



INTERNAL AUDIT REPORT



**Operational Audit
Service Tunnel Renewal/Replacement Project**

November 2017 - March 2020

Issue Date: March 23, 2020

Report No. 2020-05

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Executive Summary

Internal Audit (IA) completed an audit of the Service Tunnel Renewal/Replacement Project for the period November 2017 through March 2020. The audit was performed to assess the quality of the Port's monitoring of the project to assure it is meeting project management standards in an efficient and effective manner.

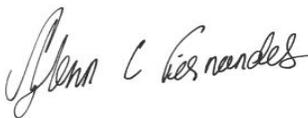
The SEA Airport service tunnel is located below the Airport arrivals drive and runs the full length of the main terminal. The 2,500 foot long service tunnel was designed, constructed and commissioned in phases between 1968 and 1974. The tunnel is an essential Airport facility and is structurally linked to other critical Airport infrastructure. The roof of the tunnel forms the support for most of the Airport's arrivals drive and portions of the departures drive. Additionally, the tunnel provides critical secured access to the central heating plant and its supporting infrastructure.

The project delivery method was a design-bid-build with a lump sum contract. As of March 2020, there were approximately \$1.9 million in change orders which have been covered through the original project contingency of approximately \$2.3 million. The current construction contract was \$25.9 million with an estimated contract completion date of August 02, 2020.

We selected this project to audit based on the number of change orders. We selected the largest dollar value change orders, ones that changed the scope of the project and those that were errors and omissions. Based on our testing and work performed, we did not find any evidence that the change orders were not justified.

We noted that the Service Tunnel Project team worked collaboratively with the general contractor, James D. Fowler Co., to assure the project ran smoothly and stayed within budget. We did note an instance, through no fault of the Service Tunnel Project, where the Port incurred \$160,000 in additional costs because of another major project's schedule slippage. With multiple major capital projects occurring concurrently at the SEA Airport, it is critical that each project stays on schedule. If one project's schedule slips, it will often impact other projects and the Port will continue to incur additional costs. Additional information is provided in Appendix B on page 7.

We do not have any reportable issues; however, we did identify an opportunity to improve processes related to the verification of financial reports submitted to the Port from the contractor, that we communicated to Port management separately via a letter.



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Director, Internal Audit

Responsible Management Team

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Background

The SEA Airport service tunnel is located below the Airport arrivals drive and runs the full length of the main terminal. The 2,500 foot long service tunnel was designed, constructed and commissioned in phases between 1968 and 1974. The tunnel is an essential Airport facility and is structurally linked to other critical Airport infrastructure. The roof of the tunnel forms the support for most of the Airport's arrivals drive and portions of the departures drive. Additionally, the tunnel provides critical secured access to the central heating plant and its supporting infrastructure, the central loading dock (used by commercial delivery vehicles to support continuous 24-hour terminal operations) and the employee busing operation.

The service tunnel is an essential element of Airport infrastructure that had not been strengthened or upgraded to current seismic building codes. Seismic standards had changed greatly since the construction of the service tunnel, and an update was needed. Retrofitting the service tunnel should improve its survivability and strength, while also extending the service life of the facility.

A 2009 study by Kennedy/Jenks indicated that each section of the service tunnel had seismic deficiencies, with the transition structures between cast-in-place concrete sections and sections supported by structural framing being the areas of greatest risk. The study also identified failing expansion and construction joints that were causing water-related deterioration and damage to the tunnel structure.

The Service Tunnel Renewal/Replacement project was bid on April 11, 2017 and received two bids. The low responsive bidder, James D. Fowler Co., submitted a bid for \$23,963,900 which was greater than the Engineer's estimate of \$19,567,000. The second and remaining bid submitted was \$25,665,000. Port staff analyzed the low bid and concluded that it was competitively priced to the market conditions for a project of this type, size and complexity. The project delivery method for the Project was a design-bid-build with a lump sum contract.

As of March 2020, there were approximately \$1.9 million in change orders and a current contract of \$25.9 million. The total cost of the project, including design and the Port's soft costs will be approximately \$39.5 million. Substantial completion is anticipated to occur in August 2020.

Audit Scope and Methodology

We conducted the engagement in accordance with Generally Accepted Government Auditing Standards and the International Standards for the Professional Practice of Internal Auditing. Those standards require that we plan and conduct an engagement to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our engagement objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our engagement objectives.

Change order review

- Obtained an understanding of the project management team's review process.
- Verified accuracy and allowability of a sample of change orders, including; adequate documentation, allowability, proper approval, and compliance with general condition requirements.

Pay Estimate Review

- Obtained an understanding of the project management team's review and approval of pay estimates.
- Tied out total amount paid per the pay estimates to PeopleSoft financial reports.
- Assessed the overall "*percent complete per pay estimate*" for reasonableness.
- Verified compliance with retainage requirements.

Small Business Utilization

- Obtained an understanding of the Port's monitoring of compliance with small business utilization requirements.
- Verified compliance with requirements through document review, submitted reports and the general contractor's job cost ledger.

Monthly Amounts Paid to Subcontractor (MAPS) Reports

- Obtained an understanding of the Port's monitoring of MAPS reports.
- Compared the most recently submitted MAPS report to the general contractor's job cost subledger report.

Appendix A: Risk Ratings

Findings identified during the audit are assigned a risk rating, as outlined in the table below. Only one of the criteria needs to be met for a finding to be rated High, Medium, or Low. Findings rated Low will be evaluated and may or may not be reflected in the final report.

Rating	Financial Stewardship	Internal Controls	Compliance	Public	Commission/ Management
High	Significant	Missing or not followed	Non-compliance with Laws, Port Policies, Contracts	High probability for external audit issues and / or negative public perception	Requires immediate attention
Medium	Moderate	Partial controls Not functioning effectively	Partial compliance with Laws, Port Policies Contracts	Potential for external audit issues and / or negative public perception	Requires attention
Low	Minimal	Functioning as intended but could be enhanced to improve efficiency	Mostly complies with Laws, Port Policies, Contracts	Low probability for external audit issues and/or negative public perception	Does not require immediate attention

Appendix B:

The Service Tunnel Project incurred additional costs of approximately \$160,000 due to schedule delays on the International Arrivals Facility Project.



Temporary Bus Turnaround

Source: Port of Seattle Construction Services

The Service Tunnel Project (ST) and the International Arrivals Facility Project (IAF) were active concurrently. For the Service Tunnel Project to remain on schedule, the IAF was expected to have the south portal of the service tunnel open by the end of July 2018 so that buses had a turnaround outside of the tunnel. Part of the IAF's scope was to construct a permanent bus turnaround which would be located on the south end of the new IAF building. At the time, the buses used the loading dock area of the service tunnel as a turnaround point. As the ST contractor approached completion of the north end, the Port faced the potential that the ST contractor would need to postpone their work, which would have cost the Port an estimated \$5,000 per day for standby time or, incur additional costs for the contractor to demobilize and then re-mobilize after the IAF contractor completed their portion of the work.

Discussions between the IAF and ST Project teams concluded that a temporary bus turnaround was needed to prevent a delay with the ST Project. As the temporary turnaround was not in scope for either project, Port management decided that the ST would pay for the temporary turnaround as it had contingency money and there was an "add nothing to IAF" mandate.

The ST contractor determined that the turnaround could be completed for approximately \$240,000 and would not require an extension to the ST's schedule. A time and materials change order was issued in October of 2018 for the turnaround. After the ST's contractor completed the turnaround, the actual cost came in at approximately \$160,000.