



**COMMISSION  
AGENDA MEMORANDUM**

**Item No.**

6i

**ACTION ITEM**

**Date of Meeting**

April 14, 2020

**DATE:** March 23, 2020

**TO:** Stephen P. Metruck, Executive Director

**FROM:** Eileen Francisco, Acting Director, Aviation Facility and Capital Program  
Laurel Dunphy, Director, Airport Operations  
Wayne Grotheer, Director, Aviation Project Management Group

**SUBJECT:** Remote Aircraft Deicing (CIP #C801035)

**Amount of this request:** \$14,555,000

**Total estimated project cost:** \$17,700,000

**ACTION REQUESTED**

Request Commission authorization for the Executive Director to advertise, award, and execute a construction contract and authorize construction of the Remote Aircraft Deicing project at the Seattle-Tacoma International Airport (Airport); and to enter into a reimbursable agreement with the Federal Aviation Administration (FAA) for monitoring of critical FAA infrastructure within the project area during construction. This request is for \$14,555,000, of a total estimated project cost in the amount of \$17,700,000.

**EXECUTIVE SUMMARY**

This project will mitigate some of the delays caused by on-gate deicing, by constructing the infrastructure to provide two off-gate deicing positions on Taxiway A.

Over the past few years, the airport has experienced rapid growth in both passenger and aircraft operations. The increased aircraft operations have created an aircraft gate deficiency and resulted in significant departure delays when aircraft on-gate deicing occurs. The on-gate deicing also requires arriving aircraft to hold for gates on the airfield, further congesting the movement area and exacerbating delays. Based on input from the FAA Air Traffic Control Tower, aircraft departures during deicing operations could increase significantly with the addition of the proposed off-gate deicing positions that will be constructed on Taxiway A.

The Remote Aircraft Deicing CIP (C801035) is included in the 2020-2024 capital budget and plan of finance. Following completion of pavement and utility design studies, the project cost estimate was reduced from \$24,300,000 to \$17,700,000; a 27 percent budget decrease. The project scope remained the same and the savings resulted from value engineering and design opportunities.

Meeting Date: April 14, 2020

This project requires FAA approval for an Airport Layout Plan (ALP) change. A successful Safety Risk Management Panel was conducted with the FAA for the ALP change and the corresponding FAA approval letter is expected, no later than May 2020. Asking for Commission authorization for construction prior to receiving this letter allows taxiway construction to be completed prior to both the wet weather and the holiday peak travel seasons. Maintaining this schedule will also allow the Remote Deicing positions to be operational for the 2020/2021 winter season.

**JUSTIFICATION**

Based on the Bureau of Transportation Statistics data, Alaska Airlines had 296 hours and Delta Airlines had 392 hours of weather delays during the 2017/2018 and 2018/2019 winter seasons at the airport. The significant delays and inconvenience to the traveling public have caused negative traveling experiences. This project will mitigate some of these delays and support the strategy of the Port's Century Agenda objective to "Advance this region as a leading tourism destination and business gateway" by meeting the region's air transportation needs at the airport for the next 25 years.

The construction of the two off-gate deicing positions will result in less aircraft holding for gates on the airfield, or congesting the movement area, which will increase passenger level of service, reduce the long-term airline operating cost, and support the long-term strategy of the Port's Century Agenda objective to "Be the greenest, and most energy efficient port in North America" by reducing air pollutants and carbon emissions. In addition, less overall deicing fluid waste is anticipated due to better spray accuracy and the higher efficiency of deicing on Taxiway A, supporting the King County Waste Water Permit agenda of reducing industrial waste water.

Due to the rapid growth of aircraft operations, locations in the non-movement area that could accommodate off-gate deicing are increasingly being utilized for other purposes such as hardstand operations, Remain-over-night (RON) parking of passenger aircraft, and cargo operations. The rapid growth of hardstand operations and competing uses has greatly reduced the availability of these hardstands in the non-movement area for deicing operations.

Projects included in the Sustainable Airport Master Plan (SAMP) Near-Term Projects (NTP) and currently in environmental review may resolve the existing deicing deficiency by adding additional gates and new multi-use hardstand positions in the non-movement area for off-gate deicing. If these projects received required approvals through the environmental review process, they will take several years to implement. Interim solutions are needed now to alleviate the growing delays experienced during deicing operations.

The project was presented at the Airline Airport Affairs Committee (AAAC) meeting in June 2019 and the Majority-In-Interest ballot was approved in November 2019.

Meeting Date: April 14, 2020

### ***Diversity in Contracting***

The Diversity in Contracting Department along with project staff have identified a 10% WMBE aspirational goal for this project.

### **DETAILS**

During the 2017/2018 and 2018/2019 deicing season, two narrow body deicing positions were tested in the movement area at the north end of Taxiway A. The test helped mitigate some of the delays caused by the on-gate deicing without incident. With the addition of two more off-gate deicing positions provided by this project, an Operational Safety Assessment was conducted with the FAA, Airlines, and Airport Operations, in July 2019, to identify hazards and document mitigations to ensure safe airfield operations.

This project will be constructed in 2020 between mid-August and end of November to avoid the peak travel months and minimize operational impacts. With the addition of the new Taxiway Y, a Safety Risk Management Panel for the Airport Layout Plan change was conducted with the FAA, Airlines, Airport Planning and Airport Operations, in February 2020, to identify and examine hazards and develop controls for effective risk mitigations. The project is in the FAA approval process for an Airport Layout Plan (ALP) change. An ALP Safety Risk Management Panel was successfully completed with the FAA and the risk of not receiving the approval letter is deemed very low.

Phased closures of sections of Taxiway A and Taxiway B will be needed for construction and a construction phasing plan has been developed to minimize the impacts from construction to airfield operations. In addition, a Construction Safety Risk Management Panel was conducted in February 2020 with the FAA, Airlines, Airport Operations to identify safety hazards during construction and documented mitigations to ensure safe airfield operations during construction.

As part of the project, there will be demolition of stormwater drainage pipes and installation of new industrial waste system pipes adjacent to existing FAA duct banks. An agreement with the FAA will be utilized to reimburse the FAA to monitor their critical infrastructure during construction, if deemed necessary by the FAA.

A project labor agreement was evaluated in collaboration with Port of Seattle Labor Relations and will be used based on the location and complexity of this project and the importance of labor continuity and stability to minimize the operational impacts during construction.

### ***Scope of Work***

The main scope items are listed as follows:

- (1) The construction of cross-over Taxiway Y to alleviate queueing back-ups during deicing operations on the taxiway

Meeting Date: April 14, 2020

- (2) The construction of asphalt pads along Taxiway A to provide support for Deicing Vehicles
- (3) Industrial Waste and Storm Drainage System Improvements

**Schedule**

*Activity*

Construction start	Q3 2020
In-use date	Q4 2020

**Cost Breakdown**

	This Request	Total Project
Design	\$0	\$3,145,000
Construction	14,555,000	14,555,000
<b>Total</b>	<b>\$14,555,000</b>	<b>\$17,700,000</b>

**ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1** – The Port would not construct any additional off-gate deicing positions on Taxiway A.

Cost Implications: \$0

Pros:

- (1) No additional cost in 2020.
- (2) No additional operational impact or closure of Taxiway A and B for construction.

Cons:

- (1) Continued significant delays and associated airline costs caused by on-gate deicing.
- (2) More aircraft holding for gates and congesting the movement areas.
- (3) Negative traveling experiences due to the significant delays and inconvenience to the traveling public.
- (4) Delay impacts to other airports and airlines around the nation and world.

This is not the recommended alternative.

**Alternative 2** – Provide infrastructure to accommodate off-gate deicing positions on Taxiway A.

Cost Implications: \$17,700,000

Pros:

- (1) Mitigate some of the delays caused by on-gate deicing.
- (2) Increase aircraft departures.
- (3) Less overall glycol used due to the higher efficiency of deicing on Taxiway A.
- (4) Reduce the long-term operating cost and support environmentally sustainable development by reducing aircraft-related carbon emissions and noise.

Cons:

- (1) Operational impacts during construction.

- (2) Additional project costs in 2020.

***This is the recommended alternative.***

**FINANCIAL IMPLICATIONS**

<b><i>Cost Estimate/Authorization Summary</i></b>	<b>Capital</b>	<b>Expense</b>	<b>Total</b>
<b>COST ESTIMATE</b>			
Original estimate	\$24,300,000	\$0	\$24,300,000
Current change	(6,600,000)	0	(6,600,000)
Revised estimate	17,700,000	0	17,700,000
<b>AUTHORIZATION</b>			
Previous authorizations	3,145,000	0	3,145,000
Current request for authorization	14,555,000	0	14,555,000
Total authorizations, including this request	17,700,000	0	17,700,000
Remaining amount to be authorized	\$0	\$0	\$0

***Annual Budget Status and Source of Funds***

The Remote Aircraft Deicing CIP #C801035 was included in the 2020-2024 capital budget and plan of finance in amount of \$24,300,00. A budget decrease was transferred to the Aeronautical Reserve CIP (C800753) resulting in no net change in the total Aviation capital budget. Given that the life of the asset would be six to ten years, the planned funding source will be 2018 revenue bonds with a short amortization to more closely match the life of the asset (ten years).

***Financial Analysis and Summary***

Project cost for analysis	\$17,700,000
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	\$.11 in 2021

***Future Revenues and Expenses (Total cost of ownership)***

The design life for the various pavements will need to meet the minimum FAA design criteria, 20 years. Those assets that are likely to remain in service beyond possible SAMP implementation would be designed for 40 years or longer.

**ATTACHMENTS TO THIS REQUEST**

- (1) Presentation slides

**PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

August 13, 2019 – The Commission authorized the Executive Director to design and prepare construction bid documents for the Remote Aircraft Deicing project at the Seattle-Tacoma International Airport in an amount not to exceed \$2,850,000 of a total estimated project cost of \$24,300,000.