COMMISSION
AGENDA MEMORANDUM **Item No.** 8b

ACTION ITEM **Date of Meeting** August 13, 2019

DATE: August 5, 2019

TO: Stephen P. Metruck, Executive Director

FROM: Jeffrey Brown, Director, Aviation Facility and Capital Program
Daniel Zenk, Interim Director, Airport Operations
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Remote Aircraft Deicing (CIP #C801035)

Amount of this request: $2,850,000
Total estimated project cost: $24,300,000

ACTION REQUESTED

Request Commission authorization for 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.

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 has 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 Federal Aviation Administration 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 not included in the 2019-2023 capital budget and plan of finance. A budget was transferred from the Aeronautical Reserve CIP (C800753) resulting in no net change in the total Aviation capital budget.

JUSTIFICATION

Based on the Bureau of Transportation Statistics data, Alaska Airlines had 296 hours and Delta Airlines had 392 hours of weather delay during the 2017/2018 and 2018/2019 winter seasons. The significant delays and inconvenience to the traveling public have caused negative traveling experiences. This project will mitigate some of the 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 a gate on the airfield, or congesting the movement area, which will increase passenger level of service, reduce the long-term operating cost of the airlines, 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 use is anticipated due to 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 increasing 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 effectively eliminated 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 would 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 and interim solutions are needed now to alleviate the growing delays experienced during deicing operations. As part of SAMP, Taxiways A and B may be relocated to meet the 500-foot separation criteria from the runway. Should this portion of SAMP NTP be implemented, it would shorten the off-gate deicing project service life to approximately six to ten years from construction completion.

Diversity in Contracting

Project staff is working with the Diversity in Contracting Department in outreach to woman and minority business enterprises (WMBE) of this opportunity, and the establishment of the WMBE aspirational goal for this construction 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 the two 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 late summer and end of November to avoid the peak travel months and minimize operational impacts. A cross-over taxiway located north of Taxiway G will be constructed between Taxiways A and B to alleviate queueing back-ups during deicing operations. New asphalt pads for deicing equipment will be constructed along Taxiway A.

Phased closures of sections of Taxiway A and Taxiway B will be needed for construction with the probable closure of Runway 16L/34R when operationally required for airfield traffic optimization. Construction phasing plan will be developed to minimize the impacts from construction to airfield operations. A Construction Safety Risk Management Panel will be conducted during project design with Airlines, FAA, and Airport Operations to ensure safe and efficient airfield operations during construction.

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 a cross-over taxiway to alleviate queueing back-ups during deicing operations on the taxiways
(2) Partial reconstruction of portions of Taxiway A and Taxiway B pavement and lighting infrastructure
(3) The construction of asphalt pads along Taxiway A for Deicing Equipment
(4) Industrial Waste and Storm Drainage System Improvements

Schedule

Activity	
Commission Design Authorization	2019 Quarter 3
Design start	2019 Quarter 3
Commission Construction Authorization	2020 Quarter 2
Construction start	2020 Quarter 3
In-use date	2020 Quarter 4

Cost Breakdown	This Request	Total Project
Design	$2,850,000	$3,200,000
Construction	0	21,100,000
Total	$2,850,000	$24,300,000

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 2019 or 2020.
(2) No additional operational impact or closure of Taxiway A, B, or Runway 16L/34R 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: $24,300,000

Pros:

(1) Mitigate some of the delays caused by on-gate deicing.
(2) Increase aircraft departures.
(3) Less overall glycol uses 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 2019 and 2020.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

Cost Estimate/Authorization Summary	Capital	Expense	Total
COST ESTIMATE			
Original estimate	$24,300,000	$0	$24,300,000
Current change	0	0	0
Revised estimate	24,300,000	0	24,300,000
AUTHORIZATION			
Previous authorizations	295,000	0	295,000
Current request for authorization	2,850,000	0	2,850,000
Total authorizations, including this request	3,145,000	0	3,145,000
Remaining amount to be authorized	$21,155,000	$0	$21,155,000

Annual Budget Status and Source of Funds

The Remote Aircraft Deicing CIP #C801035 is not included in the 2019-2023 capital budget and plan of finance. A budget was transferred from 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 2020 revenue bonds with a short amortization to more closely match the life of the asset (ten years). The project was presented to the Airline Airport Affairs Committee (AAAC) on June 27, 2019. The majority-in-interest ballot will be submitted to AAAC in August.

Financial Analysis and Summary

Project cost for analysis	$24,300,000
Business Unit (BU)	Airfield Movement Area
Effect on business performance (NOI after depreciation)	NOI will increase after depreciation
IRR/NPV (if relevant)	N/A
CPE Impact	$0.22 for 6-year life or $0.15 for 10-year life

Future Revenues and Expenses (Total cost of ownership)

The design life for the various pavements will need to meet the minimum FAA design criteria, likely 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

None.