



# INTERNAL AUDIT REPORT

Operational Audit- Capital  
AOA Perimeter Fence Line Standards Project

June 2017 – August 2020

Issue Date: September 8, 2020  
Report No. 2020-11

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## Executive Summary

Internal Audit (IA) completed an audit of the AOA Perimeter Fence Line Standards Project for the period March 2017 through August 2020. The audit was performed to assess the quality of the Port's monitoring of the Project to assure it was meeting project management standards in an efficient and effective manner.

We selected this project to audit based on the number of change orders (CO's) and the delays in schedule completion. We selected the largest dollar value change orders, ones that changed the scope of the project, those that approved the extension of the contract, and those that were the result of errors and omissions.

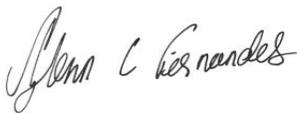
The project delivery method was a design-bid-build with a lump sum contract. The construction contract total is currently \$4.6 million, which includes approximately \$570,000 in change orders. The contract required that the contractor substantially complete the work no later than 225 days following the contract execution date, which would have been October 9, 2019. To date, there has been an additional 181 approved days that extended substantial completion to April 7, 2020. As of the conclusion of this audit, the Contractor had not completed the Project. Port management anticipates that the Project will not be completed until the end of September 2020.

Through discussions with the Port's project staff, significant reasons that the Project did not meet critical milestones included: errors in design from the Port's in-house team, and the Contractor's failure to provide adequate resources. These design errors resulted in approximately \$106,000 in avoidable costs and an additional 56 days added to the completion of the Project.

The Port is entitled to liquidated damages for unapproved schedule delays. As of the date of this report, we estimate liquidated damages are \$232,000, however, the actual amount is unknown until the Project is complete and a full reconciliation is performed.

We identified the following opportunities where internal controls could be enhanced or developed. These opportunities are listed below and discussed in more detail beginning on page seven of this report.

1. **(Medium)** The Contractor's lack of experience with the Port's contract provisions and inadequate management of the Project resulted in critical milestones not being met, negatively impacting the completion dates.
2. **(Medium)** The Port's processes during the design phase, can be strengthened: to decrease the potential for errors in drawings and scope changes, to avoid additional project costs, and to reduce the need to extend a Project's completion date.



Glenn Fernandes, CPA  
Director, Internal Audit

### Responsible Management Team

Elizabeth Leavitt, Sr. Director Engineering, Environment and Sustainability  
Wayne Grotheer, Director, Aviation PMG  
Nora Huey, Director, Central Procurement Office  
Tina Soike, Chief Engineer and Director of Engineering Services  
Janice Zahn, Asst. Engineering Director - Construction

## Background

Authorization from the Port of Seattle Commission was obtained on June 13, 2017 to design, advertise and execute a construction contract for the Airport Operations Area (AOA) perimeter fence line (Project). The Port construction team determined that a design-bid-build with a lump sum contract was the most efficient method because it allowed the Port to manage the design of the Project in-house, develop phasing that minimized operational impacts, and manage unforeseen site conditions and risks. Massana, Inc. was selected to be the general contractor and the Port authorized Massana to proceed with the Project on June 06, 2019 at a base construction lump sum contract cost of \$4 million.

The final construction contract total, as of the audit report date, is \$4.6 million which includes approximately \$460,000 in change orders and the potential of an additional \$110,000 in COVID-19 related safety expenses. The contract required that Massana substantially complete the work no later than 225 days following the contract execution date, which would have been October 9, 2019. There were an additional 181 approved days that extended the substantial completion date to April 7, 2020. As of the date of this audit report, Massana has not completed the Project. Port management anticipates that the Project will not be Substantially Complete until the end of September 2020.

After the event of 9/11, the Port of Seattle established a minimum fence height of twelve feet for the AOA perimeter fence wherever permissible by the Federal Aviation Administration (FAA). Portions of the perimeter fence have been replaced with the twelve-foot fence over time as construction projects moved fence lines. However, areas along the fence line still exist with lower heights that needed to be upgraded. The scope of the Project was to replace approximately 8,100 linear feet of seven-foot AOA perimeter fence with a twelve-foot fence, plus one foot of barbed wire at the top. Approximately 6,500 linear feet out of the 8,100 linear feet of fence was replaced with a non-climbable fence. In addition, the Project replaced AOA access gates, installed faster gate operating systems, and installed a security camera system.

The following table details the current schedule and budget.

<b><i>Schedule (Per August 2020 Trend Log and Pay Estimate 13)</i></b>	
Approved Contractual Substantial Completion Date	04/07/20
Forecasted Substantial Completion Date	09/30/20
Contractual Project Physical Completion Date	11/29/20
Forecasted Project Physical Completion Date	01/28/21
<b><i>Budget (Per August 2020 Trend Log and Pay Estimate 13)</i></b>	
<b>Original Contract Sum</b>	\$4,042,695
<b>Executed CO's and Potential Cost Risks</b>	\$572,736
<b>Contract Sum to Date</b>	\$4,615,431
<b>Total Completed and Stored to Date</b>	\$2,939,743
<b>% Complete</b>	64%

## **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.

The period audited was March 2017 through August 2020 and included the following procedures:

### Project Communications

- Reviewed monthly reports between Massana and the Port.
- Reviewed drawings, submittals, and requests for information (RFI).
- Reviewed RFI and submittal logs for open items affecting the project phase completion.
- Reviewed the submittal log for timeline of any delays.
- Reviewed daily construction/manpower reports.
- Assessed trends within a specific area or trade.
- Identified significant impacts to schedule or cost.

### Change Orders

- Obtained an understanding of the Port's change order review process.
- Verified approvals by required personnel (e.g. Port, Architect, etc.)
- Confirmed approved change order amounts tied to the Change Order Log.
- Reviewed for reasonableness and allowability (i.e. not base contract scope).
- Calculated proper markups (for force account CO's).
- Tested subcontractor back-up including direct costs and inclusion of accurate markups.
- Reviewed supporting documentation supporting change order/claim submission, specifically error/omission and scope change orders.
- Verified the inclusion of reasonable unit pricing.
- Reviewed potential CO's in the trend development stage to determine if they are not within the original scope of the project, reasonable, and allowable.

### 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 reasonableness of the overall percent complete by pay estimate.
- Verified compliance with retainage requirements.

### Bid Protest

- Obtained an understanding of the Port's adherence to the requirements of holding a bid protest hearing.
- Verified approvals were obtained by required personnel.
- Reviewed documentation for reasonableness and compliance with policies (bid protest, administrative letter, administrative hearing minutes, and the Port's formal response).

### Compliance with FAA Grant requirements

- Obtained an understanding of FAA grant requirements.
- Verified compliance with material grant requirements that are susceptible to non-compliance.

Liquidated Damages

- Reviewed the contractual obligations for the collection of liquidated damages if the project does not meet substantial and/or physical completion milestones.
- Calculated the potential liquidated damages that the Port may seek collection.

## Schedule of Findings and Recommendations

### 1) Rating: Medium

**The Contractor's lack of experience with the Port's contract provisions and inadequate management of the Project resulted in critical milestones not being met, negatively impacting the completion dates.**

The Project was awarded to Massana Inc. on February 26, 2019 and a Notice to Proceed was issued on April 12, 2019. The initial duration of the contract was for 225 calendar days. The Contract's terms required Substantial Completion by October 9, 2019. Physical Completion was to occur 120 days after Substantial Completion.

Events such as; Covid-19 impacts, adverse weather in December 2019 and January 2020, lack of information in the contract documents, and Port design errors and scope changes resulted in the Port's approval of 181 additional days through change orders. With these additional days, Substantial Completion was extended to April 7, 2020 and Physical Completion to November 29, 2020.

Besides the approved reasons for the extension to the completion of the Project, the Contractor's lack of timely development of fall protection compliance documents, lack of experience with the Port's contract provisions, failure to provide adequate resources, and inadequate managing of the Project, resulted in the Substantial Completion milestone not being met. Additionally, there is a possibility that the Physical Completion milestone will also be missed.

On February 25, 2020, The Port issued a Notice of Forbearance, that the Port was willing to forbear taking action to impose Liquidated Damages for 90 days from the date of the letter. According to the letter, the Contractor was expected to meet certain criteria, including: completion of the project within the 90 days, submitting information justifying the delay, and providing time for the Port to complete its analysis of the matter. The letter stated that if the Contractor did not meet the criteria, the Port reserved the right to assess Liquidated Damages from the original milestone date. The Contractor did not meet the requirements of the letter.

The Contract allows the Port to pursue liquidated damages of \$1,207 per day after the Substantial Completion date and, starting 60 days after Substantial Completion, \$323 per day until Physical Completion is met. The Port anticipates that Substantial Completion will not be achieved until the end of September 2020. Based on a projected five-month delay, we estimate that the Port will be entitled to pursue approximately \$232,000 in liquidated damages, however, the final amount is unknown until the Project is complete and a full reconciliation is performed.

#### **Recommendation:**

Upon completion of Project, Port management should calculate and pursue liquidated damages from the Contractor.

#### **Management Response/Action Plan:**

The team agrees with the recommendation that Liquidated Damages should be imposed in the amount of \$1,207 per day for unexcused delays beyond the original Substantial Completion date and \$323 per day for unexcused delay beyond the Physical Completion date. The team fully intends to pursue Liquidated Damages and that has been conveyed to the Contractor. Liquidated Damages will be assessed once the Contractor achieves Substantial and Physical Completion when we can quantify the actual unexcused delay.

**DUE DATE: December 31, 2020**

**2) Rating: Medium**

**The Port’s processes during the design phase, can be strengthened: to decrease the potential for errors in drawings and scope changes, to avoid additional project costs, and to reduce the need to extend a Project’s completion date.**

The Port used its in-house design team to prepare the Project’s drawings which were included in the proposal documents. At the time of our engagement, the Port had 16 approved change orders (CO) and one unexecuted CO for potential COVID-19 safety costs. The following table details the types of CO’s and the amounts.

<b>Justification Code Summary</b>	<b>No. of CO’s</b>	<b>Amount</b>	<b>Approved Contract Extension</b>
Error/Omission Designer	7	\$150,600	56
Error/Omission Owner	1	6,416	0
Tenant Requested	3	58,280	28
Scope Change	4	147,440	56
COVID-19 Safety Provisions	2	110,000 <sup>1</sup>	41
<b>Total:</b>	<b>17</b>	<b>\$472,736</b>	<b>181 days</b>

Source: SQL Server Reporting Services Production- *Full Trend Log*, August 3, 2020

We selected six CO’s for review, based on those we considered high risk. Examples included; designer errors and omissions, large dollar value CO’s, and CO’s that were approved to extend the contract completion date. Our review covered \$384,000 and 140 days of the approved contract extension days.

One of the CO’s that we reviewed, CO 2 was to fabricate and install a crash rated overhead beam gate, in lieu of the proposed ground track gate shown in the contract documents. CO 2 was approved as a not-to-exceed CO in the amount of \$140,000; and \$105,000 has been paid to date. The CO will be reconciled to actual costs later. CO 2 is unique in that it’s coded as a scope change, but also includes parts that could be coded as a designer error. During our discussions with project management, unique instances such as this occur periodically in projects, and it is difficult to code them so that the justification is accurately represented. The Port’s Project Management Group (PMG) and Engineering Services have an opportunity to consider changing how to code CO’s in these unique instances; such as by creating new justification codes, or by other means.

Based on our review, we concluded that the CO’s were for allowable purposes, properly reviewed and approved, and included adequate supporting documentation. Two of the CO’s in our sample were related to errors in design, and these CO’s totaled \$100,600 and resulted in an additional 56 days being added to the Project. We recognize that errors and/or omissions do periodically occur during the design process, however, these change orders may have been preventable with a stronger design process.

**Recommendations:**

- Management should strengthen its processes during the design phase to obtain assurance that suggested designs meet safety standards and that stakeholder expectations are met.

<sup>1</sup> The Trend Log lists this as a potential risk but has not yet been approved. The 41-day extension has been approved as a CO.

**Management Response/Action Plan:**

The team agrees with the assessment that the change orders on this project stem from complex and interrelated issues, including both scope changes and design errors. With regard to the errors and omissions components, a few efforts are underway to improve processes such that these risks are minimized for future work. These efforts include documenting the increased depth of understanding of compatibility of gate controller and structural systems for future designers' use, updating of Port Master Specifications and Standards to reflect gate system needs, and updating of typical details. Construction Management will also consider how best to code change orders with complex and interrelated issues. As is the policy for all projects, a Lessons Learned (LL) session will be conducted for this project upon completion.

In April 2020, the Aviation Division also instituted additional processes for reviewing and approving discretionary scope changes from initial project approval through design and construction. In addition to the existing documentation accompanying discretionary change orders during construction, any scope changes will also require approval by the project manager, program leader and project sponsor. For scope changes over \$50,000, the change must be approved by a Project Review Board made up of the Director of Aviation Project Management Group, the Director of Aviation Capital Programs, and the Director of Aviation Finance and Budget. For changes over \$500,000, it requires an additional approval by the Aviation Chief Operating Officer, and for changes over \$1,000,000, it requires approval by the Managing Director of Aviation. This process will be reviewed in October 2020 to determine whether changes are needed based on the first six months of implementation. In addition to this new process for discretionary changes, existing processes for budget increases requiring approval by the Aviation Investment Committee and authorization increases requiring approval by the Port Commission remain in effect.

**DUE DATE: December 31, 2020**

### 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
<b>High</b>	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
<b>Medium</b>	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
<b>Low</b>	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