

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**  
**ACTION ITEM**

**Item No.** 4g  
**Date of Meeting** October 27, 2015

**DATE:** October 8, 2015  
**TO:** Ted Fick, Chief Executive Officer  
**FROM:** Randy Krause, Fire Chief  
**SUBJECT:** Fire Department Aircraft Rescue Fire Fighting Vehicle Capital Improvement Project CIP #800705

<b>Amount of This Request:</b>	\$1,450,000	<b>Source of Funds:</b>	Airport Development Fund
<b>Est. Total Project Cost:</b>	\$1,450,000		
<b>Est. State and Local Taxes:</b>	\$125,000		

**ACTION REQUESTED**

Request authorization for the Chief Executive Officer to execute a contract to purchase an Aircraft Rescue Fire Fighting Vehicle with a high reach extendable turret for the Port of Seattle Fire Department at Seattle-Tacoma International Airport for an estimated cost of \$1,450,000.

**SYNOPSIS**

The Federal Aviation Administration (FAA) requires that Sea-Tac Airport has three in-service Aircraft Rescue Fire Fighting (ARFF) vehicles at all times to support safe aircraft operations. This is accomplished by maintaining four ARFF vehicles, three in active service and one in reserve status. The oldest of the four vehicles is nineteen (19) years old and is in need of replacement. Adding a high reach extendable turret (HRET) will enhance the Fire Department's capabilities. Currently, the Port of Seattle Fire Department (POSFD) ARFF Vehicles are equipped with manual turrets. The HRET is new automated technology that is 53% more effective for fuel pooling fires and provides a significant advantage of accessing into the fuselage to mitigate interior fires.

**BACKGROUND**

The FAA Part 139, which regulates the requirements for ARFF vehicles, categorizes airports by index based on aircraft size and movements. An airport with five or more average daily departures of aircraft at least 200 feet in length (large wide-body aircraft such as a 777 or larger) is classified as Index E. The FAA requires Index E Airports such as Sea-Tac to have three ARFF vehicles in-service at all times. If less than three vehicles are in-service the Airport is at risk of being unable to accept large wide-body aircraft, and could possibly face closure by the FAA or be restricted to receiving only smaller category aircraft.

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The Fire Department maintains the FAA requirement with three ARFF vehicles in-service and the fourth vehicle in reserve status. The replacement plan designates the oldest vehicle to be replaced every 5-8 years. The serviceable life is 10-12 years and the vehicles in the current fleet are 1996, 2000, 2006, and 2008 year models. This authorization request would replace an aging ARFF Vehicle currently in reserve status, and eligible for surplus or donation. This purchase will replace Truck 763/Unit #958, a 1996 Oshkosh T-3000 that will become surplus, allowing Truck 765/Unit #1241, a 2000 Oshkosh T-3000 to be placed in a reserve status to extend its service life for several more years. The latter truck is scheduled to be replaced in 2017; the 2006 truck is scheduled to be replaced in 2022; and the 2008 truck is scheduled to be replaced in 2024.

The Port Fire Department's Vehicle Replacement Plan for ARFF vehicles is designed to provide for the maximum amount of service life while maintaining the highest level of reliability for all vehicles in use by the Fire Department. Through strategically planning and scheduling replacements, we can extend each vehicle's useful service life by moving older vehicles into a reserve status. When the new ARFF vehicle is received, the oldest and least reliable vehicle will be either sold or donated.

### **PROJECT JUSTIFICATION AND DETAILS**

As noted above, the FAA requires the Airport to have three (3) in-service ARFF vehicles at all times. Having fewer than three vehicles in service presents the risk of the Airport's being unable to accept large wide-body aircraft. Potentially, the Airport could face closure by the FAA or be made subject to receiving only smaller category aircraft.

Currently there is an increased risk of breakdowns associated with aging vehicles. This risk is evidenced by maintenance issues with the current reserve vehicle:

- ARFF #763 was out of service nine months in 2014, which led to our borrowing a replacement ARFF vehicle from North Bend Training Academy.
- ARFF #763 is currently out of service for an anticipated additional four months awaiting fabrication of parts. Again, we are borrowing a replacement ARFF vehicle from North Bend Training Academy.

Additionally there are long delays acquiring parts for the older equipment, which require the Fire Department to borrow a vehicle to maintain our index and accept larger aircraft without disruption. Purchasing a new vehicle at this time will allow the Airport to have a reliable set of ARFF vehicles. This purchase will replace ARFF #763.

A competitive procurement is intended for this vehicle. The specifications include: 4500 gallon water capacity; 600 gallon of AFFF (Foam Capacity); Suitable complementary agent (Dry Chemical/Halotron); and 65-foot High Reach Extendable Turret (HRET).

The HRET is an enhancement that will allow additional capability not only during an incident with a passenger aircraft, but will also assist with a water supply to upper decks of large aircrafts, the roof tops of our concourses, and also provide penetrating capability for cargo aircraft. The

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FAA recommends that airports at C Index and above have at least one HRET to support ARFF operations (Advisory Circular No: 150/5210-23).

### ***Schedule***

Compete Q4 2015

Delivery Q4 2016

## **FINANCIAL IMPLICATIONS**

<b><i>Budget/Authorization Summary</i></b>	<b>Capital</b>	<b>Expense</b>	<b>Total Project</b>
Total Original Budget	\$1,450,000	\$0	\$1,450,000
Previous Authorizations		\$0	\$0
Current request for authorization	\$1,450,000	\$0	\$1,450,000
Total Authorizations, including this request	\$1,450,000	\$0	\$1,450,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Original Budget	\$1,450,000	\$0	\$1,450,000

### ***Budget Status and Source of Funds***

The acquisition is included in the 2016 – 2020 capital budget and plan of finance (CIP #C800705). The funding source is the Airport Development Fund.

### ***Financial Analysis and Summary***

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Renewal and Replacement
<b>Risk adjusted discount rate</b>	N/A
<b>Key risk factors</b>	N/A
<b>Project cost for analysis</b>	\$1,450,000
<b>Business Unit (BU)</b>	Primarily allocated to Airfield Movement Area
<b>Effect on business performance</b>	NOI after depreciation will increase
<b>IRR/NPV</b>	N/A
<b>CPE Impact</b>	\$0.01 in 2017

### ***Lifecycle Cost and Savings***

This vehicle will be in service as a front line piece of equipment for 12 years and will be maintained in the inventory for another four (4) years as reserve equipment for a total of 16 years.

## **STRATEGIES AND OBJECTIVES**

This purchase supports the Airport's strategy to operate a world class international airport by ensuring safe and secure operation.

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### **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

#### **1) Extend the life of existing fleet**

During 2015 prioritization of capital purchases it was agreed to delay this purchase out to early 2016 to help mitigate cost growth of the International Arrivals Facility. We could choose to continue to delay this purchase. However, a continued delay would increase the risk of breakdowns associated with aging vehicles as noted in the justification section of this memo.

**Pros:** Continue to delay capital spending.

**Cons:** Increasing risk of not being able to meet FAA requirements due to vehicle down time. Additional risks include not being able to effectively supply water to upper levels of larger aircraft, inability to effectively penetrate Cargo holds to mitigate fire and continued inability to more effectively supply water to concourse rooftops.

This is not the recommended alternative.

#### **2) Purchase a 3,000 gallon vehicle with a 50' HRET**

This option provides opportunity to improve our current abilities. The HRET is an enhancement that will allow additional capability not only during an incident with a passenger aircraft, but will also assist with a water supply to upper decks of large aircrafts, the roof tops of our concourses, and also provide penetrating capability for cargo aircraft. The FAA recommends that Airports at C Index and above have at least one HRET to support ARFF operations (Advisory Circular No: 150/5210-23).

**Pros:** Provides enhanced capabilities to meet current FAA expectation of having one vehicle on site with a HRET (Advisory Circular No: 150/5210-23). This improves ability due to elevated water supply and cargo penetration capabilities.

**Cons:** Does not allow us to solve current and upcoming challenges as the HRET is limited by a 50' reach. With the proposed construction of a 75' bridge in conjunction with the IAF project the 50' HRET would not as effectively protect the exposure as a 65' HRET as well as sections of the Sound Transit light rail.

This is not the recommended alternative.

#### **3) Purchase a 4,500 gallon vehicle with a 65' HRET**

This option best fits our future strategic goals and operational needs. During the recent Asiana 777 incident in San Francisco it became apparent that water supply is essential for efficient operations. This vehicle will allow us to integrate new technology, increased water/foam capacities, and capabilities to better support a longer operational period. This particular model not only enhances our water supply but also accommodates a 65 foot HRET. This length HRET provides additional capacity to support the following ARFF and Structural areas; penetration into larger aircraft and cargo holds, support an essential water supply to provide greater protection to the roof tops of our concourses, support the future bridge associated with the new International

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Arrivals Facility and assist with mutual aid for Sound Transit at the light rail station, trains and elevated guideways.

**Pros:** Provides enhanced capabilities to meet current FAA expectation (Advisory Circular No: 150/5210-23) of having one vehicle on site with an HRET. This improves ability due to elevated water supply and cargo penetration capabilities. Provides additional agent quantities to better mitigate larger incidents and be the designated safety vehicle on scene.

**Cons:** Size may limit access in and around terminal area; however, it will fit in the station garage. This is the reason this would be the only one of this size in the fleet.

**This is the recommended alternative.**

### **ATTACHMENTS TO THIS REQUEST**

- None.

### **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- None.