

District of Barriere

REPORT TO COUNCIL

Request for Decision

Date: March 10, 2025	File: 530.20/Rpts
To: Council	From: Fire Chief
Re: Bush Truck Replacement – Early Budget Approval	
Recommendation: THAT Council instructs Staff to expedite the purchasing of a suitable Bush Truck in the amount not to exceed \$400,000 to be funded from _____, AND THAT the Mayor and Chief Administrative Officer be authorized to complete the procurement even if it requires sole sourcing of the item; AND THAT the expense be included in the 2025-2029 Financial Plan.	

Purpose

Fire Department's Bush Truck is currently aging and has had several issues identified with the pump, wiring and weight. The purpose of this request is for Council to consider funding and replacing the current Bush Truck.

Background

The Fire Department currently has a 2007 Ram 3500 Bush Truck in service and use for responding to wildfires, general calls, and as a second Rescue Vehicle (for Motor vehicle Incidents). This vehicle is an all around multi purpose vehicle for the department to effectively respond to a variety of calls.

Over the last few years, The District of Barriere has had to complete multiple different types of maintenance on this vehicle and this vehicle has seen failure on wildfire events and emergency scenes, including refusing to turn back on while on scene at a wildfire event. The three main issues identified have been:

The pump for this vehicle is fire service rated – however the connections and set up are not. This means that the pump needs to work harder to produce its expected output – which will result in more wear and tear, use more fuel and essentially cost more in replacing the pump more frequently. (approximate repair cost to replace the parts is \$10,000)

Weight restrictions: The current Gross Vehicle Weight Rating for this vehicle is 5670kg (or 12,474lbs). It is currently sitting at 6080kg (or 13,376). This means the vehicle is 410kg (902lbs) overweight with only 2 firefighters in it. This vehicle is typically required to carry 3-4 passengers. The water in the truck has been reduced to half capacity to ensure it is within legal weight. However, this creates other risks and reduces the effectiveness of the vehicle when responding to wildfire or other fire events. As a note, the initial attack is critical and the more amount of water is available from the start directly correlates to limiting the spread of the fire.

As a note, commonly, the most ordered and purchased Bush Truck is at minimum a 5500/550, this allows for maximum weight capacity and allows the vehicle to carry all necessary equipment.

Wiring: This vehicle has not been properly equipped to maintain the amount of electrical current it draws. This has resulted in complications from the alternator and has been in to the mechanics shop 3 times since 2021 for this issue. In addition to this, fuses needed to be replaced annually on the vehicle. The amount of electrical that this vehicle requires, is not sufficient to supply radios, emergency lights, pump etc.

The approximate costs to re-wire the truck and to replace the necessary parts are approximately \$15,000.

CURRENT FIRE DEPARTMENT FLEET

Currently, the Fire Department has the following **active** apparatus in their fleet. Please note, the Fire Underwriter Survey (FUS), dictates the useable life for certain fire department equipment. Falling out of line with the FUS requirements will have a direct impact on home insurance premiums for residential and commercial properties alike. For the District, these items are Engine 2, Engine 3, and the Water Tender.

2007 Ram 3500 (Bush Truck) – approximate replacement cost \$400,000

- Diesel
- 300 Gallons of water (Currently running at 50% water capacity as GVWR is 1000lbs over when tank is)
- Main use: Wildland Fires, Rapid Attack Truck
- Used as a secondary Rescue Truck
- Used in areas with long, steep driveways to ensure an Engine can make it through the area without damage
- Used for FireSmart Assessments and Commercial Business Inspections
- Pros: Most versatile truck, allows easy access to FSR, tight spaces, fields etc.

2016 International (Water Tender) – estimated cost by the time of replacement in 2035 \$750,000

- Recommended to be replaced at 15 to 20 years (2030 or 2035)
- Diesel
- Used as a vehicle to move water back and forth to an emergency
- 1600gallons of water
- Hydraulic Pump (not fire-service rated)

2021 Freightliner (Engine 2) – estimated cost by the time of replacement in 2046 \$1,500,000

- Replacement recommended in 15 years
- Diesel
- Primary structure firefighting apparatus or event

2006 Freightliner (Engine 3) – estimated cost by the time of replacement in 2030 \$1,000,000

- Replacement recommended in 2026 – an age extension can be requested to extend the life of the vehicle, staff expect to be able to get 3-4 years out of this extension, with a replacement Engine required no later than 2030
- Diesel
- Second In fire apparatus
- Main apparatus to deploy to Rural Rescue

** The Engines can both be switched as the primary Engine – meaning that by replacing E3, we can extend the life of Engine 2. One primary Engine must be within 15 years and the secondary Engine must be within 20 years per FUS. Both numbers are eligible for extensions of up to 5 years, however, must be tested yearly and pass an inspection, and if the inspection fails, the Engine must be replaced within 6 months, which will be challenging to accomplish as the wait times for engines is roughly 18-24 months currently.

BUSH TRUCK HISTORY

The Bush Truck was purchased in 2008 from the USA. This truck was bought and reconfigured with compartments, a water tank and a water pump and was outfitted to be used as a 'Rapid Attack Truck' with forestry fittings.

During the Wildfires in 2021, this truck failed on the fireground, dying while a crew was leaving a major event in Vernon. The issue was found to be a fried connection to the alternator.

Two years ago, a significant amount of work was completed on the Bush Truck. This included electrical work, a new pump, and inspections. Even after this work was completed, a failure for the pump occurred in 2023 during the Donnie Creek Fire. Crews adapted by installing a Wateraxe pump on the top of the apparatus to draw out water to use in firefighting efforts.

The night switch for this vehicle was serviced again in January of 2025 after failing three times at an emergency event.

IMPORTANCE OF BUSH TRUCK

Barriere is surrounded by the Wildland Urban Interface (WUI). (A WUI is the area where human development meets the natural environment). This is a zone where wildfires can have a devastating impact on communities: Barriere currently sits at a Risk Class of 1 (the most extreme rating for the WUI).

Engines and Tenders have the capacity to travel on commonly maintained roads, but a Bush Truck can move more freely through fields and back roads to 'meet' a fire instead of waiting for it to come to a structure.

A Bush Truck is not a requirement for a municipal fire department and does not affect insurance gradings through the FUS. That being said, many rural departments utilize Bush Trucks because of their adaptability, moveability, quick deployment options and versatility. In mountainous areas, areas where FSR's are present and areas that are subject to lots of grass/interface and landscape fires are present, Bush Trucks are utilized significantly.

With 70% of our Fire Protection Boundary being rural residents, the densification of some urban areas, and multiple properties displaying more of a 'rural' aesthetic even within town boundaries (Leonie, Birch, Spruce, Barkley etc), the importance of a Bush Truck is essential in the area to allow for a rapid and quick knock down of fire events within the district and Fire Protection Boundary.

The Bush Truck has been deployed to over 272 landscape and grass fires and illegal burns. This does not include MVI's, Rural Rescues, wildfire deployments or structure fires.

In addition to these events, the Bush Truck has been used in the past year as a 'FireSmart Assessment' vehicle (in addition to emergency incidents) to allow for use of the equipment off the vehicle (ladders to access roofs). This vehicle is also utilized for Commercial Business Inspections. The Bush Truck is utilized as a 'Command' vehicle to scope out fires in 'hard to access areas,' including steep driveways, over bridges, on FSR's and smaller events like a 'line down.' In addition to these, this vehicle is utilized to get firefighters from the firehall to the fire ground, or to send a firefighter with SCBA bottles to refill them with air during a major structural event when a Tender or Engine can not leave.

Although this vehicle is not mandatory through the FUS or the Office of Fire Commissioner, this apparatus has been a crucial and integral part of the Fire Department thus far.

INTERAGENCY AGREEMENT

Our Fire Rescue team is eligible to be deployed to wildfire events through the Provincial Interagency Agreement with the Office of the Fire Commissioner and BC Wildfire Service.

A Bush Truck is one of the highest requested apparatuses that Barriere has been called for. Previous Chiefs estimated that we have rejected around 10 deployments over the last 4 years (for various reasons).

The following is a breakdown of the 5 types of Bush Trucks (referred to as wildland in the table) that can be requested by BCWS under the agreement.

Engine Minimum Requirements

Engine Type	Staff / crew	Tank Size USG	Pump USGPM	Pump PSI	Pump & Roll	Ladders	Master Stream	2.5" hose	1.5" hose	¾" hose
Type 1 (structure)	4	300	1000	150	No	Yes per NFPA 1901	Yes	1200' BAT	500' NPSH or QC	200' GHT
Type 2 (structure)	4	300	500	150	No	Yes per NFPA 1901	No	1000' BAT	500' NPSH or QC	200' GHT
Type 3 (wildland)	3	500	150	250	Yes	No	No	No	1000' NPSH or QC	500' GHT
Type 4 (wildland)	3	750	50	100	Yes	No	No	No	300' NPSH or QC	300' GHT
Type 5 (wildland)	3	400	50	100	Yes	No	No	No	300' NPSH or QC	300' GHT
Type 6 (wildland)	3	150	50	100	Yes	No	No	No	300' NPSH or QC	300' GHT
Type 7 (wildland)	2	50	10	100	Yes	No	No	No	No	200' GHT

Figure 1: Pulled directly from the Memorandum of Agreement for Interagency Operational Procedures and Reimbursement Rates document, available online through the provincial government website.

REVENUE GENERATED

The Bush Truck has been deployed through the previously mentioned Interagency Agreement on several occasions, with the two largest years of revenue being 2021 and 2023 (specific to only Bush Truck – the amount below does not include other engines and tenders deployed).

Revenue generated from 2021 and 2023 was \$357,620.00 from the Bush Truck.

Below is a table explaining the hourly rate the trucks can make on a deployment:

Structure Engine, Type 1, all found	\$676/hr
Structure Engine, Type 2, all found	\$567/hr
Truck Company, Type 1, all found	\$938/hr
Truck Company, Type 2, all found	\$807/hr
Water Tender, Support Type 1, all found	\$419/hr
Water Tender, Support Type 2, all found	\$341/hr
Water Tender, Support Type 3, all found	\$319/hr
Water Tender, Tactical Type 1, all found	\$419/hr
Water Tender, Tactical Type 2, all found	\$352/hr
Wildland Engine, Type 3, all found	\$536/hr
Wildland Engine, Type 4, all found	\$412/hr
Wildland Engine, Type 5, all found	\$395/hr
Wildland Engine, Type 6, all found	\$363/hr
Wildland Engine, Type 7, all found	\$238/hr

Figure 2: Figure 1: Pulled directly from the Memorandum of Agreement for Interagency Operational Procedures and Reimbursement Rates document, available online through the provincial government website.

The current Bush Truck has been deployed as a 'Type 6' Wildland truck, and can make \$363/hr. This is an all-found rate, and wages to firefighters and staff are paid out of this hourly amount. After pulling wages from this rate, \$211 per hour is actual revenue for the District of Barriere.

Other Potential Risks

Besides not being able to respond to incidents, the following risks are also apparent if operating a vehicle over the maximum allowable weight:

- Insurance would become void if an accident occurs and the vehicle is found to be overweight
 - o It should be noted, that if an accident should occur and the vehicle is found to be overweight, the District of Barriere would be liable for 100% of all costs and accident-related expenses
- CVSE will issue a fine for the vehicle if it is found overweight
- All insurance will become void
- The fine can affect the Transport Canada Licensing for the District of Barriere

Additional Overweight Risks:

- Increased likelihood of accidents
- Breaking failure
- Damage to roads
- Steering difficulty
- Additional wear and tear to the vehicle (possibly including additional downtime in vehicle)
- Increased fuel consumption
- Likelihood of void insurance
- Loss of license to driver

Water at half capacity risks:

- Allows water to move more freely and can affect steering, brake handling, and control of the vehicle while it is in motion

Removing Compartments and Necessary Equipment Risks:

- Not having enough tools and equipment to extinguish a fire putting firefighters, exposures and assets at risk

FINANCIALS (BORROWING & PURCHASING)

The primary option would be to replace the current Bush Truck. By removing some heavy components, the current truck may be an acceptable vehicle for continued light duty use for a few additional years while serving for lower priority tasks such as FireSmart Inspections, Commercial Business Inspections, Command Vehicle, and a transport vehicle.

COST:

Staff have approached several different companies that make Bush Trucks in both Canada and the USA to gain an understanding of replacement costs and turnaround times for a Bush Truck if Council choose to replace this apparatus. Below are the highlights of these conversations:

- To build a new Bush Truck specific to the needs of the department, a 32-month waiting period is expected. During that build time, the price of the vehicle can fluctuate depending on the cost of material (quotes cannot be guaranteed)
- Stock models are available and range from a price around \$300,000 to \$400,000
 - Stock models around \$300,000 mark do not have accurate storage for the department's needs and would need to have funds allocated to reconfigure the vehicle after market

TARIFFS

After the threat of tariffs in January, staff investigated the estimated cost increases within the Fire Department. Thankfully, the District purchases the majority of the fire department specific equipment from Canadian suppliers, and a large amount of items purchased are made in Canada. Unfortunately, 90% of the materials used for the equipment comes from the USA. If tariffs move ahead (and reciprocal tariffs are implemented by Canada), we will be looking at a significant increase for the replacement of a Bush Truck. US leadership has indicated that these tariffs would take place as early as March 4, 2025. Canadian tariffs on US imports that are in effect immediately are not expected to be focused on major vehicle components; however, Canada has indicated that they would look at further products to be taxed within a 2-3 week timeframe.

FINANCING

Vehicles are required to be funded to 100% upfront if buying stock, and 90% upfront if a new build is being manufactured.

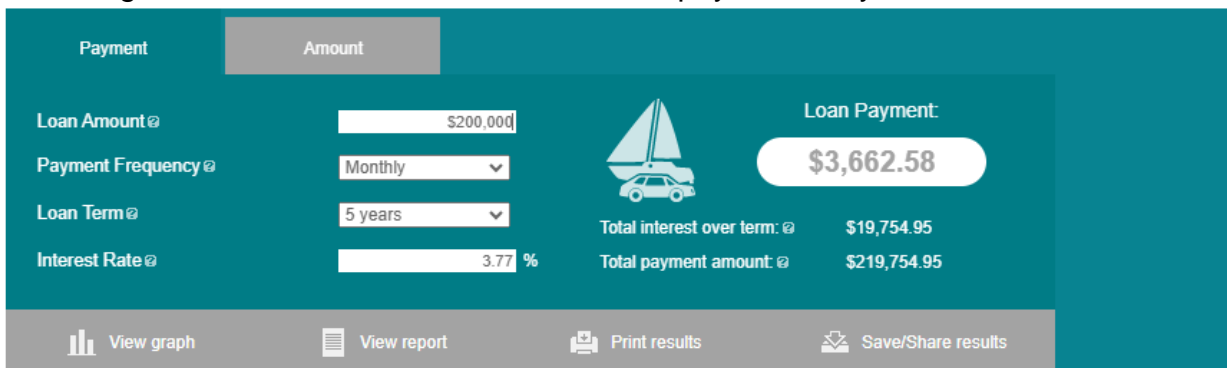
There are three options of purchasing a new Bush Truck if Council approves the request to move forward with this replacement:

Use of Reserves:

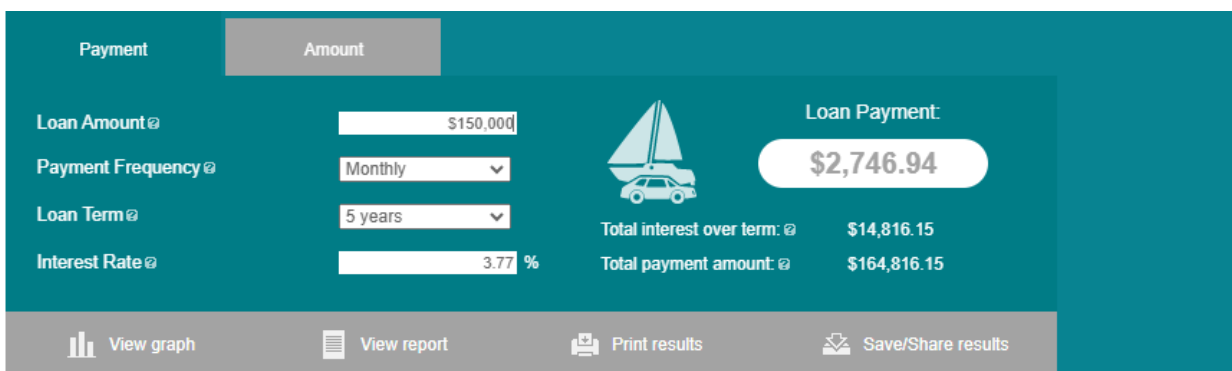
- Utilize reserves to fully purchase a new Bush Truck. Between the Highway Rescue, Fire Department, and Wildfire reserves, there are enough reserve funds; however, this would leave only roughly \$100,000 in reserve currently dedicated to the Fire Department.
- Utilizing reserves will have no immediate impact on taxation to our taxpayers; however, the reserves will have to be rebuilt over the coming years to fund the upcoming replacements of the \$1,000,000 (estimate) Engine 3 as well as an expansion to the current fire hall or construction of an entirely new hall. The cost of a new hall could easily reach \$2,000,000.

Utilizing Financing and Reserves

- This could allow for a smaller loan, with an upfront payment coming from reserves. This could be a mix of \$200,000 in cash from reserves, and \$200,000 financed over 5 years
- See optional scenarios for \$150,000 and \$200,000 financed over 5 years below
- This option would only use some of the reserves, allowing for funding to remain for other larger projects (Engine 3, Fire Hall, etc.) However, an estimated \$33,000 to \$44,000 would be needed annually to fund the interest and principal payments, which would most likely need to be funded from taxation. (3.25% to 4.5% tax increase).
- Any revenue from wildfire contracts could directly be applied to the principal owing to reducing the overall term and could allow for a payoff a few years ahead of schedule.



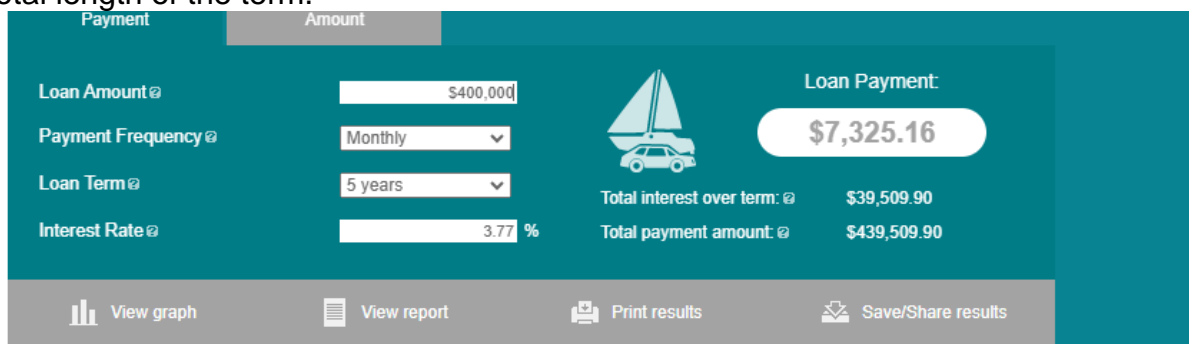
\$200,000 over 5 years.



\$150,000 over 5 years.

Financing through the Municipal Finance Authority (MFA) of BC.

- Below is also the estimated summary for a possible loan of \$400,000 to purchase a new or used Bush Truck
- Any loan lasting longer than 5 years will require electoral approval.
- This option would allow for all reserve funds to remain for future projects
- The annual impact on ratepayers under this scenario would be \$88,000 or 8.8% taxation
- As mentioned above, the revenues for wildfire contract could also be applied to reduce the total length of the term.



\$400,000 over 5 years

Quick Facts about financing:

- Lump Sum payments are accepted with no additional penalties to the District of Barriere.
- The maximum length of a loan could be 25 years (renewable every 5 years), but would require electoral approval if the loan lasts longer than 5 years.
- The interest rate is variable (currently sitting at 3.77%) but the loans have fixed monthly payments, subject to reset every 5 years for longer loans (or unless paid off sooner).

Options:

1. Status Quo

Remains as is, without reallocation of funds for a new Bush Truck.

Outcome: Operate a Bush Truck with water at half capacity and do the best we can with the equipment we have. This carries some risk as there is a high likelihood that the current Bush Truck will continue to fail as the components on the truck are incompatible to the use. Also, the truck has been under heavier than designed use for the majority of its 18-year lifespan. Other rural departments generally budget to replace their Bush Trucks within a 15–20-year window under normal use.

2. Reduce the Fleet Permanently

Outcome: Reduce the current Fire Department Fleet and remove the Bush Truck from service entirely. Although this is an option, this would reduce the service levels and the response options for fighting wildland fires. There would be no impact on residential and commercial insurance rates; however, there is a potential for reputational risk if the District reduces the wildfire fighting capabilities in a high risk for wildfire zone.

3. Reduce the Fleet Temporarily

Outcome: Temporarily remove the Bush Truck from service and re-assess purchasing a new truck in future years. Same outcomes as listed above under 2.; however, if the intent is to purchase a new truck in a year or two, the costs will most likely have increased by any tariff amount plus any additional inflationary costs. Please note, the fire service generally sees cost increases of at least 5% annually.

4. Purchase

Outcome: Purchase a Bush Truck for the Fire Department at this time. This would most likely be a stock item and some adjustments would need to be made to accommodate the tools and equipment currently used by our crew. Staff may consider purchasing a slightly used version as well. The maximum estimate for a new bush truck is \$400,000.

Summary

At this time, from a technical point and considering all the various risk factors, Staff is recommending the purchase of a new bush truck as per option 4 above.

Strategic Impact

The 2025 Strategic Plan of Council includes these priorities that relate to this report:

- Implement an Organizational Asset Management Program
- Create Opportunities for Community Growth
- General Governance and Community Engagement
- Develop a Strategy to mitigate cost increases and downloading pressures

Risk Assessment

Compliance: WorkSafe BC legislation, ICBC, CVSE, Provincial Interagency Agreement with the Office of the Fire Commissioner and BC Wildfire Service, Mutual Aid Agreement with TNRD.

Risk Impact: Medium to High – The current Bush Truck is one of the most utilized vehicles in the Fire Department Fleet for both emergencies and non-emergency events. This vehicle is one of the most versatile pieces of equipment given its size and the geographical area of Barriere and its properties within the Fire Protection Boundaries. Potentially not replacing the truck or reducing the service levels by reducing the truck would be considered High Risk with the addition for potentially high reputational risk.

Internal Control Process: Staff would follow standard processes searching for and procuring a Bush Truck sufficient for the Fire Department's needs while also expediting the purchasing to ensure that the least amount of tariff impacts the organization. For expediency, it is recommended for Council to delegate potential sole sourcing authority to the Mayor and CAO.

Next Steps / Communication

- If approved, Staff to search for Bush Trucks within the assigned budget
- Staff will use the chosen purchasing option by Council

Attachments

- Current Bush Truck Pictures

Recommendation

THAT Council instructs Staff to expedite the purchasing of a suitable Bush Truck in the amount not to exceed \$400,000 to be funded from _____, AND THAT the Mayor and Chief Administrative Officer be authorized to complete the procurement even if it requires sole sourcing of the item; AND THAT the expense be included in the 2025-2029 Financial Plan.

Alternative Options

1. Council could choose another option as provided in the report.

Prepared by: A. Hovenkamp, Fire Chief

Reviewed by: D. Drexler, CAO

Bush Truck - Pictures

