

Response's to Finance Committee Questions, 2-11-2025

- 1. As an example, the average age of our 9 Mack Dump trucks is 15 years, how much will that be improved? How much will that save the taxpayers?**

Storing all vehicles and equipment inside a minimally heated, controlled environment will extend the life of diesel and gas engines. Proper indoor storage and a dedicated wash bay will help prevent corrosion, reducing maintenance needs.

Currently, some dump trucks are nearly 30 years old and must last longer before replacement. DPW is shifting to a 24-year replacement model, compared to a 17-year cycle used by some private companies that store their vehicles outdoors.

Between the wash bay & indoor storage, the vehicle body will be maintained and its longevity increased. The proposed storage garage minimizes maintenance / replacement needs in terms of rust, paint degradation, oxidation, tire cracking etc. that is associated with road salt, moisture and extreme sunlight (protection from environmental elements). The storage garage can also shield the fleet from temperature extremes that otherwise hinder engine performance. Additionally, the temperature control can minimize the excessive wear on parts like seals, rubber components and batteries as well as minimize the need to check on fluids and the cooling system. An enclosed storage garage will also prevent rodents from burrowing into vehicle bodies and potentially impairing parts. Reduced exposure to dirt and debris will minimize potential issues with air intake and other sensitive engine components. The lifespan of a vehicle stored in an enclosed, minimally heated garage could be extended by several years (10-25%; i.e. if a truck is expected to last for 20 years with regular exposure to elements, this truck may get an extra +/- 2-4 years with washing and storage in an enclosed, minimally heated garage).

- 2. What has been the annual expenditure on DPW Highway Vehicle maintenance for the past five years and how much will be reduced with the new facility?**

A copy of the recent expenses is below. Reducing exposure to weather-related damage and corrosion will lower repair costs and extend vehicle life.

	Org	Obj	Budget	Description	FY				
					2020	2021	2022	2023	2024
Fleet and Equipment									
Repair and Maintenance									
01422	520300	Snow & Ice		Eqpt Repair & Servicing	\$ 27,841	\$ 52,282	\$ 91,864	\$ 67,369	\$ 67,378
01424	520300	Machinery		Eqpt Repair & Servicing	\$ 37,053	\$ 83,504	\$ 42,761	\$ 31,194	\$ 60,259
01424	540960	Machinery		Parts & Tires - Highway, Town Hall	\$ 56,200	\$ 77,243	\$ 100,310	\$ 83,082	\$ 102,443
01424	540920	Machinery		Parts & Tires - Police, Town Manager, IT	\$ 19,297	\$ 14,656	\$ 18,094	\$ 21,178	\$ 33,241
01424	540940	Machinery		Parts & Tires - MuniProp/Facilities	\$ 11,790	\$ 3,756	\$ 820	\$ 717	\$ 389
01424	540950	Machinery		Parts & Tires - Civil Defense	\$ 1,102	\$ 216	\$ -	\$ 684	\$ 679
01424	540980	Machinery		Parts & Tires - Cemetery, Recreation	\$ 4,050	\$ 3,908	\$ 4,534	\$ 3,943	\$ 7,047
6400	520600	Transfer Station		Transfer Station Equipment	\$ 7,144	\$ 16,958	\$ 1,838	\$ -	\$ 1,078
				Subtotal:	\$ 164,478	\$ 252,523	\$ 260,220	\$ 208,167	\$ 272,514
Fleet Replacement	01424	580000	Machinery	Capital Outlay	\$ 104,714	\$ 106,592	\$ 182,234	\$ 92,948	\$ 138,147
				Total (including replacement):	\$ 269,192	\$ 359,116	\$ 442,453	\$ 301,115	\$ 410,661

3. What is the cost of building an open garage vehicle storage building (similar in concept to what we have at the Public Safety Facility) as opposed to the fully enclosed minimally heated building proposed?

Storage of gas or diesel fueled vehicles outside is not recommended for DPW operations and fleet, either under a canopy or exposed completely to the weather. Any perceived immediate building savings realized by its elimination would result in escalating additional costs over the 50-75-year life of the facility related to shortened equipment life, increased equipment maintenance needs, lost employee productivity time and reduced department response times.

While an open canopy might offer short-term savings, it would result in significantly higher long-term costs due to:

- i. Increased maintenance and replacement costs from exposure to weather.
- ii. Additional energy use for engine block heaters.
- iii. Increased employee time spent clearing snow and ice from vehicles.
- iv. Dry-acting Fire Sprinkler would be required for canopy
- v. Delayed emergency response times.

The entire 46,800 SF building currently represents approximately 65% of the project's Schematic Design \$47 Mill estimated total project cost prior to implementation of cost savings identified during value engineering. The other 35% of the Total Project Cost are Site Development, Industrial Equipment Costs, and Owner Soft Costs including Engineering Fees, Material Testing and Inspections, FF=E, Construction and Owner Contingencies, etc.

The storage garage is the least expensive portion of the building at approximately \$300/Sf x 25,000 SF= \$7.5 million.

A canopy structure would save only \$2.5 million (5.3%) of the project cost while leading to significantly higher lifetime expenses.

Other considerations:

- Need to mitigate for increased site noise related to vehicle parking and site circulation.
- Starting and idling of trucks outdoors rather than indoors increases environmental impacts.
- Cold impacts not only engine start-up but also shortens the life, reduces effectiveness and increases maintenance of hydraulic lines required for operation of plows and other truck mounted equipment.
- Larger maintenance issues will be reduced due to proper storage. One example is diesel engine equipment. Recently we stored a diesel engine tractor outside, when we went to turn it on, the mechanics found that the fuel had gelled up due to the temps. This created costly repairs and required our mechanics to work on the tractor all day. Additionally, the diesel engine trucks and equipment tend to smoke when started in cold temps and stored outside during cold periods.

4. What codes and regulations does the current DPW facility not meet?

Here are a few examples:

- NFPA Fire Protection Codes – Insufficient fire sprinkler coverage.
- ADA Compliance – Public areas not handicap accessible; no dedicated women's locker facilities.
- Energy Efficiency – No insulation in exterior walls, outdated windows/doors.
- OSHA Standards – Poor indoor air quality, unsafe mezzanine structure, inadequate ventilation, and poor lighting.



Photo: smoke in mechanics garage from repairs of truck. The garage door was open during repair and this demonstrates the poor ventilation and air quality.

5. Will this project reduce labor, overtime, utilities, and other operating costs? If so, how much and how will the taxpayers see the benefit?

Yes, emergency response and daily operations will be impacted with the design of a garage large enough to fit all equipment in safely. Currently, it takes one hour per day (30 minutes in the morning and evening) to shuffle vehicles due to space limitations. Over 50 years, the improved design will save an estimated \$12 million in labor costs. (see table below for calculation:

Town of Acton Department of Public Works Cost / Benefit Analysis - Item 11 - Loading & Unloading Costs								Avg Annual Inflation Rate Benefits Adjustment Number of Large Vehicles Number of Small Vehicles Number of Pieces of Construction Equipment Average Workforce Rate (loaded) 2022	
Maintenance Activity	FREQUENCY			LABOR			TOTAL		
	A Number of Vehicles Impacted by Operations	B Number of Employees Impacted by Operations	C Average Loading & Unloading Time per Vehicle per Day (minutes)	D Total Downtime Per Year (minutes)	E Total Downtime Per Year (hours)	F Loaded Labor Rate	G Total Labor Cost per Year (F x E)	H Total Labor Cost per Year (1st Year) (G)	I Total Cost Over Life of Bldg (50 Years)
Vehicle Loading & Unloading	22	44	30	330,000	5,500	\$ 43.94	\$ 241,688	\$ 241,688	\$ 12,084,380
Work Days	250							\$ 241,688	\$ 12,084,380

Assumptions:
1. It is assumed that there is an average of 2 employees per vehicle

6. What are the standard expected emergency response times for the DPW and how have we performed against those expectations in the past 5 years?

The expected emergency response times for DPW's are as follows:

General emergencies (i.e. flooding, road hazardous like fallen trees): within 1-2 hours

For priority areas (i.e. emergency access roads, major highways): within the first 30 mins-1 hr of an emergency

Winter operations deployment occurs based on forecasts.

The existing setup delays truck deployment due to:

- i. Vehicles being parked too tightly, requiring repositioning.
- ii. Plows stored outside, needing to be cleared of snow before attachment.
- iii. Cold temperatures affecting engine startup and hydraulic systems.

With the new facility, trucks will be pre-positioned for rapid deployment, improving response times and reducing overtime costs (currently estimated to cost \$28,000 in lost productivity per year during winter operations).

Due to the vehicle storage and parking limitations of the current garage, crews are required to report early to prepare equipment. Also, throughout a storm event employees have to return to the DPW facility multiple times to refuel and prepare equipment for continued operations.

The inefficient storage layout delays the necessary trucks from exiting the undersized existing garage. They then have to attach plows which are stored outside, potentially requiring staff to clear them off first, delaying the process further (and subjecting the DPW to potential employee injury). Fleet stored outside may have difficulties with engine start up due to the cold weather. The storing/un-storing process currently takes 30 minutes each time, plus then having to attach plows outside. In contrast, the proposed new DPW Storage Garage allows trucks to park at an angle, adjacent to a center drive aisle, with their plows efficiently stored right at the front of the truck for quick connection. They can connect, back up out of their parking spot, and continue right out of the garage and immediately hit the roads.

According to the 2023 Annual report, we treated the roads 42 times and plowed on 22 occasions, totaling 64 winter operation responses. Using this example and assuming it takes 10 employees to arrange trucks for 30 minutes at the beginning and end of each response, the overtime costs would be appropriately \$28,000 for 64 winter operation responses.

7. What metrics exist to indicate a morale problem? High turnover? Employee Surveys?

Exit interviews and ongoing staff feedback have highlighted concerns about facility conditions, including outdated infrastructure, poor air quality, and lack of proper locker rooms.

8. What required training is not being accomplished because of the existing facility?

- a. Acton cannot host hands-on MassDOT technical training for DPW employees due to lack of space. The new facility will accommodate both classroom and hands-on training, reducing the need for off-site training and improving staff readiness.
- b. MassDOT offers technical training workshops for DPWs to provide training to new employees, refresher courses for existing staff and technical training for new approaches and initiatives for all staff. Acton can typically only host these trainings at other town buildings which is difficult due to the need for space and time and can only accommodate classroom training. Most training workshops have a classroom training and a hands-on component. The current DPW building and garage are not sized or suitable to host any of these workshops. Host communities receive free registrations for a few employees which we are not able to take advantage of currently.

- c. New and existing staff are sent off site for training refresher courses related to winter maintenance, storm response, equipment/vehicle operation, work zone safety, confined space training, EPA MS4 (stormwater – oversight, illicit detection, upkeep and inspections), road paving, OSHA training, and CDL training

9. Are there documented safety or health concerns with the existing DPW facility?

Yes, studies and inspections have identified:

- Poor ventilation and air quality, affecting employee health.
- Rodent infestations, potentially damaging equipment.
- Lack of gender-equitable facilities, including separate women's locker rooms.
- Unsafe work areas, including dangerous mezzanines and inadequate clearances.

10. The air quality issue is not new. It was cited in the Allegra Town of Acton Space Needs study in 2013. Has it not been addressed?

DPW added air purifiers in the office spaces. The air filter shown in the photo below on the left is after seasonal change-out in office space and reflective of poor ventilation and air quality within the building. The Director also worked with the former Municipal Properties Director after that report to have the duct work cleaned. The systems are outdated and would need to be completely replaced and several structural changes would have to be made to permanently address the issue. Replacing these systems and renovating this space is not cost effective given the several other systems that would also need to be replaced. A major renovation of a facility that is not adequately sized would be very costly and that option was not recommended by the study committee or Select Board.



11. The Town of Billerica has recently broken ground on a 67,500 square foot DPW Facility at a cost of \$47 million, or \$696 per square foot. Ours is proposed as 46,000 square feet at \$43 million or \$935 per square foot. Why is ours 34% more expensive?

- a. The Billerica DPW was designed by Weston & Sampson and bid in July of 2025. We are utilizing the same cost estimator that was utilized for Billerica. Over the past 20 years, Weston & Sampson has designed and constructed over 50 DPW facilities in the New England Region.
- b. *Billerica DPW final May 2024 cost estimate:* \$45.5 Million Construction Cost, \$55 Million Total Project Cost
- c. *Construction Costs at July 2024 Bid Opening:*
 - i. Total of all FSB Categories= \$11,200,000 Million vs \$13,900,000 Estimate (\$2.7 Million Lower than estimate)
 - ii. G.C. Low Bid including two bid alternates= \$37.8 vs. \$45.5 Final Estimate (\$7.7 Million Lower than estimate)

12. Why is the SF cost more for the Acton DPW project?

- Acton's costs are escalated to the mid-point of construction, which is approximately July 2026.
- The schematic design estimate contains design and estimating contingencies related to this level of design which doesn't account for Value Engineering that typically takes place as the project is further developed.
- Billerica's large 45,000 SF storage garage, representing almost 75% of the overall building footprint, reduces the overall building SF cost.
- Acton's upfront cost to meet Opt-in Municipal Stretch Energy Code and Town's Fossil Fuel-Free Bylaw vs. traditional gas fueled HVAC. Our estimate has \$5.58M for HVAC costs vs \$3.5 Million Billerica Bid cost for HVAC. There are also other energy code required cost increases related to required opt-in stretch code building's thermal envelope performance and electrical requirements vs basic stretch code.
- The low bid GC, J&J is HQ'd in N. Billerica, so proximity to the project site represents some savings.
- Billerica had economy of scale: Higher DCAMM single project bonding capacity >\$45 mill est. construction cost, resulted in larger GC's bidding on the project that we don't see get on most of our DPW Projects. We are guessing these GC's have a better market presence/pricing advantage over smaller sized contractors.
- Competitive bidding for filed sub-bidder categories and general contractors.