



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8a

ACTION ITEM

Date of Meeting September 24, 2019

DATE: September 5, 2019
TO: Stephen P. Metruck, Executive Director
FROM: Laurel Dunphy, Director, Aviation Operations
Wayne Grotheer, Director, Aviation Project Management
SUBJECT: Safedock Upgrade and Expansion Project (CIP #C800779)

Amount of this request: \$24,654,000
Total estimated project cost: \$28,218,250

ACTION REQUESTED

Request Commission authorization for the Executive Director to advertise and execute a major works construction contract for installation of Advanced Visual Docking Guidance Systems (A-VDGS) for gates on Concourses B, C, D and the South Satellite at the Seattle-Tacoma International Airport (STIA). This authorization request is for \$24,654,000.

EXECUTIVE SUMMARY

This project improves safety on the airfield by installing Safedock Advanced-Video Docking Guidance System (A-VDGS) units at all gates that currently do not have A-VDGS units. A-VDGS units scan the gate area and alert pilots to obstacles in their docking path. They provide real-time docking video, actual gate usage data and statistics to both the airport and our airline partners, helping to improve safety and gate efficiency while reducing taxi-lane congestion.

A-VDGS units are already installed at several gates at STIA and both the International Arrivals Facility (IAF) and NorthStar projects include A-VDGS installation. This project will complete the procurement and installation of remaining A-VDGS units on Concourses B, C, and D, the South Satellite, as well as upgrading outdated units. An approved Competition Waiver (ADB Safegate 2016-007) is in effect and will be used in the procurement of the Safedock A-VDGS units.

Additionally, a centralized Gate Operating System (GOS) database will be developed which will connect all A-VDGS units that are included in this project scope (i.e. Concourse B, C, D, South Satellite) as well as the A-VDGS units that are currently being installed by the IAF and NorthStar projects at Concourse A and the North Satellite Terminals, respectively.

A Project Labor Agreement will be utilized on this project.

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JUSTIFICATION

Over the past few years, the airport has experienced rapid growth in both passenger and aircraft operations. Today STIA is the 8th fastest growing airport by aircraft operations, in the world. STIA is now number 23rd in the world for aircraft operations and 28th in the world for passenger throughput. The increased aircraft operations have contributed to docking delays at the gates, taxi-lane congestion, and a corresponding increase in the potential for human errors and safety incidents. There is a need to reduce the safety risk from the increased ramp operations by both vehicles and aircraft.

This system also assists aircraft and pilots in efficient docking which may save fuel and can reduce taxi-lane congestion. With limited gate capacity, deploying technology to leverage gate usage, is critical to managing the increasing number of operations at STIA. Efficient and safe docking reduces taxi-lane congestion, improves gate utilization, and helps mitigate against gate area incidents in an increasingly congested airfield.

Safedock will provide the Port and airlines with real on-gate and off-gate information to better utilize the limited gate facilities as well as provide real-time video for gate scheduling and airline asset tracking. Furthermore, the advanced Safedock units, connected to the GOS, provide automatic Ramp Information Display (RIDS) capability that allows airlines to display critical flight information to ramp workers. Delta, American and Alaska Airlines desire and have requested this capability. The Safedock upgrade was presented to the airlines at the STIA Airport Airline Affairs Committee (AAAC) on December 7th, 2017 and received Majority-In-Interest (MII) approval for \$28,954,000 on May 14, 2018 via Ballot #1.

This project supports the following Century Agenda and Aviation Division strategic goals:

1. Makes Seattle-Tacoma International Airport (STIA) the west coast “Gateway of choice” for international travel: Having a standard system at all gates will make the docking process more efficient, accurate and reduce the taxi to gate times. It will improve gate utilization, help prevent gate area accidents, and provide an efficient tracking and reporting mechanism.
2. Be the greenest, and most energy efficient Port in North America: Upgrade and expansion of the Safedock system at STIA will result in less aircraft holding for a gate on the airfield or congesting the movement area. It will reduce jet fuel consumption, air pollutants, and carbon emissions.
3. Use technology to leverage safety engagement: With the Safedock system, Aviation staff can leverage proven technology to reduce safety risk, incidents and accidents on the airfield at STIA.

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Diversity in Contracting

Project staff are working with the Diversity in Contracting Department in outreach to Woman and Minority Business Enterprises (WMBE) of this opportunity. A WMBE aspirational goal of 9% has been established for this construction project.

DETAILS

Installation of the Safedock A-VDGS units will be phased in a manner to minimize impacts to operations. Aircraft access to the gates will be maintained to the greatest extent possible without compromising safety. Minimal impacts to aircraft operations are anticipated and work requiring full gate closures will be performed during non-peak hours. Acceptable times and durations for gate closures will be closely coordinated with Airport Operations and the Airlines in advance.

Scope of Work

The project scope includes:

1. Decommission and remove existing mounting hardware and 21 outdated A-VDGS and Ramp Information Display units.
2. Procure and install up to 78 A-VDGS units with video cameras and apron scanning at the B, C, and D Concourses and the South Satellite. Safedock A-VDGS is a proprietary product. On this project, an approved Competition Waiver (ADB Safegate 2016-007) is in effect (expires: May 18, 2021).
3. Develop and implement a GOS with a centralized database.
4. Provide the network connectivity to allow data and gate usage metrics gathered from the A-VDGS units to feed into a centralized database for use by staff and the airlines.
5. Allow for airlines to have workstations with apron views of their gates.
6. When possible, re-route existing network cabling from local communication rooms to STIA's newly installed micro-distribution cabinets.
7. Testing and commissioning of all systems, software, user interfaces and data collection.

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Schedule

Activity

Construction start	2020 Quarter 1
In-use date	2021 Quarter 2

Cost Breakdown

	This Request	Total Project
Design	\$0	\$2,383,750
Construction	\$24,654,000	\$25,834,500
Total	\$24,654,000	\$28,218,250

Alternative 1 – Do not install new or upgrade existing A-VDGS units.

Cost Implications: \$0

Pros:

- (1) No capital improvement required.
- (2) No construction impacts to aircraft operations.

Cons:

- (1) This alternative continues the inconsistent aircraft docking (gate parking) operations between gate locations.
- (2) This alternative does not meet airlines’ requests.
- (3) No safety improvements are provided by this alternative.
- (4) Older Safedock units would remain that do not have video cameras nor obstacle scanning capability and have limited or no ramp information display ability.

This is not the recommended alternative.

Alternative 2 – Advertise and execute a major works construction contract to install the A-VDGS system over a phased, longer duration 5-year program.

Cost Implications: \$33,000,000

Pros:

- (1) Project costs would be spread over multiple years.
- (2) This project deploys Safedock units at Concourses B, C, D and the South Satellite.
- (3) Port business units and airlines’ stakeholders benefit from a centralized system by being able to access docking information including (1) actual docking information for gate usage; (2) real time and archival video footage of aircraft docking for incident review; (3) automated ramp information for display.

Cons:

- (1) This alternative is the most expensive.
- (2) The phased approach prolongs inconsistent gate docking operations between gate locations for a longer period and delays airport-wide gains in safety, docking efficiency, and savings in fuel consumption and emissions.

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- (3) Data for making operational decisions will be incomplete.
- (4) Some airlines supporting the full installation do not receive early benefit.
- (5) This approach is inefficient.

This is not the recommended alternative.

Alternative 3 – Advertise and execute a major works construction contract to install the A-VDGS system, including a centralized Gate Operating System which will connect all A-VDGS units with other Port systems, enhancing data sharing between the Port and the airline stakeholders.

Cost Implications: \$24,654,000

Pros:

- (1) Airport-wide deployment creates consistency in operations.
- (2) This alternative leverages the efficiencies inherit in mobilizing once.
- (3) This alternative results in functioning A-VDGS units airport-wide providing safety, efficiency and data sharing to stakeholders sooner than the other alternatives.
- (4) This project deploys Safedock units at Concourses B, C, D and the South Satellite.
- (5) Port business units and airlines stakeholders benefit from a centralized system by being able to access docking information including (1) actual docking information for gate usage; (2) real time and archival video footage of aircraft docking for incident review; (3) automated ramp information for display.

Cons:

- (1) The alternative requires earlier expenditures.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

The initial project scope consisted of 3 new units and connection to a GOS. In Q3 2017 widespread airline support increased the scope to include all gates at Concourse B, C, D and South Satellite.

Cost Estimate/Authorization Summary

	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$3,872,000	\$0	\$3,872,000
Previous scope and cost increase	\$25,082,000	\$246,000	\$25,328,000
Budget transferred to International Arrival Facility Program on February 13 th , 2018	-\$981,750	\$0	-\$981,750
Total estimate	\$27,972,250	\$246,000	\$28,218,250
AUTHORIZATION			

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Previous authorizations	\$4,546,000	\$0	\$4,546,000
Authorization transferred to International Arrival Facility Program on Feb. 13 th , 2018	\$981,750	\$0	\$981,750
Revised authorization	\$3,564,250	\$0	\$3,564,250
Current request for authorization	\$24,408,000	\$246,000	\$24,654,000
Total authorizations, including this request	\$27,972,250	\$246,000	\$28,218,250
Remaining amount to be authorized	\$0	\$0	\$0

Financial Analysis and Summary

Project cost for analysis	\$29,200,000
Business Unit (BU)	Gates
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase
IRR/NPV (if relevant)	N/A
CPE Impact	\$.012 in 2021

Annual Budget Status and Source of Funds

This project was included in the 2019 – 2023 capital budget and plan of finance. The funding source is existing revenue bonds.

ADDITIONAL BACKGROUND

STIA was the first airport in the United States to install Safedock. Below is the history of Safedock VDGs units at STIA:

- 2005-2007: Concourse A (minus A6) for Delta Airlines realignment.
- 2007: Gates D1-D4 for Alaska Airlines trial.
- 2012: Gates D7-D9 for American Airlines realignment.
- 2015: Gate C3 Alaska Airlines safety measure for tight gate space.
- 2016: Plan to upgrade old and expand.
- 2017: NorthStar includes Safedock for all North Satellite gates.
- 2018: International Arrival Facility includes for all Concourse A gates.

The following are new/expanding Safedock installation initiatives at other North American airports in terms of units being placed into service:

- 2019
 - La Guardia, Delta Airlines – 11 units
 - JFK Terminal 4 – 6 units
 - DFW Terminal A – 28 units
 - Vancouver – 4 units
 - Montreal – 12 units
 - Charlotte – 4 units
 - SLC – 47 units (currently on order; expected to increase in 2020)

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- 2018
 - Los Angeles, MSC – 12 units
 - DFW Terminal E – 41 units
- 2017
 - DFW Terminal D – 40 units
 - Boston Logan – 12 units

ATTACHMENTS TO THIS REQUEST

- (1) Presentation slides.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

February 13, 2018 – The Commission authorized design funds for construction documents for A-VDGS for gates on Concourses A, B, C, and D and the South Satellite; (2) procure software / vendor services to configure a gate operating system; and (3) transfer \$981,750 to the International Arrivals Facility program for the purchase of approximately 17 A-VDGS units for Concourse A.