



Town of Belmont Fuel Tank Forum II

September 28, 2021



Project Background

- ▶ Two Underground Fuel Tanks at the DPW Yard – 37 C Street
- ▶ 6000 Gallon Unleaded Fuel Tank
- ▶ 6000 Gallon Diesel Fuel Tank
- ▶ Installation Date November 1986
- ▶ Tanks are Single Wall Fiberglass Construction



Project Evaluation

- ▶ Insurance
- ▶ Environmental - DEP
- ▶ **Town Department Operations**
- ▶ Tank Sizing, Design, and Financing
- ▶ Public Input Forums

Town Department Operations

Task – Evaluate current operations to determine options for future fueling

Status - ONGOING

Recommendations

- 1 – Implement a three month trial period for all departments to use off site private gas stations for unleaded fueling between the hours of 6:00 AM and 10:00 PM
Given the amount of Off Hours activity by the Police department, a source of unleaded fuel must be available at the DPW Yard.
- 2 - All diesel fuel operations remain at the DPW Town Yard

Town Department Operations

General Consumption Data

12 Departments utilize the fueling station in the DPW yard
(Parks and Recreation have been combined for this study)

12 Departments use unleaded gasoline

8 Departments use diesel fuel

For the period FY 20:

54,667.49 gallons of unleaded gasoline

24,754.80 gallons of diesel fuel

Town Department Operations (cont)

COVID 19 Impact

Consumption impacted March thru June of 2020

*DPW is the largest consumer of Diesel Fuel and the second largest consumer of Unleaded Fuel

Unleaded Fuel

Approximately 9% decrease in consumption for DPW

Diesel Fuel

Approximately 15% decrease in consumption for DPW

Town Department Operations (cont)

FY 20 Department Unleaded Fuel Usage

<u>Quantity (gal)</u>	<u>Total (\$)</u>	<u>Department</u>	<u>%</u>
1,679.20	\$3,428.70	Belmont Facilities	3.1%
4,026.90	\$7,840.22	Belmont Light	7.4%
1,760.50	\$3,658.17	Cemetery Division	3.2%
2,089.50	\$4,288.34	Council On Aging	3.8%
2,494.20	\$5,105.92	Fire Department	4.6%
378.50	\$772.14	Health Department	0.7%
10,820.58	\$22,236.34	Highway Division	19.8%
1,321.80	\$2,698.33	Housing	2.4%
2,073.40	\$4,245.27	Parks / Rec	3.8%
24,504.22	\$49,988.61	Police Department	44.8%
964.00	\$1,980.66	School Department	1.8%
2,554.70	\$5,229.77	Water Division	4.7%
54,667.49	\$111,472.45		100.0%

Town Department Operations (cont)

FY 20 Department Diesel Fuel Usage

<u>Quantity</u> (gal)	<u>Total (\$)</u>	<u>Department</u>	<u>%</u>
3,443.70	\$8,441.64	Belmont Light	13.9%
980.60	\$2,371.36	Cemetery Division	4.0%
6,602.40	\$16,192.92	Fire Department	26.7%
11,382.30	\$27,637.63	Highway Division	46.0%
10.00	\$24.50	Housing	0.0%
584.80	\$1,435.70	Parks / Rec	2.4%
13.30	\$32.59	School Department	0.1%
1,737.70	\$4,287.66	Water Division	7.0%
24,754.80	\$60,424.00		100.0%

Town Department Operations (cont)

Monthly Consumption

Unleaded Fuel

The average monthly consumption of unleaded gasoline was 4,555.62 gallons

The Belmont Police Department is month over month the largest consumer of unleaded gasoline

Diesel Fuel

The average monthly consumption of diesel fuel was 2,062.90 gallons

In eleven months the Highway Division of DPW was the largest consumer of diesel fuel. In June 2020 the Belmont Fire Department was the largest consumer

Town Department Operations (cont)

Off Site Unleaded Fueling - Private Gas Station Option

There are nine private gas stations available to provide unleaded gasoline.

Business Hours (6:00 AM to 10:00 PM)

The average monthly consumption of unleaded gasoline was 3,920.08 gallons

Off Hours (10:00 PM to 6:00 AM)

The average monthly consumption of unleaded was 635.54 gallons

Given the amount of Off Hours activity by the Police department, a source of unleaded fuel must be available at the DPW Yard.

Town Department Operations (cont)

FY 20 Department Monthly Off Hours Unleaded Fuel Usage 10:00 PM to 6:00 AM

Department	July	August	September	October	November	December	
Belmont Facilities	0.00	0.00	0.00	0.00	0.00	0.00	
Belmont Light	0.00	0.00	0.00	0.00	0.00	0.00	
Cemetery Division	0.00	0.00	0.00	0.00	0.00	0.00	
Council On Aging	0.00	0.00	0.00	0.00	0.00	0.00	
Fire Department	0.00	0.00	0.00	7.40	0.00	11.20	
Health Department	0.00	0.00	0.00	0.00	0.00	0.00	
Highway Division	27.00	10.00	0.00	22.00	12.00	214.50	
Housing	0.00	0.00	0.00	0.00	0.00	30.00	
Parks / Rec	0.00	0.00	0.00	0.00	0.00	21.40	
Police Department	587.13	434.20	516.30	680.50	598.60	732.70	
School Department	0.00	0.00	0.00	0.00	0.00	0.00	
Water Division	0.00	0.00	0.00	0.00	0.00	13.10	
	614.13	444.20	516.30	709.90	610.60	1,022.90	
	January	February	March	April	May	June	Total
Belmont Facilities	0.00	0.00	28.10	0.00	0.00	0.00	28.10
Belmont Light	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cemetery Division	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Council On Aging	0.00	0.00	11.20	0.00	0.00	0.00	11.20
Fire Department	0.00	13.70	13.40	0.00	0.00	0.00	45.70
Health Department	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Highway Division	55.50	31.60	32.30	0.00	0.00	17.30	422.20
Housing	0.00	0.00	0.00	0.00	0.00	0.00	30.00
Parks / Rec	0.00	0.00	0.00	0.00	0.00	0.00	21.40
Police Department	633.00	687.90	536.10	578.60	518.90	541.60	7,045.53
School Department	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Division	9.30	0.00	0.00	0.00	0.00	0.00	22.40
	697.80	733.20	621.10	578.60	518.90	558.90	7,626.53

Town Department Operations (cont)

Off Site Unleaded Fueling – Lost Productivity

Study Group

12 Town departments utilize the DPW yard

3 departments store their vehicles and equipment at the yard;

Highway Division, Water Division, and Belmont Light Department.

Methodology

Data showing fueling that occurred at the start of each work day was analyzed to determine how often a vehicle gets fuel at the start of a work day.

Fueling operations that occurred after the start of the workday are assumed to be productivity neutral since the vehicle would be away from the yard and it is possible a private gas station would be more convenient to visit than a return trip to the yard.

For this analysis the period of 6:00 AM to 8:30 AM is assumed to be the start of the work day.

Town Department Operations (cont)

Highway Division

13 different vehicles received fuel during 183 fueling events

Of the 13 vehicles only one pumped fuel more often than once per month

This vehicle pumped fuel an average of 1.3 days per month

Belmont Light Department

11 different vehicles received fuel during 75 fueling events

Of the 11 vehicles only one pumped fuel more than once per month

This vehicle pumped fuel an average of 1.3 days per month

Water Division

5 different vehicles received fuel during 75 fueling events

Of the 5 vehicles only two pumped fuel more often than once per month

One vehicle pumped fuel an average on 1.0 times per month while the other pumped fuel an average of 1.3 days per month

The total number of times these departments get fuel at the start of the workday is insignificant over the course of a year and therefore has no negative impact on productivity.

Town Department Operations (cont)

Police Department

Belmont Police department is the largest consumer of unleaded gasoline

The distance from the Police Station to the DPW Yard is 1.2 miles. There are four private gas stations that open at 6:00 AM. All four are essentially no farther away than the DPW Yard:

0.8 miles to 337 Pleasant Street – Pleasant Street Shell

0.4 miles to 365 Concord Avenue – Mobil

1.3 miles to 90 Trapelo Road - Cushing Square Auto

~~1.2 miles to 350 Trapelo Road – Power Plus Gas~~

For the Belmont Police Department there is no expected loss of productivity fueling at an offsite location versus the DPW Yard.

The other departments that store vehicles away from the DPW yard are expected to have a similar experience.

Town Department Operations (cont)

Off Site Unleaded Fueling – Financial Impact

The Town of Belmont purchases fuel through a consortium

Consortium bid price does not include state taxes but does include federal taxes.

In FY 20, 47,040.97 gallons was pumped between the hours of 6:00 AM and 10:00 PM. The following financial analysis assumes FY 20 consumption totals for each year studied from FY 06 to FY 21

Note: for the sixteen year study period average annual gasoline prices were determined using internet research.

Town Department Operations (cont)

Cost Comparison – Private Gas Station versus Town Consortium Bid (Projected FY 21)

FY 20 Total Unleaded Consumption		54,667.50							
FY 20 Off Site Unleaded Consumption		47,040.97							
WEX Rebate Percentage		1.50%							
						Year Over Year Comparison			
FY	Fed Tax	MA Tax	Private Gas (No Fed Tax)	Belmont Bid (No State Tax)	Diff	Unleaded Off Site (gal)	Cost Difference	WEX Rebate	Net Loss/Savings
FY 06	\$0.184	\$0.210	\$2.462	\$1.956	(\$0.507)	47,040.97	(23,828.78)	\$1,737.33	(\$22,091.45)
FY 07	\$0.184	\$0.210	\$2.514	\$2.725	\$0.211	47,040.97	9,918.77	\$1,774.16	\$11,692.93
FY 08	\$0.184	\$0.210	\$3.036	\$2.204	(\$0.833)	47,040.97	(39,168.18)	\$2,142.49	(\$37,025.69)
FY 09	\$0.184	\$0.210	\$2.460	\$4.287	\$1.827	47,040.97	85,959.77	\$1,735.78	\$87,695.56
FY 10	\$0.184	\$0.210	\$2.580	\$2.325	(\$0.255)	47,040.97	(12,000.88)	\$1,820.57	(\$10,180.31)
FY 11	\$0.184	\$0.210	\$3.087	\$2.695	(\$0.392)	47,040.97	(18,447.30)	\$2,178.34	(\$16,268.96)
FY 12	\$0.184	\$0.210	\$3.562	\$3.414	(\$0.147)	47,040.97	(6,937.28)	\$2,513.17	(\$4,424.11)
FY 13	\$0.184	\$0.210	\$3.614	\$3.164	(\$0.450)	47,040.97	(21,182.37)	\$2,550.16	(\$18,632.21)
FY 14	\$0.184	\$0.240	\$3.541	\$3.173	(\$0.369)	47,040.97	(17,342.59)	\$2,498.70	(\$14,843.88)
FY 15	\$0.184	\$0.240	\$2.859	\$3.463	\$0.604	47,040.97	28,415.28	\$2,017.60	\$30,432.88
FY 16	\$0.184	\$0.240	\$2.249	\$2.170	(\$0.079)	47,040.97	(3,696.70)	\$1,586.85	(\$2,109.85)
FY 17	\$0.184	\$0.240	\$2.297	\$1.553	(\$0.745)	47,040.97	(35,025.08)	\$1,621.05	(\$33,404.02)
FY 18	\$0.184	\$0.240	\$2.671	\$2.130	(\$0.541)	47,040.97	(25,441.93)	\$1,884.59	(\$23,557.34)
FY 19	\$0.184	\$0.240	\$2.767	\$2.680	(\$0.087)	47,040.97	(4,077.19)	\$1,952.20	(\$2,124.98)
FY 20	\$0.184	\$0.240	\$2.555	\$2.448	(\$0.107)	47,040.97	(5,013.32)	\$1,802.69	(\$3,210.64)
FY 21	\$0.184	\$0.240	\$2.516	\$2.148	(\$0.368)	47,040.97	(17,298.95)	\$1,775.29	(\$15,523.67)
Average			\$2.798	\$2.658	(\$0.140)	47,040.97	(6,572.92)	\$1,974.43	(\$4,598.48)
Median					(\$0.311)		(\$14,649.92)	\$1,852.58	(\$12,797.34)

Town Department Operations (cont)

Storm Events and Fuel Usage

December 1-3, 2019 - 11.5 inches of snow

During this time period, 815.70 gallons of unleaded fuel was pumped

Of the 815.70 gallons, 528.00 gallons were pumped during the hours of 6:00 AM and 10:00 PM

This leaves a total of 287.70 gallons pumped off hours.

During this same time period, a total of 1,073.10 gallons of diesel fuel was pumped

Town Department Operations (cont)

December 1 -3, 2019 Snow Event Unleaded Fuel Usage

<u>Date</u>	<u>Quantity (gal)</u>	<u>Department</u>	<u>%</u>
All Hours			
12/1 - 12/3 2019	35.30	Belmont Facilities	4.3%
12/1 - 12/3 2019	115.40	Belmont Light	14.1%
12/1 - 12/3 2019	23.80	Council On Aging	2.9%
12/1 - 12/3 2019	12.80	Fire Department	1.6%
12/1 - 12/3 2019	15.10	Health Department	1.9%
12/1 - 12/3 2019	244.60	Highway Division	30.0%
12/1 - 12/3 2019	50.70	Housing	6.2%
12/1 - 12/3 2019	40.70	Parks	5.0%
12/1 - 12/3 2019	221.30	Police Department	27.1%
12/1 - 12/3 2019	35.10	School Department	4.3%
12/1 - 12/3 2019	20.90	Water Division	2.6%
12/1 - 12/3 2019	815.70		100.0%

Town Department Operations (cont)

Storm Events and Fuel Usage

December 16-18, 2020 - 14 inches of snow

During this three day time period, 731.80 gallons of unleaded fuel was pumped

Of the 731.80 gallons, 635.30 gallons were pumped during the hours of 6:00 AM and 10:00 PM

This leaves a total of 96.50 gallons pumped off hours.

During this same time period, a total of 906.80 gallons of diesel fuel was pumped

Town Department Operations (cont)

December 16 - 18, 2020 Snow Event Unleaded Fuel Usage

<u>Date</u>	<u>Quantity (gal)</u>	<u>Department</u>	<u>%</u>
All Hours			
12/16 - 12/18 2020	49.80	Belmont Light	6.8%
12/16 - 12/18 2020	14.30	Council On Aging	2.0%
12/16 - 12/18 2020	16.60	Fire Department	2.3%
12/16 - 12/18 2020	334.90	Highway Division	45.8%
12/16 - 12/18 2020	46.20	Housing	6.3%
12/16 - 12/18 2020	26.40	Parks/Rec	3.6%
12/16 - 12/18 2020	168.90	Belmont Police	23.1%
12/16 - 12/18 2020	21.60	School Department	3.0%
12/16 - 12/18 2020	32.90	Water Division	4.5%
12/16 - 12/18 2020	20.20	Cemetery Division	2.8%
12/16 - 12/18 2020	731.80		100.0%

Town Department Operations (cont)

Storm Events and Fuel Usage

A well-managed fuel supply at the DPW yard can result in an adequate fuel supply for Town vehicles even through a significant snow event:

24 hour unleaded fueling occurring at the DPW yard, or

In combination with off site fueling from 6:00 AM and 10:00 PM

Final recommended tank sizes will be determined upon further review of departmental operations.

Future integration of electric vehicles and fuel supply security will also be evaluated when considering final recommended tank sizes.

Tank Sizing, Design, and Financing

Task – Determine required size of tanks, evaluate options for placement, and determine cost alternatives

Status – PENDING

Review engineering design to date

Extent and detail of design

Status of budget – expended and remaining

Determine remaining level of design effort

Determine right size of tanks

Proper size of two individual tanks versus one dual use tank

Evaluate options for above ground versus underground location

Above ground alternative locations

Underground locations considering future development

Evaluate cost alternatives

Determine if current budget is sufficient

Identify additional funding needs as necessary

Public Input

Task – Report progress and receive public input and comment

Status – Ongoing

August 3, 2021 – Public Forum

September 28, 2021 – Public Forum II

Next Public Forum – TBD

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Fuel Consumption Report – www.belmont-ma.gov