



**COMMISSION
AGENDA MEMORANDUM**

Item No. 6c

ACTION ITEM

Date of Meeting October 23, 2018

DATE: October 12, 2018

TO: Stephen P. Metruck, Executive Director

FROM: Ralph Graves, Senior Director, Capital Development
Janice Zahn, Assistant Engineering Director, Construction Services

SUBJECT: 2018 Taxiway Improvement Projects C800914

Amount of contract change: \$700,000

Total estimated project cost: \$47,500,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to execute Change Order 23 to Contract MC-0318750 for taxiway, runway, and apron improvements at Seattle-Tacoma International Airport for an amount not to exceed \$700,000. No additional funds are being requested.

EXECUTIVE SUMMARY

This project consists of taxiway, runway and apron modifications, reconfiguration, repairs and relocation for safety and continued operational access by aircraft. This project also includes improvement to the industrial waste system and new taxiway signage. This project is driven by the expansion of the North Satellite (NSAT) triggering the need to reconfigure the adjoining Taxiways A & B (Alpha & Bravo). Due to the proximity of Taxiway L (Lima) to the Alpha/Bravo work, the FAA required that Lima be brought into compliance with current FAA design standards by being relocated to minimize potential aircraft runway incursions. This relocation requires a closure of Runway 16L/34R. This closure provides the opportunity to proceed with fixing another safety concern at the intersection of Taxiway Q (Quebec) as well as needed runway repairs. Based on the complexities of coordination, similar work, seasonal construction limitations and runway use restrictions, it was decided that the many 2018 airfield work projects should be combined into a single airfield contract to best coordinate airfield construction phasing in the safest and most efficient manner.

Currently this project is progressing into the last phase of construction as planned. The work at Alpha and Quebec as well as the other airfield related projects are complete. The work adjacent to and on Runway 16L/34R, Bravo and Lima commenced on September 10, 2018 and are projected to be complete in early December.

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During construction activities at Taxiway S (Sierra) and Runway 16L/34R, the pavement on Sierra began to unravel. While initially a repair at the joint between Sierra and Runway 16L/34R was thought to be adequate, subsequent investigation of the pavement surfaces reveal more widespread distress on Sierra. Sierra is the only asphalt taxiway on the airfield and was last fully paved in 1990. Sierra is currently planned to be resurfaced in the 2020 Airfield Improvement Project. Staff is recommending that Sierra be resurfaced immediately and an Authorization of Critical Work was declared on October 5, 2018. A Change Order is required to direct the Contractor to repair the taxiway. This Change Order will be issued for an amount not to exceed \$700,000.

JUSTIFICATION

The performance of this work requires the closure of Runway 16L/34R for the duration of the repair. Currently Runway 16L/34R is closed due to the ongoing work on Bravo & Lima. The resurfacing of Sierra can be accomplished without extending the current runway closure if we have authorization to proceed. Without repairing this taxiway, it is unlikely that we could return Sierra to service without severe Foreign Object Damage (FOD) risk to aircraft and would likely result in the closure of Sierra until 2020. Currently, the only activity in the 2020 Airfield Improvement Program that requires a runway closure is the Sierra resurfacing. Performing this work now will eliminate a runway closure in 2020.

DETAILS

Background

Sierra is one of the oldest taxiways and the only asphalt taxiway on the airfield. While historically it had been used very little, Sierra has recently become more heavily used to reduce congestion at the South end of Runway 16L/34R due to increased activity at the South Satellite. Sierra's pavement surface is almost 30 years old. FAA pavement standards for asphalt are typically based on a 20 year life span.

Due to the high volume of air operations it is highly desirable to reduce the number of runway closures, especially Runway 16L/34R (the long runway). There is a significant scheduling and cost impact to the airlines resulting from closing this runway to perform work. Staff has estimated that the potential cost impact routes that require the longer runway is approximately \$50,000 per flight. Additionally in previous project memos, staff has detailed re-phasing the current project from a summer project to a fall/winter project to ease congestion during the busiest travel season.

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ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Perform a limited repair of Sierra

Cost Implications: Approximate cost \$200,000 - \$300,000

Pros:

- (1) Low cost to the project.
- (2) Resurfacing is currently planned in 2020

Cons:

- (1) FOD risk to the airfield would continue to exist from the unrepaired portions of the taxiway.
- (2) A closure of the 16L/34R Runway will be required in order to perform this work in 2020. This option has the highest operational impact.
- (3) The combined cost of this option, plus resurfacing it again in 2020 makes it the highest cost option.

This is not the preferred alternative.

Alternative 2 – Close Sierra to traffic

Cost Implications: Approximate cost \$200,000

Pros:

- (1) Lowest Cost
- (2) Eliminates FOD risk.

Cons:

- (1) Sierra would not be usable, aircraft taxi routes would be modified contributing to increased taxi time and congestion at the South end of the airfield

This is not the preferred alternative.

Alternative 3 – Issue a Change Order with the current contractor to resurface Sierra

Cost Implications: Approximate cost \$700,000.

Pros:

- (1) Eliminates FOD risk.
- (2) Keeps Sierra operational for the foreseeable future.
- (3) Eliminates a future planned closure of Runway 16L/34R in 2020.

Cons:

- (1) There is a potential that FAA grant funding associated with this work in 2020 cannot be recovered.

This is the recommended alternative.

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FINANCIAL IMPLICATIONS

There is no additional funding being requested in this memo.

ATTACHMENTS TO THIS REQUEST

- (1) Presentation slides
 - o Slide 1 – Airfield Photo Taxiway S
 - o Slide 2 – Taxiway S Scope of Work
- (2) Critical Work Declaration, 10-5-2018

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

2018 Taxiway Improvement Projects

November 14, 2017 – The Commission authorized advertisement and execution of a single major works construction contract comprised of the Taxiway A/B, Taxiway L/Q, 2018 Pavement Program, B Concourse IWS Upgrade, Taxiway H signage projects.

Taxiways A/B/L/Q

March 14, 2017 – The Commission authorized design funds for construction documents for Taxiways L and Q, to transfer budget and authorization from the NSAT project, and approved use of PLA.

May 24, 2016 – The Commission authorized the NSAT increase of project scope and budget that included Taxiway Lighting and Panel Replacement of \$3.2M.

2018 Pavement Replacement

May 9, 2017 – The Commission authorized design funds for construction documents for replacement of distressed pavement and joint seal replacement in the 2018 portion of the 2016-2020 Pavement Program, and approved use of PLA.

October 25, 2016 – The Commission authorized advertisement and execution of contract for retrofits of 400 Hz In-ground power units and reconstruction of existing pavement at Cargo 2.

February 24, 2015 – The Commission authorized design funds for construction documents for replacement of distressed pavement and joint seal replacement in the 2016 portion of the 2016-2020 Pavement Program.

B Concourse IWS Upgrade

October 25, 2016 – The Commission authorized capital spending for design and construction of Port utility and supportive infrastructure work associated with the Concourse B gate reconfiguration.

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Taxiway H Signage

December 2, 2014 – The Commission authorized advertisement and execution of the Runway 16C/34C reconstruction that included the reconfiguration of Taxiway H.