

**Board Report**

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**File #:** 2018-0779, **File Type:** Informational Report**Agenda Number:**

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**CONSTRUCTION COMMITTEE  
JANUARY 17, 2019****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****I. SUMMARY**

The OIG has developed a spot check program (“Spot Checks”) that primarily focuses on approved Change Orders and Modifications that exceed \$1 million. The Change Orders in this report were selected from the January 2019 Program Management Major Project Status Report (File # 2018-0780), covering September, October, and November 2018. 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, Bus Operations, and Procurement staff from each individual project office.

The OIG has reviewed four Change Orders for the period of September 1, 2018, to November 31, 2018; one processed from Crenshaw/LAX, one from Regional Connector, and two from Westside Purple Line Extension Section 2. For this quarter, the Westside Purple Line Extension Section 1 did not have any Change Orders above \$500,000.

We found that all the Change Orders in this report were negotiated/approved/executed on average

faster than the former Board approval process would have taken. In addition, the negotiated cost for one Change Order was lower than Metro's Independent Cost Estimate (ICE) and two were higher than the ICE, but were lower than the contractor's proposed price, and one was equal to Metro's estimate amount. For the Change Orders/Modifications the OIG reviewed, the Spot Checks have shown that the delegation of authority has, in certain cases, resulted in:

- Minimized/reduced delay costs,
- A negotiated amount that was reasonable for the work to be done; and
- Minimized construction delays.

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
- 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.

## **DISCUSSION**

### **II. 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-00335.1). Cable Transmission System Update - Construction

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

See Attachment A Spot Check #1 chart.

#### **Summary #1**

**Scope of Work** - Specifications for the Crenshaw line communications system were prepared many years ago. The scope of work, written 3 years ago for the Line, incorporated those specifications pending any evaluation of new technology. After an evaluation was completed it was determined that Metro's rail communications system agency wide will migrate over time from the SONET System currently in use, to new technology provided by FUJITSU. This Modification is to correct the specifications to the new technology platform (FUJITSU (FW) 9500 a Native Ethernet platform). Eventually, all Metro rail lines will migrate to the new FUJITSU 9500 system. The contractor shall procure, provide, and construct this System for the ROC, stations, and the South West Rail Yard for the Crenshaw Line. These costs are net of the offset of the elimination of the older technology, but still require drawing changes and similar expenses for the new technology.

**Budget** - The ICE was \$966,285. The Modification was awarded for \$1,180,296. The award was \$214,011 (18.13%) higher than the ICE.

**Schedule** - The new delegation process was utilized for this Modification which was executed on October 3, 2018. The negotiations of the scope of work began on February 2, 2018. The 8-month delay occurred because Metro and the contractor disagreed on the schedule for accomplishing the Modification. The parties agreed on the Modification without having a set schedule. This Change Order could not have gone to the Board for approval until the November Board, a full 47 work-days later. The schedule is pending.

### **Recommendation**

The OIG agrees with and recommends the use of newer technology. It is appropriate to have the communications system updated from the original legacy SONET platform that is over 25 years old to accomplish critical communication.

The OIG recommends that schedule negotiations with the contractor be expeditiously concluded so the schedule impacts are minimized.

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

This OIG Spot Check report concerns the Regional Connector Transit Corridor Project (Contract C0980 CO-00023). Add Wye Junction Fan Plant - Construction

### **Facts of Change Order**

See Attachment A Spot Check #2 chart.

### **Summary #2**

**Scope of Work** - This Change Order is part 3 of 4 for the addition of fans at 1<sup>st</sup> street and Alameda junction. Part one and two covered the design of the fan system that was jointly developed by both contractor and Metro Fire Life Safety Committee. In December 2015 Metro Board approved the deletion of the original 8 jet fan ventilation design and the addition of the fan system at the interior intersection of the two converging/diverging tunnel segments. The revised design of the tunnel section is now complete and ready for the installation of the fan system. This Modification is to pay for the items necessary for the fan system and work performed to date for the fans.

**Budget** - The award amount for this Modification is \$1,200,000. The contractor was not required to submit a proposal because this is a unilateral Change Order by Metro. The payment enables the contractor to order the fan parts and invoice for work performed to date. The Metro Board approved \$12,000,000 for the fan system in December 2015 and the \$1,200,000 will be paid out from that account.

**Schedule** - The new delegation process was utilized for this Modification. The Change Order was executed on November 2, 2018. There are no saved days accomplished by the use of the new delegation process because this item would not have needed to go to the Metro Board again since this fan system was approved in December 2015.

**Recommendation**

None.

**C. Spot Check #3 - Purple Line Extension Section 2 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 2 Transit Project (Contract C1120 MOD-00026). Santa Monica Blvd. Bus Layover Design and Construction Changes

**Facts of Change Order**

See Attachment A Spot Check #3 chart.

**Summary #3**

**Scope of Work** - This Modification is to revise the design and construction of the Santa Monica Bus layover facility. The work under this Change Order will shift the new bus layover facility 60-feet to the east. The 60-foot takes advantage of available space that provides more capacity, improves bus movement, and maintains the existing bus stop. The design will protect the left turn signal for buses in the center median of Santa Monica Blvd. The signal allows for left turns and U-turns at Century Park East and a new left turn to detect the waiting buses with vehicle loop detectors that distinguish between U-turn and straight buses and minimize overall traffic delays. LADOT Bureau of Street Lighting requested the addition of new street lights to meet ambient safety lighting standards along Santa Monica Blvd. from Avenue of the Stars to Century Park East.

**Budget** - The award amount for this Modification is \$1,345,904. The contractor's proposal was \$1,602,335 and the ICE was \$1,209,139. The award amount was \$256,431 below the contractor's proposal or 19% less, and the negotiated award was 10% above the ICE amount.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on Oct. 17, 2018 and the Modification was executed on Nov. 2, 2018, which was done in 12 work-days. If this Modification had gone to the Board it would have been on the January agenda which would be 70 work-days later. From the final scope of work to the January Board meeting there is a time savings of 58 work-days.

**Recommendation**

Multiple design coordination meetings (using 30% design) with Metro Bus and Rail Operations during preliminary engineering were held to develop the scope. During those meetings Bus Operations requested 6 bus bays to be incorporated into the design. Then at the 60% design meetings Bus Operations saw that the existing active bus stop was removed and asked that it be restored. The active bus stop will be added back into the plans.

The addition of the left turn signal, pocket lane with detector loops, and street lights were additions requested from the City of LA after their review of the 60% design plans who had not submitted the required changes earlier.

The OIG recommends that Operations and LADOT be provided the scope of work after requests are submitted or "no comments" are received to confirm their requests have been added into the scope

prior to the release of the RFP.

The OIG recommends the Program Management team create a check list showing to whom preliminary 30% plans and the 60% design plans were given and what were the individual requests. The check list should note follow up dates, phone calls, and emails to verify their requests are incorporated into the scope of work prior to the release of the RFP.

#### **D. Spot Check #4 - Purple Line Extension Section 2 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 2 Transit Project (Contract MC072 MOD-00001). Continuation of Construction Management Support Services for WPLE Sect. 2

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

See Attachment A Spot Check #4 chart.

#### **Summary #4**

**Scope of Work** - This Modification allows for the Construction Management Support Services (CMSS) to continue for 2 years (FY19 & FY20) for the Purple Line Section 2 project. This staff augmentation is to hire additional experts to support the construction. By creating different phases for support and award, the CMSS contract allows the money to be utilized based on evolving needs.

**Budget** - This Modification was negotiated and the award is \$24,020,080. The contractor's proposal was \$26,770,931 and the ICE was \$25,158,756. The award amount was \$2,750,851 (or 11.5% less) than the contractors proposal. The negotiated amount was 4.7% less than the ICE.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on November 1, 2018, and the Modification was executed on November 28, 2018, was completed in 20 work-days. If this Modification had gone to the Board it would have been on the January agenda which would be 60 work-days later. From the final scope of work to the January Board meeting there is a time savings of 40 work-days.

#### **Recommendation**

None.

#### **FINANCIAL IMPACT**

The financial impacts are the expenditures from the projects reserves as follows:

Spot Check #1) \$1,180,296.

Spot Check #2) \$1,200,000.

Spot Check #3) \$1,345,904.

Spot Check #4) \$24,020,080.

#### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The recommendations that the Office of Inspector General has put forward support the Strategic Plan Goal #5: Provide responsive, accountable, and trustworthy governance within the Metro organization. The OIG focuses on fraud, waste, and abuse. For each selected Change Order/Modification review,

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the OIG is evaluating if fraud, waste, or abuse is taking place. We report the details of why the Change Order is 'out of scope', we support, and make recommendations with our construction best practices report, more particularly focusing on lessons learned, improving efficiencies, and prudent spending. Our goal is to provide rational, trustworthy information to the Board. 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.

Program Control and Program Management agreed to respond to the recommendations of the OIG within 30 days. Program Management has provided responses to the prior OIG Construction Spot Check reports (May, July, and October 2018) as listed in Attachment B.


### **ATTACHMENTS**

Attachment A - Chart for Spot Checks

Attachment B - May, July, and October Recommendations and Engineering Responses

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Karen Gorman  
Inspector General

**Spot Check #1 - Crenshaw/LAX Transit Project - Contract C0988****Facts of Change Order**

<u>Description of Modification MOD-00335.1</u> Cable Transmission System Update - Construction	
<u>Change Order Dates:</u>	
Scope of Work approved	February 2, 2018
Modification Executed	October 3, 2018
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	17 work days
Estimate using former Board approval process	47 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$966,285
Contractor's proposed cost	\$1,180,296
Negotiated amount	\$1,180,296
Negotiated amount over ICE	\$214,011
Percentage of negotiated amount over ICE	18.13%

**Spot Check #2 - Regional Connector Transit Project - Contract C0980****Facts of Change Order**

<u>Description of Modification CO-00023</u> Fan system - Construction	
<u>Change Order Dates:</u>	
Scope of Work approved	Not agreed upon
Modification Executed	November 2, 2018
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	Not applicable
Estimate using former Board approval process	Board approved \$12 M in Dec 2015
<u>Cost of Change Order:</u>	
Record of Magnitude (ROM)	\$1,200,000
Contractor's proposed cost	not required
Negotiated amount	\$1,200,000
Negotiated amount over ICE	\$0
Amount negotiated under Contractors proposal	Not applicable

**Spot Check #3 - Purple Line Extension Section 2 Transit Project - Contract C1120****Facts of Change Order**

<u>Description of Modification MOD-00026</u>	
Santa Monica Blvd. Bus Layover Design and Construction Changes	
<u>Change Order Dates:</u>	
Scope of Work approved	October 17, 2018
Modification Executed	November 2, 2018
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	12 work days
Estimate using former Board approval process	70 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$1,209,139
Contractor's proposed cost	\$1,602,335
Negotiated amount	\$1,345,904
Negotiated amount under ICE	\$136,765
Amount negotiated under Contractors proposal	\$256,431

**Spot Check# 4 - Purple Line Section 2 Transit Project - Contract MC072****Facts of Change Order**

<u>Description of Modification -MOD-00001</u>	
Continuation of Construction Management Support Services for WPLE Sect. 2	
<u>Change Order Dates:</u>	
Scope of Work approved	November 1, 2018
Modification Executed	November 28, 2018
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	20 work days
Estimate using former Board approval process	60 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$25,158,756
Contractor's proposed cost	\$26,770,931
Negotiated amount	\$24,020,080
Negotiated amount over ICE	\$1,138,676
Amount negotiated under Contractors proposal	\$2,750,851



ATTACHMENT B (May 2018)

OIG REPORT/ SPOT CHECK # MOD # Description	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
<p>May 2018 / #1 C0988-MOD-00345 Crenshaw - Oil Water Separator at UG Stations</p>	<p>The Metro rail design criteria (MRDC) was updated on October 31, 2017, to reflect the addition of the elevator, escalator pit drain and underground station track drains to be processed through a clarifier to remove oil, grease, and sand. Metro management should:</p> <ol style="list-style-type: none"> <li>1. Update the "Lessons Learned" files regarding the OWS change to the MRDC and communicate the lesson to other Project Managers working major transit construction projects (This is consistent with recommendation 51 and 89p in the OIG's Construction Management Best Practices Study.).</li> <li>2. Investigate this change to determine:               <ol style="list-style-type: none"> <li>a) If the scope of work of other major transit construction projects require this design update for the OWS.</li> <li>b) If the Regional Connector and the Westside Purple Line Extension sections 1, 2, and 3 should be amended for the same OWS omission to reduce additional change orders and costs.</li> <li>c) When should have the City been provided this information and reviewed construction plans prior to the cement being poured to avoid redesign costs?</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Agree, Lessons Learned have been updated.</li> <li>2. Agree, However contractor used the minimum percentage of contaminants level and did not require OWS.</li> </ol>	
<p>May 2018 / #3 C1078-MOD-00011 Purple Sect 1 - Schdl Impacts from Arcadis Work/change to accommodate const schdl extension from site impacts</p>	<p>All Environmental Site Assessments were performed prior to excavation. No record of underground tanks or buried reinforced concrete slabs were found by the Department of Conservation and Division of Oil, Gas, and Geothermal Resources (DOGGR). However, based on lessons learned from this site, Metro management should:</p> <ol style="list-style-type: none"> <li>1. Conduct Ultrasonic Soil Examinations at future questionable sites to attempt to avoid unidentified hazards. This is consistent with recommendations (88b, 88c, and 88d) in the OIG's report on Capital Project Construction Management Best Practices Study (February 29, 2016).</li> <li>2. Perform research to determine who could have installed the tanks and buried reinforced concrete slabs, and provide this information to the LA Metro Legal department for consideration of possible legal action to recover the cost of remediation under the Comprehensive Environmental Response, Compensations and Liability Act of 1980 (CERCLA).</li> <li>3. Perform an assessment of the schedule to determine if any recovery of time is possible.</li> </ol>	<ol style="list-style-type: none"> <li>1. Agree, Under the guidance and direction of Metro's Environmental Staff and the use of Ground Penetrating Radar (GPR) in order to attempt to identify these conditions prior to bid.</li> <li>2. Agree, Further efforts on identifying the existing Oil and Gas Wells through DOGGR may be warranted. COLA does not have design drawings of all underground tanks. There are no as built drawings for the various Tar Collection Sumps located on the Westside of LA.</li> <li>3. Agree, will utilize Metro' Environmental Staff.</li> </ol>	
<p>May 2018 / #4 C1120-MOD-00002 Purple Sect 2 - Worksite Traffic Control for AUR</p>	<p>Metro management should:</p> <ol style="list-style-type: none"> <li>1. Establish a single party to serve as a "clearinghouse" for all utilities relocations during construction. The "clearinghouse" could be assumed by the Metro group, Third Party Administration. (This is consistent with recommendations 80, 88, 89, 89j, 89n, and 89v in the OIG's report on Capital Project Construction Management Best Practices Study.)</li> <li>2. Utilize the "clearinghouse" process to improve the Advance Utility Relocations. (Consistent with recommendations 79, 83, 87, 89b, 89c, 89d, 89g, 89h, 89s, and 89t in the Best Practices Study.)</li> <li>3. Create "Lessons Learned" for the establishment of a single clearinghouse in the initial scope of work for the Design Build Contractor to avoid future costly change orders. (This is consistent with recommendation 89p in the Best Practices Study.)</li> </ol>	<ol style="list-style-type: none"> <li>1. Agree, Creation of Clearinghouse was already completed for WPLE2</li> <li>2. Agree, Unilaterateral change order was later negotiated and issued to improve as recommended.</li> <li>3. Agree, Lessons learned from AUR work will be documented for consideration for future projects.</li> </ol>	

ATTACHMENT B (July 2018)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
July 2018 / #1 C0988-MOD-00173.4 Crenshaw - Fire rated conduit and cable for tunnel emergency lighting	The OIG recommendation is to: 1) update the Metro Specifications to list the change in the standards and to include the list of approved alternatives from Metro Fire Life and Safety group 2) continue to follow appropriate process to resolve the Change Order dispute.	1- Agree as appropriate 2- Agree	
July 2018 / #2 C0988-CO-00209.1 Crenshaw - Preliminary 45 day acceleration	The OIG recommends Metro continue to explore with the contractor opportunities to accomplish schedule recovery.	Agree	
July 2018 / #3 C0988-MOD-00354 Crenshaw - COLA request to replace concrete street light & signal poles w/steel poles-MLK area	This modification might be considered a 'Betterment' and recommend that consideration of a similar value be negotiated with the City to offset this cost in connection with this project.	Agree - Under consideration	
July 2018 / #5 C0980-MOD-00119 Regional Connector - Addl Special conditions CAL/OSHA Tunnel classification	OIG recommends that during coordination meetings, between project management of Regional Connector and of Westside Purple Line Extensions 1, 2 & 3, communicate Lessons Learned concerning gas emissions monitoring when tunneling in this region to ensure timely notification and coordination with Cal/OSHA once a notifiable event occurs.	Agree - Regional Connector will share lesson learned with respect to gas detection and OSHA notification protocol with Purple Line Projects 1,2 & 3.	
July 2018 / #6 C1120-MOD-00011 Purple Line sect. 2 - Temp K-rail Noise Barrier	<p>1) The OIG recommends for work activities along an open city street (center of roadway) to add the option into future Scopes of Work to consider use of plywood barrier panels set into K-Rail when noise and working hours are extraordinary factors versus chain link fence with screens and sound blankets.</p> <p>2) Plywood panels set into K-Rail enable longer working hours as compared to the standard traffic cones. This form of traffic control can also be set up and left in place during long work periods. The OIG recommends writing into Metro's Standard Specifications, for long duration activities, the option of utilizing plywood barriers set into K-Rail for traffic control plans to maximize the work hours and assist in traffic control.</p> <p>3) The OIG further recommends that, this form of barrier be recorded in Lessons Learned and considered for the Westside Purple Line Extension Section 3. Program Management may consider it in meetings between Section 2 and Section 3 to share Lessons Learned.</p>	<p>(1) Agree, Future projects will consider the use of each barrier system on a case by case basis, considering actual traffic impacts and the proximity to commercial and residential properties.</p> <p>(2) Agree, For future applications with long duration activities, and when approved by the municipality having jurisdiction, K-rail with plywood will be considered to maximize work hours.</p> <p>(3) Agree, Lessons learned from AUR work on the WPLE2 project will be documented for consideration by future projects.</p>	
July 2018 / #7 C1120-MOD-00012 Purple Line Sect. 2 - Oil Abatement at launch box CCC Station	<p>This is a potential CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund. Passed in 1980) remediation that Metro should evaluate and pursue if appropriate to recover funds from the previous property owners. Metro may be entitled to proceed against the previous line of owners and recover damages for the clean-up of the abandoned oil pipelines that are asbestos lined causing the pollution.</p> <p>The OIG recommends that Metro's Engineering Program Management provide information on this matter to allow Metro's Legal department to assist in making this determination.</p>	Agree, Actively coordinating with County Counsel.	

ATTACHMENT B (Oct. 2018)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
Oct 2018 / #1 C0988-MOD-00347.2 Crenshaw - UG1 Center Walkway Lighted Handrail	The OIG recommends: Management should note the steps and procedures in Lessons Learned and follow up during management group discussions, on ways to expedite and coordinate future situations involving evaluation of numerous options to quickly reach a best alternative.	Agree	
Oct 2018 / #2 C1045 MOD-00060 Purple Line Sect. 1 - Accommodate COBH Memorandum of Agreement	The OIG recommends: To start future MOA processes with cities during the planning stages of the Environmental Assessment and identify the concerns/matters relating to the MOA in the Risk Registry.	Agree	
Oct 2018 / #3 C1045 MOD-00061 Purple Line Sect. 1 - Addl. SOE design work for LaBrea Station due to deviation request for bldg settlement	The OIG recommends: This matter concerning dewatering and SOE be added to the Lessons Learned files and the separation of dewatering and SOE be updated in the Metro Design Criteria as a special case.	Agree	
Oct 2018 / #4 C1045 MOD-00058 Purple Line Sect. 1 - LaBrea Additional Instrumentation	The Independent Cost Estimate was not an accurate representation of work stated in the agreed upon scope of work. The OIG recommends: The project manager or knowledgeable person from the project team, establishes a coordination meeting both in the field and office for the estimator to see and hear each detail of new scope of work. Hearing and visualization of the scope changes will assist the estimator in preparing a more accurate Independent Cost Estimate.	Agree, The Estimator will continue to be invited to the Fact Finding with the Contractor as identified in CF-14"	
Oct 2018 / #5 C1120-MOD-00015 Purple Line Sect. 2 - Century City Constellation Station Main Entrance Final Design	The OIG understands the real estate transaction between the developer and Metro is not a signed agreement as of the time of this report. The OIG recommends: Metro management and Metro real estate staff work expeditiously with the developer to finalize cost estimates and complete the real estate transaction to minimize the likelihood of additional costs associated with further modifications to the design of the station entrance.	Agree	