

**Board Report**

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**CONSTRUCTION COMMITTEE  
JANUARY 16, 2020****SUBJECT: OFFICE OF THE INSPECTOR GENERAL CHANGE ORDER/MODIFICATION  
CONSTRUCTION SPOT CHECKS****ACTION: RECEIVE AND FILE****RECOMMENDATION**

RECEIVE AND FILE Office of the Inspector General Change Order/Modification Construction Spot Check Report.

**ISSUE**

On January 25, 2018, the Metro Board directed the Office of the Inspector General (“OIG”) to conduct random spot checks on the projects listed in the quarterly program management report to ensure that the delegation of authority to approve construction Change Orders policy is performing in the manner desired by the Board of Directors.

**BACKGROUND**

The OIG’s Spot Check Program (“Spot Checks”) focuses on approved Change Orders and Modifications that exceed \$1,000,000. The four Change Orders in this report were selected from the January 2020 Program Management Major Project Status Report (File # 2020-0001), covering September 1 to November 30, 2019. The information for the Spot Checks was collected from the Program Management Information System (PMIS) which is the department’s database system. Also, in-person and telephonic interviews were conducted with Metro Program Management, Project Control, and Procurement staff from each individual project office.

We found that all four of the Change Orders in this report were negotiated and executed more expeditiously than would have occurred pursuant to the former Board approval process, and all four were approved faster with the new delegation of authority. In addition two Change Orders were negotiated at lower cost and two were equal to the contractors’ proposed price. This quarter’s Spot Checks of Change Orders/Modifications found the delegation of authority has resulted in:

- A negotiated amount that was reasonable for the work to be done,

- Enabled the contractor to immediately order parts and materials, reducing delay.
- Contractor and was able to continue working without stoppages related to these change orders, and
- Zero construction delay costs were incurred for these changes.

Each Spot Check summarizes the following areas:

- Introduction of Change Order/Modification
- Facts of Change Order (charts and pictures shown on Attachment A)
- Scope of Work
- Budget
- Schedule: Time to Execute Change Order
- Recommendations

Metro's Program Control department will provide responses to the recommendations in this report to the OIG Spot Checks within 30 days after this Board report. Attachment B, included with this January report, is a separate spreadsheet of recommendations and the status of responses concerning former Spot Check recommendations.

## **DISCUSSION**

### **Spot Checks Performed in this Quarter**

#### **A. Spot Check #1 - Crenshaw/LAX Transit Project**

This OIG Spot Check report concerns the Crenshaw/LAX Transit Corridor Project (Contract C0988 MOD-437), UG1 (H<sub>2</sub>S) Ventilation Fans - Construction.

#### **Facts of Change Order**

See Attachment A Spot Check #1 chart.

#### **Summary #1**

**Scope of Work** - This change order is to procure two tunnel booster fans to add to the underground trainways in section 1 (UG1). These fans were originally not in the scope of work. At that time, Metro staff understood that UG1 did not require any mechanical ventilation equipment because the trainway box structures meet the guidelines in NFPA 130 to require no mechanical ventilation.

Metro's Fire Life Safety Committee decided that the length of the tunnel and the level of existing gasses from multiple sources warrants improved air circulation to maintain desired air quality for the safety of maintenance workers, dictates the use of two tunnel booster fans.

**Budget** - This Modification was negotiated and the award amount is \$2,448,545. The contractor's proposal was \$2,912,415 and the ICE was \$2,237,017. The award amount was \$463,870, or 15.9%, under the contractor's proposal. The negotiated amount was \$211,528, or 9.45%, over the ICE. Staff has stated that funds for this change are within the approved the Life-of-Project budget, and unallocated contingency funds.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on July 9, 2019. The Modification was executed on September 12, 2019, and was

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completed in 48 work-days. Using the July 29, 2019 V/CM submission date, this Change Order would have gone to the September Board. The scenario of utilizing the Board for approvals on change orders would have been 57 work-days later instead of the 48 actual work-days incurred utilizing the delegated authority.

**Recommendation** - None

**B. Spot Check #2 - Regional Connector Transit Project**

This OIG Spot Check report concerns the Regional Connector Transit Corridor Project (Contract C0980 MOD-00154), Acoustical Treatments for Areas Not on Finish Schedule.

**Facts of Change Order**

See Attachment A Spot Check #2 chart.

**Summary #2**

**Scope of Work** - This change order covers the cost of additional acoustical treatments to ceilings and walls to reduce the noise and keep sound under 50 decibels as specified in the Metro Rail Design Criteria (MRDC). The original project definition documents specification indicates the acoustical treatments in specific locations, pending determination of final quantities once the design was completed. At bid time, the contractor was instructed to include the unit rates for additional acoustical treatments, in case more treatment was necessary once the design was completed.

**Budget** -The cost for this Modification is \$1,968,703. The contractor's proposal was \$1,968,703. The independent cost estimate (ICE) was also \$1,968,703 because it was based upon the same unit price listed in the contractors original bid. Staff has stated that funds for this change are within the approved the Life-of-Project budget, and unallocated contingency funds.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on September 17, 2019. The Modification was executed on October 25, 2019, and work was completed in 29 work-days. Using the September 30, 2019 V/CM submission date, this Change Order would have gone to the November Board. The scenario of utilizing the Board for approvals on change orders would have been 54 work-days later instead the 29 actual work-days incurred utilizing the delegated authority.

**Recommendation** - None

**C. Spot Check #3 - Purple Line Extension Section 1 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 1 Transit Project (Contract C1045 MOD-00089), Development and On Site Validation of the Selected Gas Mitigation Option for M13.

**Facts of Change Order**

See Attachment A Spot Check #3 chart.

### **Summary #3**

**Scope of Work** - There is a potential safety concern in the M-13 zone (underground on Wilshire, about 700 feet long, between McCarty Vista and Fairfax streets) of hydrogen sulfide (H<sub>2</sub>S) and methane gas (CH<sub>4</sub>) that are present in the soil where the tunnel boring machine (TBM) alignment will be traversing. It is necessary to evaluate the current gas replenishing rate and develop an effective mitigation plan.

The change order is for the contractor to install 10 vapor extraction wells and 7 monitoring wells, analyze the resulting data, prepare plans, and make a final report to Metro.

**Budget** -This Modification was negotiated and the award amount is \$2,957,277. The contractor's proposal was \$3,126,444 and the ICE was \$2,665,860. The award amount was \$169,167, or 5.4%, under the contractor's proposal. The negotiated amount was \$291,417, or 10.9%, over the ICE.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on September 10, 2019. The Modification was executed on September 30, 2019, and was completed in 15 work-days. Using the September 30, 2019 V/CM submission date, this Change Order would have gone to the November Board. The scenario of utilizing the Board for approvals on change orders would have been 52 work-days later instead of the 15 actual work-days incurred utilizing the delegated authority.

### **Recommendation**

While the soil at every site is unique, it is possible to create a standard for testing soils for gasses. There is no current rule or technical specification within Metro criteria for extraction of CH<sub>4</sub> or H<sub>2</sub>S from the soil.

The OIG recommends after the final report is submitted by the contractor, that a technical specification for testing be developed and written into the MDRC to use in the future.

We further agree that testing to accomplish high levels of safety confidence is a prudent practice.

### **D. Spot Check #4 - Purple Line Extension Section 1 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 1 Transit Project (Contract C1045 MOD-00090), Oil Well Investigation In Lieu of TBM Probe-Ahead.

### **Facts of Change Order**

See Attachment A Spot Check #4 chart.

### **Summary #4**

**Scope of Work** - The Geotechnical Data Report states there are 3 abandoned Chevron Oil wells in the vicinity of the tunnel alignment. The contractor has researched with DOGGR (California Department of Conservation: Division of Oil, Gas, and Geothermal Resources) and estimated the location of the existing wells. There is a potential for the TBM to hit the metal casing of the abandoned wells which could damage and stop the machine. It is Metro's responsibility to be in

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conformance with specification CON53 of the Monitoring Mitigation Reporting Plan, which states that alignment of the TBM must be clear of the abandoned wells.

In order to mitigate the potential damage and stoppage of the TBM, Metro has asked the contractor to perform a subsurface investigation by way of horizontal directional drilling and a magnetometer survey. A magnetometer detects and measures magnetism direction and strength (this is typically used by the military to detect submarines). If there is a conflict found within the tunnel space, the tunnel alignment will be redirected to avoid the existing Chevron oil well or the oil well must be removed according the current DOGGR requirements.

The contractor will prepare and submit a drill path alignment plan, geophysical investigation plan, traffic control plan, and a plan/profile with cross sections under this change order.

**Budget** -This Modification was negotiated and the award amount is \$1,868,928. The contractor's proposal was \$1,868,928 and the ICE was \$2,022,309. The award amount was equal the contractor's proposal. The negotiated amount was \$153,381, or 7.6%, under the ICE.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on August 22, 2019. The Modification was awarded on September 12, 2019, and was completed in 16 work-days. Using the August 30, 2019 V/CM submission date, this Change Order would have gone to the October Board. The scenario of utilizing the Board for approvals on change orders would have been 46 work-days later instead of the 16 actual work-days incurred utilizing the delegated authority.

### **Recommendation**

The implementation of the drilling and magnetometer survey from section 1 has been incorporated into Purple Line Extension Sections 2 and 3 contracts.

The OIG recommends that the procedures implemented for locating tanks, pipes and other abandoned waste be added to the Lessons Learned database.

The OIG further recommends that Metro evaluates whether to pursue recovery for waste removal costs under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund. Passed in 1980). The OIG recommends that Metro's Engineering Program Management provide information on this matter to Metro's Legal department to assist in making this determination and potentially pursuing this recovery.

### **FINANCIAL IMPACT**

Report will have no Financial Impact to the agency.

#### **Impact to Budget**

For all of the Construction Change Orders, Metro states the funds are within the approved budget, and will utilize the contingency funds to cover the costs.

- Spot Check #1) \$2,448,545 Crenshaw/LAX Transit Project
- Spot Check #2) \$1,968,703 Regional Connector Transit Project
- Spot Check #3) \$2,957,277 Purple Line Purple Line Extension Section 1
- Spot Check #4) \$1,868,928 Purple Line Purple Line Extension Section 1

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The recommendations that the Office of Inspector General has put forward support Metro's Strategic Plan Goal #5: Provide responsive, accountable, and trustworthy governance within the Metro organization. The OIG mission includes reviewing expenditures for fraud, waste, and abuse. For each selected Change Order/Modification reviewed, the OIG evaluates if fraud, waste, or abuse is taking place. We report the background details of the Change Order, and make recommendations consistent with the OIG's Construction Best Practices report February 29, 2016, more particularly focusing on lessons learned, improving efficiencies, and prudent spending.

Our goal is to provide rational, trustworthy information to the Board and support the efforts of Metro management to constantly improve and refine its efforts for the benefit of the public. The Office of the Inspector General will continue reporting to the Board the results of Construction Change Order Spot Checks selected from the Program Management Major Project Status Quarterly Report. The next OIG Construction Spot Check report will be in April 2020.

## **NEXT STEPS**

The OIG shall provide every quarter, an on-going spread sheet of recommendations to Program Control. Program Control and Program Management agrees to respond to the recommendations of the OIG within 30 days. The OIG continues to meet periodically to discuss reports, recommendations, and the status of implementation of recommendations, with Project Management and receive updates. The list of OIG recommendations and Metro management responses, including those for October 2019, is an attachment to this OIG January 2020 report.

## **ATTACHMENTS**

Attachment A - Charts for Spot Checks

Attachment B - Tracking Sheet of OIG Recommendations and Responses

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