



## Board Report

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### CONSTRUCTION COMMITTEE JANUARY 18, 2024

**SUBJECT: OFFICE OF THE INSPECTOR GENERAL CONSTRUCTION CHANGE ORDER SPOT CHECKS**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE Office of the Inspector General Construction Change Order Spot Check Report for the period September 1 to November 30, 2023.

#### **ISSUE**

On January 25, 2018, the Metro Board directed the Office of the Inspector General ("OIG") to conduct random spot checks on change orders for the construction projects listed in the Quarterly Program Management report to ensure that the CEO Delegation of Authority to approve Construction Change Orders Policy is performing in the manner desired by the Board of Directors.

#### **BACKGROUND**

The OIG's Construction Change Order Spot Check Program ("Spot Checks") focuses on approved change orders and modifications that exceed \$500,000. The four change orders in this report were selected from the Program Management Quarterly Major Project Status, Legistar 2023-0750. The OIG gathers the data, reviews all the change orders over \$500,000 and selects change orders from the major projects. The information for the Spot Checks was collected from the Program Management Information System (PMIS) which is the department's database system. Also, virtual meetings and telephonic interviews were conducted with Metro Program Management, Project Control, and Procurement staff as necessary involved in each change order.

For each Spot Check, we summarize:

- Description of the change order,
- Change order detail,
- Scope of Work,
- Budget,
- Schedule (Time to execute the change order),
- Safety, and

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- Recommendations and Lessons Learned.

Metro's Program Control department has provided informal responses to this report before its issuance and are asked to provide written responses to the recommendations in this OIG Spot Checks Report within 30 days after this Report is issued. Included with this Report is a spreadsheet on the status of responses concerning former OIG Spot Check Report recommendations (ATCH. B).

## **DISCUSSION**

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

#### **Spot Check #1 - Division 20 Portal Widening Turnback Project**

This OIG Spot Check report concerns the Division 20 Portal Widening Turnback Project (Contract C1136 MOD 0109), Lighting Various Civil and Electrical Changes.

#### **Change Order Detail**

See Attachment A Spot Check #1 table.

#### **Summary #1**

**Scope** - This change order is to rectify design conflicts within the Division 20 Yard electrical drawings. Ductbank sizes were increased to provide the required separation between conduit and rebar, making room for the additional conduits. The light fixtures and the light poles were modified to increase the height and diameter of the pole, as well as the size of the concrete base for the pole was enlarged. This increase provides for additional conduits and cables added for the closed-circuit television (CCTV), Wi-fi fixtures, and PA systems (The primary PA function would be to amplify a message to yard workers and trains in the Metro Division 20 yard).

Other changes within this modification remedy conflicts between the original design and newly designed utilities. Multiple drawing revisions are required. The project team states it is possible some of these design changes will be reimbursable costs from the Designer of Record. This change order includes all revisions made to the drawings and the contractor's labor and materials for these changes.

**Budget** - This change order was negotiated as MOD 0109 for the amount of \$1,395,861. The Contractor's proposal was \$1,853,497. The negotiated price is \$457,636 (24.7%) lower than the Contractor's proposal. The ICE was \$216,151. A 1,578,562 credit was erroneously added to the ICE for another RFI. Staff stated that funds for this change order are within the approved Life-of-Project budget. Additionally, there *is* a cost recovery potential from the Designer of Record.

**Schedule** - The CEO Delegation of Authority process was utilized for this change order. The Contractor and Metro agreed on the Scope of Work on August 28, 2023. The modification was awarded on October 4, 2023, and it took staff 27 workdays to complete all signature approvals. Under the prior Board approval method for change orders, assuming an October Board meeting date, it would have taken a minimum of 43 workdays to complete the transaction.

**Safety** - The Division 20 Portal Widening Turnback Project has 926,798 project hours through November 2023; the Recordable Injury Rate was 2.4 (the Bureau of Labor Statistics National

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Average is 2.4) and the Days Away Rate (DART) was 0.22 (the Bureau of Labor Statistics National Average is 1.5).

**Recommendation/Lessons Learned** - The OIG recommends continuing forward with cost recovery from the Designer of Record.

**Spot Check #2 - Airport Metro Connector Transit Station/96th Street Station**

This OIG Spot Check report concerns the Airport Metro Connector (AMC) Transit Station/96th Street Station (Contract C1197, MOD 0027), Low Voltage Cabling.

**Change Order Detail**

See Attachment A Spot Check #2 table.

**Summary #2**

**Scope** - This change order is to install matching fiber optic cabling to connect the AMC to the Crenshaw "K" line. The AMC project is part of the Crenshaw/Los Angeles Airport (CLAX) system. The K line previously had a change order that included the new NFPA-130 standard that calls for a Low Smoke Zero Halogen (LSZH) type fiber optic cable.

The AMC Contract specified fiber optic cables according to code to meet the NFPA-130 rating and the MRDC at that time (2016) but did not specify a LSZH type cable, which is now required to match with the "K" line.

The CLAX rail system cabling was reviewed by Metro Operations - Low Voltage Group and it was determined in order to keep continuity between the projects, the LSZH fiber optic cable should be used to align with the CLAX cabling system.

The AMC project will now not only utilize a LSZH type cable, but will add copper cabling to comply with the latest MRDC requirements. This change order provides for all labor, material, and equipment to install the fiber optic and copper cables for the AMC project.

**Budget** - This change order was negotiated as MOD 0027 for the amount of \$818,691. The Contractor's proposal was \$1,105,789. The negotiated price is \$287,098 (26%) lower than the Contractor's proposal. The ROM is \$708,815, which is \$109,876 (15.5%) lower than the negotiated amount. Staff stated that funds for this change order are within the approved Life-of-Project budget

**Schedule** - The CEO Delegation of Authority process was utilized for this change order. The Contractor and Metro agreed on the Scope of Work on August 31, 2023. The modification was awarded on November 7, 2023, and it took staff 47 workdays to complete all signature approvals. Under the prior Board approval method for change orders, assuming a November Board meeting date, it would have taken a minimum of 61 workdays to complete the transaction.

**Safety** - The Airport Metro Connector Transit Station/96th Street Station has 699,883 project hours through November 2023; the Recordable Injury Rate was 1.71 (the Bureau of Labor Statistics National Average is 2.4) and the Days Away Rate (DART) was 0.29 (the Bureau of Labor Statistics National Average is 1.5).

**Recommendation/Lessons Learned** - The OIG recommends that the project office contact the Airport monorail construction support team and recommend they install the Low Smoke Zero

Halogen (LSZH) type fiber optic cable also.

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

This OIG Spot Check report concerns the Purple Line Extension Section 1 (C1045, CO-45), SCE and LADWP Change to Electrical Rooms and Equipment (Construction with minor design).

### **Change Order Detail**

See Attachment A Spot Check #3 table.

### **Summary #3**

**Scope** - This change order is to make modifications to the electrical rooms at each of the Purple Line Extension 1 Metro stations.

The power for the La Cienega Station is controlled by Southern California Edison (SCE) and the power for the La Brea and Fairfax Stations is controlled by Los Angeles Department of Water and Power (LADWP).

At the La Cienega Station, SCE has requested a 6-foot clearance from the wall to the switchgear equipment. They have also requested drip protectors be installed on the incoming electrical cables so water does not reach the main electrical feeder cables and short out the system. Galvanized steel conduits of various sizes, from street level to interior meter boxes, will also be added to allow the power use to be remotely metered.

At the La Brea Station LADWP has requested a 3-hour fire rated overhead roll-up door in lieu of double doors at the DWP Switch Room. At the Fairfax Station LADWP has requested double doors in lieu of a 3-hour fire rated overhead roll-up door. The surface of the floor must be sloped toward an area drain and connected to the station's main drain. Galvanized conduit is also a requirement by LADWP from street level to multiple switchgear equipment and Train Control Rooms. A Ground Grid System for lighting and receptacles is required and updates are required on many of the technical electrical plans.

The contractor and Metro have agreed upon a negotiated amount for all these changes. However, the contractor returned the Modification unexecuted, stating they have met the requirements already for the small or disadvantaged business participation goals of the contract and do not need to meet new and additional requirements in that regard for this change order. Therefore, CO 45 is being issued as a unilateral change order at the negotiated lump sum of \$702,052 to proceed and to operate the electrical room according to SCE and DWP standards.

**Budget** - This unilateral change order was negotiated as CO 45 for the amount of \$702,052. The Contractor's proposal was \$901,722. The negotiated price is \$199,670 (22.1%) lower than the Contractor's proposal. The ICE is \$480,242, which is \$221,810 (46.2%) lower than the negotiated amount. Staff stated that funds for this change order are within the approved Life-of-Project budget.

**Schedule** - The CEO Delegation of Authority process was utilized for this change order. The Contractor and Metro agreed on the Scope of Work on October 4, 2023. The Unilateral Change Order was awarded on November 14, 2023, and it took staff 29 workdays to complete all signature approvals. Under the prior Board approval method for change orders, assuming a January Board

meeting date, it would have taken a minimum of 77 workdays to complete the transaction.

**Safety** - The Purple Line Extension Section 1 Project has 9,262,172 project hours through October 2023; the Recordable Injury Rate was 0.89 (the Bureau of Labor Statistics National Average is 2.4) and the Days Away Rate (DART) was 0.09 (the Bureau of Labor Statistics National Average is 1.5).

**Recommendation/Lessons Learned** - The OIG recommends staff work closely with SCE and LADWP to confirm their approvals for the requested work and to update any MRDC standard or specification to ensure that Metro corrects any out of date standards in relations to SCE or LADWP.

It is recommended that Management discuss with the Diversity and Economic Development Department if the standard change order language might be revised to indicate a particular SBE/DBE goal for the change order “unless the contractor has already met the SBE/DBE goal for the contract as a whole”.

#### **Spot Check #4 - Purple Line Extension Section 3 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 3 (Stations Contract C1152, CO-91.2), VA Station - Water Supply Loop System at Wilshire/Federal Intersection.

#### **Change Order Detail**

See Attachment A Spot Check #4 table.

#### **Summary #4**

**Scope** - This change order is to procure the material to construct a new water line and connect the systems together in order to support the new Metro Westwood/VA Hospital Station. The existing Los Angeles Department of Water and Power (LADWP) water supply consists of two single public water lines that run along Federal Blvd. and Wilshire Blvd., approximately 1/2 mile away from the future station. These single lines are currently not connected and do not provide enough pressure to serve the new the Westwood/VA Hospital Station.

The current Metro Rail Design Criteria (MRDC) requires that the water supply to the station come from two public utility main lines to design redundancy into the system. In order to utilize existing water lines, an expanded system will be installed to connect the two water lines, and parts of the old pipes will be upsized to 10-inch pipes.

The project team separated the changes into three parts to not impact the construction progress: design, procurement of material, and construction. This change order (CO 91.2) is to procure all pipes, valves, and fittings necessary to complete the work in both the County and the City of LA sides of the project as well as the yard rental cost in accordance with the design and specifications approved under MOD 70.

**Budget** - This Not-to-Exceed change order is for \$1,901,250 for materials for a portion of the work. The Contractor's proposal is \$34.3 million for procurement of materials and construction. There is not an agreed upon price at this time. The ICE is for the procurement of these materials is

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\$3,338,985, which is a difference of \$1,437,735 from what the contractor proposes. The balance of the materials and construction costs will be included in future change orders. Staff stated that funds for this change are within the approved Life-of-Project budget.

**Schedule** - The CEO Delegation of Authority process was utilized for this change order. The Contractor and Metro agreed on the Scope of Work on October 2, 2023. The Not-to-Exceed Change Order was awarded on November 22, 2023, and it took staff 37 workdays to complete all signature approvals. Under the prior Board approval method for change orders, assuming a January Board meeting date, it would have taken a minimum of 79 workdays to complete the transaction.

**Safety** - The Purple Line Extension Section 3 Project has 2,979,353 combined project hours through November 2023; the Recordable Injury Rate was 1.41 (the Bureau of Labor Statistics National Average is 2.4) and the Days Away Rate (DART) was 0.34 (the Bureau of Labor Statistics National Average is 1.5).

**Recommendation/Lessons Learned** - None.

## **FINANCIAL IMPACT**

This report does not have a financial impact on the Agency.

For all of the construction change orders reviewed, Metro states the funds are within the approved budget and will utilize the contingency funds to cover the costs from the Life of Project budget.

Spot Check #1) \$1,395,861 Division 20 Tunnel Widening Turnback Project  
Spot Check #2) \$818,691 Airport Metro Connector Transit Station/96th St. Station  
Spot Check #3) \$702,052 Purple Line Extension Section 1 Project  
Spot Check #4) \$1,901,250 Purple Line Extension Section 3 Project

## **EQUITY PLATFORM**

In the opinion of the OIG, we considered whether these change orders presented any equity related issues on their face. The OIG did not receive any data concerning community impacts. There is a low-income equity-based community near the Veteran's Hospital on Wilshire Blvd. The completion of Extension 3 will benefit veterans by transporting them to and from the Metro Station at the VA Hospital. The OIG observed no obvious disparate impacts created by these change orders on small businesses, low-income persons, or by the performance of the work in a manner that impacted a disadvantaged community beyond what is typical and usual when conducting any construction.

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The Office of Inspector General reviews large change orders over a calendar quarter and makes recommendations as appropriate to support Metro's Strategic Plan Goal #5: Provide responsive, accountable, and trustworthy governance within the Metro organization and CEO goals to exercise fiscal discipline to ensure financial stability. The OIG mission includes reviewing expenditures for

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fraud, waste, and abuse in Metro programs, operations, and resources. For each selected change order reviewed, the OIG evaluates whether there are red flags of fraud, waste, or abuse taking place. We report the details of the significant change orders and make recommendations consistent with the OIG's 2016 and 2023 Construction Best Practices reports, particularly focusing on lessons learned, improving efficiencies, and prudent spending.

### **NEXT STEPS**

The OIG shall provide every quarter, an ongoing spreadsheet of recommendations to Program Control and Program Management. 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 the recommendations with Project Management, and receive updates. The list of OIG recommendations and Metro management responses is an attachment to this OIG report (Attachment B).

### **ATTACHMENTS**

Attachment A - Change Order Details for Spot Checks in this report

Attachment B - OIG Recommendations and Responses Tracking Sheet

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Karen Gorman  
Inspector General

**Spot Check #1 - Division 20 Portal Widening Turnback Project - Contract C1136**  
**Change Order Detail**

<u>Description of Modification or Change Order - MOD-0109</u> Lighting Various Civil and Electrical Changes	
<u>Change Order Dates:</u>	
Scope of Work approved	August 28, 2023
Modification Executed	October 4, 2023
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	27 workdays
Estimate using former Board approval process Agenda for the <b>October Board</b>	43 workdays
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$216,151
Contractor's proposed cost	\$1,853,497
Negotiated amount	\$1,395,861
Percentage of negotiated amount <i>OVER ICE</i>	546%
Amount negotiated less than the Contractor's proposal	\$457,636

**Spot Check #2 - Airport Metro Connector Transit Station/96th Street Station**  
**Contract C1197**

**Change Order Detail**

<u>Description of Modification or Change Order – MOD 0027</u> Low Voltage Cabling	
<u>Change Order Dates:</u>	
Scope of Work approved	August 31, 2023
Modification Executed	November 07, 2023
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process,	47 workdays
Estimate using former Board approval process Agenda for the <b>November Board</b>	61 workdays
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$708,815
Contractor's proposed cost	\$1,105,789
Negotiated amount	\$818,691
Percentage of negotiated amount <i>OVER ICE</i>	\$109,876
Amount negotiated less than the Contractor's proposal	\$287,098



**Spot Check #3 - Purple Line Section 1 Transit Project – Contract C1045****Change Order Detail**

<u>Description of Modification or Change Order – CO-45</u> SCE and LADWP Change to Electrical Rooms and Equipment (Construction with minor design).	
<u>Change Order Dates:</u>	
Scope of Work approved	October 04, 2023
Unilateral Executed	November 14, 2023
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	29 workdays
Estimate using former Board approval process Agenda for the <b>January Board</b>	77 workdays
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$480,242
Contractor's proposed cost	\$901,722
Unilateral amount	\$702,052
Percentage of negotiated amount <i>OVER ICE</i>	46.2%
Amount negotiated less than the Contractor's proposal	199,670

**Spot Check# 4 - Purple Line Section 3 Transit Project – Stations Contract C1152****Change Order Detail**

<u>Description of Modification or Change Order – CO-091.2</u> VA Station – Water Supply Loop System at Wilshire/Federal Intersection	
<u>Change Order Dates:</u>	
Scope of Work approved	October 02, 2023
Not to Exceed (NTE) issued No Modification Executed	November 22, 2023
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	37 workdays
Estimate using former Board approval process Agenda for the <b>January Board</b>	79 workdays
<u>Cost of Change Order</u>	
Metro independent cost estimate (ICE) material only	\$3,338,985
Contractor's proposed cost (combined material & construction)	\$34.3 million
NTE amount	\$1,901,250
Percentage of negotiated amount <i>UNDER ICE</i>	43%
Amount negotiated less than the Contractor's proposal	N/A

## ATTACHMENT B (JANUARY 2024)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
#1 Contract C1136: Division 20 Portal Widening Turnback Project MOD-0109: Lighting Various Civil and Electrical Changes	The OIG recommends continuing forward with cost recovery from the Designer of Record.		
#2 Contract C1197 Airport Metro Connector Transit Station/96th Street Station MOD 0027 - Low Voltage Cabling	The OIG recommends that the project office contacts the Airport monorail construction support team and recommend they install the Low Smoke Zero Halogen (LSZH) type fiber optic cable also.		
#3 Contract C1045 Purple Line Ext. Section 1 CO-0045: SCE and LADWP Change to Electrical Rooms and Equipment (Construction with minor design).	<p>The OIG recommends staff work closely with SCE and LADWP to confirm their approvals for the requested work and to update any MRDC standard or specification to ensure that Metro corrects any out of date standards in relations to SCE or LADWP.</p> <p>It is recommended that Management discuss with the Diversity and Economic Development Department if the standard change order language might be revised to indicate a particular SBE/DBE goal for the change order "unless the contractor has already met the SBE/DBE goal for the contract as a whole".</p>		
#4 Contract C1152: STATIONS Purple Line Ext. Section 3 CO-091.2: Water Supply Loop System at Wilshire & Federal Intersection	None		

## ATTACHMENT B (OCTOBER 2023)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
#1 Contract C1136: Division 20 Portal Widening Turnback Project MOD-0093: Rebar for Contact Rail Encasement	The OIG recommends an updated ICE reflecting the complete work that should have been requested to aid in the negotiations with the contractor for final settlement. Lessons Learned is to evaluate ductbanks in trenches for compliance with applicable city standards and loading requirements for static and dynamic loading demands when installing these. Future design plans should include this as a requirement to check.	None.	
#2 Contract C1151: TUNNELS Purple Line Ext. Section 3 CO-011: Extension of Time and Re-sequencing of Contract Work	The OIG recommends that a determination be made whether the Tunnels contractor can be held liable for any costs incurred from the Station contractor, and vice versa, when delays occur that are the responsibility of a contractor and further study potential project recovery time.	The Metro project team has assessed the cost responsibilities in accordance with the Contract, which does not provide this mechanism. The overall project recovery time is being addressed by implementing the accelerated resequencing schedule.	
#3 Contract C1152: STATIONS Purple Line Ext. Section 3 CO-0109: Extension of Time	Lessons Learned from previous contracts was to state a delay compensation rate. This action was included in this contract (delay compensation rate of \$24,000/day) and eliminates future disagreements and litigation.	The C1152 contract procurement commenced prior to the other contract lessons learned, and the C1152 Contract includes the same Delay Compensation terms as the other contracts.	
#4 Contract C1152: STATIONS Purple Line Ext. Section 3 CO-0109: Acceleration and Re- sequencing of Contract Work	The OIG recommends Metro evaluate these three change orders in order to reduce the time impact to the schedule and increase work acceleration.	Metro minimized the time through acceleration and re-sequencing implemented by COs to both C1151 and C1152 Contracts resulting in acceleration of project substantial completion to January 2027.	

## ATTACHMENT B (JULY 2023)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
July 2023 #1 Contract C1197 Airport Metro Connector MOD-0245: Bulletin 28 – Onsite DWP & Bus Charging	The OIG recommends Metro review all construction plans for satisfaction of the zero-emissions bus fleet objective to add as appropriate electric charging capability.	Confirmed. Project has been in consistent coordination with the Bus Operations Group since 2019. Initial coordination landed on 3 chargers which were included in the original construction bid contract. Additional coordination after release of original contract documents introduced the 2020 Layover Charging Analysis, which has led to four (4) additional chargers and an entire new LADWP Yard being placed into the project for seven (7) bus charging stations total. This final number and layout of bus chargers has been coordinated and confirmed with Metro Bus Operations.	Fall 2024 is the current estimated schedule
#2 Contract C1045 Purple Line Ext. Section 1 CO-0028: Expedite Cutterhead Removal at Tail Track	The lessons learned from this change order is to add to the initial Contract details on the tunnel boring machine interplay between the two projects and the cutterhead removal and scheduling.	Accept	
#3 Contract C1120 Purple Line Ext. Section 2 CO-0179: Provisions for WRS North Secondary Entrance	The OIG recommends continual monitoring of the City of Beverly Hill design plans as they near construction as to avoid any construction impacts, safety concerns and complications at the knockout panel.	The Project agrees with this recommendation and will continue to monitor the City's design. Currently, the City has paused the design to reassess its project budget.	
#4 Tunnel Contract C1151 Purple Line Ext. Section 3 MOD-0024: Claim-04 Gravel Seam Impact BR Tunnel Rings 399-486	The OIG recommends more geotechnical exploration in the development of the Geotechnical Baseline Report as to better identify the correct soil characteristics.	Extensive ground investigations were performed to provide data to support writing of the C1151 Geotechnical Baseline Report (GBR). Additional investigations help, but costly, they are not a panacea, as the alluvial soils of the Los Angeles Basin are heterogeneous (highly variable), so additional boreholes would not identify every change in the ground. The considered baseline using experience as well as borehole information presents the expected changes in the GBR. This enables pricing of risks that are within the control of the Contractor and not to transferring this ground conditions risk to the contractor. Metro Rail Design Criteria (MRDC) Section 5 GBR requirements are being revised <Metro Chief Engineer to confirm> to control use of 2022 ASCE GBR suggested guidelines, including ground investigation requirements, to better define baseline soil characteristics.	September 2023 <Metro Chief Engineer to confirm when the MRDC revisions will be completed>

## ATTACHMENT B (APRIL 2023)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2023 #1 Contract C0980 Regional Connector MOD-0245: 10-Inch Sanitary Sewer Relocation & Upsize existing 8-Inch Sewer to 12- Inch	The OIG recommends to Work with the City where construction is going to occur at the earliest possible time to determine their requirements so that those requirements can be negotiated, included in the bidding documents when released with correct information and requirements, and if the requirement change is caused by Metro's increased utilization of the utility or if it amounts to a betterment for which a sharing/contribution should be made.	Agreed. Projects should do their best to identify utility conflicts ahead of time, but depending on the area and available documentation that is not always possible. This work was impacted by both surrounding facilities and modified work sequencing in the intersection when the project changed the plan after realizing the utility impacts of the terminated AUR contract.	
#2 Contract C1045 Purple Line Ext.Sect.1 CO-0022 Fully Guarded Double Crossovers	The OIG recommends consulting with Operations on the desired headway speeds at the design phase so that these requirements can be added at the earliest possible times. This may be added to the Construction Departments Lessons Learned data base to have fully guarded double crossover rail to keep the minimum headway and protect rail cars to avoid possible derailment in the future in the initial design and specifications and avoid future change orders.	Concur that the Project's required crossover speeds need to be finalized during the design phase and those needed speeds, combined with the available station box crossover length and width, will determine if a fully guarded crossover is required and if it will be required to be included as part of the Project's design.	
#3 Contract C1120 Purple Line Ext.Sect.2 CO-0058:Project and Construction Site Delay Impacts	None		
April 2023 #4 Stations Contract C1152 CO-0090.1 & MOD-0089 Purple Line Extension Section 3 UCLA Station - Additional LADWP Temporary Power Conduits	<p>The OIG recommends:</p> <p>1.For the Project to submit to the Lessons Learned data base, run by the Quality Assurance group, the events regarding coordination with LADWP (or another third-party utility) which required the increase in size of conduits and forced relocation of the ductbanks. By submitting information of these changes to the Lessons Learned data base, future projects will be warned that there might be an update to the electrical requirements applicable to their project.</p> <p>2.The Metro Rail Design Criteria (MRDC) should get periodic updates to include new standards by agencies that review and approve Metro construction so that when future RFPs are issued they comply with those mandatory standards. This will not foreclose Metro seeking a waiver or amendment in the future from that entity on an individual project that might reduce the cost and that will not require a costly change order. Additionally, the MRDC should be updated to encourage early coordination with the third-party utilities to obtain their written agreement to the specifications for a project prior to the RFP issuance.</p>	<p>1. Agreement in sharing the LADWP standards (that were not previously made available to the project by LADWP) to be available for other Metro projects.</p> <p>2. Third Party standards are maintained by the respective Third Parties and provided to Metro during the design phase for each project. Early coordination occurs with Third Parties; however, disclosing the current and applicable standards has at times not been consistent by the Third Parties.</p> <p>Metro is currently working with LADWP to establish a new Utility Cooperative agreement. Agreement terms: to include language where standards will be memorialized at the time of RFP issuance, language accommodating early involvement, language to establish a design freeze, language to define betterments, as well as other terms to minimize risks on projects. Similar agreements are also being pursued with other utility owners.</p> <p>It should also be noted that Metro is closely coordinating with all applicable City's and utility owners from an early engagement standpoint while the Projects are still in the planning phases. The following actions are currently being taken; Establishing and execution of Master agreements and Utility Cooperative Agreements with applicable City's and utility owners prior to the start of Preliminary Engineering and prior to the release of RFP's. Other general actions being taken include establishing more robust potholing and subservice investigations early on and engagement with utility owners early on to identify fatal flaws and pitfalls with alternatives. Pitfalls such as unavailability of power in the area to accommodate TBM's, addressing heavy relocations, identifying schedule challenges with relocations should they be required.</p> <p>The MRDC is a live document and goes through review and updates on a regular basis and usually before award of a major contract. MRDC is currently undergoing a major review and update. We have and will continue to share our MRDC with City of Los Angeles.</p> <p>The MRDC mainly refers to the Green Book for roadway and utility related items which is what almost all the Cities use as well. With the current efforts to engage the third parties prior to the release of the RFPs, we should be able to catch any third party requirement that would be outside the Green Book and MRDC.</p>	

## ATTACHMENT B (January 2023)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
January 2023 #1 Contract C1136 CO-0121.1 Division 20 Portal Widening and Turnback Project - Site Improvements for Garfield Yard to Store New Special Trackwork	As was recommended in the prior quarterly construction change orders spot check report, the OIG recommends the issue of liability for sub-contractors bonds and insurance be resolved, and further change orders follow the standard Metro construction practices and procedures.	Recommendation is noted. VCM is seeking a resolution to the sub-contractor bond and insurance for change orders.	
January 2023 #2 Contract C1045 CO-0015 Purple Line Extension Section 1 Station Artwork Architectural Glass	The OIG recommends that a final scope of work and agreed upon total costs be determined as soon as possible.	Metro acknowledges the OIG's recommendations and will work toward resolution of scope & cost disagreements involving the Architectural Art Glass. Negotiations are pending the contractors confirmation on available dates for these negotiations.  To avoid these potential impacts for future projects, WPLE 1 is working with the Metro Art department on a lessons learned session to help implement a change in the development of the artwork scope in future contracts. This will impact the contractual and procurement requirements for the artwork (timing, line item allowances, contingency) so that there is less cost discrepancy for the artwork between the time overall Construction Contract is developed and when the artwork is procured.	
January 2023 #3 Contract C1120 CO-0023.2 Purple Line Extension Section 2 Relocated UPE Plenum at Westfield Mall	None.		
January 2023 #4 Tunnels Contract C1151 MOD-0007.2 Purple Line Extension Section 3 Revisions to Southern California Edison (SCE) Power Connection	The OIG recommends that in all future contracts where it is possible to consolidate planned multiple street utility construction works, that a single trench be dug and both temporary and permanent power conduits be installed in the same trench at the same time as to reduce costs and minimize impacts to the neighborhood.  The OIG further recommends, that when the Metro management authorize work and exercise their authority under this Delegation Policy, there should be a maximum period after that action that it must be reported in the quarterly program management report, and not wait 3 years to negotiate the modification and report an action to the Board.	PM and V/CM have committed to working together as necessary to analyze the issue and seek resolution. As part of that process, the two departments will work with the Office of the IG to close out the action.	

## ATTACHMENT B (October 2022)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
October 2022 #1 Contract C0980 MOD-0239 Regional Connector Transit Corridor Project - Additional AT&T Duct bank Installations at 2nd Street – Construction	<p>The OIG acknowledges the unknown underground site condition of numerous conflicting underground utilities, but the existing AT&amp;T communication vaults that were both too small and in poor condition were known prior to the beginning of contract. It should be noted that AT&amp;T did not initially provide design or informational requests for new vaults and now Metro must create a change order and pay the contractor for an oversight on the utility's behalf.</p> <p>The OIG recommends, as a Lesson Learned, that in project planning for Metro to ask the utility company to acknowledgement that all vaults, duct banks, and utility lines conform to current specifications and are in satisfactory condition. It is prudent for Metro to be aware of the utilities condition before entering into a construction contract.</p>	Agreed. The AT&T infrastructure was not in a condition that could be hung in place safely resulting in the construction of a new system. It would be best to understand the condition of all utilities to the best possible extent prior to start of construction but not always possible.	
October 2022 #2 Contract C1136 CO-0017.4/MOD 0037 Division 20 Portal Widening and Turnback Project - 1st Street Bridge Continuous Monitoring	As was recommended in the prior quarterly construction change orders spot check report, the OIG recommends the issue of liability for sub-contractors claims and bonds be resolved so that it is not necessary to use NTE change order methods, and further change orders follow the standard Metro construction practices and procedures.	Agreed	
October 2022 #3 Contract C1197 MOD-009 Airport Metro Connector Transit Station Bulletin 16 – Light Rail Transit (LRT) Fence Updates	The OIG recommends Metro consider updating Metro's design criteria and necessary specifications to reflect current 2022 California Seismic standards in the MRDC and future requests for proposals to build better and be prepared for future earthquakes. This may be considered a lesson learned.	The OIG recommendation may not completely reflect the issue. The contract MOD for bulletin 16th was the result of design change during the construction. In reviewing of the contractor's submittal, two things became apparent. First, the picket members were very heavy and disproportionate to the size of the horizontal members carrying them which created a structural concern. The second issue was a quality/constructability concern as the design shown on the contract drawings and the shop drawings required each picket to be field welded in place. All welds are required by the original Contract Documents to be ground smooth. The design change addressed both issues. For the structural issue, the thickness of the 4" o.c. pickets were reduced although the depth of the horizontal members was increased. For the constructability issue, the pickets were panelized so that they could be shop fabricated and craned into place. The panels were attached to the horizontals with bolts rather than welds, speeding up the installation time which would reduce crane use and reduce field welding and grinding. None of these issues were related to Metro's design criteria or technical spec.	
October 2022 #4 Contract C1045 MOD 0159 Purple Line Ext. Sect. 1 Track Level Access Openings at Wilshire/Western, Wilshire/La Brea and Wilshire/ La Cienega	None		

ATTACHMENT B (August 2022)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
August 2022 #1 Contract C1136 MOD-0029 Division 20 Portal Widening and Turnback Project - Time Extension for MOD-20 Addl Scope and Addl Requirements for DIV 20	The OIG recommends, that all future construction contracts include a capped amount per day to pay the contractor when Metro stops critical path construction work or contractor incurs significant delays due to unforeseen causes.	Agreed	
August 2022 #2 Contract C1136 CO-0011.3 Division 20 Portal Widening and Turnback Project - 1st Street Viaduct - Crack and Spall Repair	1) The OIG recommends that the scope of work should be agreed upon as soon as possible.  2) The OIG recommends the issue of liability for sub-contractors claims and bonds be resolved, and further change orders follow the standard Metro construction practices and procedures. We further recommend that the language concerning bonds and sub-contractors in the Metro standard forms for modification/change orders be moved to the Metro standard contract terms and conditions.	Agreed	
August 2022 #3 Contract C1120 CO-0041 Purple Line Ext. Sect. 2 Tunneling Suspension Associated with Abandonment of Oil Wells	The OIG recommends Metro consider implementing Unilateral change orders when the contractor is claiming compensation for delays greater than the contract cap permits.	Agreed	
August 2022 #4 Stations Contract C1152 CO-0035.1 Purple Line Ext. Sect. 3 VA Steam Tunnel Size Increase and Redundancy	Now that the cost schedule proposal (CSP) has been received, the OIG recommends that the Contractor's CSP be thoroughly evaluated to finalize the change order to enter into an agreed upon modification to replace working on a NTE basis as soon as possible.	The Contractor has split the CSP into two parts. Part 1 is the heavy civil work. Part 2 is the Mechanical / Electrical / Plumbing work.  Metro has finalized their analysis of Part 1 of the Contractor's CSP of the change and should finalize a value with the contractor imminently.  Metro has performed an initial round of fact finding and analysis of Part 2 and is engaging in further meetings with the Contractor to resolve the differences.	



## ATTACHMENT B (April 2022)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2022 #1 Contract C0988 MOD-0551 Crenshaw/LAX Transit Corridor Project Landscape Changes – Park Mesa	none		
April 2022 #2 Contract C0980 MOD-00230 Regional Connector - Transit Corridor Project Alameda Emergency Stair Exit (ES2)	The OIG recommends in-house plan review be as fully completed as possible before Metro groups sign off on the design plans.	The project team agrees with OIG and does have both project staff and Metro staff provide reviews for all plans. This change originated with the change in FLS requirements within the Wye which was identified after award of contract.	
April 2022 #3 Contract C1045 MOD-0144 Purple Line Extension Sect. 1 Construction LaCienega Station During Mining	none		
April 2022 #4 Contract C1045 MOD-0147 Purple Line Extension Sect. 1 Vapor Extraction Street Restoration	none		

## ATTACHMENT B (January 2022)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
January 2022 #1 Contract C0980 MOD-00218 Regional Connector - Transit Corridor Project Metro Eastside Access Improvement Project "Segment 2" Esplanade and other improvements along Alameda Street – Construction Only	none		
January 2022 #2 Contract C1136 CO-00020.2 Division 20 Portal Widening and Turnback Project Differing Site Conditions - Connections to Existing Ductbanks and Unknown Utilities Impacts	The OIG recommends that Metro continue to track the time and materials used by the contractor while negotiating the Contractor's cost and schedule proposal and to bring this change order to a final award amount.	Final award amount for CO-00020.2 has been reached. Negotiations with the Contractor (TPC) consisted of multiple workshops to reach agreement on rates of production, activity duration, labor, materials and equipment required, complexity of the work. Since agreement on these items was challenging, Metro made a business decision to start with the contractor's estimate and deduct items that were not allowed in the contract. A final settlement for CO 20 was reached at \$43.3M, approximately \$10M under the contractor's original estimate. A time delay for changes related to CO 20 in the amount of \$6M, or 6 months at \$1M per month, has also been agreed upon for these changes.	Substantial Completion and commissioning of the turnback track is scheduled for late Fall of 2024 to coincide with Revenue Operations of PLE1. Final project completion could be as much as a year later.
January 2022 #3 Contract C1120 CO-00034 Purple Line Extension Sect. 2 Century City Constellation Station Storm Drain and Sanitary Sewer Relocation Construction of MOD 70 Design	none		
January 2022 #4 Contract C1152 MOD-0007 Purple Line Extension Sect. 3 Replacement Parking at VA Hospital Lot 42 During Station Construction	The OIG recommends that the Contractor be instructed to timely submit cost proposals, enter negotiations, and sign agreements before work is performed so Metro can process the work order close in time to work being performed, not only to pay the contractor but to help ensure the sub-contractors are paid timely.	No comments	

## ATTACHMENT B (October 2021)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
October 2021 #1 Contract C0980 MOD-00206 Regional Connector - Transit Corridor Project Add Wye Junction Fan Plant - Construction	Since the Board approved of a budget for this item in 2015 at \$12 mil., the cost has increased to a total of \$21,186,000 (a 77% increase). This Fan System cost has been reported in pieces, as parts were completed, but not as a whole to indicate the cost creep overall over time. We recommend that when LOP information is being periodically provided to the Board that it includes a summary, per project, to show historical cost information over the life of each project. That summary should indicate if they anticipate completing the project within the current LOP and how many LOP increases have occurred so far.	The initial board item in 2015 for the fan plant was an ROM at the time and had yet to be fully designed and estimated for a complete change. As the project progressed the design and went into construction, the team worked through the negotiations for the full scope of the fan plant. As of now, there has only been one LOP increase and the project has anticipated that the project would fall within the LOP to date. Project team will work with Program Management leadership on how information is reported and follow Program Management's direction for any changes on how LOP is reported.	
October 2021 #2 Contract C1136 MOD-00020 Division 20 Portal Widening and Turnback Project Additional Scope and Additional Requirements for the Division 20 Portal Widening and Turnback Project	The OIG recommends: 1. When Metro needs to expedite a project, include Operations in the initial planning phase early, prior to and during design so they can provide constant input during the design. 2. Explore with Operations if they need additional resources to dedicate full time to assist in the intense design, planning, and implementation pre-opening phases of Metro's rail infrastructure/capital projects, or other ways in which Program Management and Operations can work together to approach these projects to maximize cooperation, communication, and assistance. 3. Have the Legal Department review our designer contracts to determine if they are adequate to hold contractors accountable, enforceable, and require use of bonds and proof of adequate insurance to cover errors of this type and resulting in cost of this magnitude.	1. Project alignments were revised during planning phase to accommodate additional storage capacity and technical requirements required for turnback headways. As design progressed, Operations participated in frequent design review meetings. 2. Additional Operations resources during design phases would be beneficial and help produce more comprehensive reviews. 3. Project team is coordinating with County Counsel on review of designer contracts.	
October 2021 #3 Contract C1045 MOD-0 137 Purple Line Extension Sect. 1 Increased Well Maintenance at Western Shaft due to Groundwater Chemistry Impacts	see #4 for recommendation		
October 2021 #4 Contract C1045 MOD-00138 Purple Line Extension Sect. 1 Additional Dewatering Treatment and Discharge Impacts at Western	The OIG recommends that all dewatering change orders for this project should be evaluated or audited. The Geotechnical Baseline Report issued by the consultant to Metro was not accurate for the soil type, ground water, and hydrogen sulfide levels for each segment of Purple Line Section 1 and the consultant might be held liable for some of the costs of differing site conditions not correctly determined by the consultant. Unplanned dewatering site conditions also cost Metro \$15.8 mil. at the La Brea Station and \$16.8 mil. at the La Cienega Station in 2020 and 2019 respectively.	The dewatering MODs for WPLE-1 have been already been evaluated as part of the CN process. In order to minimize the potential for future DSCs on other Projects, consideration should be undertaken to expend more resources during Preliminary Engineering (PE) to more accurately project the actual conditions encountered. The costs of additional PE should be weighed against the increased base bid prices, or future Change Order costs if no additional PE efforts are undertaken. Valid additional costs to Metro, via the base bid or Change Order, will be incurred either way. It is premature at this time to hold the PE Consultant liable for all or a portion of the costs of this MOD.	

## ATTACHMENT B (July 2021)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
July 2021 #1 Contract C0980 MOD-00196 Regional Connector - Transit Corridor Project Construct the 2nd & Broadway Station Overbuild Load Transfer System	none		
July 2021 #2 Contract C0980 MOD-00202 Regional Connector - Transit Corridor Project Revise Communications Radio System Scope of Work- Construction	The OIG recommends that after installation of the new radio system that interface with Los Angeles fire, police and sheriff departments be tested and verified for their signal strength and connectivity.	Agreed, all radio systems will be fully tested and verified for signal strength and connectivity	
July 2021 #3 Contract C1045 MOD-0131 Purple Line Extension Sect. 1 Wilshire/Fairfax Station Subgrade Differing Site Conditions	The OIG recommends that after a DRB issues its recommendations that favor the contractor, Metro act swiftly to move forward with a change notice to the contractor and not delay payment to the contractor, less any credits owed to Metro. We understand in this particular case the contractor assigned a lower priority for processing this change notice over many others.	In this case there was no requirement for Metro to issue a Change Notice due to the DRB ruling. The Contractor (STS) chose to delay providing Metro with a cost proposal associated with the DRB ruling due to other higher Contractor priorities. After the eventual receipt of the DRB ruling proposal from the Contractor, the costs were negotiated, and a MOD issued (w/o any Change Notice being created). It should be noted that whether a Change Notice is issued or not, the Contractor has the right to submit a proposal whenever and for whatever they perceive as changed work (via a Request for Change). Section 1 has and continues to issue Change Notices in a timely manner when Metro recognizes merited changed scope of work.	
July 2021 #4 Contract C1152 MOD-0014 Purple Line Extension Sect. 3 Revisions to Westwood/UCLA Station Entrances – Design Only	none		

## ATTACHMENT B (April 2021)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2021 #1 Contract C0988 MOD-00253.3 Crenshaw/LAX Transit Corridor Project Landscape Changes – Park Mesa	The OIG recommends that we identify quickly the differences in cost between the new scope of work from the contract and finalize plans and the cost with the prime Contractor.	-Agree and recommendation will be incorporated into C/LAX Project Lessons Learned. -C0988 Contract Team has started to identify the differences in cost between the new scope of work from the contract. Additionally, new scope of work will only be processed if it is a safety related change.	
April 2021 #2 Contract C0980 MOD-00188 Regional Connector - Transit Corridor Project 2nd/Hope Pedestrian Bridge - Construction	no recommendation concerning this change order		
April 2021 #3 Contract C1120 MOD-0095 Purple Line Extension Sect. 2 Station and Bicycle Parking, Architectural Features Design and Construction Changes at Wilshire/Rodeo & Century City Constellation Stations	The OIG recommends that Purple Line, Section 3, be immediately evaluated to determine if the MRDC architectural updates and the Metro bike hub system changes have been incorporated into the Purple Line Extension Section 3 Transit project. This will ensure consistency, compliance with the MRDC, and cost assessments to be determined and negotiated at the earliest possible time.	Purple Line Sect #2 response: Noted.  Purple Line Sect #3 response: The WPLE3 contract included the latest MRDC requirements for bike hubs at both stations at time of bid, which minimized changes to the WPLE3 contract.	
April 2021 #4 Contract C1120 MOD-0095 0100 Purple Line Extension Sect. 2 Century City Constellation Main Entrance - Construction	The large cost disparities between the ICE and a Contactor's proposal on high dollar transactions should continue to prompt further technical and commercial evaluation in order to arrive at a fair and reasonable price. The OIG recommends that the ICE be evaluated by the Estimating department to further evaluate the significant differences between the Contractor's proposal and their independent estimate utilizing both technical and commercial evaluation.	ESTIMATING response: Metro Estimating will review the ICE and CSP and work with V/CM and Project Management staff to evaluate the differences.  Purple Line Sect #2 response: Project staff will continue to involve Estimating staff in scoping discussions to ensure that they have a full understanding of the scope of work for all Change Work.	

## ATTACHMENT B (January 2021)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
January 2021 #1 Contract C0980 MOD-00184 Regional Connector - Transit Corridor Project Expanded Duco Yard and Temple Street Sanitary Sewer Work	The OIG recommends that future contracts with the designer should include verification of sewers identified as abandoned, and to document the verification on the construction drawings if the cost of such verification is minor and the consequences of reliance on erroneous information is significant. Additionally, the OIG recommends that the as-built record drawings at the City be updated.	Planning and engineering need to rely on as-built records for much of their work. However, where key utilities are involved, it is best that their condition and status be validated during the preliminary design phase. This investigation is often expensive and not easily performed without site investigation. The engineer must use his/her judgement to determine which utilities require physical investigation and inspection. Project budget contingency should be set aside for utility discrepancies that may be discovered during construction. Agree that even minor utilities, improperly documented, can have a significant cost and/or schedule impact to a project and should be investigated early, to the extent possible. The City is the best entity to ensure that underground maps are complete.	No further action from Regional Connector as project design has already been completed. However, efforts are continually made to perform potholing investigations for verification prior to construction so as to avoid impacts to schedule should discrepancies be found.
January 2021 #2 Contract C1045 MOD-00121 Purple Line Extension Sect. 1 Alternate Soil Disposal	<p>California laws, including Senate Bill 1383 of 2016 set mandatory targets to reduce waste going to landfills. Metro developed a recycling policy (GEN 51) in response to State recycling goals and to support Metro's sustainability goals. The Conditional Use Permit for the Chiquita Canyon Landfill was set to expire and the Landfill operator sought a new permit, which was granted in July, 2017. The new permit requirements limits the rate of tonnage of dumping allowed, hours of operation, and the county set other multiple requirements that Chiquita Canyon must adhere. The OIG recommends:</p> <p>1. Construction waste disposal options are utilized to minimize project costs and to help achieve the reduction goal of a 75% reduction in waste by 2025;</p> <p>2. Project teams work very closely with the Metro Sustainability Department, State, Los Angeles County, other regulators, landfill owners, and contractor's personnel, to determine options consistent with GEN 51 for the reuse of soils and construction debris in the current or other construction sites;</p> <p>3. When a Board member has a matter come before them at their respective municipalities that can potentially effect Metro projects, if they would give notice to Metro of the matter, Metro can determine how its projects will be impacted and possibly address the matter with the municipality or 3rd party prior to the matter being approved including possibly negotiate that the terms of a permit not allow price increases or other impacts on Metro projects where contractual commitments have previously been negotiated in reliance on previous conditions;</p> <p>4. LA Metro evaluate how other LA Metro projects for which a contract was entered may be impacted by the newly imposed landfill mitigations and higher fees.</p>	<p>Metro acknowledges the recommendations listed and provides the following responses below:</p> <p>1.Per contract, the project must divert/recycle 75% of waste. Purple Line Section 1 has diverted 100% of excavated clean material on the project to be reused as beneficial cover or fill at offsite projects.</p> <p>2.The Purple Line Section 1 project has a member of the Metro Environmental Compliance and Sustainability Department (ECSD) on staff. This team member updates project management and contractors on opportunities to reduce waste impacts as they become available across the county.</p> <p>3.Acknowledged</p> <p>4.ECSD management will review awarded projects and available facilities and make recommendations on where to make changes to disposal practices as needed.</p>	
January 2021 #3 Contract C1120 MOD-0091 Purple Line Extension Sect. 2 Increase UPS Spare Capacity at Wilshire Rodeo and Century City Constellation Stations	The OIG recommends that immediately prior to sending out an RFP, Metro should insure that the most current MRDC is used.	In this case, the updated MRDC Section 8 was added to the RFP near the end of the solicitation period, but conflicts with other contract documents were not identified because of the late issuance of the update. Staff agree that all future changes to the MRDC should be coordinated by Metro Engineering and issued before future RFPs are released.	

## ATTACHMENT B (January 2021)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
January 2021 #4 Contract C1152 CO-0005.1 Purple Line Extension Sect. 3 VA Hospital Replacement Parking for Lot 42 During Station Construction Phase	The OIG recommends that the Project office and Real Estate continue to work closely and aggressively to come to a full resolution with the VA hospital and the contractor on the modified costs.	Agree	

## ATTACHMENT B (October 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
October 2020 #1 Contract C0988 MOD-00485 Crenshaw/LAX Transit Corridor Project Case 5 Bedding Required by LABOE	<p>Since the 'Green book' states the support and materials for sewer and storm drain pipe are to be encased in concrete, the OIG recommends that the LA Metro rail standard drawing US-014, be updated to reflect the required City standard and Metro may negotiate with the LABOE to adopt a different standard for specific projects as warranted.</p> <p>We further recommend, as discussed in previous reports, that Metro study the large discrepancies between the Metro ICE and the award amounts to determine if there is a method by which those discrepancies can be narrowed. This recommendation applies to many of the Spot Checks reviewed in this Report, and is based also on a Metro audit completed by the Management Audit Services Department that noted significant discrepancies in these amounts to be a frequent occurrence.</p>	Recommendation will be incorporated into C/LAX project Lessons Learned.	
October 2020 #2 Contract C1045 MOD-00111 Purple Line Extension Sect. 1 Fairfax Paleo Zone Modified Limits	The OIG recommends future GBR's include a more comprehensive underground site assessment to determine a better approximation of the marine and paleo geological layers. In this instance, a robust underground assessment would have avoided the costly change order. However, the additional excavation costs would have been included in the higher base bid value.	Recommendation will be incorporated into PLE1 project Lessons Learned.	
October 2020 #3 Contract C1120 MOD-00080 Purple Line Extension Sect. 2 Demobilization and Remobilization due to COBH Moratorium	<p>The MOA between Metro and COBH imposes additional restrictions on Metro and adds costly change orders to the original contract.</p> <p>The OIG recommends Metro adopts a standardized MOA for use in negotiations with all jurisdictions within Los Angeles County and utilizes this agreement for every construction project going forward in each respective jurisdiction and that budget estimates for projects should be revised as necessary to take into consideration MOAs entered into.</p>	Agreed.	
October 2020 #4 Contract C1151 MOD-0004.1 Purple Line Extension Sect. 3 Increase Ground Water Treatment Plant Capacity at Tail Track Exit Shaft	<p>It is the OIG's understanding that water pump tests and water quality tests were performed, but they were performed at the original location, the Army Reserve site, which is no longer the correct shaft location. Now the site is at the Veterans Administration property. A change in location can greatly affect both the levels and quality of the groundwater, thus increasing the revised dewatering process.</p> <p>It is critical that the Real Estate Department be included at the earliest possible time in negotiating the property requirements for a project. Having to change location plans after a contract award can have significant scheduling and expense consequences.</p>	The location of the Tail Track Exit Shaft had to move from an environmentally cleared site occupied by the Army reserve site to the US Department of Veterans Affairs West Los Angeles campus when it became evident that the US Army Reserve was unwilling to allow the use of this location for either construction laydown or a permanent Metro Facility. Metro Real Estate and Project staff successfully negotiated with the Department of Veterans Affairs to enable relocation of this construction laydown area and permanent facility to their West Los Angeles Campus.	



## ATTACHMENT B (October 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
October 2020 #5 Contract C1151 MOD-0005 Purple Line Extension Sect. 3 Addition of Sepulveda Staging Area to Compensate VA Site Reduction	<p>The Purple Line Extension 3 was a 'next decade project' and was accelerated to be completed in the next 5 years with many project processes that had to be compressed to meet the schedule. We also understand that the real estate acquisition process is contingent on the funding being in place.</p> <p>The real estate acquisition process and all other real estate arrangements must be negotiated as early as possible and negotiate those property rights strategically to ensure we have our real estate needs met at the earliest and least expensive manner possible.</p>	<p>The space available for staging at the Tail Track Exit Shaft on the Department of Veterans Affairs Campus is limited; being located in a nationally designated historic district. Metro Real Estate and Project Staff have and are working closely together, in a timely manner to ensure real estate acquisitions are coordinated with project need dates to minimize overall risk and cost to Metro in delivering the project.</p>	

## ATTACHMENT B (August 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
August 2020 #1 Contract C1045 MOD-00095 Purple Line Extension Sect. 1 Transit Project: Phase 5 Golder EOR Mitigation Plan Implementation	<p>The OIG is in agreement with applying extra safety precautions that the Metro project office has put forward. Where conditions are relatively unique to the tunneling industry, more prescriptive specifications for means and methods in these zones is warranted.</p> <p>Since the Contractor, Golder Gas, performed the entire mitigation plan including removal and mitigation, the OIG recommends that LA Metro ensure that Golder Gas is held contractually, jointly, and severally liability for any future incident involving gas in the area where the soil vapor extraction wells and the monitoring wells are installed and abandoned. This is the common practice in environmental cases where a "consulting expert" is hired to monitor and mitigate a hazardous substance issue.</p>	The Section 1 Project will review the indemnification text issued to Golder that was required by STS in order for Golder to proceed with the work. This indemnification will determine what Golder's future obligations are.	
August 2020 #2 Contract C1045 MOD-00106 Purple Line Extension Sect. 1 Center Muck Shaft at La Brea (ECI-03)	The OIG recognizes that this type of shaft at the La Brea station can serve a legitimate purpose and that the OIG recommends that use of such methods should be considered and contemplated in future project specifications and a reserve for same should be made when the savings in time, expense, and safety outweigh the cost of such a shaft.	OIG comment received will be included in the lessons learned.	
August 2020 #3 Contract C1045 MOD-00107 Purple Line Extension Sect. 1 Center Muck Shaft at La Brea (ECI-03)	The OIG is concerned that a bid of 40% over an ICE, when you are in a noncompetitive circumstance, may not be a good faith offer or bad communication on specifications. Such behaviors can have the effect of damaging a relationship during an early phase of construction and create distrust that can harm project collaboration in the future. We appreciate a contractor's willingness to proceed on work even without a commitment from Metro in some cases for the payment for that work, but recommend the contractor exercise greater care in formulating its proposals and that Metro be clear and fair but diligent and firm in its ICE calculations and negotiations stance.	OIG comment received. Contractor will be reminded to have appropriate personell attend the fact finding and provide timely complete CSP in order to resolve issues in a collaborative manner.	

## ATTACHMENT B (August 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
August 2020 #4 Contract C1120 MOD-00073 Purple Line Extension Sect. 2 Century City Constellation Station Track work Extension	<p>1. The OIG is concerned that a bid is almost 3 times over the ICE, when you are in a noncompetitive circumstance, may not be a good faith offer or bad communication on specifications. Such behaviors can have the effect of damaging a relationship during an early phase of construction and create distrust that can harm project collaboration in the future. We appreciate a contractor's willingness to proceed on work even without a commitment from Metro in some cases for the payment for that work, but recommend the contractor exercise greater care in formulating its proposals and that Metro be clear and fair but diligent and firm in its ICE calculations and negotiations stance.</p> <p>LA Metro is having to absorb the cost of track extension change orders that arose due to errors and omissions on the part of the engineering consultant WSP. The OIG was informed that WSP miscalculated the braking distance in the initial project definition drawings that were supplied to the construction contractor. Metro will have to cover this expense with the contractor, but should look to the design engineering firm for reimbursement to Metro of the costs it would not have had to otherwise incur less amounts saved or mitigations.</p> <p>2. The OIG additionally recommends that Metro review the current Metro Rail Design Criteria (MRDC) compared to the newly released FRA track design standards for accommodating a train entering a stub-end to determine if any modification or update to our MRDC is warranted.</p>	<p>1. If a Cost and Schedule Proposal (CSP) is significantly higher than the Independent Cost Estimate (ICE), Metro's Contract Administrator and the Project Team engages in further meetings with the Contractor to clarify scope in order to determine the source of the discrepancies between the two estimates. These meetings are professional in nature, and often result in favorable resolution on a price that is somewhere between the ICE and the revised CSP. This process ultimately leads to the execution of mutually agreed upon Contract Modifications, and avoids costly disputes related to Changed Work.</p> <p>Related to the cost of the change, if WSP had calculated the braking distance correctly, the Contractor's proposal price would have included the cost for the trackwork that was recently added by Contract Modification. As a result, the awarded contract value would have been slightly higher, and the project contingency slightly lower at Notice to Proceed. The only additional cost that this error by WSP may have created is a theoretical premium for paying for added trackwork in a non-competitive environment, which would be difficult to prove. It should be noted that the difference between the executed Contract Modification price and the ICE was about 17%, or \$171,000. As a result, it is likely that it would be difficult for Metro to determine if it paid a non-competitive premium. That said, the recommendation will be discussed with senior executive management in VCM and Program Management to determine if any action against WSP will take place.</p> <p>2. This recommendation will be referred to Metro Engineering for consideration.</p>	

## ATTACHMENT B (April 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2020 #1 C0980 MOD-00161 Regional Connector - Procure Medium Attenuation Fasteners in Lieu of Standard Direct Fixation Rail Fasteners for the 2nd & Broadway Crossover	<p>Regional Connector project is very unique because of all the existing historical buildings above the construction. Noise pollution has become a major concern for urban transit dwellers and authorities. The rule of thumb is a 10decibel technical increase in noise is heard by the human ear as "doubled" in loudness. When constructing underground for tunnels and stations the Environmental Impact Report must remember to always mitigate sound and vibration to protect the potentially impacted fragile surface buildings.</p> <p>The OIG recommends this scenario be written into the Lessons Learned file for future similar situations when constructing under historic or special case existing buildings.</p>	<p>The Regional Connector Project has extensive vibration mitigation elements included in the design where the operating guidway passes nearby sensitive receptors including recording studios, music venues and hotels. The project also requires that noise and vibration monitoring be performed during construction near sensitive facilities.</p> <p>The lesson learned and responded to in the referenced Contract Modification, is that information gathered during construction monitoring should be used to adjust the designed mitigations where field conditions indicate they are necessary.</p>	Completed with issuance of subject contract modification. Equipment to be installed 3rd quarter 2020
April 2020 #2 C1045 MOD-00098 Purple Line Sect. 1 Additional Air Scrubbers at Fairfax Station	<p>The OIG recommends further questioning to Southern California AQMD to determine why on a previous Metro construction contract (at the same location) they set the emission limit at 50 parts per billion, and the published standards are set at an emission limit of 30 parts per billion. On this contract the limits are set at 15 parts per billion. The inconsistency of the emissions limit should be taken under consideration and request in writing from AQMD why the standard emission limit could not be applied to this permit.</p> <p>The OIG further recommends in future construction pre-bid meetings, disclose to all potential contractors that the AQMD permit values necessary for the technical specification, "Temporary Construction Ventilation for Scrubber Units" has varied in the recent past and to verify the amount with an AQMD representative. If possible a commitment needs to be obtained from AQMD by the contractor at the time of submission of a bid amount, that the standard is firm for a defined period.</p>	<p>The emissions limit for equipment was set at the time the Contractor submitted the specific ventilation plan to SCAQMD for permit.</p> <p>The SCAQMD does not have a set standard for hydrogen sulfide, but the states standard is 30 parts per billion. SCAQMD develops their requirements based on specific site conditions. Our EIR states Metro and its contractors will set and maintain work equipment and standards to meet SCAQMD standards.</p> <p>A letter will be sent to SCAQMD for clarification on how SCAQMD can consistently apply emissions regulations for hydrogen sulfide for Metro's future projects.</p>	
April 2020 #3 C1120 MOD-00064 Purple Line Sect. 2 Geotechnical Instrumentation Installation and Monitoring AT&T and Beverly Hills High School	The OIG recommends that the independent estimator visit the field location concerning where the work for this change order will occur. The construction manager should walk the estimator through the scope of the changes for which they are developing a cost estimate. The independent estimate was a 126.7% lower than the negotiated price. Where such significant discrepancies in price estimates exist, either the estimator for Metro, or the estimator for the contractor needs to re-evaluate the scope of the change order.	Agreed. Moving forward the estimating group will endeavor to work even more closely with available subject matter experts to assure a thorough understanding of scope and of the engineering and construction processes involved.	
April 2020 #4 C1151 MOD-00001 Purple Line Sect. 3 Revise the Tail Track Exit Shaft Location from US Army Reserv to Veterans Affairs Property	<p>If the Army Reserve location had been negotiated prior to the contract award, these amounts might have been included in the original bid, although the price then and now might have been the same for this different location.</p> <p>The OIG recommends Real estate arrangements should be negotiated as early as possible.</p>	Metro agrees with the OIG's comment regarding the price of the change. The cost would roughly be the same whether it was negotiated prior to contract award or after award. We agree that real estate arrangements (agreements) should be negotiated as early as possible. The project initiated contact with the property owner for the Exit Shaft property acquisition after the project was identified to be accelerated from the original 2035 Revenue Service Date. Metro did engage in talks with the VA early in the Project but obtaining VA approval to access their property has not been without a few challenges that Metro was able to overcome.	

## ATTACHMENT B (January 2020)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
Jan 2020 / #1 C0988-MOD-00437 Crenshaw/LAX UG1 (H2S) Ventilation Fans - Construction	none		
January 2020 #2 C0980 MOD-00154 Regional Connector - Acoustical Treatments for Areas Not on Finish Schedule	none		
January 2020 #3 C1045 MOD-00089 Purple Line Sect. 1 Development and On Site Validation of the Selected Gas Mitigation Option for M13	<p>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.</p> <p>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.</p>	PLE1 Final M13 Mitigation Report will be forwarded to Metro Geotechnical Department for their review and further processing.	
January 2020 #4 C1045 MOD-00090 Purple Line Sect. 1 Oil Well Investigation In Lieu of TBM Probe Ahead	<p>The implementation of the drilling and magnetometer survey from Section 1 has been incorporated into Purple Line Extension Section 2 and 3 contracts.</p> <p>The OIG recommends that the procedures implemented for locating tanks, pipes and other abandoned waste be added to the Lessons Learned database.</p> <p>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.</p>	<p>PLE1 implemented methodologies for locating known tanks, pipes and other abandoned waste will be added to the Lessons Learned database. PLE1 notes that the hazardous waste removal is relatively small/negligible compared with the overall volume of soil removed. After reviewing the potential ROI on pursuing legal actions against any potential responsible parties for cost recovery the current determination based on the available data is that it is not worth the effort and cost at this time. However, <b>it was decided that Metro County Counsel would provide a preliminary review on the issue and it would be revisited in the future.</b></p>	

## ATTACHMENT B (Oct 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
Oct. 2019 / #1 C0988-MOD-00432 Crenshaw/LAX - Update Station Customer Signage, Construction	<p>The Metro RDC was updated with 2010 ADA Standards for Accessible Design later, and after the release and execution of the Crenshaw contract. When new standards are issued all request for proposal specifications pending after that date should be reviewed for correction before release when possible.</p> <p>For request for proposals released between 2010 and 2014,(when we changed the specification and Metro RDC) the OIG recommends immediate evaluation to determine if they were also awarded based on the old pre 2010 standards to determine whether their projects might be similarly impacted.</p>	Agreed	
Oct. 2019 / #3 C1078 MOD-00083 Purple Line Sect. 1 - La Cienega Dewatering DSC	<p>The Geotechnical Baseline Report stated that the ground conditions would permit drainage of water. The OIG questions if the consultant who developed the Geotechnical Baseline Report properly interpreted the boring data. Investigation is warranted to determine if the report accurately reflects the data.</p> <p>The OIG recommends recovering part of the cost, if the investigation demonstrates that the report was erroneous. The OIG further recommends future Geotechnical Baseline Reports should include interpretation of the borings to determine within a 95% confidence level the nature of the underlying soil and the location of the water table.</p>	Project reviewed the GBR and actual field data and concludes this is a DSC. There is no error and omission on the part of the consultant.	
Oct. 2019 / #4 C1078 MOD-00085 Purple Line Sect. 1 - Geotechnical Instrumentation: Revise Geotechnical Contingency Plan and Reporting	<p>The OIG recommends if Metro believes this change order is a betterment, then Metro should complete the new "Potential Notice of Betterment" form, submit a copy to LABOE and retain a copy for negotiations at the end of the contract if not sooner. This means Metro would move forward at LABOE expense. Going forward, this "Potential Notice of Betterment" form should be completed when applicable and submitted to the LABOE prior to agreeing to move forward, thus allowing the LABOE to make the decision if the betterment is truly necessary.</p>	Project concurs and will develop a Potential Notice of Betterment for LABOE.	

## ATTACHMENT B (July 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
July 2019 / #1 C0988-MOD-00426 Crenshaw/LAX - Irrigation Water Meters, Park Mesa Medians	The OIG recommends this disagreement between the City of Los Angeles Public Works and LA Metro about the responsibility for the changes should be discussed and resolved.	This item is tied to the tree permit that included adding pavement in areas beyond the project limits, increasing the number of replacement of trees for those cut down, adding landscaped medians (which require the subject irrigation). All of the items above were discussed with City and the two parties agreed to an MOU for which the City would be paid 3.5 million to pave the street (work valued at 7.0 million plus) and that this agreement resolved the other issues mentioned above with Metro installing at its cost (medians, trees...etc)	
July 2019 / #2 C0980 MOD-00141.2 Regional Connector - Impacts to Support of Excavation: Decking, Utilities and Temporary Drainage	The OIG recognizes the age of the buildings at the site and errors of definitive drawings.  The OIG recommends to research on the front end, even drawings to confirm accuracy, to preclude issuing an expensive change order after construction has commenced.	There are definitely some lessons to be applied to future projects based on Regional Connector's experience with utilities. The most significant finding is the need to conduct utility condition assessments in areas where cut-and-cover construction is planned. This could be accomplished by a combination of potholing, inspection of maintenance holes/vaults and research with the utility owner. The documented age of the utility and the presence of large masonry vaults/maintenance holes, should serve as guides in the determination of whether facilities should be replaced.	No further action by Regional Connector
July 2019 / #3 C1078 MOD-00025 Purple Line Sect. 1 - Revised Low Impact Development (LID)	The OIG recommends that all upcoming sites where known industrial and railway activity occurred, that a full investigation of soils occurs and is stated in the Environmental Impact Statement. Performing such investigation early may result in additional early costs, but these circumstances will then become known costs of the project and may be prepared with less delay and less costs than waiting.	Site investigation and soil remediation was completed prior to the construction of the site. However, the original plan for the DTSC directed site cleanup was the previous owners responsibility. Due to the nature in how this property was eventually acquired in order to meet the construction schedule (imminent domain) there was no time to cleanup the groundwater issues prior to LID designs. and assess any data gaps that may have existed. Orders from the DTSC to continue remediation efforts of the groundwater, beyond Metro's planned clean up phase, pushed the environmental effort beyond a clear end date which in effect conflicted with the LID design since it would be predicted to pushing an identified contaminated groundwater plume during rain events once completed. In the future, if Metro can anticipate action to be required from outside entities (that can take significant time to develop and execute) beyond the initial environmental phase, it will request contractor to change the design prior to 60% completion to avoid major changes	
July 2019 / #4 MC1120 MOD-00037 Purple Line Sect. 2 - Revision to Avg Depth of Seismic Borings along Wilshire Blvd. on Tunnel Reach 5	The OIG commends the Engineering department for taking supplementary steps to determine additional the location of seismic fault line in relation to the track alignment for improved safety and long term structural integrity.	Noted	N/A

ATTACHMENT B (April 2019)			
OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2019 / #1 C0988 MOD-00402 Crenshaw/LAX - Provisional Payments - Pending Dispute Resolution Fire Rated Cable (multiple) Change Orders	<p>1. The OIG recommends that Metro expeditiously and fairly resolve the litigation with the Contractor.</p> <p>2. The OIG further recommends that a review team monitor the billings of the Contractor to validate the efficacy of the incentive program as this may become a tool for improving future performance on other projects.</p>	<p>1. Agree, different mechanisms to achieve this being considered.</p> <p>2. Agree, already being implemented.</p>	<p>1. December 2019</p> <p>2. Closed</p>
April 2019 / #3 C1045 MOD-00071 Purple Line Sect. 1 - Golder Gas Investigation and Report	<p>The Independent Cost Estimate was not an accurate representation of work stated in the agreed upon scope of work.</p> <p>The OIG recommends that Metro continue to follow through on the plan for mitigation of gas migration utilizing the Contractor's new report of procedures where known high concentrations of hydrogen sulfide and methane gases exist.</p>	<p>Metro is following thru on the plan. Installation of wells for field testing began in 3/19. The mitigation options draft memo, based on the field testing observations, was received 6/25. Design of a selected gas migration mitigation option, i.e. increasing the number of soil vapor extraction wells, is ongoing.</p>	<p>Completion of mitigation recommendation and implementation, is tentatively scheduled for December 31, 2019.</p>
April 2019 / #4 C1045 MOD-00072 Purple Line Sect. 1 - Reach 3 Additional Gas Testing and Assessment	<p>The OIG recommends:</p> <p>1. In following the new Contractor's report, Work Plan for Exploratory Program to Assess Mitigations for Potential Gas Migration,</p> <p>a. Record all steps that were successful and those that need modification.</p> <p>b. Have information formatted and add to Technical Specifications.</p> <p>c. Have steps and procedures added into Lessons Learned</p> <p>d. Incorporate these finding and procedures into any future bid process where potential gas migration and tunnel boring may occur.</p> <p>2. Note under Lessons Learned where known high concentrations of hydrogen sulfide and methane gases exist, prior study and geotechnical investigation be completed and included in the bid documents.</p>	<p>1. Metro has the following comments:</p> <p>a. Plan to record this. Modifications to the testing program in field to be made as appropriate</p> <p>b. This is likely a unique area. A Full report on the program and recommendations is included in the work. Pending the outcome, Technical Specifications would be developed for the Project</p> <p>c. Agree, also see b above</p> <p>d. We note that investigation is in progress now to study gas migrations. Pending outcome, future bid process would include results, including incorporation in Geotechnical Investigation and Technical Requirements</p> <p>2. Agree. In this instance the area was studied and fully identified/described in the bid documents. Also see 'b' above.</p>	<p>12/31/2019</p>



ATTACHMENT B (April 2019)			
OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
April 2019 / #5 C1045 MOD-00074 Purple Line Sect. 1 - Additional Instrumentation (Project Wide) as requested by LABOE and STS EOR	The OIG recommends that instrumentation bought for this project become property of LA Metro, so that future projects (remainder of the Purple Line Extension 2 and 3) will have instrumentation on hand to immediately install when Support of Excavation for those projects begin.	<p>Metro has made several attempts in the past for Purple Line and Regional to salvage and reuse geotechnical instrumentation. However, passing the instruments between projects offer a number of challenges. These include the following:</p> <ul style="list-style-type: none"><li>• The Design life of instrumentation equipment is limited given the temporary nature of the work.</li><li>• Given the diminished value of the used instrumentation equipment it is often abandoned in place. An effort to salvage the equipment may result in increased costs.</li><li>• The means, methods and performance of shoring, instrumentation and monitoring are left with the Design-builder. Dictating the used instruments would interfere with the selection of means and methods and make Metro responsible for warranting the equipment for the life of the project.</li><li>• The technology associated with the equipment continues to evolve. Metro may then be obligating the contractor to use obsolete equipment.</li><li>• Timing and turnover of instrumentation. The contract schedules for Regional, Crenshaw and Purple Line Sections 1, 2 and 3 all overlap. As such, the instrumentation for each project is needed at the same time.</li><li>• Metro would need to inventory and temporary store the instrumentation equipment. There is a risk that Metro may be storing the equipment permanently or Metro may need to make efforts for their disposal.</li></ul>	Closed

## ATTACHMENT B (Jan. 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
Jan 2019 / #1 C0988 MOD 00335.1 Crenshaw - Cable Transmission System Update - Construction	"The OIG recommends: The schedule <b>negotiations</b> with the <b>contractor</b> be expeditiously concluded so the schedule impacts are minimized."	Not sure what this means. CO's were issued prior to MOD that obligated the contract to commence work - this mitigated schedule impacts. Response could stay as-is I suppose (with edits) as it is relatively benign in nature	Closed
Jan 2019 / #3 C1120 MOD-00026 Purple Line Sect. 2 - Santa Monica Blvd. Bus Layover Design and Construction Changes	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.	Because the OIG's recommendation is for actions to be taken prior to the release of RFPs, it has been passed on to Metro Engineering for consideration in revising Policy DSGN01 DB for future projects.	Metro Engineering (Androush Danielians/ Eduardo Cervantes) have been notified. They provided the below comment: A process will be set in place that will be included in future Specs and contract language for the PE Consultant. The process will require the consultant to submit plans to all applicable agencies (including Metro). Upon receiving comments, the Consultant shall address each comment as to the disposition in a matrix/spreadsheet. The spreadsheet / matrix will then be submitted to each of the commenting agencies. That agency will then be requested to accept the project disposition (via an initial). If the agency is not in acceptance of the disposition, the Consultant via the Project shall work with each agency until that comment disposition is accepted. The final signed off matrix shall then be included in the RFP for the DB (contractor) to complete the path forward based on the agreed upon disposition.

## 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 noted - this was a unique and complex issue needing evaluation and testing of different option prior to selection and moving forward. Process used now accounts for this.	Closed - Will incorporate the suggested comment into lessons learned to be used in future projects.
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	Per the PM's comments Planning needs to close this item.  Planning (Manjeet Ranu) was informed on 04/05/19 and is supposed to provide comments by the end of April 2019.
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	Closed - Per the PM's comments Project responded to the concern, but Gateway Engineering needs to close this issue.  Engineering (Androush Danielians) has been notified and responded that the related MRDC has been previously revised.
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"	Closed - Staff is being invited as stated in the response.
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	Closed - Ongoing Process.

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	1- Closed - was updated in next project, Regional Connector.  2- Closed
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	Closed
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	Closed
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.	Closed - Discussed with Project Managers in the meeting held on Nov 13, 2018.

ATTACHMENT B (July 2018)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
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) The use of traffic control measures is governed by the municipality in which work is occurring. Both K-rail with plywood and chain link fence with screening are already contractually allowed, and considered appropriate installations in the proper application. 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) Work hours in streets are governed by the municipality in which the work is occurring (and often time by the City Councilmember representing the district where the work is being performed). 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) Lessons learned from AUR work on the WPLE2 project will be documented for consideration by future projects. The WPLE3 project considered the use of k-rail barriers for AUR work, but because of the significant traffic during daytime hours, AUR work has been limited to nighttime hours by LADOT (municipal agency having jurisdiction), with a requirement to fully restore travel lanes during daytime hours. A k-rail barrier system cannot be feasibly moved on the street at the start of a shift and removed at the end. Therefore, it was not practical to utilize k-rail barriers.</p>	Lessons learned from AUR work on the WPLE2 project will be documented for consideration by future projects by the end of FY19 .

ATTACHMENT B (July 2018)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
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>	<p>The Project is actively coordinating with Kathleen Dougherty from County counsel to determine if Superfund legislation provisions can be used to pursue cost reimbursement for the extra work.</p>	<p>The Project is actively coordinating with Kathleen Dougherty from County counsel to determine if Superfund legislation provisions can be used to pursue cost reimbursement for the extra work.</p>

ATTACHMENT B (May 2018)

OIG REPORT/ SPOT CHECK # MOD # Description	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
May 2018 / #1 C0988-MOD-00345 Crenshaw - Oil Water Separator at UG Stations	<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>	<p>the primary driver to the change is that the Metro criteria does not stipulate the percentage level of contaminants that should be expected to design the OWS system. Since none was provided then the contractor assumed the minimum and therefore designed a system that did not require OWS. since the percentage of contaminants were of the level to need and OWS then this triggered there was a need for a redesign...etc.</p>	<p>Closed - Will incorporate the suggested comments into lessons learned to be used in future projects.</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>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>	<p>Agree, but please note that as with all major capital construction projects, every effort is made to exercise due diligence and to ensure consistent and comprehensive investigations in identifying underground issues by use of Phase I ESAs, Phase II ESA (if recommended) 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. An exhaustive investigation is not cost or schedule prohibitive, however further effort on identifying the existing Oil and Gas Wells through DOGGR may be warranted. Also, to note: 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.</p>	<p>Closed - Lessons learned are to apply more resources to upfront identification of potential unforeseen underground issues such as DOGGR wells, USTS identified in the initial Phase I ad II, GBR and EDR Reports.</p>

## ATTACHMENT B (May 2018)

OIG REPORT/ SPOT CHECK # MOD # Description	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
May 2018 / #4 C1120-MOD-00002 Purple Sect 2 - Worksite Traffic Control for AUR	<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>	<p><b>Point of clarification:</b> 'Worksite Traffic Control for AUR' was <b>CO No. 2</b>, not MOD-002. The unilateral change order was later negotiated and issued as MOD 10 .</p> <p><b>Response:</b> consistent with OIG's " Capital Project Construction Management Best Practices Study", the WPLE Project established and utilized a single point of contact for advanced utility relocations outside of the scope of the DB contracts. This group is lead by Metro Third Party coordinators, engineering resources, and construction management consultants.</p> <p>Program Management agrees with the recommendations in the Best Practices Study, however this MOD was specific to a project decision on how to handle the implementation of traffic control for two third party utilities that the Project needed to work simultaneously to mitigate a delay caused by the Beverly Hills City Council delaying the start of construction.</p> <p>This Modification to the C-1120 contract is not extra work to the Project. This work was budgeted and originally expected to be performed by the individual AUR companies and reimbursed by the Project. The Project moved this work into the C1120 contract, by Modification, in order to expedite the AUR construction work which was successful. This work was necessary regardless of which entity performed it. Compensating the DB for this work eliminated compensation to the AUR companies for this work, and allowed SCE and the Gas Company to work simultaneously.</p>	<p>Closed</p> <p>Creation of Clearinghouse was already completed for WPLE2. Future projects will address this matter during Preliminary Engineering.</p> <p>Lessons learned from AUR work on the WPLE2 project will be documented for consideration by future projects by the end of FY19 .</p>



# Office Of Inspector General Construction Change Order Spot Check Report

Presented By  
**Karen Gorman**  
Inspector General

January 2024

Construction Committee

Los Angeles County Metropolitan Transportation Authority



# Spot Checks 1 & 2

File #  
2023-0725

## 1 – Division 20 Portal Widening Turnback Project :

Lighting Various Civil and Electrical Changes

***Recommendation:***

Award: **\$1,395,861**

The OIG recommends continuing forward with cost recovery from the Designer of Record.

## 2 - Airport Metro Connector Transit Station/96th Street Station

Low Voltage Cabling

***Recommendation:***

Award: **\$818,691**

The OIG recommends that the project office contact the Airport monorail construction support team and recommend they install the Low Smoke Zero Halogen type fiber optic cable also.

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# Spot Check 3 & 4

File #  
2023-0725

## 3 - Purple Line Extension Sect. 1

SCE and LADWP Change to Electrical Rooms and Equipment

***Recommendation:***

**Award: \$702,052 Unilateral**

The OIG recommends staff work closely with SCE and LADWP to confirm their approvals for the requested work and to update any MRDC standard or specification to ensure that Metro corrects any out of date standards in relations to SCE or LADWP.

It is recommended that Management discuss with the Diversity and Economic Development Department if the standard change order language might be revised to indicate a particular SBE/DBE goal for the change order “unless the contractor has already met the SBE/DBE goal for the contract as a whole”.

## 4 - Purple Line Extension Sect. 3

VA Station – Water Supply Loop System at Wilshire/Federal Intersection

***NO Recommendation***

**Award: \$1,901,250 NTE**

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# Spot Check Schedule Comparison

File #  
2023-0725

## Schedule Comparison: New Delegated Authority process vs. former Board Approval

PROJECT	Title of Change Order	Time Saved Executed date to Board Mtg.	NEW Delegated Process final SOW to Executed date	Former Board Approval Process
Division 20 Portal Widening Turnback Project	Lighting Various Civil & Electrical Changes	16	27	43
AIRPORT METRO CONNECTOR STATION	Low Voltage Cabling	14	47	61
WESTSIDE PURPLE LINE EXT. SECT 1	SCE & LADWP Change to Electrical Rooms & Equipment	48	29	77
WESTSIDE PURPLE LINE EXT. SECT 3	VA Station – Water Supply Loop System at Wilshire/Federal Intersection	42	37	79

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