

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 4d.
Date of Meeting March 22, 2016

DATE: February 24, 2016
TO: Ted Fick, Chief Executive Officer
FROM: David Soike, Director, Aviation Facilities and Capital Program
Stuart Mathews, General Manager, Aviation Maintenance Department

SUBJECT: Airfield Snow Removal Equipment Procurement (CIP #C800775)

Amount of This Request:	\$3,275,000	Source of Funds:	Airport Development Fund and Future Revenue Bonds
Est. Total Project Cost:	\$3,275,000		
Est. State and Local Taxes:	\$328,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to execute contracts for the purchase of airfield snow removal equipment (CIP #C800775) at Seattle-Tacoma International Airport for a total authorization of \$3,275,000.

SYNOPSIS

This procurement of new airfield snow removal equipment will allow Port staff to operate a more efficient and effective snow removal team. The procurement provides multiple benefits:

- Allows Port staff to deploy two effective snow removal teams focused on keeping runways and taxiways operational.
- Allows for the retirement of some of our oldest pieces of equipment that were purchased in 1984 and 1991.
- Allows Port staff to re-deploy some equipment to improve performance of our ramp-side team.
- Provides equipment that performs multiple functions in the removal of snow on the ramp and taxiways.

In the future, we will bring forward a request for authorization for the Chief Executive Officer to dispose of up to nine pieces of obsolete snow fleet through best available methods.

The Aviation Division strives to operate a world-class international airport by ensuring safe and secure operations. One of the key objectives in this strategy is to increase overall runway availability during snow events. Operating and maintaining an effective and efficient snow

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 2 of 8

removal fleet is critical to meeting that objective. Rapid and safe removal of snow and ice from the airfield surfaces ensures Airlines can operate as efficiently as possible, even in times of inclement weather.

BACKGROUND

This request for procurement of replacement snow removal equipment is the next step in the strategy developed following the opening of the third runway. Following the opening, the Aviation division began the phased enhancement and replacement of the snow fleet. This includes the purchase of four high efficiency, multi-functional combination plow/broom units in 2012/2013 to clear snow and ice on the two easternmost runways and associated taxiways.

Utilizing the existing 1991 and 1984 vintage equipment required eight individual pieces of equipment with eight operators. With the plow/broom combination equipment, the eastern snow removal team can perform the same task with four operators, allowing resources to be redeployed to perform removal activities on the western surfaces of runway 16R/34L and its associated taxiways. This methodology utilizing combination equipment has proven very effective.

Utilizing existing equipment, the snow removal team deploys a second team of eight (8) machines to the western surfaces. This team of eight performs the same task as the team of four on the eastern surfaces. Following the successful completion of this procurement, the snow removal team will be able to deploy two nearly identical runway and taxiway snow removal teams, and a third larger team to perform snow removal activities on ramp surfaces.

PROJECT JUSTIFICATION AND DETAILS

Following this purchase of the five new plow/broom combination units the snow removal team would have two nearly identical teams of four plow/broom combination units. One unit would be utilized as a rotating asset to provide ready backup for both teams to ensure operational capability in case one of the active units required maintenance or repair during a snow event.

The other component of this procurement, the purchase of three sander plows, will allow the replacement of equipment originally procured in 1984. This equipment will be utilized in conjunction with four existing pieces of equipment currently used on our ramp operation for snow and ice removal. This will give us seven total pieces to perform removal operations on the ramp, an increase of three pieces of equipment from the current configuration without the need for additional equipment operators.

Existing plow blades currently installed on the existing truck chassis will be removed and re-used on the new truck chassis/sander bodies as they were procured in 2009 and have significant life remaining.

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 3 of 8

Equipment will be dispositioned as surplus once the procurement is completed, resulting in no increase to the total snow fleet. Opportunities to allow other airports or similar entities to obtain the dispositioned equipment will be explored during the disposition process. Equipment will be maintained utilizing the current auto mechanic staffing.

Project Objectives

The purchase of new snow equipment meets multiple objectives.

- It allows Port staff to deploy two effective snow removal teams focused on keeping runways and taxiways operational.
- It also allows for the retirement of some of our oldest pieces of equipment that were purchased in 1984 and 1991.
- It allows staff to re-deploy some equipment to improve performance of our ramp-side team, as the combination plow/broom units perform the function of two pieces of equipment.
- It allows the Port to procure equipment that serves multiple purposes required to remove snow on ramp and taxiways.

Scope of Work

This procurement includes the following equipment:

- Five pieces of combination plow/broom snow removal equipment.
- Three pieces of sander/plow snow removal equipment.

Schedule

- Commission Authorization, March 22, 2016.
- Advertise April 2016.
- Award May 2016.
- Receive equipment first quarter, 2017.

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$2,500,000	\$0	\$2,500,000
Budget Increase	\$775,000	\$0	\$775,000
Revised Budget	\$3,275,000	\$0	\$3,275,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$3,275,000	\$0	\$3,275,000
Total Authorizations, including this request	\$3,275,000	\$0	\$3,275,000
Remaining budget to be authorized	\$0	\$0	\$0

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 4 of 8

Total Estimated Project Cost	\$3,275,000	\$0	\$3,275,000
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Project Cost Breakdown

	This Request	Total Project
Equipment	\$2,937,000	\$2,937,000
Design (Specification development)	\$10,000	\$10,000
State & Local Taxes (estimated)	\$328,000	\$328,000
Total	\$3,275,000	\$3,275,000

Budget Status and Source of Funds

This project was included in the 2016-2020 capital budget and plan of finance with a budget of \$2,500,000. The budget increase was to accommodate three small capital project requests to replace snow fleet equipment with the large capital project C800775. This budget increase will be transferred from the Aeronautical Allowances CIP (C800404) resulting in no net change to the airport's capital budget. The funding sources will include the Airport Development Fund and future revenue bonds.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$3,275,000
Business Unit (BU)	Airfield
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	\$.01 in 2017

Lifecycle Cost and Savings

This project is not anticipated to add costs to the Aviation Maintenance department expenditures. By dispositioning surplus equipment, the total amount of equipment maintained and operated by the snow removal team is anticipated to remain the same. Anticipated maintenance costs are expected to be similar to current maintenance costs. Significant repair costs may be avoided due to the reliability of the new equipment. Repair costs for the new equipment are expected to be less than the current equipment scheduled for disposition.

STRATEGIES AND OBJECTIVES

This project promotes the Century Agenda strategy of meeting the region's air transportation needs at Seattle-Tacoma International airport for the next 25 years. Ensuring reliable airport operations, even in times of inclement weather, is necessary to meet this need. This project also meets the Aviation Division strategy to operate a world-class international airport by ensuring safe and secure operations. One of the objectives in this strategy is to increase overall runway

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 5 of 8

availability during snow events. Maintaining an effective and efficient snow removal fleet is important to meeting that objective.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

1. Status Quo. Do not purchase new snow equipment.

Cost Estimate: \$70,000- \$75,000 potential increased annual expense.

Estimate is for anticipated increasing repair costs on aging equipment. Estimate is based on recent actual costs.

Pros:

- No capital funding is expended. Avoids the expenditure of \$3,275,000 in funds.
- Snow removal can still be performed with existing equipment.

Cons:

- Aging equipment will continue to be used. Current equipment is of an age that operational availability is at risk. Necessary equipment may be out of service for repair during snow events, limiting the ability to maintain runway availability.
- Utilizing existing equipment requires a team of eight (8) people with eight (8) pieces of equipment to form a runway team. Newer multi-purpose plow/broom combination units allow a team to be formed with four (4) pieces of equipment and four (4) operators. This alternative requires more equipment and more operators.

While this alternative is the least costly from a capital expenditure perspective, it is the highest risk, as aging equipment is more vulnerable to failure. In addition, this option means the west side snow removal team will continue to require eight operators with eight pieces of equipment. More operators and equipment actively operating on the Air Movement Area is considered a higher safety risk. This alternative does not free up existing resources to enhance the ramp snow removal team as desired.

This is not the recommended alternative

2. Procure less equipment. Buy one combo unit and move two units to ramp side.

Cost Estimate: \$447,000 for one (1) combination plow/broom piece of equipment.

Pros:

- Requires a smaller capital investment. The capital investment would be limited to \$447,000.
- Provides the ability to re-purpose two pieces of runway snow removal equipment to be re-utilized as ramp snow removal equipment. This will allow our ramp snow removal team to provide better customer service with the extra equipment and operators.
- Adds one new piece of snow removal equipment to the fleet. This continues our strategy of renewing our aging snow removal fleet.

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 6 of 8

Cons:

- Requires more staffing (one person per shift) than the current snow team staffing level.
- Requires that existing aging snow removal fleet equipment must remain in operation. This alternative does not allow staff to replace aging equipment to enhance reliability and performance.

This alternative was considered, as it requires spending \$2,678,000 less in capital funds than the recommended alternative. It does allow staff to improve the operation of the ramp staff by re-utilizing the one plow and one broom displaced by the one new plow/broom combination unit. It, however, requires that we continue to utilize all of our existing aging snow removal fleet, which is at a growing risk of failure. It would slightly reduce the size of the west-side snow removal team by one piece of equipment, with the team reduced to 7 operators. This alternative therefore has a slightly reduced safety risk over alternative 1. As such this alternative is considered better than alternative 1, but not as good as alternatives 3 or 4.

This is not the recommended alternative

3. Purchase all 8 pieces of equipment, but spread purchase out over multiple years.

Cost Estimate: \$3,500,000 Cost estimate based on a 5 year procurement plan and an escalation rate of 4%

Pros:

- Allows capital funds to be expended over multiple years, leveling capital expenditures. The first year capital expenditure will be less, freeing up capital funding for other uses in that first year.
- Replaces all equipment planned for in this project.
- Procuring over multiple years may have the positive effect of buffering any market conditions that could drive equipment prices up for any one year procurement. This option dampens market volatility while recognizing escalation.

Cons:

- Slows the process of procuring the equipment. This method delays the implementation of the smaller four piece runway snow removal team, negating the maximum efficiency gain until all equipment is procured.
- Requires existing aging equipment (26 – 33 years old) to remain in service for a number of years until it can be replaced.
- May require new bidding process each year until completed adding cost.
- Potential that equipment would not be the same each year and not allow standardization of fleet, increasing costs and parts inventories.
- While this will free up capital funding in the first year, the overall capital cost is larger than Alternative 4 by \$225,000.

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 7 of 8

Alternative 3 is identical in end result to Alternative 4. Because the procurement is spread out over a longer period of time, the overall cost is larger by \$225,000 due to anticipated cost escalation over multiple years. In addition the full benefit of the efficiencies experience with the combination equipment will not be achieved until all equipment is in place, four (4) years later than alternative 4.

This is not the recommended alternative

4. Procure new snow equipment for delivery in a single season in 2017.

Cost Estimate: \$3,275,000

Pros:

- Replace 25 to 30 year old equipment with more effective up-to-date machines. This reduces the risk of equipment failure that could impact airport operations.
- Reduce the number of pieces of equipment on the Air Movement Area during removal operations, increasing safety for staff and customers.
- Allows for a standardized snow fleet to allow for fewer inventories of parts and maintenance supplies, and familiarity for operators across the fleet.
- Reduce the number of operators needed by four for a removal operation on the Air Movement Area. Staff can be re-deployed for snow removal activities in other areas of the facility, improving customer satisfaction. During a snow event, this results in a reduction of 96 staff hours per 24 hours of snow removal operation. Three of these staff members (72 staff hours per day) will be re-deployed to support the enhanced ramp snow removal efforts. The fourth staff member (24 staff hours per day) will be re-deployed to support landside snow removal on roadways and walkways around the terminal.
- Allows for the ability to increase the use of dry chemicals. Dry chemical is more cost effective than liquid chemical, may save \$1,000-\$2,000 for a major snow event, therefore overall cost for anti-icing may be reduced.

Cons:

- Requires the largest one year capital expenditure. This does not allow us to level our capital expenditures as much as possible.
- Consumes capital funds that could be utilized for other projects.
- Depending on timing, a single year purchase may result in market conditions that are unfavorable. The market may be at a high point in pricing when we go forward for a single procurement.

This alternative allows staff to operate a west side team with the fewest number of pieces of equipment of four (4) plow/broom combination units. This alternative therefore provides the lowest safety risk, as the fewest number of pieces of equipment and operators are required to

COMMISSION AGENDA

Ted Fick, Chief Executive Officer

February 24, 2016

Page 8 of 8

operate on the Air Movement Area. This is an advantage over alternatives 1 and 2. This alternative allows for three (3) pieces of equipment to be re-deployed to the ramp team, allowing that team to provide improved customer service. This alternative allows for the disposition of at least eight (8) pieces of snow equipment, so the snow equipment fleet will not have to grow as it does in alternative 2. This alternative is less costly than alternative #3 by approximately \$225,000. This alternative also allows the more efficient and effective use of staff sooner than alternative #3 as the procurement will take place in one year rather than five years.

This is the recommended alternative

ATTACHMENTS TO THIS REQUEST

- PowerPoint Presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- February 14, 2012 – Commission Authorization of CIP C800498 for the procurement of four pieces of plow/broom combination snow removal equipment.