



**Metro**

Los Angeles County  
Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213.922.2000 Tel  
metro.net

**APRIL 7, 2020**

**TO: BOARD OF DIRECTORS**

**THROUGH: KAREN GORMAN  
INSPECTOR GENERAL**

**FROM: SUZANNA STERLING  
CONSTRUCTION SPECIALIST INVESTIGATOR**

**SUBJECT: CHANGE ORDER/MODIFICATION CONSTRUCTION  
SPOT CHECKS**

### **ISSUE**

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

### **BACKGROUND OR DISCUSSION**

The OIG’s Spot Check Program (“Spot Checks”) focuses on approved Change Orders and Modifications that exceed \$1,000,000. The four Change Orders in this report were selected from the April 2020 Program Management Major Project Status Report (File # 2020-0197), covering December 1, 2019 to February 28, 2020. The information for the Spot Checks was collected from the Program Management Information System (PMIS) which is the department’s database system. Also, in-person and telephonic interviews were conducted with Metro Program Management, Project Control, and Procurement staff from each individual project office.

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

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

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

Each Spot Check summarizes the following areas:

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

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

## **DISCUSSION**

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

#### **A. Spot Check #1 - Regional Connector Transit Project**

This OIG Spot Check report concerns the Regional Connector Transit Corridor Project (Contract C0980 MOD-00154), Procure Medium Attenuation Fasteners in lieu of Standard Direct Fixation Rail Fasteners for the 2nd and Broadway Crossover.

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

See Attachment A Spot Check #1 chart.

#### **Summary #1**

**Scope of Work** – This Modification is to procure Medium Attenuation track fasteners to reduce vibration and noise for the 2<sup>nd</sup> and Broadway crossover in lieu of the standard fasteners. Direct fixation fasteners have been used over the past 40 years and have become the standard way to securely hold the rail down to a concrete tie. Standard direct fasteners are listed in the contract for Regional Connector Transit Project. However the standard fastener is not intended to reduce sound and vibration.

During construction of the underground crossover cavern at 2nd and Broadway, temporary walls were erected to support the sides of the cavern. When the temporary walls were removed, Metro found that the construction noise and

vibration could be felt by residents in the historic (circa 1910) Higgins Building located adjacent to the cavern.

The Metro Project Team determined that it would proactively mitigate potential noise and vibration during future rail operations in the 2<sup>nd</sup> and Broadway track crossover by installing the superior noise/vibration Medium Attenuation fasteners in this crossover section of the alignment for a total of 356-feet. It was critical that Metro place the order quickly to ensure that the project schedule would not be impacted by the modification. This Modification covers only the cost of procurement of the upgrade to Medium Attenuation Fasteners.

**Budget** - This Modification was negotiated and the award amount is \$954,601. The contractor's proposal was \$954,601 and the ICE was \$967,597. The award amount was equal to the contractor's proposal because it is only for the parts. The negotiated amount is \$12,996, or 1.34%, below the ICE. Funds for this change are within the approved the Life-of-Project Budget. No labor cost differential has been discussed.

**Schedule** - The new delegation process was utilized for this Modification. The preliminary scope of work for procurement of the new fasteners occurred on May 28, 2019 and the signed change order was approved on June 18, 2019. This change order was completed in 16 work-days in order to place the order. The Modification was executed later on January 30, 2020. Using the July 29, 2019 V/CM submission date, this Change Order would have gone to the September Board (no August Board meeting). The scenario of utilizing the Board for approvals on change orders would have been 84 work-days later than the 16 actual work-days incurred utilizing the delegated authority.

**Recommendation** – 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 10-decibel 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.

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.

**B. Spot Check #2 – Purple Line Extension Section 1 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 1 Transit Project (Contract C1045 MOD-00098), Additional Air Scrubbers at Fairfax Station.

## **Facts of Change Order**

See Attachment A Spot Check #2 chart.

### **Summary #2**

**Scope of Work** – This change order is for the addition of 2 each air scrubbers at Fairfax Station. An air scrubber is a device that removes particles, gases, and chemicals from the air within a given area. Air scrubbers will make airborne particulate matter control more effective than equipping an employee with a face mask and decreases the potential for bronchial conditions.

Southern California Air Quality Management District (AQMD) has requirements for regulating, monitoring and reporting air quality during construction. At the time the construction contract was issued, the technical specifications for Temporary Construction Ventilation states, “All scrubber units employed shall have current AQMD Permits.”

AQMD has issued a permit for the scrubber emissions not to exceed 15 parts per billion of hydrogen Sulfide (H<sub>2</sub>S) Air quality standards for underground construction in Southern California was published at 30 parts per billion. The published amount of 30 parts per billion is what the contractor used to bid the job years ago, but now AQMD is requiring a more stringent air quality of 15 parts per billion. Therefore the contractor is forced to add 2 additional air scrubbers to reach that level and comply with the AQMD new standard and what the permit issued requires for that construction site.

**Budget** - This Modification was negotiated and the award amount is \$976,744. The contractor’s proposal was \$1,163,617 and the ICE was \$867,018. The award amount was \$186,873, or 16.06%, under the contractor’s proposal. The negotiated amount was \$109,726, or 12.66%, greater than the ICE. Staff has stated that funds for this change are within the approved the Life-of-Project budget, with no potential for cost recovery.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on January 17, 2020. The Modification was executed on February 28, 2020, and was completed in 31 work-days. Using the February 3, 2020 V/CM submission date, this Change Order would have gone to the March Board, and trailed to the April Board meeting. The scenario of utilizing the Board for approvals on change orders would have been 50 work-days (to the March Board) later than the 31 actual work-days incurred utilizing the delegated authority.

**Recommendation** – 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.

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.

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

This OIG Spot Check report concerns the Purple Line Extension Section 2 Transit Project (Contract C1120 MOD-00064), Geotechnical Instrumentation Installation and Monitoring AT&T and Beverly Hills High School.

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

See Attachment A Spot Check #3 chart.

#### **Summary #3**

**Scope of Work** – This Modification is a proactive precaution to install level measurement instruments at the AT&T Building above the tunnel bore holes. The instruments will provide continuous real-time monitoring of the excavation within 10-ft of the tunnel boring machine to detect any ground relaxation. This process will enable the contractor to detect and respond in real time by adjusting and fine tuning the excavation parameters to mitigate settlement if it were to occur.

**Budget** - This Modification was negotiated and the award amount is \$904,044. The contractor's proposal was \$1,125,874 and the ICE was \$398,781. The award amount was \$221,830, or 19.7%, under the contractor's proposal. The negotiated amount was \$505,263, or 126.7%, over the ICE. Staff has stated that funds for this change are within the approved the Life-of-Project budget, and there is no cost recovery potential.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on November 1, 2019. The Modification was executed on December 17, 2019, and was completed in 32 work-days. Using the December 2, 2019 V/CM submission date, this Change Order would have gone to the January Board. The scenario of utilizing the Board for approvals on change orders would have been 57 work-days later than the 32 actual work-days incurred utilizing the delegated authority.

**Recommendation** – 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.

#### **D. Spot Check #4 – Purple Line Extension Section 3 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 3 Transit Project (Contract C1151 MOD-00001), Revise the Tail Track Exit Shaft Location from US Army Reserve to Veterans Affairs Property.

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

See Attachment A Spot Check #4 chart.

#### **Summary #4**

**Scope of Work** – This Modification is for the engineering, labor, materials, equipment and supervision to relocate the Tail Track Exit Shaft from the original staging area at U.S. Army Reserve to the western Veterans Administration (VA) site property. The Department of the Army declined Metro’s request for an easement at the U.S. Army Reserve location for the Tail Track Exit Shaft. The Army requested the VA to accommodate the proposed facilities on the VA property. Metro notified the VA of the alternatives for the location. The location was established on the western edge of the VA property (in the historical area) provided that the only permanent Metro presence within the VA Historic District is limited. Items that were not in the original contract (because of the changed location) are: site preparation which includes historical tree removal/relocation, sub grade prep changes, grading, drainage and underground utilities (previously above ground) power conduits now need to share in one trench. Additionally, taller sound walls, fences, gates, change to tunneling length, logistic changes due to reduced and more restricted site layout, shared access road which slows construction, parking for workers, and associated time impacts of an additional six months.

**Budget** - This Modification was negotiated and the award amount is \$11,217,006. The contractor’s proposal was \$15,982,846 and the ICE was \$10,337,040. The award amount was \$4,765,840, or 29.82%, under the contractor’s proposal. The negotiated amount was \$879,966, or 8.51%, over the ICE. Staff has stated that funds for this change are within the approved the Life-of-Project budget, with no cost recovery.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on December 20, 2019. The Modification was executed on January 24, 2020, and was completed in 24 work-days. Using the December 30, 2019 V/CM submission date, this Change Order would have gone to the February Board. The scenario of utilizing the Board for approvals on change orders would have been 49 work-days later instead of the 24 actual work-days incurred utilizing the delegated authority.

**Recommendation** – 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.

The OIG recommends Real estate arrangements should be negotiated as early as possible.

## **FINANCIAL IMPACT**

Report will have no Financial Impact to the agency.

### **Impact to Budget**

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

- Spot Check #1) \$954,601 Regional Connector Transit Project
- Spot Check #2) \$976,744 Purple Line Purple Line Extension Section 1
- Spot Check #3) \$904,004 Purple Line Purple Line Extension Section 2
- Spot Check #4) \$11,217,006 Purple Line Purple Line Extension Section 3

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

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

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

## **NEXT STEPS**

The OIG shall provide every quarter, an on-going spread sheet of recommendations to Program Control. Program Control and Program Management agrees to respond to the recommendations of the OIG within 30 days. The OIG continues to meet periodically to discuss reports, recommendations, and the status of implementation of recommendations, with

Project Management and receive updates. The list of OIG recommendations and Metro management responses, is an attachment to this OIG report.

## **ATTACHMENTS**

Attachment A – Charts for Spot Checks

Attachment B – Tracking Sheet of OIG Recommendations and Responses

Attachment C – Power Point for April 2020 Construction Spot Checks

Prepared by: Prepared by: Suzanna Sterling,  
Construction Specialist Investigator, (213) 244-7368

Reviewed by: Karen Gorman, Inspector General, (213) 244-7337



Karen Gorman  
Inspector General

**Spot Check #1 - Regional Connector Transit Project - Contract C0980****Facts of Change Order**

|  |                  |
|--|------------------|
| <u>Description of Modification MOD-00161</u><br>Procure Medium Attenuation Fasteners in Lieu of Standard Direct Fixation Rail Fasteners for the 2 <sup>nd</sup> & Broadway Crossover |                  |
| <u>Change Order Dates:</u>   |                  |
| Scope of Work Approved   | May 28, 2019     |
| Change Order Approved  | June 18, 2019    |
| Modification Executed  | January 30, 2020 |
| <u>Elapsed Time for Executing Change Order:</u>  |                  |
| Using new delegated process  | 16 work days     |
| Estimate using former Board approval process<br>Agenda for the September Board (no Aug Board)  | 84 work days     |
| <u>Cost of Change Order:</u>   |                  |
| Metro independent cost estimate (ICE)  | \$967,597        |
| Contractor's proposed cost   | \$954,601        |
| Negotiated amount  | \$954,601        |
| Negotiated amount over ICE   | \$12,996         |
| Percentage of negotiated amount below ICE  | 1.34%            |
| Amount negotiated less than Contractor's proposal  | 0                |

**Spot Check #2 – Purple Line Extension Section 1 Transit Project - Contract C1045****Facts of Change Order**

|   |                   |
|---|-------------------|
| <u>Description of Modification MOD-00098</u><br>Additional Air Scrubbers at Fairfax Station |                   |
| <u>Change Order Dates:</u>  |                   |
| Scope of Work approved  | January 17, 2020  |
| Modification Executed   | February 28, 2020 |
| <u>Elapsed Time for Executing Change Order:</u>   |                   |
| Using new delegated process   | 31 work days      |
| Estimate using former Board approval process<br>Agenda for the March Board                  | 50 work days      |
| <u>Cost of Change Order:</u>  |                   |
| Metro independent cost estimate (ICE)   | \$867,018         |
| Contractor's proposed cost  | \$1,163,617       |
| Negotiated amount   | \$976,744         |
| Percentage of negotiated amount over ICE  | 12.66%            |
| Amount negotiated less than the Contractor's proposal                                       | \$186,873         |

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

|   |                   |
|---|-------------------|
| <u>Description of Modification MOD-00064</u><br>Geotechnical Instrumentation Installation and Monitoring AT&T and Beverly Hills High School |                   |
| <u>Change Order Dates:</u>  |                   |
| Scope of Work approved  | November 01, 2019 |
| Modification Executed   | December 17, 2019 |
| <u>Elapsed Time for Executing Change Order:</u>   |                   |
| Using new delegated process   | 32 work days      |
| Estimate using former Board approval process<br>Agenda for the January Board  | 57 work days      |
| <u>Cost of Change Order:</u>  |                   |
| Metro independent cost estimate (ICE)   | \$398,781         |
| Contractor's proposed cost  | \$1,125,874       |
| Negotiated amount   | \$904,044         |
| Percentage of negotiated amount over ICE  | 126.7%            |
| Amount negotiated under Contractor's proposal   | \$221,830         |

**Spot Check# 4 - Purple Line Section 3 Transit Project - Contract C1151****Facts of Change Order**

|   |                   |
|---|-------------------|
| <u>Description of Modification - MOD-00001</u><br>Revise the Tail Track Exit Shaft Location from US Army Reserve to Veterans Affairs Property |                   |
| <u>Change Order Dates:</u>  |                   |
| Scope of Work approved  | December 20, 2019 |
| Modification Executed   | January 24, 2020  |
| <u>Elapsed Time for Executing Change Order:</u>   |                   |
| Using new delegated process   | 24 work days      |
| Estimate using former Board approval process<br>Agenda for the February Board   | 49 work days      |
| <u>Cost of Modification:</u>  |                   |
| Metro independent cost estimate (ICE)   | \$10,337,040      |
| Contractor's proposed cost  | \$15,982,846      |
| Negotiated amount   | \$11,217,006      |
| Percentage of negotiated amount over ICE  | 8.51%             |
| Amount negotiated under the Contractor's proposal   | \$4,765,840       |

ATTACHMENT B (April 2020)

| OIG REPORT/<br>SPOT CHECK #<br>MOD #   | RECOMMENDATIONS   | MANAGEMENT'S RESPONSES | COMPLETION DATE |
|--|---|------------------------|-----------------|
| <p>April 2020 #1<br/>C0980 MOD-00161<br/>Regional Connector -<br/>Procure Medium<br/>Attenuation Fasteners in<br/>Lieu of Standard Direct<br/>Fixation Rail Fasteners for<br/>the 2nd &amp; Broadway<br/>Crossover</p> | <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>April 2020 #2<br/>C1045 MOD-00098<br/>Purple Line Sect. 1<br/>Additional Air Scrubbers at<br/>Fairfax Station</p>   | <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>April 2020 #3<br/>C1120 MOD-00064<br/>Purple Line Sect. 2<br/>Geotechnical<br/>Instrumentation<br/>Installation and<br/>Monitoring AT&amp;T and<br/>Beverly Hills High School</p>                                   | <p>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.</p>  |                        |                 |
| <p>April 2020 #4<br/>C1151 MOD-00001<br/>Purple Line Sect. 3<br/>Revise the Tail Track Exit<br/>Shaft Location from US<br/>Army Reserv to Veterans<br/>Affairs Property</p>  | <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>  |                        |                 |

ATTACHMENT B (January 2020)

| OIG REPORT/<br>SPOT CHECK #<br>MOD #   | RECOMMENDATIONS  | MANAGEMENT'S RESPONSES  | COMPLETION DATE |
|--|--|---|-----------------|
| Jan 2020 / #1<br>C0988-MOD-00437<br>Crenshaw/LAX<br>UG1 (H2S) Ventilation<br>Fans - Construction   | none   |   |                 |
| January 2020 #2<br>C0980 MOD-00154<br>Regional Connector -<br>Acoustical Treatments for<br>Areas Not on Finish<br>Schedule                             | none   |   |                 |
| January 2020 #3<br>C1045 MOD-00089<br>Purple Line Sect. 1<br>Development and On Site<br>Validation of the Selected<br>Gas Mitigation Option for<br>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>  | <p>PLE1 Final M13 Mitigation Report will be forwarded to Metro Geotechnical Department for their review and further processing.</p>   |                 |
| January 2020 #4<br>C1045 MOD-00090<br>Purple Line Sect. 1<br>Oil Well Investigation In<br>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> |                 |

# Office Of Inspector General Construction Change Order Spot Check Report

Presented By  
**Karen Gorman**  
Inspector General

# Spot Check Costs

## Summary of Selected Change Order Costs

Four OIG spot checks of Change Orders / Modifications reported

### **1 Change Order for Regional Connector**

- ❖ Procure Medium Attenuation Fasteners in Lieu of Standard Direct Fixation Rail Fasteners for the 2<sup>nd</sup> & Broadway Crossover = \$954,601

### **2 Change Order Purple Line Section 1**

- ❖ Additional Air Scrubbers at Fairfax Station = \$976,744

### **3 Change Order for Purple Line Section 2**

- ❖ Geotechnical Instrumentation Installation and Monitoring AT&T and Beverly Hills High School = \$904,044

### **4 Change Order for Purple Line Section 3**

- ❖ Revise the Tail Track Exit Shaft Location from US Army Reserve to Veterans Affairs Property = \$11,217,006

# Spot Check Schedule Comparison

Schedule Comparison: new delegated process vs. former Board approval process

| PROJECT                     | Title of Change Order  | Time Saved<br>Executed date to Board Mtg. | NEW Delegated Process final SOW to Executed date | Former Board Approval Process |
|-----------------------------|--|---|--|-------------------------------|
| REGIONAL CONNECTOR          | Procure Medium Attenuation Fasteners in Lieu of Standard Direct Fixation Rail Fasteners for the 2 <sup>nd</sup> & Broadway Crossover | 68  | 16   | 84                            |
| WESTSIDE PURPLE LINE SECT 1 | Additional Air Scrubbers at Fairfax Station  | 19  | 31   | 50                            |
| WESTSIDE PURPLE LINE SECT 2 | Geotechnical Instrumentation Installation and Monitoring AT&T and Beverly Hills High School  | 25  | 32   | 57                            |
| WESTSIDE PURPLE LINE SECT 3 | Revise the Tail Track Exit Shaft Location from US Army Reserve to Veterans Affairs Property  | 25  | 24   | 49                            |

# Spot Check Recommendations

#1  
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

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 10-decibel 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.

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.

#2  
April 2020 #2  
C1045 MOD-00098  
Purple Line Sect. 1  
Additional Air  
Scrubbers at Fairfax  
Station

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.

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.

# Spot Check Recommendations

File #  
2020-0193

#3

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.

#4

April 2020 #4  
C1151 MOD-00001  
Purple Line Sect. 3  
Revise the Tail Track  
Exit Shaft Location  
from US Army  
Reserve to Veterans  
Affairs Property

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.

The OIG recommends Real estate arrangements should be negotiated as early as possible.

April 2020

Construction Committee

Los Angeles County Metropolitan Transportation Authority

