



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8b

ACTION ITEM

Date of Meeting October 26, 2021

DATE: October 15, 2021

TO: Stephen P. Metruck, Executive Director

FROM: Eileen Francisco, Interim Director, Aviation Facilities and Capital Programs
Wayne Grotheer, Director, Aviation Project Management

SUBJECT: Snow Storage Expansion Project Design Authorization (CIP 801171)

Amount of this request: \$2,500,000

Total estimated project cost: \$17,500,000

ACTION REQUESTED

Request Commission authorization to design and prepare construction documents for the Snow Storage Expansion Project (CIP 801171) at Seattle-Tacoma International Airport. The total request for this action will be \$2,500,000 for a total project authorization of \$2,794,000. The estimated overall cost of the project is \$17,500,000.

EXECUTIVE SUMMARY

The Seattle-Tacoma International Airport (Airport) has historically stored snow in two small, designated areas at the north and south ends of the airfield, as well as in aircraft cargo and off-gate parking areas. These cargo and parking areas are now occupied with aircraft year-round and the remaining designated snow storage areas are inadequate for the volume of snow the airport receives. The project will expand the designated areas available for snow storage and provide regulatory compliant capture of melt water during typical winter snow events. Melt water from the snow contains deicing fluids that must be treated. The project will meet the regulatory need for connection of snow storage areas to the Industrial Waste System (IWS).

JUSTIFICATION

Snow storage and melt water disposal capacity is not adequate in the current locations, which drain to the IWS. When significant snow events occur, snow needs to be temporarily staged in areas that drain to the storm drainage system or will need to displace aircraft parking positions within the IWS basin. When untreated melt water discharges outside of the IWS drainage area it has the potential to negatively impact water quality in adjacent creeks and does not comply with the Airport's National Pollutant Discharge Elimination Systems (NPDES) permit. Aviation

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Environmental has been in discussions with Washington Department of Ecology for a solution for several years. This project provides that solution.

When snow is staged outside the designated storage areas, that snow needs to be moved again from the temporary storage areas (e.g. aircraft parking areas) to the designated storage areas. The proposed improvements would allow a larger volume of snow to be placed directly in the designated storage areas without the need for temporary staging. Therefore, the operational costs of rehandling snow will decrease. The project will also address safety concerns related to large dump trucks hauling snow on the vehicle service road (VSR) and operating within the existing snow storage areas.

This project meets a regulatory requirement and supports the Century Agenda Goal 4: Be the greenest and most energy efficient port in North America. Work will be packaged with other concurrent airfield capital projects to minimize multiple operational impacts and to enhance safety risk management on the airfield.

Diversity in Contracting

The project will be designed using an existing consultant contract with a Women / Minority Business Enterprise (WMBE) goal of 15%. Project staff is also working with the Diversity in Contracting Department to develop WMBE aspirational goals for the project's construction phase.

DETAILS

The project includes expansion of the two existing snow storage areas (North and South) as well as construction of a new snow storage area northeast of Lagoon 3. The north snow storage area will be expanded by increasing the pavement to the north and improved by lift station capacity and equipment updates. The existing south snow storage area will be expanded by increasing the height of the retaining wall and improved through the addition of pavement for truck turning movements. The proposed SAMP Taxiway A/B project will displace the south snow storage area if approved. The new Lagoon 3 area will require impacts to wetlands and includes additional design, permitting, mitigation, and construction requirements for that element. Based on preliminary information, the Lagoon 3 area site will directly impact approximately 1.8 acres of wetlands and approximately 2.2 acres of wetland buffers. Design analysis will include employing an environmental consultant to delineate the quality and quantity of wetlands impacted, as well as several options for mitigation following standard Washington Department of Ecology protocol. Design authorization for the project will support the environmental process and development of a wetland mitigation plan. The timeline for the additional permitting and wetland mitigation adds approximately 12 months to the construction schedule for the new Lagoon 3 area improvements. For this reason, the project will be phased for design and construction. Phase 1 improvements will include the work that does not impact wetlands and will be constructed in 2023. Phase 2 work will include work that impacts wetlands. This Phase 2 work, including wetlands mitigation

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will occur in 2024. The Scope of Work section below includes a list of the project elements included in each phase.

The snow storage capacity with this project will allow snow from a 12-inch snowstorm to be stored with 20% reserve capacity. In contrast, the snow storage capacity at the two existing facilities can store the snow from approximately a 3-inch snowstorm. The volume of snow to be stored was developed in consideration of historic snow event records from airport operations and maintenance and assumptions in the Utility Master Plan.

Scope of Work

The project consists of four elements that will be constructed in two phases:

Phase 1:

- (1) Expand Existing North Snow Storage Area including IWS Infrastructure Improvements.
- (2) Expand Existing South Snow Storage Area including additional pavement for vehicle maneuvering.
- (3) Widen VSR for Snow Operations Traffic travelling to/from the new area.

Phase 2:

- (1) Construct New Snow Storage Area Northeast of Lagoon 3 consisting of new asphalt storage pad and IWS infrastructure. Wetland mitigation is required for this new storage area.

Schedule

Phase 1 work will be constructed in the 2023 construction season. Phase 2 work will be constructed in the 2024 construction season.

Activity

Design start	2021 Quarter 4
Phase 1 Commission construction authorization	2023 Quarter 1
Phase 1 Construction start	2023 Quarter 2
Phase 1 In-use date	2023 Quarter 4
Phase 2 Commission construction authorization	2024 Quarter 1
Phase 2 Construction start	2024 Quarter 2
Phase 2 In-use date	2024 Quarter 4

Cost Breakdown

	This Request	Total Project
Design	\$2,500,000	2,794,000
Construction	\$0	\$14,706,000
Total	\$2,500,000	\$17,500,000

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ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Continue existing operational protocol to move snow to various airfield locations when designated snow storage capacity is exceeded.

Cost Implications: \$0 Capital Investment

Pros:

- (1) No initial capital investment.

Cons:

- (1) Continued operational expenses due to rehandling snow stored outside of IWS basin. For example, snow rehandling costs were approximately \$360,000 for the three-day snow-storm in February 2021.
- (2) Continuing concern for NPDES permit noncompliance when snow is stored outside of IWS basin
- (3) Existing infrastructure will need to be replaced in the 1-5 year horizon
- (4) Regulatory compliant snow storage within IWS basins will need to displace aircraft positions

This is not the recommended alternative.

Alternative 2 – Expand existing north snow storage area including IWS infrastructure improvements. Expand existing south snow storage area including additional pavement for vehicle maneuvering.

Cost Implications: \$6,000,000

Pros:

- (1) Increases snow storage capacity in existing familiar areas

Cons:

- (1) Potential operational expense due to rehandling of snow stored outside of IWS basin
- (2) Continuing concern for NPDES permit noncompliance when snow is stored outside of IWS basin
- (3) Does not meet full snow storage needs – regulatory compliant snow storage will need to displace aircraft parking positions
- (4) Construction will have temporary operational impacts

This is not the recommended alternative.

Alternative 3 – Expand Existing North Snow Storage Area including IWS Infrastructure Improvements. Expand Existing South Snow Storage Area including additional pavement for vehicle maneuvering. Construct New Snow Storage Area Northeast of Lagoon 3 consisting of new

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asphalt storage pad and IWS infrastructure. Widen VSR for Snow Operations Traffic travelling to/from the new area.

Cost Implications: \$17,500,000

Pros:

- (1) Snow storage capacity will be increased to meet need based on historical snow events
- (2) Snow storage meltwater will flow to the IWS, meeting regulatory requirements
- (3) Annual operating costs for snow handling will be reduced

Cons:

- (1) Requires capital expenditure now
- (2) Construction will have temporary operational impacts

This is the recommended alternative.

FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$8,177,000	\$0	\$8,177,000
Current change	\$9,323,000	0	\$9,323,000
Revised estimate	\$17,500,000	0	17,500,000
AUTHORIZATION			
Previous authorizations	\$294,000	0	\$294,000
Current request for authorization	\$2,500,000	0	\$2,500,000
Total authorizations, including this request	\$2,794,000	0	\$2,794,000
Remaining amount to be authorized	\$14,706,000	\$0	\$14,706,000

Annual Budget Status and Source of Funds

This project, CIP C801171, was included in the 2021-2025 capital budget and plan of finance with a budget of \$8,177,000. A budget increase of \$9,323,000 was transferred from the Aeronautical Reserve CIP (C800753) resulting in zero net change to the Aviation capital budget. The funding source would be Airport Development Fund and revenue bonds. The Majority in Interest proposal was submitted to the airlines for review.

Financial Analysis and Summary

Project cost for analysis	\$17,500,000
Business Unit (BU)	Airfield Movement Area
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase due to inclusion of capital (and operating) costs in airline rate base
IRR/NPV (if relevant)	N/A
CPE Impact	\$.03 in 2023 and \$.05 in 2025

ATTACHMENTS TO THIS REQUEST

- (1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None