



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8d

ACTION ITEM

Date of Meeting May 10, 2022

DATE: April 28, 2022

TO: Stephen P. Metruck, Executive Director

FROM: Wayne Grotheer, Director Aviation Project Management Group
Laurel Dunphy, Director Airport Operations

SUBJECT: Concourse N Arc Flash Mitigation (C800556)

Amount of this request: \$0

Total estimated project cost: \$1,000,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to (1) Use Port of Seattle crews, as well as small and major works on-call contracts to perform the construction work and (2) advertise and execute a major on-call construction contract for hazard mitigation in the south power center of Concourse N.

EXECUTIVE SUMMARY

A final short circuit coordination study performed as part of the North Satellite Modernization project identified that the configuration of the existing south power center at Concourse N resulted in arc flash incident energy levels over acceptable requirements. To complete the North Satellite Modernization project objectives for staff to maintain the campus electrical systems at the airport in a consistent manner airport wide, new equipment with updated protection and monitoring is required to be installed. This work is being completed as part of the original North Satellite Modernization project at Concourse N.

JUSTIFICATION

This request is being made to provide authority to advertise and execute a major works on-call specific construction contract for Port Construction Services (PCS). This approval will allow the quick execution of arc flash mitigation efforts to alleviate the safety concerns at the Concourse N power center. The North Satellite Modernization project has previously authorized funding in the amount of \$1M to support the project. This request is intended to provide authority to advertise and execute the contract.

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Diversity in Contracting

Project staff has engaged with the Diversity in Contracting Department and have established that there are Women and Minority Owned Business Enterprises (WMBE) firms that are capable of completing this work as a prime and are pursuing outreach efforts to publicize this upcoming opportunity.

DETAILS

The final short circuit coordination study identified that the existing south main power center resulted in arc flash incident energy levels over the specified levels required by the North Satellite Modernization project. Aviation Maintenance and Facilities and Infrastructure reviewed the study, and in concurrence with the project team identified that the arc flash can be reduced by installing new enhanced breakers and updated monitoring equipment.

The mitigation allows for shutting down portions of the concourse power system consistently without powering off the entire concourse for maintenance, tenant connections, or changes to infrastructure in the future life of the facility.

This follow-on work is being completed as part of the original North Satellite Modernization project at Concourse N. Completing this work in this way results in contract cost and schedule savings by leveraging the remaining budget authorization and design work already completed.

Scope of Work

The project would supply and install the following equipment and monitoring system for arc flash mitigation at the south main power center in the concourse:

- (1) Two (2) new appropriately rated arc flash circuit breakers.
- (2) Modifications to the switchgear to accept the 2 new circuit breakers.
- (3) Two (2) circuit breaker relays for primary breaker protection.
- (4) Two (2) control power transformers.
- (5) Two (2) sets of 3 current transformers for power monitoring.
- (6) Perform commissioning of the switchgear to validate the arc flash incident levels desired are achieved.

Schedule

The North Satellite Modernization project opened the completed Concourse N on schedule in the summer of 2021. The project construction contractor demobilized from the project in the fourth quarter of 2021. This request will enable execution of a new Major Works PCS on-call specific construction contract to perform the switchgear modifications within the 2022 calendar year.

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Activity

Commission design authorization	2012 Quarter 2
Design start	2021 Quarter 2
Commission construction authorization	2022 Quarter 2
Construction start	2022 Quarter 2
In-use date	2022 Quarter 4

Cost Breakdown

	This Request	Total Project
Design	\$0	\$377,900
Construction	\$0	\$622,100
Total	\$0	\$1,000,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Defer mitigation to a future date

Cost Implications: Likely cost of mitigation will be greater than currently estimated \$1M. The project that completed Concourse N possesses authorization to design, advertise, and deliver project and construction management services in 2022. Therefore, it will be most cost effective to use the current, contracted design team.

Pros:

- (1) None.

Cons:

- (1) Power for the entire concourse would need to be shut off to complete routine maintenance, causing many gate outages for the Airport.
- (2) Additional authorization as well as time and resources will be required to design and advertise this scope of work.

This is not the recommended alternative.

Alternative 2 – Do not complete this scope

Cost Implications: \$1M saved

Pros:

- (1) Save funding and resources for use addressing other airport priorities.

Cons:

- (1) Power for the entire concourse would need to be shut off to complete routing maintenance, causing many gate outages for the Airport.

This is not the recommended alternative.

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Alternative 3 – Mitigate the arc flash risk at Concourse N south main power center.

Cost Implications: \$1M

Pros:

- (1) Allows for maintenance to service the south main power center.
- (2) Double ended switchgear design intent is realized eliminating gate outage impact for service maintenance.

Cons:

- (1) None

This is the recommended alternative.

FINANCIAL IMPLICATIONS

No additional project funding is required to complete this scope and less savings will be returned.

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Previous changes – net	\$679,916,127	\$20,209,105	\$700,125,232
Current change	\$0	\$0	\$0
Revised estimate	\$679,916,127	\$20,209,105	\$700,125,232
AUTHORIZATION			
Previous authorizations	\$691,916,127	\$20,209,105	\$712,125,232
Current request for authorization	\$0	\$0	\$0
Total authorizations, including this request	\$691,916,127	\$20,209,105	\$712,125,232
Remaining amount to be authorized	\$0	\$0	\$0

Annual Budget Status and Source of Funds

This project is included in the 2022-2026 capital budget and plan of finance with a budget of \$691.9 million. The budget decrease of \$12 million was returned to the Aeronautical Allowance CIP 800753. The funding sources include the Airport Development Fund, revenue bonds and Passenger Facility Charge revenue (PFCs).

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Financial Analysis and Summary

Project cost for analysis	\$700,125,232
Business Unit (BU)	Terminal Building
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase due to inclusion of capital (and operating) costs in airline rate base. Increasing use of PFCs reduces Port revenue as capital costs are excluded from airline rate base.
IRR/NPV (if relevant)	N/A
CPE Impact	\$0.86-\$1.48 depending on amounts of PFCs applied to ongoing revenue bond debt service

The funding plan includes approximately \$126 million of PFCs to fund construction costs. Capital costs funded with PFCs are excluded from the airline rate base and therefore do not impact passenger airline cost per enplaned passenger (CPE). The funding plan also includes the use of PFCs to pay some level of ongoing PFC-eligible revenue bonds debt service. Debt service paid by PFCs is also excluded from the airline rate base.

ATTACHMENTS TO THIS REQUEST

- (1) Presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

North Sea-Tac Airport Renovations (NorthSTAR) (CIP #C800544)

April 26, 2022 - Request Commission authorization for the Executive Director to execute a major public works construction contract to provide full functional wide body aircraft capacity at the Concourse N gate N16. This construction contract will provide flexibility to accommodate a wider array of aircraft to support wide body gate service.

May 14, 2019 – NorthSTAR Program status update

February 26, 2019 – NorthSTAR Program status update

November 13, 2018 – NorthSTAR Program status update

July 31, 2018 – NorthSTAR Program status update

May 22, 2018 – NorthSTAR Program status update

Jan 30, 2018 – NorthSTAR Program status update

Oct 24, 2017 – NorthSTAR Program status update

July 25, 2017 – NorthSTAR Program status update

April 25, 2017 – NorthSTAR Program status update

January 24, 2017 – NorthSTAR Program status update

September 13, 2016 – Request Commission authorization for the Chief Executive Officer to (1) increase the North Satellite Renovation & North Satellite Transit Station Lobbies (NSAT) project scope and budget; (2) increase authorization for project design; (3) amend design service agreement with URS that exceeds 50% of the value of the original contract; and (4) increase authorization for Preliminary Work Package #2 (PWP #2) construction.

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August 9, 2016 – NorthSTAR Program Status Update

May 24, 2016 – Commission authorized Chief Executive Officer to 1) increase the North Satellite project scope and budget; 2) increase authorization for NSAT design and overall project support; 3) amend service agreements with Jacobs Project Management Company and AECOM; and 4) authorize the use of port crews and small works contactors to perform work for the project.

February 23, 2016 – NorthSTAR Program status update

November 24, 2015 – NorthSTAR Program status update

July 14, 2015 – NorthSTAR Program status update

April 28, 2015 – NorthSTAR Program status update

January 27, 2015 – NorthSTAR Program status update

October 28, 2014 - NorthSTAR Program status update

August 19, 2014 - NorthSTAR Program status update

May 27, 2014 – NorthSTAR Program status update

January 14, 2014 – NorthSTAR Program status update

September 24, 2013 – NorthSTAR Program status update

June 25, 2013 –NorthSTAR Program status update

April 9, 2013 – The Commission authorized the Chief Executive Officer to enter into a project labor agreement covering the NorthSTAR program’s five major construction projects.

March 26, 2013 –NorthSTAR Program status update

June 26, 2012 – The Commission received a briefing on the status of the Airline Realignment Program and budget restructuring in association with the NorthSTAR Program.

April 10, 2012 – Authorizations for the North Sea-Tac Airport Renovations program for: 1) preliminary project funding; 2) execution of consulting contracts for design/construction support services and project management services; and 3) use of Port crews and consultants to conduct regulated materials management surveys and field support services for preliminary project planning tasks.

North Satellite Renovation & North Satellite Transit Station Lobbies (CIP #C800556)

April 26, 2022 - Request Commission authorization for the Executive Director to execute a major public works construction contract to provide full functional wide body aircraft capacity at the Concourse N gate N16.

March 10, 2020 – The Commission authorized

increase the North Satellite Modernization Project budget by \$40,000,000 (\$32 million capital and \$8 million expense) for a total project authorization of \$712,125,232.

August 15, 2017 – The Commission authorized

Increase the authorized budget by \$107,000,000 capital and \$500,000 expense and authorize the remaining \$261,547,392 capital and \$8,800,000 expense, amending the Hensel Phelps (HP) contract by \$161,563,526 for the final MACC to complete the project in Q3 2021. Authorize execution of all pending and future change orders to the HP contract within the authorized budget and project scope to avoid potential delays. Authorize Port crews to support NSAT construction and authorize Port staff to enter

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into a TRA with AS for the reimbursement of AS and Port responsible design efforts and improvements.

June 27, 2017 – The Commission authorized four NSAT related items:

increase project authorization for the North Satellite Renovation & North Satellite Transit Station Lobbies Project by \$200,000,000; execute Preliminary Work Amendment #3 (PWA #3) with Hensel Phelps (HP) for up to \$200,000,000; authorize Port staff to execute all change orders to the HP contract within authorized budget and project scope without returning for additional Commission authorization; and authorize Port Construction Services (PCS) to execute small works contracts and use Port crews to support NSAT construction

September 13, 2016 – The Commission authorized four NSAT related items:

the increase of project scope and budget (capital) by \$7,000,000 for the revised third floor layout to better accommodate the signature restaurant, provide 3,000 additional square feet of future airport related leasable space, and increase AS premium traveler lounge as requested by 4,850 square feet.

Increase authorization by \$1,000,000 for project design.

Amend design service agreements with AECOM that exceed 50% value of the original contract.

Increase authorization by \$30,000,000 to accommodate Preliminary Work Package #2 construction.

May 24, 2016 - The Commission authorized four NSAT related items:

Increase of project scope and budget (capital and expense) by \$121,219,098 for 30% & 60% design scope additions and risk contingencies

Increased authorization of \$11,000,000 for continued NorthSTAR Program/Project Management services and NSAT design and overall project support.

Amend service agreements with Jacobs Project Management Co. and AECOM.

Authorize the use of port crews and small works contractors.

December 8, 2015 – The Commission authorized \$98,100,000 for the following:

Additional Pre-Construction services (\$1,200,000)

Construction auditing services

Preliminary Construction work

March 24, 2015 – The Commission authorized three NSAT related items:

Expand the baggage handling system increasing the project scope for \$14,400,000 and \$1,954,000 to complete the design.

Entering into a developer agreement with Puget Sound Energy and \$200,000 in reimbursement for the design and construction of underground gas infrastructure.

\$5,300,000 to Prepare four locations to accommodate temporary passenger loading bridges, to construct temporary construction offices; To complete construction of a Satellite Transit System (STS) North loop Dynamic Display system; \$600,000 in expense funds for regulated materials management for AS's tenant improvement project; and Approval to use Port crew labor and small works contractors to complete early project work.

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August 5, 2014 – The Commission authorized expansion of the NSAT, \$191,323,143 budget increase, \$15,717,800 to complete the design, execute amendments to existing consulting contracts; execute future consulting contracts and use of and to advertise for General Contractor/Construction Manager (GC/CM) alternative public works contractor.

July 22, 2014 - NSAT Expansion Briefing

April 22, 2014 – Seattle-Tacoma International Airport Capital Program - Briefing

January 14, 2014 – NSAT expansion briefing.

May 28, 2013, Commission authorized the execution of separate service agreements for Construction Management Services and Commissioning Services, of approximate values of \$10 million and \$1.5 million.

December 11, 2012 – The Commission was briefed on the Vertical Conveyance Modernization Project Aero Phases 1 and 2 and the possibility of adding the specified elevators and escalators to the NorthSTAR program.

July 24, 2012 - Commission authorized \$32,000,000 for the design of the NorthSTAR NSAT Renovation and NSTS Lobbies project.

April 10, 2012 - The Commission authorized the execution of consultant contracts for design and construction support services; program management services; and the completion of site surveys for regulated materials management, for \$1,200,000.