



INTERNAL AUDIT REPORT



OPERATIONAL AUDIT - CAPITAL

Noise Insulation Program

JANUARY 2013 – MARCH 2019

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
BACKGROUND	4
AUDIT SCOPE AND METHODOLOGY	5
SCHEDULE OF FINDINGS AND RECOMMENDATIONS.....	6
APPENDIX A: RISK RATINGS.....	12
APPENDIX B: GENERAL CONDITIONS.....	13

EXECUTIVE SUMMARY

Internal Audit (IA) completed an audit of the Noise Insulation Program (Program) for the period January 2013 through March 2019. The audit was performed to assess the Port's controls related to the Noise Insulation Program and to assess compliance with the Federal Aviation Administration's (FAA) federal grant requirements.

The Program was established in 1985 to reduce the interior noise level in single family homes, condominium complexes, and schools/colleges. For single family homes, the majority of noise mitigation consisted of replacing doors and windows. The project is part of the Port's long-term commitment to communities surrounding the airport, which has totaled more than \$400 million of investment since 1985.

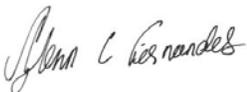
The Port utilized the Job Order Contract (JOC) approach for Noise Insulation of single family residential residences. RCW 36.10.440 allows a maximum of \$4 million to be used for JOCs over the course of three years. The JOC Contract, awarded to Burton, was set as "Not to Exceed \$3.8 million" and during the course of the contract Burton was paid \$2.83 million. State law requires at least 90% of work contained in a JOC be subcontracted to entities other than the job order contractor. During the period 2013 through 2016, Burton subcontracted over 90% of the work, as required by law.

Burton's bid had the characteristics of an unbalanced bid. An unbalanced bid is when certain line items are bid low to win the contract; in this case the coefficient. The contractor then makes a significant profit through mathematical manipulation that result in the organization paying materially more than reasonable cost analysis values. This is reflective of the average markup of 51% that Burton charged the Port, over the work performed by their subcontractors.

Based on the work that we performed and the information that we gathered, we noted the one high risk issue where stronger controls would mitigate future risks in this area. We also noted one medium risk issue related to the FAA grant program.

1. (High) - The Port's controls related to the review of Job Order Contract(JOC) work proposed and performed by Burton Construction. Inc., were not functioning effectively. As a result, Burton billed the Port an unreasonably high amount and may have billed for more work than was performed.
2. (Medium) - Highline School District, an FAA Airport Improvement Plan (AIP) grant recipient, was not always in compliance with disadvantaged business enterprise (DBE) requirements (Title 49 USC § 26), the Buy American requirements (Title 49 USC § 50101), nor the Memorandum of Agreement (MOA) with the Port.

These issues are discussed in more detail beginning on page six of this report.



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RESPONSIBLE MANAGEMENT TEAM

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BACKGROUND

In 1985, Sea-Tac Airport was one of the first airports in the country to conduct a Federal Aviation Administration (FAA) Airport Noise Compatibility (Part 150) study. Since that time over 9,400 single family homes and six condominium complexes have been insulated. Mobile homes cannot be upgraded to levels that will comply with FAA noise reduction standards; accordingly, the program also included purchasing five mobile home parks and relocating their residents out of the noise zones. The project is part of the Port's long-term commitment to communities surrounding the airport, which has totaled more than \$400 million of investment since 1985.

Highline School District (HSD) has been provided \$60 million, out of a committed \$100 million (\$50 million from the Port and \$50 million from the FAA), for sound insulation in noise-impacted school buildings. Additionally, \$8 million has been provided to Highline College for sound insulation of buildings on the campus. As of December 2018, seven schools in HSD remain to be sound insulated.

The latest round of sound mitigation installations will be in coordination with the most recent FAA Airport Noise Compatibility Study (Part 150) completed in 2014. Historically, Noise Insulation Program (NIP) residential costs have been funded through airport funds. Future mitigation costs will be funded by approximately 80% from FAA grants and 20% from airport funds.

An experienced noise remediation firm will be hired by the Port to review and design the project which will provide renovations including new windows, doors, storm doors, and ventilation for each unit to meet the FAA standard of a 45 decibel (dB) interior noise level. Currently, three condominium complexes are within the boundary and the firm will verify that they meet the mitigation requirements to proceed with the work.

To be eligible, a complex must be:

- Within the noise remedy boundary.
- Constructed before the establishment of local building codes enacted to meet or exceed FAA standards for noise reduction.
- Compliant with a noise audit that verifies a noise level of more than 45 dB inside the condominium units.

On November 27, 2018, the Port Commission approved \$10 million for an Environmental Community Fund. The intention of this fund is to address the Commission's concern of the environmental health, growth, and disproportionate noise on communities. The Port hopes to see strong community engagement for use of funds and will work collaboratively through the Sea-Tac Airport round tables. Other avenues of the use of these funds will be through a joint operating agreement with the City of Sea-Tac and Highline School District forums.

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 January 2013 through March 2019 and included the following procedures:

Noise insulation Program

To determine if Port managements' processes were adequate to assure the Program is achieving its objectives and that the benefits outweigh the costs, we:

- Interviewed Port management and staff to obtain an understanding of how they monitor the costs of residential noise mitigation and the monitoring of the Program's success.
- Obtained Program expenditure reports through PeopleSoft Financial System, obtained property value data from the King County Department of Assessments, and reviewed pay applications / work orders from the job order contractor, Burton Construction.
- Randomly selected work order payments from work orders 9 through 24, which were for work completed between 2013 through 2016.
- Compared payments Burton made to subcontractors to payments the Port made to Burton.
- Interviewed Burton and subcontractors.

FAA Airport Improvement Program Grants

To determine if key grant requirements were missing from the Highline School District's contract language for the Highline High School and Des Moines Elementary School renovation and addition projects, we:

- Conducted interviews with Port management and staff to obtain an understanding of internal controls over the grant monitoring process and obtained an understanding of the requirements related to Disadvantaged Business Enterprises (DBE) and "Buy American" provisions.
- Reviewed copies of the FAA NIP grant requirements and the construction contracts between the Highline School District and the general contractors for Des Moines Elementary School and Highline High School.

SCHEDULE OF FINDINGS AND RECOMMENDATIONS

1) RATING: HIGH

The Port’s controls related to the review of Job Order Contract(JOC) work proposed and performed by Burton Construction. Inc., were not functioning effectively. As a result, Burton billed the Port an unreasonably high amount and may have billed for more work than was performed.

Our work also indicated that Burton’s bid had the characteristics of an unbalanced bid. An unbalanced bid is when certain line items are bid low to win the contract; in this case the coefficient. The contractor then makes a significant profit through mathematical manipulation that result in the organization paying materially more than reasonable cost analysis values. This is reflective of the average markup of 51% that Burton charged the Port, over the work performed by their subcontractors

The Port used the Job Order Contract (JOC) method of contracting for the Single-Family Sound Insulation program. State law (RCW 39.10.440) requires at least 90% of work contained in a JOC be subcontracted to entities other than the job order contractor. During the period 2013 through 2016, Burton subcontracted nearly all the work, as required by law. However, Burton charged the Port a 51% average markup, over the work performed by their subcontractors. Internal Audit (IA) used Work Order #9 (WO #9), which had a markup of 74.59%, as a basis to understand why margins were excessively high, and we discovered the following:

The Port's JOC method of contracting required contractors to bid on jobs with a “coefficient”. The coefficient is a multiplier that is applied to various line items that describe the work that will be performed. The contractor’s detail line items are valued using a price book (RSMMeans), before applying the coefficient (see table below). Each summary line item in the table below is supported with further detail line items.

Work Order #9

CSI Summary of Work Order Items Listed in Unit Price Book					
Item	CSI Division Description	Bare Cost Total	Cost Index	Contractor Coefficient	Division Total Price
1	General Conditions	\$ 11,945.52	1.038	0.898	\$ 11,134.71
2	Abatement	\$ 5,996.87	1.038	0.898	\$ 5,589.83
3	Demo	\$ 1,994.47	1.038	0.898	\$ 1,859.09
4	Doors & Windows	\$ 25,639.07	1.038	0.898	\$ 23,898.80
5	Drywall	\$ 577.00	1.038	0.898	\$ 537.84
6	Paint	\$ 3,365.39	1.038	0.898	\$ 3,136.96
7	Mechanical	\$ -	1.038	0.898	\$ -
8	Electrical	\$ -	1.038	0.898	\$ -
		\$ 49,518.33	1.038	0.898	\$ 46,157.23
Total of all base items listed in Price Book					\$ 46,157.23

Burton submitted a cost proposal for each work order which was approved internally by Port staff. Assuring that the line items and quantities proposed are appropriate requires a diligent review and necessitates questioning items that appear to inaccurate. Our work indicated that a reasonableness review was not always performed.

We contacted the subcontractor who performed the work on Work Order #9. The subcontractor advised us that asbestos tests were conducted by the Port prior to any work being performed and the results were negative, accordingly no work was done on this. Caveman submitted a generic plan on what would

Noise Insulation Program
January 2013 – March 2019

be done if lead or asbestos were to be found. The lead identified within the scope of work on the exterior trim was below the EPA/HUD threshold of 1.0 mg/cm². This required some protective measures which were followed, however, the \$5,589.93 that was billed to the Port was not reflective of the work performed. Burton was unable to provide us with evidence that certain work billed to the Port was performed.

Construction audit guidance¹ suggests that, in the construction industry, general conditions/adjustment factors normally range from 5% to 8% of total price; percentages above 8% generally warrant further review. General conditions/adjustment factor costs were 24% for WO #9. Our review of general conditions/adjustment factors identified line items that should have been questioned and negotiated. For example, on WO #9, Burton included line item costs for employee taxes in its calculation at a total cost of \$2,002. The Request for Proposal (section 4a.1), which is included in the Contract Manual and is therefore binding as part of the contract, states that these costs should have been included in the coefficient. The “Instructions to Bidders” in the JOC contract manual was silent on this detail, therefore, IA’s position is that the contract does not allow the Port to be charged for these items. (See Appendix B for further detail)

The contract permitted utilization of a Commercial price book (RSMeans). Since this work was residential, the RSMeans Residential price book would be a more appropriate measure of work performed on residential units.

Of the \$2.83 million the Port paid to Burton, only \$1.87 million was paid to subcontractors for the work that they performed; over 90% of the work was performed by subcontractors. Almost \$960 thousand or 51% markup was retained by Burton (see table below).

Year	Number of work orders	Port payment (to GC)	Subs charge (Paid by GC)	Difference (Retained by GC)
2013	2	\$100,032	\$63,399	\$36,633
2014	5	920,614	600,907	319,707
2015	6	1,251,417	805,786	445,631
2016	3	560,915	403,045	157,870
	16	\$2,832,978	\$1,873,137	\$959,842

The primary objective of the Noise Insulation Program is to improve the life of homeowners impacted by aircraft noise. While the JOC method can be an effective approach to completing multiple, relatively small projects with one point of contact, strong controls that assure that line items and quantities are reasonable are critical.

Recommendation:

1. Port management should implement robust review controls, before approving a pay application for payment. Examples of these procedures should include a thorough review of proposed JOC line items for: accuracy, compliance with the contract, and reasonableness. Additionally, the Port estimators have significant experience and should know the approximate cost for a job. They should use this experience to assess the reasonableness of what the Job Order Contractor submits.
2. The Port should assess whether the JOC method is appropriate for these kinds of small jobs. Consideration should be given to other options including: using the Port’s PCS team to perform the work or partnering with the Environmental & Sustainability team to assess whether subcontractors can be managed directly by the Port.

¹ The Practitioner’s Blueprint to Construction Auditing; pg. 88

Management Response/Action Plan:

Recommendation #1:

- I. We acknowledge and concur with the auditor recommendation to review and implement more robust review controls. This contract review represents the first two Job Order Contracts (JOC) issued and managed by the Port. From lessons learned, we made improvements to its administrative controls on the last 2. We have procured and managed four JOCs since 2011.
 - A. In 2018, the Port created a committee to ensure the JOC is managed appropriately and consistently, to review project requests and determine if the JOC is the best contracting method for the work, and to provide support where necessary. The Committee meets quarterly to discuss process, lessons learned, guidance and best practices. Members are from a cross section of the Port including Project Management, PCS, Engineering, Marine Maintenance, and CPO. The group created a JOC Process Guide and JOC Request Form.
 - B. In 2015, we revised our contract language to exclude specific line items from work order pricing, such as unemployment and B&O taxes. By excluding the additional line items and requiring the JOC accommodate for them in the co-efficient bid, it streamlines the work order pricing and reviews.
 - C. In 2015, we revised our Work Order approval process to include a Summary of Negotiation document with each work order.
 - D. As a result of this audit, we are implementing the following:
 1. Update our JOC User Guide to advise the independent cost estimates are printed and saved to the project files.
 2. Focus on how the work order line items are determined and negotiated and provide updated guidance.
 3. Update our JOC User Guide to recommend a regulated material management (RMM) representative review and walk through the estimated line items with the Port Reviewer to ensure proper line items are used and the Port receives the best value.
 4. Update our JOC Acquisition Plan and User Guide related to selection of an appropriate unit price book. In this case, the RSMeans Facilities book was used because the windows and doors required for the specific sound proof levels were not contained in the residential price book. Other items contained in both books (Facilities and Residential) have similarly priced materials but slightly higher priced labor.
- II. The JOC is competitively bid and administered in accordance with the RCW 39.10.422. We disagree with the inference that the JOC Contractor billed the Port for more work than was performed, that the procurement had characteristics of an unbalanced bid, and that there was a mathematical manipulation of profit.
 - The contractor was required to provide an abatement plan for both lead and asbestos due to levels of regulated materials (RMM) being above 0. The Contractor performed the lead abatement. The cost of the plan, the abatement and the personal protection equipment is appropriate. The Port's 3rd party RMM consultant received reports and the daily inspection logs confirming the work billed to the Port was performed. It is unfortunate the Port used the asbestos abatement line item in the work order instead of lead abatement. Regardless, the level of effort to protect the home and the residents requires a high level of detail.
 - The Port had no reason to consider the bid to be unbalanced. The expectation is to see the coefficient submitted around 1. The low bid was .898 which is not a number too low for concern.

Noise Insulation Program
January 2013 – March 2019

The JOC Contractor appropriately charged the Port a .898 coefficient on the RSMeans costs of negotiated scopes of work. The Port performed its own RSMeans estimates utilizing the WinEst program, then reviewed and negotiated the line items. The Port also utilized historical cost data as a baseline figure. The Port then issued a lump sum Work Order and paid a lump sum price for the work.

Recommendation #2:

- I. We concur with the auditor recommendation to review our acquisition planning process with respect to delivery of home insulation projects. We are providing the following additional information:
 - A. The Port engages in acquisition planning to determine how to deliver a project. An assessment was made in 2010 to determine if the JOC would be an effective tool for the noise remediation residential program. The analysis looked at total costs (costs of actual construction and soft costs related to managing the construction including obtaining permits, daily field inspector, quality control inspector, managing the homeowner, hiring and coordinating multiple subcontractors, safety submittal approvals, answering design RFIs, and substitution requests, etc.) Based on the analysis, the Port estimated the JOC would have higher construction costs and less Port staff costs. Recent analysis of actual costs has confirmed the assumption that JOC would cost more in construction and less in administration.
 - B. The Port is currently assessing other possible delivery methods to complete the noise remediation program in the future.
 - o JOC
 - o Small works contracts
 - o Open order major construction
 - o Bundled project major works
 - o Port crews
 - PCS
 - AV Maintenance
 - Marine Maintenance

From the community relations standpoint, the JOC works more efficiently than contracting each home individually because the homes are handed off quickly to the contractor as each home becomes eligible. Due to the difficulty of obtaining subordination agreements and avigation easements from banks and homeowners, timing can be challenging as to when homes become eligible. If traditional design, bid, build contracting method were to be used, each home or small package of homes would need to be brought through the Ports procurement process adding several months of time. This includes additional staff time for Noise Programs, Project Management Group, and the Central Procurement Office. With each new contractor, it would include the requirement for safety plans, training and extensive Port staff oversight. Delays add additional strain on the homeowners and community relations aspect of the program. It's important to have the noise programs run as efficiently as possible to ensure our community receives the noise reduction benefits in a timely manner. In a three-year period, the noise remedy program accomplished 14 homes under traditional design bid build (2008-2011) and 40 homes under the JOC (2011-2014).

2) RATING: MEDIUM

Highline School District, an FAA Airport Improvement Plan (AIP) grant recipient, was not always in compliance with disadvantaged business enterprise (DBE) requirements (Title 49 USC § 26), the Buy American requirements (Title 49 USC § 50101), nor the Memorandum of Agreement (MOA) with the Port.

The Highline School District (HSD) has a 2002 Memorandum of Agreement (MOA) with the Port and the Federal Aviation Administration (FAA) to sound insulate 15 identified noise-impacted schools at a total cost of \$100 million. The Port is the awarding agency and will pass FAA Airport Improvement Program (AIP) grant funds to HSD. The Port is tasked with monitoring HSD's compliance with the provisions of the grant.

As a pass-through entity, the Port is responsible for verifying subrecipient compliance with FAA requirements. Additionally, Section 4(d) of the Memorandum of Agreement (MOA) between the Port and Highline School District states, in part, "The Port must apply for and receive FAA AIP grants for each of the Eligible Schools before the District commences construction of work that will be reimbursed by AIP funds..." However, construction has already started at Des Moines Elementary and Highline High School anticipates will begin construction in 2019. As of February 2019, the FAA had not approved AIP funding.

Failure to adhere to grant requirements can jeopardize current federal grants. Internal Audit recognizes that in January 2019, staff from the Highline High School's general contractor, HSD and Port staff met to resolve the DBE and Buy American concerns. Port management has also agreed to be transparent with the FAA and is also working closely with them for guidance on these issues. As agreed upon in the MOA, the Port is not obligated to reimburse HSD if it does not receive AIP grant money. However, there is a potential that HSD and/or the community may expect the Port to reimburse the School District for construction costs.

The Port has been working with the District since mid-2017 to assist with Federal Procurement Contracting Guidelines. Representatives from the Port CPO and Noise Office met with the District numerous times during 2017 and 2018 informing them that they must follow all Federal Procurement Guidelines, regardless of FAA's willingness to review documents. The District was also informed by the Port that there was a risk to the grant if they proceeded with contracting and did not follow all federal guidelines. The District is tasked with meeting those Federal Guidelines before the Port applies for an AIP Grant – which has not happened yet. It is anticipated that the HSD will receive approximately \$14.8MM in AIP grant funds for the two schools.

Recommendations:

1. As the pass-through entity, we recommend the Port enhance their current process of monitoring grant compliance and enhance the methodologies to assure grant recipients are aware of and comply with such requirements.

Management Response/Action Plan:

Port staff appreciates and supports Audit's recommendation to enhance current processes to ensure grant recipient awareness. Our recent experience with the Highline School District (HSD) (see additional background below) provides a good basis for that enhancement.

Response to Background:

Port staff agrees with the audit summary and appreciates the opportunity to provide additional information to enhance understanding of the project.

An FAA determination in 2016 put the eligibility to sound insulate both schools at risk, so the Port worked extensively with the HSD, local congressional staff and the FAA to ensure that the District would be eligible for funding. The HSD needed to complete construction within a certain timeframe to meet State class size requirements and could not delay construction while the FAA grant issue was being resolved; thus, they proceeded with contracting without FAA review. However, the Port coordinated with the FAA to ensure that eligible project costs could be reimbursed after construction. In 2018, United States Representative Adam Smith was able to include a provision in the National Defense Authorization Act that restored eligibility for these schools to receive the needed sound insulation funding. We note these facts because they indicate the unique situation that led to our inability to submit the AIP grant application prior to commencement of construction.

To date (5/15/19) through Port staff efforts, the HSD has worked to bring its contracts for Highline High School into compliance with both DBE and Buy American clauses. The package has not been formally submitted for FAA approval, but we are confident that it will meet the contracting criteria.

There are ongoing issues with the contracts for Des Moines Elementary School, and the resulting package may not meet the DBE requirements. If the FAA does not approve the DBE percentage used on the project, it is unlikely to receive grant funding.

APPENDIX A: RISK RATINGS

Findings identified during 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
Effectiveness Opportunity	An effectiveness opportunity is where the Port is complying with its obligations; however, a modification would make the process more transparent to the Commission and the public				

APPENDIX B: GENERAL CONDITIONS

A rule of thumb, in the construction industry, is that general conditions/adjustment factors normally range in the 5% to 8% range, with 8% pushing the high range and warranting further review. Proposed general condition/adjustment factor costs averaged 30% in the work orders we reviewed.

A thorough analysis of general condition/allowable adjustment factors in work proposals may have identified excessive costs that would have warranted further review and questioning. The following table provides an example of the proposed costs for work order no. 24 which included remediation work on two residences. The subcontractor charged the job order contractor \$91,340 for the work, while the Port paid the job order contractor \$148,515 which included \$44,813 in general condition/adjustment factor costs.

Work Order No. 24 (Adjustment Factors)

Description	Amount (residence 1)	Amount (residence 2)	Totals
Material handling & storage limitations	\$2,461.96	\$3,174.49	\$5,636.45
Equipment usage curtailment, max	2,457.36	2,921.37	5,378.73
Equipment usage curtailment, minimum ²	2,457.36	494.87	2,952.23
Cut & patch to match existing work	2,649.10	3,295.37	5,944.47
Dust protection, add max	2,836.24	3,416.24	6,252.48
Protection of existing work, max	2,271.75	2,884.87	5,156.62
Taxes (unemployment, state/fed, social security, etc.)	3,254.62	3,540.56	6,795.18
Small tools as % of part of bare labor costs	377.35	410.50	787.85
Add to labor for working in existing occupied space	<u>2,830.10</u>	<u>3,078.75</u>	<u>5,908.85</u>
Total WO 24 adjustment factors:	\$21,595.85	\$23,217.01	\$44,812.86

Source: Port of Seattle- Job Order Contract Work Order; Kathi Clark, Burton Construction.

² The Job Order Contractor included *equipment usage curtailment, maximum* twice on residence 1 instead of *equipment usage curtailment, minimum*.