

# Mosier Fire District Capital Advisory Subcommittee Report November 2021

## Executive Summary

The committee gathered information from the Chief and others in order to understand the future needs of the district. The Union Pacific (UP) money enabled Mosier Fire to upgrade most of our apparatus. However, the funding needs of the Joint Use Facility (JUF) may extend for a few decades during which we will also need to replace all our apparatus.

- The Chief has requested approximately \$38,000 to purchase another brush engine. Our other brush engines may need to be replaced over the next several years. Our oldest larger engine should last another 10 years, others 20-25 years.
- Mosier Fire should consider setting aside approximately **\$35,000-\$40,000/year**(inflation adjusted) for vehicle replacement. This amount is based on purchasing a used brush engine every 4 years (\$10k/year), a new used Command Vehicle every 8-10 years (\$3k/year), and replacing our larger engines (\$16k/year) and our tenders (\$10k/year) when they are 40 years old with other used equipment.
- Mosier Fire should consider budgeting an **additional \$5,000-\$10,000/year**(inflation adjusted) for other medium ticket items. Some of these items are already in our annual budget either entirely or partially, but the line items do not cover anticipated expenses. This amount will not cover large items like a new set of Self Contained Breathing Apparatus (SCBA), but will allow us to purchase a radio or two plus a set of turnouts or two in addition to wildland gear and radio maintenance.
- Mosier Fire should consider budgeting a minimum of \$20,000 to outfit the JUF with an extractor and some basic equipment/furnishings. Note that this amount is a bare minimum as other larger items (e.g. a compressor and associated plumbing for fill stations) will be much easier to install at the time the facility is built.
- Many of these expenses may be covered by grants, and Mosier Fire should strive to get such grants.

## Introduction

This report updates the report from June of 2014. Readers are encouraged to review that report on Mosier Fire's website, as it provides both excellent historical context and background information that remain relevant today. Due to the infusion of cash from the derailment settlement, Mosier Fire has been able to execute much of the plan of 2014.

At the time writing of this updated report, Mosier Fire is considering the funding of the Joint Use Facility (JUF). We anticipate that the JUF will require significant funding. However, the first duty of Mosier Fire is public safety, and it is the responsibility of the Board to ensure that we have the resources we need to support the operational needs of the District. Thus, it is timely and important to review our future capital needs to ensure we have the money to buy the apparatus and other equipment required to fight fires and respond to EMS calls. The goal of this report is to forecast operational needs that go beyond our current day to day budget, so that the Board can

both budget and plan for expenses, as well as to explain to our constituents why Mosier Fire maintains the fleet we do.

## Vehicles

This report divides vehicles into four categories: Brush Engines, Engines, Tenders, and Other. Each of these classes of vehicles is used for different purposes as explained (briefly) in the relevant sections. As Mosier Fire is fortunate to have a large number of volunteers (approximately 20), we also can make use of a number of vehicles simultaneously. Each category description includes a brief explanation of the purpose of the vehicles and why Mosier Fire maintains the number that we do. This explanation is followed by a brief replacement plan that explains our future costs. All estimates are in 2021 dollars, and should be adjusted annually based on changing costs.

Below is a chart of the different types of engines as defined by FEMA. The information is taken from FIRESCOPE. As explained below, Mosier Fire currently has type 1 engines, one type 3 (Wildland) engine, and type 6 (brush) engines.

Component	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6
Equipment Pump Min Capacity	1000 GPM	500 GPM	150 GPM	50 GPM	50 GPM	50 GPM
Equipment Tank Min Capacity	300 gal	300 gal	500 gal	750 gal	400 gal	150 gal
Equipment Hose 2.5"	1200 feet	1000 feet	-	-	-	-
Equipment Hose 1.5"	500 feet	500 feet	1000 feet	300 feet	300 feet	300 feet
Equipment Hose 1"	-	-	500 feet	300 feet	300 feet	300 feet
Min Personnel	4	3	2	2	2	2

## Brush Engines

Brush Engines, often referred to as Brush Rigs, are the most frequently used vehicles at Mosier Fire. They are used for fighting wildland fires and for responding to EMS calls. Mosier Fire currently has two brush engines that are used regularly, and a few more that are rarely if ever used. Several of the unused brush engines have been sold in recent years and we are contemplating selling at least one more. Mosier's brush engines are also our highest mileage

pieces of apparatus, and are most likely to require replacement soon. Brush engines are especially useful in a rural district like Mosier because they are easily maneuverable and can travel more easily throughout the district.

Below is a chart of our current brush engine inventory.

	<b>Brush 11 (federal excess property)</b>	<b>Brush 13</b>
<b>Year</b>	2008	1999
<b>Age</b>	13	22
<b>purchase year</b>	2019	2008, paid \$30K
<b>Manuf/Model</b>	Ford F550	Dodge 2500
<b>Value</b>	N/A	insured for 20K
<b>Cab space</b>	4 person	2 person
<b>Terrain/Type</b>	Type 6	Type 7
<b>pump</b>	150	125
<b>tank size</b>	300	250
<b>foam</b>	20 gallon	10 gallon
<b>ladders</b>	none	none
<b>can it be dispatched to conflags?</b>	yes	yes/with attachments
<b>Life expectancy &amp; reliability</b>	has 96K	has 80K as of 2020
<b>Station housed</b>	11	13
<b>replacement parts</b>	easy	easy
<b>Engine brake</b>	none	none
<b>generator</b>	none	none
<b>SCBA</b>	none	none
<b>EMS equipment</b>	yes	yes, in cab
<b>radio headset system</b>	none	none
<b>light tower</b>	none	none
<b>Replacement est.</b>	2029 (note that since this is Federal Excess property it may last longer or less time; this is our estimated time that we might purchase a replacement)	2025

<b>Years until replacement</b>	8	4
<b>Budget Cost (2021 \$)</b>	40,000	40,000
<b>notes</b>	<i>B11 is federal property and if it dies we give it back. It has a Ford 6.4l engine that is known to break down, and as such B11 may need to be replaced sooner as well.</i>	B13 may need to be replaced sooner.

### **Proposed Additional Apparatus**

The Chief has proposed purchasing an additional brush engine at an approximate cost of \$38,000. His proposal is that we buy a vehicle from Oregon Department of Forestry (ODF) that has approximately 64,000 miles on it, and that we put a new motor in it, buy new tires and other necessary equipment. This purchase would come to around \$38,000, including the updated motor that would increase the lifespan of the vehicle for our district. As stated above, brush engines are frequently the first out equipment and ours have the highest mileage of our fleet.

### **Brush Engine Replacement Plan**

If practical, Mosier Fire would like to upgrade one of our brush engines approximately every four years, thus making the service life of each brush engine around 12 years. It may be that if we can acquire newer equipment we may be able to keep brush engines in service for longer, but it is more likely that both B11 and B13 may need replacement sooner than we might like. If we continue to rely on surplus and/or used brush engines, we should budget approximately \$10,000 per year towards future brush engines, though we are likely to require more than that in the next few years.

### **Engines**

Mosier Fire has three larger engines, two Type 1 engines and a Type 3 four wheel drive engine. The Type 3, E11, is useful for getting around in the snow and in more rural or wildland situations. It also fits well into the smaller bays at Station 11 (in downtown Mosier). Mosier Fire's Type 1 engines are capable of pumping more water and are used to fight structure fires. Mosier Fire has a Type 1 at Station 12 (at the intersection of State and Carroll Roads) E12, and another at the top of the hill in Station 13 (upper State Road across from Walker Farm Road) E13. By maintaining the current type 1 and type 3 engines the district has the ability to keep ISO ratings good and insurance rates lower for district residents. Being 4WD, type 3 Engine 11 helps ensure that Mosier Fire can respond in inclement weather and to more rural locations.

## Engine Replacement Plan

The oldest engine, E13, should probably be replaced in about 10 years when it is about 40 years old. The demand for used equipment is increasing and we expect that we will have to pay more for apparatus as time goes on. Thus, we believe that we need to plan to be able to spend more, and our savings budget should be \$100,000 for each of E12 and E13, and \$200,000 for the 4WD E11. All of that put together means that we would need around \$400,000 in 2021 dollars in the next 25 years or so.  $\$400,000/25 = \$16,000/\text{year}$ . Alternatively, we may be able to get grants for some or all of the expense of replacing engines. Grants have the huge advantage of enabling us to buy newer apparatus that will function better for longer. However, grants are not a sure thing, so it may be prudent to budget \$16,000/year towards engine replacement.

Below find a chart of Mosier's engines:

	<b>Engine 13</b>	<b>Engine 12</b>	<b>Engine 11</b>
<b>Year</b>	1991	2003	2006
<b>Age</b>	30	18	15
<b>purchase year</b>	2020, paid 20K	2020, paid 49K turnkey	2018, paid \$100K
<b>Manuf/Model</b>	International 4900	HME Fox	International 700
<b>Value</b>	insured for 50K, replacement cost \$800K	replacement cost: \$800K, insured for \$50K	insured for 100K, replacement cost is \$405K
<b>Cab space</b>	3 person	4 person	4 person
<b>Terrain/Type</b>	Type 1	Type 1	Type 3
<b>pump</b>	1000 GPM	1250 pump	1000 GPM
<b>tank size</b>	1000	750	500
<b>foam</b>	25 gallon, class A	30 gallon class A	none
<b>ladders</b>	full complement	complemented ground ladders	1 ground ladder, 15'
<b>can it be dispatched to conflags?</b>	\$100/hour	\$100/hour	\$60/hour
<b>Life expectancy &amp; reliability</b>	has 11K miles as of 2020	43K miles on it as of 2020	around 11K as of 2020
<b>Station housed</b>	13	12	11
<b>replacement parts</b>	still relatively easy	easier because newer	easy because newer
<b>Engine brake</b>	no	yes	yes
<b>generator</b>	not mounted; removable	5 kw on-board	5 kw
<b>SCBA</b>	exterior mounted, 3	3 mounted in cab	4 mounted in cab
<b>EMS equipment</b>	none	EMS compartment inside cab	stored in exterior compartment

<b>radio headset system</b>	none	internal communication	none
<b>light tower</b>	External scene lights	External scene lights	External scene lights
<b>Replacement est.</b>	2031	2043	2046
<b>Years until replacement</b>	10	22	25
<b>Budget (2021 \$)</b>	100,000	100,000	200,000

## Tenders

Tenders are large tanks of water on wheels that are used to provide water supplies to structure, wildland, or brush engines when there is no hydrant nearby. As with engines, it's important to have a tender at both the top and the bottom of the hill. It's also important to have two tenders to operate tender shuttles. Mosier Fire has two tenders, both of which are 1998's, low mileage, and manual transmission. Although they are relatively easy to drive stick shifts, we may at some point have problems with volunteers who don't have experience with manual transmission vehicles. Fortunately that has not been a problem to date, and we can train volunteers as needed. Below find a chart of our tenders.

### Tender Replacement Plan

These tenders should last at least until they are 40 years old as they both have stainless steel tanks that are less susceptible to rust. The budgeted cost to replace a tender is \$100,000 each. As with engines, we may be able to get grants for new tenders, however, that is not a sure thing. Given that we will want to replace two of them in 20 years, we should consider budgeting  $\$200,000/20 = \$10,000/\text{year}$  for tenders.

Below is a chart of Mosier's tenders.

	<b>Water Tender 12</b>	<b>Water Tender 13</b>
<b>Year</b>	1998	1998
<b>Age</b>	23	23
<b>purchase year</b>	2018, paid \$50K	2018, paid \$50K
<b>Manuf/Model</b>	KME/Ford	KME/Ford
<b>Value</b>	insured for 50k	insured for 50k
<b>Cab space</b>	2 person	2 person
<b>Terrain/Type</b>	Type 2	Type 2
<b>pump</b>	250	250
<b>tank size</b>	1500 gallon	1500 gallon
<b>foam</b>	none	none
<b>ladders</b>	none	none
<b>can it be dispatched to conflags?</b>	yes	yes
<b>Life expectancy &amp; reliability</b>	has 10K miles as of 2020	has 10K miles as of 2020
<b>Station housed</b>	12	13
<b>replacement parts</b>	easy	easy
<b>Engine brake</b>	none	none
<b>generator</b>	none	none
<b>SCBA</b>	none	none
<b>EMS equipment</b>	AED	AED
<b>radio headset system</b>	none	none
<b>light tower</b>	none	none
<b>Replacement est.</b>	2038	2038
<b>Years until replacement</b>	17	17
<b>Budget Cost (2021 \$)</b>	100,000	100,000

## Other Vehicles

For the past several years, Mosier Fire has maintained a command vehicle, previously a 2007 Chevy Suburban, now a 2015 GMC Sierra Pickup. The suburban now has over 168,000 miles and will be used as a utility vehicle for duty shifts or transporting volunteers to classes. The District anticipates that the Command vehicle will need to be replaced sometime in the next 8-10 years as the Chief drives it around 13,000 miles/year. Thus, we should probably budget around \$3000/year for a new (used) Command vehicle.

	<b>Utility Vehicle (Suburban) U11</b>	<b>Pickup C-10</b>
<b>Year</b>	2007	2015
<b>Age</b>	14	6
<b>purchase year</b>	2015, paid \$10k	2021, \$25,000
<b>Manuf/Model</b>	Chevy Suburban	GMC Sierra Crew Cab
<b>Value</b>	insured for 30K	25,000
<b>Cab space</b>	5 person	4 person
<b>Terrain/Type</b>	Sport Utility	Pickup
<b>pump</b>	none	none
<b>tank size</b>	none	none
<b>foam</b>	none	none
<b>ladders</b>	none	none
<b>can it be dispatched to conflags?</b>	yes	Yes as it's the TF/STLDR unit
<b>Life expectancy &amp; reliability</b>	has 168K miles as of 2020	8-10 years
<b>Station housed</b>	Chief's	Chief's
<b>replacement parts</b>	easy	easy
<b>Engine brake</b>	none	none
<b>generator</b>	none	none
<b>SCBA</b>	9 spare cylinders	1 SCBA, 1 spare cylinder
<b>EMS equipment</b>	AED	BLS with AED
<b>radio headset system</b>	none	No
<b>light tower</b>	none	No
<b>Replacement est.</b>	N/A	2030
<b>Years until replacement</b>		9
<b>Budget Cost (2021 \$)</b>		30,000



## Additional Expenses

For the past several years, Mosier Fire has spent from both the general fund and other funds to update equipment. Here are some numbers from the budget at the start of the 2021-22 fiscal year:

### Budget numbers

For the 2021-22 fiscal year, Mosier Fire budgeted from the general fund:

\$6,000 PPE Purchase and Replacement

\$3,000 Communications Equipment

PPE includes both structural and wildland gear; we have been spending a few thousand dollars each year on wildland gear in addition to purchasing some structural turnouts.

It is unclear whether the Communications Equipment line item includes both service for our radios as well as replacement radios, but \$3000 would not cover both.

For the 2021-22 fiscal year, Mosier Fire budgeted from other funds:

\$21,252 Fire Equipment from UP Derailment Equipment fund

\$27,236 Squad loan payment from the Capital Reserve fund

\$4,016 General fund amount budgeted above estimated taxes

\$2,000 Giswold Bequest

### Potential Future Expenditures

Other expenses are hard to predict. Eventually the turnouts we have will be old and require replacement. We did just receive SCBA cylinders from Portland Fire, so we don't anticipate purchase of SCBA's for another 10 years. Chief Mike Renault hopes that we can piggy back onto a regional grant for SCBA's. Although we were unable to join the Hood River County grant, we hope to join a Wasco County grant in several years.

Below is a chart of possible expenses. Many of these numbers are rough estimates.

Item	Estimated Cost	Purchase Year	Replace ment Year	Notes
Milnor Washer/Extractor	15000	2023		Grant?/Looking at other purchase options.
Ram Air Gear Dryer	9500	2023		Grant?/Looking at other purchase options.
Bauer SCBA Compressor	25000	2023		Grant?/Looking at other purchase options.
Radios	2000/each?	various	various	
SCBA	15 * 10k per = \$150,000	various	2031?	Really hoping for a grant

Turnouts	3000 per	various		budget 6000 2021
Portable Exhaust System	300/vehicle	2023		
Miscellaneous Station Equipment/Furnishings	5000	2023		
Lifepak 15	25000	2020	2035	Used including lifepak, extra batteries and charger.
Lifepak 12	25000		2025	
Generator Trailer		2015		Hoping for power company to install generator at the grange.
Pumping System	70000	2019		

## Plan

Mosier Fire needs a budget plan for these kinds of expenses.

Best guesses at this point include:

Bare minimum \$20,000 to outfit the JUF with an extractor and some equipment/furnishings.

We probably need to increase the budget line items for communications and PPE. The current line items for these total \$9000 but if we want to replace two radios and two sets of turnouts each year in addition to buying wildland gear and maintaining radios we probably need closer to \$15,000.

We should consider budgeting around \$3000/year to replace a Lifepak every 10 years.

Replacement SCBA will be a major expense of approximately \$150,000 and we should pursue a grant, hopefully in conjunction with regional agencies.

If we had the opportunity to join a grant for replacement turnouts that could be advantageous.

In the past two years, the District has budgeted over fifty thousand dollars for “rightsizing” of fire equipment. If the District requires more such expenditures in order to meet operational needs we should plan for them.

## Closing thoughts

Housing apparatus was an important part of the 2014 Capital Equipment plan. The new bays in the JUF will help us be able to house larger more modern apparatus. However, the JUF likely will require significantly more money in upkeep than our smaller stations. Mosier Fire needs to develop a budget for the JUF operations in order to ensure we have sufficient funds for its upkeep.

There is significant interaction between our budgetary constraints and our capital equipment needs. Now that all of the UP money has been committed, the District needs to plan its budget to ensure that we have the money for operational needs.