
Town of Montague

Public Works Facility Feasibility Study and Design Services



Board of Selectmen / Finance Committee Update Presentation
September 21, 2016

Town of Montague Public Works Facility

Agenda |

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

Town of Montague
Public Works Facility

Public Works Responsibilities

Town of Montague Public Works Facility

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

- Highway maintenance and construction
 - 108 miles of roadway
- Construction & Maintenance of:
 - Parks
 - Playgrounds
 - Public Areas
 - Tree belts
 - Streetscapes
 - Street lighting
- Stormwater system construction and maintenance
- Sewer system construction and maintenance
- Public building maintenance
- Equipment maintenance
- Monitoring of Town's former landfill
- Support of other Town departments
- Administration / Capital Improvement Plan development and implementation



Town of Montague
Public Works Facility

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
- Removal of road hazards
- Flooding
- Road repair
- Emergency response / consequence management
- The support of other emergency departments



Town of Montague Public Works Facility

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”

Town of Montague
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Why Does the Town Need a New Facility?

Town of Montague Public Works Facility

Why does the Town need a new Public Works facility?

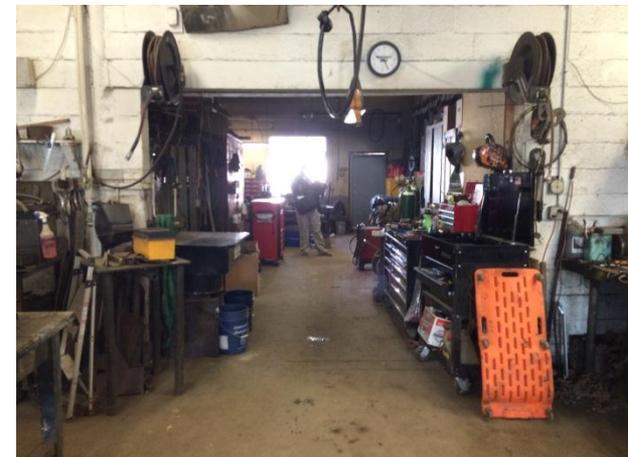
- Existing facility was built in 1948 is more than 60 years old with no significant improvements or modernizations
- Responsibilities have increased significantly over the decades along with vehicles, equipment, and staff
- The facility no longer meets the needs of Public Works/Town and is not code compliant
- Efficiency of operations and employee safety are negatively impacted by the substandard conditions



Town of Montague Public Works Facility

Summary of Deficiencies|

- The existing facility is 68 years old with no significant improvements
- Existing buildings do not comply with today's Building Code
 - No sprinkler system
 - Inadequate egress
 - Not ADA accessible
 - No fire separation
 - Roof system is not capable of meeting today's load requirements (snow load and added sprinkler system loads)
- Toilet facilities do not meet current Plumbing Code
 - Inadequate number of fixtures
 - Inadequate facilities for male/female employees
- Building does not meet current Mechanical Code
 - Inadequate ventilation / electrical systems
 - Non-code compliant maintenance air exchanges
 - Inadequate carbon monoxide detection system
- Operational inefficiencies due to space constraints
 - Inadequate storage areas
 - Inadequate employee facilities
 - Inadequate material storage areas
 - Undersized maintenance area
 - Inadequate file storage
 - Safety concerns for staff



Town of Montague Public Works Facility

Vehicle Maintenance Area

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

No room to lift vehicles



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

Town of Montague Public Works Facility

Why does the Town need a new Public Works facility?

- Vehicle and equipment types and sizes have changed significantly since the facility was constructed



1950's era DPW vehicles



Today's larger multipurpose DPW vehicles

Town of Montague Public Works Facility

Existing Vehicle / Equipment Storage



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

Town of Montague
Public Works Facility

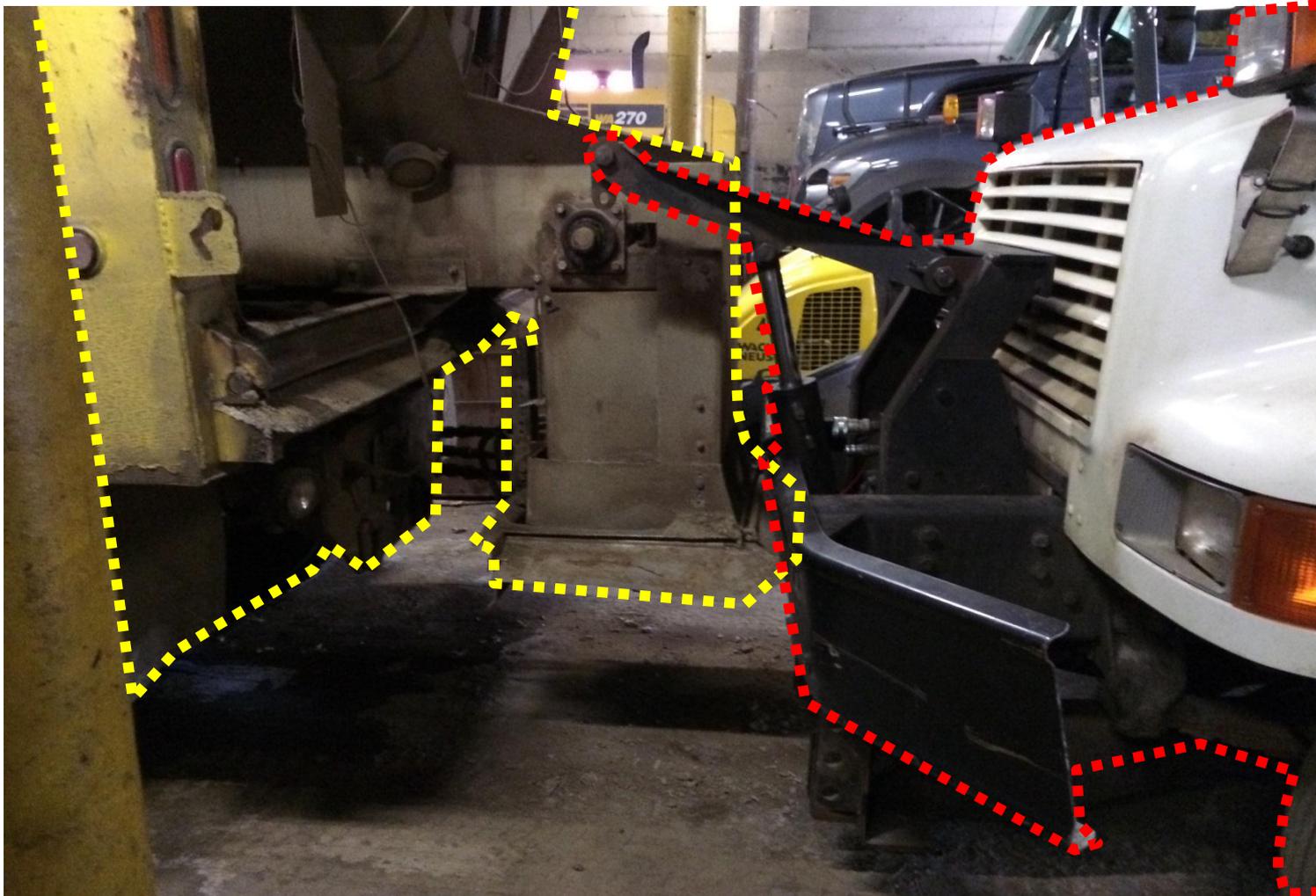
Existing Vehicle / Equipment Storage



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

Town of Montague Public Works Facility

Existing Vehicle / Equipment Storage



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

Town of Montague Public Works Facility

Unprotected vehicle/equipment storage due to undersized facility



As a result, a portion of the multi-million dollar fleet and equipment are stored outdoors due to limited space

Town of Montague Public Works Facility

Non-Code Compliant and Inefficient Working Conditions



This room serves as the break room for 17 staff as well as the storm event room for those long storm events where staff can be working for 24 to 48 hours at a time

Employee Support Spaces are Undersized and Inefficient for Today's Operations

Town of Montague Public Works Facility

Non-Code Compliant and Inefficient Working Conditions



Toilet facilities do not meet code

Employee Support Spaces are Undersized and Inefficient for Today's Operations

Town of Montague Public Works Facility

Non-Code Compliant and Inefficient Working Conditions



Employee lockers are located in a hallway

Employee Support Spaces are Undersized and Inefficient for Today's Operations

Town of Montague Public Works Facility

Potential risks associated with substandard facilities

Town's Fleet of Plows Crushed in Collapse
(Plymouth CT, NBCConnecticut.com 2011)



Fire destroys town's public works building
Officials say fire was major loss for town (WMUR Hopkinton NH 2012)



Lynnfield DPW Storage Garage Fire (2013)



Blaze destroys Henniker snow-removal equipment, leaving 'serious problem'
(Henniker NH, Concord Monitor 2015)



Town of Montague
Public Works Facility

What is Proposed

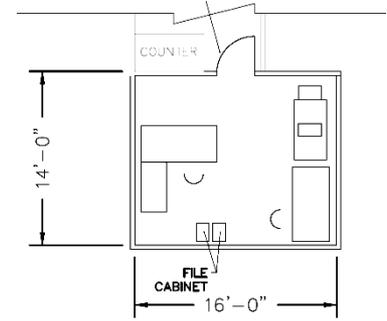
Town of Montague Public Works Facility

Programming Process |

- Conducted staff interviews to verify program requirements
 - Administration
 - Highway
 - Grounds
 - Building Maintenance
 - Sewer & Drainage
 - Vehicle Maintenance

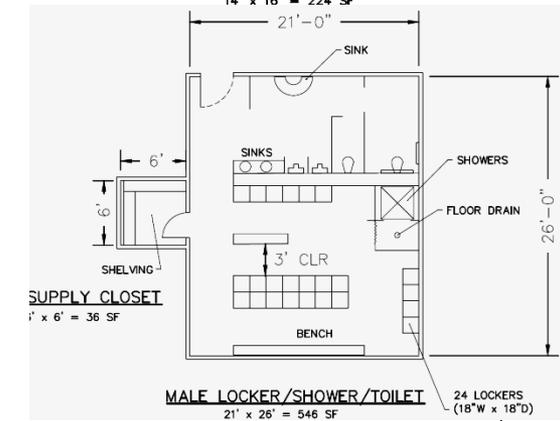
- Compared interview data to Weston & Sampson standards based > 100 New England public works facility projects

- Prepared programming sketches for each operating area



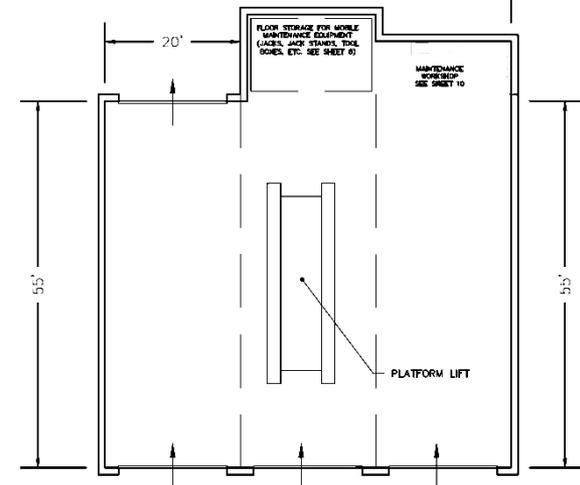
OFFICE ADMINISTRATOR/WORKING FOREPERSON'S WORKSTATION

14' x 16' = 224 SF



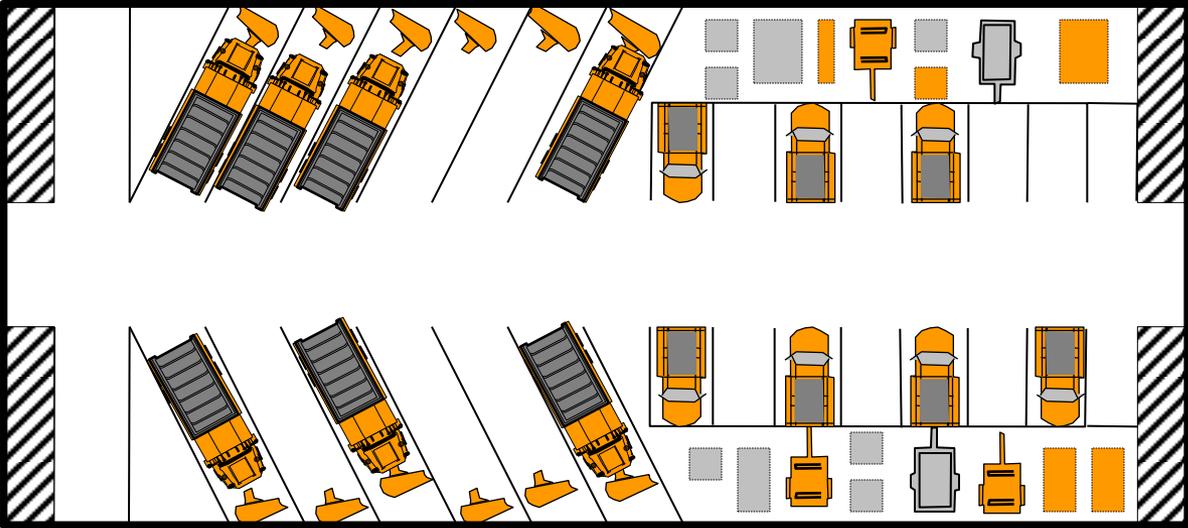
MALE LOCKER/SHOWER/TOILET

21' x 26' = 546 SF
24 LOCKERS (18"W x 18"D)



HEAVY DUTY DRIVE-THRU DOUBLE BAY 20' x 55' = 1,100 SF
HEAVY EQUIPMENT BAY 20' x 55' = 1,100 SF
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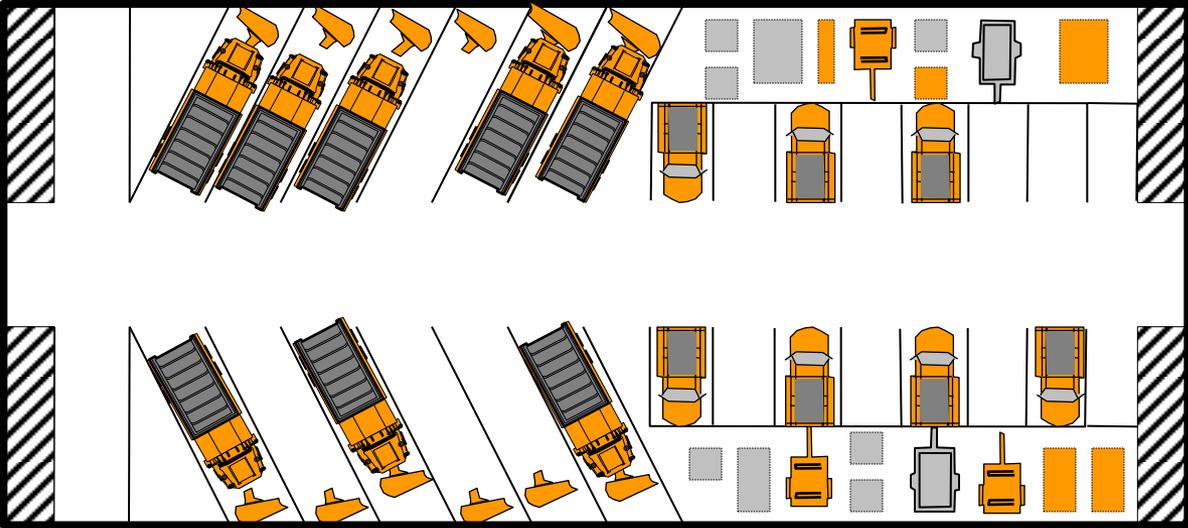
VEHICLE/EQUIPMENT MAINTENANCE BAYS
BAY DIMENSIONS AND AREAS VARY



Parking stalls sized to store plows



Safe and efficient vehicle / equipment storage



Parking stalls sized to store plows



Safe and efficient vehicle / equipment storage

Town of Montague Public Works Facility

Programming Results |

<u>Space Needs Assessment</u>	<u>Initial Needs</u>	<u>Rev 1</u>	<u>Rev 2</u>	<u>Rev 3</u>
• Office / Office Support	4,547 SF	1,223 SF	1,264 SF	1,203 SF
• Employee Facilities	2,367 SF	2,140 SF	1,936 SF	1,936 SF
• Workshops	3,315 SF	2,783 SF	1,428 SF	2,773 SF
• Vehicle Maintenance	7,659 SF	5,564 SF	4,233 SF	5,382 SF
• Wash Bay	1,591 SF	1,549 SF	1,433 SF	1,433 SF
• Vehicle & Equipment Storage	15,461 SF	13,965 SF	11,172 SF	15,461 SF
Subtotal:	32,575 SF	27,224 SF	21,119 SF	27,974SF
• Open Canopy Storage	4,650 SF	4,200 SF	3,360 SF	4,650 SF

Potential reductions were reviewed in detail with the Committee and it was determined that the 35% reduction would negatively impact current and future operations – Not Recommended by the Committee

Town of Montague Public Works Facility

Programming Results |

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**Rev 3 Space Needs represents a
14% reduction in the initial program**

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Due Diligence Activities

Town of Montague Public Works Facility

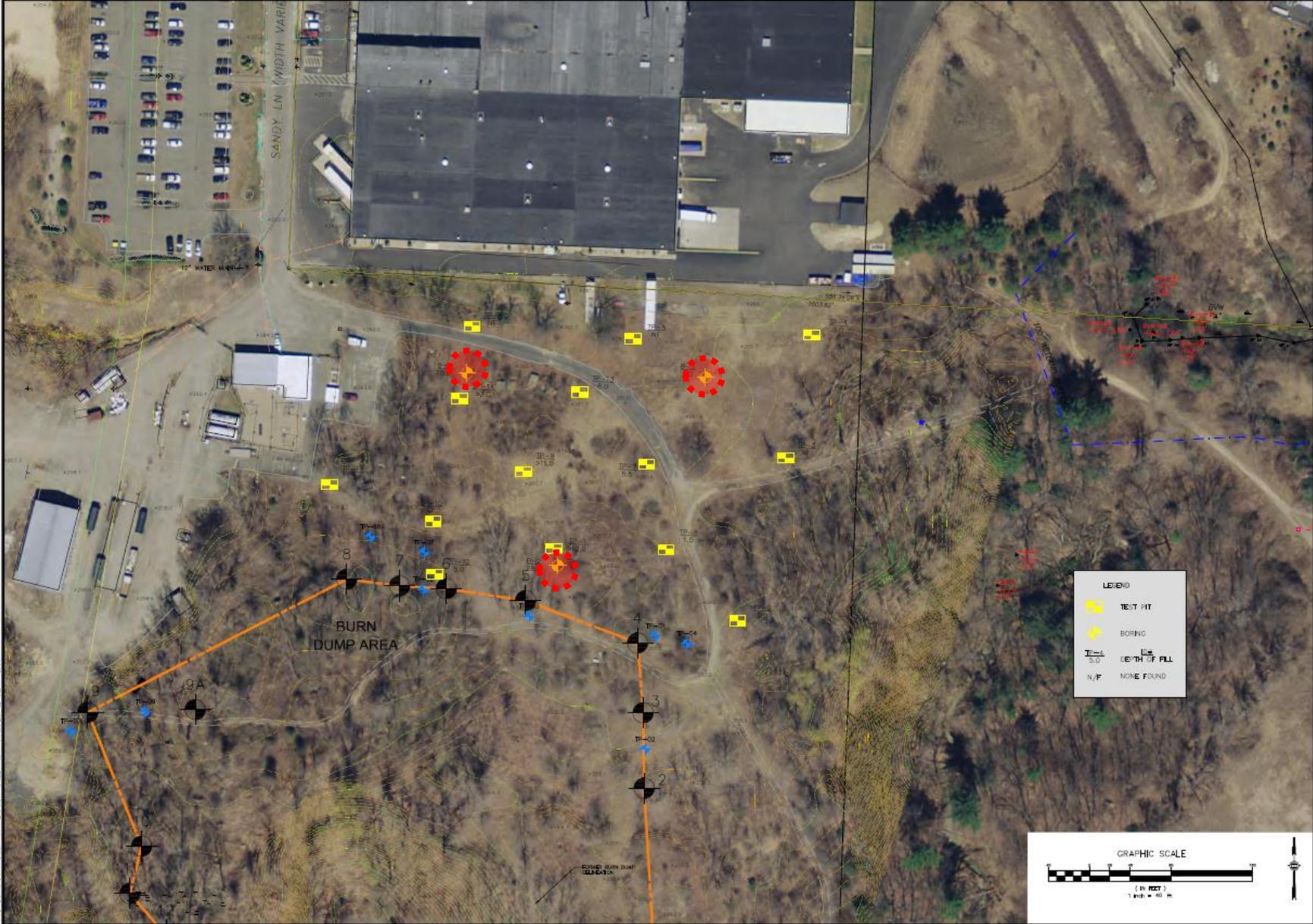
Due Diligence Activities Completed

- Wetlands Delineation
 - Wetland flagging
 - GPS Survey of flags
- Geotechnical Boring Investigation
 - Three (3) borings
- Geotechnical Test Pit Investigation
 - 14 Test Pits
- DEP Coordination
 - Site assigned land use
 - Shallow waste consolidation
- Updated Site Plan Development
- Prepared an Independent Cost Estimate



Town of Montague Public Works Facility

Due Diligence Activities Completed



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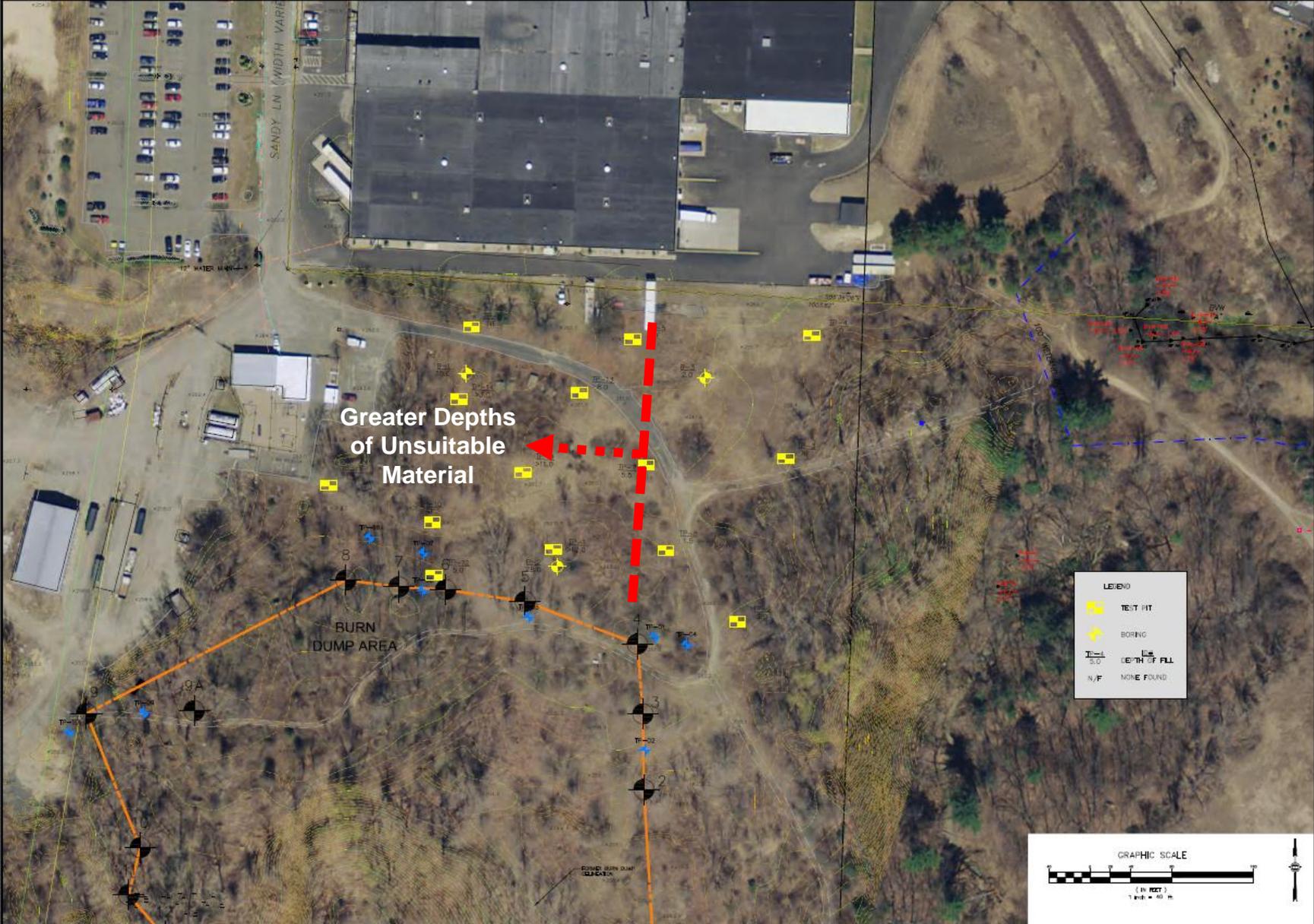
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Town of Montague Public Works Facility

Due Diligence Activities Completed



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What is Proposed

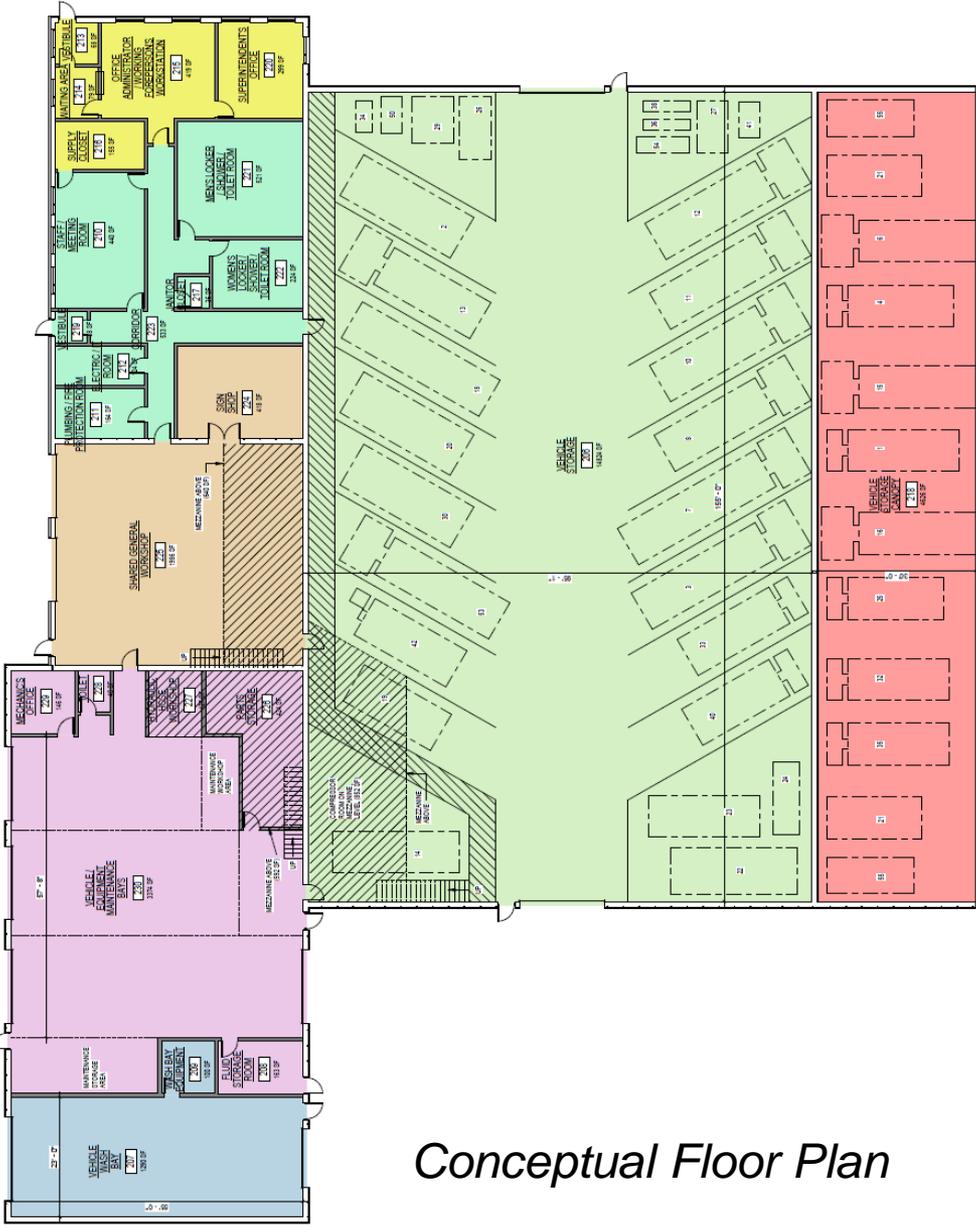
Town of Montague Public Works Facility



Town of Montague Public Works Facility

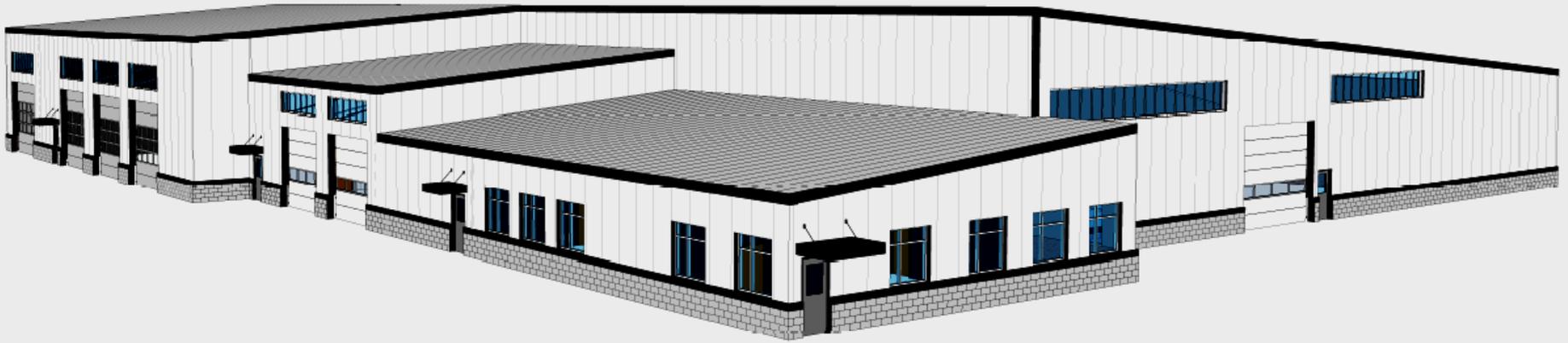
Department Legend

- Administration
- Employee Facilities
- Shops
- Vehicle Canopy
- Vehicle Maintenance
- Vehicle Storage
- Vehicle Wash Bay



Conceptual Floor Plan

Town of Montague Public Works Facility



Conceptual Building Rendering

Town of Montague
Public Works Facility

Cost

Town of Montague
Public Works Facility

Project Cost Comparison

<u>Description</u>	<u>Size</u>	<u>Bid Date</u>	<u>Avg Cost/SF</u> <u>(escalated to 2017)</u>	<u>Total Project</u> <u>Cost</u>
• Bourne Public Works Facility	39,040 SF	2014	\$324	\$365
• Medford Public Works Facility	45,000 SF	2014	\$314	\$371
• Montague Public Works Facility	27,200 SF	est 2017	\$341	\$425
• Norwood Public Works Facility	53,870 SF	2014	\$328	\$382
• Wayland Public Works Facility	39,869 SF	2014	\$302	\$403
• Hopkinton Public Works Facility	42,410 SF	2016	\$300	\$355

Note: Montague Public Works Facility Costs include design contingencies, escalation, and construction contingencies due to the early nature of the project resulting in higher costs per SF.

Town of Montague
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Benefits of an Improved / Code Compliant Facility?

Town of Montague Public Works Facility

What are the benefits |

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

- Code 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
- Creates a consolidated public works operations improving overall efficiencies for the department
- Eliminates the need to invest money (band-aids) in the existing substandard facility



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Questions?

Why Store the DPW Equipment Indoors in a Minimally Heated Garage?

Town of Montague Public Works Facility

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

Town of Montague Public Works Facility

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

1. Employee Safety
- 2. Public Safety**
3. Protection of Equipment
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Vehicles 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



Town of Montague Public Works Facility

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

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Outdoor storage contributes to accelerated
equipment deterioration

Town of Montague Public Works Facility

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

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

Town of Montague Public Works Facility

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

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

Town of Montague Public Works Facility

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

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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

Town of Montague Public Works Facility

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

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



Vehicle starting in a minimally heated garage

Town of Montague Public Works Facility

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



Same vehicle starting outdoors / unprotected

Why put the vehicles and equipment in a minimally heated garage.....

Impacts associated with outdoor storage:

- Fuel becomes more viscous contributing to no-start conditions
- Viscous fuel generates an excessive amount of exhaust due to incomplete combustion of the fuel source.
- Vehicle warm-up times will be increased dramatically resulting in an increase in non-productive labor.
- Any vehicle with a water source will need to be drained and filled each day resulting in an increase in non-productive labor.
- Condensate in the air tanks for the vehicle compressed air braking systems can potentially freeze requiring the tanks to be defrosted prior to operating.
- Specialty equipment requiring heated storage will not function properly.
- Excess wash water on the vehicle after it is washed will freeze which can potentially damage vehicle parts such as salt/sand conveyor belts.
- Cold storage results in the hydraulic oil becoming more viscous. This overstresses hydraulic pumps which in turn damages or reduces the life expectancy of the pumps.
- Cold storage reduces the flexibility of the hydraulic hoses. Rigid hoses coupled with viscous hydraulic oil increases the potential for damaged or broken hydraulic hoses.

Why put the vehicles and equipment in a minimally heated garage.....

- **Impacts associated with outdoor storage:**
 - Increase in response times due to no start conditions and increased warm-up periods.
 - Snow pack on vehicles will not melt. This requires vehicles to be “defrosted” before vehicles are placed back into service or before maintenance activities can be performed.
 - Salt/Sand product in spreader bodies will freeze which can damage spreader system. This will require all salt/sand product to be loaded or unloaded each day.
 - Increase in operational costs (refer to the Cost / Benefit Analysis).

Sustainable Design

Town of Montague Public Works Facility

- LEED Leadership in **E**nergy and **E**nvironmental **D**esign (Sustainable Design)
 - Rainwater harvesting
 - Photovoltaic ready
 - Superinsulation envelope
 - Natural daylighting

Town of Montague Public Works Facility

- LEED (Sustainable Design)
 - **Rainwater harvesting**
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Town of Montague Public Works Facility

Rainwater
from the Roof



- LEED (Sustainable Design)

- Rainwater harvesting
- **Photovoltaic ready**
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- LEED (Sustainable Design)
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