



Town of Duxbury DPW Operations Center



Feasibility Study - Update Presentation
January 10, 2022

Town of Duxbury

DPW Operations Center

Agenda |

- Public Works Responsibilities
- Why does the Town need a new facility
- What is proposed & costs
- What are the benefits of a new / improved facility
- Questions / comments

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DPW Operations Center

Public Works Responsibilities

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Department of Public Works (DPW) Operating Divisions

- Highway
- Lands & Natural Resources
- Water & Sewer
- Vehicle Maintenance
- Administration
- Cemetery & Crematory
- Transfer Station
- Animal Control
- Central Building



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DPW Operations Center

The DPW touches the lives of the residents everyday by maintaining the infrastructure that the community relies on including...

• **Highway**

- 110 miles of road
- Sidewalks
- Stormwater (drainage) systems
- Town landings
- Catchbasin cleaning & repair
- Street sweeping
- Roadway line painting
- Street signs

• **Lands & Natural Resources**

- Urban forestry management & roadside mowing along 110 miles of road
- Athletic field maintenance (including 13 irrigation systems)
- Open space / conservation land
- Parks
- Trash removal at all open space
- Beach handicap access ramp
- Municipal building landscape maintenance (10 buildings)
- Maintenance of Town Wide fuel depot

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DPW Operations Center

The DPW touches the lives of the residents everyday by maintaining the infrastructure that the community relies on including...

- **Water & Sewer**

- 130 miles of water mains
- 1,100 hydrants
- 5,700 service connections
- 12 water sources providing average 2 million gallons per day
- Two water storage tanks (1 M gallon and 2 M gallon)
- 50 homes on three (3) shared septic systems
- Operation and maintenance of collection and treatment for school campus
- 130 homes on Gurnet Road sewer system

- **Vehicle Maintenance**

- Maintain Town owned vehicles and equipment for:
 - All DPW Divisions
 - Police
 - Harbor Master
 - Fire Department
 - Conservation
 - Facilities
 - Animal Control
 - Inspectional Services

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The DPW touches the lives of the residents everyday by maintaining the infrastructure that the community relies on including...

On call 24 hours a day to handle incidents & emergencies including:

- Snow and ice removal operations
- Hurricane / windstorm cleanup
- Flooding
- Removal of road hazards
- Oil spills / accidents
- Emergency road repairs
- Emergency response / consequence management
- The support of other emergency departments



8:09 AM - 2 Mar 2018 from Duxbury, MA



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Public Works agencies are considered First Responder and the facilities must support this important role:



Public Works
THE FIRST RESPONDERS WHO ARE THERE
UNTIL THE EMERGENCY IS OVER

“Since the Fall of 2009 DPW’s have been classified as first responders under U.S. Department of Homeland Security’s (DHS) Emergency Services Sector Coordinating Council’s Sector Specific Plan”

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What does the DPW do for the Community



**APWA adopts national Public Works
First Responder symbol**

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Why Does the Town Need a New Facility?

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Why does the Town need a new Public Works facility?

- Facilities are more than 50 years old
- Responsibilities have increased significantly over the years, but the facilities have not
- The facilities no longer serve the needs of the Town
- Facilities do not meet current codes
- Efficiency of operations and employee safety are negatively impacted



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Why does the Town need a new Public Works facility?



Buildings have exceeded their useful life

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Employee Support Spaces



Inadequate basic employee support spaces – Lockers are located in the garage

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Employee Support Spaces



Example of Proper Locker facilities

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Employee Support Spaces

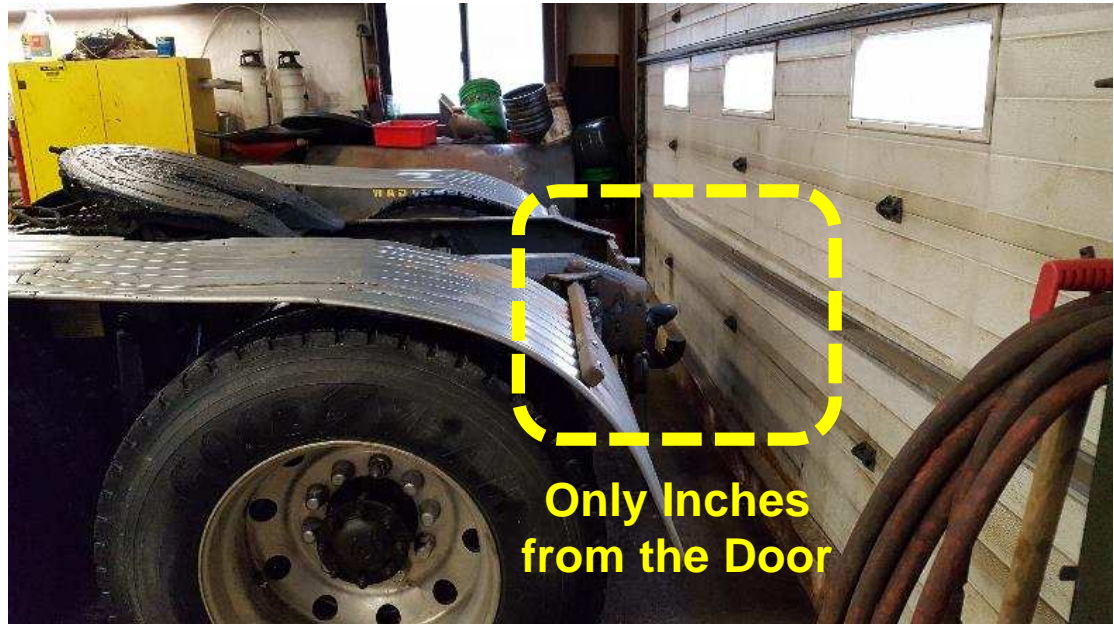


Inadequate basic employee support spaces – Muster / Training / Storm Event Room

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Vehicle Maintenance Area

- Does not meet acceptable industry and safety standards
- Poor ventilation - antiquated mechanical system
- Poor lighting
- Non code compliant shop clearances



Maintenance bays and support space are undersized to safely and efficiently maintain vehicles and equipment

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Vehicle Maintenance Area

- Does not meet acceptable industry and safety standards
- Poor ventilation - antiquated mechanical system
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- Non code compliant shop clearances



Inadequate height to raise a dump body inside for maintenance

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Existing Vehicle / Equipment Storage



Vehicle and equipment storage area is too small to safely and efficiently store the DPW equipment

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Existing Vehicle / Equipment Storage



Vehicle and equipment storage area is too small to safely and efficiently store the DPW equipment

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Unprotected vehicle/equipment storage due to undersized facility



Inadequate storage results in a portion of the multi-million dollar fleet and equipment being stored outdoors

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What is Proposed?

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Programming Results

<u>Space Needs Assessment</u>	<u>Initial Needs</u>	<u>Rev 1</u>	<u>Rev 2</u>
• Office / Office Support	4,634 SF	3,833 SF	3,459 SF
• Employee Facilities	3,696 SF	3,279 SF	3,178 SF
• Workshops	5,566 SF	4,407 SF	3,703 SF
• Vehicle Maintenance	8,994 SF	8,497 SF	8,119 SF
• Wash Bay	1,550 SF	1,376 SF	1,376 SF
• Vehicle & Equipment Storage	19,950 SF	18,354 SF	18,354 SF
Subtotal:	44,390 SF	39,746 SF	38,189 SF

**Revised program
represents a 14%
reduction**

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Programming Results

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Vehicle / Equipment Storage Area is 48% of the facility - so why does the Town need to put the equipment indoors

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Why put the vehicles and equipment indoors.....

- 1. Employee Safety**
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Employee safety is compromised when trying to clear off large equipment in inclement weather conditions as shown above

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Why put the vehicles and equipment indoors.....

1. Employee Safety
- 2. Public Safety**
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Vehicles / equipment which are covered by snow or ice may take longer to respond to the needs of the community which could result in unsafe conditions for the public



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Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
- 3. Protection of Equipment**
4. Stormwater Pollution Control
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Outdoor storage contributes to accelerated equipment deterioration

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Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
- 4. Stormwater Pollution Control**
5. Cost Effective Operations
6. Efficient Operations



Vehicles stored outdoors on the existing site have inadequate environmental control measures



Any drips or spills from vehicles stored inside will be collected in a closed floor drain system preventing them from reaching the environment

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Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
- 5. Cost Effective Operations**
6. Efficient Operations

Cost to Construct Storage Garage

- Construction
- Maintenance
- Operation

VERSUS

Cost Associated with Exterior Storage

- Increased Vehicle Maintenance
- Decrease in Vehicle Life Expectancy
- Non-Productive Labor
- Operational impacts
- Employee Safety & Environmental

**Analyses has shown that it will cost
2 – 3 times more to store equipment
outdoors over the life of a building**

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Why put the vehicles and equipment indoors.....

Case Study for increased vehicle life expectancy associated with storage of equipment indoors

- A Town purchased three large dump trucks
- Town only had room to store one indoors
- Remaining two vehicles were stored outdoors
- Two vehicles stored outdoors were removed from service early due to equipment deterioration. Equipment conditions were so poor that they were sold as scrap.
- The vehicles which was stored indoors **remained in service for three more years** and was in suitable condition when it reached its service life that it was able to be sold at auction



Only room to store one (1) new dump truck indoors



Two (2) vehicles stored outdoors due to limited availability of covered storage

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Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
- 6. Efficient Operations**



No-start conditions or extensive warm-up times in cold weather delaying response times & increasing non-productive labor

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Conceptual Plan

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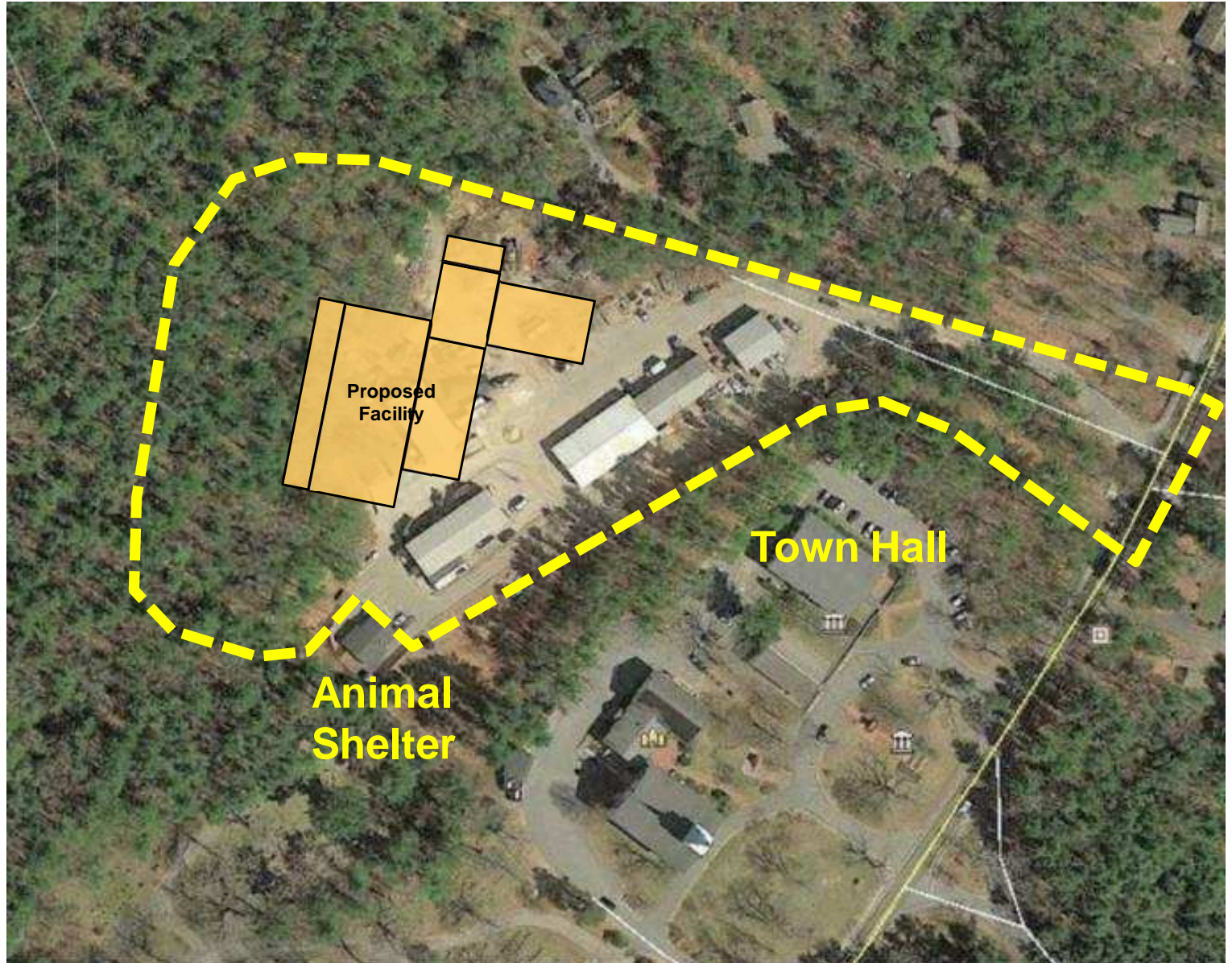


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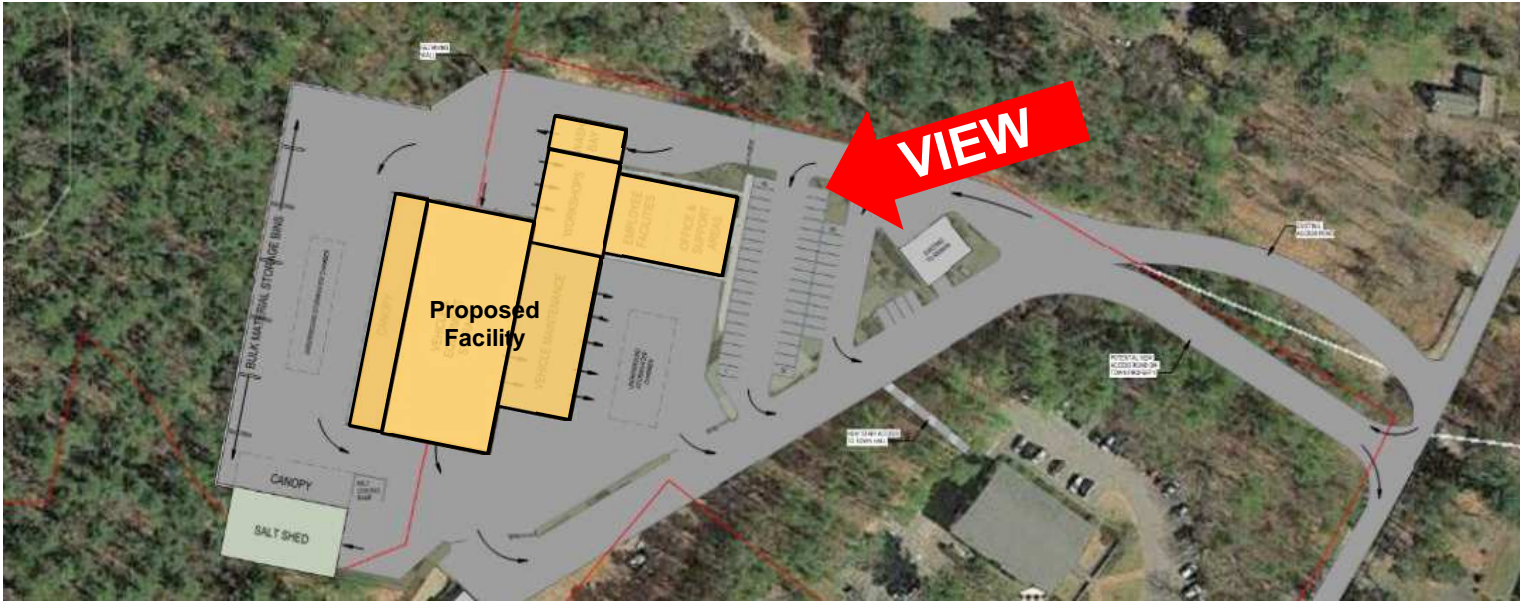


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- Office / Employee Facilities
- Workshops
- Vehicle Maintenance
- Wash
- Vehicle / Equipment Storage
- Equipment Canopy



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Conceptual Rendering of Proposed DPW Operations Building

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Green / Sustainable Opportunities

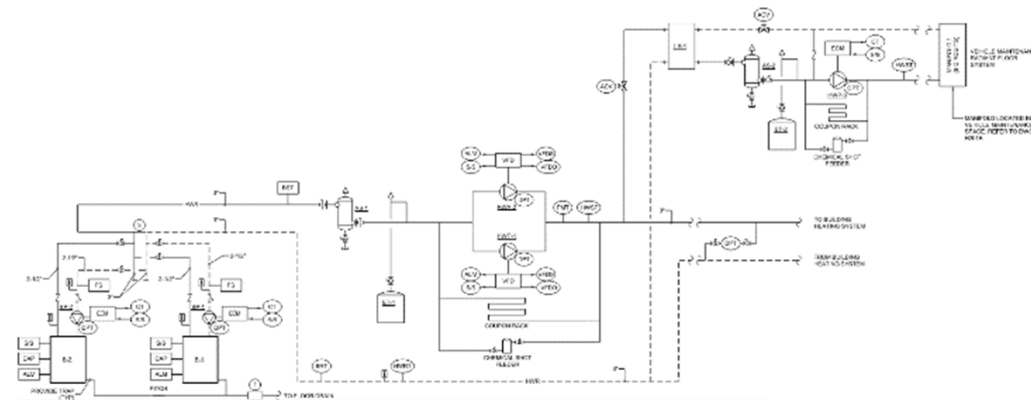
- Photovoltaic ready roof system
- Natural daylighting (reducing use of artificial lighting)
- Rainwater harvesting
- Superinsulation building envelope (exceed energy code by 20 – 35%)



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Green / Sustainable Opportunities

- High-efficiency mechanical systems
- High-efficiency condensing boilers or heat pump hot water heaters for vehicle wash
- High-efficiency variable refrigerant flow (VRF) heat pumps with heat recovery in office / employee support areas
- Air compressor heat recovery
- High-efficiency heat pump domestic hot water system
- Integral web-based building management system with energy optimization strategies

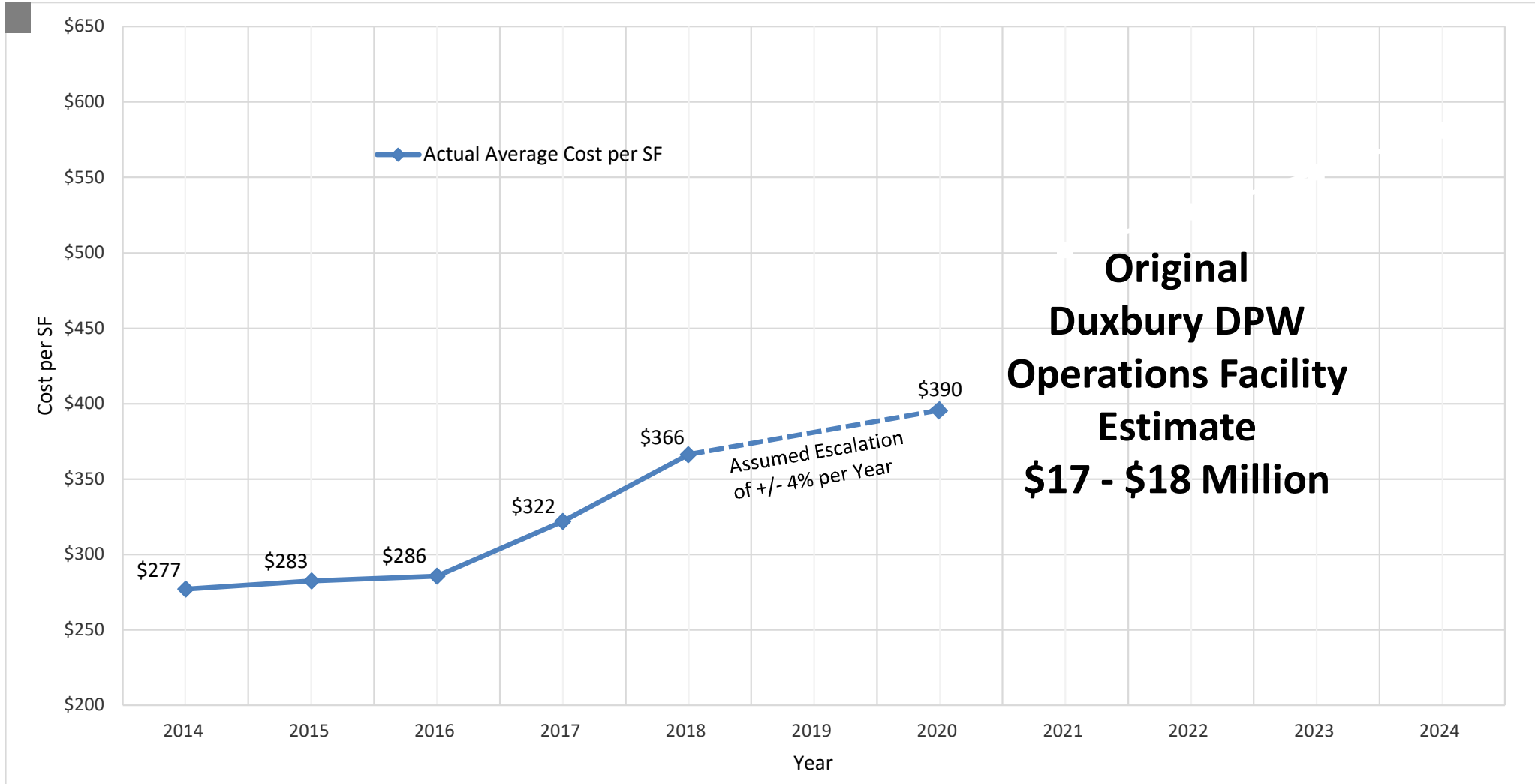


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Anticipated Costs

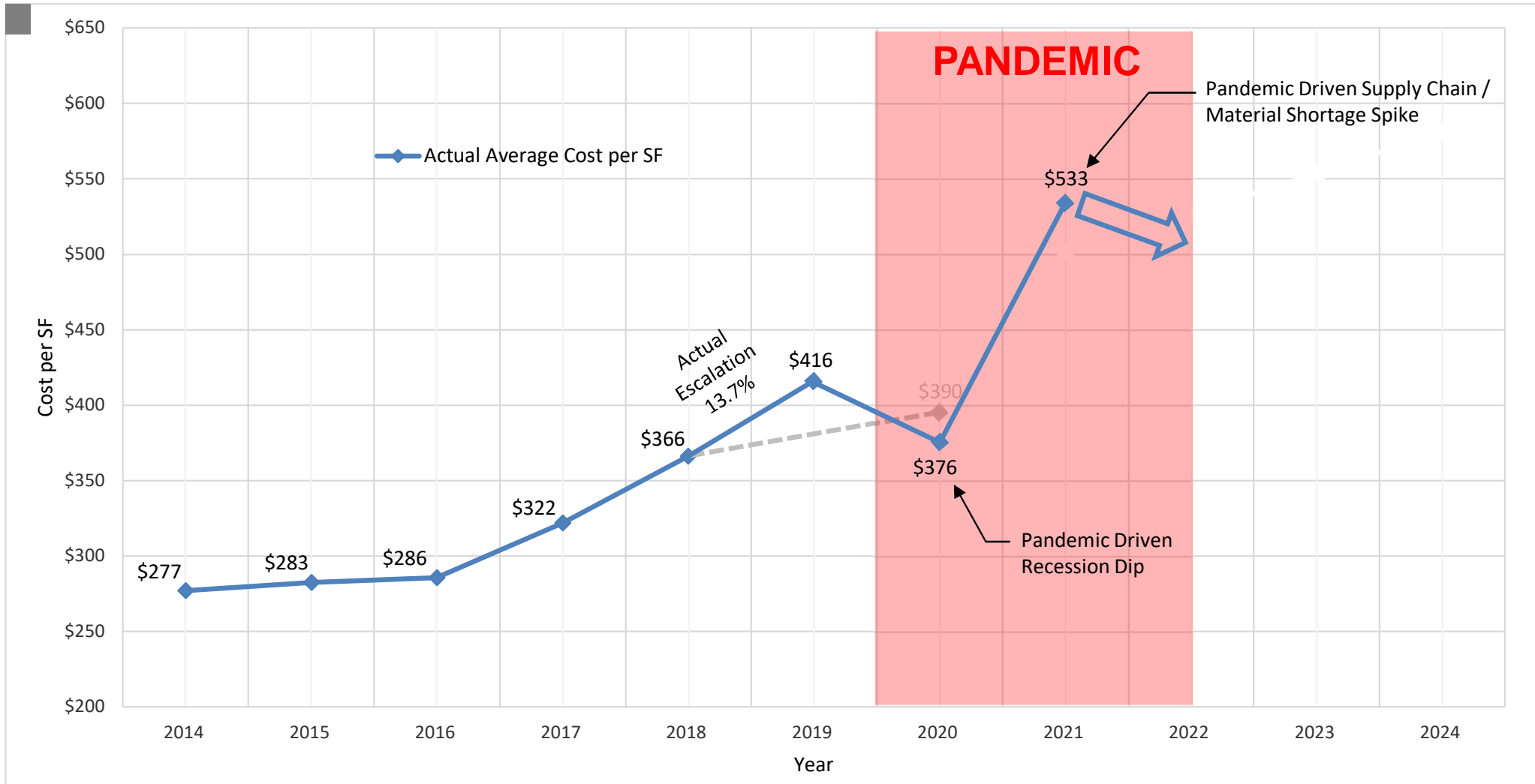
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2018 Project Costs



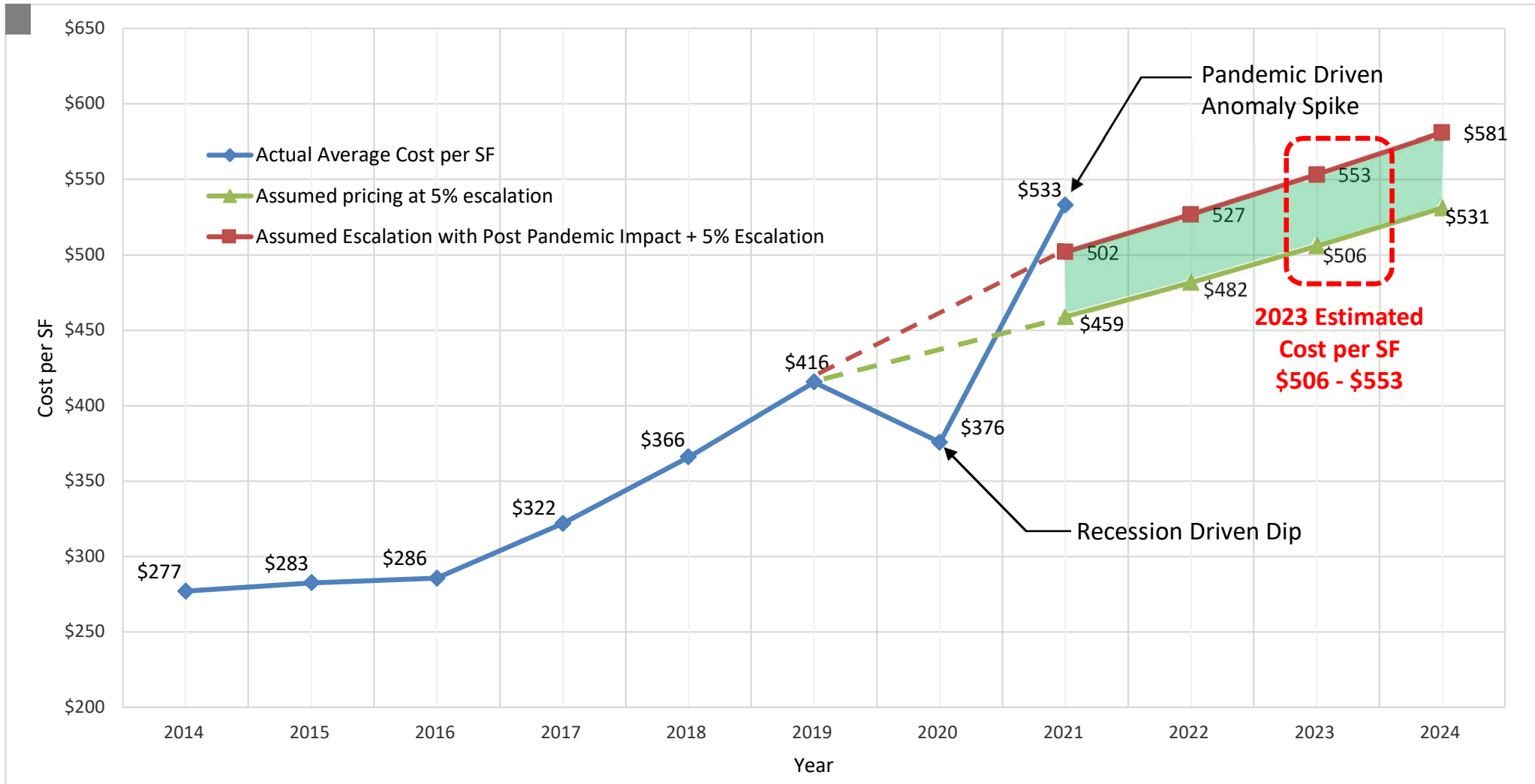
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Historic DPW Pricing (based on actual bid prices)



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Current Project Costs Based on Projected Bid Prices



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DUXBURY DPW ESTIMATED COSTS BASED ON HISTORIC DPW COST DATA

- Duxbury DPW Operations Center (low end range)
 - Construction Cost: 38,189 SF @ \$506 / SF = \$19,300,000
 - Soft Costs: 25% of 19,300,000 = \$4,800,000
 - Total Project Cost: \$24,100,000

- Duxbury DPW Operations Center (high end range)
 - Construction Cost: 38,189 SF @ \$553 / SF = \$21,100,000
 - Soft Costs: 25% of 21,100,000 = \$5,300,000
 - Total Project Cost: \$26,400,000

TOTAL PROJECT COST RANGE: \$24.1 Million - \$26.4 Million

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TOTAL PROJECT COST RANGE: \$24.1 Million - \$26.4 Million

Enterprise & General Fund Breakdown

Facility Costs Attributable to the Water Division (Water Enterprise Fund): **21.8%**
\$5.3 - \$5.8 Million

Facility Costs to be funded by the General Fund: **78.2%**
\$18.8 - \$20.6 Million

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Next Steps

- Present the Project to the Board of Selectmen, Fiscal Advisory, and Finance Committee
- Seek approval to place debt exclusion override question on ballot at Spring Town Meeting in March 2022
- Debt Exclusion Override vote in March 2022
- Design – 8 months
- Bidding – 2 months
- Construction – 18 months

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Benefits of an Improved / Code Compliant Facility

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What are the benefits?

What will an improved / code compliant facility do for the DPW and the community.....

- Code and OSHA compliant and safe work environment for Town employees
- Protect the Town's multi-million dollar investment in vehicles and equipment
- More efficient work space and response times to better serve the public
- New stormwater management system improving overall water quality in the Zone II aquifer area
- Eliminates the need to invest money (band-aids) in the existing substandard facility
- Replaces a facility long past its useful life before it becomes a mandated emergency replacement



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Thank You