

MIXED FLEET REPLACEMENT SCHEDULES

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what we are going to cover...

- The challenges ESDs have maintaining a safe and effective fleet
- Understanding your ESD's current approach to fleet replacement and operation
- Assessing fleet replacement and maintenance costs
- Developing a Fleet Replacement Schedule (FRS)
- Mixed Fleet Replacement Approach

Today's Challenges Facing ESDs

- ✓ Cost of vehicle ownership
- ✓ Cost of operation/fuel/training
- ✓ Cost of maintenance and inspection
- ✓ Changing needs of emergency services
- ✓ Public perception of your needs and support
- ✓ Updated NFPA and regulatory standards
- ✓ Unidentified future demands

Approaches to fleet replacement and operation

Scheduled replacement at specific marks:

- ✓ *Age (10 Years for Front Line Engines, 15 years for Front Line Ladders)*
- ✓ *Mileage*
- ✓ *Resale estimates/trade-in values/lease agreements*
- ✓ *Established repair cost maximums*

“Wait and see” or “As Needed”

- ✓ *Repair cost/continued out-of-service time*

When funding is available

- ✓ Grants, donations, and fundraisers

Assessing fleet replacement and maintenance costs

Estimating and tracking costs:

- ✓ Record Management Systems (RMS)
- ✓ Accounting Software (Example: QuickBooks®)
- ✓ Microsoft Excel®
- ✓ Maintenance records
- ✓ Out-of-Service (OOS) times
- ✓ Change out time estimates
- ✓ Indirect cost for down time
- ✓ *CIP and Strategic Plans*

Tracking Out of Service (OOS) Time & Costs

Engine 1 24/7/365 Expected Hours: 8760

Scenario A (Fictional Time Estimates)

Engine 1 is scheduled for 7 minor repairs & PM all at one time. Total time for actual repairs is 8 hours. It takes an average crew up to 60 min to change in and out of a reserve unit. Mechanic takes 30 minutes to set up. Total OOS Time = 10 Hours, 30 mins of mechanic set up time & 1 mechanic trip fee (if applicable)

Scenario B (Fictional Time Estimates)

Engine 1 is scheduled for 7 minor repairs & PM; each separately. Total time for actual repairs is 8 hours. It takes an average crew up to 60 minutes to change in and out of a reserve unit. Mechanic takes 30 minutes to set up. Total OOS Time = 24 Hours, ~ 4 hours of mechanic set up time, 8 mechanic trip fees (if applicable)

Tracking Out of Service (OOS) Hours

Unit	InServiceExpt	OOS Jan	OOS Feb	OOS March	OOS April	OOS May	OOS June	OOS July	OOS Aug	OOS Sept	OOS October	OOS Nov	OOS Dec	OOS Total	Avg Per Month
Engine 1	8760	12	24	3	6	12	26	120	56	34	2	0	5	300	25.00
Engine 2	8760	3	3	4	22	4	23	2	6	20	0	0	0	87	13.38
Engine 3	8760	2	4	0	5	0	22	2	120	4	6	7	2	174	14.50
Engine 4	8760	34	3	0	2	3	54	6	77	12	0	7	9	207	17.25
Engine 5	8760	120	23	2	5	3	44	5	6	4	3	7	3	225	18.75
Engine 6	8760	55	0	3	3	8	6	4	5	6	2	3	3	98	8.17
Engine 7	8760	3	12	5	4	5	6	4	33	0	0	6	4	83	6.83
Quint 1	8760	2	2	3	65	0	0	7	720	720	720	0	0	2239	186.58
Quint 2	8760	6	0	5	4	6	4	3	2	0	5	6	7	52	4.33
Quint 3	8760	7	0	7	1	8	4	2	12	32	34	5	4	116	9.67
Quint 4	8760	9	0	9	350	7	53	2	5	8	4	4	3	454	37.83
Year Total														4034	31.12
Monthly OOS		253.00	71.00	41.00	467.00	56.00	242.00	157.00	1042.00	840.00	780.00	45.00	40.00		
Monthly Avg		23.00	6.45	3.73	42.45	5.09	22.00	14.27	94.5	76.36	70.91	4.09	3.64		

Spotting Trends or Issues:

- ✓ *Bad Batch of Fuel?*
- ✓ *Training Issues?*
- ✓ *Specific Incident Taxing/Damaged Fleet?*
- ✓ *Fleet Wide Up NFPA Upgrades?*

Spotting Trends or Issues:

- ✓ *Recall on truck?*
- ✓ *Damage because of accident?*

Unit was OOS
25.55% of the
expected 8760 in-
service hours.
Ideal in-service time
is 85-95%.

Developing a Fleet Replacement Schedule (FRS)

Establish a philosophy for fleet replacement:

- ✓ *Gather input from BOC, employees, mechanics, subject experts, and published material*
- ✓ *Neighboring fire departments/cities/elected or appointed officials/public*
- ✓ *Manufactures/Dealers*

Vehicle & Apparatus Replacement Schedule																	
September 23, 2016; 1330 DRAFT																	
Unit ID	Description	Prch Date	Age 10/16	Miles 8/13	Miles/ Hours 5/14	Miles/ Hours 7/15	Miles/ Hours 6/16	Estimate Replace \$	Maint FY13	Maint FY14	Maint FY15	Maint FY16 7/26/16	Est Maint	COMMENTS	Refb in	Prch in	Sell in
Lines & Quints (Frontline & Reserve)																	
ENG601-3022	2004 Sutphen/Precision	05/03/04	12	91,835	98,002	109748/9461	116548/9999	\$650,000	\$9,605	\$12,229	\$42,419	\$6,350	\$19,267	FY17: Refurbished in FY16; Replace in FY26	FY16	FY26	FY26
ENG602-3015	2004 Sutphen/Precision	05/03/04	12	90,166	96,019	108904/10565	117540/11415	\$650,000	\$7,446	\$16,148	\$20,994	\$16,813	\$19,267	FY17: Refurbished in FY16; Replace in FY26	FY16	FY26	FY26
ENG603-0893	2009 Spartan/Crimson	12/01/09	7	39,977	47,489	63027/5135	74529/6059	\$650,000	\$29,184	\$13,914	\$17,324	\$27,061	\$19,267	FY17: Refurbish in FY21	FY21	FY31	FY31
ENG604-0894	2009 Spartan/Crimson	12/01/09	7	31,742	36,571	47927/3710	53937/4305	\$650,000	\$9,584	\$13,339	\$16,450	\$21,063	\$19,267	FY17: Refurbish in FY21	FY21	FY31	FY31
ENG606-7468	2001 Spartan/Precision (Reserve)	08/18/00	16	41,503	42,616	44547/2889	49217/3252	\$650,000	\$31,111	\$10,271	\$5,214	\$25,179	\$19,267	RA(8/15): Refurbish in FY17	FY17	FY27	FY27
ENG608-7469	2001 Spartan/Precision (Reserve)	08/18/00	16	90,000	100,948	101753/8560	1805/8754	\$650,000	\$21,075	\$10,366	\$4,269	\$7,793	\$19,267	RA(8/15): Refurbish in FY17	FY17	FY27	FY27
QNT605-0089	2009 Pierce Velocity 105' CAFS/Q-605	09/01/09	7	24,483	27,832	36394/3466	41627/3957	\$1,300,000	\$25,553	\$5,337	\$18,524	\$19,244	\$27,459	FY17: Refurbish in FY25	FY25	FY35	FY35
QNT609-3053	2003 Sutphen Magnum 110' (Reserve)	09/30/03	13	33,178	34,800	35642/4066	36982/4200	\$1,300,000	\$10,909	\$8,953	\$11,818	\$9,835	\$27,459	RA(8/15): Refurbish in FY18	FY18	FY28	FY28

Specific Vehicle ID

Historical Data – Age, Mileage, Replace Est., Maint Cost

Replc Plans/Dates

Mixed Fleet Replacement Approach

New Units

- ✓ Custom specs
- ✓ Updated Safety Standards
- ✓ Numerous financing options
- ✓ Lease Options

Demo/Pre-Owned units

- ✓ Latest options
- ✓ Quick Turn Around
- ✓ Discounts/Incentives

Full Refurbishment

- ✓ Extends vehicle's service life
- ✓ Significant savings

New Units

- ✓ Updated safety features and technologies
- ✓ Spec'ed to meet specific needs of the agency and changes in service
- ✓ Sometimes purchased to gain Insurance Service Office credits
- ✓ Turn around time once ordered avg. 6 months – 1.3 years depending on manufacture

Demo/Pre-Owned Units

- Savings vs. exact specs should be assessed
- Total savings of \$450k compared to purchasing each unit new. Each met or exceeded our required specifications.

Full NFPA Compliant Refurbishment

- ✓ NFPA Standards on refurbishments have been updated
- ✓ 180-200 day average turn around
- ✓ Significant savings – up to 60% of a new unit
- ✓ TCESD 6 is estimated to save \$4.5 million by refurbishing some of its fleet over the next five years.
- ✓ Both manufactures and special regrab companies can competitively bid for the refurbishment.
- ✓ No impact on ISO rate
- ✓ Refurbs are built into all new trucks' FRS

Wrapping up...

- ✓ Every ESD is different with its own challenges.
- ✓ Fleet Replacement Schedules help BOCs make funding decisions.
- ✓ Fire Chiefs can better plan for down time and implement cost saving measures.
- ✓ The community is provided a level of assurance that the ESD is properly allocating funding for emergency vehicles.

Thank you for your time!

If you or your fire chief would like further information or consultation on enhancing your ESD's Fleet Replacement Schedule, please do not hesitate to contact me directly!

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