



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8j

ACTION ITEM

Date of Meeting August 10, 2021

DATE: August 2, 2021

TO: Stephen P. Metruck, Executive Director

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

**SUBJECT: Airfield Pavement and Supporting Infrastructure Replacement Program
(CIP #C800930) - North Runway Protection Zone Culvert**

Amount of this request: \$3,800,000

Total estimated project cost: \$153,500,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to advertise and award a major public works contract to replace the North Runway Protection Zone Culvert (NRPZ Culvert), a year 2022 component of the 2021 to 2025 Airfield Pavement and Supporting Infrastructure Replacement Program. This construction authorization is for \$3,800,000 for a total program authorization to date of \$55,195,000. The total 2021-2025 program cost is \$153,500,000.

EXECUTIVE SUMMARY

This project will replace the existing failing culverts and the road crossing at Miller Creek on South 150th St. with an engineered structure capable of sustaining heavy vehicle loading requirements. The new structure will also revert the creek at this location to a natural streambed and restore fish passage. The primary reason to maintain this road is that it provides access for Aircraft Rescue and Fire Fighting (ARFF) vehicles to be able to respond to any incident within the Runway Protection Zone (RPZ) north of the airport. The road has a variety of additional uses, including as a haul road for staging and moving construction material for on-going projects, Port Police, security access, and environmental resource staff accessing the wetlands and creek. The existing culverts under the road have settled to the point where the culverts are now located beneath the Miller Creek streambed and therefore have restricted creek flow and fish passage. Additionally, sinkholes have developed in the roadway that crosses Miller Creek, creating concerns about stability of the roadbed and the potential for safety hazards. This project has received all the Environmental permits required to do work in this wetland area.

This project was included in the 2021-2025 capital plan and the funding source will be the Airport Development Fund.

Meeting Date: August 10, 2021

JUSTIFICATION

In its current state the existing culvert blocks Miller Creek, does not provide fish passage, and the failed roadway above creates an unsafe environment for all users of the roadway. It may also limit ARFF response to any incident within the north RPZ. ARFF access to the RPZ is an FAA requirement. This project will replace the existing failing culverts and the road crossing Miller Creek on S. 150th St. with an engineered structure spanning the creek, revert the creek to a natural streambed at this location, and restore fish passage.

Diversity in Contracting

The project staff, in coordination with the Diversity in Contracting Department, have set a 10% woman and minority business enterprise (WMBE) aspirational goal for the NRPZ culvert project. The goal is based upon the project’s scopes of work which does not include FAA funding, and baseline availability of certified WMBE businesses to perform the work.

Details

The overall purpose of this project is to provide safe conditions for ARFF, construction, and other users on the access road within the North Runway Protection Zone road and to reopen the fish passage in the wetlands. This project was one of the planned components of the 2021-2025 Airfield Pavement and Supporting Infrastructure Program. Design authorization for the overall program occurred in October 2019 while construction authorization is brought forth for each yearly construction contract or component. Construction of the culvert replacement will occur in the summer of 2022 during the permissible fish window of July to October while stream flow conditions are at their lowest level. Concurrence for this project and the in-water work permits have been obtained from the Washington Department of Fish and Wildlife (WDFW) and the Army Corps of Engineers (Corps).

Scope of Work

The scope for work for this project includes:

- Install temporary stream bypass, water treatment and fish protection measures
- Remove the failing roadway
- Restore the Miller Creek streambed to its natural state
- Install piling for the new roadway structure span
- Install the engineered roadway decking spanning the creek

Schedule

<i>Activity</i>	
Construction start	2022 Quarter 3
In-use date	2022 Quarter 4

Meeting Date: August 10, 2021

Cost Breakdown	This Request	Total Project
Design	\$0	\$13,495,000
Construction	\$3,800,000	\$140,005,000
Total	\$3,800,000	\$153,500,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Shut the road down permanently and do not restore fish passage

Cost Implications: \$600,000 expense funds for design costs to date

Pros:

- (1) No construction costs
- (2) No disturbance to the wetlands

Cons:

- (1) ARFF vehicles will no longer have access to the north RPZ to be able to respond to an aircraft incident, which is an FAA requirement. Police, security, and environmental staff will also lose this access. Construction vehicles accessing the airfield from SR518 and SR509 will also need to use surface streets.
- (2) Fish passage is not restored
- (3) Not supportive of current agreements with the Corps and WDFW.

This is not the recommended alternative.

Alternative 2 – Continue to perform ad-hoc repairs to the access road

Cost Implications: \$600,000 expense funds for design costs to date; and \$50,000 per year in repairs

Pros:

- (1) Lower initial costs

Cons:

- (1) Not an engineered solution. Roadway could collapse at any time restricting ARFF access to the north Runway Protection Zone and other road uses.
- (2) Delay pushes full replacement into a future date, escalating actual replacement costs
- (3) Fish passage is not restored
- (4) Not supportive of current agreements with the Corps and WDFW.

This is not the recommended alternative.

Alternative 3 – Replace the culvert with an engineered structure and restore creek and fish passage

Cost Implications: \$4,900,000

Pros:

- (1) Fish passage will be restored

Meeting Date: August 10, 2021

- (2) Safe road conditions for ARFF and construction vehicles
- (3) Supports agreements with the Corps and WDFW.

Cons:

- (1) Highest initial capital costs
- (2) Temporary closure of the access road
- (3) Temporary disturbance of the wetlands

This is the recommended alternative.

FINANCIAL IMPLICATIONS

The 2021-2025 Airfield Pavement and Supporting Infrastructure Replacement Program is included in the annual FAA Airport Capital Improvement Program (ACIP) letter for FAA Airport Improvement Program (AIP) Grant funding. The program will receive federal grant funding for eligible items meeting the FAA standards and the anticipated FAA grant reimbursement over the life of the program is \$47,992,000 with \$21,206,057 received for the year 2021.

Cost Estimate/Authorization Summary

	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$156,300,000	\$0	\$156,300,000
Previous changes – net	(2,800,000)	0	(2,800,000)
Revised estimate	153,500,000	0	153,500,000
AUTHORIZATION			
Previous authorizations	51,395,000	0	51,395,000
Current request for authorization	3,800,000	0	3,800,000
Total authorizations, including this request	55,195,000	0	55,195,000
Remaining amount to be authorized	\$98,305,000	\$0	\$98,305,000

Annual Budget Status and Source of Funds

This project, C800930 Airfield Pavement and Supporting infrastructure Replacement Program, was included in the 2021-2025 capital budget and plan of finance with a budget of \$153,500,000. A budget reduction of \$2,800,000 was transferred to the Airfield Pavement Program 2016-2020 (C800483) to accelerate pavement and supporting infrastructure work to take advantage of the lower operations in 2020. There was zero net change to the Aviation capital budget. This project has a Majority-In-Interest approval from the airlines in January 2020. The funding sources will be the Airport Development Fund, AIP grants, and revenue bonds.

Meeting Date: August 10, 2021

Financial Analysis and Summary

Project cost for analysis	\$153,500,000
Business Unit (BU)	Airfield movement and airfield apron
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	Total project cost CPE of 0.38 in 2026; annual CPE of .05

Future Revenues and Expenses (Total cost of ownership)

This project will not have an impact on annual Aviation Maintenance operating & maintenance (O&M) costs and may lead to a reduction in the amount of time currently spent by the field crew on repairing this section of the road due to the current condition of the road. After implementing the project, it is anticipated that many of the problems that we currently have in this area would be resolved.

Anticipate approximately \$50,000 (\$10,000 annually) to conduct five years of post-construction performance monitoring as specified by the Washington Department of Fish and Wildlife (WDFW) and the Army Corps of Engineers (Corps).

ADDITIONAL BACKGROUND

The ARFF Access Road and the culvert over Miller Creek were constructed in 1983. The geotechnical investigation study conducted in fall of 2018 indicated the presence of soft peat layers in the subsurface. It is anticipated that the culvert and the road east of the culvert may have suffered significant settlement due to this peat layer. Using a new precast structure and building a new foundation supported on king piles are needed to prevent settlement of the new structure in the future.

ATTACHMENTS TO THIS REQUEST

Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- November 10, 2020 – The Commission authorized the Executive Director to (1) advertise and execute a major works construction contract and (2) include a project labor agreement for the replacement of distressed pavements and supporting infrastructure for the 2021 portion of the 2021-2025 Airfield Pavement and Supporting Infrastructure Replacement Program at the Seattle-Tacoma International

Meeting Date: August 10, 2021

Airport. This construction authorization is for \$37,900,000 for a total authorization to date of \$51,395,000. The total 2021-2025 program cost is \$153,500,000.

- October 22, 2019 – The Commission authorized the Executive Director to authorize design and preparation of construction documents for the 2021-2025 Airfield Pavement and Supporting Infrastructure Replacement Projects at the Seattle-Tacoma International Airport in the amount of \$16,000,000 and approve the use of a project labor agreement (PLA) for each year's construction contract.