



Town of Fairfield

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Public Works Administration

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To: Board of Selectmen
From: Joseph Michelangelo P.E., Director of Public Works
Scott Bartlett, Public Works Superintendent
Date: August 22, 2014
Re: Public Works Capital Vehicle Plan

During the most recent operating and capital budget discussion in the Spring of this year, there was much discussion about the condition of the Public Works Department vehicles. Due to the need demonstrated, the purchase of seven new trucks was ultimately approved as part of a capital appropriation. However, going forward an inventory of the Town's fleet and proposed replacement plan was requested so that the future decisions can be made with more comprehensive data. Although some of these items are more often referred to as equipment, for the purposes of this report they will be classified as vehicles. Capital items in the Town of Fairfield are generally non-recurring purchases of items over \$100,000. We are concurrently working on a similar plan for vehicles under \$100,000, and that will be presented to the Board of Selectmen at a subsequent meeting. Please note the \$100,000 threshold may need to be adjusted in the future, or eventually the lower costing vehicles (such as a mason dump truck) will ultimately creep over this amount.

This report assumes that we will be continuing our status quo operations; i.e. our workload and functions will remain consistent in the future. The only possible exceptions are street sweeping operations, which are noted below. In order for the Town of Fairfield Department of Public Works to maintain our infrastructure of

roads, storm drainage, parking lots, parks, beaches, and grounds, we feel this is the appropriate size fleet.

The Public Works Department currently has 48 vehicles over the \$100,000 limit. The vehicle descriptions are broken down in the following classes:

1. Medium Backhoes – (4) These have a boom bucket at the rear, and a large bucket in the front, the Department utilizes four of these. These are extremely versatile pieces of equipment that are used every day. These excavate and grade with the rear boom and can load, clean, clam up, and dump with the front bucket. They are small enough to easily move from one job sit to another. They are also strong enough to lift over one ton, excavate asphalt, set drainage pipes and structures, backfill, and clear brush and trees. Although we have utilized smaller and larger backhoes in the past, the medium size has proven to be the best fit for the DPW.
2. Payloaders (4) These are the heavy-lifting machines used to lift 3.5 to 5 tons of material. They load salt and snow in the winter; and collect tree logs and brush for both scheduled and emergency storm related operations. They are used for road construction work to load gravel, sand, rock, and topsoil during the construction season. They are especially critical for drainage pipe and catch basin installation. They are also used to grade roads during complete resurfacing projects.
3. Street Sweepers (4) - Our street sweepers play an important role in regular scheduled street sweeping which allows us to sweep every mile of our 275 miles of road, as well as parking lots. This is not only important for the aesthetics and perception of the Town of Fairfield, but it also helps prevent material from entering our storm drainage system. This enables us to comply with a State mandated program for municipal storm drainage systems (MS4). Our sweeping operations also allow us to sweep our Fairfield, Grasmere, and Southport centers on a rotating basis from April – November. These sweepers also clean up before and after events like the Memorial Day parade and the 4th of July fireworks, and other various community events such as running and biking road races. Street sweepers are hugely important to our street resurface program, as we strive to improve roughly 30 miles of road annually. We use these before, during, and after these road processes. Due to the high replacement cost, as well as annual maintenance cost of these units, this is the major area that we will be reviewing to possibly sub-contract some of these activities.

Although we will still need to perform our own sweeping, we may be able to reduce our sweeper to three or even two in the future by utilizing contractual services. While this will eliminate a capital expenditure, it will require an increase in the annual operating budget to maintain the same level of service.

4. 6-Wheel Dump Trucks (25) –Our 6-Wheel Dump Trucks have 4 different body styles which hold 6-8 tons of material. The biggest part of the fleet has 10 conventional dump trucks and 9 all-season bodies. As these vehicles age beyond their programmed life, they are utilized for snow duty, as replacements to primary vehicles being serviced, and to handle peaks construction activities. Please note that all 25 of these trucks are used for snow operations.

- a) 9 All-Seasons – These trucks are used for all construction activity. These have the conveyor built into the bed of the truck body. This means that these vehicles can transition from construction uses to snow mode without inserting any type of salt spreaders or calcium tanks. They can literally haul gravel in the morning and spread salt in the afternoon. Although these types of trucks have been around for a couple of decades, the systems have improved and they are not as fickle as they originally were.
- b) 10 Dump Trucks – These conventional trucks are used for all construction activity. When they are used for winter operations, a drop in V type sander is loaded into the body. Generally, these are left in the truck bed for the duration of the four month snow & ice season, limiting its ability for other work.
- c) 4 Asphalt Trucks – These trucks are equipped with built in conveyors that discharge asphalt and they are used for paving trenches, sidewalks, driveways, etc.
- d) 2 Hook Lift Trucks - trucks that are extremely versatile by swapping truck bodies like dumpsters. They are used for all types of material and debris transport

5. 10-Wheel Dump Trucks (5) Our 10-Wheelers allow us the ability to move more quantity quicker. These hold up to twice the weight of our 6 wheelers as well as over twice the capacity for brush and trees. One truck is primarily a winter snow fighter, but does get used to ass liquid calcium to our construction jobs; the other 5 trucks haul up to 12 tons of earth, millings, snow, brush, etc. All of these trucks are also utilized for snow removal operations.

6. Aerial Bucket Trucks (2) Our Aerial Bucket Trucks allow us to respond to emergency tree work and scheduled tree maintenance. They are also used to replace parking light lights, hang banners downtown and support building repairs including cleaning gutters.
7. Trash & Recycling Compact Truck - The DPW utilizes this vehicle for our daily servicing at our parks, beaches, Town grounds, and various public locations around Town
8. Tractor Trailer Cab – The Town owns a cab exclusively for the hauling of a trailer for the transportation of material. The current cab is very old, and due to its limited use we do not plan on replacing it when the current unit no longer operates. Because we do not plan on utilizing track machines, this minimizes the amount of hauling we need to perform. Tandems can also be used to transport trailers, even though their hauling capacity is not as great.
9. Dozer - The DPW has owned dozer in the past. This is exclusively for fine grading of surfaces such as new parking lots and athletic fields. As we only do this work a small percentage of the time, we do not feel it is efficient to own a dozer, and will contract out this work when necessary.
10. Excavator - The DPW has owned this piece of equipment in the past. This is exclusively a digging machine, and is efficient for deep and heavy trenching, or site work such as cutting into an embankment. As we only do this work a small percentage of the time, we do not feel it is efficient to own an excavator, and will contract out this work when necessary.

CURRENT INVENTORY Over 100,000 cost (55 in total, includes incoming and outgoing vehicles)

No.	Year	Age	Make	Model	REPLACE COST	REPLACE YEAR	NOTES
63	1989	25	GMC	Brigadier	200	2001	GOING
70	1989	25	GMC	Brigadier	200	2001	GOING
78	1988	26	GMC	Brigadier	200	2000	GOING
164	2007	7	INTL	6 wh all season	200	2019	PRIMARY
165	2005	9	INTL	6 wh all season	200	2012	PRIMARY
166	2007	7	INTL	6 wh all season	200	2019	PRIMARY
167	2008	6	INTL	6 wh all season	200	2020	PRIMARY
171	2000	14	STERLING	6 wh all season	200	2012	PRIMARY
263	2000	14	STERLING	6 wh all season	200	2012	PRIMARY
290	2000	14	INTL	6 wh all season	200	2012	PRIMARY
169	2015	New		6 wh all season	200	2027	
198	2015	New		6 wh all season	200	2027	
174	1997	17	FORD	6 wh asphalt	220	2009	PRIMARY
248	1990	24	GMC	6 wh asphalt	224	2002	SNOW
316	2004	10	INTL	6 wh asphalt	220	2012	PRIMARY
54	2015	New		6 wh asphalt	224	2027	
161	2005	9	INTL	6 wh hook lift	200	2012	PRIMARY
162	2007	7	INTL	6 wh hook lift	200	2019	PRIMARY
40	1988	26	FORD	6 wheel dump	200	2000	pre treat
45	1986	28	INTL	6 wheel dump	200	1998	pre treat
65	1985	29	INTL	6 wheel dump	200	1997	pre treat
136	1991	23	FORD	6 wheel dump	200	2003	SNOW
163	1995	19	FORD	6 wheel dump	200	2007	SNOW
178	1991	23	FORD	6 wheel dump	200	2003	SNOW
180	1990	24	INTL	6 wheel dump	200	2002	SNOW
181	1990	24	INTL	6 wheel dump	200	2002	SNOW
200	1996	18	FORD	6 wheel dump	200	2007	SNOW
255	1983	31	MACK	6 wheel dump	200	1995	SNOW
38	1987	27	MACK	10 wheel dump	228	2002	GOING
39	2005	9	INTL	10 wheel dump	228	2020	PRIMARY
55	2008	6	INTL	10 wheel dump	228	2023	PRIMARY
89	1989	25	MACK	10 wheel dump	228	2004	PRIMARY
114	1995	19	FORD	10 wheel dump	228	2007	SNOW
54	2015	New		10 wheel dump	228	2030	

CURRENT INVENTORY (Continued)

No.	Year	Age	Make	Model	REPLACE COST	REPLACE YEAR	NOTES
106	1989	25	GMC	Aerial tree truck	185	2004	GOING
53	1999	15	INTL	Aerial tree truck	185	2014	
54	2015	New		Aerial tree truck	185	2027	
169	1998	16	JOHN DEERE	back hoe, large	192	2010	GOING
47	1997	17	NEW HOLLAND	back hoe, medium	150	2009	
42	2001	13	JOHN DEERE	back hoe, medium	150	2013	
49	2012	2	JOHN DEERE	back hoe, medium	150	2024	
44	2015	New	JOHN DEERE	back hoe, medium	150	2027	
108	2008	6	JOHN DEERE	loader	180	2020	
109	2006	8	JOHN DEERE	loader	180	2018	
250	2011	3	JOHN DEERE	loader	180	2023	
289	2000	14	JOHN DEERE	loader	180	2012	
34	2002	12	ELGIN	sweeper	190	2014	
64	2005	9	ELGIN	sweeper	190	2007	
75	1998	16	ELGIN	sweeper	190	2010	
97	2001	13	ELGIN	sweeper	190	2013	
279	2001	13	MITSUBISHI	trash compacting			GOING
279	2015	New		trash compacting		2027	
303	1969	45	MACK	tractor trailer cab	150	1999	PRIMARY
4	1990	24	ACKERMAN	Excavator	300	2002	OUT
D-1	1987	27	CAT	track dozer	290	1999	OUT
TOTAL:					9,418,000		

PROPOSED FIVE-YEAR REPLACEMENT PLAN

Methodology: The useful life of the vehicles has been estimated.

A life cycle of 12 years is projected for:

6 Wheel Trucks
Backhoes
Loaders
Sweepers
Trash & Recycling

A life cycle of 15 years is projected for:

10 Wheel Trucks
Aerial Tree Trucks

When a vehicle reaches the end of projected life, it does not suddenly become obsolete. However, it does become less reliable and is often subject to more costly repairs. Items on dump trucks such as a set of springs, tires, transmission, and body rehabilitation are more common and frequent as trucks go beyond this threshold. These type items can easily cost over \$10,000. As vehicles pass their useful life, we are often faced with annually investing 50% of the vehicles value in a given year to keep it operational.

To use the four backhoes as an example, the oldest one in the group will no longer be able to perform 25% of the work. It will more frequently need repair, and it will be assigned to the less rigorous and non-priority assignments. The more vehicles that we have in a category (for example the 6 wheel trucks) give us some more flexibility to keep a greater amount on the backside of the category. However, while we can nurse a small percentage of our vehicles beyond its useful life, it should not be expected to become the norm.

Rather than focusing on the older vehicles that are on their way out, I will emphasize the vehicles that we need to efficiently perform our functions. Currently, we have 20 of these vehicles that are within the optimal vehicle useful life. This includes the seven capital vehicles that were approved this past spring. All of the new vehicles that were approved are expected to arrive before the calendar year, and will greatly improve our operations. To reiterate the sports analogy that I used during the budget season, we need our fleet to get younger to plan for the future.

PROPOSED FIVE-YEAR REPLACEMENT PLAN

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|------------------------------------|--------------------------|
| 1. Medium Backhoes (4) | (2) needed in 2018, 19 |
| 2. Payloaders (4) | (1) needed in 2016 |
| 3. Street Sweepers (4) | (2) needed in 2015,16 |
| 4. 6-Wheel Dump Trucks (25) | |
| A) 9 All-Season | (3) needed in 2016,17,18 |
| B) 10 Dump Trucks | (3) needed in 2016,17,18 |
| C) 4 Asphalt Trucks | (2) needed in 2015,16 |
| D) 2 Hook Lift Trucks | (2) needed in 2017,19 |
| 5. 10-Wheel Dump Trucks (6) | (1) needed in 2015 |
| 6. Aerial Bucket Trucks (2) | (1) needed in 2015 |

Summary:

The proper number of Capital Vehicles that the Public Works Department requires is 48. In the 5 year plan we will be replacing 17 of those 48. At the end of this 5 year plan, we will 35 of our vehicles will be with in their optimal programmed life span, and 13 will be beyond.

As this is the first iteration of this report, we struggled on the best way to present this information. It is an attempt to illustrate the current status of our capital vehicles and our vision of the direction we need to go. We look forward to working with the Board of Selectmen, Board of Finance, and RTM to accomplish this goal. This plan services the needs of the Department while respecting the financial pressures involved.