OFD's Vehicle Capital Fund Needs

~2018 to 2028~

Goal 8 of the 2017-2022 Strategic Plan

5/31/2017

OFD's 10 Year Capital Replacement Fund Needs - 2018 to 2028

Executive Summary

With the support of the City Manager and the City Council, the Olympia Fire Department has embarked on the process of development of our Strategic Plan. The strategic planning process identifies eight strategic Initiatives; resource management is one of these initiatives. This initiative has been expressed as *Strategic Goal 8: To establish a resource management equipment repair and replacement (ER&R) plan for the regional fire training center, apparatus and additional capital.*

This document, *OFD's 20 Year Capital Replacement Fund Needs*, represents a comprehensive purchase plan to include capital items housed at the fire stations and training center, fire apparatus, command & staff vehicles, self-contained breathing apparatus, fire hose, personal protective clothing, and portable fireground radios. We have created this plan to identify the Fire Department's capital funding needs and to provide the City a comprehensive list of replacement items listed by year and cost.

In the development of this document, OFD worked to insure that the replacement schedules are verifiable against the Standards of the Industry to include: National Fire Protection Association (NFPA), Washington Survey and Rating Bureau (WSRB), State of Washington Firefighter Safety standards, and related manufactures association's recommendations. The NFPA is a United States trade association that creates and maintains private, copyrighted standards and codes for usage and adoption by local governments. This includes publications from model building codes to the many on equipment utilized by firefighters while engaging in firefighting, hazardous material (hazmat) response and rescue response.

The standards that will be referenced in this document are the following:

NFPA 1901- Fire Apparatus: Engines, Ladder Trucks, Technical Rescue Vehicles

Washington Survey Rating Bureau (WSRB), OFD Evaluation

Fire Apparatus Manufacturer's Association (FAMA), White Paper

If you have any questions please feel free to contact the Deputy Fire Chief, Greg Wright (8466), Assistant Chief of Operations, Mike Buchanan (8459) the Line of Business Director, Shelley Flaherty (8431).

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Goal 8 of the 2017-2022 Strategic Plan

To establish a resource management equipment repair and replacement (ER&R) plan for the Regional Fire Training Center (FTC), apparatus, fleet and additional capital equipment.

To include: Fire Apparatus, Command Cars and Business Cars

Target Audience/Concept: Sustainability - Strengthen the department's planning process for maintaining/replacing the critical equipment used by firefighters.

Objective 8A

To identify and implement the replacement schedule for the FTC; apparatus, fleet and additional capital equipment.

Objective 8B

To identify funding sources to meet the identified maintenance, repair and replacement needs.

Objective 8C

To identify current status of the fire department's Mark Noble's Regional Training Center (MNRTC), apparatus, fleet, and additional capital equipment.

Action Items

- Evaluate the current status and obtain a needs report from the Personal Protective Equipment and Self-Contained Breathing Apparatus (PPE and SCBA) program managers
- Identify capital equipment items
- Evaluate the current status of the Training Center grounds and structures
- Evaluate the current status of the apparatus and fleet replacement plan

Objective 8D

To identify and implement the replacement schedule for the FTC, apparatus, fleet and additional capital equipment.

Action Items

- Review any pertinent manufacturer testing and replacement schedules
- Review current and applicable NFPA standards
- Create a preventative maintenance schedule

Objective 8E

To identify funding sources to meet the identified maintenance, repair and replacement needs.

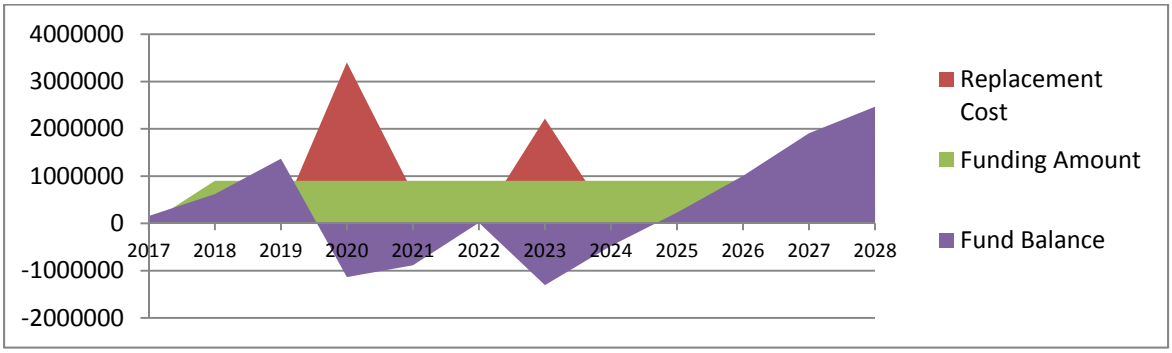
Action Items

- Prior to budget preparation, review any needs for the following budget year
- Create a critical needs report for unfunded repairs/replacements and submit to the City Budget Committee
- Work with Finance Department to identify any new funding sources

Overview of Capital Equipment Plan Cost 2018 to 2028

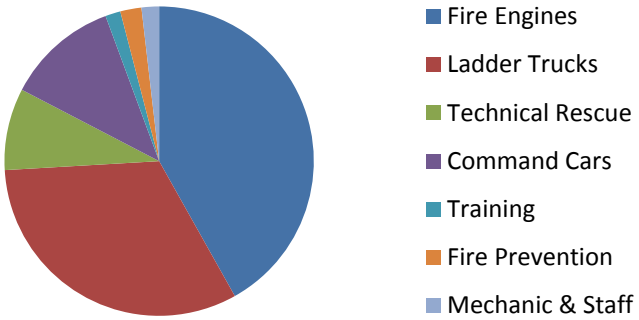
Fixed Yearly Contribution Amount

Replacement Date	Replacement Cost	Funding Amount	Fund Balance
2017			$157,249
2018	$437,147	$900,000	$620,102
2019	$152,869	$900,000	$1,367,233
2020	$3,403,842	$900,000	($1,136,609)
2021	$650,000	$900,000	($886,609)
2022	$0	$900,000	$13,391
2023	$2,218,292	$900,000	($1,304,901)
2024	$70,425	$900,000	($475,326)
2025	$198,930	$900,000	$225,744
2026	$121,629	$900,000	$1,004,116
2027	$0	$900,000	$1,904,116
2028	$336,771	$900,000	$2,467,345
Grand Total	$7,589,904		



Category and Replacement Cost

Category	**Replacement Cost**
Fire Engines	$3,176,414
Ladder Trucks	$2,445,720
Technical Rescue	$650,000
Command Cars	$891,179
Training	$119,765
Fire Prevention	$168,160
Mechanic & Staff	$138,666
Grand Total	$7,589,904



Fire Apparatus Replacement Schedule
Standard of the Industry

There are a number of national fire apparatus organizations that discuss apparatus replacement schedules for fire and EMS apparatus, including the NFPA, National Association of Emergency Vehicle Technicians, Fire Department Safety Officers Association and the Fire Apparatus Manufacturer's Association (FAMA). FAMA developed the "Fire Apparatus Duty Cycle White Paper" in 2004. The paper is an in-depth analysis of many aspects of apparatus replacement, including the key factors to be considered in a typical apparatus replacement schedule including:

- Type of department
- Fire department workload
- Population served
- Demographics served
- Topography of region served

Based on these resources, the Washington Survey and Rating Bureau (WSRB) has set the industry standard for fire apparatus (fire engine, ladder truck and technical rescue) replacement to be 15 years. Olympia Fire Department is able to extend our reserve apparatus life by an additional 10 years for a total lifespan of 25 years. This is due to the fact that we have a talented team of Emergency Vehicle Technicians that maintain and test our response apparatus.

As noted in our June 8, 2015 WSRB evaluation, Olympia Fire Department received deficiency points for apparatus greater than 15 years and additional deficiency points were added for apparatus older than 25 years. To minimize these deductions and to meet the industry standards for apparatus replacement, Olympia Fire Department's has adopted an apparatus replacement schedule of:

- 15 years frontline status
- 10 years reserve status
- 25 years total lifespan

Fire Engines

NFPA 1901- Fire Engines

The City of Olympia has four fire stations strategically located throughout the City. Each fire station houses a primary fire engine and a reserve fire engine. A fire engine combines a fire suppression unit, an aid unit and a rescue unit into one multi-function response unit.

The Number of Fire Engines Needed

Current criteria calls for one frontline fire engine and one reserve fire engine in each fire station. The standard fire engine is an apparatus designed primarily for firefighting and basic life support operations. The primary purpose of the engine is transporting firefighters to the scene, providing a water pump, limited supply of water with which to fight the fire, and carrying tools, equipment, and hoses needed by the firefighters. Standard tools found on our fire engines include basic EMS kit with an automatic defibrillator, ladders, floodlights, fire hose, fire extinguishers, self-contained breathing apparatus, and thermal imaging cameras.

Age limits and criteria for Frontline and Reserve Fire Engines

OFD fire engines serve 15 years frontline and 10 years in reserve status for a total of 25 years.

Fire Engine Cost

	Purchased	Replace	Replacement Cost
Reserve Engine 03	1995	2020	$848,727
Equipment			$109,395
Reserve Engine 01	1998	2023	$982,507
Equipment			$126,639
Reserve Engine 02	1998	2023	$982,507
Equipment			$126,639

Total Fire Engines **$3,176,414**

Fire Ladder Truck

NFPA 1901- Ladder Trucks
The City of Olympia has one fire ladder truck located OFD's Headquarters fire station. A fire ladder truck is like a fire engine except without a water tank, pump and hose. A fire ladder truck combines an aerial fire suppression unit, an aid response vehicle into one multi-function response unit and a rescue unit. The fire ladder truck carries ladders, forcible entry tools and the Jaws of Life.

The Number of Fire Ladder Trucks Needed
Current criteria calls for one frontline fire ladder truck and one reserve fire ladder truck at the Headquarters fire station. The standard fire ladder truck is an apparatus designed primarily for firefighting rescue and basic life support operations. The primary purpose of the fire ladder truck is transporting firefighters to the scene, providing aerial access with a 105 foot aerial ladder. The fire ladder truck is also needed for rescue and access to the roof, carrying tools, equipment, and limited hose needed by the firefighters. Standard tools found on our fire ladder trucks include basic EMS kit with an automatic defibrillator, ladders, hydraulic rescue tools, floodlights, fire hose, fire extinguishers, self-contained breathing apparatus, and thermal imaging cameras.

Age limit and criteria for Frontline and Reserve Fire Ladder Trucks
OFD fire ladder truck serves 15 years frontline and 10 years in reserve status for a total of 25 years.

Fire Ladder Truck Cost

	Purchased	Replace	Replacement Cost
Truck 04	1995	2020	$2,335,720
Equipment			$110,000

Total Ladder Truck $2,445,720

1995 Reserve Ladder Truck

Technical Rescue

NFPA 1901- Technical Rescue Apparatus

The City of Olympia has one Technical Rescue vehicle strategically located at our Headquarters station. The technical rescue carries the equipment required to conduct rope rescue, confined space, trench collapse and structural collapse. Technical rescue tools and equipment require a specific apparatus, as these tools take up a lot of space and will not fit on a fire engine or fire ladder truck. The City of Olympia is mandated by WAC 296-809-50014 to provide rescue services to public works employees working in trenches and confined space. OFD has contracted with Olympia Public Works to provide this required service.

The Number of Technical Rescue Apparatus Needed

We have one inadequate technical rescue vehicle on loan from McLane / Black Lake Fire Department. This vehicle was originally built to serve as a water delivery truck. The vehicle was retrofitted modestly to serve as an interim technical rescue vehicle. The technical rescue is an apparatus designed primarily for technical rescue operations. The purpose of a technical rescue is to respond to rescue calls that are beyond the capability and capacity of a fire engine and / or fire truck. Examples of technical rescue are incidents involving: high angle rescue, confined space, trench collapse and structural collapse. Standard tools carried on a technical rescue include ropes, fans, gas monitors, low profile supplied air breathing apparatus, air bags, struts, wood supports, cutting, breaching and breaking tools.

Age limit and criteria for Frontline and Reserve Technical Rescue Apparatus

OFD technical rescue vehicles serve 15 years frontline and 10 years in reserve status for a total of 25 years.

Technical Rescue Cost

	Purchased	Replace	Replacement Cost
Rescue Vehicle On loan from McLane/Black Lake	2003	2021	$650,000

Total Rescue $650,000

Command Vehicles and Business Cars Replacement Schedule
Standard of the Industry

The University of Minnesota, Center for Transportation Studies, has determined the optimum life cycle for passenger vehicles to be in the range of 9 to 12 years. The study also showed that total annual costs tend to decline only marginally after 9 years. Based on the results of this study, extending OFD's target life beyond 9 years may only provide marginal cost savings.

Command vehicles serve a critical role in our department. Command vehicles are on call 24 hours and respond to emergencies within our city and adjoining jurisdictions. With this increased responsibility the lifecycle for command vehicles is 10 years. Business vehicles are also important to our department, but since their role is less critical, their life cycle has been extended to 12 years.

Command Unit serves as a regional interoperable field command post for complex events.

Age limit and criteria for Command and Business Cars
OFD Command vehicles serve 10 years and Business vehicles serve 12 years

Age limit and criteria for Command Van
OFD's one Regional Incident Command Unit serves a total of 25 years frontline and then is replaced.

2000 Chevrolet Regional Incident Command Unit

Command Vehicle Cost

	Purchased	Replace	Replacement Cost
Chief 02 Deputy Chief	2001	2018	$40,113
Equipment			$10,000
Battalion 02	1999	2018	$42,230
Equipment			$20,000
Mechanic 01	2005	2018	$87,550
Equipment			$20,000
Fire Chief 01	0	2019	$41,317
Equipment			$10,000
Battalion 01	2014	2024	$50,425
Equipment			$20,000
Command Van	2000	2025	$99,593
Equipment			$50,000
Chief 03 Fire Marshal	2016	2026	$50,814
Equipment			$10,000
Chief 04 Operations Chief	2016	2026	$50,814
Equipment			$10,000
Chief 02 Deputy Chief	2018	2028	$53,909
Equipment			$10,000
Battalion 02	2018	2028	$56,754
Equipment			$20,000
Mechanic 01	2018	2028	$117,660
Equipment			$20,000

Total Command Cars $891,179

Training and Support Vehicle Cost

	Purchased	Replace	Replacement Cost
Training Officer	2016	2028	$48,448
Equipment			$10,000
Medical Services Officer	2001	2019	$41,317
Equipment			$20,000

Total Training $119,795

Fire Prevention Vehicle Cost

	Purchased	Replace	Replacement Cost
Inspector	2003	2018	$29,355
Equipment			$5,000
Inspector	2004	2018	$29,355
Equipment			$5,000
Asst. Fire Marshal	2005	2018	$40,113
Equipment			$10,000
Inspector	2013	2025	$44,337
Equipment			$5,000

Total Fire Prevention $168,160

Mechanic & Staff Vehicle Cost

	Purchased	Replace	Replacement Cost
Fleet Vehicle	2003	2019	$30,236
Equipment			$10,000
Fleet Vehicle	2003	2018	$24,720
Equipment			$5,000
Fire Pool car	2005	2018	$29,355
Equipment			$5,000
Fleet Vehicle	2005	2018	$29,355
Equipment			$5,000

Total Mechanic & Staff $138,666