



## Board Report

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Agenda Number: 24.

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**CONSTRUCTION COMMITTEE  
MAY 21, 2020**

**SUBJECT: TUNNEL ADVISORY PANEL**

**ACTION: CONTRACT MODIFICATION**

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to:

- A. Execute Contract Modification No. 11 to Contract No. PS-2020-1055 with **Dr. Geoffrey R. Martin for the continuation of Tunnel Advisory Panel Services**, in an amount not-to-exceed \$910,475, increasing the total contract value from \$2,090,006 to \$3,000,481 and extend the contract from July 1, 2020 to June 30, 2023;
- B. Execute Contract Modification No. 6 to Contract No. PS-8510-2493 with **Dr. Edward J. Cording, for the continuation of Tunnel Advisory Panel Services**, in an amount not-to-exceed \$923,457, increasing the total contract value from \$2,075,778 to \$2,999,235 and extend the contract from July 1, 2020 to June 30, 2023; and
- C. Negotiate and Execute sole source Contract No. PS-1620-1000, with **Dr. Thomas O'Rourke**, for Tunnel Advisory Panel Services, in an amount not-to-exceed \$947,457, from June 1, 2020 to June 30, 2023.

**ISSUE**

LACMTA is currently planning, designing or constructing rail transit projects with extensive underground engineering and construction that involve complex geotechnical and tunneling issues. Some of the current active projects include the Westside Purple Line Extension Section 1, Section 2 and Section 3 Projects, Regional Connector Transit Corridor Project, Eastside Transit Corridor Phase 2 Project, Sepulveda Transit Corridor Project, West Santa Ana Branch Transit Corridor Project and Crenshaw Northern Extension Project. Los Angeles County has challenging geologic, seismic and tunneling conditions and deep underground station construction, with some through fault rupture zones, tar impregnated soil, toxic gasses, and high concentration of methane. While LACMTA has extensive experience from both staff and engineering consultants, there is the need for a Tunnel Advisory Panel (TAP) to provide expert advice and review of this engineering work. The Tunnel Advisory Panel comprised of Dr. Geoffrey Martin, Dr. Edward Cording and Dr. Thomas O'Rourke, are recognized in the industry and throughout the world as engineering/construction experts in the areas

of geotechnical analyses, tunneling, deep excavation, earthquake engineering and building settlements.

Board approval of the recommendations will allow the continuation of services of two of the current Tunnel Advisory Panel members and replacement for a recently deceased member, Dr. Harvey Parker, with Dr. Thomas O'Rourke to support LACMTA on the Westside Purple Line Extension Section 1, Section 2 and Section 3 Projects, Regional Connector Transit Corridor Project, Eastside Transit Corridor Phase 2 Project, Sepulveda Transit Corridor Project, West Santa Ana Branch Transit Corridor Project and Crenshaw Northern Extension Project. In addition, Board approval of the recommendations will also allow TAP to provide Ad-Hoc services to other projects as needed by Metro staff.

## **BACKGROUND**

The TAP convened in August 1995 in response to questions posed by the Board regarding feasibility of tunneling in Los Angeles ground conditions. Metro contracted with Drs. Dan Eisenstein, Geoffrey Martin and Harvey Parker to determine the feasibility of tunneling in Los Angeles, to assess the effectiveness of Metro's construction program to date, and to recommend any modifications to the current construction program deemed appropriate.

In June 2001, the Board approved two five-year contracts to the members of the TAP in the amount not-to-exceed \$1,167,826 and directed staff to return each year for funding approval. Since that time, the Board has approved funding and extensions to the TAP contracts. Due to Dr. Eisenstein's untimely death in April 2009, Metro management staff decided to procure an additional member for the TAP, Dr. Edward Cording, to provide expert technical services. With Dr. Harvey Parker passing away on May 5, 2020, Metro management staff decided to procure an additional member for the TAP, Dr. Thomas O'Rourke, to provide expert technical services.

## **DISCUSSION**

The TAP members, Drs. Martin and Cording, have been providing advice to all Metro project with underground construction elements. In addition, Dr. O'Rourke has provided Independent Review Services for the Westside Purple Line Extension Project (Contract No. PS85102798) to review and validate the technical approach and conclusions drawn by the Metro's Consultants regarding earthquake faults in the general vicinity of Century City and tunneling through Beverly Hills and Century City. The projects that TAP has been involved with, include extensive underground engineering and construction that involve complex geotechnical and tunneling issues for which the TAP members are uniquely qualified.

In particular, Drs. Martin and Cording have been involved with the Westside Purple Line Extension Section 1, Section 2 and Section 3 Projects and the Regional Connector Transit Corridor Project from planning studies, preliminary and advanced preliminary engineering and development of procurement documents for construction contracts. They will continue to support these projects during active underground excavation and tunneling. In addition, they are involved with the Eastside

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Transit Corridor Phase 2 Project and Sepulveda Transit Corridor Project planning studies.

The status of each project is as follows:

### **Westside Purple Line Extension Project**

The Westside Purple Line Extension Project was adopted by the Board and the Final Environmental Impact Report (EIR) was certified in 2012. The project is being designed and constructed in three sections as part of Metro's 30-Year Long Range Transportation Plan. The entire 9-mile project consists of twin-bored tunnels with 7 subway stations which are primarily under Wilshire Boulevard.

As part of the approval process for the project, Metro commissioned a Peer Review Panel by the American Public Transportation Association (APTA) in 2005 to assess the safety of tunneling under Wilshire Boulevard. The Peer Review Panel agreed that it was possible to safely tunnel and operate a subway along the Wilshire Boulevard corridor using current technologies of tunneling, station construction and operation. The Panel also assessed the specific risks associated with tunneling, and recommended a course of action that addressed the following elements of tunnel construction and operation:

- Gas detection
- Mitigation of hazards
- Tunnel boring and station construction
- Safe operation
- Long-term monitoring and verification
- Technical feasibility

As a follow-up to the APTA Peer Review Panel's recommendations, Metro has retained the services of the TAP to provide independent review and monitoring of the following work that is being performed by Metro's engineering consultants and contractors:

- Section 1 Wilshire/Western Station to Wilshire/La Cienega Station (3.92 miles of twin-bored tunnels, 3 subway stations) - The Design/Build Contract (Tunnels, Stations, Systems and Trackwork) Notice-To-Proceed (NTP) was issued in January 2015. The main station box for all 3 underground stations (Wilshire/La Brea Station, Wilshire/Fairfax Station, and Wilshire/La Cienega Station) and the excavation for the Wilshire/Western Shaft has been completed. The appendages for the underground stations have begun and is anticipated to continue through the 2<sup>nd</sup> Quarter of 2022. Tunneling is expected to be completed by the 4<sup>th</sup> Quarter of 2020. The TAP will be required to provide expert advice on the tunnel segment designs, geotechnical data which includes gassy ground and tar sands, the daily tunneling reports to monitor progress, potential ground movements and mitigations for gassy ground conditions. The construction of underground stations and tunnels is anticipated to continue till the 3<sup>rd</sup> Quarter of 2023. Tap services will only be required for the underground and tunnel portion of the project, which is expected to be complete in the 2<sup>nd</sup> Quarter of 2022.
- Section 2 - Wilshire/La Cienega to Century City Constellation Station (2.59 miles of twin-bored tunnels, 2 subway stations) - The Design/Build Contract (Tunnels, Stations, Systems and

Trackwork) Notice-To-Proceed (NTP) was issued on April 2017. Final Design is almost complete. Construction of the 2 Stations (Century City/Constellation Station and the Wilshire Rodeo Station) began in 3<sup>rd</sup> Quarter of 2018 and anticipated to be completed by 2<sup>nd</sup> Quarter of 2025. Tunnel construction is expected to begin 2<sup>nd</sup> Quarter of 2020 and is expected to be completed by 4<sup>th</sup> Quarter of 2022. The TAP will be required to continue providing expert advice on the tunnel and station construction, geotechnical conditions encountered, potential ground movements and mitigations for gassy ground conditions. The construction of underground stations and tunnels is anticipated to continue until 1<sup>st</sup> Quarter of 2024.

- Section 3 - Century City/Constellation Station to Westwood/VA Hospital Station (2.56 miles of twin-bored tunnels, 2 subway stations) - The Design/Build Contract (Tunnels, Stations, Systems and Trackwork) Notice-To-Proceed (NTP) for Tunnel was issued on January 2019 and for Station was issued on May 2019. Final Design is currently in progress. The Tunnel Construction is anticipated to begin in the 2<sup>nd</sup> Quarter of 2020 and anticipated to be completed by 1<sup>st</sup> Quarter of the 2022. Station Construction is expected to begin 4<sup>th</sup> Quarter of 2020 and expected to be completed by 1<sup>st</sup> Quarter of 2025. The TAP will be required to provide expert advice on the tunnel and station design and construction, especially in the potential fault rupture zones and gassy ground conditions, geotechnical conditions encountered, the daily tunneling reports to monitor progress, potential ground movements and mitigations for gassy ground conditions. The construction of underground stations and tunnels is anticipated to continue until 1<sup>st</sup> Quarter of 2024.

### **Regional Connector Transit Corridor Project**

The Regional Connector Transit Corridor project was adopted by the Board and the Final EIR was certified in 2012. The project consists of 1.9 miles of twin bored tunnels with three underground stations. The Design/Build Contract NTP was issued in July 2014. Construction of the Tunnels and excavation of the underground stations are complete and station structure construction is in progress. TAP members will continue to provide expert advice for the Regional Connector Project construction quarterly until 2<sup>nd</sup> quarter of 2021.

### **Eastside Transit Corridor Project - Phase 2**

Metro is preparing Supplemental Draft Environmental Impact Report (DEIR) for the Eastside Transit Corridor Phase 2 Project (Project) that would extend the existing Metro L (Gold) Line from the existing terminus station at Atlantic Boulevard and Pomona Boulevard in East Los Angeles eastern Los Angeles County. The Supplemental DEIR considers the Washington Alternative. The Washington Alternative is approximately 9 miles, of which roughly 3 miles is an underground configuration along Atlantic Boulevard in unincorporated East Los Angeles and then along Smithway Street in the City of Commerce. TAP will be providing expert advice for the Washington Alternative on the following topics amongst others:

- Tunnel alignment design
- Tunnel Portal Locations
- Feasibility of Metro's twin-bore tunnels vs single-bore tunnels

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- Ground movements and changes the groundwater table associated with proposed methods of excavation and support for cut and cover structures;
  - Ground movements and changes to the groundwater table associated with proposed tunneling methods

It is anticipated that draft environmental studies and advanced conceptual engineering will continue through 2023. The project is identified as one of the four pillar projects and if funding can be secured before the anticipated 2029 funding cycle, design and construction is anticipated to proceed from 2023 to 2028.

### **Sepulveda Transit Corridor Project**

The Sepulveda Transit Corridor Project is included in Metro's 2009 Long-Range Transportation Plan (Metro, 2009), in the Measure R Expenditure Plan as the "San Fernando Valley I-405 Corridor Connection" (Metro, 2008) and in the Measure M Expenditure Plan as the "Sepulveda Pass Transit Corridor" (Metro, 2016a). After the passage of Measure R in 2008, Metro undertook the Sepulveda Pass Corridor Systems Planning Study (Metro, 2012), which evaluated both highway and transit improvements extending from the Valley to LAX. The Measure M Expenditure Plan provides for implementation of the Sepulveda Transit Corridor Project in two phases: the first segment between the San Fernando Valley and the Westside of Los Angeles (Valley-Westside) by 2033-2035 and an extension to LAX (Westside-LAX) by 2057-2059. Under Metro's 28 by 2028 initiative, the Valley-Westside portion of the project is identified for potential acceleration in time for the 2028 Olympic and Paralympic Games in Los Angeles (LA 2028).

The Sepulveda Transit Corridor Feasibility Study was completed and presented to the Board in November/December 2019, and contracts for the environmental phase, including up to two pre-development agreements (PDAs), are currently undergoing procurement. While project alternatives for environmental review have not yet been selected, they may require geotechnical considerations for design and construction of tunnels and underground stations as follows:

- Tunneling through hard rocks
- Tunneling through alluvial soils
- Tunneling through fault zones
- Tunneling with relatively high groundwater pressures
- Mixed-face tunneling with rocks with contrasting strengths (low to very high abrasive, weak to very strong rocks)

Environmental review is anticipated to be completed in 2024.

### **West Santa Ana Branch (WSAB) Transit Corridor Project**

In Summary 2017, Metro formally initiated the environmental process through the original public scoping meetings held for the WSAB Project. In May 2018, the Metro Board selected two Northern Alignment options (Alameda Underground and Downtown Transit Core Underground) that include about 3 miles long tunnels and underground stations. It is anticipated that Draft EIS/EIR will be completed in Winter of 2021 and the Board will select LPA in Spring 2021 for Final EIR/EIS.

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Concurrently, Metro is evaluating an early project delivery by 2028 through P3 delivery method.

TAP will be providing expert advice for the underground portions of the WSAB Project on the following topics amongst others:

- Tunnel alignment design
- Tunnel Portal Locations
- Ground movements and changes the groundwater table associated with proposed methods of excavation and support for cut and cover structures;
- Ground movements and changes to the groundwater table associated with proposed tunneling methods

### **Crenshaw Northern Extension Project**

In February 2016, the Crenshaw North Extension project was included in the Chief Executive Officer's "Operation Shovel Ready Initiative" list of projects for advancement through early stages of project planning. The Crenshaw Northern Extension Feasibility Study was initiated in May 2016. Following the passage of Measure M in November 2016, it was further expanded to include Alternatives Analysis. The study analyzed four potential alignment alternatives that could extend the Crenshaw/LAX Line northward from the Metro Expo Line (Line E) to the Metro Purple Line (Line D) on Wilshire Boulevard and the Metro Red Line (Line B) in Hollywood, as well as one alignment alternative that would extend from the Expo Line to the Red/Purple Line Wilshire/Vermont Station, with a connection to Hollywood via transfer to the existing Metro Red Line, but would not serve West Hollywood.

In September 2018, the Metro Board authorized the preparation of an Advanced Alternatives Screening Study with further engineering design and public stakeholder outreach to narrow the range of alternatives to be carried forward in the environmental studies. That study was completed in 2019.

It is anticipated that EIR and Advanced Conceptual Engineering (ACE) will begin in the later part of 2020. TAP will be providing expert advice on the following topics amongst others for the ACE study:

- Tunnel alignment design
- Tunnel Portal Locations
- Tunneling through fault zones and gassy areas
- Ground movements and changes the groundwater table associated with proposed methods of excavation and support for cut and cover structures;
- Ground movements and changes to the groundwater table associated with proposed tunneling methods

In addition to the above Projects, TAP may be asked to provide Ad-Hoc services to other projects as needed by Metro Staff.

All the projects listed above are at critical stages in their respective planning, engineering and construction phases. Extension and additional funding for the TAP contracts are vital and essential to provide continuity that would otherwise be interrupted, should the Board decide to cancel and re-

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procure the TAP contracts (a 6 to 9-month process). Furthermore, the history and knowledge of the current designs, geotechnical conditions and construction approaches will present a steep learning curve for a new team of TAP members, which could significantly delay the timely review and input necessary to provide this important layer of independent monitoring and oversight across these complex engineering and construction projects.

TAP members are involved with on-going support relating to third party and project stakeholders' issues, which will require continuation of their services for the future. They have unique knowledge and background on Los Angeles County's underground conditions and intimate knowledge of Metro's past and current engineering and construction projects. Board approval and execution of the Contract Modifications will allow continuation of these services.

### **DETERMINATION OF SAFETY IMPACT**

The Board actions will not have an impact on established safety standards for Metro's engineering and construction projects.

### **FINANCIAL IMPACT**

Funds are included in the FY21 budget for the actions under Regional Connector Transit Corridor Project 860228; Westside Purple Line Extension Section 1 Project 865518; Westside Purple Line Extension Section 2 Project 865522; Westside Purple Line Extension Section 3 Project 865523; Eastside Transit Corridor Phase 2 Project 460232; Sepulveda Transit Corridor Project 460305; West Santa Ana Branch Transit Corridor Project 460201; and Crenshaw Northern Extension Project 405558 under Account No. 50316 (Professional and Technical Services). Since this is a multi-year contract, the Executive Director of Engineering and Construction and the Project Managers will be responsible for cost budgeting in future years.

#### **Impact to Budget**

The source of funds for these actions are a combination of Measure R Transit 35%, Measure R Highway 20%, Measure R Admin 1.5%, Measure M Transit 35%, Lease Revenues, Federal Section 5309 New Starts, Transportation Infrastructure Finance and Innovation Act (TIFIA) Loan proceeds, Federal STP, CMAQ, State Proposition 1B, Local Partnership Program, Transit and Intercity Rail Capital Program, Proposition A 35%, Proposition A Admin 5%, Proposition C 25%, and Proposition C Admin 1.5%. These were approved in the capital projects funding plan.

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

This recommendation supports the Strategic Plan Goal # 5, "*Provide responsive, accountable, and trustworthy governance within the Metro organization.*"

### **ALTERNATIVES CONSIDERED**

Staff has considered the alternative of allowing the current contracts with Dr. Martin, and Dr. Cording to expire and open a procurement notice to solicit applications from potential new members, but

decided to execute the contract modification for the current TAP panel members and negotiate and execute sole source Contract with Dr. O'Rourke for the following reasons:

- Current TAP members Drs. Martin's and Cording's long history and institutional knowledge of Metro together with Drs. Martin's, Cording's and O'Rourke's knowledge of local soil conditions and technical understanding of specific tunnel related issues in general and those pertaining to local conditions in particular would require significant investment in time and resources to replicate even if other equally suitable candidates were found and used in this role,. This would not only incur cost but would significantly reduce the benefit and validity of their advice, while this knowledge and understanding were obtained. This is not recommended as it will leave Metro without the benefit of their extensive local experience, knowledge and expertise and create a void in the required tunneling expertise for a considerable period of time, thereby creating the potential for delays and additional costs to ongoing Metro projects.
- Metro baseline documents include Design Criteria, Standard Drawings, Directive Drawings and Baseline Specifications. These baseline documents were adapted and updated from documents previously utilized for prior projects and are being continuously updated to incorporate the Lessons Learned from the past and current projects or to account for evolving technologies. Current TAP members, Drs. Martin and Cording have observed developments and successes on Metro's current projects that need to be documented and be made available to both current and future Metro projects. Through their involvement with various Metro projects, TAP has also encountered technical and contractual issues that require improvements in Metro baseline documents. Currently, TAP is fully engaged in assisting Metro with this lessons-learned process and accordingly updating the Metro Baseline documents. Executing the contract modification with the current TAP members enable Metro to continue seeking this valuable input from them to update the baseline documents with the lessons learned from their engagements from all the current large projects. This will make the Metro Baseline a set of industry leading document and capture the issues from Metro's past and current Projects.

### **NEXT STEPS**

After Board approval and execution of the Contract Modifications, staff will direct the Tunnel Advisory Panel to continue providing tunnel engineering advice to Metro including supporting the aforementioned projects.

### **ATTACHMENTS**

Attachment A - Procurement Summary

Attachment B - Contract Modification Change Log

Attachment C - DEOD Summary

Prepared by:




N. Sathi Sathialingam, Senior Director, (213) 922-2261

Androush Danielians, Executive Officer, (213) 922-7598

Reviewed by:

Richard F. Clarke, Chief Program Management Officer, (213) 922-7551

Debra Avila, Chief Vendor/Contract Management Officer, (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

**PROCUREMENT SUMMARY**  
**TUNNEL ADVISORY PANEL**  
**CONTRACT NO. PS-2020-1055**

1.	<b>Contract Number:</b> PS-2020-1055		
2.	<b>Contractor:</b> Geoffrey Martin		
3.	<b>Mod. Work Description:</b> Continued Tunnel Advisory Panel support		
4.	<b>Contract Work Description:</b> Tunnel Advisory Panel		
5.	<b>The following data is current as of:</b> March 23, 2020		
6.	<b>Contract Completion Status</b>		<b>Financial Status</b>
	<b>Contract Awarded:</b>	5/1/2001	<b>Contract Award Amount:</b> \$326,000
	<b>Notice to Proceed (NTP):</b>	5/1/2001	<b>Total of Modifications Approved:</b> \$1,764,006
	<b>Original Complete Date:</b>	1/28/2015	<b>Pending Modifications (including this action):</b> \$910,475
	<b>Current Est. Complete Date:</b>	6/30/2020	<b>Current Contract Value (with this action):</b> \$3,000,481
7.	<b>Contract Administrator:</b> Tim Clark		<b>Telephone Number:</b> (323) 900-2110
8.	<b>Project Manager:</b> Androush Danielians		<b>Telephone Number:</b> (213) 922-7598

**TUNNEL ADVISORY PANEL**  
**CONTRACT NO. PS-8510-2493**

1.	<b>Contract Number:</b> PS-8510-2493		
2.	<b>Contractor:</b> Edward Cording		
3.	<b>Mod. Work Description:</b> Continued Tunnel Advisory Panel support		
4.	<b>Contract Work Description:</b> Tunnel Advisory Panel		
5.	<b>The following data is current as of:</b> April 16, 2020		
6.	<b>Contract Completion Status</b>		<b>Financial Status</b>
	<b>Contract Awarded:</b>	1/29/2010	<b>Contract Award Amount:</b> \$1,225,000
	<b>Notice to Proceed (NTP):</b>	1/29/2010	<b>Total of Modifications Approved:</b> \$850,778
	<b>Original Complete Date:</b>	1/28/2015	<b>Pending Modifications (including this action):</b> \$923,457
	<b>Current Est. Complete Date:</b>	6/30/2020	<b>Current Contract Value (with this action):</b> \$2,999,235
7.	<b>Contract Administrator:</b> Tim Clark		<b>Telephone Number:</b> (323) 900-2110
8.	<b>Project Manager:</b> Androush Danielians		<b>Telephone Number:</b> (213) 922-7598

**TUNNEL ADVISORY PANEL  
CONTRACT NO. PS-1620-1000**

1.	Contract Number: TBD	
2.	Recommended Vendor: Dr. O'Rourke	
3.	Type of Procurement (check one): <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input checked="" type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	Procurement Dates:	
	A. Issued: N/A	
	B. Advertised/Publicized: N/A	
	C. Pre-proposal/Pre-Bid Conference: N/A	
	D. Proposals/Bids Due: N/A	
	E. Pre-Qualification Completed: TBD	
	F. Conflict of Interest Form Submitted to Ethics: TBD	
	G. Protest Period End Date: N/A	
5.	Solicitations Picked up/Downloaded: N/A	Bids/Proposals Received: N/A
6.	Contract Administrator: Eva Rodriguez	Telephone Number: (323)900-2111
7.	Project Manager: Androush Danielians	Telephone Number: (213) 922-7598

**A. Procurement Background**

This Board Action is to approve modifications in support of continued Tunnel Advisory Panel (TAP) support by Dr. Martin and Dr. Cording and award a sole source contract to Dr. O'Rourke.

Dr. Thomas O'Rourke is nationally and internationally recognized expert in the field of tunnels, seismology, geology, structures and Fault Rupture Deformation. Dr. O'Rourke is the Thomas R. Briggs Professor of Engineering, School of Civil & Environmental Engineering at Cornell University. His teaching and professional practice include geotechnical engineering for earth retention systems, foundations, and soil/structure interaction; earthquake engineering; underground construction technology, and engineering of large, geographically distributed systems such as water supplies, gas and liquid fuel systems, electric power, and transportation facilities. He has authored or co-authored over 340 publications on geotechnical, underground, earthquake engineering, and impact of extreme events on civil infrastructure.

Dr. O'Rourke was part of the Independent Review Panel convened by Metro CEO in September 2011 for the Westside Purple Line Extension Project (Contract No. PS85102798) to review and validate the technical approach and conclusions drawn by the Metro's

Consultants regarding earthquake faults in the general vicinity of Century City or tunneling through Beverly Hills and Century City.

On May 1, 2001, Contract No. PS-2020-1055 was awarded to Geoffrey Martin in the amount of \$326,000. On January 28, 2010, and PS-8510-2493 was awarded to Edward Cording, in the amount of \$1,225,000. The Board also authorized additional Modifications increasing the contract value and extending the period of performance to June 30, 2020. This Board Action is to approve the continuation of services of the TAP in support of Metro on various projects. Los Angeles County has challenging geologic and tunneling conditions and deep underground station construction, with some through tar impregnated soil, toxic gasses, and high concentration of methane. The TAP members, comprised of Dr. Geoffrey Martin, Dr. Edward Cording, and Dr. O'Rourke are recognized in the industry and throughout the world as engineering/construction experts in the areas of geotechnical analyses, tunneling, deep excavation, earthquake engineering and building settlements.

The proposed contract actions will be processed in accordance with Metro's Acquisition Policy and the contract type for each contract is a Labor Hour Contract.

**B. Cost/Price Analysis**

The existing individual Labor Hour contracts contain a fixed, negotiated labor rate of \$250 per hour which was established in 2015. Negotiations have resulted in the individual hourly rates for each contract being increased to \$300 per hour plus travel expenses. The Metro ICE is based on a labor rate (direct cost, overhead, and profit) of \$327.40 in the first year of the extension with escalation up to \$347.00 in the third year. The recommended amounts for the Modifications have determined fair and reasonable upon cost/price analysis, fact-finding, technical analysis and negotiations. The recommended not-to-exceed amount for the Contract with Dr. O'Rourke contains the same \$300 per hour plus travel expenses rates as the existing TAP contracts.

**CONTRACT NO. PS-2020-1055**

<b>Modification</b>	<b>Metro ICE</b>	<b>Not-To-Exceed Amount</b>
No. 11 – Increase Contract Value and extend Contract to June 30, 2023	\$1,077,963	\$910,475

**CONTRACT NO. PS-8510-2493**

<b>Modification</b>	<b>Metro ICE</b>	<b>Not-To-Exceed Amount</b>
No. 8 – Increase Contract Value and extend Contract to June 30, 2023	\$1,030,944	\$923,457

**CONTRACT NO. PS-1620-1000**

<b>Award</b>	<b>Metro ICE</b>	<b>Not-To-Exceed Amount</b>
Contract from June 1, 2020 to June 30, 2023	\$1,058,739	\$947,457

**CONTRACT MODIFICATION/CHANGE LOG****TUNNEL ADVISORY PANEL****CONTRACT NO. PS-2020-1055**

<b>Mod. No.</b>	<b>Original Contract</b>	<b>5/1/2001</b>	<b>\$326,000</b>
1-4	Increase unit rate and extend period of performance to June 30, 2010	09/06/02-05/11/09	\$0
5	Increase unit rate and extend period of performance to January 28, 2015	1/29/10	\$875,000
6	Extend period of performance to June 30, 2015	1/9/15	\$0
7	Increase contract value and extend period of performance to July 30, 2015	6/22/15	\$28,915
8	Increase contract value and extend period of performance to August 31, 2015	7/17/15	\$28,915
9	Increase unit rate and extend period of performance September 30, 2015	8/10/15	\$28,915
10	Increase contract value and extend period of performance to June 30, 2020	10/1/15	\$802,261
11	Increase unit rate, contract value, extend period of performance to June 30, 2023	<b>Pending Board Approval</b>	<b>\$910,475</b>
	<b>Total:</b>		<b>\$3,000,481</b>

**CONTRACT NO. PS-8510-2493**

<b>Mod. No.</b>	<b>Original Contract</b>	<b>1/29/10</b>	<b>\$1,225,000</b>
1	Extend period of performance to June 30, 2015	1/9/15	\$0
2	Increase contract value and extend period of performance to July 30, 2015	6/22/15	\$28,915
3	Increase contract value and extend period of performance to August 31, 2015	7/17/15	\$28,915
4	Increase contract value and extend period of performance to September 30, 2015	8/10/15	\$28,915
5	Increase contract value and extend period of performance to June 30, 2020	10/12/15	\$764,033
6	Increase unit rate, contract value, extend period of performance to June 30, 2023	<b>Pending Board Approval</b>	<b>\$923,457</b>
	<b>Total:</b>		<b>\$2,999,235</b>

DEOD SUMMARY

TUNNEL ADVISORY PANEL

CONTRACT NOS. PS-2020-1055, PS-8510-2493 & PS-1620-1000

**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) did not recommend a Disadvantaged Business Enterprise (DBE) goal for this sole source panel due to the lack of subcontracting opportunities. It was expected that Prime Contractors Geoffrey R. Martin, Dr. Edward J. Cording and Thomas O'Rourke would perform work with its own workforces.

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

A review of the current service contract indicates that the Living Wage and Service Contract Worker Retention Policy (LW/SCWRP) was not applicable at the time of award. Therefore, the LW/SCWRP is not applicable to these modifications.

**C. Prevailing Wage Applicability**

Prevailing wage is not applicable to these modifications.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to these Contracts. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction contract value in excess of \$2.5 million.