

INTERNAL AUDIT REPORT

Operational Audit – Capital Terminal 5 Berth Modernization Project



Source: Port of Seattle

January 2019 – February 2023

Issue Date: March 23, 2023

Report No. 2023-02

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Executive Summary

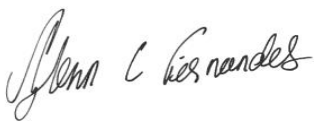
Internal Audit (IA) completed an audit of the Terminal 5 Berth Modernization Project (Project) for the period January 2019 through February 2023. The audit was performed to assure unit price work items, exceeding 125% of the initial bid, were properly billed and supported. In addition, we obtained the contractor's actual cost of unit price work items and calculated the difference between the actual cost and the bid amount. When the unit price work item bid quantity exceeds the actual quantity by more than 125%, the contract allows for renegotiation of the unit price. We obtained the actual cost of the eight unit price work items in the sample and prepared a comparison of the contractor's actual cost and bid price. We provided this information to the Construction Management (CM) team.

The Port of Seattle, through The Northwest Seaport Alliance (NWSA), a marine cargo partnership between the Port of Seattle and the Port of Tacoma, approved the Terminal 5 Improvement Project on February 26, 2019. In May of 2019, Orion Construction was awarded the Terminal 5 Berth Modernization portion of the contract, in the amount of \$159,986,390 (excluding State Sales Tax) and began construction in July of 2019. The Project upgraded Terminal 5 to handle ultra-large container ships with a capacity of up to 18,000 containers. The Project was originally budgeted for \$340,000,000 however, as of August of 2022, the budget had increased to \$454,000,000.

The contract included a total of 41 unit price work items, costing \$43,940,232 as of December of 2022. Sample testing included eight unit price work items that exceeded the original bid quantity estimate by more than 125%. A review process of payments is in place to assure Pay Applications are supported. Documentation was readily available for the audit and there were receipts supporting the Pay Applications. We observed written notes documented by the reviewer, and corrections were made prior to making payments.

Overall, Port management's monitoring aligned with policies and procedures. However, our audit identified an opportunity where internal controls could be enhanced or developed. This opportunity is listed below and discussed in more detail beginning on page 6 of this report.

1. **(Low)** In most instances, the Port's internal controls over the review process for Pay Applications worked well to assure billings pertaining to unit price work items were accurate and supported. However, our audit identified instances in which Pay Applications were missing supporting documentation or billed incorrectly, resulting in a potential overbilling of \$124,771.



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Background

The Northwest Seaport Alliance (NWSA) members include commissioners from the Port of Seattle and the Port of Tacoma. In February of 2019, the members discussed significant new investments to grow international marine cargo in Seattle Harbor, including a new tenant at Terminal 5, and more than \$300 million in infrastructure improvements to the facility. Terminal 5 has long been considered a premier container cargo facility on the West Coast because of its naturally deep berth, wide footprint, and the availability of an on-dock rail yard, allowing containers to be directly loaded from a ship onto rail lines.

Ultra-large container ships entering the market, with a container capacity of more than 10,000 twenty-foot equivalent units (TEU) and vessels of 18,000-TEU capacity, triggered dramatic changes in the container shipping industry in recent years. These larger container ships make fewer calls and only berth at ports capable of accommodating them. The new ultra-large container ships require larger, heavier cranes with a longer reach, which in turn requires strengthening the dock and upgrading utilities. In response to these industry changes, the NWSA proposed improvements at Terminal 5 to accommodate larger vessels. Terminal 5 investments are critical for Washington state exports to Asian markets, in addition to growing cargo volumes and maritime jobs, in the Puget Sound region.

In addition to these infrastructure improvements, Seattle and Tacoma port commissioners have directed staff to bring forward environmental investments to enhance water and air quality for the community. They include updating stormwater treatment systems and installing “shore power” infrastructure, which allows a vessel to plug into electricity while at berth, substantially reducing air emissions. The plan also includes technology improvements to manage truck flow around the terminal and a railroad “quiet zone” to reduce noise impacts for the surrounding community.

The budget for the Terminal 5 Modernization Program (Program) was approved for \$340,000,000 in April of 2019. Budget increases were approved during the Program, bringing the total budget to \$454,000,000, as listed in Table 1. Added costs included purchasing and installing 8 scales. There were additional expenses associated with the South Reefer Restoration Project, as part of a partial settlement agreement, as well as the Third Lease Amendment.

Table 1: Program Cost

Description	Amount
April 2019 Authorized Program Cost	\$ 340,000,000
July 2021 Authorized Increase	\$ 50,000,000
December 2021 Authorized Increase	\$ 2,500,000
August 2022 Authorized Increase	\$ 61,500,000
Total Program Cost (as of December 31, 2022)	\$ 454,000,000

The largest portion of the Program is the Terminal 5 Berth Modernization Project, which was the focus of our audit. In May of 2019, Orion Construction was awarded the Terminal 5 Berth Modernization contract in the amount of \$159,986,390 (excluding Washington State Sales Tax). The first phase of construction began in July of 2019 with demolition of the north section of the dock, installation of new electrical infrastructure, pile driving, and construction of the north segment of the dock. The completed north berth includes new crane rails, fendering, bollards, and an underwater toe wall. A new primary substation was constructed to supply power to the new cranes and provide shore power to vessels.

Phase 2 construction included delivery of new cranes to the north dock and demolition and construction of the south portion of the dock. The completed south berth includes new crane rails, fendering, bollards, and an underwater toe wall. Phase 2 was followed by dredging of the north and south berths to a depth of minus 57 feet (current depth is minus 45 to 50 feet). The Project is expected to be completed by September 2023.

Source: [Port of Seattle](#) and [Northwest Seaport Alliance](#)

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.

Although our testing represented 97.3% of bid quantities that exceeded 125%, we used a judgmental method to determine these samples selected for our audit test work, accordingly the results of this work cannot be projected to the population as a whole.

The period audited was January 2019 through February 2023 and included the following procedures:

Cost of Unit Price Work Items

- Reviewed contractual unit prices on the Schedule of Prices.
- Met with the contractor to review bid documents displaying the contractor's actual costs.
- Prepared a comparison of the bid unit prices (items that exceeded 125% of original bid) to the contractor's actual costs.

Supporting Documentation

- Reviewed Standard Operating Procedures, training documents, and contractual requirements.
- Obtained an understanding of management's review process of unit price work items that exceeded 125% of original bid.
- Analyzed reported costs from submitted documentation, including tickets and receipts, to determine if the costs were valid, supported, and reasonable.
- Reviewed for reasonableness and compliance with contract requirements.

Schedule of Findings and Recommendations

1) Rating: Low

In most instances, the Port's internal controls over the review process for Pay Applications worked well to assure billings pertaining to unit price work items were accurate and supported. However, our audit identified instances in which Pay Applications were missing supporting documentation or billed incorrectly, resulting in a potential overbilling of \$124,771.

The contract defines "Unit Price Work" as work for which a unit price is established in the Contract's Schedule of Prices or by Change Order. The contract defines "Bid Quantity" as the total unit quantity listed in the Schedule of Prices for an item of Unit Price Work. The Schedule of Prices for this contract displayed a total of 41 unit price work items, with an estimated cost of \$38,551,390. The total amount incurred (as of December of 2022) is \$43,940,232, an overage of \$5,388,842. The contract allows the bid quantity to exceed the estimated bid quantity by one hundred twenty five percent (125%), without any contractual changes. When exceeding 125%, Section G-05.04.B.2. of the contract states, in part:

If the quantity of an item of Unit Price Work actually performed or to be performed is more than one hundred twenty five percent (125%) of the bid quantity for that item, the Contractor or the Port may request a Change Order revising the unit price for that portion of the Work that exceeds 125% of the bid quantity. (See Appendix B for contract Section G.05.04.B.2)

There were 12 unit price work items whose quantity exceeded 125% of the original bid estimate. We selected the eight unit price items that exceeded the 125% threshold by at least 1,000 units for our sample testing, which covered 97.3% of the total items that exceeded 125%. The eight items had a contract value of \$7,394,040, however, as of December of 2022, the Port had paid \$22,747,174, since the quantities exceeded 125% of the bid quantity. Our testing focused on reviewing supporting documentation for the quantities that exceeded 125% of the bid threshold. Our testing determined there is a review process in place to assure Pay Applications are supported. Documentation was readily available for the audit and there were receipts supporting the Pay Applications. We observed written notes on the Pay Applications and corrections that were made by the reviewer, prior to making payments. We did, however, find instances in which supporting documentation could not be located, as listed in Table 2. The five instances total \$124,771, which is 0.9% of the sample tested. The Construction Management (CM) team took immediate action and contacted the contractor to obtain supporting documentation. Table 2 details the outstanding requests as of the date of this report.

Table 2: Unit Price Work Items Lacking Supporting Documentation

Item Number	Item Description	Issue	Questioned Costs (\$)
82	Crushed Surfacing Base Course/ 1/4 Minus Quarry Rock CSB	An amount of 26.81 tons was charged to the wrong project.	1,072
82	Crushed Surfacing Base Course/ 1 1/4 Minus Quarry Rock CSB	A total of 215.71 tons lacked supporting documentation.	8,628
83	HMA Class 1" PG 58H-22	Five receipts were missing from documentation, totaling 94.2 tons.	18,369
84	HMA Class 3/4" PG 58H-22	A double payment was made for 50.06 tons.	9,762
85	HMA Class 1/2" PG 58H-22	A total of 17 receipts were missing from documentation, totaling 289.8 tons.	86,940
Total Questioned Costs			124,771

Recommendations

- If the contractor is unable to provide supporting documentation, CM should seek and recover any amount due.

Management Action Plan

The full amount of \$124,771 will be credited from the next Pay Estimate processed for this project unless the Contractor provides missing documentation.

Outside of this audit, Construction Management is confident these discrepancies would have been identified and corrected during the independent verification process required when each Unit Price Bid Item is completed, in line with our standard operating procedures as part of the closeout of the project.

Due Date: 6/30/2023

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	Moderate probability for external audit issues and / or negative public perception	Requires attention
Low	Minimal	Functioning as intended but could be enhanced	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: Testing Methodology

Contract

When exceeding 125%, Section G-05.04.B.2. of the contract states, in part:

If the quantity of an item of Unit Price Work actually performed or to be performed is more than one hundred twenty five percent (125%) of the bid quantity for that item, the Contractor or the Port may request a Change Order revising the unit price for that portion of the Work that exceeds 125% of the bid quantity. Such request shall be accompanied by evidence to support the requested revision. The proposed revision will be evaluated considering such factors as the change in actual cost to the Contractor of that portion of the work exceeding 125% of the bid quantity, and the share, if any, of fixed expenses properly chargeable to that portion of change in quantity which exceeds 125% of the bid quantity. If the Port and Contractor agree on the change to the Unit Price, a Change Order shall be executed in accordance with Paragraph G-05.01. If the parties cannot agree, the Port may nevertheless issue a Change Order pursuant to Paragraph G-05.01 and the Contractor will have the rights provided in Paragraph G-05.02.

Unit Price Work Items - Total

The contract's Schedule of Prices displayed a total of 41 unit price work items. Table 3 shows the original contract dollar amount for the 41 items and the total amount paid through Pay Application 41 (includes all payments through December 2022). The total amount paid for unit price work items that exceeded the contractual amount is \$5,388,842.

Table 3: Payment Amount Exceeding Contract for 41 Unit Price Work Items

Description	Amount
Amount Paid	\$ 43,940,232
Original Contract	\$ 38,551,390
Amount Exceeding Contract	\$ 5,388,842

Unit Price Work Items – Sample Selection

Of the 41 unit price work items, there were 12 items whose actual bid quantity exceeded the original bid quantity estimate by 125%. We selected the eight unit price items that exceeded the 125% threshold by at least 1,000 units for our sample testing, which covered 97.3% of the total items that exceeded 125%. Table 4 details the original contract dollar amount for the sample selection and the total amount paid through Pay Application 41, which includes all payments through December 2022. The total amount paid for the eight unit price work items, that exceeded the contractual amount, is \$15,353,134.

Table 4: Payment Amount Exceeding Contract for Sample Selection of 8 Unit Price Work Items

Description	Amount
Amount Paid	\$ 22,747,174
Original Contract	\$ 7,394,040
Amount Exceeding Contract	\$ 15,353,134