



INTERNAL AUDIT REPORT

OPERATIONAL AUDIT

North Satellite (NSAT) Renovation and Expansion Project



APRIL 2012 – MAY 2018

ISSUE DATE: JUNE 8, 2018

REPORT NO. 2018-02

TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY..... | 3 |
| BACKGROUND | 4 |
| AUDIT SCOPE AND METHODOLOGY | 5 |
| SCHEDULE OF FINDINGS AND RECOMMENDATIONS..... | 6 |
| APPENDIX A: RISK RATINGS..... | 10 |
| APPENDIX B: Schedule Delays and Additional Costs | 11 |
| APPENDIX C: HOK Study Reimbursement | 12 |
| APPENDIX D: NorthSTAR Organization Chart | 13 |

EXECUTIVE SUMMARY

Internal Audit (IA) completed an audit of the North Sea-Tac Airport Renovation (NorthSTAR) Program for the period April 2012 through May 2018. Our audit focused on the North Satellite (NSAT) Renovation and Expansion project, which is the largest segment of NorthSTAR. The audit was performed to assess Port staff's monitoring of the project and whether they followed policies, procedures, laws, and contractual requirements.

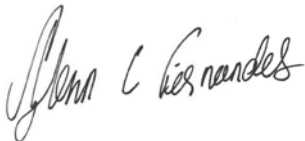
Alaska Air Group, Inc. (Alaska Airlines) is the largest airline at the Seattle-Tacoma International Airport (Airport) and serves as Alaska Airlines primary hub. The Port and Alaska Airlines are partnering to create an efficient "Curb to Gate" operation at the north end of the Airport. As of January 2018, total Port costs were \$98.3 million from a Commission approved budget of \$658.3 million. The project is expected to be completed in the spring of 2021.

In general, Port staff is managing the project effectively and has applied sound practices. Deliverables are discussed frequently in team meetings and quarterly update reports are provided to the Port Commission. Furthermore, The Port has contracted with the firm, R.L. Townsend and Associates, to perform independent construction cost control and cost verification consulting services.

Because of the complexity of the NorthSTAR Program, there are multiple departments involved in the project. Our audit identified opportunities where departments can work collaboratively to assure the project is cost effective and completed on schedule. We identified the following issues which are discussed in more detail on page six:

1. A letter of understanding (LOA) that the Port issued to Alaska, to assure alignment, was not legally binding, but nonetheless had the ability to materially impact the project's cost and timeline. Failure to adhere to this LOA resulted in changes that increased the cost of the project by approximately \$31.8 million and delayed the schedule by approximately 39 weeks.
2. The process utilized to reimburse Alaska for work performed, did not adequately involve key stakeholders to assure that what was reimbursed, was aligned with the value received by the Port.

We extend our appreciation to the Aviation Director's Office, the Aviation Project Management Group, Engineering General Services and the Central Procurement Office for their assistance and cooperation during the audit.



Glenn Fernandes, CPA
Director, Internal Audit

RESPONSIBLE MANAGEMENT TEAM

Lance Lytle, Managing Director Aviation

Ralph Graves, Sr. Director of Capital Development

Jeffrey Brown, Director of Aviation Facilities and Capital Programs

Wayne Grotheer, Director of Aviation Project Management Group

Janice Zahn, Assistant Engineering Director

BACKGROUND

The North Sea-Tac Airport Renovation Program (NorthSTAR) is a collaborative effort between the Port and Alaska Airlines to improve traveler experience and customer service. The North Satellite (NSAT) Renovation and Expansion Project is the largest segment of NorthSTAR Program and the focus of our audit. The NSAT component addresses the expansion of the North Satellite from 12 to 20 contact gates, modernization of the existing North Satellite facility including North Satellite and Concourse C Satellite Transit Stations. NSAT also expands the baggage system to accommodate the satellite expansion.

The Project is being delivered through a General Contractor/Construction Manager (GC/CM) approach. This approach uses an architect engineer (AECOM) to produce the design, but uses GC/CM (Hensel Phelps) for construction. A GC/CM is procured through a multi-part selection process that includes consideration and evaluation of the GC/CM bidder qualifications and experience, together with some cost elements. The GC/CM is selected early in design and assists the Port in evaluating the project during the design phase and then provides construction management services.

Once the drawings were complete, the GC/CM entered into a construction agreement and assumed the risk for the construction means and method (ie., the GC/CM became the general contractor and hires the subcontractors directly). Hensel Phelps is the GC/CM on the NorthSTAR project.

Construction is expected to be performed in two phases, beginning with the expansion of eight gates to the west of the current facility, followed by renovation. The Project is on schedule for completion in 2021.



Funding for the project comes from a combination of airline fees, the Airport Development Fund and Passenger Facility Charge revenues. The Port’s portion of NSAT is estimated at \$658.3 million. Alaska Airlines will contribute an estimated \$41 million to build a new lounge and employee spaces. The current capital cost by segment is shown in the following table:

| Estimated Capital Cost Summary | Port of Seattle Budget |
|--|------------------------|
| North Satellite Renovation <i>(Not including Alaska Airlines costs for Board Room and employee spaces - \$41,000,000)</i> | \$ 658,300,000 |
| Vertical Circulation, Concourse C | \$ 15,900,000 |
| Refurbish Baggage System | \$ 19,300,000 |
| Overall Management Costs | \$ 4,300,000 |
| Current Total Project Estimate | \$ 697,800,000 |

AUDIT SCOPE AND METHODOLOGY

We conducted this performance audit 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 perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The period audited was April 2012 through May 2018. We utilized a risk-based approach from the planning phase to the testing phase of our audit. We gathered information through document requests, research, interviews, observations, and analytical procedures. We assessed significant risks and identified controls to mitigate those risks. Our audit included the following procedures:

Bid-Law Compliance

- Obtained an understanding of Port staff's compliance with general contractor/construction manager (GC/CM) bid regulations.
- Reviewed supporting documentation from bid packets, including: the public solicitation, bid proposals, bid tally sheets, and applicable state laws.

Project Management (Lessons Learned)

- Reviewed spreadsheet from the Lessons Learned Database.
- Obtained an understanding of issues encountered during the project through inquiry with aviation staff.
- Reviewed supporting documentation, including: email correspondence, invoices, and reimbursement calculations.

Artwork Program

- Obtained an understanding of the Airport's artwork program through inquiry and observation of artwork at the Sea-Tac International Airport.
- Reviewed email correspondence on how the Port determined where to build the glasswork for the North Satellite.

Change Orders

- Obtained an understanding of Port management's oversight of change orders, including creation, negotiation and approval.
- Reviewed *Trend Log Full Report* from the Port's SQL Server Reporting Services Production.
- Selected and reviewed lump sum change orders where independent estimates were similar to contractor proposals for adequate documentation and price negotiations.
- Selected and reviewed force account change orders for compliance with procedures, allowability, adequate price negotiations and cost reconciliations.

SCHEDULE OF FINDINGS AND RECOMMENDATIONS

1) RATING: HIGH

A letter of understanding (LOA) that the Port issued to Alaska, to assure alignment, was not legally binding, but nonetheless had the ability to materially impact the project's cost and timeline. Failure to adhere to this LOA resulted in changes that increased the cost of the project by approximately \$31.8 million and delayed the schedule by approximately 39 weeks.

The Port and Alaska Airlines entered into a letter of understanding on the NorthSTAR program. Although the letter was not legally binding, it established how the Port and Alaska Airlines would work together in the planning, design and construction of the Project. Among other things, the letter listed specific milestones that required Alaska Airlines to concur in writing.

By obtaining concurrence, both parties could rely on milestones to limit changes in project scope or design. The Port received written concurrence for the project through the 30% design milestone. However, Alaska did not provide written concurrence for the 90 - 100% milestone. Instead, it provided implicit concurrence by email. Those concurrences did not prevent Alaska from requesting design changes after milestones were established. These requests resulted in approximately \$31.8 million of additional costs and 39 weeks of schedule delays. Of the \$31.8 million, \$15.6 million was related to scope changes and \$16.2 million in soft costs.

The largest single design request included dual passenger loading and unloading doors, requiring the Port to amend completed designs. Alaska Airlines decided not to pursue the dual door request which resulted in the Port amending the designs again. Aviation Project Management Group (AVPMG) estimated this particular request cost the Port \$1.2 million and a four week delay. In August of 2017 Port Management communicated to the Commission that a request had been made to Alaska, seeking reimbursement for the cost of removing the dual door. To date, no action has been taken on this.

Appendix B provides information on requests resulting in additional costs and delays in the schedule.

Recommendations:

1. We recommend Alaska also sign any future letters of understanding and accept financial responsibility for changes made after designs have been approved. Without a formalized letter of understanding that is accepted and followed by all parties, project costs can increase and the project timeline could be delayed.
2. As presented to and approved by Commission on August 15, 2017, the Aviation Director's Office should seek reimbursement of \$1.2 million for the dual passenger doors.

Management Response/Action Plan:

In general, the intent of the Letter of Understanding between Alaska and the Port, dated April 5, 2012, was followed. Alaska concurred in writing, verbally, or as implied through emails.

As to the audit recommendation to enter into a contract with a tenant, a legal determination is necessary for any airline tenant regarding whether such a contract would be allowable, in conflict with, contradict, or modify requirements of the Signatory Lease Operating Agreement (SLOA).

For future projects, we will:

North Satellite (NSAT) Renovation and Expansion Project

April 2012 – May 2018

- Require tenants to possess or provide a strong technical team sufficient to meet the needs of the project.
- Develop an improved change management process into the Tenant Reimbursement Agreement to better control scope changes and to determine responsibilities for cost increases.
- In the future, changes to design, scope, and schedule, will not be pursued without a written agreement.

Additionally, we will prepare a written letter and request reimbursement of \$1.2 million from Alaska for the dual passenger doors.

DUE DATE: July 31, 2018

2) RATING: MEDIUM

The process utilized to reimburse Alaska for work performed, did not adequately involve key stakeholders to assure that what was reimbursed, was aligned with the value received by the Port.

Alaska Airlines hired HOK Architecture/Design in 2010 to conduct a study on the North Satellite. The purpose of the study was to analyze Alaska's existing facilities, its operations, and evaluate potential capital investment strategies.

In 2012, Alaska Airlines submitted a letter requesting reimbursement of \$1,685,255. Although not legally obligated, Port management determined the study may assist the Port in obtaining cost savings during the NorthSTAR renovation project. Between 2012 through 2015, there were communications on how much, if any, the Port would reimburse Alaska Airlines. In 2015, the Port's Legal Council stated, by email, that the Aviation Project Management Group (AVPMG) was the team with the most knowledge to determine the amount to reimburse Alaska. AVPMG concluded that \$385,871 was a reasonable amount and submitted that information to the Aviation Director's Office.

Based on further discussions and Alaska Airline's influence, The Aviation Director's Office agreed to reimburse Alaska \$508,587. True knowledge of benefits to the Port and utilization of work of others resides with those closest to the process, in this case, AVPMG. Additionally, funding for this request was drawn from AVPMG's capital budget, furthering the argument to rely on AVPMG's recommendation.

Appendix C provides additional information on the HOK study reimbursement.

Recommendations:

As a matter of process, on a going forward basis, decisions to reimburse third parties with Port funds, should be based on estimates of value provided by the appropriate individuals or departments, with subject matter expertise. In this particular case AVPMG's estimates of value should have been utilized.

Management Response/Action Plan:

Since 2017, Aviation performs all concept development for Port owned facilities through the On Call Planning consultants. This will make it unnecessary for tenants to develop concepts with the expectation of reimbursement from the Port.

In the future, tenants are expected to obtain a reimbursement agreement with the Port prior to performing the work and incurring cost for which reimbursement is expected.

For any major airport renovation project a substantial amount of time and effort is devoted to evaluating and defining the existing systems. The HOK's Program provided a high level summary of the existing condition of mechanical, electrical, plumbing, fire protection, and BHS. While a summary of existing conditions may not seem to be of much value, the work and research involved should not be ignored. The appendices and detailed analysis referenced for each system provide an excellent resource for understanding the existing systems, as well as identifying record documents which could be used to evolve the design.

One could reasonably assume that the information contained within HOK's document could be passed along to another design firm and greatly assist them in their preliminary evaluation of the existing building. The value of the HOK as-built information and analysis should not be discounted and the quality of the content considering the preliminary nature of a program definition report was good. The basis for reimbursing the \$508,000 was not only the estimated value contributed to the final design, but

North Satellite (NSAT) Renovation and Expansion Project
April 2012 – May 2018

also the estimated cost, if the Port had conducted the concept development. Typically, in concept development, time and effort goes into developing concepts that are not selected and are not incorporated into the final design.

DUE DATE: Immediately

APPENDIX A: RISK RATINGS

Findings identified during the course of the audit are assigned a risk rating, as outlined in the table below. The risk rating is based on the financial, operational, compliance or reputational impact the issue identified has on the Port. Items deemed “Low Risk” will be considered “Exit Items” and will not be brought to the final report.

| Rating | Financial | Internal Controls | Compliance | Public | Port Commission/ Management |
|-------------------------------|--|---|--|--|--|
| HIGH | Large financial impact Remiss in responsibilities of being a custodian of public trust | Missing, or inadequate key internal controls | Noncompliance with applicable Federal, State, and Local Laws, or Port Policies | High probability for external audit issues and/or negative public perception | Important Requires immediate attention |
| MEDIUM | Moderate financial impact | Partial controls Not adequate to identify noncompliance or misappropriation timely | Inconsistent compliance with Federal, State, and Local Laws, or Port Policies | Potential for external audit issues and/or negative public perception | Relatively important May or may not require immediate attention |
| LOW/ Exit Items | Low financial impact | Internal controls in place but not consistently efficient or effective Implementing/enhancing controls could prevent future problems | Generally complies with Federal, State and Local Laws or Port Policies, but some minor discrepancies exist | Low probability for external audit issues and/or negative public perception | Lower significance May not require immediate attention |
| Efficiency Opportunity | An efficiency opportunity is where controls are functioning as intended; however, a modification would make the process more efficient | | | | |

APPENDIX B: Schedule Delays and Additional Costs

| <i>Expansion (Oct 2013) through 30% Design (Aug 2014) - Alaska Requests</i> | | |
|---|----------------------------------|--|
| Scope Addition | Schedule Delay (in weeks) | Cost |
| Alaska requests delay in kicking off the 30% design workshops/charrettes schedule – including request for Port to conduct numerous studies | 5 weeks | \$2,000,000 |
| <i>From 30% Design (Aug 2014) through 60% (June 2015) Design Review</i> | | |
| Delay in Alaska's concurrence of 30% design (3 weeks vs. 2 weeks) | 1 week | \$400,000 |
| Alaska "Plain Vanilla" (Only 737 aircraft) Aircraft Layout Study (Gate Study) | 4 weeks | \$2,000,000 |
| Alaska: aircraft parking/ GSE layout/ Safety Risk Assessment, Dual/Tri Taxilane, 777 at north satellite (NSAT), wide-body study at C Gates, 4-Car STS trains and decision making. | 4 weeks | \$1,700,000 |
| Dual Door Design/Redesign (Dual Door Deletion) – Design effort to delete DD from dwgs (\$175k) plus expended costs to date and cost to "redesign" DD space. | 4 weeks | \$2,900,000 (\$1.2M scope, \$1.7M time) |
| <i>From 60% Design (June 2015) through 90% (October 2015) Design Review</i> | | |
| Connect AAG MDF to Emergency Power | N/A | \$72,400 |
| Relocate STS Switchgear & Smoke Evac Ductwork (trend #029) | N/A | \$5,273,000 |
| "Pause the Project" Analysis (8 people x 3 weeks effort) | N/A | \$140,000 |
| <i>From 90% Design (October 2015) through Present</i> | | |
| Alaska Lounge expansion (3 rd floor, etc) (9/13/16 Commission Meeting) | N/A | \$7,000,000 |
| Construction Phasing Concurrence (10/14/15 – 02/08/16 = 16.5 weeks) | 16 weeks | \$6,400,000 |
| Alaska Budget Concurrence (MII ballot) (2/8/16 – 3/11/16 = 5 weeks) | 5 weeks | \$2,000,000 |
| Additional CCTV Cameras (shared cost - DC#08 \$116.8k total) | N/A | \$58,300 |
| Alaska ITC Changes for NSAT-Fiber & Redundant pathway (DC#18) | N/A | \$275,000 |
| Alaska Radio Coverage Survey -- (PENDING DC#20) | TBD | \$670,000 |
| Holdroom Seating – Level of Service (based upon 2.5 FTE effort for 10 wks) | N/A | \$250,000 |
| Alternate Boardroom Tint/Glazing study | N/A | \$5,000 |
| Alaska Boardroom Glass Revision / Study | N/A | \$250,000 |
| Revise North Satellite Striping | N/A | \$0 |
| Alaska Lounge Point of Connection Changes | N/A | \$393,000 |
| Gate Information Display (GID) Relocation | N/A | TBD |
| Expand Unaccompanied Minors Room | N/A | \$0 |
| Additional Copper from Alaska MDF to Port MDH Rooms (DC#34) | N/A | \$30,000 |
| Additional CAT6 Cable to each GID (DC#33) | N/A | \$53,000 |
| Total schedule delay generated cost | 39 weeks | \$16,200,000 |
| Total Scope related cost | | \$15,669,700 |
| TOTAL IMPACT | | \$31,869,700 |

APPENDIX C: HOK Study Reimbursement

| Project Description | HOK Cost- (AAG Orig. Request) | AVPMG- Suggested Reimb. | AAG- Counter Request | AV Director's Office Reimb. Agreement | Difference (AV Dir. Office & AVPMG) |
|--|-------------------------------------|-------------------------------|-------------------------|---|--|
| Employee Space | \$114,332 | - | - | - | - |
| NSAT Gates/Bldg. Expansion | \$114,332 | \$28,583 | \$57,166 | \$28,583 | - |
| Remain Over Night aircraft parking | \$304,886 | - | - | - | - |
| Dual/Tri Taxi lines | \$16,769 | - | \$12,577 | \$8,384 | \$8,384 |
| Satellite Transit System (STS) Lobby updating – NSAT | \$2,287 | \$571 | \$571 | \$571 | - |
| STS Lobby - Concourse C | \$7,622 | \$1,906 | \$1,906 | \$1,906 | - |
| Concourse- NSAT | \$312,508 | \$156,254 | \$156,254 | \$156,254 | - |
| Concourse C | \$4,573 | \$2,287 | \$2,287 | \$2,287 | - |
| Boardrooms | \$114,332 | \$5,717 | \$5,717 | \$5,717 | - |
| Baggage Handling System | \$76,221 | \$76,221 | \$76,221 | \$76,221 | - |
| NSAT Mechanical, Electrical, and Plumbing | \$457,328 | \$114,332 | \$228,664 | \$228,664 | \$114,332 |
| Seismic Strengthening- NSAT | \$144,821 | | \$72,410 | | - |
| Main Terminal Improvements | \$15,244 | - | \$7,622 | - | - |
| | \$1,685,255 | \$385,871 | \$621,395 | \$508,587 | \$122,716 |

| HOK Study Reimbursement Timeline and Communications | |
|---|--|
| Date | Description |
| 2010-2011 | Alaska Airlines hires HOK Architecture/Engineering firm to assist in analyzing Alaska's existing facilities and operations and evaluate potential capital investment strategies. |
| April 5, 2012 | Port and Alaska agree to Letter of Understanding on each party's role and responsibilities related to North Satellite project. Port may consider reimbursing Alaska if Port uses study. |
| May 2012- Dec. 2014 | <i>No known communication</i> |
| January 9, 2015 | Alaska requests reimbursement of \$1.6 million for HOK costs incurred. |
| January 15, 2015 | Email between Port Council and AVPMG. Council stated AVPMG is only department with enough knowledge to determine reimbursement amount, if any. |
| December 17, 2015 | Port response to reimbursement request. Stating, study fell short and Port did not utilize all of report. Port request for additional information from Alaska. |
| December 31, 2015 | Alaska email to Port. Discusses meeting with Port AV management. Alaska provided HOK contract. |
| January 14, 2016 | AVPMG email to Management. Concerns about reimbursement. |
| January 16, 2016 | AVPMG email to AV Director's Office Management suggesting \$385k is justifiable reimbursement. |
| February 18, 2016 | Letter to Alaska Airlines detailing Port's recommendation of \$385k reimbursement. |
| March 22, 2016 | AVPMG email request additional detail from Alaska if it wants additional reimbursement. |
| February 9, 2017 | Alaska counter proposal for reimbursement of \$621,395. |
| July 21, 2017 | AVPMG email to AV Management. Dual passenger door delay and additional cost should offset HOK study reimbursement. |
| July 21, 2017 | AV Director's Office management response both should be kept separate and AV Director's Office management made agreement to reimburse Alaska. |
| August 15, 2017 | Reported to Port Commission: "The Port has requested AS reimburse the Port for the cost of removing the Dual Door scope...", "The Port has also agreed to reimburse AS \$508,587.24 for a portion of the HOK study..." |
| August 24, 2017 | AV Director's Office management email that Port agreed to reimburse Alaska \$508,587 |

APPENDIX D: NorthSTAR Organization Chart

NorthSTAR/North Satellite Renovation & STS Lobbies Org Chart

