



Fair Haven
New Jersey

Department of Public Works (DPW)

FACILITY RESEARCH & ANALYSIS W/ PROPOSED ACTION PLAN

09 JANUARY 2023

Executive Summary

A structural assessment of the roof, footings, and HSS columns will determine if we must build a new structure or have an option to renovate the existing

Irrespective of a new structure or renovation, there are 3 (three) critical requirements requiring immediate attention, resulting in a Renovation, per the NJ Rehabilitation Subcode (applies to any building in NJ, per NJ Department of Community Affairs)

An additional three 3 (three) major requirements exist, in need of mid-term remediation, resulting in a Renovation, per the NJ Rehabilitation Subcode

Possible Areas of Environment Concern (AOC) and/or Recognized Environment Conditions (REC) are associated with 1 Allen Street, and, depending on the size of renovation and/or new build, require remediation and/or further investigation

The maturity of the DPW demonstrates an increased requirement to have a standardized facility to support Fair Haven's needs and essential services

The Best Practice for a DPW is to store certain vehicles and equipment inside year-round, proper office/operational space for each component, salt shed, police impound, proper storage, and onsite fuel pumps

A review of DPW in surrounding areas shows a mix of locations in residential and light industrial areas, varying sizes, and a variety of mitigations to blend structures accordingly based on location

To shift the DPW to a new location takes on average 3-5 years, a viable location to support each component of DPW, and site remediation (to include addressing AOC/RECs) to prepare original site for sale

- A previous assessment (informal – not a 3rd party) by the Borough Planner did not identify a viable alternative site

Critical Requirements – Life & Safety

Roof

- The current roof is rated at 20 years, and reached its end of life in 2016
- It is currently deteriorating rapidly and failing, to include falling inside the building
- A structural engineer was assessed required to determine if the roof is structurally sound

Footings

- There are footings in question regarding structural integrity
- A structural engineer was assessed required to determine if the footings are structurally sound

Life & Safety

- There is no proper egress (or windows) for the DPW employees in the upstairs office location (4 employees)
- There is no fire sprinkler system in the DPW (a fire sprinkler system is not a NJ statute requirement)

Major Requirements – Compliance, Space & Stormwater Management

Stormwater Management

- There is no stormwater management system in place to proactively distribute water around DPW
 - Standard: Proper stormwater management system (water quantity (how much) discernment from water quality (how clean)) exists to ensure water can flow away from a commercial building

Compliance

- The 3rd Mechanics Bay is not up to code, and is not useable, since it still maintains an oil change pit
- Half of the DPW's floor is unlevel and not to standard presenting both a compliance and safety issue
 - The current floor leads to stagnant water issues, as well as an inability to fully service vehicles during snowstorms

Space Reduction/Reallocation

- There are 5 temporary storage containers onsite, with containers' purposes range from storage to extra workspace
 - Best Practice: No commercial containers in a residentially located DPW building; workers do not work in a commercial shipping container
- Used oil is currently stored inside
 - Best Practice: Store used oil and other vehicular fluids in a outside environment
 - Per [OSHA](#), motor oil is combustible liquid (flashpoint of oil is 250-450°F)

Potential Areas of Environment Concern (AOC) and Recognized Environment Conditions (REC) Overview

In Q4 2017, Maser Consulting P.A. (Maser Consulting) performed a Preliminary Assessment (PA) and Phase I Environmental Site Assessment (ESA) of the DPW facility

The objective of the assessment was to identify possible AOC and REC

To achieve this objective, the assessment included a review of historical records and mapping and regulatory databases followed by visual observations

The assessment was conducted in general accordance with the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (N.J.A.C.7:26E) and the American Society for Testing and Materials (ASTM) Standard Practice for Phase I Environmental Site Assessments (E1527-13)

In total seven (7) potential AOC/REC were identified, five (5) of which will require further investigation pending extent of renovation/new build

- Do Not Require Attention & Further Investigation
 - Former Underground Storage Tanks (UST)
 - Current Aboveground Storage Tanks (AST)
- Do Require Attention & Further Investigation
 - Stormwater Drywells
 - Heating Oil Tank
 - Hydraulic Lift Area
 - Hazardous Material Storage & Handling Area
 - Floor Drains (Sealed)

DPW Background

DPW is located at 1 Allen Street (Block 44, Lot 2) and is approximately 2.27 acres in zone PB (Public Use)

DPW consists of 10 full-time employees, which include two (2) foreman, building maintenance technician, and mechanic

Over the course of the past 10-15 years, the DPW matured to support Fair Haven's needs

- Essential services include recycling; maintenance of parks, streets, vehicles, and buildings and ground; brush and leaf collection; and snow removal

The current structure was erected circa 1974

The discussion regarding renovating or building a new DPW structure started in 2014

Fair Haven's one out of the three shared services (Construction Department, Rumson) interface within the Department of Engineering and DPW organization

- Other two shared services are IT (RFH) and CFO & Tax Collector (Middletown)

DPW by the Numbers

104 roads to sweep

27 miles of road

250 catch basins to monitor (plus outfall pipes, creeks, and other tributaries)

26 centerline miles and 5,960 square feet of sidewalk to remove snow and ice

100 acres of public open space, including twenty (20) distinct areas in town

45 vehicles, with supporting equipment

7 baseball fields, multiple multi-purpose courts & fields, and four (4) playgrounds

Department of Engineering & Public Works

Organizational Structure Overview

Shared Services (Interface)

- Construction Department

Engineering

- Statutory (CFM, ADA, SWM)
- Land Development (Grading Reviews, Inspection, Cos)
- Capital Improvements (Design, Grants, Construction Management)
- Consultants (Planner, Engineer, Surveyor, Attorney)

Land Use

- Zoning
- Planning Board
- Zoning Board

Public Works

- Recycling
- Parks Department
- Street Department (Maintain Business District)
- Vehicle Maintenance
- Building Maintenance
- Safety Coordinator

- Waterfront Maintenance

Private Services

- Alarms
- Tree Removal
- Trash Recycling
- Irrigation
- Electrical
- HVAC
- Plumbing
- Joint Insurance Fund (JIF)

Liaison

- Fire Department
- Historic Preservation
- Environment Commission
- Natural Area
- Shade Tree Commission

Special Events (Concert on the Dock, Fireworks, etc...)

DPW Requirements

Requirement	Current Building	Comment
Director of Engineering Office	Yes (shared)	Limited space
Assistant Director of Engineering Office	Yes (shared)	Limited space
Vehicle Maintenance Office	Yes	
Building Maintenance Office	Yes	
Recycling Coordination Office	No	
Sign Shop	Yes	Currently in outside commercial shipping container
Foremen Office (4 Desks)	Yes	No egress or windows
Break Room / Training Room	Yes	No proper windows for egress out of 2 nd floor
Bathrooms	Yes	
Loft Storage	Yes	Not complete, safety issue (roof, loft integrity)
Vehicle Fluid Outside Storage	No	
Generac	Yes	
Life Safety	No	
2 Mechanic Bays (1 w/ Lift)	Yes	
1 Flex Bay	Yes	
2 Long Building Maintenance Bays	Yes	Seasonal equipment storage, seasonal staging area for operations
1 Short Building Maintenance Bay	Yes	Proper workspace for Sign Shop
Storage	Yes	Fragmented, outside commercial shipping containers
Linen Closet	Yes	
Flex Space (2 Desks)	Yes	
Public Entrance	No	Standard/Best Practice

Cost Comparison – V1 to V2

Goal: Drive fiscal responsibility

New Building		
Date of Estimate	Sub-Total	Reduction
12/20/2022 (Owner Rep)	\$2,489,993.71	37.58%
11/18/2022 (Owner Rep)	\$3,438,728.18	13.80%
6/1/2022 (Architect)	\$3,989,103.00	N/A

Renovation			
	18-Nov-22	20-Dec-22	Reduction
Selective Demolition	\$135,503.50	\$101,311.70	25.23%
Site Work	\$717,254.44	\$220,000.00	69.33%
Building Concrete	\$93,550.00	\$51,488.89	44.96%
Masonry	\$28,200.00	\$0.00	100.00%
Steel	\$27,500.00	\$54,000.00	-96.36%
Carpentry	\$485,045.00	\$390,065.00	19.58%
Thermal and Moisture Protection	\$185,995.00	\$185,460.00	0.29%
Doors and Hardware	\$206,130.00	\$165,100.00	19.90%
Finishes	\$73,925.00	\$66,750.00	9.71%
Specialities	\$5,815.00	\$5,615.00	3.44%
Equipment	\$150,000.00	\$5,000.00	96.67%
Furnishings	\$43,800.00	\$43,800.00	0.00%
Casework and Millwork	\$5,250.00	\$6,375.00	-21.43%
Special Construction	\$0.00	\$0.00	0.00%
Conveying	\$0.00	\$0.00	0.00%
Sprinkler	\$94,890.00	\$0.00	100.00%
Plumbing	\$53,980.00	\$29,980.00	44.46%
HVAC	\$319,935.10	\$244,455.00	23.59%
Electrical	\$275,678.40	\$179,525.60	34.88%
Total	\$2,902,451.44	\$1,748,926.19	39.74%

New Build			
	18-Nov-22	20-Dec-22	Reduction
Selective Demolition	\$164,186.40	\$164,186.40	0.00%
Site Work	\$741,787.78	\$281,433.33	62.06%
Building Concrete	\$195,405.50	\$207,405.50	-6.14%
Masonry	\$28,200.00	\$0.00	100.00%
Steel	\$274,210.00	\$140,000.00	48.94%
Carpentry	\$64,920.00	\$72,720.00	-12.01%
Thermal and Moisture Protection	\$12,915.00	\$12,380.00	4.14%
Doors and Hardware	\$136,600.00	\$97,000.00	28.99%
Finishes	\$73,925.00	\$73,050.00	1.18%
Specialities	\$5,815.00	\$5,615.00	3.44%
Equipment	\$150,000.00	\$7,500.00	95.00%
Furnishings	\$44,000.00	\$44,000.00	0.00%
Casework and Millwork	\$4,500.00	\$4,500.00	0.00%
Special Construction	\$703,920.00	\$703,920.00	0.00%
Conveyin	\$0.00	\$0.00	0.00%
Sprinkler	\$94,890.00	\$0.00	100.00%
Plumbing	\$101,000.00	\$71,000.00	29.70%
HVAC	\$311,235.10	\$332,217.88	-6.74%
Electrical	\$331,218.40	\$273,065.60	17.56%
Total	\$3,438,728.18	\$2,489,993.71	27.59%

Total Cost Comparison

Renovation vs New Build w/ Standard Cost Analysis

New Building		
Date of Estimate	Total	Reduction
12/20/2022 (Owner Rep)	\$4,389,588.37	35.45%
11/18/2022 (Owner Rep)	\$5,798,534.00	14.73%
6/1/2022 (Architect)	\$6,800,000.00	N/A

	Renovation - Dec - PCM	Renovation - Dec - Variation
Sub-Total	\$1,748,926.19	\$1,748,926.19
General Conditions	\$1,923,818.81	\$174,892.62
Overhead & Profit	\$2,116,200.69	\$192,381.88
Design Contingency	\$2,327,820.76	\$192,381.88
Soft Costs	\$2,793,384.91	\$384,763.76
Bond & Insurance	\$2,863,219.53	\$48,095.47
Escalation (Bid Q2)	\$2,949,116.12	\$57,714.56
Total	\$2,949,116.12	\$2,799,156.37

	New - Dec - PCM	New - Dec - Variation
Sub-Total	\$2,489,993.71	\$2,489,993.71
General Conditions	\$2,738,993.08	\$248,999.37
Overhead & Profit	\$3,012,892.39	\$273,899.31
Design Contingency	\$3,464,826.25	\$410,848.96
Soft Costs	\$4,157,791.50	\$547,798.62
Bond & Insurance	\$4,261,736.28	\$68,474.83
Escalation (Bid Q2)	\$4,389,588.37	\$82,169.79
Total	\$4,389,588.37	\$4,122,184.59

Renovation Cost
\$2.799MM to \$2.949MM

32% - 33% Increase

New Building Cost
\$4.122MM to \$4.390MM

Additional Cost Savings Notes

- Depending on the phasing of the project, DPW employees could offset costs, to include Demolition and Soft Costs, pending availability and prioritization
- Multiple cost saving measures already taken place, with DPW employees conducting an initial USD \$50K in demolition work to date
- Certain components of the cost might not be realized or a critical need, to include design contingency (\$192K), HSS column work (\$20K), repaving (\$50K), and new garage bay doors (\$75K)

Suggested Milestones & Next Steps

09 January 2023 Special Meeting

- Confirm Structural Engineer assessment forthcoming to confirm renovation is possible
- Initiate process to bid new roof (minimus cost, max gain) (include with intent to replace phase 2 of roof at Borough Hall)
- Initiate process to generate a list of Architects to produce renovation drawings (minimus cost, max gain)
- Initiate project to replace Fuel Tanks that are EOL
- Begin early discussions with Licensed Site Remediation Professional (LSRP) to determine any impact to scope

January/February 2023

- Structural engineer assesses the integrity of the roof, footing, and HSS column in question
- Receive a list of architects to bid project, with expedited milestones
- Initiate process to generate design drawings accordingly (enhance Residential aesthetics to support location of DPW)
- Review roof bid and award accordingly
- DPW staff assist in initial assessments for design work

SWAG Milestones

- March/April 2023
 - Update Design Drawings Received
- April/May 2023
 - Bid Project
- May/June 2023
 - Award Project

Appendix

AOC & REC Overview

Stormwater Drywells

- Two stormwater drywells are located north and south of the DPW building.
- These stormwater drywells are considered an REC/AOC, as the potential exists for the release of petroleum products into the ground and/or groundwater.

Heating Oil Tank

- The drawing “Replacement of Fuel Tanks” (prepared by T&M Associates dated August 1993) shows (in addition to the USTs to be removed) a “Fuel Oil Tank” adjacent to the oil-water separator.
- Since the DPW building is now heated by natural gas, this may be an unregulated heating oil tank used prior to natural gas.
- This heating oil tank is considered an REC/AOC, as the potential exists for the release of petroleum products into the ground and/or groundwater.

Hydraulic Lift

- A hydraulic lift is in the truck bays area of the DPW building.
- This hydraulic lift was located near floor drains.
- This hydraulic lift is considered an REC/AOC, as the potential exists for the release of petroleum products into the ground and/or groundwater on the subject property.

Hazardous Material Storage & Handling Area

- Automotive fluids including oils and coolants are present in drums in the truck bays area.
- The drums were stored on shelves and directly on the concrete floor near floor drains.
- This hazardous materials storage is considered an REC/AOC, as the potential exists for the release of petroleum or chemical products into the ground and/or groundwater.

Floor Drains

- Four floor drains are inside the truck bays area of the DPW building.
- These floor drains were plugged with concrete.
- Floor drains are considered an REC/AOC, as the potential exists for the release of petroleum or chemical products into the ground and/or groundwater.

State of NJ Department of Community Affairs

CODE (as adopted by NJAC 5:23)	Adoption Date
<p>BUILDING SUBCODE (NJAC 5:23-3.14)</p> <p>International Building Code/2021 (IBC w/ NJ edits from 3.14 coming Jan 2023)</p> <p>* Corrected sections (ICC errata)</p> <p>Other referenced I-Codes (IFC/2021; ISPSC/2021; etc.)</p> <p>Other referenced ICC Standards (ICC/ANSI A117.1-2017; ICC 300-2017; etc.)</p>	<p>Sept. 06, 2022</p>
<p>REHABILITATION SUBCODE (NJAC 5:23-6)</p> <p>NJUCC, Subchapter 6</p>	<p>Updated as Necessary (current as of 02/16/21)</p> <p>Proposed for update 09/06/22</p>

Flashpoint of Common Vehicle Fluids

Fluids	Flashpoint [12] °F	Autoignition Temperature [13] °F
Automatic Trans. Fluid [2, 4]	302-383	410-417
Brake Fluid [2, 4, 10, 11]	210-375	540-675
Compressor Oil (PAG and ester) [4, 8]	392-500	410-714
Coolant		
Ethylene Glycol (100%) [1, 2, 4]	232-260	725-775
Ethylene Glycol (90%) [2]	270	N/A
Propylene Glycol (100%) [1, 4]	210-230	700
Diesel Fuel [1, 2, 3, 4]	100-204	350-625
Ethanol (in gasohol) [1, 3, 5]	55	685
Gasoline (50-100 octane) [1, 2]	-36 to -45	536-853
Gasoline (unleaded) [4]	-45	495-833
Engine Oil (conventional and synthetic) [1, 2, 4]	300-495	500-700
Methanol (in windshield fluid) [1, 2, 3, 4, 5,14]	52-108	725-878
Power Steering Fluid [2, 4]	300-500	500-700
Refrigerants		
R134a 140 KPa (5.5 Psig) [7]	350	
R134a [7,15,16]	Not flammable at ambient temp. and atmospheric pressure	1370-1418
Freon 12 [17]		>1382
HCFC-22 [9]		Flammable at 60 psig
Hydrocarbon Refrigerants	Flammable	Flammable
Starter Fluid (ethyl ether) [5,18]	-49	320

Definitions

[Life Safety System](#): Any interior building element designed to protect and evacuate the building population in emergencies, including fires and earthquakes, and less critical events, such as power failures.

[Fire Sprinkler System](#): A fire sprinkler or sprinkler head is the component of a fire sprinkler system that discharges water when the effects of a fire have been detected, such as when a predetermined temperature has been exceeded.

[REC – Recognized Environmental Condition](#): A simplified definition of a REC is any occurrence whereby: 1). actual pollution of the environment is occurring; 2). the threat of pollution of the environment occurs; or 3). there is a preponderance of evidence suggesting possible pollution of the environment.

[AOC – Area of Concern](#): An area at a site where contamination is identified or suspected.

[Centerline](#): A line along the center of a road or highway dividing it into separate sections for traffic moving in opposite directions.

Updated NJ Rehabilitation Subcode

Traditionally, the New Jersey Uniform Construction Code has made the requirements that are applicable to new buildings also apply to buildings whose use is changed; applicable to buildings undergoing rehabilitation with the extent of the requirements depending on the amount of money being spent on the building; and to some extent applicable to existing buildings that have an addition constructed.

Buildings whose use was changed and buildings receiving rehabilitation costing more than 50 percent of the replacement cost of the building were required to comply with all the provisions of the Uniform Construction Code for new buildings.

This subcode takes a new approach. The requirements that apply to a project are based upon the type of work being done rather than on the extent of the work.

There is only one exception to this rule. In the case of reconstruction work, as the term reconstruction is defined in this subcode, there are some requirements which must be met when the project is a large one in floor area.

Rehabilitation Subcode Definitions

Repair

- The restoration to a good or sound condition of materials, systems and/or components that are worn, deteriorated or broken using materials or components identical to or closely similar to the existing.

Renovation

- The removal and replacement or covering of existing interior or exterior finish, trim, doors, windows, or other materials with new materials that serve the same purpose and do not change the configuration of space. Renovation shall include the replacement of equipment or fixtures.

Alteration

- The rearrangement of any space by the construction of walls or partitions or by a change in ceiling height, the addition or elimination of any door or window, the extension or rearrangement of any system, the installation of any additional equipment or fixtures and any work which reduces the loadbearing capacity of or which imposes additional loads on a primary structural component.

Reconstruction

- Any project where the extent and nature of the work is such that the work area cannot be occupied while the work is in progress and where a new certificate of occupancy is required before the work area can be reoccupied. Reconstruction may include repair, renovation, alteration or any combination thereof. Reconstruction shall not include projects comprised only of floor finish replacement, painting or wallpapering, or the replacement of equipment or furnishings.

Change of Use

- Change from one use to another use in a building or tenancy or portion thereof.

Additions

- Increase in the footprint area of a building or an increase in the average height of the highest roof surface or the number of stories of a building.

Life Safety

Life safety is addressed in a number of regulations, codes, and consensus standards. For example, OSHA addresses life safety concepts in [Subpart E of 29 Code of Federal Regulations 1910](#) (including 1910.33 thru 1910.37). OSHA's life safety standards are limited in scope and mostly focus on exit routes, lighting, and marking of exits, but they include references to additional non-OHSA standards as an alternative means of compliance. In 29 CFR 1910.35, OSHA "will deem an employer demonstrating compliance with the exit-route provisions of National Fire Protection Association 101, Life Safety Code, 2009 edition, or the exit-route provisions of the International Fire Code, 2009 edition, to be in compliance with the corresponding requirements in 1910.34, 1910.36, and 1910.37."

Life safety is also addressed in the [International Building Code \(IBC\)](#) and [International Fire Code \(IFC\)](#), which are often adopted by local authorities having jurisdiction (such as fire marshals and building code officials). The most prominent consensus standard for life safety is the [National Fire Protection Association 101: Life Safety Code](#). Some fire marshals and other authorities having jurisdiction have adopted the Life Safety Code as a jurisdictional code.