



Board Report

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CONSTRUCTION COMMITTEE MAY 20, 2021

SUBJECT: WESTSIDE PURPLE LINE EXTENSION SECTION 1 PROJECT

ACTION: APPROVE RECOMMENDATIONS

RECOMMENDATION

CONSIDER:

AMENDING the Life-of-Project (LOP) budget by \$150,000,000 for the Westside Purple Line Extension Section 1 Project (Project) from \$2,978,879,593 to \$3,128,879,593 using the fund sources as summarized in Attachment A, consistent with the provisions of the Board-adopted Measure R and Measure M Unified Cost Management Policy (Attachment B).

ISSUE

As outlined at the August 2020 Board meeting, Section 1 is being constructed in complex and extremely challenging geologic conditions that include subsurface gases (methane and hydrogen sulfide) and asphalt saturated ground, or “tar sands” in the areas surrounding the La Brea Tar Pits. The presence of these soil conditions previously prevented tunneling in this area until more technological advanced tunneling methods were developed. Metro tunneling specialists worked with federal representatives to have legislation changed in 2006, so that subway alternatives could be considered.

In addition to the above natural geologic challenges, Section 1 also faced man made underground obstacles. Old, abandoned oil wells were located along the alignment. Since their precise locations were not known, additional investigations and efforts were implemented to insure there were no incidents involving the Tunnel Boring Machines (TBMs) and these wells. Such an incident could cause damage to the TBMs or an unplanned release from the oil wells. Horizontal Directional Drilling (HDD) in combination with the use of a Magnetometer (a first of its kind of operation) was implemented to search for the abandoned oil wells and any other metal objects (anomalies) that may be in or very close to the tunnel alignment. Section 1 did find both abandoned oil wells and other metal objects that would have impacted the tunneling operations. The tunnel alignment was shifted ten feet at one location to avoid an assumed oil well. Anomalies were also discovered in both tunnel alignments at the intersection of Wilshire/San Vicente. These anomalies were safely removed with no injuries to the miners or major impacts to the traffic flow on the surface. More details of the Wilshire/San Vicente anomaly mitigation efforts, including cost impacts and schedule impacts to the

Project follow in this report.

The Project has entered the seventh year of its 10 year expected duration and is 69% complete as of March 31, 2021.

As was reported and addressed at the August 2020 Board meeting, the Project has experienced higher than expected differing site conditions, an increase in third party and safety requirements, and changes in scope related items. These conditions and additional requirements were known to impact the LOP budget, but what wasn't known in August 2020 were the impacts that these same issues would have on the Project schedule. Also, what impacts any future new risks may have on the Project schedule and LOP budget.

One differing site condition that has significantly impacted the Project in terms of cost and schedule over the past year has been the Wilshire/San Vicente anomaly. Potential oil well locations close to the tunnel alignment were identified in the Project documents by a circular zone within a 200 foot radius without an exact known or verified location. The Wilshire/San Vicente intersection was one of these locations and as required by contract, the contractor was to provide an investigation to determine if any oil wells existed.

The zone closest to the Wilshire/San Vicente intersection was cleared by Horizontal Directional Drilling (HDD). However, during the clearance of the tunnel alignment for oil wells by the HDD method, an anomaly was discovered just outside the potential oil well zone. Five vertical magnetometer readings were also taken north and south of each tunnel alignment in the general area of the anomaly. Upon review of the horizontal and vertical magnetometer data, unknown potential anomalies were identified by the contractor. The anomalies were shown at tunnel depth (55 ft to 75 ft), potentially near or in the tunnel alignments. There is no method to pinpoint the exact anomaly location without major open cut excavation from the surface. Given the location, an open cut excavation was not feasible.

The remedial method chosen to mitigate this unforeseen condition was to install a chemical grout block surrounding each tunnel (45 feet in length) so that in the event an anomaly is encountered while tunneling, it would be feasible to remove it by hand mining from outside the tunnel boring machine (TBM) while keeping the surrounding ground stable. While the chemical grout blocks were being installed, the two TBMs remained parked east of the Wilshire/San Vicente intersection.

To address the impacts that the anomaly is having on ongoing construction and the Project schedule, staff recommends a total LOP budget increase of \$150 million. This increase will fund newly identified contract changes associated with the anomaly, address new issues and risks, and provide additional contingency as shown in Attachment C.

BACKGROUND

Section 1 of the nine-mile Westside Purple Line Extension Project is the first of three sections that

has been designed and is currently under construction as part of the Los Angeles County Metropolitan Transportation Authority (LACMTA) Measure R Program. Section 1 extends the existing Purple Line by 3.92 miles beginning at the Wilshire/Western Station. From this station, the twin tunnel alignment travels westerly within the existing Wilshire Boulevard right-of-way with station locations at the intersections of Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega. All three of the station boxes are located within the Wilshire Boulevard right-of-way with station portals extending to off-street entrances. Two of the stations, Wilshire/La Brea and Wilshire/Fairfax, are within the jurisdiction of the City of Los Angeles and the Wilshire/La Cienega Station is within the City of Beverly Hills jurisdiction.

On July 24, 2014, the Board authorized an LOP budget of \$2,773,879,593 for the Project and authorized the Chief Executive Officer to award a 107-month design/build contract (C1045), subject to the resolution of timely protests, to Skanska, Traylor and Shea (STS). The contract was awarded on November 4, 2014 and the Notice to Proceed was issued on January 12, 2015.

Metro procured and awarded three contracts for advance utility relocations within the construction limits of each of the three future stations and constructed an exploratory shaft adjacent to the future Wilshire/Fairfax Station to observe ground conditions, all prior to the award of Contract C1045.

Metro also procured and awarded a design/build contract to provide the final design and construction of a new Maintenance-of-Way (MOW) and Non-Revenue Vehicle (NRV) Building at the south end of the existing Division 20 Yard (Location 64). On February 26, 2016, the Board authorized an increase to the LOP budget, in the amount of \$5 million, for an alternative design for the site placement of the Division 20 MOW and NRV Building.

On August 20, 2020, the Board authorized an increase to the LOP budget in an amount of \$200 million to address higher than expected differing site conditions, an increase in third party and safety requirements, and changes in scope related items. The Wilshire/San Vicente anomaly was identified as a potential change to the Project at that time, but the extent of the scope of work needed to safely tunnel through the intersection, and the risk that it would have to the Project schedule were not fully known.

DISCUSSION

When the LOP budget was increased by \$200 million in August 2020, the project cost contingency was increased to \$170 million. The amount included allocated contingency to cover anticipated contract modifications to be issued by Metro as required. The Wilshire/San Vicente anomaly was acknowledged as a potential change to the Project in the LOP budget increase request, but the impacts associated with the anomaly to on-going/follow-on construction and the Project schedule are more profound than estimated. As a result, it is projected that the current contingency balance is insufficient to carry the Project through to revenue service, considering the outstanding pending

changes, potential changes, and remaining issues that need to be concluded on the Project.

The Federal Transit Administration (FTA) will conduct a formal risk assessment of the Project after tunnel mining through the anomaly is complete. This milestone was achieved in late March 2021. The Board will be briefed of the results of FTA's risk assessment.

STS has submitted claims concerning impacts on its ability to complete the Project early, impacts to the tunneling operations between Wilshire/La Brea and Wilshire/Fairfax Stations, and impacts to steel fabrication and delivery. Metro has disputed these claims and they will be subject to the dispute resolution process (subject to the Board's approval). Since Metro is disputing these claims, the requested amount in this Board Report does not include any amounts for these claims.

Also, not included in this request are change requests related to COVID-19. Under the force majeure clause of the contract, compensation is not granted during a pandemic, only extensions of time to the contract are allowable.

DETERMINATION OF SAFETY IMPACT

This Board action will not have an impact on established safety standards for Metro's construction projects.

FINANCIAL IMPACT

Funds required for fiscal year 2022 have been requested through the fiscal year 2022 budget development, anticipated to be adopted at the May 2021 Board meeting. Until then, fiscal year 2021 budget provides the necessary funds, under Project 865518 Westside Purple Line Extension Section 1, and in Cost Center 8510 (Construction Project Management).

Since this is a multi-year capital project, the Chief Program Management Officer and the Project Manager will be responsible for budgeting costs in future fiscal years.

Impact to Budget

The sources of funds for the recommended actions are local and other funds that are eligible at the time of expenditure.

Multiyear Impact

The sources of funds for the Project are capital funds identified in the recommended Funding/Expenditure Plan as shown in Attachment A. With respect to the \$150,000,000 increase, Attachment B shows the Measure R and Measure M Unified Cost Management Policy (the Policy) analysis and funding strategy required for cost increases to Measure R Projects.

To comply with the Policy of the Metro Board of Directors, Metro staff has evaluated potential offsetting cost reductions, including scope reductions, value engineering, shorter segment, and has determined these are not feasible. The source of funds to address the LOP increase is Measure R Transit Capital (35%). The Measure R in the Expenditure Plan that is allocated to the Project and other components of the subway is already fully utilized. Measure R expended on the Crenshaw/LAX will be used instead, and this amount will be exchanged with Proposition A 35% funds. Proposition A and C cannot be expended on the Project. Metro staff will concurrently work with the subregions to provide the required 120 day written notification and seek formal approval from the governing body for use of the subregional equity program as a reimbursement or funding source for future expenditures. Should the subregion not approve the use of the funds, Metro staff will return to the Board with an update on the funding sources and a fiscal impact analysis of the use of these funds for the project.

This report identifies additional funding resources consistent with the Policy approved by the Board in 2018. Attachment B provides a detailed discussion of the Policy. In summary, the Policy was developed in recognition that some projects would need additional funding and the Policy provides a consistent and equitable process to ensure that any financial impacts are limited to the local area where the project is located and not have a region-wide impact.

The Policy defines a cascading list of actions that can be taken. Because the Project is so far along, actions such as value engineering or changes in scope are no longer feasible. Additional funding is the only option.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Recommendation supports Strategic Plan Goal #1 - Provide high-quality mobility options that enable people to spend less time traveling.

ALTERNATIVES CONSIDERED

The Board may choose to not move forward with amending the LOP budget. This is not recommended as Metro will be unable to provide funding to complete the Project according to the current schedule.

NEXT STEPS

Upon approval by the Board, the LOP budget will be amended accordingly per the Recommendation.

ATTACHMENTS

Attachment A - Funding/Expenditure Plan

Attachment B - Measure R and Measure M Unified Cost Management Policy Analysis

Attachment C - Projected Breakdown of Cost Allocation for \$150 million

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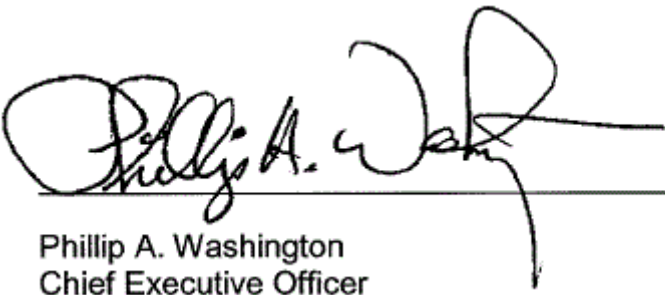
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Westside Purple Line Extension Section 1 Project
Funding/Expenditure Plan
(Dollars in Millions)

Capital Project 865518	Prior	FY21	FY22	FY23	FY24	FY25	FY26	Total	% of Total
Uses of Funds									
Construction	1,278.1	210.3	321.5	223.7	50.9	8.8	-	2,093.3	66.9%
Right-of-Way	184.4	4.0	7.4	2.4	2.4	2.4	-	203.0	6.5%
Vehicles	24.5	6.0	44.5	33.2	-	-	-	108.3	3.5%
Professional Services	392.1	48.3	50.8	42.7	43.7	34.5	4.4	616.5	19.7%
Project Contingency	-	-	22.0	30.7	14.0	1.7	-	68.4	2.2%
Subtotal Capital Project	1,879.2	268.6	446.4	332.7	110.9	47.4	4.4	3,089.5	98.7%
Environmental/Planning	39.4	-	-	-	-	-	-	39.4	1.3%
Total Project Cost	1,918.5	268.6	446.4	332.7	110.9	47.4	4.4	3,128.9	100.0%
Sources of Funds									
Federal 5309 New Starts	665.0	100.0	290.8	194.2	-	-	-	1,250.0	40.0%
Additional Federal 5309 New Starts	-	-	-	20.1	46.3	-	-	66.4	2.1%
Federal CMAQ	12.2	-	-	-	-	-	-	12.2	0.4%
Federal Section 5339 Alternatives Analysis	0.5	-	-	-	-	-	-	0.5	0.0%
STIP Regional Improvement Program	2.6	-	-	-	-	-	-	2.6	0.1%
Measure R - TIFIA Loan	749.3	-	-	-	-	-	-	749.3	23.9%
Measure R 35%	436.8	168.6	150.6	137.8	15.6	-	-	909.4	29.1%
Measure R 35% from Crenshaw	-	-	-	-	34.5	44.7	4.4	83.6	2.7%
City of Los Angeles	1.3	-	5.0	38.7	27.6	2.7	-	75.3	2.4%
State Capital Project Loans - Others*	50.9	-	-	(58.1)	(13.1)	-	-	(20.4)	-0.7%
Total Project Funding	1,918.6	268.6	446.4	332.7	110.9	47.4	4.4	3,128.9	100.0%

*Including TDA and Fund 3562

ATTACHMENT B

Westside Purple Line Extension Section 1 Project

Measure R and Measure M Unified Cost Management Policy Analysis

Introduction

The Measure R and Measure M Unified Cost Management Policy (the Policy) was adopted by the Metro Board of Directors in June 2018. The precursor Measure R cost management policy was adopted in March 2011. The intent of the Policy is to inform the Metro Board of Directors regarding cost increases to Measure R- and Measure M-funded projects and the strategies available to close a funding gap. The Westside Purple Line Extension Section 1 Project (the Project) is subject to this policy analysis.

The life of project (LOP) budget for the Project was last approved by the Board in August 2020 at \$2,978,879,593. The Project is subject to the Policy analysis now due to a proposed \$150,000,000 increase to the LOP budget. Funding for the cost increase is needed through FY 2026. This analysis recommends trade-offs required by the Policy to identify the funds necessary to meet the cost increase.

Measure R and Measure M Unified Cost Management Policy Summary

The adopted Policy stipulates the following.

If a project cost increase occurs, the Metro Board of Directors must approve a plan of action to address the issue prior to taking any action necessary to permit the project to move to the next milestone. Shortfalls will first be addressed at the project level prior to evaluation for any additional resources using these methods in this order as appropriate:

- 1) Scope reductions;
- 2) New local agency funding resources;
- 3) Value Engineering;
- 4) Other cost reductions within the same transit or highway corridor;
- 5) Other cost reductions within the same subregion; and finally,
- 6) Countywide transit or highway cost reductions or other funds will be sought using pre-established priorities.

Scope Reductions

The Project cost increase is due primarily to the discovery and removal of an anomaly. Any attempt to identify and negotiate agreeable reductions to the scope may result in further delays and potential additional costs. Because of this, we recommend moving to the next step.

New Local Agency Funding Resources

Local funding resources (i.e., specific to the affected corridor or subregion) are considered in the next step as opposed to countywide or regional sources so as not to

impact the funding of other Metro Board-approved projects and programs or subregions in the County.

The Project is eligible for Measure M and Measure R funding and is currently allocated \$1,660,466,475 of the total \$4,074,000,000 of funding that is identified in the Measure R sales tax ordinance Expenditure Plan.

The Project is located primarily in the Central City Area, with a relatively small section in the Westside Cities subregion (as defined in the Policy, as amended), and has station locations in the cities of Los Angeles and Beverly Hills. Local funding resources from both the subregions and cities could be considered for the cost increase.

Funding Within the Corridor

The Project is within the same subregion as Expo Phase 1 and shares the corridor with Expo Phase 2. The Expo Projects had unused funds totaling an estimated \$229,582,693 from the combined life of project budget, and \$200,000,000 of the Expo funds were made available to the Project in August 2020 (Board item # 2020-0351). No other surplus or otherwise available funding has been identified from other Metro projects on the same corridor.

Subregional Programs and Local Agency Contributions

Measure M has funding for a transit-eligible Subregional Equity Program (SEP) in the Central City Area and Westside Cities subregions. The subregions could allocate a portion of the funding for the Project, which requires notice to and approval by the subregions. The Measure M Expenditure Plan includes \$235 million for the Central City Area SEP and \$160 million for the Westside Cities SEP. The SEP funds are programmed beginning in FY 2043 in the Long Range Transportation Plan Financial Forecast due to limited financial capacity. Staff has previously recommended that the South Bay and Central City Area subregions allocate a portion of the SEP to address a \$90 million cost increase on the Crenshaw/LAX Transit Project. Per Board action in May 2020 (Motion 38.1 # 2020-0356), staff is developing, in partnership with all Board offices, a uniform process by which subregions can elect to use SEP funding. Staff is also pursuing a reimbursement process that will utilize SEP funding to address an \$11.9 million shortfall on the Eastside Light Rail Access (Gold Line) project (Board item # 2020-0931).

Local Agency Contributions

The cities with Project stations are expected to contribute funding to the Project as part of the 3% local agency funding assumption included in the Measure R ordinance. The cities are generally not responsible for cost increases to the projects and are not considered as a source of funding for the Project cost increase.

Measure M, as well as Measure R and Propositions A and C, provide “local return” funding to Los Angeles and Beverly Hills. The cities will receive an estimated \$3.23 billion of local return (Los Angeles \$3.2 billion, Beverly Hills \$27 million) over the ten year period FY 2021 to FY 2030 that is eligible for transit use and could contribute a

portion to the Project (not adjusted for any negative impact to countywide sales tax due to the current global pandemic). However, prior Board actions relating to the Twenty-Eight by '28 Initiative and funding for the cost increase to Foothill Extension to Pomona did not support use of local return, and it is presumed these funds would not be available for the cost increase to the Project.

State and Federal Funding (Discretionary)

The FTA has previously granted the Project \$1.25 billion through a New Starts grant and the USDOT has provided funding through a \$856 million TIFIA loan. The March 2021 federal American Rescue Plan Act increased the New Starts grant by \$66,428,844. This funding can partially address the impact of the cost increase. Additional State or federal discretionary funding (where Metro would compete for the funding) is not probable, given the Project has experienced a cost increase and the design/build contract is already awarded.

Value Engineering

The Project cost increase is due primarily to the discovery and removal of an anomaly. Any attempt to identify and negotiate agreeable value engineering may result in further delays and potential additional costs. As a result, we recommend moving to the next step.

Other Cost Reductions within the Same Transit or Highway Corridor, or within the Same Sub-region

The cities and subregions have existing funding programs that have funding amounts yet to be programmed to the subregion or spent. The SEP is discussed above in section "Subregional Programs and Local Agency Contributions."

The cities also receive funding through the Call-For-Projects, the competitive grant program that is funded and managed by Metro for the benefit of LA County cities, transit operators, and State highway projects that was last held in 2015. At times the funding for certain projects in the Call-For-Projects is "de-obligated" if not spent within a reasonable timeframe and this can be a funding source for other uses. Currently there is not a meaningful amount of de-obligated funds available unless the cities choose to terminate an existing project, and all other projects are moving through their respective development process.

Countywide Cost Reductions and/or Other Funds

If new local agency resources are not allocated to the Project cost increase, regional or countywide funding could be considered. These funds are programmed for other uses in Metro's financial forecast, during the timeframe when funds are needed for the Project cost increase. Eligible sources of countywide funding are limited due to the restriction on the use of Proposition A and C for the Project and include General Fund and Lease Revenues. These countywide sources are not sufficient to address the cost increase.

State and Federal Funding (Formula)

Metro receives quasi-formula funding from the State through the Regional Improvement Program (RIP) and Local Partnership Program (LPP). This is considered regional funding as it can be applied countywide to both transit and highway spending. The most recent RIP funding was allocated to projects submitted in Metro's 2020 RTIP and the next cycle of the LPP is planned to be used on the \$801 million Division 20 project. However, the 2020 federal Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) allocated funding to the State, and the State decided to allocate a portion of the funding through the RIP. Metro expects a \$38 million increase in its RIP share. Per concurrent Board action in April 2021 (Board item # 2021-0114), Metro staff propose that this funding is allocated to the East San Fernando Valley project.

Metro receives federal formula funding from the Congestion Mitigation and Air Quality (CMAQ) Improvement Program and the Surface Transportation Block Grant Program (STBG). Metro also receives an allocation of funds from the "Highway Infrastructure Program," which is a federal formula grant created in 2018 for uses that include the construction of highways, bridges, tunnels, transit capital, and ITS; operational improvements; highway and transit safety improvements; and pedestrian and bicycle projects, among others. Funding from the CMAQ, STBG, and the Highway Infrastructure Program grant will be programmed in the pending 2021 Short Range Transportation Plan. The initial apportionments (FFY 2018 \$25,835,214, FFY 2019 \$36,399,992) from the Highway Infrastructure Program are only eligible for highway projects and will be allocated to those entering construction. Per concurrent Board action in April 2021 (Board item # 2021-0114), Metro staff propose that this funding is allocated to Metro highway projects.

Recommendation

Metro staff recommends the use of \$66,428,844 of additional New Starts and \$83,571,156 of Measure R Transit 35% for the proposed \$150,000,000 LOP budget increase. The Project and other components of the subway are currently allocated a maximum amount of Measure R allowed in the Expenditure Plan. Therefore, we are recommending the swapping of Proposition A 35% funds with Measure R 35% on the Crenshaw/LAX Project. This is done to address the ordinance restrictions on the amount of Measure R funding by project and the use of Prop A and C on new subway projects. The following table shows the proposed transfers of Measure R and Prop A and C funds.

Strategy to Address Westside Purple Line Extension Section 1 Funding Gap

(\$ in millions)	Measure R 35%	Proposition C 25%	Proposition A 35%	Total
Westside Purple Line Extension	\$ 83.57			\$ 83.57
Crenshaw/LAX LRT	\$ (83.57)		\$ 83.57	\$ -
Additional SRTP Shortfall			\$ (83.57)	\$ (83.57)
Balance	\$ -	\$ -	\$ -	\$ -

Metro staff will concurrently work with the Central City Area and Westside Cities subregions to provide the required 120 day written notification and seek formal approval from the governing body for use of the subregional equity program as a reimbursement or funding source for future expenditures. Should the subregion not approve the use of the funds, Metro staff will return to the Board with an update on the alternative potential funding source, comprised entirely of Proposition A 35% swapped with Measure R 35%, and a fiscal impact analysis of the use of these funds for the project.

ATTACHMENT C

Westside Purple Line Extension Section 1 Project Projected Breakdown of Cost Allocation for \$150 million

Amount	Description
80,000,000	Construction Tunnels, Stations, Trackwork, Systems and Systems Integration Testing (D/B Contract C1045)
41,000,000	Professional Services All Other Professional Services <ul style="list-style-type: none"> o Metro Staff at Gateway and at multiple field offices who perform oversight in various disciplines. o Engineering - STS D/B Contract C1045: Design engineering during construction. o EMSS - WSP: Engineering management support services providing design review support and assessment of engineering issues during construction. o CMSS - WEST: Construction management support services procured to support Metro staff in oversight of specific areas of project construction disciplines such as field inspectors, resident engineers and other construction support. o DSDC - SecoTrans: Systems design support during construction. o PMSS - KKCS/Triunity: Project management support services including project controls estimating and scheduling. o Claim Support Services - Arcadis Inc.: claims support consultant to assist with preparing documentation and analysis in support of Metro's defense against claims submitted by the contractor. o Legal Services: County Counsel and procured legal services to assist project management. o Community Relations: Consultant companies provide assistance in support of construction along the Westside Purple line Extension Section 1 Project alignment. o Labor Compliance Monitoring: Consultant companies monitor the construction contractor compliance with project labor agreement and DBE requirements. o Auditing Services: Consultant companies conduct audits of main professional services and construction contracts. o QA Test Lab Services: Consultant companies provide materials verification testing and inspections services.
29,000,000	Unallocated Project Contingency Amount not yet allocated to a specific line item but is required for anticipated unknown cost increases.
\$150,000,000	Total Increase