comfort cooling, base comfort heating, and ventilation. The air conditioning units had several ducted zones controlled by variable-air-volume boxes and reheat coils that were supplied hot water from the boilers. The largest zone, the Concourse/Waiting room, was supplied by both systems. Most ductwork is hidden by drop-ceilings, but due to the vaulted ceilings, the large Waiting area is supplied via underground ducts that branch to the perimeter windows.

*Figure 7: Boiler Exhaust and Louvered Exterior for Mechanical Space*

*Figure 8: Unitary Air-Conditioning Unit in Attic Above Boiler Room*

Due to the issues with the cooling system, the unitary air-conditioning units are no longer used for cooling and heating. The fans operate to provide ventilation, but the cooling and supplemental heating are provided by an exterior mounted unitary air-conditioner (a rooftop unit) and by a split system variable refrigerant flow (VRF) system consisting of Qty (4) wall-mounted indoor units and Qty (1) roof-mounted condenser.

*Figure 9: Rooftop Unit and Condenser for Split System*

*Figure 10: Indoor Unit for Large Waiting Room*

*Figure 11: Indoor Unit for Ticket Office*

*Figure 12: Wall-Mounted Indoor Unit*

The Central Dispatch Room and the Telephone/Electrical Room were provided heating and cooling with separate VRF systems with ceiling mounted indoor units and condensing units in the attic. Due to issues with the Central Dispatch Room unit, a head from the new VRF system was added to heat and cool the space. The split system unit for the Telephone/Electrical Room appears to be original, and the condenser for this unit is still in place in the unit.

*Figure 13: Wall-Mounted Indoor Unit in Dispatch Room*

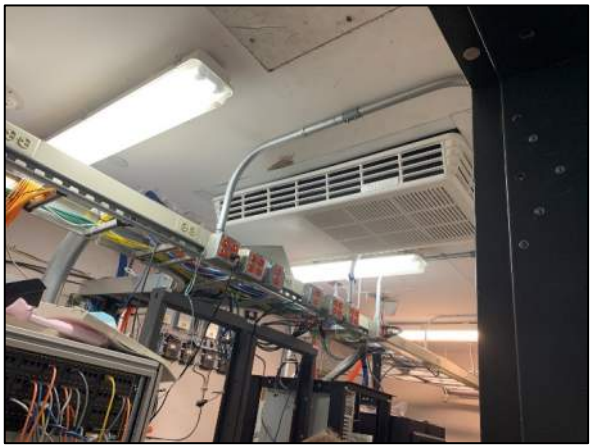


*Figure 14: Indoor Liebert Unit for IT Room*

*Figure 15: Ducted Floor for Liebert Unit in IT Room*

The new RTU uses some of the original ducting to provide cooling and heating to the large Waiting Room and the Concourse/Waiting Room.


*Figure 16: Diffuser in Concourse/Waiting Room*

*Figure 17: Floor Ducts and Perimeter of Large Waiting Room*

The Boiler Room is equipped with Qty (4) gas-fired 1,000,000 BTUh boilers. However, only Qty (1) boiler is operational. The boilers provide hot water for hydronic heating to the reheat coils, the unitary air-conditioners, and they also provide hot water for radiant flooring and a snowmelt system. The radiant flooring and snowmelt systems are supplied by Qty (2) separate heat exchangers. The radiant flooring is broken into Qty (5) zones: Large Waiting Room, Ticket Office, Concourse/Waiting Room, Small Waiting Room, and the Café/Vending Room. The radiant flooring is used as the primary source of heat, and the VRF system and Rooftop are used for supplementary heating. The snowmelt system is supplied hot water by another heat-exchanger, but the system is no

longer functioning. The snow melt system was made of Qty (4) zones covering the plaza.

*Figure 18: Qty Four Boilers*

*Figure 19: Radiant Floor Manifolds*


*Figure 20: Capped Lines for Heat Exchanger for Abandoned Snow Melt System*

*Figure 21: Abandoned Snow Melt Manifold*

## Exhaust Systems

The boiler room has an attic above it, and combustion air is brought in via lovers to the exterior. The boiler exhaust is ducted straight up through the attic.

*Figure 22: Boiler Exhaust and Louvered Exterior for Mechanical Space*

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Dry-Chemical System, Sprinklers, and Valving |
| Condition | 3-Adequate |
| Quantity | Qty (1) System |
| Unit Cost | Total: $150,000 |
| Year in Service | ~2002 with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

The fire sprinkler system is a wet-pipe system served by a 6" lateral and a 4" double-check valve assembly. The engineered drawings called for an Inergen system to protect the Central Dispatch Room and the Telephone/Electrical Room, but this system has since been converted to a pre-action system connected to the wet-pipe sprinkler system. A Fire Department Connection is located on the street side where an alarm bell is situated.

*Figure 23: Fire Department Connection and Bell*

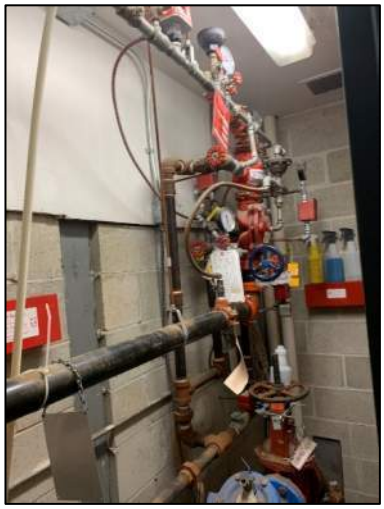


*Figure 24: Fire Service*

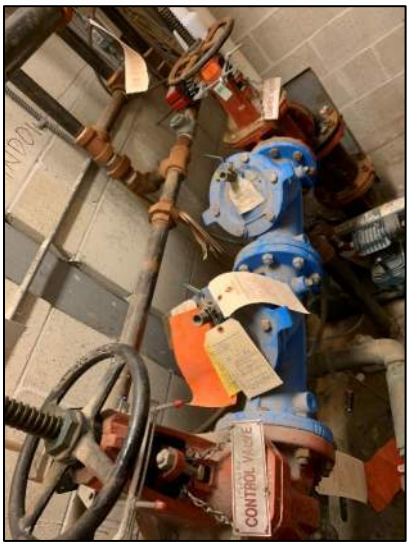



*Figure 25: Fire Service Double Check Valve Assembly*

*Figure 26: Air Compressor for Pre-Action System*


*Figure 27: Pre-action System at Service*

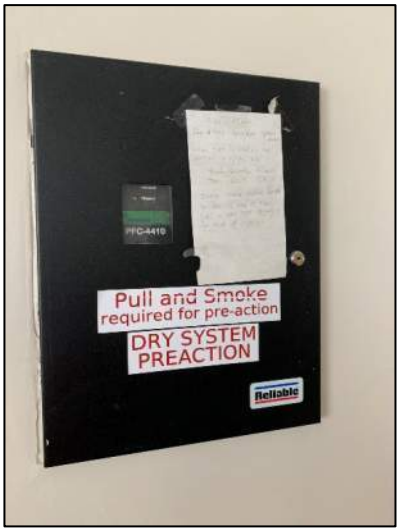



*Figure 28: Pre-action System Controls*

## Electrical Systems

### Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 208V Service and Distribution | Service Disconnects, Distribution Panels, dry-type transformers and associated panelboards |
| Condition | Electrical Service/Distribution: 3 – Adequate |
| Quantity | Electrical Service/new panelboards ~ 7,000 square feet |
| Unit Cost | $2.57 square foot for ~ $18,018 |
| Year in Service | Electrical Service/Distribution ~20+ years |
| Expected Useful Life (EUL) | Electrical Service/Distribution ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service/Distribution ~ 0-10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Exterior of building. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

It appears that three 200A, 208V services enter the building through 3 disconnect switches (Figure 1) located on the North side of the building into the main Electric Room (Figures 2-3) installed approximately 20 years ago. Building is served by a 37.5KW backup generator (Figure 4). Distribution equipment appears to be in adequate condition but is approaching its expected useful life based on industry standards.

**Pictures:**

*Figure 1: Main Service Disconnects*

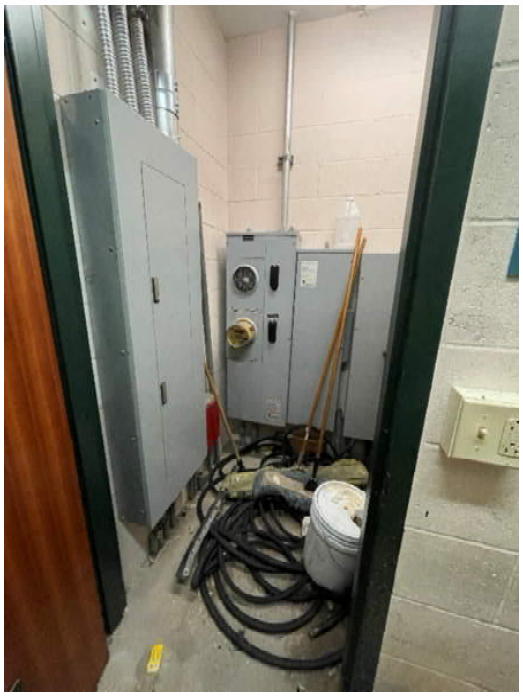


*Figure 2: Main Electric Room (1)*

*Figure 3: Main Electric Room (2)*

*Figure 4: Generator*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 2/1 – Marginal/Poor |
| Quantity | Bus Terminal ~ 7,000 square feet |
| Unit Cost | $13.29/square foot for ~ $93,030 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Bus Terminal |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Main lobby consist of decorative fluorescent pedants and wall mounted architectural fixtures (Figure 1). Storage/office spaces consist of fluorescent 2'X2' troffers (Figure 2), downlights (Figure 3), linear fixtures (Figure 4), and track lighting (Figure 5) controlled by toggle switches (Figure 6). Fixtures and controls are still operational but are at the end of their expected useful life. Exit signs throughout the space were still illuminated (*Figure 7*) and are no longer operational. It appears lighting throughout the space is on generator backup for emergency lighting.

**Pictures:**

*Figure 1: Decorative fluorescent pendants/wall mounted fixtures*

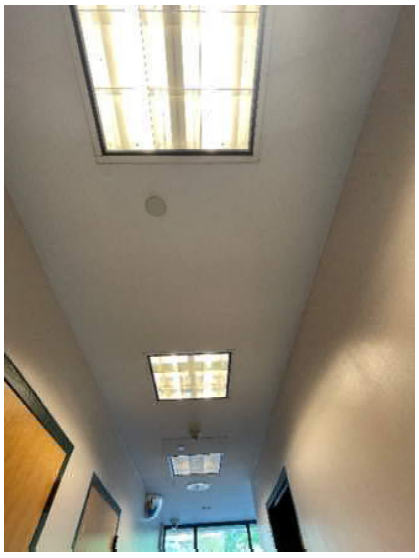


*Figure 2: 2'X2' Flourescent fixtures*

*Figure 3: Fluorescent downlight fixtures*

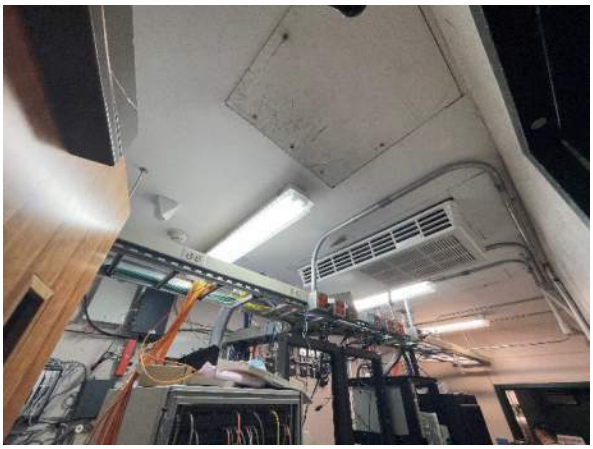


*Figure 4: Fluorescent linear fixtures*

*Figure 5: Track Lighting*

*Figure 6: Toggle Switch*


*Figure 7: Exit Sign*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior downlights, inground fixtures |
| Condition | Downlights - 2 – Marginal; Inground Fixtures – 4 - Good |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Exterior Lighting, Branch Wiring, and Associated controls ~ 20 years; Inground LED ~ 5 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years; Inground LED ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0-5 years; Inground LED ~ 15 years<br>Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior, throughout plaza |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Exterior downlights (*Figure 8*) are installed along perimeter of building. Inground LED RGB fixtures (*Figure 9*) are installed throughout plaza to provide accent lighting.

**Pictures:**

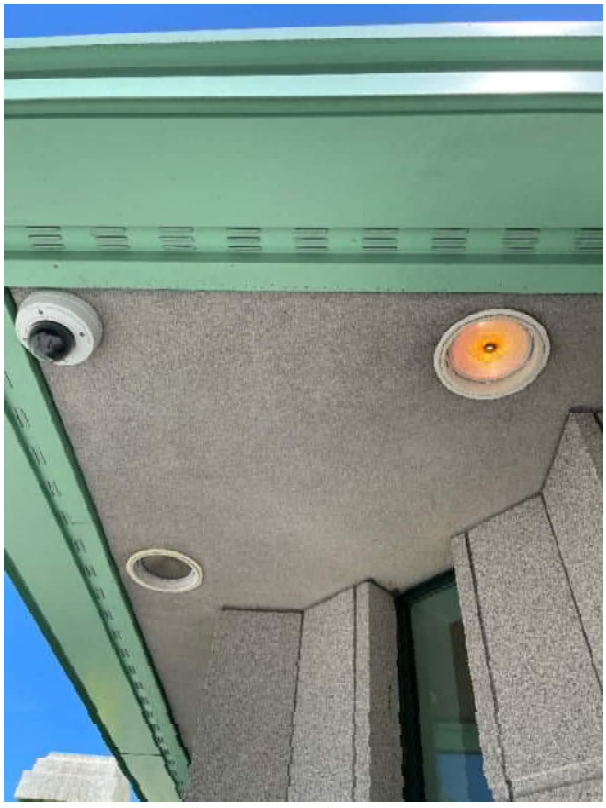


*Figure 8: Exterior downlights*

*Figure 9: In ground LED RGB fixtures*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Fire Alarm Devices and Associated Wiring |
| Condition | 3 - Adequate |
| Quantity | Fire Alarm System ~ 7,000 square feet |
| Unit Cost | $.50/square foot for ~ $3,500 |
| Year in Service | Fire Alarm Control Panel ~ 10 years, Other System Components ~20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 5 years, Other System Components ~ 1-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Lobby/entrance |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system consists of an addressable Fire Alarm Control Panel (Edwards EST-2) (*Figure 1*) and devices manufactured by Edwardsl. Fire Alarm system and associated devices and wiring appear to be in working condition, however they are approaching their expected useful life based on industry standards.

**Pictures:**

*Figure 1: Fire Alarm Control Panel*

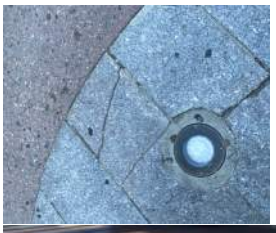
# G. SITE

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior paving and stonework |
| Condition | 3 |
| Quantity | ~71,349 sq. ft. |
| Unit Cost | Total: $1,654,658 |
| Year in Service | 2001 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 50 years, Estimated, Based on Date of Observation |
| Location | Site |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Many surfaces and textures create accessibility / tripping concerns. Maintenance is difficult with many connecting surfaces requiring differing treatment.

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Bus shelters |
| Condition | 3 |
| Quantity | 8 |
| Unit Cost | Total: $238,832 |
| Year in Service | 2001 |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Site |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Glazing material resulting in cracked units.

**Pictures:**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 350 CODDINGTON HWY, MIDDLETOWN, RI 02842

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

The facility at 350 Coddington Highway was built in 1993 for the Rhode Island Public Transit Authority and is one-story vehicle storage facility with administration space. The facility includes office space, restrooms, employee lounge, meeting space, mechanical service space, vehicle storage, and two wash bays.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 350 Coddington Hwy, Middletown, RI 02842 |
| Property Type | General Purpose Maintenance |
| Year Built | 1993 |
| Number of Vehicles Stored | 5-20 |
| Year of Latest Major Renovation | N/A |
| Number of Stories | 1 (Does not Include Basements, Mezzanines, or MEP Penthouses) |
| Occupied | Yes |
| Land Area | 3.42 Acre |
| Gross Building Area (GSF) | 39,217 |
| Total Parking Count (Including ADA) | 66 total parking spaces |
| ADA Compliant (Total Count) | 6 Total ADA Spaces. |
| ADA Compliant for Vans | N/A |

### C. Summary of Findings

This facility appears to be in adequate condition. The building is approaching 30 years in age and could benefit from some rehabilitation of components to ensure a prolong life. Photos showing the current condition of the exterior and interior of the building are enclosed in the subsequent sections.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.53 |
| Interiors | 3.22 |
| Conveyance | *N/A* |
| Plumbing | 3.00 |
| HVAC | 2.00 |
| Fire Protection | 2.00 |
| Electrical | 3.31 |
| Equipment | 2.51 |
| Site | 4.00 |
| **Total** | **3.13** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section F. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section G.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rainwater drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement. exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**E. EQUIPMENT**
E10 Equipment

**G. SITEWORK**
G10 Site

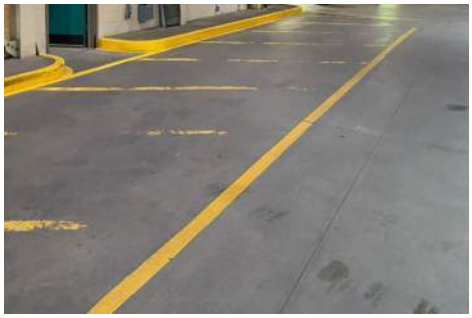
# A. SUBSTRUCTURE

| B. Coding / Field Name | Asset Description |
|---|---|
| System Name | Slabs on grade |
| Condition | 4 |
| Quantity | ~38,000 sq. ft. |
| Unit Cost | Total: $760,760 |
| Year in Service | 1993 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 95 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Some cracking and minor wear.

**Pictures:**



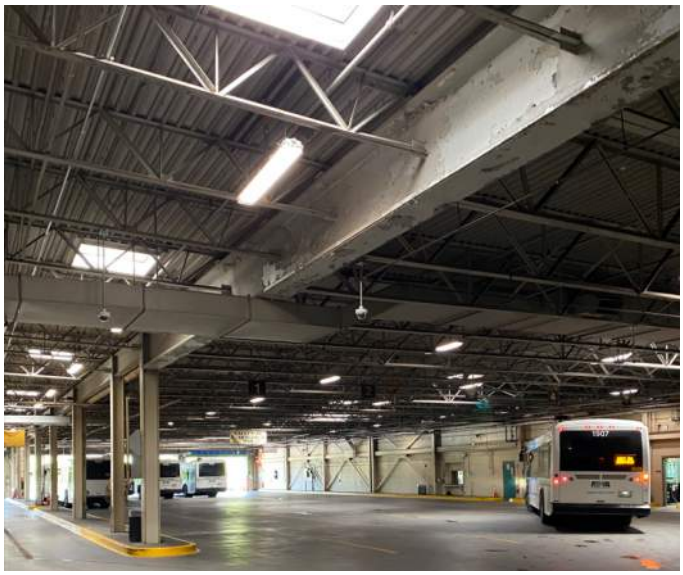
# B. SHELL

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure and metal roof decking. |
| Condition | 4 |
| Quantity | ~38,000 sq. ft. |
| Unit Cost | Total: $512,566 |
| Year in Service | 1993 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 85 years, Estimated, Based on Date of Observation |
| Location | Building Structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Paint and coating wear and peeling.

**Pictures:**



| Coding $ Field Name | Asset Description |
|---|---|
| System Name | CMU walls |
| Condition | 3 |
| Quantity | ~17,795 sq. ft. |
| Unit Cost | Total: $371,915.50 |
| Year in Service | 1993 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 75 years, Estimated, Based on Date of Observation |
| Location | Bearing walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

CMU walls appear in fair condition, however there is evidence of potential moisture buildup and efflorescence staining. Weep holes were not observed on the exterior, which are called for in the original construction documents.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior split-face CMU |
| Condition | 3 |
| Quantity | ~17,795 sq. ft. |
| Unit Cost | Total: $370,136 |
| Year in Service | 1993 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 75 years, Estimated, Based on Date of Observation |
| Location | Exterior walls |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Split-face CMU walls appear in fair condition, however there is evidence of potential moisture buildup and efflorescence staining. Weep holes were not observed on the exterior, which are called for in the original construction documents.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior brick |
| Condition | 4 |
| Quantity | ~2,200 sq. ft. |
| Unit Cost | Total: $63,360 |
| Year in Service | 1993 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 85 years, Estimated, Based on Date of Observation |
| Location | Exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Exterior brick work appears in fair condition, however there is some evidence of potential moisture buildup and efflorescence staining.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Membrane roofing + rigid insulation |
| Condition | 4 |
| Quantity | ~38,875 sq. ft. |
| Unit Cost | Total: $296,365 |
| Year in Service | 1993 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Flat roofs. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Rigid insulation not visible during inspection. Membrane roof covering in fair condition. Evidence of bubbling and some staining.

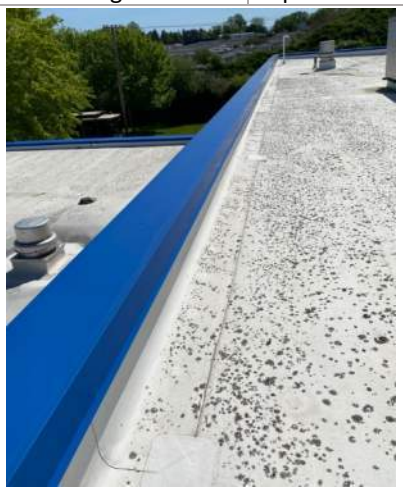
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Standing seam metal roof |
| Condition | 4 |
| Quantity | ~342 sq. ft. |
| Unit Cost | Total: $8,250 |
| Year in Service | 1993 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Vestibule roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Metal roof coping |
| Condition | 4 |
| Quantity | ~890 linear ft. |
| Unit Cost | Total: $26,077 |
| Year in Service | 1993 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building roof edge. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof skylights |
| Condition | 4 |
| Quantity | 20 |
| Unit Cost | Total: $10,353.20 |
| Year in Service | 1993 |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 45 years, Estimated, Based on Date of Observation |
| Location | Flat roofs |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Roof hatch |
| Condition | 4 |
| Quantity | 1 |
| Unit Cost | Total: $3,085 |
| Year in Service | |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Flat roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior steel doors and frames. |
| Condition | 3 |
| Quantity | 11 |
| Unit Cost | Total: $ 41,085 |
| Year in Service | |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Deterioration/rust evident at base of doors and frames.

**Pictures:**


| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior overhead coiling doors |
| Condition | 3 |
| Quantity | 7 |
| Unit Cost | Total: $48,702.50 |
| Year in Service | 1993 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Some denting and rust evident.

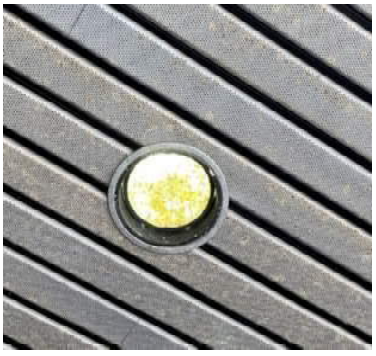
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Glazed aluminum curtainwall system |
| Condition | 4 |
| Quantity | ~595 sq. ft. |
| Unit Cost | Total: $16,767.50 |
| Year in Service | 1993 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 50 years, Estimated, Based on Date of Observation |
| Location | Building exterior and vestibule |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior linear metal ceilings |
| Condition | 4 |
| Quantity | ~342 sq. ft. |
| Unit Cost | Total: $4,258 |
| Year in Service | 1993 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 35 years, Estimated, Based on Date of Observation |
| Location | Building exterior and vestibule |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

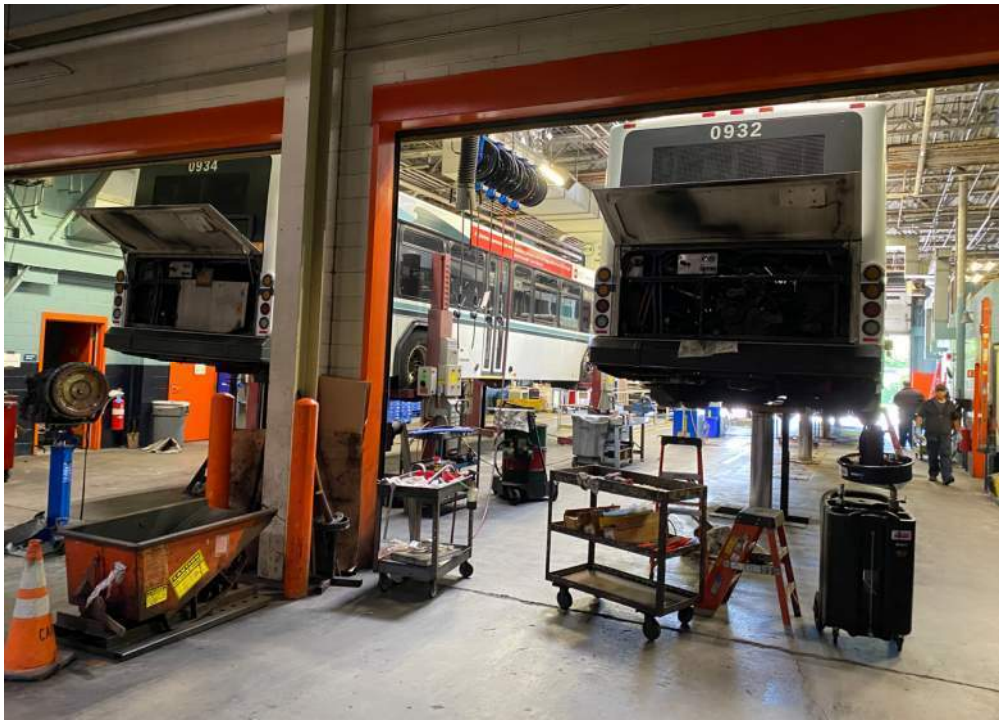
**Pictures:**



# C. INTERIORS

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead garage doors |
| Condition | 3 |
| Quantity | 2 |
| Unit Cost | Total: $8,695 |
| Year in Service | 1993 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Maintenance garage. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior Steel doors and frames |
| Condition | 3 |
| Quantity | 16 |
| Unit Cost | Total: $25,766 |
| Year in Service | 1993 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tiles and grids |
| Condition | 2 |
| Quantity | ~5,625 sq. ft. |
| Unit Cost | Total: $60,637.50 |
| Year in Service | 1993 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Non-garage/service spaces. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Observations/Comments:**

Water damage, missing tiles, corroded grids.

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic tile Flooring and base. |
| Condition | 4 |
| Quantity | ~6,625 sq. ft. |
| Unit Cost | Total: $90,187.50 |
| Year in Service | 1993 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Common areas |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Restroom fixtures and accessories |
| Condition | 3 |
| Quantity | 2 restrooms |
| Unit Cost | Total: $6,589 |
| Year in Service | 1993 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic wall tile |
| Condition | 4 |
| Quantity | ~2500 sq. ft. |
| Unit Cost | Total: $22,500 |
| Year in Service | |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Restrooms |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior drywall Partitions |
| Condition | 3 |
| Quantity | ~3,800 sq. ft. |
| Unit Cost | Total: $18,400 |
| Year in Service | 1993 |
| Expected Useful Life | 60 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

# D. SERVICES

## Plumbing Systems

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Systems | Cold-and Hot-Water, Natural Gas, Storm, Compressed Air, and Waste & Vent Systems. |
| Condition | 3-Adequate |
| Quantity | Qty (1) System |
| Unit Cost | Total: $350,000 |
| Year in Service | ~1990s |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

## Domestic Water

The fire protection and domestic water systems connect to a common 6”-service lateral from the street. The domestic service has a 2” copper line. There is a 2” water meter and a pair of 2” reduced-pressure zone backflow preventer in parallel protect the system.

*Figure 1: Fire and Water Services*


*Figure 2: Domestic Water Service Backflow Devices*

*Figure 3: Domestic Water Meter*

## Domestic Hot Water System

A 100-gallon, 250,000 BTU/hr water heater located in the boiler room provides HW to the facility.

*Figure 4: Gas-Fired Water Heater*

A dedicated gas-fired boiler provides hot water for the car wash.

*Figure 5: Dedicated Boiler for Bus Wash*

## Compressed Air System

A compressed air system is in the Mechanical Room. The system includes an air compressor, a filter/dryer, and a storage tank. The compressed air is routed to drops and cord reels. The compressed air used for hand tools and the air-operated diaphragm pumps pumping automotive fluids.

*Figure 6: Compressed Air System*

## Sanitary and Storm Drainage

Storm drainage is handled via roof drains with secondary drainage being handled by scuppers.

*Figure 7: Roof Drain*

An Oil-Water separator handles the waste from floor drains in the shop area before discharging to the main sewer line.

## HVAC Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating and Cooling Systems | Air-Conditioning and Baseboard Systems |
| Condition | 2-Marginal |
| Quantity | ~12,000 square feet |
| Unit Cost | $14/square foot for ~$168,000 |
| Year in Service | ~2000 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | 0 years |
| Location | Office Space |
| Basis of Costing | RMS Means Data with Contingencies Added |

The office area is heated and cooled with a Rooftop Unit (RTU) which also provides outdoor air for ventilation. The RTU is a constant-volume, single-zone system. The RTU is equipped with a gas-fired burner for heating. The conference room and select offices have split systems installed by the occupants. Perimeter electric baseboard also appears to be added by the occupants. Electric unit heaters provide heating in the maintenance areas.

*Figure 8: Rooftop Unit*

*Figure 9: Split System Condensers*

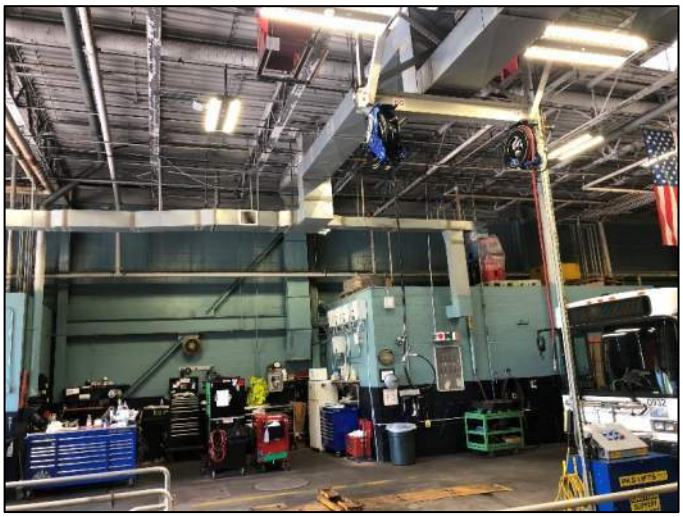


*Figure 10: Mechanical Ducting*


*Figure 11: Electric Unit Heater at Entrance*

*Figure 12: Electric Baseboard Heater*

*Figure 13: Electric Unit Heater in Water Room*

## Makeup-Air and Exhaust Systems

| Coding / Field Name | Asset Description |
|---|---|
| Makeup Air and Exhaust Systems | MAUs, Exhaust Fans, and Ductwork in Garage |
| Condition | 2-Marginal |
| Quantity | Qty (1) MAU System and Qty (1) Exhaust System and Controls |
| Unit Cost | $375,000 |
| Year in Service | ~1993 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~ 0 Years |
| Location | Garage Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The maintenance bays are supplied with local rope-and-pully exhaust at each hydraulic lift and pit. Centrifugal upblast fans exhaust the maintenance areas. On the roof, existing make-up air units (MAUs) are original to the building (1993). The existing control system detecting CO and NO2 is not operational.

Figure 14: Rope-and-Pulley Exhaust System

Figure 15: Ceiling Mounted Exhaust Fan

Figure 16: Makeup Air Unit

Figure 17: Centrifugal Upblast Exhaust Fans

Figure 18: Centrifugal Downblast Exhaust Fans

Figure 19: Boiler Exhaust Stack

*Figure 20: NO2 and CO2 Control Panel*

*Figure 21: NO2 and CO2 Control Panel*

Centrifugal downblast fans exhaust restrooms and housekeeping areas. A battery charging station is equipped with a dedicated exhaust system that is no longer operational.


*Figure 22: Battery Exhaust Hood*

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe and Dry-Pipe Piping, Sprinklers, and Valving |
| Condition | 2-Poor |
| Quantity | Qty (1) System |
| Unit Cost | Total: $150,000 |
| Year in Service | ~1960 with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

The fire protection and domestic water systems connect to a common 6”-service lateral from the street. The fire sprinkler system has Qty (2) risers: (1) is a wet-system riser and (1) is a dry-system riser. The office is protected with the wet-system riser and the sprinkler heads appear original to the building. The maintenance bay is supplied with the dry-system with upright heads that also appear original.

*Figure 23: Fire and Water Services*

A fire-department connection with an alarm bell is situated outside the fire sprinkler room.

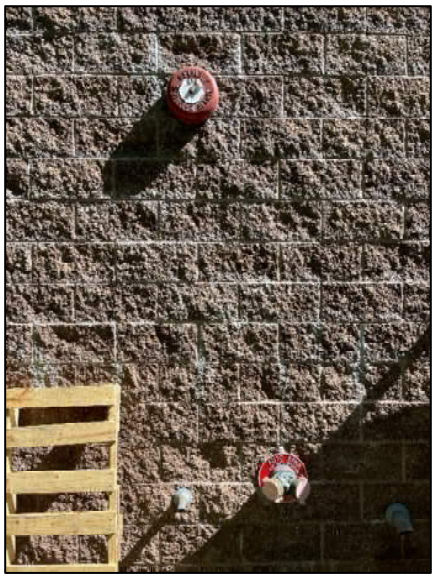


*Figure 24: Fire Department Connection and Drain*

## Electrical Systems

### Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 480V Service and Distribution | Switchboard, Distribution panelboards, dry-type transformers and associated panelboards |
| Condition | Electrical Service/Distribution: 3 - Adequate, Rest of System: 3 - Adequate |
| Quantity | Electrical Service/Distribution ~<br>Office: 5,825 square feet<br>Garage: 33,140 square feet |
| Unit Cost | Office: $2.80/square foot for ~ $16,310<br>Garage: $.63/square foot for ~ $20,878 |
| Year in Service | Electrical Service ~30 years, Other System Components ~30 years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years, Other System Components ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 0-5 years, Other System Components ~0-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Main Electrical Room. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

A 800A, 480V service installed approximately 30 years ago. The service is fed from the pad mounted transformer (Figure 2) (South side of the building) and enters the main switchboard (*Figure 1*) located in the Electrical Room. Building is served by a backup diesel generator (Figure 3). All distribution equipment appears to be in adequate condition, but it is approaching expected useful life based on industry standards.

**Pictures:**

*Figure 1: Switchboard (277/480V)*

*Figure 2: Transformer*

*Figure 3: Diesel Generator*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 – Good/1 - Poor |
| Quantity | Garage Lighting System ~<br>33,140 square feet |
| Unit Cost | $11.97/square foot for ~ $396,685 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 6 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 14 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

LED high-bay fixtures with integral occupancy sensors (*Figure 1*) are installed throughout the first-floor garage space and appear to be in good condition. Exit signs (Figure 2) throughout the space do not appear to be illuminated and are not operational.

**Pictures:**

*Figure 1: LED High-bay fixtures with integral occupancy sensor*

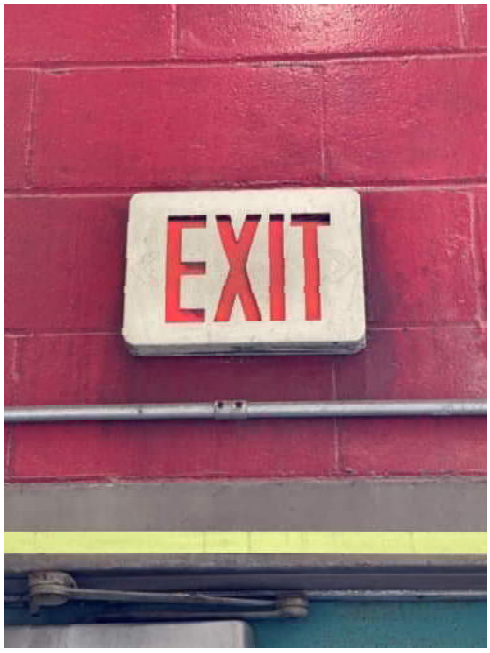



*Figure 2: Exit Sign (Not Illuminated)*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 - Good |
| Quantity | Office/Storage Lighting System ~ 5,825 square feet |
| Unit Cost | $21.29/square foot for ~ $124,014 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of LED 2'X2' and 2'X4' troffer fixtures (Figure 3) and linear LED fixtures controlled by a combination of toggle switches (Figure 7), ceiling mounted occupancy sensors (Figure 4), and wall switch occupancy sensors (*Figure 8*). Exit signs were observed throughout the space and appear to be fully operational (*Figure 5*). Lighting fixtures throughout

the office space are on generator backup. Fluorescent fixtures (Figure 6) are installed in the storage areas and fluorescent downlights were left in place throughout the lobby.

**Pictures:**

*Figure 3: LED 2'X2' troffer fixtures*

*Figure 4: Ceiling mounted occupancy sensor*


*Figure 5: Exit sign*

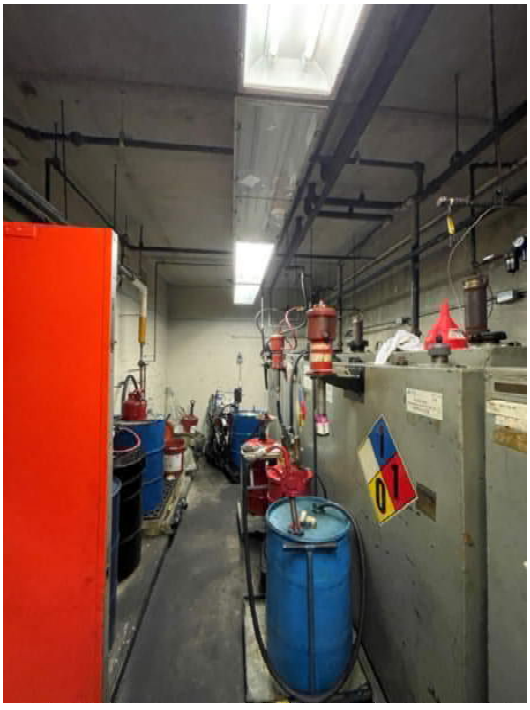


*Figure 6: Flourescent fixtures*

*Figure 7: Toggle switch*

*Figure 8: Wall switch occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 4 – Good |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Wall packs (*Figure 9*) are installed along perimeter of building. Photocells on wall packs appear to have issues (lights staying on throughout the day). Emergency wall packs (*Figure 10*) are located above doors for emergency egress lighting.

**Pictures:**

*Figure 9: Exterior Wall packs*

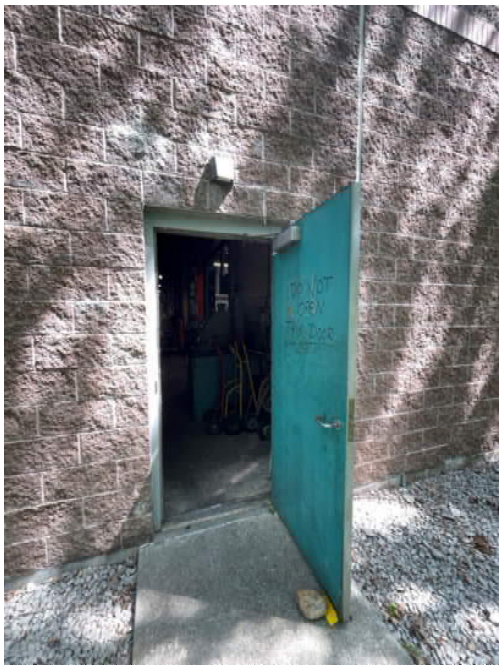


*Figure 10: Emergency Wall packs*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 4 - Good |
| Quantity | Fire Alarm System ~ 38,965 square feet |
| Unit Cost | $.50/square foot for ~ $19,482.50. |
| Year in Service | Fire Alarm Control Panel ~ 10 years, Other System Components ~10 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 5 years, Other System Components ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor Electric Room |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system consists of an addressable Fire Alarm Control Panel (Figure 2) (Simplex 4007) and associated devices manufactured by Simplex. Connection to local fire department is through a Radio Master Box (Figure 1). Pneumatic CO detection system is installed throughout the garage space is no longer operational. One operational CO detection device was observed throughout the space (Figure 3). A fire suppression system is installed in the IT room (Figure 4). Fire Alarm system and associated devices and wiring appear to be in good condition.


*Figure 1: Gamewell Master Box*


*Figure 2: Fire Alarm Control Panel*

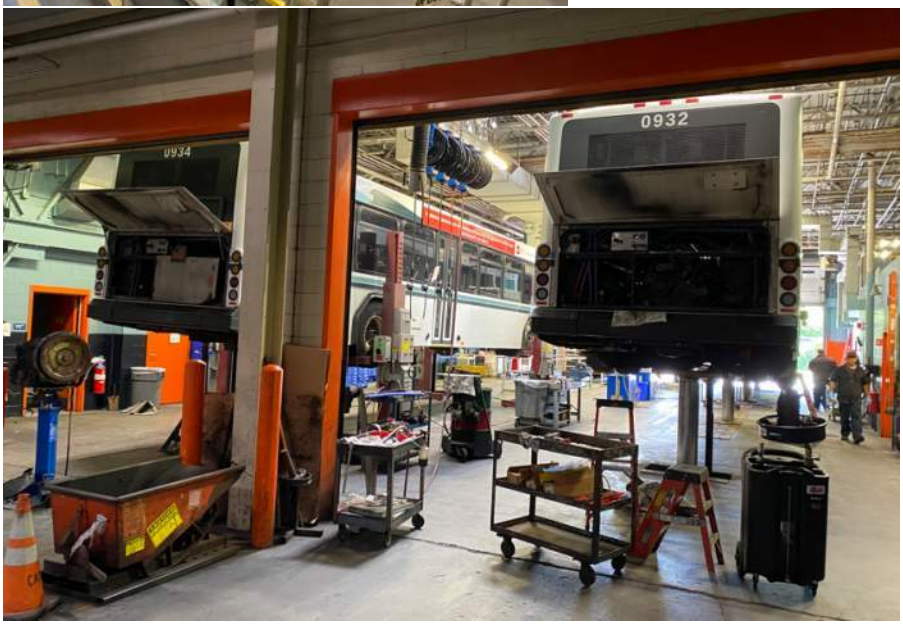

*Figure 3: CO system*

*Figure 4: Fire suppression system*

# E. EQUIPMENT

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vehicle lifts |
| Condition | 3 |
| Quantity | 3 |
| Unit Cost | Total: $105,000 |
| Year in Service | 29 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Bus wash |
| Condition | 2 |
| Quantity | 2 |
| Unit Cost | Total: $99,172 |
| Year in Service | 29 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

# G. SITE

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior concrete pads and walking surfaces. |
| Condition | 4 |
| Quantity | ~3,040 sq. ft. |
| Unit Cost | Total: $32,589 |
| Year in Service | 29 |
| Expected Useful Life | 85 years |
| Remaining Useful Life | 70 years, Estimated, Based on Date of Observation |
| Location | Building exterior. |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

RHODE ISLAND PUBLIC TRANSIT AUTHORITY

# 705 ELMWOOD AVENUE, PROVIDENCE, RI 02907

TAMS Facility Condition Assessment

**TABLE OF CONTENTS**

# I. ASSESSMENT OVERVIEW

## A. Facility Description

705 Elmwood Avenue was built in 2012 for the Rhode Island Public Transit Authority and is primarily a two-story administrative facility. There is a portion of this facility that houses indoor storage for the authority's paratransit fleet. Both the first and second floor levels houses RIPTA administrative and operations offices.

## B. Facility Inventory Data

| Item | Description |
|---|---|
| Agency | Rhode Island Public Transit Authority (RIPTA) |
| Address | 705 Elmwood Ave, Providence, RI 02907 |
| Property Type | Para-Transit Maintenance and Storage Facility |
| Year Built | 2009 |
| Number of Vehicles Stored | 80-100 |
| Year of Latest Major Renovation | N/A |
| Number of Stories | 2 |
| Occupied | Yes |
| Land Area | 5.60 Acres |
| Gross Building Area (GSF) | 127,952 sq. ft. |
| Total Parking Count (Including ADA) | 157 |
| ADA Compliant (Total Count) | 8 |
| ADA Compliant for Vans | 2 |

### C. Summary of Findings

The building is approximately 10 years in age and is the Authority's headquarters and newest facility. Photos showing the current condition of the exterior and interior of the building are enclosed in the subsequent sections. Based on our team's assessment, the building is in an Adequate to good condition. Please refer to the overall facility condition in Section D.

### D. Overall Facility Condition

| Components | Rating |
|---|---|
| Substructure | 4.0 |
| Shell | 3.74 |
| Interiors | 3.60 |
| Conveyance | 3.0 |
| Plumbing | 4.9 |
| HVAC | 4.2 |
| Fire Protection | 4.0 |
| Electrical | 4.0 |
| Equipment | 3.0 |
| Site | 3.0 |
| **Total** | **3.7** |

## II. PURPOSE AND SCOPE

### A. Facility Condition Assessment Requirements & Procedures

The condition assessment is primarily intended to assess the overall physical condition of the facility to support capital investment decisions. The facility's classification is based upon American Society of Testing and Materials (ASTM) and reporting will follow guidelines set by the Transit Asset Management (TAM) data-reporting requirements and National Transit Database (NTD).

These assessments are completed through an on-site review of our team comprised of an Architect, Electrical Engineer and Mechanical Engineer. These on-site assessments are supplemented with the review any previous inspections results, available as-builts and any additional information provided by RIPTA. The team will also note and report any defects that may constitute a safety concern or potential service delay immediately.

During the on-site assessment, the inspector will observe the primary and secondary level conditions identified in Section B. Our assessments are limited to assets that are visible and accessible, with information on less easily accessible features like internal systems and wiring gained via documentation and interview. Entering limited access areas such as crawl spaces, utility pits, and sloped roofs is not advisable, and their conditions will be observed from a point of safe access. The inspector will assess each using the FTA TERM condition rating scale that is described in Section C.

## B. Facility Components and Sub-Components

This section describes the specific components and sub-components that must be inspected as part of a facility condition assessment. The component classification is based upon American Society of Testing and Materials (ASTM) documents that provide standards for classification of building components and related site components, but these have been customized in certain respects to address common features of transit facilities.

| ID# | Components | Typical Sub-Components |
|---|---|---|
| A. | Substructure | • Foundations: Walls, columns, pilings other structural components<br>• Basement: Materials, insulation, slab, floor underpinning |
| B. | Shell | • Superstructure / structural frame: columns, pillars, walls<br>• Roof: Roof surface, gutters, eaves, skylights, chimney surrounds<br>• Exterior: Windows, doors, and all finishes (paint, masonry)<br>• Shell appurtenances: Balconies, fire escapes, gutters, downspouts |
| C. | Interiors | • Partitions: walls, interior doors, fittings such as signage<br>• Stairs: Interior stairs and landings<br>• Finishes: Materials used on walls, floors, and ceilings |
| D. | Conveyance | • Elevators<br>• Escalators<br>• Lifts: any other such fixed apparatuses for the movement of goods or people |
| E. | Plumbing | • Fixtures<br>• Water distribution<br>• Sanitary waste<br>• Rain water drainage |
| F. | HVAC | • Energy supply<br>• Heat generation and distribution systems<br>• Cooling generation and distribution systems<br>• Testing, balancing, controls and instrumentation<br>• Chimneys and vents |
| G. | Fire Protection | • Sprinklers<br>• Standpipes<br>• Hydrants and other fire protection specialties |
| H. | Electrical | • Electrical service & distribution<br>• Lighting & branch wiring (interior and exterior)<br>• Communications & security<br>• Other electrical system-related pieces such as lightning protection, generators, and emergency lighting |
| I. | Equipment | • Equipment related to the function of the facility, including maintenance or vehicle service equipment<br>*For clarity, includes only items valued above $10,000 and related to facility function* |
| J. | Site | • Roadways/driveways and associated signage, markings, and equipment<br>• Parking lots and associated signage, markings, and equipment<br>• Pedestrian areas and associated signage, markings, and equipment<br>• Site development such as fences, walls, and miscellaneous structures<br>• Landscaping and irrigation<br>• Site Utilities |

## C. Condition Assessment Rating Scale

The condition measure used in the NTD is the five-point scale used by FTA's Transit Economic Requirements Model (TERM). This scale has the following values:

| Rating | Condition | Description |
|---|---|---|
| 5 | Excellent | No visible defects, new or near new condition, may still be under warranty if applicable |
| 4 | Good | Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional |
| 3 | Adequate | Moderately deteriorated or defective components; but has not exceeded useful life |
| 2 | Marginal | Defective or deteriorated component(s) in need of replacement; exceeded useful life |
| 1 | Poor | Critically damaged component(s) or in need of immediate repair; well past useful life |

A weighted average condition is being utilized to calculate an overall condition for the facility.

$$OR = \frac{\sum_i CR_i RC_i}{\sum_i RC_i}$$

Where:
$CR_i$ is the rating for component i
$RC_i$ is the replacement cost for component i

# III. ASSETS OBSERVED

Assets observed at the site are provided in this Section and sorted by the modified Uniformat II coding indexed as applicable. See the listing below for the sequence.

**A. SUBSTRUCTURE**
A10 Foundations
A20 Basement Construction

**B. SHELL**
B10 Super Structure
B20 Exterior Enclosure
B30 Roofing

**C. INTERIORS**
C10 Interior Construction
C20 Stairs
C30 Interior Finishes

**D. SERVICES**
D10 Conveying
D20 Plumbing
D30 HVAC
D40 Fire Protection
D50 Electrical

**E. EQUIPMENT**
E10 Equipment

**G. SITEWORK**
G10 Site Preparation
G20 Site Improvements
G30 Site Mechanical Utilities
G40 Site Electrical Utilities
G90 Other Site Construction

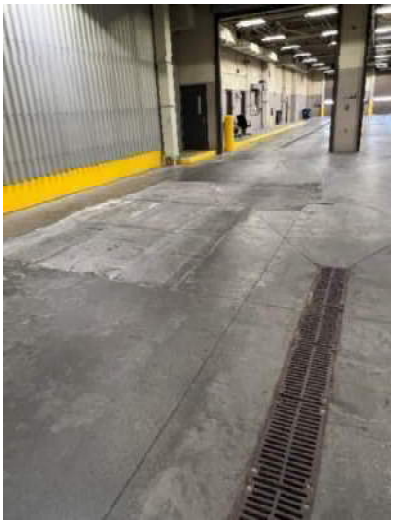
# A.Substructure

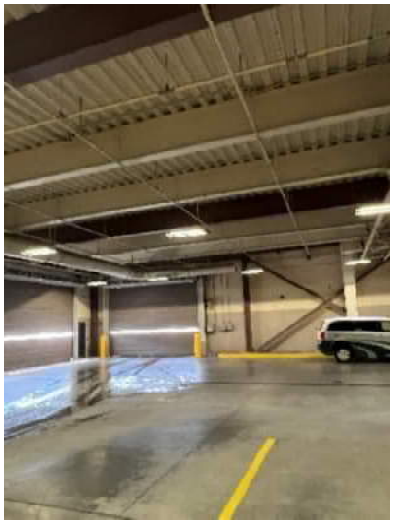
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Slabs on grade |
| Condition | 4 |
| Quantity | ~127,952 sq. ft. |
| Unit Cost | $2,561,599.04 |
| Year in Service | 2009 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Substructure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

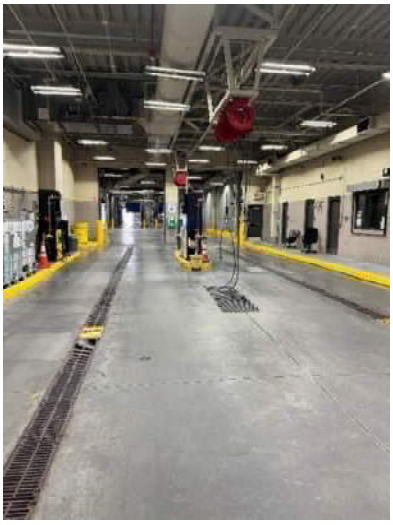
**Observations/Comments:**

Foundations not observable.

**Pictures:**



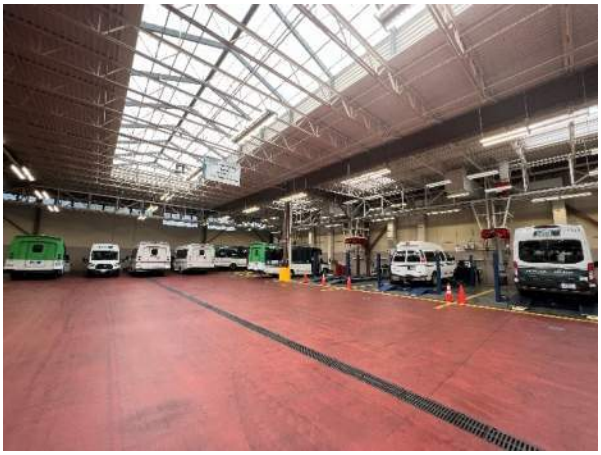


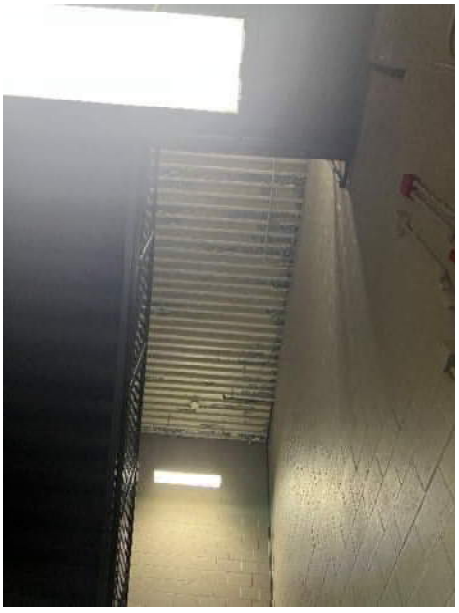


## B. Shell

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Steel superstructure and metal roof decking. |
| Condition | 4 |
| Quantity | ~127,952 sq. ft. |
| Unit Cost | $1,725,890.65 |
| Year in Service | 2009 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building structure |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**





| Coding / Field Name | Asset Description |
|---|---|
| System Name | CMU Walls |
| Condition | 4 |
| Quantity | ~282,360 sq. ft. |
| Unit Cost | $5,901,324 |
| Year in Service | 2009 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building exterior & interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior brick veneer |
| Condition | 4 |
| Quantity | ~16,595 sq. ft. |
| Unit Cost | $477,936 |
| Year in Service | 2009 |
| Expected Useful Life | 100 years |
| Remaining Useful Life | 90 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior metal panel cladding system (dry joint) |
| Condition | 4 |
| Quantity | ~2,500 sq. ft. |
| Unit Cost | $86,250 |
| Year in Service | 2009 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Membrane roofing + rigid insulation |
| Condition | 5 |
| Quantity | ~54,282 |
| Unit Cost | $502,651.32 |
| Year in Service | 2009 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Roof |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Parking deck slab and structure |
| Condition | 3 |
| Quantity | ~72,150 sq. ft. |
| Unit Cost | $3,473,300 |
| Year in Service | 2009 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 60 years |
| Location | Parking roof deck |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

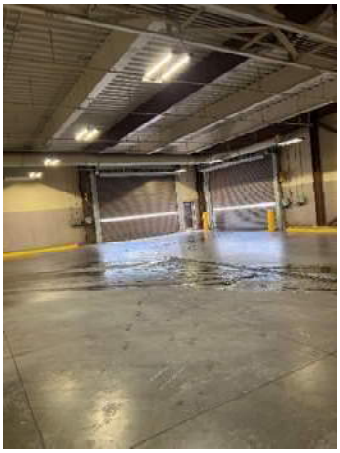
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Metal roof coping |
| Condition | 4 |
| Quantity | ~1,806 linear ft. |
| Unit Cost | $52,915.8 |
| Year in Service | 2009 |
| Expected Useful Life | 80 years |
| Remaining Useful Life | 65 years, Estimated, Based on Date of Observation |
| Location | Building roof edge |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Overhead coiling doors |
| Condition | 3 |
| Quantity | 12 |
| Unit Cost | $93,490 |
| Year in Service | 2009 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior glazing |
| Condition | 4 |
| Quantity | ~2,200 sq. ft. |
| Unit Cost | $61,997.48 |
| Year in Service | 2009 |
| Expected Useful Life | 70 years |
| Remaining Useful Life | 60 years |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

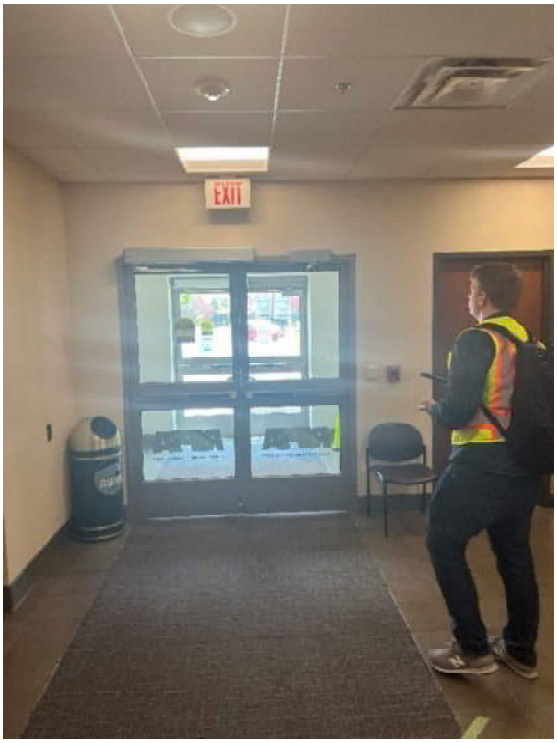
**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Exterior metal doors & frames |
| Condition | 3 |
| Quantity | 27 |
| Unit Cost | Total: $56,366 |
| Year in Service | 2009 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Aluminum automatic entrances |
| Condition | 3 |
| Quantity | 2 |
| Unit Cost | $29,650 |
| Year in Service | 2009 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

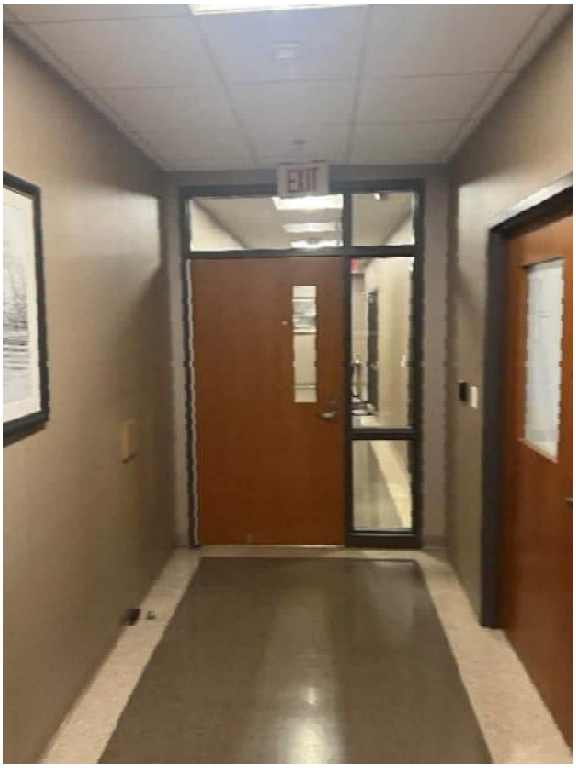
**Pictures:**



# C.Interiors

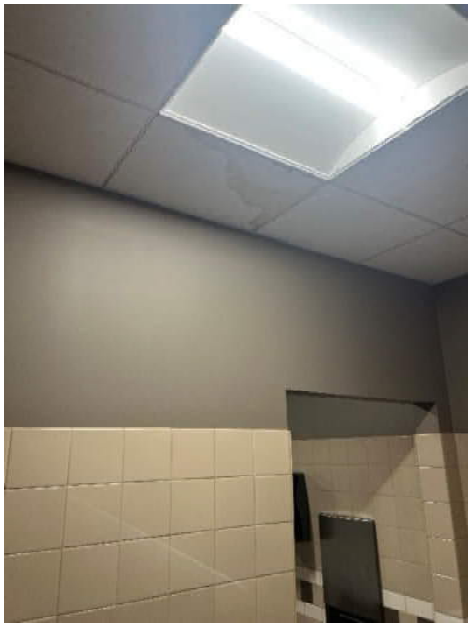
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Interior wood doors and frames |
| Condition | 4 |
| Quantity | 81 |
| Unit Cost | $106,118.1 |
| Year in Service | 2009 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 40 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



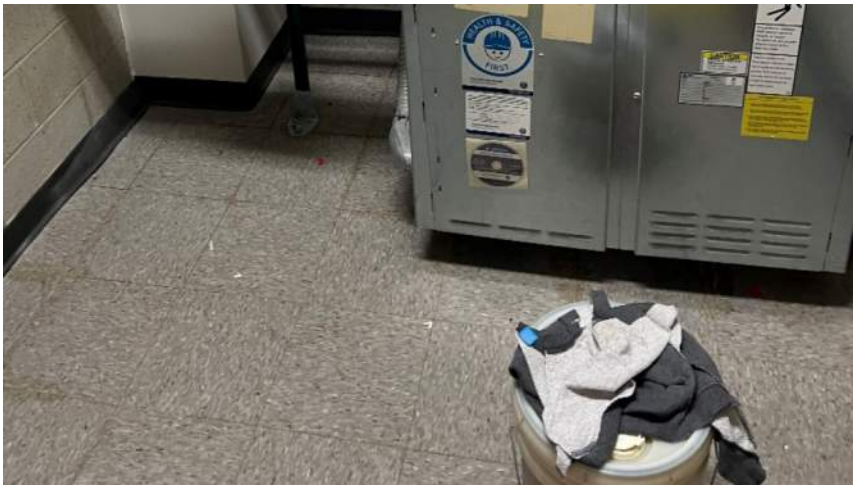
| Coding / Field Name | Asset Description |
|---|---|
| System Name | Acoustic ceiling tiles and grids |
| Condition | 4 |
| Quantity | ~26,040 sq. ft. |
| Unit Cost | $280,711.23 |
| Year in Service | 2009 |
| Expected Useful Life | 40 years |
| Remaining Useful Life | 30 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vinyl composition tile |
| Condition | 3 |
| Quantity | ~26,040 sq. ft. |
| Unit Cost | $175,770 |
| Year in Service | 2009 |
| Expected Useful Life | 50 years |
| Remaining Useful Life | 25 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



| Coding / Field Name | Asset Description |
|---|---|
| System Name | Ceramic Tile Floor & base |
| Condition | 3 |
| Quantity | ~1,200 sq. ft. |
| Unit Cost | $16,335.84 |
| Year in Service | 2009 |
| Expected Useful Life | 75 years |
| Remaining Useful Life | 60 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Restroom fixtures and accessories |
| Condition | 3 |
| Quantity | 4 restrooms |
| Unit Cost | Total: $65,196 |
| Year in Service | 2009 |
| Expected Useful Life | 30 years |
| Remaining Useful Life | 20 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

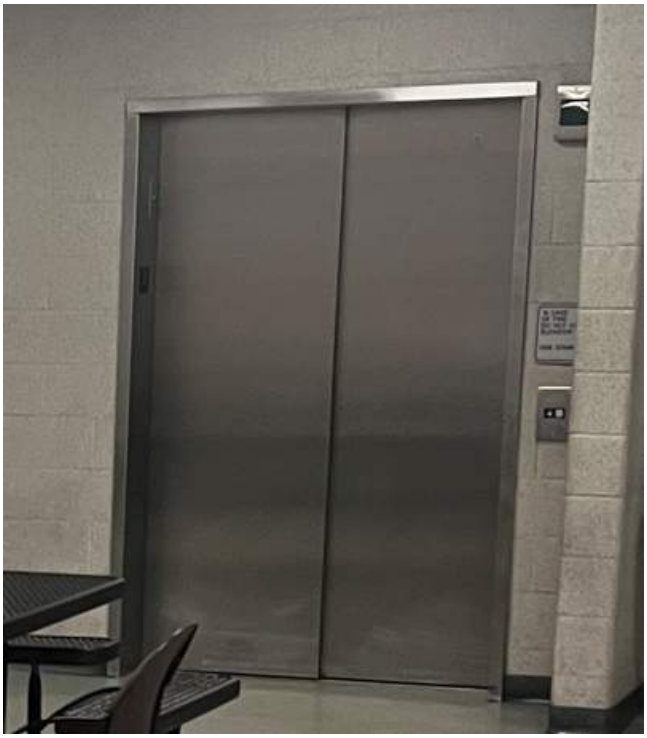
**Pictures:**

# D. Services

## Conveyance

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Elevator |
| Condition | 3 |
| Quantity | 1 |
| Unit Cost | $453,500 |
| Year in Service | 2009 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**



## Plumbing Systems

### Domestic Water

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Water Distribution | Domestic water service and piping distribution |
| Condition | 3-Maginal |
| Quantity | ~80,000 SF |
| Unit Cost | $3/square foot for distribution & Labor<br>Total: $240,000 |
| Year in Service | ~2002 with sporadic modifications through the years |
| Expected Useful Life (EUL) | ~50 Years |
| Remaining Useful Life (RUL) | ~30 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The domestic water service is in the water room with the fire service equipment. The domestic water service lateral is 4". The domestic water meter is 1-1/2" and the reduced-pressure zone backflow preventer and valving match the lateral size of 4". No pressure boosting pumps are present. The domestic water is piped with copper throughout the building. The copper appears to be in fair condition. The fittings were soldered. Insulation is present on hot or cold-water piping.

*Figure 1: Domestic Water Service*

## Domestic Hot-Water System

| Coding / Field Name | Asset Description |
|---|---|
| Domestic Hot Water Systems | Water heaters |
| Condition | 2-Marginal |
| Quantity | ~1 Gas-Fired Boiler and Storage Tank |
| Unit Cost | $50,000 |
| Year in Service | ~2002 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Boiler Room |
| Basis of Costing | RMS Means Data with Contingencies Added |

On the mechanical mezzanine, a gas-fired boiler with an accompanying 200-gallon tank provides the facility domestic hot water. Recirculation pumps provide recirculation through the facility.

*Figure 2: Domestic Water Boiler and Storage Tank*

## Plumbing Fixtures

| Coding / Field Name | Asset Description |
|---|---|
| Plumbing Fixtures | Water closets, lavatories, sinks, etc. |
| Condition | 4-Good |
| Quantity | ~20 Fixtures |
| Unit Cost | ~$4,000/Fixture. Total: $80,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

Most of the fixtures in the facility appear in good, working order. The sinks in the locker room are touchless and are equipped with pumice soap for deep cleaning. The water

closets and urinals are wall-mounted, low-flow fixtures. The showers are heavy-duty, public-use fixtures. Drinking fountains are provided in the office area. The breakroom is equipped with a kitchen sink and microwaves. No stovetops are present.

*Figure 3: Locker Room Sinks*

*Figure 4: Locker Room Water Closet*

*Figure 5: Drinking Fountain in Office Area*

*Figure 6: Urinal in Men's Locker Room*

*Figure 7: Shower in Locker Room*

*Figure 8: Break Room Kitchenette*

## Storm and Sanitary Drainage

| Coding / Field Name | Asset Description |
|---|---|
| Storm and Sanitary Drainage Systems | Piping and Appurtenances, Not Fixtures |
| Condition | 4-good |
| Quantity | ~88,000 SF |
| Unit Cost | $2/SF. Total: $352,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The storm drainage piping appeared to be original to the building and appeared in working order. Most piping was no-hub cast iron. The drains on the roof are original. For secondary drainage, sporadic scuppers were present.

The sanitary piping is no-hub cast iron. The piping appears in good, working order. A water-oil separator is present in the garage. This separator handles the runoff from the parts cleaning room, the bus bays, and other areas that have drains that could be contaminated with oil.

*Figure 9: Sanitary Drainage Piping*

*Figure 10: Oil/Water Separator*

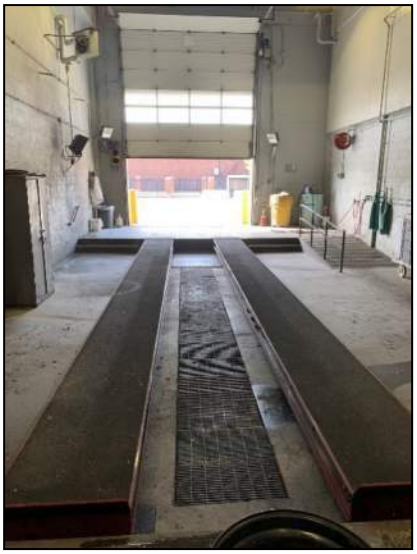


*Figure 11: Parts Cleaner Bay*

*Figure 12: Repair Bay*

## Natural Gas System

| Coding / Field Name | Asset Description |
|---|---|
| Natural Gas System | Natural gas meters, regulators, and piping. |
| Condition | 4-Good |
| Quantity | ~88,000 SF |
| Unit Cost | $1.00/SF. Total: $88,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~40 Years |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means Data with Contingencies Added |

The building is served by a natural-gas system on the North side of the facility. The incoming service is ~2" and increases to ~3" after the compressors. A few items requiring gas are the boilers for the hydronic and domestic water and the boilers in the water treatment room.

*Figure 13: Gas Service Meter and Regulator*

## Compressed Air System

| Coding / Field Name | Asset Description |
|---|---|
| Compressed Air Systems | Compressed Air System Equipment and Piping |
| Condition | 4-Good |
| Quantity | Qty (1) System |
| Unit Cost | Total: $300,000 |
| Year in Service | ~2002 |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~8 Years |
| Location | Garage |
| Basis of Costing | Equipment |

A compressed air system is in a dedicated room. The system includes an air

compressor, a filter/dryer, and a storage tank. The compressed air is used for hand tools and the air-operated diaphragm pumps in the lube room.


*Figure 14: Air Compressor*


*Figure 15: Air Compressor Filter*

*Figure 16: Compressed Air Tank*

*Figure 17: Air-Operated Diaphragm Pumps in Lube Room*

## HVAC Systems

### Hot-Water for Comfort Heating Systems

| Coding / Field Name | Asset Description |
|---|---|
| Comfort Heating Systems | Hot-water boiler, piping, ancillary equipment, and terminal devices (radiators, MAUs, and fan coils). |
| Condition | 4-Good |
| Quantity | ~80,000 square feet |
| Unit Cost | $20/square foot for ~$1,600,000 |
| Year in Service | Boiler (~2002), Other System Components ~2002 |
| Expected Useful Life (EUL) | Boiler ~30 Years, Other System Components ~30 Years |
| Remaining Useful Life (RUL) | ~10 years |
| Location | Entire Facility. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

Qty (2) Gas-Fired Boilers provide hot water for a hydronic heating system. The hot water is used in the coils of the Makeup Air Units (MAUs), unit heaters, and fan coils.

The MAUs provide tempered air to replace the air exhausted from the various exhaust systems. Some MAUs are hung from the ceiling at locations on the perimeter of the garage area. These units are ducted across the garage and to various rooms along the perimeter. MAUs are also mounted on the flat roof and provide MAU to the exterior spaces, outside of the garage area. An additional Fan Coil Unit is in the parts storage area.

There are many small, hot-water unit heaters located throughout the facility. These heaters appear to be locally controlled with a thermostat mounted on the unit.

*Figure 18: Hydronic Heating System Boilers*

*Figure 19: Hot-Water Unit Heater*

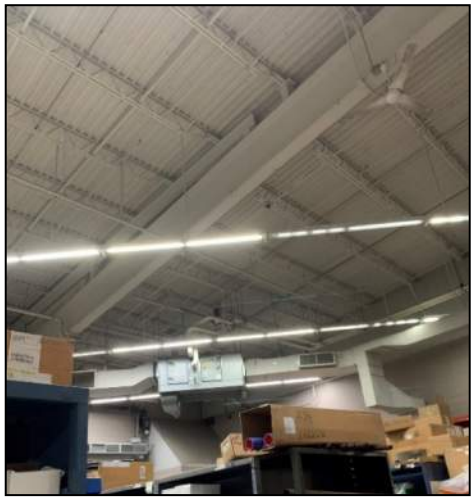


*Figure 20: Fan Coil Unit in Parts Storage*

*Figure 21: MAU on the Perimeter of the Garage*

*Figure 22: Makeup Air Unit Mounted on Roof*

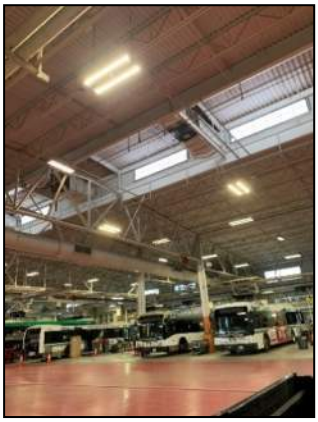


*Figure 23: MAU Ducting in the Garage*

*Figure 24: MAU Ducting from Garage to Surrounding Rooms*

*Figure 25: MAU Ducting from Garage to Surrounding Rooms*

## Exhaust Systems

| Coding / Field Name | Asset Description |
|---|---|
| Exhaust System | Motor driven fans |
| Condition | 3-Adequate |
| Quantity | ~80,000 square feet |
| Unit Cost | $4/square foot for distribution & Labor, ~$150,000 for Equipment Total: $470,000 |
| Year in Service | ~2002 with sporadic modifications |
| Expected Useful Life (EUL) | ~30 Years |
| Remaining Useful Life (RUL) | ~10 Years |
| Location | Service Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The garage is equipped with motor driven exhaust fans that have branch ducting with a rope-and-pulley system for localized exhaust. The local exhaust systems appear in good, working order. The fan drives for the exhaust systems are mounted on the roof. Some fans appear newer, and some appear to be original with the building.

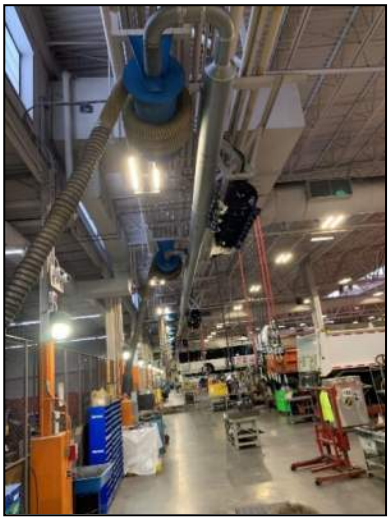


*Figure 26: Localized Exhaust Systems*

*Figure 27: Localized Exhaust System Hose Reel*

*Figure 28: Exhaust Fan on the Roof*

*Figure 29: Exhaust Fan on the Roof*

The main floor of the garage has exhaust fans mounted on both sides of the peak of the ceiling. These exhaust fans face one another and exhaust directly to the exterior. On the walls of the garage, there are control sensors that measure CO and NO2 and control the fans.

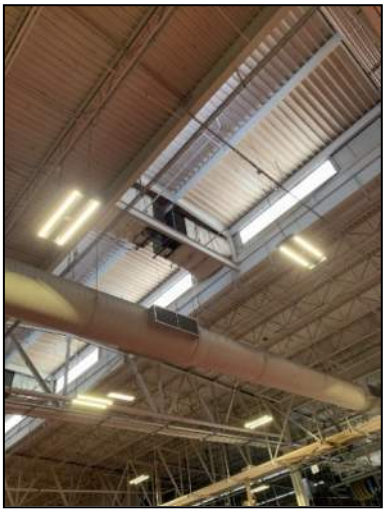


*Figure 30: Exhaust Fans at Ceiling Peak*

*Figure 31: Exhaust Fan Terminals on Peak of Roof*

The Body Shop is equipped with a localized smoke exhaust. The machine appears in working order.

*Figure 32: Smoke Exhaust System*

The facility has a paint booth that has an integral exhaust system. The interior of the paint booth has rows of filters. The exhaust terminates on the roof through exhaust stacks.

*Figure 33: Paint Booth Exhaust System (Interior to Building, Exterior to Booth)*

*Figure 34: Paint Booth Exhaust (Interior to Booth)*

*Figure 35: Paint Booth Exhaust Roof Terminations*

The battery storage room has makeup air to it, but there is not a control system in place to exhaust the room if there is a dangerous buildup of off gasses from the batteries.

*Figure 36: Battery Storage Room*

## Comfort-Cooling Mechanical Systems

| Coding / Field Name | Asset Description |
|---|---|
| Air-Side Mechanical Systems | Air Conditioning Systems |
| Condition | 3-Adequate |
| Quantity | ~8,000 Square Feet |
| Unit Cost | $12/square foot for a total of: $96,000 |
| Year in Service | ~2002 with Additions |
| Expected Useful Life (EUL) | ~20 Years |
| Remaining Useful Life (RUL) | ~0 Years |
| Location | Office Area |
| Basis of Costing | RMS Means Data with Contingencies Added |

The main garage area is not equipped with a comfort cooling system. However, several

comfort cooling systems are in place around the facility. The office area is equipped with a standard split, direct expansion system. The condensers are located on the flat roof on the South Side of the building, above the office area. The indoor units are hung from the ceiling in a mechanical space adjacent to the office area.

*Figure 37: Air Conditioning Condensers on Flat Roof*

*Figure 38: AC Fan Coil Unit*

*Figure 39: Diffuser Setup Office Portion*

Several small VRF systems provide spot cooling for IT and computer rooms. The security room is equipped with one and various offices are as well.

*Figure 40: VRF Condenser for Security Room*

*Figure 41: VRF Evaporator for Security Room*

A roof top unit on the North side of the building provides local cooling for an occupied storage area.

*Figure 42: Roof Top Unit on Flat Roof*

*Figure 43: Ducting for Roof Top Unit*

## Controls System

An abandoned in-place BMS controls system panel is in the parts storage room. The abandoned system is JCI MetaSys system. The working controls system panel is in the boiler room. The working BMS controls system is JCI Facility Explorer.

*Figure 44: Abandoned BMS Control Panel*

*Figure 45: Working BMS Control Panel in Boiler Room*

## Fire Sprinkler Systems

| Coding / Field Name | Asset Description |
|---|---|
| Fire Sprinkler System | Wet-Pipe Piping, Sprinklers, Pumps, and Valving |
| Condition | 4-Good |
| Quantity | 88,000 SF |
| Unit Cost | $5.00/SF. Total: $440,000 |
| Year in Service | ~2002 with Sporadic Modifications |
| Expected Useful Life (EUL) | ~20 Years for sprinklers. ~40 Years for Piping |
| Remaining Useful Life (RUL) | ~20 Years |
| Location | Entire Facility |
| Basis of Costing | RMS Means |

## Service Entrance

The fire sprinkler system is a wet-pipe sprinkler system. The system is a central system located in the water room. An 8" service lateral immediately reduces to 6" inside the building. A 40hp, double-suction pump provides boosted pressure for the system. A jockey pump maintains pressure. A hose station is located outside the water room. The system has qty (3) risers. There appear to be around qty (6) zones. A Fire Department Connection is located on the opposite side of the building along Thackery St. There is no exterior alarm bell.

*Figure 46: Fire Protection Service in the Water Room*


*Figure 47: Fire Department Connection*

*Figure 48: Hose Station Exterior to the Water Room*

## Risers and Sprinklers

The Risers for the zones appear rather new. There are new flow switches and tamper switches in place. The riser check assemblies appear in good condition.

*Figure 49: Fire Sprinkler Risers*

All sprinklers appear to be original to the building and appear in good, working order. Recessed sprinklers are in the office portion. Uprights and drops are in other areas. The mezzanine overlooking the garage floor was equipped with window sprinklers on both sides of the windows. The piping is steel, which is in fair condition.

*Figure 50: Recessed Sprinkler in Office*

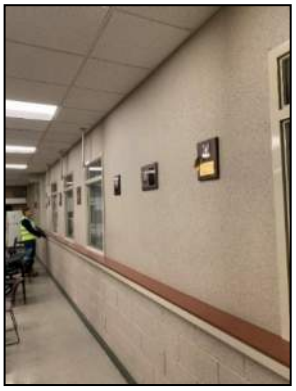


*Figure 51: Window Sprinklers in Breakroom*

*Figure 52: Window Sprinklers in Breakroom*

Electrical Systems

Electrical Service and Distribution

| Coding / Field Name | Asset Description |
|---|---|
| 480V Service and Distribution | Switchboard, Distribution panelboards, dry-type transformers and associated panelboards |
| Condition | Electrical Service/Distribution: 4 – Good, Rest of System: 4 – Good |
| Quantity | Electrical Service/Distribution ~<br>Office: 8,450 square feet<br>Garage: 42,000 square feet |
| Unit Cost | Office : $2.80/square foot for ~ $23,660<br>Garage : $.63/square foot for ~ $26,460 |
| Year in Service | Electrical Service ~20 years, Other System Components ~20 years |
| Expected Useful Life (EUL) | Electrical Service/new panelboards ~20-30 years, Other System Components ~20-30 years |
| Remaining Useful Life (RUL) | Electrical Service ~ 0-10 years, Other System Components ~0-10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Electrical Room. See comments for further details. |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

A 1,600A, 480V service installed approximately 20 years ago. The service is fed from the pad mounted transformer (South side of the building) (*Figure 2*) and enters the main switchboard (*Figure 1*) located in the Electrical Room. Building is served by a 265KW backup diesel generator (Figure 4). Many older panelboards are deteriorating and/or are damaged or abandoned in place (*Figure 3*).

**Pictures:**

*Figure 1: Switchboard (277/480V)*

*Figure 2: Transformer*


*Figure 3: Abandoned/Damaged Panelboard*

*Figure 4: Generator*

## Lighting, Branch Wiring, and Associated Controls

| Coding / Field Name | Asset Description |
|---|---|
| Garage Lighting System | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 – Good |
| Quantity | Garage Lighting System ~ 42,000 square feet |
| Unit Cost | $11.97/square foot for ~ $502,740 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 10 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 10 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First Floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

LED high-bay fixtures with integral occupancy sensors (*Figure 1*) are installed throughout the first-floor garage space. Older fluorescent fixtures were left in place (*Figure 2*). All exit signs throughout the space are illuminated and appear to be completely operational.

**Pictures:**

*Figure 1: LED High-bay fixtures with integral occupancy sensor*

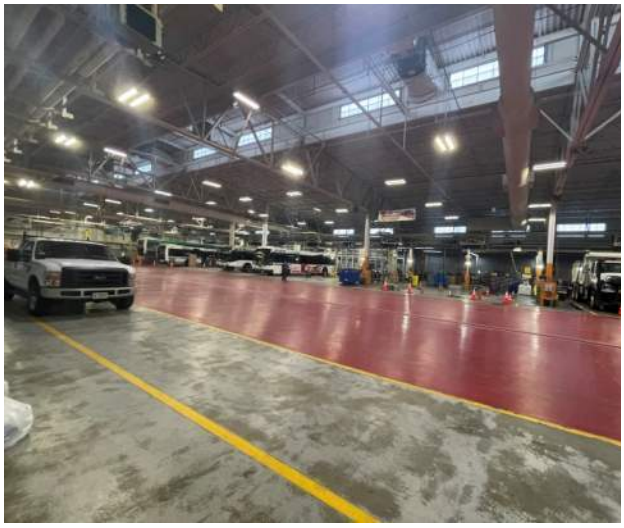


*Figure 2: LED High-bay and fluorescent fixtures*

| Coding / Field Name | Asset Description |
|---|---|
| Office/Storage Space | Lighting, Branch Wiring, and Associated controls |
| Condition | 4 - Good |
| Quantity | Office/Storage Lighting System ~ 8,450 square feet |
| Unit Cost | $21.29/square foot for ~ $179,900.50 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 7 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 13 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | First and second floor |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Storage/office spaces consist of LED 2'X2' and 2'X4' troffer fixtures (Figure 3) and linear LED fixtures controlled by a combination of toggle switches (Figure 7), ceiling mounted occupancy sensors (Figure 4), and wall switch occupancy sensors (*Figure 8*). Exit signs were observed throughout the space and appear to be fully operational (*Figure 5*). Emergency battery units were observed in some storage/mechanical/electrical rooms. In addition to emergency battery units, lighting fixtures throughout the office space are on generator backup. Fluorescent fixtures (Figure 6) are still operational throughout the office space and storage areas.

**Pictures:**

*Figure 3: LED 2'X2' troffer fixtures*

*Figure 4: Ceiling mounted occupancy sensor*


*Figure 5: Exit sign*

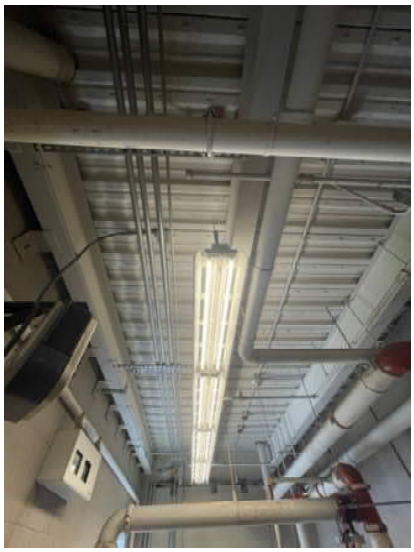


*Figure 6: Fluorescent Fixtures*

*Figure 7: Toggle switches*

*Figure 8: Wall switch occupancy sensor*

| Coding / Field Name | Asset Description |
|---|---|
| Exterior Lighting System | Exterior wall pack fixtures, emergency remote heads |
| Condition | 3 – Adequate |
| Quantity | Exterior Lighting System |
| Unit Cost | ~ $7,500 |
| Year in Service | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Expected Useful Life (EUL) | Lighting, Branch Wiring, and Associated controls ~ 20 years |
| Remaining Useful Life (RUL) | Lighting, Branch Wiring, and Associated controls ~ 0-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Building Exterior |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Wall packs (*Figure 9*) are installed along perimeter of building. Emergency wall packs (*Figure 10*) are located above doors for emergency egress lighting.

**Pictures:**

*Figure 9: Exterior Wall pack*


*Figure 10: Emergency Wall packs*

## Fire Alarm System

| Coding / Field Name | Asset Description |
|---|---|
| Fire Alarm System | Fire Alarm Control Panel, Battery Cabinet, and Fire Alarm Devices and associated wiring |
| Condition | 5 – Excellent |
| Quantity | Fire Alarm System ~ 50,450 square feet |
| Unit Cost | $.50/square foot for ~ $22,225 |
| Year in Service | Fire Alarm Control Panel ~ 6 months, Other System Components ~20 years |
| Expected Useful Life (EUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~20 years |
| Remaining Useful Life (RUL) | Fire Alarm Control Panel ~ 15 years, Other System Components ~ 1-5 years; Estimation contingent on equipment meeting the American National Standards Institute/International Electrical Testing Association (ANSI/NETA) Standard for Maintenance Testing Specifications. |
| Location | Second Floor Security Room above entrance |
| Basis of Costing | RMS Means Data with Contingencies Added |

**Observations/Comments:**

Fire alarm system (*Figure 1*) consists of an addressable Fire Alarm Control Panel (Edwards EST-3) and associated devices manufactured by Edwards. Connection to local fire department is through a Gamewell Master Box. CO detection system is installed throughout the garage space (Figure 2). Fire Alarm system and associated devices and wiring appear to be in working condition, however some devices are approaching their expected useful life based on industry standards.

**Pictures:**

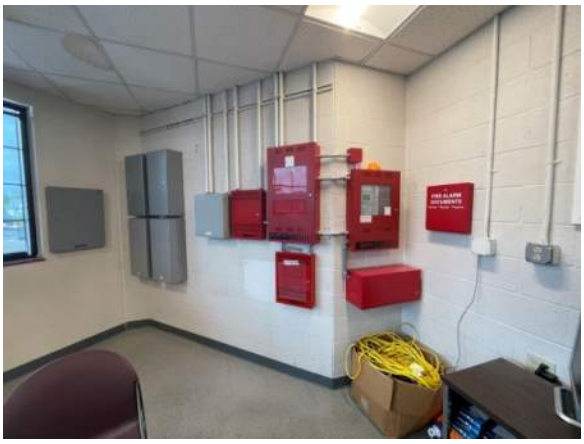


*Figure 1: Fire Alarm System*


*Figure 2: Amber Strobe for CO detection system*

# E. Equipment

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Vehicle lifts |
| Condition | 3 |
| Quantity | 5 |
| Unit Cost | $175,000 |
| Year in Service | 2009 |
| Expected Useful Life | 20 years |
| Remaining Useful Life | 10 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Bus wash |
| Condition | 3 |
| Quantity | 2 |
| Unit Cost | $99,172 |
| Year in Service | 2009 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 15 years, Estimated, Based on Date of Observation |
| Location | Building interior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

# G.Site

| Coding / Field Name | Asset Description |
|---|---|
| System Name | Site work and parking lot |
| Condition | 3 |
| Quantity | ~ 90,857.75 sq. ft. |
| Unit Cost | $478,809.60 |
| Year in Service | 2009 |
| Expected Useful Life | 25 years |
| Remaining Useful Life | 5 years, Estimated, Based on Date of Observation |
| Location | Building Exterior |
| Basis of Costing | Square Foot Costs with RSMeans Data 2022 – 43rd Edition |

**Pictures:**