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Agenda - Final

Thursday, October 16, 2025

11:00 AM

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METROPOLITAN TRANSPORTATION AUTHORITY BOARD AGENDA RULES

(ALSO APPLIES TO BOARD COMMITTEES)

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A member of the public may address the Board on agenda items, before or during the Board or Committee's consideration of the item for one (1) minute per item, or at the discretion of the Chair. A request to address the Board must be submitted electronically using the tablets available in the Board Room lobby. Individuals requesting to speak will be allowed to speak for a total of three (3) minutes per meeting on agenda items in one minute increments per item. For individuals requiring translation service, time allowed will be doubled. The Board shall reserve the right to limit redundant or repetitive comment.

The public may also address the Board on non-agenda items within the subject matter jurisdiction of the Board during the general public comment period, which will be held at the beginning and /or end of each meeting. Each person will be allowed to speak for one (1) minute during this General Public Comment period or at the discretion of the Chair. Speakers will be called according to the order in which their requests are submitted. Elected officials, not their staff or deputies, may be called out of order and prior to the Board's consideration of the relevant item.

Notwithstanding the foregoing, and in accordance with the Brown Act, this agenda does not provide an opportunity for members of the public to address the Board on any Consent Calendar agenda item that has already been considered by a Committee, composed exclusively of members of the Board, at a public meeting wherein all interested members of the public were afforded the opportunity to address the Committee on the item, before or during the Committee's consideration of the item, and which has not been substantially changed since the Committee heard the item.

In accordance with State Law (Brown Act), all matters to be acted on by the MTA Board must be posted at least 72 hours prior to the Board meeting. In case of emergency, or when a subject matter arises subsequent to the posting of the agenda, upon making certain findings, the Board may act on an item that is not on the posted agenda.

CONDUCT IN THE BOARD ROOM - The following rules pertain to conduct at Metropolitan Transportation Authority meetings:

REMOVAL FROM THE BOARD ROOM - The Chair shall order removed from the Board Room any person who commits the following acts with respect to any meeting of the MTA Board:

- a. Disorderly behavior toward the Board or any member of the staff thereof, tending to interrupt the due and orderly course of said meeting.
- b. A breach of the peace, boisterous conduct or violent disturbance, tending to interrupt the due and orderly course of said meeting.
- c. Disobedience of any lawful order of the Chair, which shall include an order to be seated or to refrain from addressing the Board; and
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NOTE: ACTION MAY BE TAKEN ON ANY ITEM IDENTIFIED ON THE AGENDA

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Live public comment can be given by telephone or in-person.

The Meeting begins at 11:00 AM Pacific Time on October 16, 2025; you may join the call 5 minutes prior to the start of the meeting.

Dial-in: 888-978-8818 and enter
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Public comment will be taken as the Board takes up each item. To give public comment on an item, enter #2 (pound-two) when prompted. Please note that the live video feed lags about 30 seconds behind the actual meeting. There is no lag on the public comment dial-in line.

Instrucciones para comentarios publicos en vivo:

Los comentarios publicos en vivo se pueden dar por telefono o en persona.

La Reunion de la Junta comienza a las 11:00 AM, hora del Pacifico, el 16 de Octubre de 2025. Puedes unirte a la llamada 5 minutos antes del comienso de la junta.

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Los comentarios del público se tomaran cuando se toma cada tema. Para dar un comentario público sobre una tema ingrese # 2 (Tecla de numero y dos) cuando se le solicite. Tenga en cuenta que la transmisión de video en vivo se retrasa unos 30 segundos con respecto a la reunión real. No hay retraso en la línea de acceso telefónico para comentarios públicos.

Written Public Comment Instruction:

Written public comments must be received by 5PM the day before the meeting.
Please include the Item # in your comment and your position of "FOR," "AGAINST," "GENERAL COMMENT," or "ITEM NEEDS MORE CONSIDERATION."
Email: BoardClerk@metro.net
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Board Administration
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MS: 99-3-1
Los Angeles, CA 90012

CALL TO ORDER**ROLL CALL**

APPROVE Consent Calendar Items: 21, 22, and 23.

Consent Calendar items are approved by one motion unless held by a Director for discussion and/or separate action.

CONSENT CALENDAR**21. SUBJECT: AUDIT SERVICES BENCH**[2025-0787](#)**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to execute Modification No. 1 to Audit Services Bench Contract Nos. PS86611000 through PS86611007 (Attachment C) to exercise the first one-year option in an amount Not-To-Exceed \$2,476,605, increasing the cumulative contract value from \$7,142,240 to \$9,618,845 and extending the period of performance from January 1, 2026 to December 31, 2026.

Attachments:[Attachment A - Procurement Summary](#)[Attachment B - Contract Modification and Change Order Log](#)[Attachment C - Firms on the Audit Services Bench](#)[Attachment D - DEOD Summary](#)**22. SUBJECT: 2025 ENERGY MASTER PLAN**[2025-0801](#)**RECOMMENDATION**

ADOPT the Energy Master Plan recommendations (Attachment A).

Attachments:[Attachment A - Energy Master Plan](#)[Presentation](#)**23. SUBJECT: 2025 CLIMATE ACTION AND ADAPTATION PLAN**[2025-0863](#)**RECOMMENDATION**

RECEIVE AND FILE status report on 2025 Climate Action and Adaptation Plan Update (Attachment A).

Attachments:[Attachment A - 2025 Climate Action and Adaptation Plan \(CAAP\) Update](#)

NON-CONSENT

- 24. SUBJECT: LOCAL SMALL BUSINESS ENTERPRISE (LSBE)
PREFERENCE PILOT PROGRAM UPDATE**

[2025-0791](#)**RECOMMENDATION**

CONSIDER:

- A. RECEIVING AND FILING the Local Small Business Enterprise (LSBE) Preference Program Pilot Final Report; and
- B. APPROVING the Local Small Business Enterprise (LSBE) Preference Program.

Attachments: [Attachment A - Motion 31](#)
 [Presentation](#)

- 10. SUBJECT: LINK UNION STATION PROJECT FINAL SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT CERTIFICATION**

[2025-0805](#)**RECOMMENDATION**

CONSIDER:

- A. CERTIFYING the Final Supplemental Environmental Impact Report (Final SEIR) for the Link Union Station [Project](#) [<https://www.linkunionstation.com/>](https://www.linkunionstation.com/) (Link US) described in Attachment A;
- B. AUTHORIZING the Chief Executive Officer (CEO) to file a Notice of Determination (NOD) with the State of California Clearinghouse, and the Los Angeles County Clerk (Attachment B); and
- C. ADOPTING the following reports for Link US, in accordance with the California Environmental Quality Act:
 - 1. Findings of Fact and Statement of Overriding Considerations (Attachment C).
 - 2. Revised Mitigation Monitoring and Reporting Plan (Attachment D).

Attachments: [Attachment A - Link US Project Location Map](#)
[Attachment B - Link US Notice of Determination](#)
[Attachment C - Link US Findings of Facts & Stmt. of Overriding Considerations](#)
[Attachment D - Link US Final SEIR Mitigation Monitoring and Reporting Plan](#)
[Attachment E - Malabar Yard Railroad Improvements Location Map](#)
[Attachment F - Summary of Community Engagement](#)
[Attachment G - Summary of Additional Mitigation Measures](#)
[Presentation](#)

(ALSO ON PLANNING AND PROGRAMMING COMMITTEE)

25. SUBJECT: TRAFFIC REDUCTION STUDY UPDATE [2025-0784](#)

RECOMMENDATION

RECEIVE AND FILE status report on Traffic Reduction Study (TRS).

Attachments: [Attachment A - TRS Third Round Modeling Results](#)
[Presentation](#)

26. SUBJECT: FEDERAL AND STATE REPORT [2025-0856](#)

RECOMMENDATION

RECEIVE AND FILE October 2025 Federal and State Legislative Report.

SUBJECT: GENERAL PUBLIC COMMENT [2025-0875](#)

RECEIVE General Public Comment

Consideration of items not on the posted agenda, including: items to be presented and (if requested) referred to staff; items to be placed on the agenda for action at a future meeting of the Committee or Board; and/or items requiring immediate action because of an emergency situation or where the need to take immediate action came to the attention of the Committee subsequent to the posting of the agenda.

COMMENTS FROM THE PUBLIC ON ITEMS OF PUBLIC INTEREST WITHIN COMMITTEE'S SUBJECT MATTER JURISDICTION

Adjournment



Board Report

File #: 2025-0787, **File Type:** Contract

Agenda Number: 21.

EXECUTIVE MANAGEMENT COMMITTEE OCTOBER 16, 2025

SUBJECT: AUDIT SERVICES BENCH

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to execute Modification No. 1 to Audit Services Bench Contract Nos. PS86611000 through PS86611007 (Attachment C) to exercise the first one-year option in an amount Not-To-Exceed \$2,476,605, increasing the cumulative contract value from \$7,142,240 to \$9,618,845 and extending the period of performance from January 1, 2026 to December 31, 2026.

ISSUE

In October 2022, the Metro Board approved the establishment of the Audit Services Bench Contracts (Bench) for a combined total amount NTE \$12,144,985 for a 3-year base term, plus two one-year options. The Bench provides Management Audit Services (MAS) with consulting and assurance services related to a broad range of audits and reviews, including as-needed staffing augmentation support and specialized audits.

Board authorization is requested to exercise the first one-year option to continue to provide specialized expertise and augmented audit services.

BACKGROUND

The Bench was established to support MAS in conducting a wide range of specialized audits and reviews, including as-needed staff augmentation and subject matter expertise. It provides flexibility in bringing in external resources that supplement staff capabilities, enabling the delivery of the Board-approved audit plan by ensuring timely access to specialized expertise and augmented staffing resources. The initial contracts were structured with a not-to-exceed value and options to ensure continuity of audit services. Further background regarding the initial procurement, as well as the price analysis supporting the recommended option, is included in Attachment A. The requested modification, which is the first and only modification to date, is reflected in Attachment B.

DISCUSSION

MAS is required to comply with Generally Accepted Government Auditing Standards (GAGAS).

GAGAS has a due professional care standard which requires MAS to bring in outside experts to supplement staff when the area being audited requires technical or specialized skills that are not available within the department. Co-sourcing is typically used to supplement staff expertise with highly specialized audits that exceed internal capacity and/or resources. Outsourcing is used when the complexity of the audit or the specialized skillsets and/or capacity required are not available in-house. Specialized audits that generally fall under this requirement include information technology projects, including construction or operations projects, programs and/or processes. Other areas of work outsourced or co-sourced to expert firms include Call-for-Projects closeout audits, grant audits such as the State Transportation Improvement Program, as well as financial, compliance, and external audits of subrecipients, Metro, and other entities.

To meet these needs effectively, the Bench is divided into two disciplines, staff augmentation and subject matter expertise, based on the nature of the audits (Attachment C). The firms selected for each discipline reflect the specialized capabilities required for these types of audits.

To date, a total of 17 task orders have been issued against the Bench, for a cumulative total value of \$6,200,181, or 87% of the total NTE amount of \$7,142,240 for the initial 3-year base term. Currently, four of the eight firms on the Bench are certified as Small Business Enterprises (SBE), and task orders have been awarded to these firms in a cumulative amount of \$5,620,561, or 91% of the total awarded value. Because the bench is subject to the Small Business Set-Aside Program, priority is given to SBE firms. As a result, three of the four non-small business firms have not been awarded any task orders to date.

DETERMINATION OF SAFETY IMPACT

The recommendation does not impact the safety of Metro employees, passengers and/or customers.

EQUITY PLATFORM

Metro is committed to small business success and strives to provide a direct route for small businesses to work and grow with Metro. Each prime consultant has established distinct commitments for Small Business Enterprise/Disabled Veteran Business Enterprise (SBE/DVBE) participation. The bench currently includes eight prime consultants, four are SBE certified. To date, seventeen task orders have been awarded under this bench. The overall cumulative participation level across all bench participants is 76.14% SBE and 0% DVBE.

While each prime consultant also made an overall Disadvantaged Business Enterprise (DBE) commitment on this bench contract, the U.S. Department of Transportation has issued an Interim Final Rule (IFR) that makes changes to the DBE Program, including suspension of goals and enforcement, effective October 3, 2025. Metro is currently reviewing the IFR to identify necessary program and procedural changes to ensure full compliance. As such, while the DBE commitment is not a factor in the staff recommendation, there are 10 certified small businesses participating in this contract. This is noteworthy since small businesses are vital for the economy as they drive job creation, foster innovation, and strengthen local communities.

VEHICLE MILES TRAVELED OUTCOME

VMT and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide. These declining VMT trends are due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. While this item does not directly encourage taking transit, sharing a ride, or using active transportation, it is a vital part of Metro operations, as the professional services provided through the Audit Services Bench support the agency's goal of promoting effective and efficient operations and continuous improvement within the organization. Because the Metro Board has adopted an agency-wide VMT Reduction Target, and this item generally supports the overall function of the agency, it is consistent with the goal of reducing VMT.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

FINANCIAL IMPACT

Funding for FY26 is included in the department cost center budgets. Each task order awarded to a Contractor will be funded with the source of funds identified for the specific project. Recognizing the Bench option will continue into FY2027, the cost center manager(s) will be accountable for budgeting future costs.

Impact to Budget

The funding for the task orders is dependent upon the specific project.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Approval of this item supports Metro Vision 2028 Goal #5: Provide responsive, accountable, and trustworthy governance within the Metro organization. The Audit Services Bench will enable MAS to conduct specialized and time-sensitive audits in a responsive manner, supporting the agency's projects, programs, and initiatives.

ALTERNATIVES CONSIDERED

Two alternatives were considered. One alternative would be to hire additional full-time staff to perform the specialized audits. However, this alternative is not cost-effective because the volume of work fluctuates constantly, making this activity subject to periods of peak activity alternating with periods of low activity. Furthermore, some projects require various technical or specialized skills that are not readily available, as it is not practical to hire staff for each particular skill set. Another alternative would be to obtain the audit services through separate procurements. This is also not recommended, as this would prolong the procurement process, making it difficult to complete time-sensitive audits within the planned timeframe.

NEXT STEPS

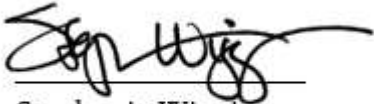
Upon Board approval, staff will execute Contract Modification No. 1 to the Audit Services Bench Contracts Nos. PS86611000 through PS86611007 and continue to award individual task orders for audit services.

ATTACHMENTS

Attachment A - Procurement Summary
Attachment B - Contract Modification/Change Order Log
Attachment C - Firms on the Audit Services Bench
Attachment D - DEOD Summary

Prepared by: Monica Del Toro, Senior Manager, Audit (213) 922-7494
Lauren Choi, Senior Director, Audit, (213) 922-3096
Alfred Rodas, Senior Director, Audit, (213) 922-4553
Kimberly Houston, Deputy Chief Auditor, (213) 922-4720
Carolina Coppolo, Deputy Chief Vendor/Contract Management Officer, (213) 213-4471

Reviewed by: Sharon Gookin, Deputy Chief Executive Officer, (213) 418-3101



Stephanie Wiggins
Chief Executive Officer

PROCUREMENT SUMMARY
AUDIT SERVICES BENCH / PS86611000 THROUGH PS86611007

1.	Contract Number: PS86611000 through PS86611007			
2.	Contractor: Various (See Attachment C)			
3.	Mod. Work Description: Exercise first, one-year option.			
4.	Contract Work Description: Provide audit support services.			
5.	The following data is current as of: 8/5/25			
6.	Contract Completion Status		Financial Status	
	Contract Awarded:	10/27/22	Contract Award Amount:	\$7,142,240
	Notice to Proceed (NTP):	N/A	Total of Modifications Approved:	\$0
	Original Complete Date:	12/31/25	Pending Modifications (including this action):	\$2,476,605
	Current Est. Complete Date:	12/31/26	Current Contract Value (with this action):	\$9,618,845
7.	Contract Administrator: Aielyn Dumaua		Telephone Number: (213) 922-7320	
8.	Project Manager: Monica Del Toro		Telephone Number: (213) 922-7494	

A. Procurement Background

This Board Action is to approve Contract Modification No. 1 to Contract Nos. PS86611000 through PS86611007 to exercise the first, one-year option for audit support services and extend the period of performance from January 1, 2026, to December 31, 2026.

This Contract Modification will be processed in accordance with Metro's Acquisition Policy, and the contract type is a task order based, firm fixed unit rate.

In October 2022, Metro awarded eight Audit Bench Services Contracts Nos. PS86611000 through PS86611007 to provide audit support services. The period of performance is a three-year base with two, one-year options.

No modification has been issued to date.

Refer to Attachment B – Contract Modification/Change Order Log.

B. Price Analysis

The recommended amount has been determined to be fair and reasonable based on pricing that was evaluated as part of the competitive award in October 2022. Pricing remains unchanged and is lower than current market rates for similar services. The Independent Cost Estimate (ICE) is based on the previously established Not-To-Exceed (NTE) amount for the first, one-year option term.

Proposal Amount	Metro ICE	Recommended Amount
\$2,476,605	\$2,476,605	\$2,476,605

ATTACHMENT B

CONTRACT MODIFICATION/CHANGE ORDER LOG

AUDIT SERVICES BENCH / PS86611000 THROUGH PS86611007

Mod No.	Description	Status (approved or pending)	Date	Amount
1	Exercise the first, one-year option extending the period of performance from 1/1/26 through 12/31/26	Pending	Pending	\$2,476,605
	Modification Total			\$2,476,605
	Original Contract:		10/27/22	\$7,142,240
	Total:			\$9,618,845

ATTACHMENT C – FIRMS ON THE AUDIT SERVICES BENCH

Contract No.	Consultant	Certifications
PS86611000	BCA Watson Rice, LLP	SBE
PS86611001	Qiu Accountancy Corporation	DBE / SBE
PS86611002	Simpson & Simpson, LLP	NONE
PS86611003	Talson Solutions, LLC.	DBE
PS86611004	TAP Financials, LLP	NONE
PS86611005	Tap International, Inc.	DBE / SBE
PS86611006	The Lopez Group, LLP	DBE / SBE
PS86611007	Vasquez and Company, LLP	NONE

DEOD SUMMARY

AUDIT SERVICES BENCH / PS86611000 THROUGH PS86611007

A. Small Business Participation

Each prime consultant made unique overall Small Business Enterprise/Disabled Veteran Business Enterprise (SBE/DVBE) commitments on the Audit Services Bench. Progress toward meeting overall SBE and DVBE commitments is measured based on the cumulative participation achieved through all task orders awarded to each prime.

The Small Business Prime (Set-Aside) Program is applicable to this bench because there are at least three (3) SBEs on the bench. To date, seventeen (17) task orders have been awarded to four (4) SBEs. Eleven (11) of those task orders have been awarded through the Set-Aside process.

While each prime consultant also made an overall Disadvantaged Business Enterprise (DBE) commitment on this bench contract, the U.S. Department of Transportation (USDOT) has issued an Interim Final Rule (IFR) that makes changes to the DBE Program effective October 3, 2025. Metro is currently reviewing the Interim Final Rule (IFR) to identify necessary program and procedural changes to ensure full compliance. As such, any DBE commitments are not a factor in this recommended action.

1. BCA Watson Rice (BCA) (PS866110)

BCA, an SBE-certified firm, has been awarded eight (8) task orders, all through the Set-Aside process. BCA made an overall 97% SBE and 3% DVBE commitment. Based on payments, the contract is 24% complete and the current SBE participation is 97.80%.

Small Business Commitment	97% SBE 3% DVBE	Small Business Participation	97.80% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	BCA Watson Rice LLP (Prime)	97%	97.80%
	Total SBE Commitment	97%	97.80%

	DVBE Subcontractor	% Committed	% Participation
1.	Logic Technology Group LLC	3.00%	0.00%
	Total DVBE Commitment	3.00%	0.00%

2. Qiu Accountancy Corporation (Qiu) (PS866111)

Qiu, an SBE-certified firm, has been awarded one (1) federally funded task order. Qiu has not been awarded any non-federally funded task orders. Qiu made an overall 97% SBE and 3% DVBE commitment.

Small Business Commitment	97% SBE 3% DVBE	Small Business Participation	0% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	Qiu Accountancy Corporation (Prime)	97%	0%
Total SBE Commitment		97%	0%

	DVBE Subcontractor	% Committed	% Participation
1.	Juventino Gayatan, Jr. dba JGTaxPro	3%	0%
Total DVBE Commitment		3%	0%

3. Simpson & Simpson LLP (PS866112)

Simpson & Simpson LLP has not been awarded any task orders to date. Simpson & Simpson LLP made an overall 30% SBE and 3% DVBE commitment.

Small Business Commitment	30% SBE 3% DVBE	Small Business Participation	0% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	Qiu Accountancy Corporation	30%	0%
Total SBE Commitment		30%	0%

	DVBE Subcontractor	% Committed	% Participation
1.	Dennis Nelson CPA APC	3%	0%
Total DVBE Commitment		3%	0%

4. Talson Solutions (Talsen) (PS866113)

Talsen has not been awarded any non-federally funded task orders to date. Talsen made an overall 90% SBE and 3% DVBE commitment.

Small Business Commitment	90% SBE 3% DVBE	Small Business Participation	0% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	TBD	90%	0%
Total SBE Commitment		90%	0%

	DVBE Subcontractor	% Committed	% Participation
1.	TBD	3%	0%
Total DVBE Commitment		3%	0%

5. TAP Financial, LLP (PS866114)

TAP Financials, LLP (TAP) has not been awarded any task orders to date. TAP made an overall 30% SBE and 3% DVBE commitment.

Small Business Commitment	30% SBE 3% DVBE	Small Business Participation	0% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	TAP International	30.00%	0%
Total SBE Commitment		30.00%	0%

	DVBE Subcontractor	% Committed	% Participation
1.	DVBE Technology Group	3%	0%
Total DVBE Commitment		3%	0%

6. TAP International, Inc. (TAP Int'l) (PS866115)

TAP Int'l, an SBE-certified firm, has been awarded one (1) task order through the Set-Aside process. TAP Int'l made overall 27% SBE and 3% DVBE commitment.

Based on payments, the contract is 96% complete and the current SBE participation is 100%.

Small Business Commitment	27% SBE 3% DVBE	Small Business Participation	100% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	TAP International (Prime)	27%	100%
Total SBE Commitment		27%	100%

	DVBE Subcontractor	% Committed	% Participation
1.	DVBE Technology Group	3%	0.00%
Total DVBE Commitment		3%	0.00%

7. Lopez & Associates, LLP (Lopez) (PS866116)

Lopez, an SBE-certified firm, has been awarded four (4) task orders, including two (2) through the Set-Aside process. Lopez made an overall 97% SBE and 3% DVBE commitment. The contract is 69% complete based on payments, and current participation reflects 100% SBE and 0% DVBE. Lopez is exceeding its SBE commitments. However, there is a 3% shortfall in DVBE participation. Lopez explained that the two non-federally funded task orders were staffing supplement procurements that did not provide subcontracting opportunities. The firm reported that it intends to engage a DVBE firm as opportunities arise.

Small Business Commitment	97% SBE 3% DVBE	Small Business Participation	100% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	Lopez & Associates, LLP (Prime)	97%	100%
Total SBE Commitment		97%	100%

	DVBE Subcontractor	% Committed	% Participation
1.	TBD	3%	0%
Total DVBE Commitment		3%	0%

8. Vasquez & Company, LLP (Vasquez) (PS866117)

Vasquez has not been awarded any task orders to date. Vasquez made an overall 27% SBE and 3% DVBE commitment.

Small Business Commitment	27% SBE 3% DVBE	Small Business Participation	0% SBE 0% DVBE

	SBE Subcontractor	% Committed	% Participation
1.	BCA Watson Rice LLCP	27%	0%
Total SBE Commitment		27%	0%

	DVBE Subcontractor	% Committed	% Participation
1.	Amerit Consulting	3%	0%
Total DVBE Commitment		3%	0%

B. Living Wage and Service Contract Worker Retention Policy Applicability

The Living Wage and Service Contract Worker Retention Policy is not applicable to this modification.

C. Prevailing Wage Applicability

Prevailing wage is not applicable to this modification.

D. Project Labor Agreement/Construction Careers Policy

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. PLA/CCP is applicable only to construction contracts that have a construction related value in excess of \$2.5 million.

E. Manufacturing Careers Policy

The Manufacturing Careers Policy (MCP) **does not apply** to this contract. The MCP is required on Metro's Rolling Stock RFPs, with an Independent Cost Estimate of at least \$50 million.



Board Report

File #: 2025-0801, **File Type:** Informational Report

Agenda Number: 22.

EXECUTIVE MANAGEMENT COMMITTEE OCTOBER 16, 2025

SUBJECT: 2025 ENERGY MASTER PLAN

ACTION: ADOPT METRO'S ENERGY MASTER PLAN

RECOMMENDATION

ADOPT the Energy Master Plan recommendations (Attachment A).

ISSUE

Metro's energy supply is fundamental to sustaining operations, advancing clean energy and environmental goals, and ensuring system resiliency. Yet the external energy landscape is marked by increasing supply constraints, rising costs, and heightened vulnerability to climate-driven disruptions. At the same time, Metro's expanding portfolio of energy assets-such as electric vehicle charging infrastructure, solar panels, and energy storage systems-requires not only capital investment, but also ongoing integration through software platforms, cybersecurity protections, and a skilled workforce capable of managing and optimizing these technologies.

In this context, Metro's *2025 Energy Master Plan* (EMP) provides the agency with a timely opportunity to proactively design a comprehensive energy ecosystem plan. The EMP addresses projected energy needs, identifies cost-effective strategies for clean energy generation, and recommends targeted investments in energy management technologies and resiliency projects that will enable Metro to meet future demand while controlling costs and strengthening system reliability.

BACKGROUND

The Metro 2025 EMP represents the agency's first formal energy master planning update since the *Energy Conservation and Management Plan* (ECMP) was developed and adopted in 2011. Since that time, Metro has implemented numerous energy-related initiatives, established and made progress toward ambitious energy and climate goals, and deployed on-site renewable energy and electric vehicle charging systems across its operations.

Changing external conditions now requires a more proactive and integrated approach. Macroeconomic realities-including energy supply constraints driven by electrification demand, insufficient investment in grid infrastructure, rising energy prices, and energy technology supply chain challenges-combine with climate-driven stressors such as extreme heat, wildfire, and other severe weather events to heighten the need for comprehensive energy planning, cost

management, and resiliency.

Metro's growing need for resiliency was reinforced by the 2022 climate risk screening of assets, staff, and customers, followed by a 2023 evaluation of Metro's adaptation, continuity of operations, and resiliency measures. These findings informed the 2025 *Climate Action and Adaptation Plan* (CAAP) update. Key energy-related risks include increased grid outages and mechanical and electrical system disruptions associated with higher ambient temperatures, flooding, and storms. Metro has integrated these risks into the *All Hazards Mitigation Plan* (AHMP), which emphasizes making climate and emergency management agency-wide considerations. Consistent with the Agency-wide Continuity of Operations Plan (COOP), which identified 19 critical business units requiring rapid resumption following disruption, the EMP provides energy-focused strategies to enhance system reliability.

In parallel, Metro's *Vision 2028* and transit demand management goals further underscore the need for a proactive, dynamic energy planning framework that can sustain operational reliability, build resiliency, and mitigate potential supply or delivery constraints as ridership grows.

Metro's strategic energy and climate commitments also shape the EMP. In 2020, the Board adopted the *Moving Beyond Sustainability Plan* (MBS), the agency's 10-year sustainability plan that establishes transformative goals to reduce environmental impacts, address the climate crisis, and advance equity and resiliency across Los Angeles (LA) County. Within the MBS, Metro committed to two key energy management targets:

1. Reduce facility energy consumption by 17% by 2030, relative to the Business-as-Usual (BAU) scenario.
2. Increase on-site renewable energy generation to 7.5 MW.

While the MBS outlines strategies toward these targets, the EMP provides the holistic, integrated analysis of current and projected energy usage needed to guide achievement. Accordingly, all energy demand and renewable energy strategies in the EMP are fully aligned with and reflected in the MBS.

Metro's Board adopted CAAP in 2019, which set two agency-wide greenhouse gas (GHG) reduction targets:

1. Reduce total GHG emissions 79% by 2030 (from 2017 baseline).
2. Achieve net-zero GHG emissions by 2050.

These CAAP targets were subsequently incorporated into the MBS in 2020, reinforcing Metro's commitment to deep decarbonization. The EMP complements these efforts by advancing strategies for energy cost management, expanded procurement of carbon-free electricity, and associated energy resiliency investments that will enable Metro to meet its 2030 and 2050 GHG reduction goals.

DISCUSSION

The EMP represents a critical, timely effort to establish a comprehensive and dynamic roadmap for Metro’s future energy needs. Developed to address projected increases in energy demand, costs, and resiliency challenges, the EMP provides an integrated framework to guide cost-effective investments in clean power generation, energy management technologies, and resiliency measures across Metro’s system.

The EMP is built on a rigorous technical foundation. It incorporates detailed energy forecasts using an Excel-based modeling tool that integrates building- and meter-level consumption data, historic and projected energy prices, zero-emission bus (ZEB) rollout schedules, traction power demands, fleet and non-revenue electric vehicle (EV) charging, on-site solar photovoltaic (PV) generation, and current and future facility energy needs based on approved capital and operational plans. Core planning and policy documents-including the MBS, *Vision 2028*, the *Long-Range Transportation Plan* (LRTP), the Equity Toolkit, and the CAAP-were aligned with operational data to ensure consistency with Metro’s long-term goals. Recommendations were further informed by research into energy management best practices and validated through multiple working sessions with Metro staff and community-based organizations (CBOs).

Findings

Key findings indicate that Metro’s energy profile will undergo significant transformation between 2025 and 2050. Electricity demand, primarily driven by electrification of the bus fleet and system expansion, is forecast to increase from 334 GWh in 2024 to over 1,000 GWh by 2050, representing a 200% increase. Current annual energy costs of \$95 million are also projected to rise substantially over this period. When accounting for utility rate escalation and increased energy consumption, total costs in 2050 could reach between \$520 million under a low scenario (3% average annual rate increase) and \$1.77 billion under a higher scenario (8% average annual rate increase).

The table below presents projected total energy costs for 2050 under different utility rate escalation scenarios. Year 2050 energy usage is assumed to remain constant across scenarios, while utility rates change 3 percent, 6 percent, and 8 percent per scenario.

The table also identifies the relative contribution of energy consumption growth versus utility rate escalation and inflation to the total cost increase, illustrating the impact of future rate increases on Metro’s energy expenditures.

Year 2050 Cost Scenarios (Non-Cumulative)	Energy Usage (A)	Utility Rate Escalation & Inflation (B)	Total Costs (A+B)	% of 2050 Energy Cost due to Energy Usage	% of 2050 Energy Cost Due to Utility Rate Escalation & Inflation
3% average annual increase	\$239.7M	\$280.4M	\$520.1M	46%	54%
6% average annual increase	\$239.7M	\$850.8M	\$1.09B	22%	78%
8% average annual increase	\$239.7M	\$1.53B	\$1.77B	14%	86%

Resiliency pressures will also intensify as electrification expands into areas with known grid supply constraints, particularly within several bus divisions and park-and-ride facilities. Current reliance on renewable diesel backup generators and uninterruptible power supply (UPS) systems provides only limited coverage, and existing solar PV systems are not paired with storage, preventing them from supplying power during outages.

While Metro has achieved 46 percent renewable electricity toward its CAAP goal of 100 percent by 2035, existing solar PV installations (currently 2.6 MW toward a 7.5 MW goal) face operational challenges related to aging equipment, weather impacts, and reactive maintenance practices. Without proactive operations and maintenance strategies, reliance on costlier utility power will increase. Similarly, energy savings and automation technologies remain under-deployed across Metro's facilities, limiting potential efficiency gains. Workforce training programs are also challenged by variability and lack of standardization in control systems, underscoring the need for expanded partnerships and skills development to support the transition to electrification and advanced energy systems.

To address these findings, the EMP identifies four primary areas of recommended action: (1) Energy Planning, (2) Energy Supply, (3) Energy Technology Deployment and Workforce Development, and (4) Stakeholder Engagement. Specific measures include establishing a centralized energy planning steering committee, standardizing operating procedures for resiliency projects, expanding and modernizing solar PV with integrated storage, upgrading building automation systems, piloting energy storage at traction power substations and bus divisions, and strengthening utility, workforce, and community partnerships. These actions are phased and structured to support incremental progress, inform future investment decisions, and provide resiliency and cost-mitigation benefits.

The EMP is intentionally designed as a dynamic, updateable resource that will evolve alongside Metro's operational and capital planning. Over the next 12-18 months, priority focus areas include ZEB division resiliency planning, traction power substation energy storage pilots, and the

development of a comprehensive implementation roadmap. These near-term actions will provide critical lessons learned, establish cost-benefit frameworks, and build institutional capacity to support broader deployment in FY27 and beyond.

Through these measures, the EMP positions Metro to proactively manage its most significant energy challenges, mitigate cost escalation, strengthen operational resiliency, and advance its commitment to a clean, equitable, and sustainable transportation system.

DETERMINATION OF SAFETY IMPACT

The recommended Board action to approve and adopt Metro's EMP will have a direct and positive impact on safety, service quality, system reliability, performance and overall customer satisfaction through increased system reliability, energy resiliency and energy cost mitigations. The EMP supports Metro's continuity of operations and reduces system vulnerability and energy independence as energy needs grow, and energy sources are homogenized.

FINANCIAL IMPACT

Impact to Budget

Adoption of the EMP will establish a framework and near-term action steps for a proactive, integrated approach to energy cost management and resiliency planning. At this time, there is no direct budget impact associated with Board adoption of the EMP. Initial funding for implementation will be drawn from existing approved budgets under the Metro Office of Sustainability, including Projects 450001: Energy Conservation Initiative, 450003: Sustainability Environment, 290009: EV Parking Equipment Program, 205697: Distributed Energy Resources, 207187: Building Automation Integration, Division 9, 208615: Non-Revenue Fleet EV Charging Program; 210805: Energy Resiliency, C Line and Division 18.

Implementation of EMP strategies may, over time, require new projects and associated capital life-of-project budgets to achieve long-term energy savings and resiliency benefits. Any such requests will be developed in coordination with relevant departments and returned to the Board for approval.

The EMP is a critical cost-management tool. With Metro's annual energy expenditures projected to rise sharply over the next 25 years, the EMP provides early visibility into future energy demand and costs, enabling proactive planning and targeted mitigation strategies. By prioritizing integrated, site-level investments-rather than piecemeal, technology-by-technology deployments, the EMP will optimize interactive benefits, reduce shared costs (e.g., design, trenching, wiring), and deliver scalable, cost-effective solutions across the system.

While not required, Metro will apply a standardized cost-effectiveness analysis to all future EMP-related projects to ensure investments deliver strong value. Existing analyses already identify Solar PV, energy storage, and energy efficiency investments as positive based on Net Present Value (NPV) and Return on Investment (ROI). More detailed, site-specific cost-effectiveness analysis will be developed beginning in FY26 to inform future budget requests.

EQUITY PLATFORM

EMP recommendations include the development of additional on-site clean energy generation, energy management and resiliency technologies at critical sites to provide local health benefits, and opportunities for continued workforce development partnerships. These recommendations will support long-term operational sustainability of the growing transit system, positively impacting Equity Focus Communities (EFCs), customers, and broader transit system users across LA County.

As part of the development of the EMP, the team engaged the Office of Equity and Race to develop a plan for community feedback to better understand the implications of the EMP strategies and recommendations. The team conducted a stakeholder outreach effort during the development of the plan with the goal of soliciting early perspectives from organizations across Metro's service area as to needs of - and insights from - local communities. This was primarily accomplished via interviewing five CBOs that had not previously engaged in other Metro sustainability or climate-related efforts that included Brotherhood Crusade, Car-Lite Long Beach, Day One, Los Angeles Neighborhood Initiative (LANI), and YMCA of Whittier.

This engagement opportunity was posted through the CBO Database and aligned with Metro's CBO Partnering Strategy. Several key recommendations were incorporated from this CBO outreach into the EMP including ongoing CBO engagement, exploring workforce development partnerships, and ensuring that energy equity indicators and benefits are communicated publicly via Metro's website and/or data dashboards.

To achieve equity objectives, the EMP recommendations include the integration of equity assessments in early project and program planning phases using the data and resources from the forthcoming Equity Toolkit, Community Demographic Profiles, and Metro's Cost Benefit Analysis (CBA) for larger capital projects. The data and insights collected from these assessments are intended to support the ongoing evaluation and continual improvement of energy equity as part of Metro's Equity Platform.

Next steps in the implementation of equity objectives as part of energy planning will include an equity assessment for the Division-18 distributed energy resource feasibility plan. Community engagement will also be part of Metro's ongoing conversation with utilities and regional energy partners including the LA100 Plan advisory group. The LA100 Plan documents are updated periodically and incorporate community input through robust outreach and engagement.

VEHICLE MILES TRAVELED OUTCOME

Vehicle Miles Traveled (VMT) and VMT per capita in LA County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit. Metro's Board-adopted VMT Reduction Targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. While this item does not directly encourage transit, sharing a ride, or using active transportation, it is a vital part of Metro operations, as it supports operational resiliency, environmental and sustainability goals and cost-effective energy management strategies. Because the Metro Board has adopted an

agency-wide VMT Reduction Target, and this item supports the overall function of the agency, this item is consistent with the goals of reducing VMT.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Implementation of the EMP provides Metro with a strategic, actionable framework to evaluate and develop energy management and resiliency actions that increase system reliability, reduce long-term energy costs, and expand on-site clean energy generation. The EMP also establishes a transparent, data-driven tool for evaluating projects against strategic goals, ensuring that Metro's capital investment decisions are aligned with organizational values and deliver measurable benefits to riders, communities, and the region.

ALTERNATIVES CONSIDERED

The Board could choose not to approve the EMP, direct staff to revise the recommendations prior to implementation, or decline implementation altogether. However, not approving the EMP would significantly limit staff's ability to deliver proactive, data-driven strategies to address Metro's projected energy demand, escalating costs, and resiliency needs. Without the EMP, Metro would face increased fiscal exposure, reduced ability to mitigate energy risks, and missed opportunities to optimize investments in clean energy and resiliency.

NEXT STEPS

With Board approval of the EMP recommendations, staff will develop a comprehensive implementation plan that outlines clear next steps, defined roles and responsibilities, and measurable deliverables across all four recommended action areas. The Office of Sustainability will coordinate this process and act as the agency's Energy Management team, ensuring alignment with Metro's broader strategic goals and providing ongoing oversight.

Successful implementation will require collaboration across Metro departments, including primarily the Office of Management & Budget, Vendor/Contract Management, Capital Planning, Program Management, and Operations. This cross-functional engagement will enable more strategic and coordinated progress in energy management, cost mitigation, and resiliency planning.

Staff will provide regular updates to the Board through Metro's Annual Sustainability Report. The update will summarize progress against key performance indicators (KPIs), cost-benefit outcomes of implemented measures, and any new capital project funding requests required to advance EMP priorities. These updates will also capture lessons learned, enabling the EMP to remain a flexible, adaptive framework responsive to evolving energy, fiscal, and climate conditions.

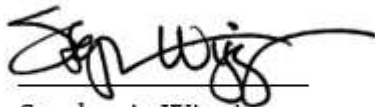
ATTACHMENT

Attachment A - Energy Master Plan

Prepared by: Cris B. Liban, Deputy Chief Sustainability Officer,
(213) 922-2471

Uduak-Joe Ntuk, Senior Director, Office of Sustainability, (213) 922-4197

Reviewed by: Tim Lindholm, Chief Program Management Officer,
(213) 922-7297



Stephanie Wiggins
Chief Executive Officer

Energy Master Plan

Energy Demand Forecast and Energy Management Recommended Actions



Metro[®]

October 2025

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This plan was led by Dr. Cris Liban and Uduak-Joe Ntuk, from Los Angeles County Metropolitan Authority's (Metro's) Office of Sustainability. Metro was supported by TRC Companies in the development of this plan. Many partners were also integral to the development of this plan:

INTERNAL PARTNERS	EXTERNAL PARTNERS
Community Relations Construction Management Countywide Planning & Development Facilities Engineering Operations Facilities/Property Maintenance Finance & Budget Government Relations Human Capital and Development Office of Equity and Race Office of the Chief Executive Officer Operations (Bus and Rail) Planning and Development Procurement Program Management Purchasing Rail Vehicle Engineering Systems Engineering Wayside Systems Facilities Maintenance Vendor/Contract Management	Burns and MacDonnell Brotherhood Crusade Car-Lite Long Beach Circlebox Ventures Cumming Group Los Angeles Neighborhood Initiative (LANI) LA28 Metro Sustainability Council UCLA Luskin Center/UCLA Department of Transportation YMCA of Whittier

Executive Summary

Background

Los Angeles County Metropolitan Transportation Authority's (Metro) 2025 EMP is the Agency's first formal energy master planning update since 2010, when the Energy Conservation and Management Plan (ECMP) was developed and subsequently approved by Metro's Board in 2011. Since that time, Metro has developed and implemented numerous energy-related plans¹, established and made progress towards energy and climate goals, and built on-site renewable energy and electric vehicle charging systems.

Many large energy users and public agencies have developed EMPs to better guide their energy planning and to proactively anticipate challenges and mitigate energy constraints as they decarbonize their operations. Metro has adopted renewable energy and carbon emissions reductions goals with electrification² and on-site solar photovoltaic (PV) energy generation serving as key enablers to meet these targets. As progress is made towards these goals, macroeconomic realities such as energy supply constraints – driven by the demand for electrification and lagging investments in energy infrastructure – energy price increases and supply chain challenges, and climate events such as extreme heat and fire necessitate a proactive approach to energy planning, cost management and energy resiliency.

Metro's need for increased resiliency was highlighted as part of the climate risk screening of assets, staff, and customers in 2022. The screening led to a 2023 evaluation of Metro's current adaptation measures and recommendations for additional measures to address climate risks. Those findings were also incorporated into the 2025 Climate Action and Adaptation Plan (CAAP) update³. Key climate risks relating to energy include increased grid outages and mechanical and electrical disruptions due to increased temperatures, flooding, and storms. Metro's Agency-wide Continuity of Operations Plan (COOP) identified 19 functional business units that need to continue or resume operations as quickly as possible following an emergency.⁴ Aligned with Metro's transit demand management and VISION 2028 goals, a proactive and dynamic energy planning framework is also required to support system reliability, provide resiliency and proactively mitigate potential energy constraints or energy delivery challenges due to increases in ridership.

Objectives

An energy master plan (EMP) is a comprehensive summary of an organization's current and future energy needs. EMPs are developed to identify the sources of projected changes in energy demand and to create a strategic roadmap for more effective management of energy costs and related technologies going forward. This is an opportune time to reexamine and proactively develop a subsequent comprehensive energy plan that can address Metro's projected energy capacity needs and identify cost-effective opportunities for continued investments in clean energy generation, energy management technologies and projects that support operational resiliency.

The EMP is a critical tool for proactive energy cost management, supporting cost mitigation and addressing potential fiscal cliffs. With annual energy expenditures projected to rise, proactive

¹ See Appendix A for a detailed Metro's energy-related plans

² The process of switching from fossil fuels such as diesel fuel and natural gas to electricity.

³ See 2025 CAAP Update

⁴ Performance Audit of Bus Operations COOP Report No. 23-SEC-P01. November 2024.

visibility into future energy costs will allow Metro time to plan and implement cost mitigation strategies while ensuring appropriate investment in operational resiliency. The 25-year forecast window allows for early identification of needed investments, enabling Metro to plan ahead and allocate funds strategically to reduce future energy costs and enhance energy resiliency.

The expected outcomes from Metro’s EMP include:

1. Estimate of future total energy demand and key components of energy needs for Metro for electricity and natural gas over the next 25 years.
2. Support the identification of potential energy constraints due to electrification and opportunities for energy management; stakeholder engagement; local, county and utility energy coordination.
3. Provide best practices and high-level recommendations to support Metro’s future energy management, equity, resiliency and decarbonization goals.
4. Development of new strategies to engage Metro staff, the public and stakeholders to make more cost-effective progress towards shared energy resilience goals.
5. Implementation Plan outlining defined activities, key performance indicators (KPIs) and assigned responsibilities.

Conclusions

Between 2025 and 2050, Metro’s energy usage, energy costs and energy resiliency needs will significantly increase requiring a more proactive, integrated approach to energy management going forward.

Energy Forecast

- > **Electric energy usage is expected to increase from 334 GWh in 2024 to more than 1,000 GWh by 2050, a 200% increase over the next 25 years.** Currently, Metro’s largest energy uses come from rail propulsion (electricity) and bus fuel supply (100% RNG). Electricity will become the largest component of Metro’s energy supply by 2035 as natural gas – which currently fuels Metro’s buses – is phased down.
- > **Metro’s annual energy spend is forecasted to grow from \$95M in 2024 to more than \$1B in 2050.** When accounting for utility rate escalation and increased energy consumption, total costs in 2050 could range between \$520 million under a low scenario (3% average annual rate increase) and \$1.77 billion under a higher scenario (8% average annual rate increase).

Resiliency

- > **Metro’s expected electricity consumption could exacerbate existing energy supply constraints.** Energy constrained areas exist today for some Southern California Edison (SCE) and Los Angeles Department of Water and Power (LADWP) accounts, with three bus divisions and three park-and-ride locations known to have potential capacity concerns due to energy load expansion.
- > **Electrification, grid supply constraints and climate-related impacts will only hasten the need for energy resiliency.** In the event of a power outage or disruption, Metro currently relies on back-up power from diesel generators and uninterruptible power supply (UPS) systems with battery banks to support communications, ventilation systems, fire alarm panels and emergency lighting. Metro’s existing grid-connected solar PV systems aren’t

paired with battery or other energy storage systems and thus aren't currently able to provide energy during grid outages.

Clean Energy Supply

- > **Metro's energy supply mix is 46% renewable energy, demonstrating progress towards Metro's CAAP goal of achieving 100% renewable electricity by 2035.** Metro's on-site solar PV systems currently contribute 2.6MW toward the Agency's goal of 7.5MW installed capacity.
- > **Expanding solar beyond the current 7.5MW goal has a positive net present value** and if paired with batteries can provide additional resiliency at critical sites.
- > **Maintenance of existing solar PV is primarily reactive, addressing issues only after performance declines or failures occur – leading to reduced system reliability and higher long-term costs.** Operational performance issues at existing solar PV installations have increased reliance on more expensive utility energy to compensate for generation shortfalls.

Workforce Development

- > **Continued investment in skill-building and growth of current workforce development** partnerships are necessary, in order for facilities maintenance (FM) and Metro's workforce to fully contribute to Metro's transition to clean electricity and increased electrification.
- > **The variability and lack of standardization across building systems and control technologies pose barriers** to developing scalable and cost-effective workforce training programs.

Energy Management Technologies

- > **Agency-wide technologies such as energy efficiency and building automation systems (BAS) have not been widely implemented.** This limited deployment reduces the potential for energy cost savings, emissions reductions and improved operational performance.

Recommended Actions

The anticipated growth in energy usage and costs, coupled with the challenges posed by grid constrained sites within Metro's operations, presents opportunities to develop more integrated and strategic approaches to energy planning, usage and management. These recommended actions, detailed in the Recommendations section, include:

Recommendation 1.0: Coordinated Energy Planning

Adopting a more coordinated and strategic approach to energy planning will require new approaches to proactive collaboration across Metro to better support the Energy Management function led by the Office of Sustainability (OOS). Creating an EMP Steering Committee with cross-departmental representation, with the OOS continuing as the coordinator and facilitator can serve to formalize energy planning coordination and enhance the efficiency and cost-effectiveness of energy data and information management. This approach would also facilitate data-driven decision-making, support utility engagement and enable the generation of more frequent and actionable progress reports on energy management outcomes.

Recommendation 2.0: Clean Energy Procurement

Metro has two opportunities to continue to increase its supply of renewable energy: through on-site generation assets such as solar PV and through utility providers' renewable energy product offerings. The EMP recommends that Metro continue expanding solar PV systems to a total of 64MW, prioritizing additional solar with battery energy storage at bus divisions to help mitigate electricity costs, support zero-emission bus charging, and provide back-up power. Increasing on-site distributed energy generation has the benefit of reducing utility costs and, when paired with energy storage, can provide resiliency and back-up power functions to support critical operations. There is an opportunity to increase the current percentage of Metro's renewable energy supply portfolio at minimal or no additional cost by leveraging clean electricity options offered by Metro's utility partners. Utilizing these options can accelerate progress toward renewable energy and greenhouse gas (GHG) reduction targets, while managing energy costs and supporting grid decarbonization efforts.

To address performance challenges in existing solar PV systems, Metro should prioritize establishing clear ownership and dedicated budget allocations for preventative operations and maintenance (O&M) across all systems.

Recommendation 3.0: Energy Technology Implementation and Workforce Development*Energy Education*

The EMP outlines several recommendations on education topics to support expanding energy fluency across key staff. Energy technology and energy management systems comprise a combination of hardware (e.g. electric vehicle chargers, solar PV) and software to connect energy assets for electricity load management, manage energy efficiency optimization in buildings and support more complex energy solutions such as back-up power and off-grid energy. Understanding the functional requirements and interactive benefits of distributed energy hardware and software can be challenging. Energy technology education delivers multiple benefits including internal workforce development needs, expansion of technology partners and more cost-effective energy technology deployments. Moreover, given the significant scope of technological change and due to increasing deployment of connected and high value energy assets such as high-powered charging stations, energy security and energy asset vulnerability is a critical education topic as threats due to cyberattacks in electric mobility as well as hardware security concerns due to theft or vandalism are prevalent in the marketplace.

In addition to high level energy education topics, continued training is a foundational element of the EMP rollout. Priorities for investing in energy education and upskilling should focus on facilities management, planning staff and operations personnel. The electrification of bus and rail systems, alongside the deployment of solar energy, battery energy storage, electric vehicle supply equipment, and advanced control technologies, will introduce new job classifications, skill sets, and potentially shift responsibilities for thousands of workers. Represented employees, especially those in maintenance and operations, will require structured upskilling and retraining programs. This presents a significant opportunity for continued labor-management collaboration on curriculum development, apprenticeship pathways and continuing education for workforce development.

Future Technology Implementation

Metro is a large and complex organization supported by a variety of critical operations. As the Agency looks ahead to a more energy constrained and costly environment, where resiliency becomes increasingly important, it is essential to re-evaluate how future energy-related

technologies are planned and deployed across Metro’s 21 major operating divisions, locations and its broader portfolio of sites. Moving forward, agency-wide deployments of a single technology solution (e.g., solar panels, building controls, etc.) may not be as cost-effective or efficient as compared to an integrated and phased, site-level technology implementation approach. A comprehensive, site-level approach would enable the optimization of interactive benefits from critical energy-management technologies while providing cost-effective solutions that can be refined and scaled to other priority sites.

Resiliency Cost-Benefits and Funding Mechanisms

On February 27, 2025, Metro’s Board approved a motion to direct the CEO to develop a standardized cost-benefit analysis framework, using U.S. DOT analysis or a comparable methodology, for all Metro capital projects to help inform the Agency’s more data-driven and transparent decision-making process for projects Metro advances. In addition to implementing Metro’s standardized cost benefit framework, there are several cost-benefits as they relate to implementing the EMP recommendations and future resiliency-related investments that should be included as part of the Agency’s standardized process, including the cost-benefits of resiliency and early screening for community co-benefits. Moreover, given the challenging funding climate and operational budget constraints, funding mitigation and innovative funding strategies should be identified early in the planning staging of energy-related projects.

Recommendation 4.0: Stakeholder Engagement

Metro’s community partners will play an important role in the implementation of the EMP. Stakeholder involvement is critical to co-developing new training program curriculum, helping expand energy technology training and certifications and increasing the co-benefits for communities as Metro’s invests more deeply in clean energy technologies and resiliency at their critical sites and divisions. As part of the development of the EMP, several community-based organizations (CBOs) were interviewed and there is a clear opportunity for Metro to extend the co-benefits and potential cost sharing of resiliency investments with external partners. Developing communications plans outlining Metro’s workforce development and energy transition priorities will also increase community awareness of and proactive engagement around energy planning and resiliency investments.

Based on feedback from the development of Metro’s Equity Toolkit which will be finalized later in 2025, and reinforced by a sampling of community partner feedback as part of the development of the EMP to enhance equitable outcomes, community partners have expressed the need for:

- > Early collaboration
- > Demonstration of collaboration benefits
- > Facilitated collaboration across the project lifecycle

The recommended priorities for stakeholder engagement in support of energy planning are:

- > **CBOs:** Strengthening relationships through proactive leadership and engagement with community partners around energy projects, energy technology co-benefits and opportunities for joint projects. This proactive engagement helps support the equity use indicator assessments which is included as part of the cost-benefit analyses in recommendations 3.3.

- > **Workforce development partnerships:** Target workforce development partnerships that can help Metro advance internal workforce development and create broader opportunities for community equity through workforce development.
- > **Communicating progress:** Ensuring that progress and community benefits are communicated on Metro’s website and ESRI dashboards.

Implementation Planning: Metrics for Continuous Improvement

To capture the full benefits of these recommendations, and support continuous improvement around energy planning, it is recommended that upon adoption of the Energy Master Plan, the Agency develop a detailed 12-18 month implementation plan that incorporates:

- > Expected outcomes and key performance indicators
- > Clear milestones for future Board decisions and input regarding additional on-site solar, energy resiliency and energy management technologies
- > Cost-Benefits fully detailed to include resiliency benefits and energy switching cost implications as well as on-going research into innovative funding to mitigate energy-related cost increases.

Approach

The EMP is organized as follows and addresses the following key questions:

SECTION	KEY QUESTIONS
Goals and expected outcomes	> How does the 2025 EMP align with and support other energy and climate planning efforts? > What were the goals and expected outcomes guiding the development of the 2025 plan?
2025 EMP context compared to 2010 baseline	> What has changed between the last formal EMP and today? > What are the key findings and organizational requirements driving future energy planning? > What are the internal challenges impacting energy management?
Industry best practices	> Which industry best practices are applicable for Metro's energy planning?
Current energy demand	> How much does Metro spend on energy? > What are the uses of energy? > How clean is Metro's energy supply content?
Future energy demand	> How does the EMP determine future energy requirements? What approach to forecasting was used (data collection and methodology)? > How much can Metro expect to pay for energy in the next 25 years? What are the cost drivers? > What opportunities are there to mitigate energy costs and support Metro's fiscal responsibility?
Energy Planning Recommendations	> What is an appropriate and achievable action plan based on future energy needs and where Metro is today? > How can Metro cost effectively invest in resiliency? > What combination of People + Processes + Technology is needed? > How should Metro engage with internal and external stakeholders to support energy planning? > What are expected outcomes for continuous improvement?
Implementation Plan and Performance Metrics	> Schedule- what are the priorities for the next 12 months look like? > Who is responsible for implementation? How do various departments coordinate going forward? > What are the Key Performance Indicators?

Table 1: Key Questions Driving the 2025 EMP's Analysis and Content

How does the 2025 EMP align with and support other energy and climate planning efforts?

The 2025 EMP is a key deliverable from the OOS, building on more than 17 years of energy-related studies and recommendations. The development of the EMP is intended to provide a long-term view of Metro’s diverse array of facilities, energy uses and strategic plans to analyze and map impacts for infrastructure, energy procurement and energy management.

The EMP is a comprehensive and integrated plan that forecasts energy demand across the Agency to guide future energy planning recommendations and investments in support of the goals established in related planning and policy documents. The EMP incorporates energy forecast data into a comprehensive Excel-based modeling tool that includes both building- and meter-level energy consumption data. The EMP uses this information, combined with strategic energy planning best practices and observations across Metro’s existing operations, to develop a series of action-oriented and phased recommendations to guide future strategic energy management. The EMP is intentionally designed to be dynamic resource with analyses that can and should be easily updated as Metro plans and implements recommendations.

In 2020, Metro’s Board of Directors adopted the agency’s 10-year strategic sustainability plan, Moving Beyond Sustainability (MBS). MBS is Metro’s transformative vision to reduce the Agency’s environmental impacts, address the climate crisis and create a more equitable and resilient Los Angeles County. In MBS, Metro committed to achieving two targets related to energy resource management:

1. Reduce energy consumption by 17% at facilities from the 2030 Business as Usual Scenario.
2. Increase onsite renewable energy generation to 7.5 megawatts (MW).

While MBS includes several strategies and actions intended to drive the achievement of those two targets, the EMP offers a holistic and integrated analysis capturing all of Metro’s current and projected future energy usage, as well as a series of concrete recommendations intended to help drive the achievement of those targets. All energy demand and renewable energy strategies outlined in this EMP are thus also reflected in MBS.

Metro’s Board adopted the agency’s Climate Action and Adaptation Plan (CAAP) in 2019, which outlined thirteen specific measures toward the achievement of two GHG emissions targets:

1. Reduce total GHG emissions by 79% by 2030 (from 2017 baseline).
2. Achieve net-zero emissions by 2050.

In 2020, these CAAP targets were folded into MBS, reinforcing Metro’s commitment to these emission reduction goals. In addition to the strategies and actions included in MBS, this EMP address strategies related to Metro’s fleet and building electrification efforts, as well as carbon-free electricity procurement, to help drive Metro’s achievement of its 2030 and 2050 GHG emissions targets.

The EMP incorporates energy-related impacts, plans and goals from a comprehensive set of planning and guidance documents including Moving Beyond Sustainability (MBS) Plan, Vision 28, Long Range Transportation Plan (LRTP), Equity Toolkit development and the CAAP.

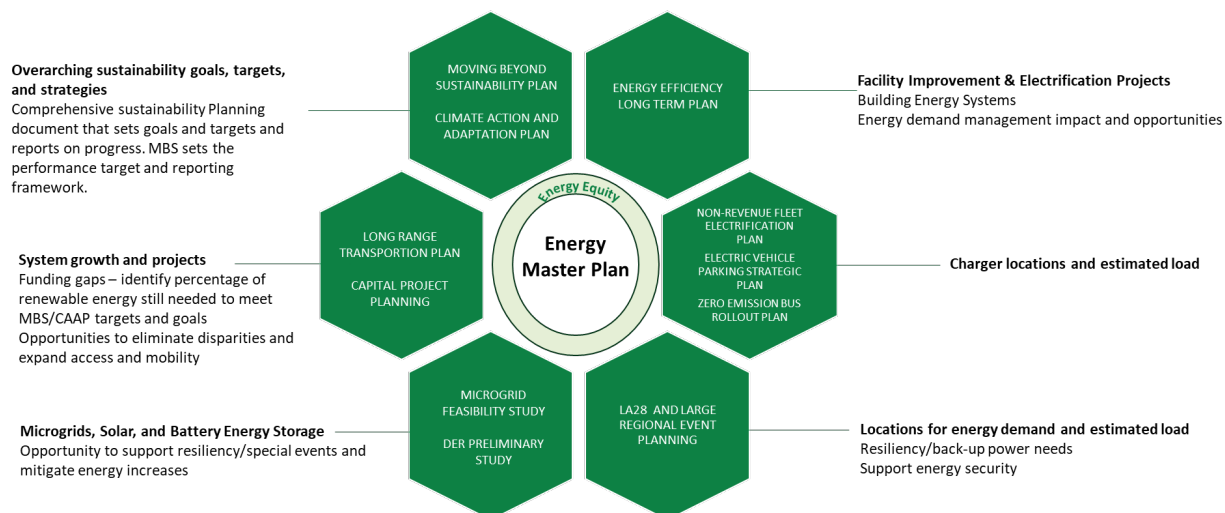


Figure 1: Energy Master Plan – Related Planning Integration

What are the goals and expected outcomes guiding the development of the 2025 plan?

Key outcomes from the development of Metro’s 2025 EMP include an estimation of future total electrical energy demand (by year, demand source, and grid location), identification of potential energy constraints and opportunities for energy management, and engagement with key stakeholders. The goals of the EMP also include providing operational recommendations based on industry best practices to support Metro’s future energy management, equity, resiliency and decarbonization goals.

GOALS	EXPECTED OUTCOMES – 2025 IN PROCESS	FUTURE OUTCOMES
Visibility Into Energy Investments: Identify sources of energy growth and potential supply constraints	Energy demands + energy capacity: Track and document current, planned, and future investments to identify source and location of energy consumption, peak demand, and opportunities to address energy equity.	Develop Geographic Information System (GIS) based tools.
Alignment Across Planning Efforts: Ensure alignment in data and assumptions across other related planning efforts	Agency-wide energy modeling incorporating assumptions and progress from Moving Beyond Sustainability (MBS) Plan, CAAP and capital planning.	Create standard operating procedures for more frequent and cost-effective updates.
Adaptable and Resilient Energy Planning: Data base/energy data can be updated annually as assumptions and energy needs change	Identify pathways and best practices for energy infrastructure investments to support resiliency and climate goals.	Communicate Metro’s leadership in energy planning to gain state and community support.
Stakeholder and Partner Engagement: Stakeholder engagement to ensure we have support for operationalization of energy planning recommendations	Communication plan to share energy planning insights with key stakeholders.	Coordinated and more frequent engagement with utilities, community partners and regionals planning agencies.
Commitment to Energy Equity: Incorporating energy equity lens into the planning document	Incorporate CBOs and community feedback	Expand SC to increase member diversity and development of process to engage and partner on community energy projects earlier in the process.

Table 2: Energy Management Plan Goals and Expected Outcomes

What has changed between the last formal EMP and today? What are internal challenges impacting energy management?

Since the initial 2010 Energy Management and Conservation Plan (ECMP) was adopted in 2011, a lot has changed at Metro and at the state and federal level, impacting future energy planning.⁵ Over the last 15 years, California has continued its clean energy leadership by developing 100% clean electricity standards, decarbonization goals and investing in light and heavy-duty vehicle electrification and infrastructure. As the energy market has transformed, challenges, such as long and costly lead times to replace aging transmission and distribution energy infrastructure, are creating constraints for scaling clean energy adoption. The acceleration of extreme climate events and resiliency requirements also add challenges at the same time as the federal government funding for clean energy projects has been curtailed.

The ECMP identified energy conservation opportunities, electric consumption and future renewable energy screening criteria and projected significant load growth due to new lines and extensions. The ECMP also projected an increase in energy usage from 2010 to 2020 showing Metro could expect a 90% increase in energy usage over that period.⁶

Advances in technology can deliver enhanced capabilities and efficiency but can also create unintended vulnerabilities as assets, organizations, and system users/customers become increasingly connected in a digital world. Paired with increased social, economic, and political instability, critical energy and government facilities can be targets for any number of bad actors, foreign or domestic, who have aims to contribute to that instability and cause harm. It is imperative that Metro incorporate energy security into evaluations and planning that protect current assets and operations and can adapt to an evolving threat and technological landscape. These plans also must synchronize holistically with the organization’s efficiency, safety, and climate goals.

In addition, since 2010, the Agency has developed more than 20 energy technology studies analyzing the potential for energy efficiency, solar and microgrids (see Appendix A for list of studies) as well as foundational energy-related plans. A snapshot of several guiding plans and how they impact energy planning are outlined below.

GUIDING PLANS	IMPACT AND CONSIDERATIONS FOR FUTURE ENERGY PLANNING
10-year Sustainability Strategic Plan Moving Beyond Sustainability (MBS)	> Documents Metro’s energy resource and GHG emission reduction goals and achievements—including the rollout Zero Emissions Buses (ZEBs), enrollment of electric accounts in the Clean Power Alliance (CPA), targets to increase on-site renewable energy generation, reduce electricity use, and improve overall air quality. This plan translates the high-level targets into actionable strategies, timelines, and investments that integrate renewable energy, energy efficiency, fleet electrification, and utility coordination across Metro’s portfolio.

⁵ See Appendix D for summary of ECMP 2010-2020 energy forecast

⁶ https://libraryarchives.metro.net/DB_Attachments/110930_ECMP.pdf

GUIDING PLANS	IMPACT AND CONSIDERATIONS FOR FUTURE ENERGY PLANNING
Climate Action and Adaptation Plan (CAAP)	> Outlines strategies to reduce greenhouse gas emissions, improve climate resilience, and address environmental justice by integrating climate considerations into transportation planning, capital projects, and operations. The EMP operationalizes CAAP goals by delivering the clean energy infrastructure—such as renewable power, battery storage, energy efficiency, and resilient systems —needed to decarbonize Metro’s operations, support zero-emission fleets, and ensure facilities remain functional and climate-resilient in the face of increasing heat, grid disruptions, and extreme weather. > Notes that power outages are expected to increase in the coming decades due to climate change. These outages disrupt bus, light rail, and subway services. Backup generators provide some power to critical assets but cannot support larger-scale system power loss. Power loss can leave subways and light rail inoperable, prevent electric buses from charging, and disrupt critical communications and operations systems. > Provides actions for Metro to reduce risks due to extreme heat and power outages (adapted from 2023 Climate Risk Analysis).
Electric Vehicle Parking Strategic Plan	> Blueprint for cost-effective and efficient investments in electric vehicle charging infrastructure. Charging goals provide insight into future electric energy needs.
Zero Emission Bus Master Plan and Updates	> Timeline for bus electrification and associated load electric growth load.
All Hazards Mitigation Plan	> Assessment of potential vulnerabilities across Metro’s expansive network, including a range of natural and climate change-induced hazards like drought, sea level rise, extreme heat, flooding, and wildfires. This assessment encompasses not only physical infrastructure, including rail lines, stations and maintenance facilities, but also vital support systems, such as power supplies, communication networks and emergency response protocols. (Source Metro website)
ECO 2.0 Study	> Assessed cost-benefits and prioritizations for Metro’s CAAP recommendations. Solar and traction power energy storage investments identified as having positive net present value.

GUIDING PLANS	IMPACT AND CONSIDERATIONS FOR FUTURE ENERGY PLANNING
Equity Toolkit	> Provides resources to better understand, assess and improve equity outcomes in communities. The datasets, equity indicators, training, and other resources support staff in assessing equity in projects. It also provides information about the important role Metro plays in fostering equitable, resilient and thriving Los Angeles communities. It can deepen understanding of equity-related topics and enhance communication with internal teams, external partners and communities.
Cost-Benefit Framework and Mitigation of potential fiscal cliff	> Provides a framework for consistent cost-benefit analyses and the need for mitigation to lessen the impact on Metro's budget.

Table 3: Guiding Plans and Their Impacts on Future Energy Planning

In addition to these guiding documents, Metro has made significant progress since 2010 in the development of new energy pathways, implementing solutions that reduce greenhouse gas emissions and increase renewable energy usage. The table below details Metro's accomplishments.

AREAS OF FOCUS	KEY ACHIEVEMENTS
Implementation of Clean Energy Pathways and energy savings	> 12 energy efficiency projects completed (recent replacement of Division 11 and 22 HVAC units and the chillers at Gateway Building). > Numerous capital projects in development with energy efficiency, and energy infrastructure features, LEED Certifications. > Cost savings recommendations identified: Fuel switching via heat pumps (HVAC) + remote building monitoring/metering to help reduce on-site visits by A/C techs.
Vehicle and Fleet Emissions Reductions	> In 2013, Metro became the first transit agency to operate electric vehicle chargers. > Installation of 126 Level 2 EV charging ports for non-revenue and public charging. 191 expected by December 2025. > Developed a Long-Range Transportation Plan (LRTP). > Adoption of engine replacements with near-zero emissions for Bus Fleets. > Achieved 65% GHG emissions reductions vs. 2017 baseline fuel by switching diesel to Compressed Natural Gas (CNG). > Zero-emission bus implementation at Division 8 / G (Orange) Line and J (Silver) Line.
Clean Energy Supply: Progress towards 100% renewable	> ~46% of Metro's 2024 energy supply was renewable. > 100% supply of Renewable Natural Gas (RNG) for CNG Buses. > Solar PV O&M Program Operational – 2.6 MW installed at seven facilities.

AREAS OF FOCUS	KEY ACHIEVEMENTS
Zero Emission Bus Master Plan and Updates	> Timeline for bus electrification and associated load electric growth load.
Data Management	> Watchwire, a cloud-based energy and sustainability management software, was implemented to aggregate all utility usage and spend data into one platform.
Resiliency	> Metro conducted a 2022 Climate Risk Screening of top vulnerabilities identified in the 2019 CAAP, noting the ways in which buses, light rail, subway, employees, and riders may be impacted by climate change. In 2023, Metro combined the climate risk screening results with adaptation options from the All Hazards Mitigation Plan, which focuses on making climate change and emergency management an agency-wide consideration.

Table 4: Metro's Key Achievements Since 2010

What internal challenges impact energy management?

Going forward, in addition to the constraints facing the broader energy and climate environment, there are internal Agency challenges that impact energy management going forward. Several of the challenges highlighted below are already in the process of being addressed. COVID-related disruptions—though rare and difficult to plan for—had a significant impact on Metro's energy planning and implementation. Capital projects were delayed or paused due to workforce limitations and supply chain disruptions. Site work was postponed, and revenue losses, coupled with emergency spending priorities, led to budget reallocations to support core transit services. Reduced building occupancy and ridership resulted in irregular energy consumption patterns, which complicated tracking and forecasting. Staff turnover and hiring challenges further stalled progress, setting back energy management goals. These disruptions led to deferred maintenance and upgrades of energy systems.

While the pandemic caused setbacks, it also underscored the need for energy resilience, remote monitoring capabilities, and flexible systems. The transition to remote work improved flexibility and demonstrated that complex planning, analysis, and coordination could be conducted effectively in a remote or hybrid environment.

The challenges around developing standardized cost-benefits metrics were addressed by Metro during the development of this plan beginning with the February 2025 Board Motion to standardize cost-benefit analysis. Follow-up coordination between the OOS and Metro's finance team has already begun. Opportunities to incorporate energy impacts and resiliency cost-benefits into Metro's standardized approaches are more fully outlined in the recommendations section. Additionally, the OOS is actively working to identify innovative sources of funding to ensure Metro can cost-effectively maintain its clean energy leadership and add needed energy resiliency to critical operations.

Coordination has already begun to engage on workforce development opportunities including ways to engage Metro’s facilities management and external training partners to support energy technology implementation.

Data and information management is a critical component of strategic energy management along with cybersecurity and so the current challenges are important to highlight and are addressed more thoroughly in the energy planning recommendations. Lastly, communicating energy management planning opportunities with partners is important to find cost-effective and collaborative energy management solutions.

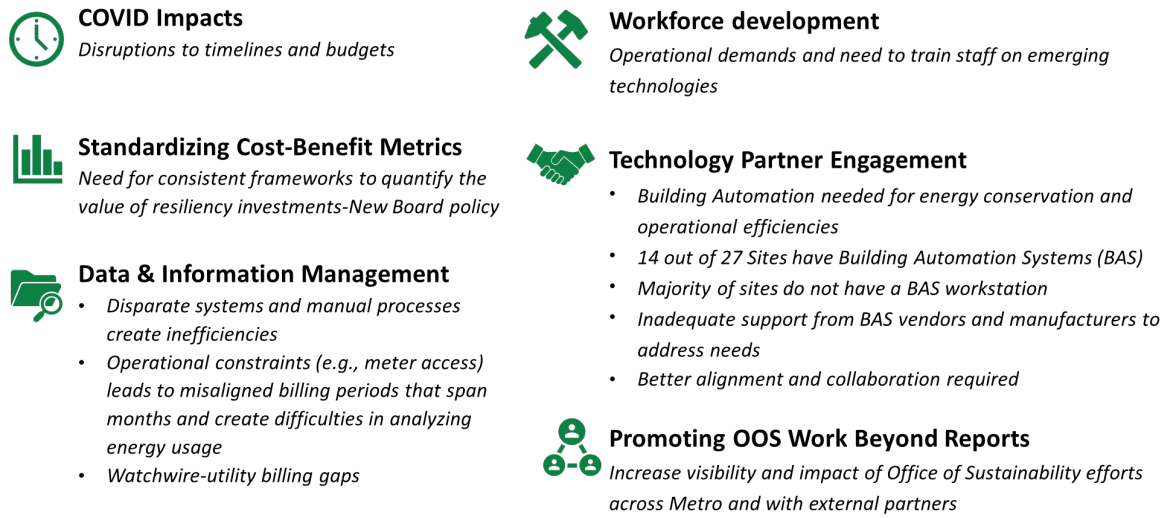


Figure 2: Internal Challenges Impacting Energy Management

What are best practices for large energy users in the development of strategic energy management plans?

Strategic energy management continues to evolve with the rapid pace of clean energy technology deployment. Many large energy users, including transit agencies, ports and airports, have committed to ambitious net zero carbon emissions goals. To achieve these targets, most of these organizations like Metro have incorporated fleet, vehicle, building and energy electrification and on-site clean energy generation as the fastest ways to decarbonize their operations. Moreover, to mitigate the impacts of climate events, these energy users are looking for ways to pair on-site clean energy generation with back-up energy storage systems to provide resiliency for their energy needs. Many large energy users like Metro have developed Hazard Mitigation plans to identify locations and critical operations most vulnerable to climate change. The output from these plans helps prioritize energy storage and on-site energy generation investments.

BEST PRACTICE	RECOMMENDED ACTION
Centralize and expand role of energy management function	> Ensure proactive energy management coordination across the organization with clear ownership and governance. Coordinate energy management with IT/OT functions to support cybersecurity and energy security requirements.
Develop clear goals and key performance indicators	> Define what success looks like and align teams with measurable outcomes.
Data-informed decision making	> Understand desired outcomes first — let that drive data collection and analytics needs.
Utility Engagement	> Plan and communicate early with utilities to reduce the risk of energy constraints. Maintain continuous engagement to mitigate potential energy demand constraints.
Dynamic Planning	> Integrated data and information management to manage evolving energy demands.
Phased and Systematic Approach to Technology Deployments	> Leverage pilots for new emerging technologies. Adapt through continuous feedback and scale. Utilize insights from early adopters in fuel switching and electrification.

Table 5: Best Practices for Large Energy Users in Developing Strategic Energy Management Plans

The National Renewable Energy Lab (NREL), National Academies of Science, Engineering and Medicine as well as early adopters of zero-emission and transit electrification including other transit agencies and airports and ports have important lessons learned that inform the recommendations outlined in this report. A full listing of energy planning best practices and use cases that informed the development of the EMP are included in Appendix F.

As large energy users begin their electrification journey - through installations of solar PV systems, vehicle charging and building heating and cooling fuel switching - they are faced with challenges such as energy supply and distribution constraints, siloed planning, competing goals and a lack of integrated data management. These distributed resources and end-users also create security challenges. While dispersed generation and users are considered lower-value targets, they also do not receive the same level of protection as consolidated resources and therefore create multiple points of vulnerability that can be exploited to cause harm to the centralized systems to which they are connected. Addressing these organizational realities and the incorporating change management will ensure a greater likelihood of success and enable more cost-effective deployment of energy management solutions. The increasing adoption of advanced energy hardware and software technologies also requires new levels of understanding and energy technology fluency, creating an opportunity to expand workforce training and broaden the technology partner ecosystem. This educational need becomes even more critical as communication standards become more complex, and cybersecurity needs increase as more distributed energy assets are deployed.

Proactive conversations with electricity providers are critical to help identify and mitigate potential energy constraints. These engagements are also valuable in identifying alternative solutions to new substations, which are costly, time-consuming, and often have negative impacts on local communities.

Taking a dynamic approach to planning is also considered a best practice, given the rapid pace of electrification and the need to develop flexible adaptation pathways and conduct “what if” scenarios that inform decision-making as the market and technology provider landscape evolves. It is also recommended that agencies develop a systematic approach to the deployment of energy management and energy resiliency technologies to accelerate results and maximize cost-effectiveness.

How much energy does Metro consume?

As part of the current energy demand modelling, the EMP characterizes current energy end uses, current renewable energy supply, on-site renewable energy generation as well as existing capacity constraints.

Calendar year 2024 was established as the baseline for Metro’s current energy demand assessment. Data for this assessment was obtained through Metro’s Watchwire platform, which was implemented in 2024 to centralize and aggregate utility bills from Metro’s seven utility providers. The platform provides energy usage, demand, and associated costs.

As a newly implemented platform and process, some data for the 2024 calendar year was incomplete. Some of these gaps were due in part to inconsistent billing from utility providers and instances where utilities were unable to access meters, resulting in missing or delayed billing records. To address these gaps, in the absence of data, energy usage data was manually populated using available utility 15-minute utility interval data and costs were estimated using weighted average utility rates. This was done to provide a complete 2024 baseline of energy usage, with 2024 serving as the baseline and foundational year for modelling and projection purposes.

A utility capacity analysis was also conducted to assess the ability of existing infrastructure to support anticipated future electrical load growth. To inform this analysis, available utility power capacity planning maps from SCE and LADWP were used to identify local constraints and infrastructure characteristics, such as feeder capacity and substation load thresholds. These maps provide preliminary insight into potential areas of concern where existing infrastructure may already be constrained or where load growth may trigger the need for upgrades. Utility account data was used to map Metro’s existing service and infrastructure to identify areas with potential energy supply constraints. In certain scenarios, a single account may be served by multiple utility feeds, and the evaluation was based on visual inspection and the relative proximity of the feeds as indicated on the maps. These sites may require further coordination with the utilities for verification. This analysis will inform future planning, helping to identify sites where further utility coordination or detailed engineering review may be required.

What are the uses of energy?

Metro’s largest end uses of energy in 2024 were from rail propulsion or traction power which accounted for 65% of Metro’s electricity usage (217,512 MWh) in 2024 with facilities comprising the next largest share of electricity at 20% (65,052 MWh). Facilities electricity consumption includes all divisions, Terminals and building locations. For natural gas usage, bus fueling comprises 97% (35M Therms) of natural gas usage. For bus fueling the natural gas supply is 100% RNG. The remaining 3% of natural gas end uses are facilities’ HVAC and hot water heating. Data on Metro’s electricity and natural gas consumption was obtained from Watchwire. Going forward this platform will function as the system of record for energy usage and expenditures.

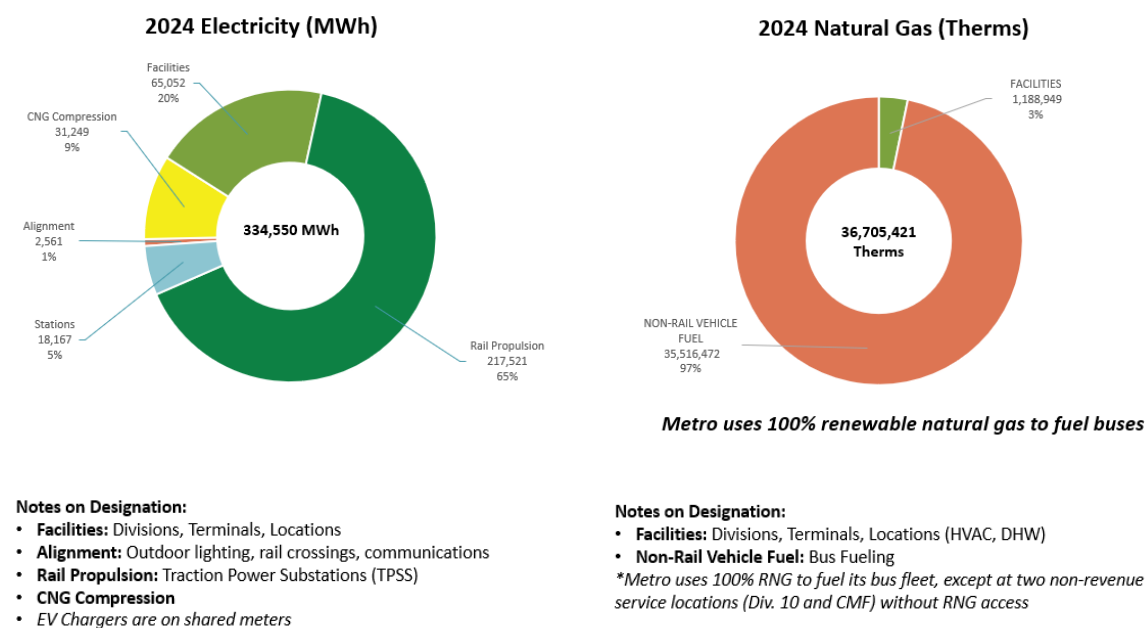


Figure 3: Metro’s 2024 Energy Usage

How clean is Metro’s energy supply content?

Metro’s current electric energy supply mix is 46% renewable energy. Metro’s internal goal is to have 100% of its electric energy supply coming from renewable energy sources by 2035 as recommended in the CAAP. To meet this goal, Metro has the option of generating 100% clean energy on-site through solar or other renewable technologies such as wind or fuel cells or through the purchase of 100% renewable energy products from utilities.

Metro is working toward a 100% renewable electricity portfolio. Currently, 46% of Metro’s total electricity portfolio comes from renewable sources. This includes two main components: on-site PV and renewable energy purchased from utility partners. Metro has installed 2.6 MW of on-site solar PV to date, contributing toward its 7.5 MW installation goal. In addition, Metro purchases 100% renewable electricity for specific meters served by the CPA.

Metro procures energy from several utility partners, each with varying options to opt-up to higher renewable energy content electricity products. For selected SCE accounts that are in the CPA service area, Metro can choose to opt-out of SCE for energy procurement and receive service from CPA, although SCE remains the transmission and distribution utility for CPA accounts. California’s utilities have been increasingly greening their energy supply as part of state law. California’s renewable portfolio standard (RPS) was established in 2002 by Senate Bill (SB) 1078⁷ with the initial requirement that 20% of electricity retail sales must be served by renewable resources by 2017. The program was accelerated with SB 350⁸ and SB 100⁹ implementation and the RPS was increased to 60% by 2030 and requires the state’s electricity to come from carbon-free resources by 2045.

⁷ [Renewables Portfolio Standard \(RPS\) Program](#)
⁸ [Clean Energy and Pollution Reduction Act - SB 350](#)
⁹ [SB 100 Joint Agency Report](#)

Metro can increase both its on-site energy generation and expand the percentage of 100% renewable energy it receives from utility partners. Both options are described in the recommendations section (3.2 Clean Energy Supply Recommendations).

ENERGY UTILITY	NUMBER OF ACCOUNTS	2024 ANNUAL ENERGY USAGE (GWH)	2024 CALENDAR YEAR ESTIMATED ENERGY SPEND	CURRENT RENEWABLE ENERGY % SUPPLY MIX ¹⁰	RENEWABLE POWER OPTIONS
City of Pasadena Water and Power	17	10.5	\$2M	36%	100% - available now
LAWDP	248	208	\$43M	40%	Choose mix from 20% to 100% renewable supply – available now
SCE Base rate Not eligible for CPA	81	46	\$12M	38%	None - program closed indefinitely
SCE Base Rate Eligible for CPA – previously opted out	27	28	\$8M	38%	Re-enroll in CPA's 50% or 100% clean power options
CPA ¹¹ 50% renewable option	21	1.5	\$0.4M	50%	Opt-up accounts to 100% Green Power
CPA ¹² 100% Green option	47	36	\$9M	100%	n/a already at 100%
Azusa Light and Water	19	4	\$1M	29%	n/a
City of Glendale Water and Power/Vernon Public Utilities	3	0.04	\$.001	23-35%	n/a
LA Metro on-site solar generation	7 systems; 2.6MW	1.75		100%	n/a
TOTAL	463	335	\$77M	46%	90% potential

Table 6: 2024 Overview of Metro's Electricity Profile

Metro has seven solar PV systems installed across seven locations, totaling 2.6MW. Most of these systems are over 10 years old, with solar PV systems having an expected useful life of 30 years. Critical components such as string inverters typically last for 10 years and microinverters and central inverters can have 20 years before requiring replacement.

¹⁰ Based on 2023 published power content labels

¹¹ Based on 2023 published power content labels

¹² Community Choice Energy Option – CPA energy procurement with SCE energy delivery

Metro’s Solar PV O&M Program launched in 2014 to proactively address performance issues and provide technical training to Metro maintenance personnel at facilities that host PV systems to support maintenance and system monitoring. Since program inception, Metro has provided over 700 hours of training to 120 personnel on topics such as annual technical refreshers on system components, safety protocols, and maintenance procedures, including PV module cleaning, inverter testing, visual inspection of system components, and system performance monitoring.

Although Metro’s Solar PV O&M program has been in place for over 10 years, system performance has been impacted by a combination of routine wear and environmental factors, such as windstorms, heavy rain, and recent wildfires. Ongoing monitoring of the system generation and site inspections have identified issues caused by water intrusion, which has affected key components including inverters, fuses, and combiner boxes, resulting in corrosion, electrical faults, and reduced output. COVID-related logistics challenges, including delays in site access and inspection schedules, along with funding constraints, further limited the agency’s ability to address emerging issues in a timely manner, contributing to prolonged performance degradation at some sites. A phased remediation plan is underway and anticipated to be completed in 2026 to address both routine maintenance needs and damage from recent environmental events, with repairs prioritized to restore system reliability and performance. Expected operational performance gaps are based on modeled system output that accounts for the age and expected degradation of the system, rather than using nameplate capacity. More detailed recommendations on how to approach solar PV going forward are described in the recommendations section 2.2.

LOCATION	FUNCTION	SYSTEM SIZE (KW DC) AND (AGE YEARS)	2024 EXPECTED GENERATION (KWH)	2024 ACTUAL AND ESTIMATED GENERATION (KWH)	OPERATIONAL PERFORMANCE	ESTIMATED SYSTEM UNDER-PERFORMANCE – COST IMPLICATIONS	2024 PV CONTRIBUTION TO SITE LOAD
Division 8	Bus Maintenance	247 (19)	339,533	254,226	75%	\$18K	5%
Division 11	Bus Maintenance	266 (9)	354,621	247,2202	70%	\$24K	9%
Division 15	Bus Maintenance	247 (19)	339,533	125,684	37%	\$47K	4%
Division 18	Bus Maintenance	437 (17)	648,851	465,1552	72%	\$41K	1%
Terminal 19	Regional Bus Station	89 (12)	128,056	106,020	83%	\$6K	6%
Division 24	Rail Maintenance	178 (8)	235,956	97,0192	41%	\$35K	1%
Central Maintenance Facility (Loc. 30)	Bus Maintenance	1,172 (15)	1,553,268	454,2152	29%	\$243K	6%
Totals/ Average		2,636	3,599,818	1,749,560	49%	\$414K	

Table 7: Metro’s On-site Renewable Energy Supply

Are there any existing energy supply concerns?

2024 utility capacity was reviewed as part of this EMP to identify existing and potential supply constraints. Based on the analysis of SCE and LADWP accounts, which provide 84% of Metro’s current electricity supply, there are existing energy supply capacity concerns at three bus divisions and 76 accounts have been identified as potentially having no additional service capacity. An additional 14 accounts are flagged with limited capacity concerns. The most critical locations to evaluate are identified in the table below and include ZEB facilities, which are expected to experience significant load growth due to increased fleet electrification, and EV charging stations, which are projected to see moderate to high demand as electric vehicle adoption rises and the non-revenue fleet transition evolves. Other sites with lower projected growth may include TPSSs, passenger stations, or signals and controls and may warrant attention based on specific operational needs. These accounts should be included in the utility outreach conversations outlined in the recommendations section.

LOCATION	UTILITY PROVIDER	LOAD GROWTH CONSIDERATIONS
Atlantic Station Parking Garage	SCE	EV Chargers
Division 3	LADWP	ZEB, Building Electrification, Non-Revenue and Employee EV Chargers
Division 5	LADWP	ZEB, Building Electrification, Non-Revenue and Employee EV Chargers
Division 13	LADWP	ZEB, Building Electrification, Non-Revenue and Employee EV Chargers
North Hollywood Station	LADWP	EV Chargers, LA28 Mobility Hub

Table 8: Locations with Potential Capacity Constraints

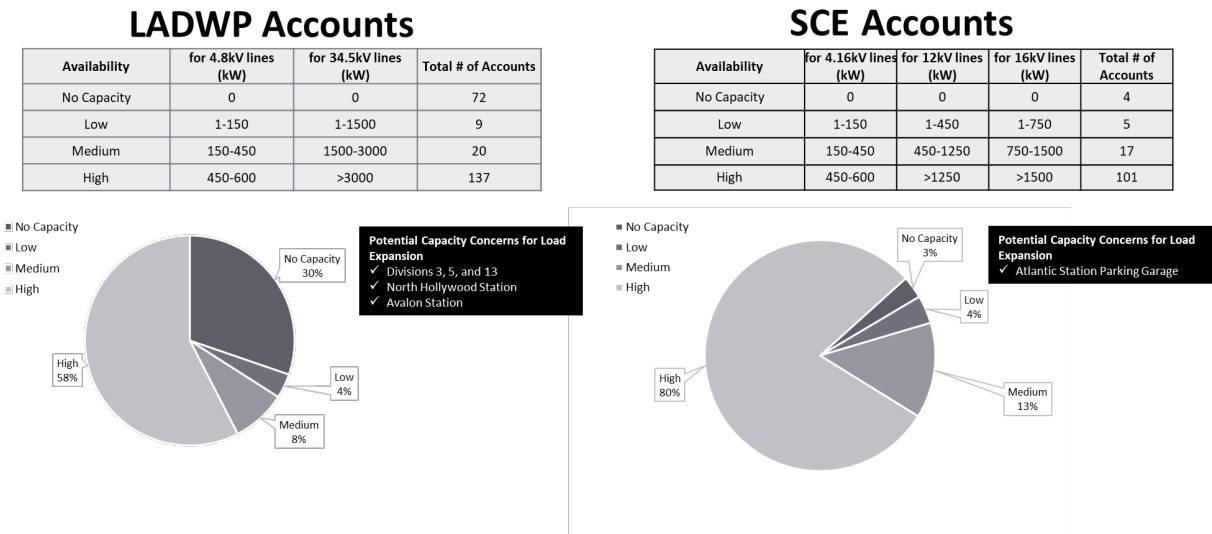


Figure 4: 2024 Utility Capacity

What approach to forecasting was used (data collection and methodology)?

Future Energy Demand

Methodology

Due to the increasing need for electricity across the Agency largely driven by bus electrification and climate goals, the future demand analysis evaluated how different electrical end uses are likely to contribute to peak demand across facilities. This peak demand analysis also informs site-specific strategies for decarbonization goals through electrification and distributed energy resource (DER) deployment. Because each end use of energy exhibits distinct daily load patterns -- solar generation peaks during midday, while ZEB charging often occurs overnight-- it was essential to disaggregate these end uses. Doing so allowed examination of how loads interact over a 24-hour period and assessment of their combined impact on system-wide and site-specific peak demand.

Summary of Future Projected Energy Cost Scenarios

ENERGY COST SCENARIO	2024	2030	2035	2050	MODELING ASSUMPTIONS
Forecast: Medium (Selected Base Case Scenario) 6% Annual Energy Cost Increase with No Cost Mitigation Strategies	\$95M	\$182M	\$313M	\$1.09B	> Models projected energy use increase based on existing capital plans, adopted strategic plans (e.g., EVPSP), and ZEB rollout > New TPSS stations for system expansion > Full ZEB roll-out by 2035 > Used 2024 actual costs and escalated 6% (medium scenario) to account for energy cost increases > Incorporates data from Metro operations, including building systems, EV charging, weather data, utility, peak demand, load patterns, and existing solar generation. > Ridership/operations data included.
Forecast: Low 3% Annual Energy Cost Increase	\$95M	\$156M	\$229M	\$520M	> Same as Base Case but assumes lower average annual energy cost increases (3%)
Forecast: Medium 8% Annual Energy Cost Increase	\$95M	\$201M	\$384M	\$1.77B	> Same as Base Case but assumes higher average annual energy cost increases (8%)
Forecast: Ultra-High 13% Annual Energy Cost Increase	\$95M	\$259M	\$630M	\$5.72B	> Same as Base Case but assumes higher average annual energy cost increases (13%)
Cost Mitigation Scenario vs. Base Case	\$95M	\$176M	\$287M	\$906M	> Full ZEB electrification by 2035 > 6% annual energy cost escalation > Solar fully implemented at all bus divisions where solar is technically feasible (64MW total) > Battery storage at 75% of TPSS sites > Energy efficiency measures implemented

Table 9: Future Projected Energy Cost Scenarios

How does the EMP determine future energy requirements?

To support this analysis, normalized average and peak 24-hour load shapes were developed for key end use categories: facilities, parking lots and garages, natural gas compression systems, transit stations, traction power systems, and alignment loads. These end-use profiles were created using high-resolution (15-minute interval) data available from 31% of modelled accounts. Although the dataset was partial, it was representative enough to serve as a strong basis for extrapolation.

Using monthly utility data from the calendar year 2024, load profiles were normalized to model current energy consumption and peak demand conditions at each property. Typical peak days were then estimated to identify load patterns across the system. The combination of normalized and scaled data offered both granularity and accuracy in understanding how energy is used and when peaks occur.

To forecast how emerging technologies and electrification strategies may impact energy use and peak demand in the future, we incorporated a wide range of additional data sources. These included typical meteorological year (TMY) weather data, EV Gateway charging session data, and ZEB ChargeSim reports, operational and implementation studies such as the EV Strategic Parking plan. A full list of assumptions is listed in Appendix D. These inputs were used to model the projected effects of space and water heating electrification, solar PV deployment, battery energy storage systems (BESS), EV charging, and ZEB charging.

To estimate energy costs increases, several sources including historical data from U.S. Federal Reserve Regional Energy Cost analyses and SCE historical rate information were used to develop low, medium, and high annual electric energy cost increase scenarios. Based on a review of historical rates and the ongoing need to upgrade California’s energy distribution infrastructure to support electrification, as well as the unforeseen costs of climate impacts to the grid, four rate increase scenarios were developed: Low (3%), Medium (6%), High (8%) and Ultra-High (13%). The Medium case, reflecting a 6% projected annual energy cost increase, was selected as the Base Case for future cost projections. See Appendix D for historical data and sources.

The result is a comprehensive, facility-level view of both current and future energy demand dynamics. This approach supports the development of targeted, data-driven solutions for optimizing peak load management, improving resilience, and guiding cost-effective investment in clean energy technologies.

[What are the drivers of cost?](#)

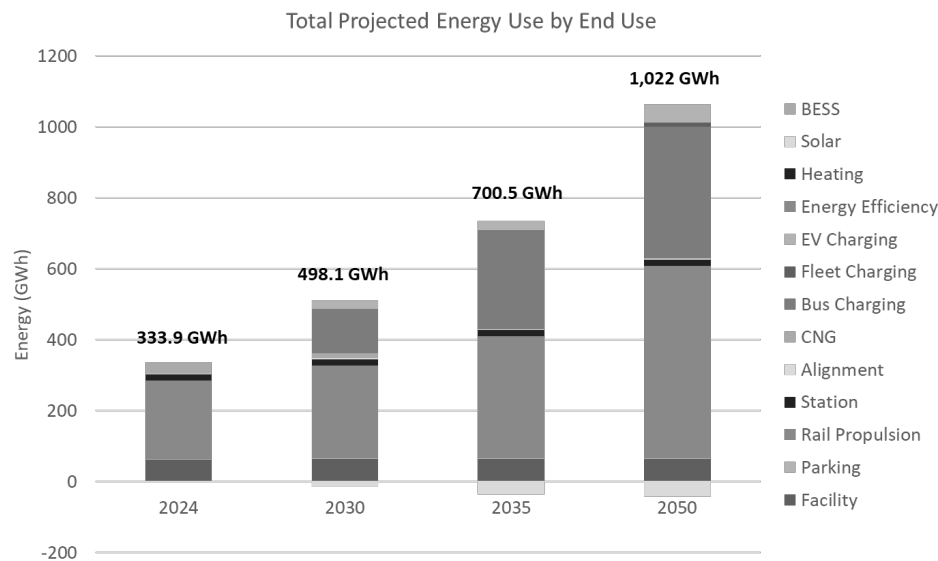
Future Energy Demand Findings

We identified key drivers of system wide energy growth as well as some opportunities to mitigate the load increases through the deployment of Energy Efficiency and Distributed Energy Resources. Rail propulsion emerged as the dominant end use across all modeled years, accounting for the largest share of total electricity consumption through 2050. Rail propulsion is projected to grow steadily over time, reflecting service expansions and ridership increases.

Bus charging was identified as the most rapidly growing end use, with significant demand acceleration expected through 2035. This trend aligns with the phased electrification of the bus fleet and the progressive installation of charging infrastructure across operating divisions. As electric bus adoption scales, charging will become a major contributor to both total energy consumption and peak demand, particularly at depots and facilities with high vehicle throughput.

- > **Rail propulsion** is the dominant energy consumer throughout all years, with steady growth each year.
- > **Bus charging** shows rapid growth through 2035, aligned with the phased deployment of fleet electrification and charger installation across operating divisions.

Electricity demand, primarily driven by electrification of the bus fleet and system expansion, is forecast to increase from 334 GWh in 2024 to over 1,000 GWh by 2050, representing a 200 percent increase.



Bus charging is currently occurring in 2024; however, it is served by shared meters, and the load cannot be isolated at this time.

Figure 5: Total Projected Energy Use by End Use

How much can Metro expect to pay for energy in the next 25 years?

Key findings indicate that Metro’s energy profile will undergo significant transformation between 2025 and 2050. Current energy costs of \$95 million are projected to rise substantially over this period.

When accounting for utility rate escalation and inflation, total costs could range from \$520 million under a low-rate scenario (3% average annual increase) to \$1.77 billion under a high-rate scenario (8% average annual increase) by 2050.

An ultra-high escalation scenario (13% average annual increase) was also evaluated. While this rate reflects historical increases observed with SCE from 2019-2024, it does not represent Metro’s broader utility portfolio. Although a 13% trajectory is considered unlikely, it highlights the potential risks of relying on volatile utility rates and underscores the importance of adopting strategies to mitigate cost exposure.

To support planning and analysis in modeling for future fiscal years, Table 10 presents a range of utility cost escalation scenarios. These scenarios are based on historical trends¹³, recent

¹³ Historic energy price increase trends over the last 20 years are summarized in Appendix D

projections, and guidance from Metro’s procurement department, providing a comprehensive view of potential utility rate increases. Each scenario is accompanied by a rationale to explain its basis and relevance.

Scenario	Rationale
Low (3%)	Represents the historical average annual increase for all utilities in the LA region over the last 10 years. This scenario assumes a conservative growth rate based on long-term trends.
Medium (6%)	This represents SCE’s historical annual increase from 2014-2024. This aligns with the current guidance provided by Metro procurement for FY26 planning. This scenario was selected as the Base Case for this analysis because it balances historical trends and future projections, making it the most realistic choice for planning purposes.
High (8%)	Represents the average annual increase for all utilities in the LA region during the period of 2019-2024.
Ultra-High (13%)	Reflects SCE’s average annual increase during the 2019-2024 period. This scenario assumes an aggressive growth rate and does not accurately reflect Metro’s broader utility portfolio which includes several utilities throughout the LA region.

Table 10: Utility Cost Escalation Scenarios

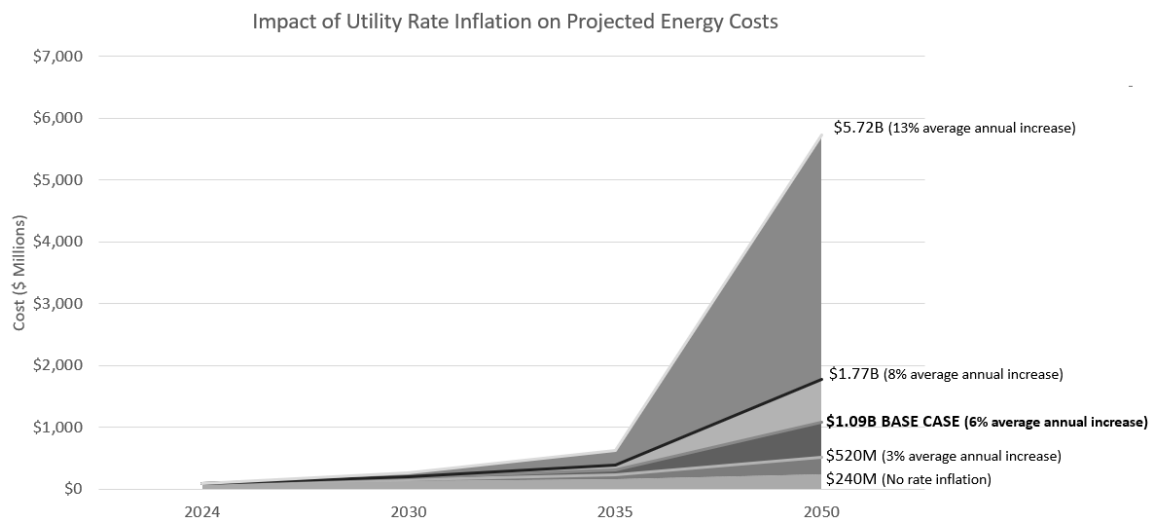


Figure 6: Impact of Utility Rate Inflation on Projected Energy Costs

Base Case Scenario

The Base Case projects Metro’s total net energy costs to reach approximately \$1.1 billion by 2050, assuming a continuation of current energy price increase trends of approximately 6% and the implementation of Metro’s already funded or planned initiatives. Key assumptions underlying this scenario include:

- > **Escalating Electric Energy Costs:** Annual electric energy and natural gas prices are assumed to rise by an average of 6% year-over-year, consistent with long-term historical utility cost trends.
- > **Existing and Funded Solar Projects:** Only currently operational and fully funded solar projects are included. That totals 2.6MW of existing installed solar capacity and 1.5 MW of already planned solar. No additional solar capacity beyond those existing and already planned systems are assumed in this Base Case.
- > **ZEB Fleet Rollout:** The scenario includes the full implementation of Metro’s ZEB plan by 2035, which significantly increases electricity demand due to fleet electrification.
- > **New TPSSs:** Energy needs related to the build-out of new TPSS to support expanded service and electrification are accounted for.
- > **Non-Revenue Fleet Electrification:** The electrification of Metro’s non-revenue vehicle fleet, as outlined in strategic planning documents, is assumed to proceed as planned.
- > **EV Charging Expansion:** Deployment of electric vehicle charging infrastructure for public and employee use is included, as identified in strategic planning documents such as the Electric Vehicle Parking Strategic Plan.
- > **Projected Annual Energy Costs:** To determine projected energy cost increases, historical energy prices were analyzed, and four average annual rates increase scenario estimates were developed: Low (3%), Medium (6%), High (8%) and Ultra-High (13%). The medium scenario of 6% was selected as the Base Case and used to project future energy costs. A summary of historical rate increases can be found in Appendix D.

While the Base Case reflects an ambitious electrification agenda aligned with Metro’s sustainability commitments, it also results in a steep increase in electricity consumption and associated costs without corresponding cost control mechanisms. A full list of assumptions used in the future energy forecast are detailed in Appendix D.

The projected increase in Metro’s energy costs is driven by two factors: higher electricity usage and rising electricity prices. The charts below illustrate the sources of Metro’s future energy costs and show much of the projected increase is due to consumption growth versus higher energy prices. The vast majority, \$851M of the projected \$1.1B spend in 2050, stems from rising energy prices and the compounding effect of those increases. This Base Case estimates accounts for existing and planned solar PV, providing a modest offset to utility energy costs. As discussed in the mitigation scenario in the next section, expanding on-site solar generation presents an offers Metro an opportunity to hedge against energy price inflation and to create on-site generation that can be paired with energy storage to support operational resiliency.

The two primary utilities, LADWP and SCE, will continue to provide most of Metro’s electrical power through 2050 with demand growing roughly proportionally by utility provider as shown in the graph below.

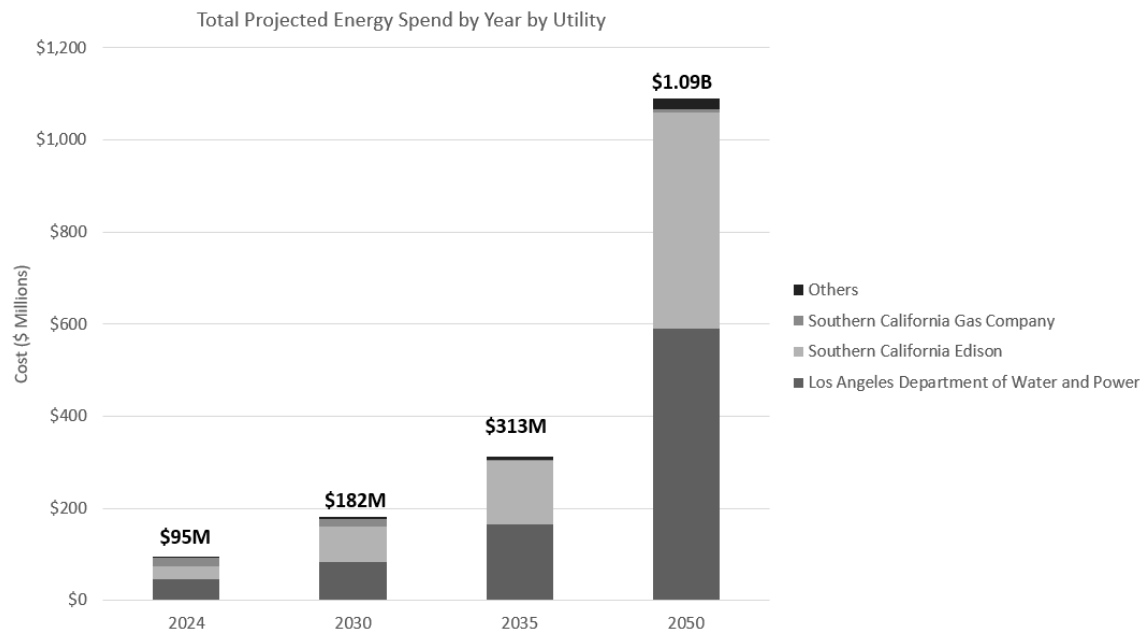


Figure 7: Total Projected Energy Spend by Year by Utility

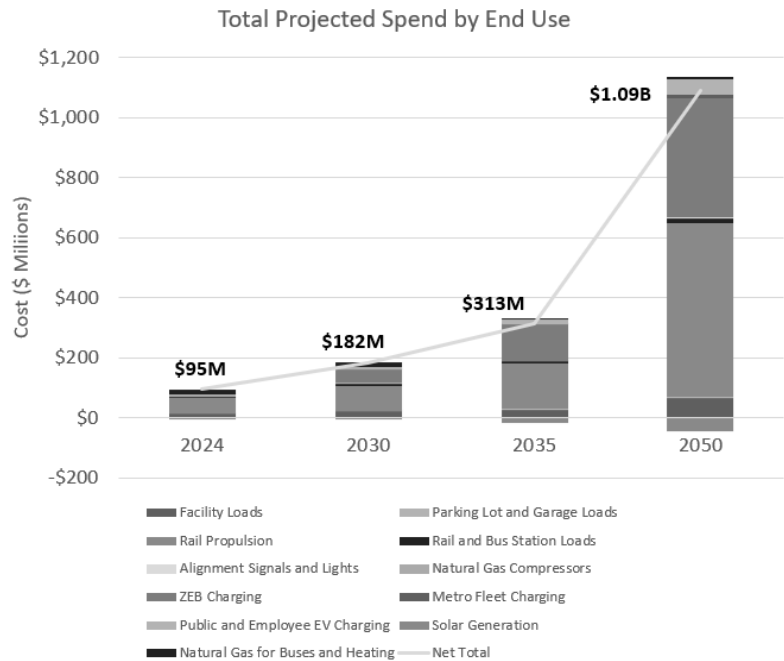


Figure 8: Total Projected Spend by End Use

Projected Energy Costs: Breakdown Due to Price Inflation and Energy Usage

The table below presents projected total energy costs for 2050 under different utility rate escalation scenarios. These scenarios illustrate the impact of utility rate escalation and inflation on Metro's total energy costs, while assuming energy usage remains constant across all scenarios. The table breaks down the projected costs into two components:

- **Energy Usage:** The portion of costs attributed to energy consumption growth.
- **Utility Rate Escalation & Inflation:** The portion of costs driven by rising utility rates and inflation.

The table highlights the contribution of each component to the total costs, emphasizing the significant role of utility rate escalation in driving future energy expenditures. This analysis underscores the importance of proactive energy planning and cost mitigation strategies to manage the agency's long-term financial impacts.

Year 2050 Cost Scenarios	2050 Energy Usage (2024 Energy Rates)	Utility Rate Inflation	Total 2050 Costs
LOW 3% average annual increase	\$240M (46%)	\$280.4M (54%)	\$520.1M (100%)
MEDIUM 6% average annual increase (Selected as the Base Case)	\$240M (22%)	\$850.8M (78%)	\$1.09B (100%)
HIGH 8% average annual increase	\$240M (14%)	\$1.53B (86%)	\$1.77B (100%)
ULTRA-HIGH 13% average annual increase	\$240M (4%)	\$5.48B (96%)	\$5.72B (100%)

Table 11: Projected 2050 Energy Costs: Contributions from Energy Usage and Utility Rate Inflation

What opportunities are there to mitigate energy costs and support Metro’s fiscal responsibility?

Projected Energy Costs: Mitigation Opportunities

Two comparative scenarios that illustrate Metro’s projected energy expenditures through 2050 were developed. A Base Case as presented in the previous section and a Cost Mitigation Opportunity Scenario described below. This mitigation scenario was developed to assess the potential cost-benefits of additional energy technologies investments.

Opportunity Scenario

Metro can reduce its overall 2050 electric energy spend or operating expenditures by approximately \$220M per year in 2050 —a 20% maximum reduction relative to the Base Case— through the strategic implementation of renewable energy, energy storage, and efficiency measures. This opportunity scenario assumes the following additional actions:

- > **Expanded Solar Deployment:** Building on existing commitments, Metro could expand their onsite solar capacity to meet its 7.5 MW target and pursue installation of additional solar PV across all viable facilities and parking structures. The total technical potential for solar across all of Metro’s facilities is estimated to be 64MW¹⁴ to be confirmed based on feasibility assessments as part of the energy technology implementation recommendations described in Section 3.2.
- > **Energy Efficiency Upgrades:** Implementation of the energy efficiency measures identified in the Energy Efficiency Long-Term Plan (EELTP), including lighting retrofits, HVAC improvements, and process optimization across facilities.
- > **BESS:** Battery storage would be installed at 75% of new and existing TPSS sites, allowing for peak shaving, demand response participation, and improved resilience during outages or grid stress periods.
- > **Advanced BASS:** Deployment of more sophisticated building energy management systems (BEMS) to optimize load control, manage HVAC and lighting schedules, and reduce unnecessary energy consumption during non-operational hours.

Together, these strategies not only reduce long-term operating costs, but also mitigate exposure to energy price volatility and enhance operational reliability. The analysis suggests that proactive investment in on-site generation, storage, and efficiency can deliver substantial lifecycle cost savings while aligning with Metro’s climate and resilience goals.

Adding additional solar where feasible across Metro’s operations represents the most cost-effective opportunity to reduce utility energy demand and provide a hedge against energy cost increases. With electricity rates compounding much faster than inflation, from an investment perspective, the rapid escalation means that each kWh offset by solar generation avoids a higher future expense. We are conservatively modeling future electricity rates at roughly half their recent growth rates (past 5 years), and in line with the 10-year average in Los Angeles. If the rates continue to increase at beyond our Medium scenario of 6% annually, the benefits seen from solar installations would be greater.

While the analysis presented here is based on a portfolio-wide view, actual NPV results for individual facilities can vary significantly depending on site specific factors such as ground composition, roof structural integrity, and interconnection cost. These types of costs cannot be

¹⁴ DER Preliminary Study. See Appendix J for a summary of additional solar deployment opportunities.

precisely estimated until a system design is completed, and a utility interconnection application is filed. This is why taking a site-specific approach is important and is why we have created a prioritization of sites in this analysis.

Impact of Clean Energy Technologies on Annual Energy Spending: Cost Mitigation Opportunity Scenario

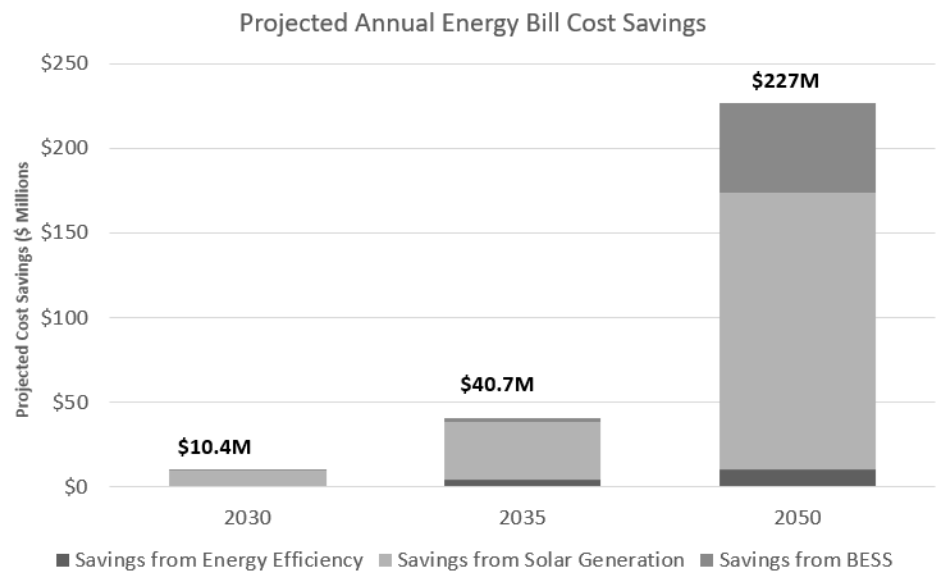


Figure 9: Projected Annual Energy Bill Cost Savings

To more fully understand the cost benefits of these mitigations, determining the net present values which include capital outlays, on-going operations and maintenance costs as well as energy savings are summarized in the table below and detailed in Appendix D. All three mitigations measures have been analyzed and are projected to generate a positive net present value (NPV) for Metro.

MITIGATION SCENARIO	NET PRESENT VALUE - 2050
Energy Efficiency – Implement Energy Efficiency Long Term Plan Recommendations	\$2,413,617
Solar – Additional 61MW at Bus Divisions and Where Solar is Technically Feasibility	\$171,940,480
Battery – 75% TPSS	\$31,387,167

Table 12: Net Present Value of Cost Mitigation Investments

Net Present Values of Additional Solar and BESS for Traction Power Support

Net Present Value of Additional Solar

The EMP estimated the net present value of any additional solar investments. The chart below shows the net present value in 2050 of an additional 60MW of solar (for a total of 64MW) installed at 136 Metro sites. This shows that after factoring in both operating and capital expenditures Metro receives a positive benefit from additional solar¹⁵.

¹⁵ NPV analysis based on ECO 2.0 and EMP rate forecasts

SOLAR PV NET PRESENT VALUE	2050
Present Value of Capital Costs	(\$44,308,580)
Present Value of Maintenance and Repair Costs	(\$6,382,779)
Present Value of Energy Costs	\$222,631,7839
Net Present Value	\$171,940,480

Table 13: Net Present Value of Solar PV

Net Present Value of Battery Storage at Traction Power Substation Locations

A similar analysis was conducted for adding battery energy storage at TPSS sites. This shows that after factoring in both operating and capital costs, Metro receives a positive benefit from BESS at TPSS¹⁶.

TPSS BESS NET PRESENT VALUE	2050
Present Value of Capital Costs	(\$21,528,464)
Present Value of Maintenance and Repair Costs	(\$23,251,353)
Present Value of Energy Costs	\$76,266,984
Net Present Value	\$31,487,167

Table 14: Net Present Value of TPSS BESS

The energy forecasting tool developed to provide the analyses in this plan can be used to dynamically forecast additional scenarios and to incorporate the energy impacts of new operational plans as they are approved.

¹⁶ NPV analysis based on ECO 2.0 and EMP rate forecasts

Using Peak Demand Analyses to Prioritize Site-level Opportunities for Energy Resiliency

Beyond the opportunity scenario, Metro also has the option of adding BESS to key bus divisions in addition to solar PV that was already added under the Opportunity Scenario. The cost-benefit of doing this is being developed as part of pilot that’s underway analyzing DER feasibility and cost-benefits. Analyzing peak electrical load demand is part of the Div-18 analysis to help determine the appropriate mix of additional energy management and energy storage technologies. The EMP analyzed peak load across all of Metro’s divisions to help determine which sites to prioritize. A list of bus sites prioritized based on resiliency is listed as part of Recommendation 3.2.

The ramifications of not only bus charging, but also rail propulsion, on the peak load and energy consumption of each Division positions these sites as the highest priority for solar, energy efficiency, and BESS offsets. Division-18 is already being evaluated for cost-benefit of resiliency and energy management technologies with analysis completed by late Fall 2025.

Going forward, the Excel-based modeling tools used to develop the EMP forecasts are agnostic as to a consultant and available to be used to easily update the models and peak load analysis for prioritized divisions as new information becomes available. This analysis can also support utility conversations regarding capacity constraints and help identify the solar and battery system sizes needed.

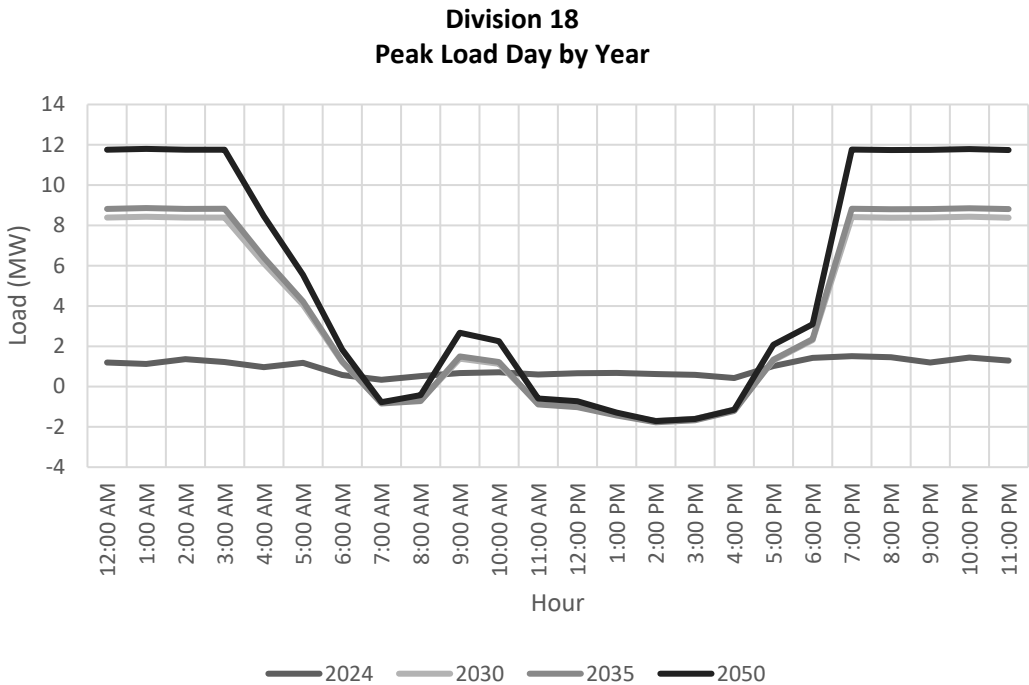


Figure 10: Division 18 Peak Load Day by Year

As outlined in the recommendations section, a full cost-benefit analysis (including installation, post installation maintenance costs and avoided customer damage costs due to resiliency measures) would need to be completed for each of the prioritized divisions. The Division 18 DER pilot will be developing this full cost-benefit analysis to be completed by December 2025. Based on the projected results from this pilot, Metro will be able to update these cost-benefit projections and better estimate the impact at scale across Metro’s operations.

Energy Planning Recommendations

This section addresses the following questions:

What is an appropriate and achievable action plan based on future energy needs and where Metro is today?

How can Metro cost effectively invest in resiliency?

What combination of People + Processes + Technology are needed?

How should Metro engage with internal and external stakeholders to support energy planning?

What are the expected outcomes for continuous improvement?

Actions in Context

There are competing goals, market realities and organizational constraints that need to consider as part of Metro’s future approach to energy planning. Many of these action plan recommendations require a degree of organizational change to more cost effectively manage energy costs and provide resiliency benefits going forward. The primary filters used to develop an appropriate and achievable action plan is based on next steps that can support Metro’s organizational goals, operational requirements as well as energy and environmental leadership goals.

AGENCY GOALS	OPERATIONAL REQUIREMENTS	ENERGY AND ENVIRONMENTAL LEADERSHIP GOALS
> Customer Service > Safety > Security > Service > Reliability	> Cost effectiveness-mitigate fiscal cliff and support cost-benefit analysis > ZEB roll-out > New Maintenance Divisions > New Bus and Rail Lines > Workforce Development > Community Engagement > Continuity of Operations	> Increase onsite renewable energy generation to 7.5 MW by 2030 > Reduce GHG emissions by 79% by 2030, zero emissions by 2050 > Reduce energy consumption by 17% at facilities vs. business-as-usual trend

Table 15: Metro’s Agency Goals, Operational Requirements, and Leadership Goals

Recommendations Overview

The EMP recommendations include a snapshot of key planning activities and expected outcomes over the next 5-8 years. A detailed implementation plan with key performance metrics for the next 12-18 months is included in the proceeding Implementation section.

The recommendations focus on four priority areas of opportunity, informed by Metro’s internal energy and climate goals, industry best practices, and needs for cost-effective resiliency and energy management technologies to support critical operations. The priority areas of recommendations are:

1. **Coordinated Energy Planning:** Create an energy management steering committee led by the OOS to increase energy planning collaboration and information sharing. Strengthen proactive communications with utility partners and developing standard operating procedures to better support internal planning and energy data management.
2. **Resilient and Clean Energy Supply:** Take advantage of existing opportunities more quickly to increase energy supply mix to meet Metro’s renewable energy and GHG reduction goals through energy partnerships. Shore up existing on-site renewable energy generation assets and expand on-site solar to decrease energy operating costs and bolster resiliency.
3. **Energy Technology Implementation and Workforce Development:** Implement a phased and site-level technology deployment strategy to comprehensively and cost-effectively support resiliency and energy management goals. Identify opportunities for feasible expansion of solar and batteries to provide energy resiliency. In parallel, increase energy technology literacy across key functions within Metro and collaborate with the Workforce and Talent Development team to identify any additional future skill gaps due to emerging energy management and resiliency technologies.
4. **Stakeholder Engagement:** There are many important stakeholders who can support and benefit from Metro’s energy planning efforts. In addition to outreach to utilities, more proactive collaboration with CBOs and local partners can strengthen Metro’s energy portfolio through joint resiliency projects and workforce development opportunities.

Sequence of Recommendations

The EMP organizes these recommended actions into a phased approach for implementation of Phase 1 activities. Outlining what future phases beyond the next 18-24 months could achieve is summarized below to highlight the critical building block function of Phase I recommendations. This section of the EMP further outlines a proposed plan of action based on four recommended focus areas for Phase 1 activities.

PHASE 1 (FISCAL YEAR [FY] 2026-2027)	PHASE 2 (FY 2028-2029)	PHASE 3 (FY 2029-2030)
RECOMMENDATION 1.0: ENERGY MANAGEMENT PLANNING		
Recommendation 1.1: Develop centralized energy planning steering committee and establish report out requirements and key performance indicators Recommendation 1.2: Socialize EMP with utilities and energy regulatory agencies as part of on-going engagement. Recommendation 1.3: Develop SOPs and process requirements (International Organization for Standardization [ISO] 50001 Process Requirements; develop SOPs for energy projects technology implementation) Recommendation 1.4: Build data and information management backbone (interval data, submetering, BAS integration, IT needs) Recommendation 1.5: Update energy demand forecast based on new capital projects	Further develop data and energy management capabilities Develop capital plans for additional IT/information management needs	Expand energy management IT staff and software as more distributed energy assets and energy technology come online
RECOMMENDATION 2.0: ENERGY SUPPLY		
Recommendation 2.1: Accelerate 100% renewable energy supply Recommendation 2.2: Develop more robust solar expansion and O&M system Recommendation 2.3: Essential use designation (work with utilities to confirm rotating outage group IDs and exemption for critical accounts)	Deeper utility engagement: joint project identified, planned for and costed out to support resiliency needs and mitigate costs	Deploy joint utility projects

PHASE 1 (FISCAL YEAR [FY] 2026-2027)	PHASE 2 (FY 2028-2029)	PHASE 3 (FY 2029-2030)	Phase 2 (FY 2028-2029)
RECOMMENDATION 3.0: ENERGY TECHNOLOGY IMPLEMENTATION AND WORKFORCE DEVELOPMENT			
> Recommendation 3.1: Develop high level internal education on energy technology; build on existing Metro, Cerritos College and ATU EV charging maintenance program to identify additional technical training needed for resiliency (solar + batteries + energy management systems) > Recommendation 3.2: Prioritize and evaluate high impact sites for energy technology and resiliency investments > Recommendation 3.3: Develop resiliency components of cost-benefit analysis framework and identify opportunities for innovative funding mechanisms	> Implement resiliency and energy management at prioritized sites > Develop planning for next phase of prioritized sites > Identify opportunities for advanced technology pilots (e.g., virtual power plants [VPP], islanding capabilities, participation in wholesale energy markets) > Integrate training on software technology for building operators	> Implement energy management system at critical sites > Pilot advanced energy technologies > Plan for vehicle/building-grid (planning with utility for vehicle expert potential at select locations) > Continue training building operations to maintain, optimize, and troubleshoot systems	
RECOMMENDATION 4.0: STAKEHOLDER ENGAGEMENT			
> Recommendation 4.1: Expand SC to include more community equity focused organizations > Recommendation 4.2: Leverage Community Partners as workforce enablers (skills and job creation) > Recommendation 4.3: Socialize energy goals and constraints, identify resiliency co-funding opportunities and needs with regional energy partners. > Recommendation 4.4: Communicate progress and community benefits of clean energy and energy resiliency investments.	> Co-develop new training programs > Identify co-development projects > Incorporate community engagement as a metric for new contracts	> Implement co-development projects	

Table 16: Phased Plan of Action for Recommendations

Recommendation 1.0: Energy Planning

Metro's energy program, now 20 years old, is led by the OOS, which oversees energy planning for the agency. Since the inception of these energy and climate programs, Metro has expanded operations and introduced new leadership focused on unifying the Agency. Future energy planning presents an opportunity to align the agency around a single, cohesive strategy aimed at reducing energy costs and increasing resiliency.

Standard Operating Procedures

Looking ahead, energy management and proactive planning will become increasingly critical due to the dynamic energy and climate environment, Metro's extensive utility meters, and energy-dependent capital projects. To address these challenges, formalized processes and Standard Operating Procedures (SOPs) and coordination are needed to more proactively connect divisional level needs and future energy impacts.

Example SOPs to Establish:

- > Develop a process for determining the appropriate energy supply product (e.g., 100% renewable energy) for new electric meters, while accounting for added costs.

- > Develop a process for coordinating with the utility to ensure that new meters are assigned a rotating outage ID to exempt them from outages, where applicable.
- > Create guidelines for selecting energy supply products and integrating resiliency cost benefits into capital project planning.

By formalizing these processes, Metro can ensure consistency, accountability, and alignment with its broader energy and resiliency goals.

Internal Coordination and Governance

Since the approval of Metro’s ECMP in 2011, the OOS has been coordinating across Metro on energy management and is best positioned to continue overseeing this function with continued support internally to continue leading annual energy forecasting, utility engagement and development of data and information management platforms. Strengthening internal coordination will be essential to proactively manage energy needs moving forward.

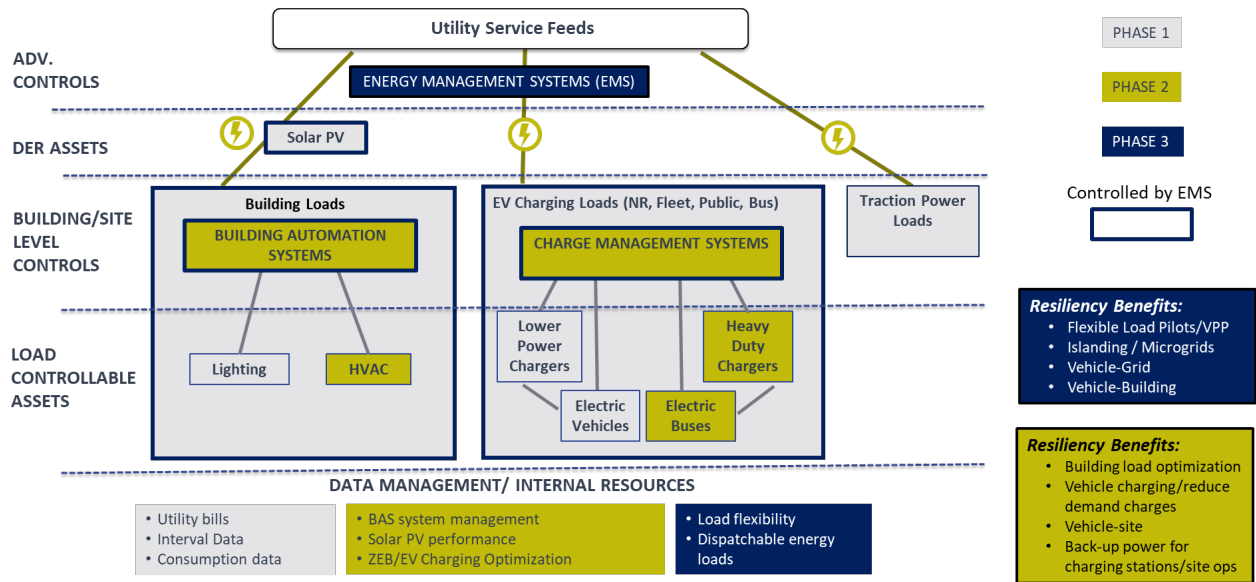
Key Opportunities:

- > Strengthen existing partnerships (e.g., OOS, Watchwire, Procurement) to standardize utility data as the system of record.
- > Establish an annual review of utility energy supply products to optimize cost-effectiveness and align with budget/rate cycles.
- > Building on this existing collaboration, Metro could consider formalizing agency-wide coordination and data sharing through the formation of an Energy Steering Committee, led by OOS, to:
 - Coordinate agency-wide data sharing and SOP implementation.
 - Develop agendas for utility and regulator engagement e.g., California Air Resources Board [CARB], CPUC, Department of Energy [DOE]).
 - Report annually on energy key performance indicators (KPIs).
 - Recommend data and IT requirements to support advanced energy management and resiliency solutions.

Phased Data & Information Management:

- > Initial phase: utility bills, interval data, solar system monitoring, consumption analysis. This initial data management function could be supported by the OOS and the Energy Steering Committee.
- > Future phases: integration with building automation, load flexibility, ZEB charging, and microgrid systems.

Looking forward, effective coordination between energy planning and IT resources will be critical to supporting advanced technologies. Figure 11 shows how data management needs increase for each of the different phases of energy technology deployment.



50

Figure 11: Data-driven Technology Management

The energy technology landscape is increasingly complicated and interactive, as Figure 11 illustrates. Multiple hardware and software technologies interact to help optimize energy usage through building and EV charging load management, optimize EV charging through charge management and optimize resiliency through energy management and control systems.

Focusing on Phase 1 of these recommendations, Table 17 describes the expected outcomes and key performance indicators.

RECOMMENDATION 1.0: FORMALIZE ENERGY PLANNING FUNCTION AND COORDINATION	EXPECTED OUTCOMES: PHASE 1 (FY 2026-2027)	KEY PERFORMANCE INDICATORS
> Recommendation 1.1: Develop centralized energy planning steering committee and establish reporting requirements and key performance indicators. > Recommendation 1.2: Socialize EMP with utilities and energy regulatory agencies as part of on-going engagement. > Recommendation 1.3: Develop SOPs and process requirements (ISO 50001 process requirements), develop SOPs for energy projects technology implementation. > Recommendation 1.4: Build data and information management backbone (i.e., interval data, submetering, BAS integration, IT needs, etc.). > Recommendation 1.5: Update energy demand forecast based on new capital projects or plans.	> Develop Centralized Energy Data and Planning Tools • Annual reporting monitoring/evaluation (verification of energy usage, energy constraints and environmental benefits) • Proactively address evolving data and process requirements • Align efforts and optimize use of division-level resources > Better Utility Coordination and Planning • Identify utility, state and federal support for proactive energy planning. • Foster stronger, long-term utility relationships • Gain better visibility into and planning for co-funding resiliency and energy cost-mitigation opportunities. > Maximize opportunities and cost effectiveness of assets and investments (PV, EVSE, batteries, BAS) • Cost + energy + resiliency benefits more easily communicated • Asset management visibility O&M • Avoid stranded or underutilized assets (immediate) • Load flexibility/shave peak demand costs (future)	> Energy planning steering committee established, meets regularly > Watchwire platform is the system of record > Annual reviews of energy spend, utility rate schedules and SOPs conducted with a report out on recommendations

Table 17: Summary of Energy Management Planning Recommendations

Recommendation 2.0: Resilient and Clean Energy Supply

Recommendation 2.1: Accelerate 100% Renewable Energy Supply

Existing Energy Supply from Utilities

As outlined in the current energy demand section, 46% of Metro’s electricity is sourced from 100% renewable energy. California utilities continue to transition to cleaner energy sources in compliance with California Renewable Portfolio Standard (RPS), which mandates that 60% of the state’s energy supply must come from renewable sources by 2030. Another driver is Senate Bill 100 (SB100), which establishes the goal of achieving 100% carbon-free energy by 2045. Therefore, Metro could accelerate its own renewable energy supply goal of 100% by 2035, as proposed in the CAAP, by increasing the number of utility accounts that receive 100% clean energy products. There are several options for consideration, summarized in Figure 12.

	2024 Annual Energy Spend	Current Renewable Energy ¹	Scenario 1 – Mix of 50% and 100%			Scenario 2 - 100% Green Power			Scenario 3 – Cost Optimization		
			Green Power Option	Annual Incremental Cost	Additional Annual Avoided GHG Emissions (MT CO ₂ e) ¹	Green Power Option	Annual Incremental Cost	Additional Annual Avoided GHG Emissions (MT CO ₂ e) ¹	Green Power Option	Annual Incremental Cost	Additional Annual Avoided GHG Emissions (MT CO ₂ e) ¹
City of Pasadena Water and Power (PWP)	\$2.4M	35.8%	100%	\$169,953	3,980	100%	\$169,953	3,908	100%	\$169,953	3,908
LADWP	\$45.3M	39.5%	50%	\$3.1M	23,582	100%	\$6.2M	47,163	No changes	N/A	N/A
SCE Base Rate CPA Eligible, previously opted-out	\$7.6M	37.6%	Re-enroll (27) accounts in CPA at 100%	\$846,770	6,306	Re-enroll (27) accounts in CPA at 100%	\$846,770	6,306	No changes	N/A	N/A
CPA – Clean Power (50%) (CPA Supply/SCE Delivery)	\$0.4M	50.0%	Remain at 50%	0	0	Opt (21) accounts up to 100%	\$16,065	227	Add (6) accounts	\$321,115	-74
CPA – Clean Power (100%) (CPA Supply/SCE Delivery)	\$9.4M	100.0%	Remain at 100%	0	0	Remain at 100%	0	0	Opt (6) accounts down to CPA Clean Power (50%)	-\$491,068	0
TOTAL				\$4.1M (5% increase)	33,867 (49% reduction)		\$5.6M (9% increase)	57,676 (84% reduction)		\$0	3,907 (6% reduction)
TOTAL Utility Portfolio Renewable Energy	45.9%		60%			91%			47.4%		

¹Based on 2023 Power Content Labels

Figure 12: Options for Increasing Renewable Energy Supply

Metro has the option in the next year to increase its utility clean energy supply from 46% to between 47%-90%, with annual costs ranging from \$0 (cost neutral option at 47%) to \$5.6M/year (90% renewable supply). Moreover, the greenhouse gas emissions reductions benefits are significant and range from a 6% to 84% reduction.

Recommendation 2.2: Develop More Robust Solar Expansion and O&M System

Existing Solar PV Systems

To ensure the long-term performance and reliability of Metro’s existing solar PV systems, it is recommended that necessary repairs and system improvements be incorporated into the existing Distributed Energy Resource Capital Project, an approved capital improvement project, or establish a new capital project. This proposed capital project should address deferred maintenance needs and upgrading aging infrastructure that is contributing to underperformance. System components such as inverters, combiner boxes, and fuses have been compromised by environmental stressors, including water intrusion, corrosion, and fire-related damage—highlighting the need for targeted system improvements.

Rather than continuing with reactive repairs, this proactive capital investment approach would establish a funding mechanism to replace outdated or failing PV components with modern, high-efficiency equipment. For example, at the Central Maintenance Facility, aging central inverters would be removed and replaced with distributed string inverters, increasing system resiliency, simplifying maintenance, and improving energy output. These upgrades would also bring systems into compliance with current safety and electrical codes. A detailed summary of proposed PV system repairs and upgrades is provided in Appendix G.

To support long-term solar performance, comprehensive O&M planning is necessary. The OOS will develop and manage a comprehensive O&M plan that defines clear roles, responsibilities, and protocols to ensure accountability and foster ownership across departments—supporting a culture of continuous improvement in line with ISO 50001 standards. The pursuit of ISO 50001

certification will further provide a structured framework for tracking performance, identifying opportunities for improvement, and establishing standardized processes that ensure consistent, data-driven maintenance. Integrating solar PV systems into Metro’s Enterprise Asset Management System (EAMS) will integrate these generation assets into Metro’s proactive maintenance scheduling, performance tracking, and lifecycle planning. To achieve all of this, dedicated investments in the O&M program as well as workforce development will be necessary. for.

Future Solar PV Systems

In alignment with Metro’s long-term sustainability and energy resilience goals, it is also recommended that the Agency expand its total installed solar capacity to 64 MW by 2050—an increase of 60 MW beyond the 4 MW already existing or planned. For new solar PV systems, it is critical to embed long-term O&M strategies, as described in the previous section, into the project development phase to prevent repeating the challenges faced with legacy systems. Integrating these strategies into the project development phase will help avoid current deficiencies, extend the productive life of future solar assets, and preserve the long-term value of past investments. This proactive approach ensures alignment with the agency’s broader energy and resilience goals.

Pathway to 100% Renewable Energy Supply

Based on Metro’s goal of achieving a 100% renewable energy supply by 2035, the agency can pursue two main strategies: Install additional on-site Solar PV and increase procurement of 100% renewable energy from utility providers. Based on 2024 information, Metro could purchase all available 100% renewable energy options from utilities, which would enable it to reach a 90% clean energy supply mix in the near term—well ahead of schedule. To close the remaining gap and achieve 100% renewable energy, Metro would need to install approximately 17 MW of additional on-site solar PV.

Recommendation 2.3: Increase Resiliency of Energy Supply

As part of strategic energy planning, Metro has several opportunities to engage more proactively with its utility partners to support resiliency needs and meet its clean energy and environmental goals. Since 2001, Metro’s rail system has undergone significant expansions with the addition of the E Line, connecting downtown Los Angeles to Santa Monica, the “Pasadena Metro Blue Line” (now known as the A Line), and the K Line Extensions.

Metro is currently working on a plan to increase the number of meters designated as “essential use” so that Metro’s critical operations, including rail, bus and operational facilities, are exempted from rotating or planned outages during periods of high energy demand. These conversations have already been initiated with utilities.

CPUC Decision 01-08-071 (2001) Adopted Rail Safety and Carriers Divisions granted exemptions for certain sections of Metro’s rail tracks from rotating outages (exclusive rights-of-way, ballasted tracks, underground sections, tunnels, aerial structures, and control centers). Refer to Appendix I for the list of sites included in this CPUC Decision.

Increasing “essential use” designations will be even more critical as Los Angeles prepares to host the 2028 Olympic and Paralympic Games and key matches of the 2026 FIFA World Cup. Uninterrupted transit operations are vital to supporting mobility, safety, and emergency response throughout the region.

SCE accounts are the priority for “essential use” meters and coordination among internal Metro stakeholders (e.g., Procurement, Real Estate, Operations) should verify the list of accounts and their end uses. Once this verification is complete, Metro can begin engagement with utilities to confirm the rotating outage group ID and determine whether accounts are exempt.

Additionally, Metro should work with utilities to establish a process for managing new meters as they come online and explore the possibility of receiving approval for accounts to gain exemption on a rolling basis. The OOS is coordinating with Government Relations to determine the best approach for addressing this in discussions with the utilities. The next steps will involve addressing LADWP accounts, which will follow a similar process, informed by lessons learned during the management of SCE accounts.

Focusing on Phase 1 of these recommendations, Table 18 describes the expected outcomes and key performance indicators.

RECOMMENDATION 2.0: OPTIMIZE CLEAN ENERGY SUPPLY TO MEET CLEAN ENERGY GOALS AND RESILIENCY NEEDS	EXPECTED OUTCOMES: PHASE 1 (FY 2026-2027)	KEY PERFORMANCE INDICATORS
> Recommendation 2.1: Accelerate 100% Renewable Energy Supply • Green energy product opt-up • Utility product recommendations > Recommendation 2.2: Develop More Robust Solar Expansion and O&M System • Phased remediation system to address routine maintenance and repair existing damage • Develop PV system replacement and asset management operating procedures • Determine contracting mechanism to use for expanded solar deployment > Recommendation 2.3: Increase Resiliency of Energy Supply • Work with the utilities to confirm rotating outage group IDs and exemption for critical accounts	> Receive exemption from rotating outages for Metro’s accounts > Improve operational resiliency > Cost effectively increase Metro’s renewable energy supply from utilities from the current 45.9% toward 100% > Repair solar PV systems to get back to expected production, saving an estimated \$400K per year in avoided utility costs > Optimize current solar investments and establish cost-effective O&M approach as a backbone for future solar system deployments	> Document savings on avoided utility costs > Overall system-wide average PV solar systems operational efficiency increases from 49% to at least 70% > Metro receives expanded essential use designation at critical facilities > O&M plan for solar is cost-effective and allows for desired workforce participation in system maintenance

Table 18: Summary of Energy Supply Recommendations

Recommendation 3.0: Energy Technology Implementation and Workforce Development

As Metro enters a more energy constrained environment, where resiliency is also an increasing need, it is important to re-evaluate planning for future energy-related technologies and implementation. Going forward, agency-wide deployments of a single technology, such as solar or building controls, may not be as cost-effective or efficient compared to taking an integrated

and phased approach at a site level. This comprehensive site level approach would allow for optimization of the interactive benefits of critical energy-management technologies and provide best practices and learnings that can be leveraged across other divisions.

A comprehensive approach at a site level would involve auditing and documenting the existing technologies, operational needs and future technology opportunities that could support energy management and resiliency for that location. An evaluation of the requisite skills and workforce development needs should inform the planning process. After collection and synthesis of existing conditions, an energy technology roadmap should be developed for each location, and include an initial detailed cost-benefit analysis with the resiliency and environmental benefits. The cost-benefit analysis should also identify innovative funding and/or cost mitigation opportunities to support the implementation of the energy technologies at that site. This approach supports both Metro’s standardized CBA framework and identifies early in the technology feasibility and planning stages any opportunities for cost mitigation.

Once a site’s energy technology roadmap, cost-benefit and funding analysis are finalized, and a capital development plan has been approved, Metro can repeat the process again for additional sites.

To support this comprehensive approach, the energy technology recommendations fall into three subcategories:

1. Internal education and workforce development
2. Site prioritization process for technology investment screening and implementation of additional solar and energy storage
3. Incorporating the cost-benefits of resiliency into Metro’s standardized Cost Benefit Analysis

Recommendation 3.1: Advance Internal Education and Workforce Development

The implementation of the EMP will have wide-reaching implications for the agency’s workforce of 12,108 employees, including 10,100 represented by labor unions. As the EMP initiates a major transition to electrified fleets, renewable energy systems, building automation, and advanced data infrastructure, new skills training and education are needed for deploying, maintaining and operating energy-related assets such as zero-emission buses, electric vehicle charging stations, solar PV systems and batteries/energy storage systems.

Additionally, as Metro implements the EMP, the scale and complexity of anticipated energy capital projects will have significant implications for labor, particularly under the agency’s existing Project Labor Agreement (PLA) with the Los Angeles/Orange Counties Building and Construction Trades Council. These impacts are critical to understanding how the energy transition can advance workforce development, ensure equitable job access, and uphold union standards. Trainings and certifications relating to energy management, energy storage and high voltage equipment, such as EV charging stations, have already been identified as part of Metro’s ZEB Workforce Development Statement of Work. Further, Metro’s Talent and Workforce Development team has an existing partnership with Cerritos College to support more career pathways for electricians and electrician helpers. This partnership can be leveraged to identify additional skill gaps and priority sites for energy management technology beyond the ZEB workforce development plan.

Energy efficiency measures are the backbone of any energy management investments and empowering the facilities and maintenance staff in leading this planning would also serve as an

opportunity to identify resource and training needs in advance of future energy technology deployments. The opportunities for energy efficiency improvements as outlined in the Energy Efficiency Long Term Plan (EELTP) would be a great opportunity for facilities and maintenance staff to develop and lead the implementation planning with support from the OOS.

Figure 13 below highlights where education and workforce development opportunities can be aligned with the agency's energy strategy, ensuring that Metro's staff is trained to operate, maintain, and optimize these systems.

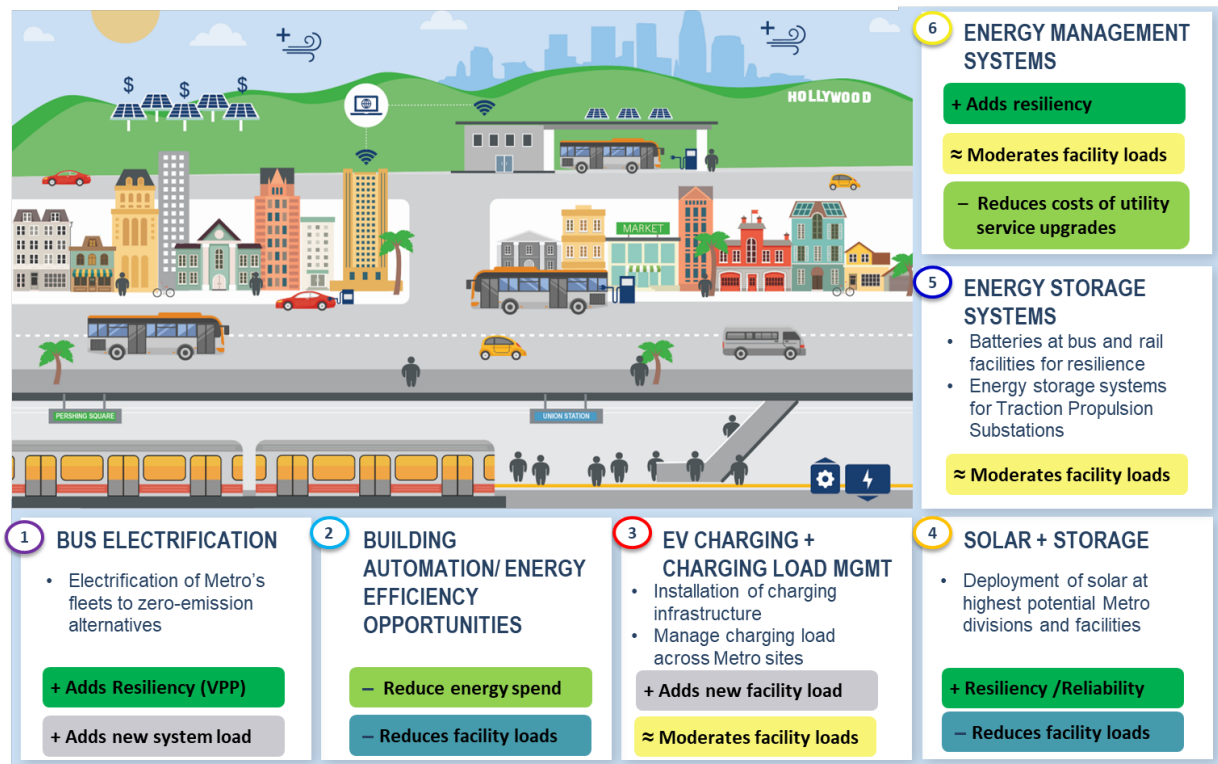


Figure 13: Energy Education - Workforce Development Opportunities

Functional Technical Training/Job Transition Opportunities

There are many specialized training and re-training needs to be addressed so that Metro's workforce can fully participate in the Agency's energy transition. Below are a few gaps to close in Metro's workforce:

- > **Bus and rail operators represented by SMART** (5,197 members) will need training on the operational nuances of zero-emission buses and potentially automated charging systems. As Metro expands micro transit services, these operators may also be called upon to operate diverse vehicle types and use real-time energy monitoring tools.
- > **Mechanics and service technicians represented by the ATU** (2,695 members) will be among the most directly impacted. As internal combustion engine vehicles are phased out, mechanics will need to acquire skills in high-voltage electrical systems, battery management, and digital diagnostics.
- > **Transportation and maintenance supervisors** (AFSCME, 858 members) will play a critical leadership role in managing cross-functional energy infrastructure projects and coordinating

building-level energy efficiency initiatives. Their involvement in strategic planning and implementation will be vital for successful system integration.

- > **Custodial and clerical employees** (TCU, 1,126 members) **and security guards** (Teamsters, 224 members) will be indirectly affected by changes to facility operations, schedules, and building access related to energy upgrades and construction timelines.

As more skill gaps are identified, Metro can leverage existing partnerships with Cerritos College and LA Trade Tech to further develop new certifications and training to support energy technology deployments.

Metro could also consider developing a series of energy-related internal education modules, beginning with foundational concepts and progressing toward advanced energy management and control technologies. A structured, phased approach will ensure that the workforce builds skills in parallel with Metro’s evolving clean energy initiatives. This approach will:

- > Strengthen internal coordination and collaboration across the agency.
- > Inform procurement documents by embedding technical understanding into requirements.
- > Enhance vendor engagement through shared knowledge and expectations.
- > Build awareness of both physical and cyber risks associated with electric mobility and infrastructure – equipping staff with strategies for proactive mitigation.

Figure 14 below illustrates a phased learning progression. Early phases emphasize core concepts (EV basics, building automation, energy security), while later phases introduce more complex systems (charging load management, energy management systems, cybersecurity for e-mobility). This approach supports upskilling of the workforce while preparing the Agency to manage increasingly more integrated and sophisticated energy systems.

PHASE 1	PHASE 2	PHASE 3
EV 101 > Basics of EV and EV charging > Best practices for charging implementation > Metro’s EV policy BAS > Computer-based system to control the building systems (e.g., heating, ventilation, air conditioning, lighting) Energy Security and Cybersecurity > Introduction to physical and cyber risks due to electric mobility and infrastructure connections (understanding of threats and vulnerabilities and best practices and mitigations)	EV Charging Load Management Systems > EV charging load management software – electricity infrastructure, charge stations, and EV communications > Load balancing systems – instruct EV chargers to deliver the right amount of energy and help offset peak demand at the charging site level, in on-site battery storage, and within campuses Cybersecurity – e-mobility > IT/OT strategies > Use of AI to proactively detect and manage risks	Energy Management System > Collection of hardware and software to monitor and control energy usage > Connects to building automation, charging management and other distributed energy resources such as solar PV, energy storage, and microgrids Advanced systems capable of supporting VPP operations (dispatching of energy, responding to real time energy prices)

Figure 14: Internal Education Topics - Recommendations

Recommendation 3.2: Implement Technology Investments - Site and Technology Prioritization

Opportunities to expand on-site clean energy generation, reduce energy costs, leverage the positive cash flow benefits of solar, and enhance resiliency through energy storage for critical operations fall into three key categories, as introduced in the Future Energy Demand Opportunity Scenario section:

- > **Recommendation 3.2.1 Bus Division Resiliency Upgrades:** Develop a technology roadmap, implementation plan, and full cost-benefit analysis for integrating solar, energy storage, energy management, and building automation at prioritized bus sites summarized in the following section.
- > **Recommendation 3.2.2 TPSS Energy Storage Implementation:** A pilot project is in progress to evaluate the potential of implementing energy storage at Division 11's yard TPSS, with study completion anticipated by Fall 2025. This pilot will help define the project scope, delivery pathway, and associated benefits to support broader deployment.
- > **Recommendation 3.2.3 Long-Term Solar Expansion Across Metro Sites:** Expand solar-only installations across Metro's portfolio to increase clean energy generation and reduce energy costs.

A full listing of Solar PV and energy storage potential is listed in Appendix J.

Recommendation 3.2.1: Bus Division Resiliency Upgrades

Implementing a phased and site level technology deployment to support resiliency and energy management goals would yield significant advantages for Metro. Metro would screen its sites/divisions to prioritize a more comprehensive energy technology deployment plan that could include multiple technologies rather than a single measure. Focusing holistically at a site or division level would enable faster technology deployment as Metro would have the ability to validate technology viability, scalability, interoperability, user experience, and energy savings before scaling to other prioritized sites. This approach also allows for:

- > Building internal understanding of technology communication standards to ensure equipment can work together effectively (part of internal education).
- > Prioritizing open standards and protocols (e.g., BACnet, OpenADR, Open Charge Point Protocol) to ensure compatibility across different systems and manufacturers.
- > Evaluating vendor support more effectively, including factors like regular software updates, feature enhancements, and long-term service agreements.

Metro would screen and prioritize based on the following criteria:

- > **Existing energy demand and energy constraints:** Prioritize sites with high or diverse energy loads, where power disruptions would have greater operational impact and where resiliency improvements would be most beneficial.
- > **Operational Fit and Cost-Effectiveness of Solar System Types:** Evaluate the feasibility and relative cost-effectiveness of different solar configurations (e.g., rooftop, carport, or superstructure) based on site layout, structural capacity, and operational requirements.
- > **Resiliency Needs:** Assess whether the site serves a continuity-of-operations function, and identify climate-related risks (e.g., wildfire, flooding, extreme heat) that could impact energy reliability.

- > **Existing and planned technology:** Consider the presence or planned deployment of solar PV, building energy management systems, and electric vehicle charging infrastructure to identify integration opportunities.
- > **Community Equity Considerations:** Incorporate input from hyper-local community partners to ensure equitable investment and community benefit in historically underserved areas.

Applying these technology screening criteria for Solar and BESS deployments and energy management across Metro’s bus division portfolio would result in this prioritization:

SITE NAME	SITE FUNCTION	PEAK DEMAND (kW)	ANNUAL CONSUMPTION (GWH)	SERVICE FEED	PROJECTED FUTURE ENERGY SUPPLY CONSTRAINTS	EXISTING PV kW DC	EXISTING PV INSTALL YEAR	EXISTING + PLANNED + ADDITIONAL PV KW	BESS	BESS INSTALL YEAR	ZEB CHARGING	EV CHARGING	EQUITY FOCUSED COMMUNITY	BUS COOP DESIGNATED BACKUP LOCATION	CURRENT CLIMATE RISK SCREEN (HEAT FLOOD, LANDSLIDE) POWER OUTAGE IS A CASCADING IMPACT
Division 18	Bus	1.51	6.73	SCE	No	437	2007	2,399	N/A	N/A	2028	25 employee ports, 2025, 136 kW non-revenue fleet	Yes		No
Division 9	Bus	1.61	6.30	SCE	No	0	N/A	1,458	N/A	N/A	2026	27 employee ports, 2029, 129 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 8	Bus	2.97	5.16	LADWP	No	247	2005	5,035	N/A	N/A	2034	15 employee ports, 2028, 82 kW non-revenue fleet		Yes	Yes - Heat
Division 7	Bus	1.14	4.53	SCE	No	0	N/A	1,467	N/A	N/A	2028	Seven employee ports, 2027, 127 kW non-revenue fleet t		Yes	Yes - Heat
Division 2	Bus	1.96	4.10	LADWP	No	0	N/A	435	N/A	N/A	2032	15 employee ports, 2028, 82 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 5	Bus	1.64	4.09	LADWP	No	0	N/A	2,308	N/A	N/A	2030	15 employee ports, 2028, 61 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 3	Bus	1.07	3.40	LADWP	No	0	N/A	2,251	N/A	N/A	2034	15 employee ports, 2028, 61 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 15	Bus	1.28	3.37	LADWP	No	247	2005	3,505	N/A	N/A	2035	15 employee ports, 2027, 124 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 1	Bus	1.47	3.02	LADWP	No	0	N/A	1,458	N/A	N/A	2032	20 employee ports, 2026, 47 kW non-revenue fleet	Yes	Yes	Yes - Heat
Division 10	Bus	1.41	2.11	LADWP	No	0	N/A	2,896	N/A	N/A	N/A	15 employee ports, 2026, 530 kW non-revenue fleet	Yes		Yes - Heat

Table 19: Metro Bus Division Solar PV + BESS Prioritization Screening

Metro has an existing DER Capital project that will evaluate opportunities for BESS at Division 18. The results from this pilot will be shared later in the fall of 2025. The outcomes will include a technology implementation plan, accompanied by a comprehensive cost-benefit analysis, to determine the most appropriate technology investments in on-site generation, on-site energy storage, and energy management technologies to cost-effectively enhance resiliency. For Division 18, the site roadmap could look like this:

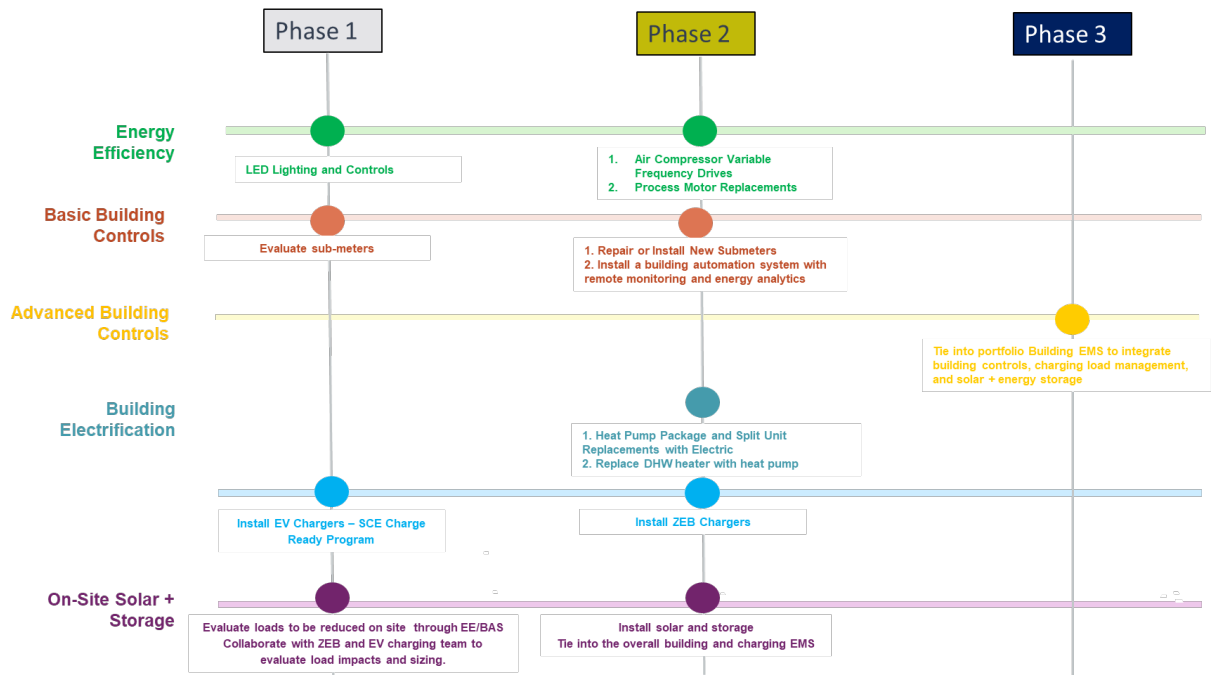


Figure 15: Division 18: Phased Technology Deployment Example

Site-level Technology Implementation Expected Outcomes: Division 18 Pilot

A key benefit of developing a comprehensive site technology roadmap would allow for the planned integration of solar and batteries (energy storage) as zero-emission bus infrastructure is being developed. Some of the benefits of integrating solar with bus charging infrastructure include:

- > **Cost Efficiency:** Combining solar installation with bus charging infrastructure minimizes capital costs by leveraging shared resources (e.g., trenching, electrical connections).
- > **Integrated Design:** Coordinated planning and installation reduce redundancy, cutting costs on labor, permitting, and project management.
- > **Enhanced Return on Investment (ROI):** Solar power can directly offset charging costs, reducing long-term operational expenses.
- > **Future-Proofing:** Integrating renewable energy with EV infrastructure aligns with sustainability goals and future energy demands.
- > **Resiliency:** When combined with energy storage or other generating assets, solar can provide some backup power for bus chargers.
- > **O&M:** Provides an opportunity to upskill maintenance personnel. Involving staff at the beginning stages of project development builds ownership, supports long-term maintenance

responsibility, and ensures O&M training and budgeting are integrated into the project costs.

Recommendation 3.2.2: TPSS Energy Storage Implementation

Building on previous microgrid and energy storage initiatives to support traction power, it is estimated that up to 75% of Metro’s TPSS sites have potential for BESS. A full list of these sites is in Appendix J. Currently, a pilot project is underway, building on earlier studies that explored reliable and resilient power solutions for critical rail propulsion systems.

Earlier studies focused on a conceptual microgrid design, which included a DC-connected wayside energy storage system. During this phase, an energy storage system was evaluated to address low substation bus voltages and the capture of excess regenerative braking energy from trains. These studies aimed to enhance resiliency, sustainability, and economic efficiency while addressing low voltage issues caused by three-car trains. These issues required either a new TPSS or non-wire alternatives (NWA), such as a DC-connected BESS.

Operational changes, such as updates to operating plans or the planned addition of rail cars, along with TPSS growth and capital projects, have introduced new deficiencies in the wayside system. As a result, the earlier load flow analysis is no longer accurate. As part of a DER Capital project, an updated analysis of BESS potential at TPSS sites is currently in progress. This pilot will include a revised power load flow analysis to evaluate the current operating plan, identify the weakest points in the system, and model the projected benefits of implementing a BESS at the pilot location, Division 11, including determining its optimal size. The pilot is expected to conclude by December 2025. During this time, the project team will collaborate with Metro Wayside Engineering Staff to identify other potential weak points across Metro’s rail network, assess the feasibility of BESS deployments, conduct cost-benefit analyses, and develop a standardized implementation plan for rolling out BESS across all suitable TPSS sites.

Recommendation 3.2.3: Long-Term Solar Expansion Across Metro Sites

In addition to Metro’s existing 2.6 MW of solar and 1.5 MW of planned solar, as well as the solar that can be paired with batteries at critical bus divisions, Metro has the opportunity to expand solar installations at other locations, bringing the total potential solar capacity to 64 MW. These locations would include Rail Maintenance Divisions, Park and Rides, and Passenger Stations. The list of sites with solar potential can be found in Appendix J. It is recommended to prioritize the development of a more robust solar O&M framework before initiating this expansion. The additional solar capacity is estimated to be planned and developed beyond the initial 12–18 months of the EMP implementation plan. This timeline would also allow for determining the appropriate project delivery structure (e.g., PDBOM, PPA, or other) based on Phase 1 EMP implementation activities and the outcomes of the Division 18 pilot.

Recommendation 3.3: Resiliency Cost Benefits and Funding Mechanisms

On February 27, 2025, Metro’s Board approved a motion to direct the CEO to develop a standardized cost-benefit analysis framework, using U.S. DOT analysis or a comparable methodology, for all Metro capital projects to help inform the agency’s a more data-driven and transparent decision-making process for projects Metro advances. In addition to implementing Metro’s standardized cost benefit framework, there are several cost-benefits as they relate to implementing the EMP recommendations and future resiliency-related investments that should be included as part of the Agency’s standardized process:

- > **Costs of Energy:** Reductions or increases in energy spend, including determining if any projects would require energy distribution upgrades if the project site is currently energy constrained or could become energy constrained as a result of that project.
- > **Cost-benefits of Energy Storage to Provide Resiliency:** These benefits can accrue both to Metro and also community partners and include capital costs of energy resiliency, O&M costs, and quantifiable benefits of avoided costs in loss of operations or other losses due to energy supply interruptions. There are several tools that can be leveraged to support more robust resiliency cost-benefits estimates including NREL’s Customer Damage Function Calculator¹⁷. This tool has an easy to use interface that would allow Metro to estimate the total costs associated with critical loads in the event of an outage including equipment damage, cost of back-up power and fuel, staff productivity losses and operational losses.
- > **Cost-benefits to Community Partners in Line with Equity Toolkit Indicators:** Recommendation that projects that fall under EMP implementation include an early directional assessment of equity indicators and community co-benefits. This directional assessment during the planning phase would serve as an early screening opportunity to improve the efficiency of community feedback and also expand opportunities for co-benefits.
- > **Cost-benefits of Carbon Reductions:** Include cost-benefit of carbon reductions and any associated environmental benefits.

A key next step would be for Metro to determine the appropriate place in the existing cost-benefit framework to and develop a process to standardize the EMP-related additional cost-benefit analyses. The OOS is already working together with Metro’s finance team to coordinate on this standardized approach.

Funding Mechanisms

To support the implementation of the proposed on-site solar PV, TPSS energy storage and targeted deployment of solar + batteries at key bus divisions, Metro may need to develop a dedicated EMP Capital Annex or explore adding Solar PV to the DER existing Capital Project.

Given Metro’s operating budget constraints and the challenging federal funding climate for clean energy investments, it is imperative to explore innovative approaches to mitigate cost outlays for clean energy and resiliency. Funding opportunities that are currently being investigated include:

- > **Revisiting opportunities for Power Purchase Agreements (PPA), third-party ownership models, Energy-as-a-Service (EaaS), and Public-Private Partnership (P3) approaches** to finance and deploy distributed energy resources. To improve the effectiveness of future procurement efforts, Metro should develop a more robust outreach and engagement plan ahead of any solicitations. This will help ensure a sufficient number of qualified responses and increase competition. Additionally, some distributed energy resource (DER) providers are interested in integrating electric vehicle (EV) charging infrastructure into the asset mix of PPAs, offering a potential pathway to co-locate renewable energy and EV charging as part of a comprehensive, third-party financed solution.
- > **Exploring opportunities to include funding for operations and maintenance costs of planned distributed energy assets**, such as EV charging infrastructure, solar PV systems,

¹⁷ [Calculator](#) | [CDF](#) | [Results](#)

battery storage, and future microgrids—within progressive design-build-operate-maintain (PDBOM) contracts. To support long-term performance and workforce development, staff training requirements can be integrated into the procurement process. A phased implementation plan should also be developed to gradually increase agency-led support for O&M as internal capacity grows and cost-effectiveness improves.

- > **Strategies to support funding for new solar and storage opportunities** could include adding solar and BESS in the ZEB design-build contract and could be studied as part of the Division 18 DER pilot described above. Metro could also align its park and ride locations with EV charger projects and also consider mobile charging needs in support of LA28 or to provide additional EV charging capacity that can be flexibly and cost-effectively deployed as EV charging needs change.
- > As part of the utility engagement process, particularly when discussing energy constrained locations and the need for essential use designations, Metro should **explore opportunities for utility co-funding**. This includes advocating for the extension or expansion of existing community microgrid programs and other distributed energy funding initiatives, even if those programs are currently fully subscribed. Proactive engagement may also help influence future program design and prioritization criteria to better align with the agency's resiliency and electrification goals.

A summary of current funding opportunities and funding mechanisms is detailed below.

	Solar	BESS	EV Charger Public	EV Charger NR Fleet & Employee	EV Charger ZEB	Electric Bus	CNG Buses
Debt-based Opportunities for Assets							
PPAs	X	X					
Loans (TIFIA, I-Banks) ^{1,2}		X					X
Infrastructure Financing Districts (funds up to Cx, does not fund O&M)	X	X	X	X	X	X	X
Leases	X	X		X		X	X
Advertisement based charging (Volta model)			X				
Revenue Based Opportunities for Assets							
Carbon Credits ³			X	X	X		
Tax Credits ⁴		X	X	X	X	X	X
Grants		X	X	X	X	X	X
Wholesale Market	X	X			X		
Delivery Methods Opportunities							
P3s	X	X	X	X	X	X	X
PDBOM	X	X	X	X	X	X	X
Fleet-as-a-service, Charging-as-a-service	X	X	X	X	X	X	
Resiliency-as-a-service, Energy as a service	X	X	X	X	X	X	X
Other Innovative Operating Considerations							
Right sizing fleet				X		X	X
Renegotiate supplier contract						X	X

1. <https://www.ibank.ca.gov/climate-finance/sectors-of-focus/>

2. <https://www.transportation.gov/buildamerica/financing/tifia>

3. <https://ww2.arb.ca.gov/news/carb-announces-latest-lcfs-updates-will-be-implemented-next-month>

Increased stringency and reporting/verification requirements effective July 1, 2025. Current forward price curve for LCFS is \$57 in Q4 25, increasing to \$65 in Q4 2027 (as of July 22, 2025).

4. Tax Credits: *Indicates that this would need to be a partnership with a private entity as there is no tax credit for government agencies directly

Figure 16: Summary of Current Funding Opportunities and Mechanisms

Next Steps

Recommendation 3.0 covered a wide range of topics and identified on-site generation and resiliency opportunities at nearly every Metro site. To support a phased and focused implementation approach, the priorities for the next 12–18 months will center on critical bus sites and TPSS resiliency support. These priorities include developing a comprehensive energy management roadmap, conducting cost-benefit analyses, creating an implementation schedule, making key decisions, and assessing the technology provider landscape. Additionally, lessons learned from DER and BAS pilots will be incorporated to inform the broader implementation plan and guide decision-making for FY27 activities.

RECOMMENDATION 3.0: TECHNOLOGY IMPLEMENTATION AND INTERNAL EDUCATION	EXPECTED OUTCOMES: PHASE 1 (FY 2026-2027)	KEY PERFORMANCE INDICATORS
> Recommendation 3.1: Energy Education • Recommendation 3.1.1: Develop internal education series on energy technology (e.g., open protocol communication standards, energy and cybersecurity) • Recommendation 3.1.2: Build on Metro workforce, ATU and Cerritos College existing charging maintenance program to identify additional technical training needed for resiliency (solar + batteries + energy management systems) > Recommendation 3.2: Prioritize and Evaluate High Impact Sites for Future Energy Technology and Resiliency Investments • Recommendation 3.2.1 (bus division resiliency upgrades): Develop a technology roadmap, implementation plan, and full cost-benefit analysis for integrating solar, energy storage, energy management, and building automation at prioritized bus sites. • Recommendation 3.2.2 (TPSS energy storage for resiliency): Evaluate the potential of implementing energy storage across 75% of TPSS sites • Recommendation 3.2.3 (long-term solar expansion across Metro sites): Expand solar only installations across Metro's portfolio to increase clean energy generation and reduce energy costs. > Recommendation 3.3: Resiliency Cost-Benefits and Innovative Funding Mechanism • Recommendation 3.3.1: Include resiliency (avoided losses) benefits in standardized cost-benefits framework. • Recommendation 3.3.2: Identify appropriate capital planning pathways to support clean energy and resiliency investments. • Recommendation 3.3.3: Identify innovative funding mechanisms that can mitigate costs.	> Expanded workforce development opportunities that support equitable and just energy transition > Optimize and prioritize locations for resiliency investments > Increase cost-effectiveness through robust CBA at early planning stages > Increase effectiveness and responsiveness from technology RFPs (vendor screening) > Increase collaboration and effectiveness on technology implementation > Increase co-funding and cost mitigation on capital projects	> Address skill gaps requirements to maintain energy technology assets in a state of good repair > Training needs assessment and educational development plan created > Resiliency cost-benefit trade-offs are identified and quantified > Resiliency planned at critical sites > Higher quality vendor responses to energy technology management RFPs > Use of new funding mechanisms to support energy planning needs

Table 20: Summary of Technology and Workforce Development Recommendations

Recommendation 4.0: Stakeholder Engagement

Metro considers all who reside, work and travel within Los Angeles County to be stakeholders of our agency. Stakeholders play a crucial role in any Metro project. Listening and responding to community concerns through broad, equitable stakeholder engagement is foundational to achieving our mission of providing mobility and access to opportunity for all.

Metro's community partners will play an important role in the implementation of the EMP. Stakeholder involvement is critical to co-developing new training program curriculum, helping expand energy technology training and certifications and increasing the co-benefits for communities as Metro's invests more deeply in clean energy technologies and resiliency at their critical sites and divisions.

Based on feedback from the development of Metro's Equity Toolkit which will be finalized later in 2025, and also reinforced by a sampling of community partner feedback as part of the development of the EMP to enhance equitable outcomes include:

- > Early collaboration
- > Demonstrate collaboration benefits
- > Facilitate collaboration across the project lifecycle

The recommended priorities for stakeholder engagement in support of energy planning are:

- > **CBOs:** Strengthening relationships through proactive leadership and engagement with community partners around energy projects, energy technology co-benefits and opportunities for joint projects. This proactive engagement helps support the equity use indicator assessments which is included as part of the cost-benefit analyses in Recommendations 3.3.
- > **Workforce Development Partnerships:** Target workforce development partnerships that can help Metro advance internal workforce development and create broader opportunities for community equity through workforce development.
- > **Communicating Progress:** Ensuring that progress and community benefits are communicated on Metro's website and ESRI dashboards.

Recommendation 4.1: Community-Based Organizations

In addition to workforce development partnerships, Metro can expand collaboration with CBOs and the SC to support new workforce initiatives and help identify critical stakeholders and community co-benefits for more localized clean energy technology and resiliency investments. A summary of the community engagement process used for the development of the EMP is described in Appendix E.

Metro's SC could be expanded with the recommendation of adding an energy subcommittee and/or on-going energy planning standing agenda topic to support the EMP next steps. As part of the initial step of engaging with new organizations, The EMP project team conducted a stakeholder outreach process to gather insights and initial perspectives during the EMP development. The outreach process aligned with Metro's CBO Partnering Strategy¹⁸ focusing on a primary goal of seeking CBOs to advise and consult on the EMP's scope and goals. It also was an opportunity for the project team to disseminate information to CBOs by raising awareness of

¹⁸ [Metro CBO Partnering Strategy](#)

a forthcoming plan and solicit ideas for future Community Engagement approaches as the EMP moves to future implementation. The organizations that were surveyed for the EMP were also invited to join the SC.

Metro Energy Master Plan CBO Recommendations

Each of the five CBO interviews and subsequent surveys generated substantive feedback and insightful commentary. The collective insights summarized below fall into six general categories for ongoing consideration by the EMP project team.

Engage Communities Early and Meaningfully

All five participating CBOs provided some version of the feedback to engage with local communities earlier in planning processes. Early engagement was cited as an effective way to identify options and solutions that result in greater mutual benefits from Metro planned projects or initiatives. Overall, the insights shared emphasized that it is disempowering for community members and local CBOs to be invited into planning processes after decisions have been made. One participant cited “plan fatigue” to describe how communities receive notification of a completed plan where there is no opportunity to comment or help shape outcomes.

Energy Solutions Extend Beyond New Technologies

CBO participants shared clear, local perspectives on energy use, clean energy solutions and community experience during the interviews. One pointed out that energy planning is about land-use decisions, and it is critical to incorporate local level interests and advocacy positions with early engagement strategies. Given the breadth of topics the EMP addresses, the range of energy-related feedback was equally broad:

- > There’s no cleaner energy than walking or riding a bike.
- > Expanding EV charging locations does not help with LA’s car dependency.
- > Consider community benefits for clean energy infrastructure: 1) appearance, 2) less disruptive and 3) co-benefits for a greater purpose.
- > Electric bikes can fill the gap for longer trips and fitness benefits; Increased need for secure parking with more expensive e-bikes.
- > Share clear cost versus benefit analyses of proposed energy related actions to demonstrate value and level of impact of any changes within communities.
- > Consider co-locating planned electric vehicle charging with communities with nearby access to Metro trains and buses to reduce parking lot expansion and provide community co-benefits.
- > Explore ways to support electric vehicle charging for multi-family and affordable housing developments.
- > Focus on increasing bike lanes with seamless integration to other urban transportation interventions like Bus Rapid Transit lanes.
- > Consider programs for e-bike / cargo e-bike opportunities for families as part of energy planning.
- > Explore a climate/GHG public transit information source for riders like calorie counting for different transportation modes.

- > Look at resiliency and reliability throughout the system. For example, conduit hardening and seeking to minimize copper and other theft that can occur with new clean energy technology.

Focus on Increasing Ridership for Reducing Energy Use

CBO participants shared recommendations for Metro to elevate increased ridership for existing public transit as a key strategy for energy reduction, sustainability and community health outcomes. These insights focused on behavioral changes over technology solutions:

- > The ZEB focus is a disservice for existing transit options. It is better to get people onto the existing transit (trains/buses) system over more zero emission buses.
- > Make buses feel exclusive as a higher tier of transportation than cars.
- > Get bus passes into the hands of community members – increasing ridership is key.
- > Stations need to be accessible for bikes, scooters, strollers and pedestrians to increase rider adoption.
- > Consider bus route changes that intersect with existing community facilities/hubs.
- > Fund bus shelters and make shelters specific to the communities to increase ridership (e.g. enhanced street art).

Workforce Development Partnerships Abound

Participating CBOs provided several recommendations around workforce development and training as part of building out local clean energy resources. These recommendations ranged from training youth for future careers to providing job opportunities to local communities to support ongoing maintenance of clean energy assets. Communicating through CBO partners was also highlighted as a key to success as they are the organizations doing the on-the-groundwork in communities. Many workforce training ideas were shared including:

- > CBOs already offer workforce training programs to youth and people in transition. Proactive CBO partnerships can have mutual benefits for the energy transition.
- > Engage young people in workforce development/job training opportunities for new technology (real, non-robot opportunities).
- > Develop budgets for the maintenance of resources in underserved and "disadvantaged" communities.
- > Focused workforce development with youth leadership and leverage student days for key technical topics (e.g., electrification process).

Access and Safety Remain a Top Priority

Metro's existing priority on safety and access was further reinforced throughout the interviews and survey follow-up. As one participant stated, "Metro is more useful when accessible and safer." Metro's First/Last Mile considerations were also highlighted as important in these comments:

- > Ensure access to stations for cyclists (directly from bike lanes) and pedestrians alike.
- > Install secure bike lockers / storage options. This is especially important with more expensive e-bikes.
- > Explore how to "activate" stations – increasing safety with friendly community vibe or allowing street vendors in-station.

- > Focus on bike path improvements over more parking lots.

Funding and Resources

Suggestions were also provided for funding and resource consideration to support enhanced CBO participation, project grant funding and programs and re-prioritizing funding towards projects that reduce car dependency, public transit and active transportation solutions.

- > Budget for maintenance of resources in underserved and "disadvantaged" communities.
- > Supporting communities with EV charging projects that add local value and maintenance workforce opportunities.
- > Put money toward implementation projects over more planning.
- > Explore funding that supplements limited city services.
- > Budget for discretionary funding for CBOs to implement portions of LA Metro's energy planning.
- > CBOs do the groundwork but need support to fully engage (e.g. grant writing help, project funding, and overhead capacity support that is limited within non-profit organizations).

Recommendation 4.2: Workforce Partnership Opportunities

The other critical stakeholder group supporting Metro's energy planning include community partners that can support internal education, technology partner engagement and also expand workforce development opportunities throughout Metro's service area through co-design of new training programs to ensure equity in access to advancement and also to support Metro's own labor management framework.

Metro's labor-management framework should be leveraged to:

- > Establish **joint labor advisory committees** to guide workforce impacts and co-manage retraining resources.
- > Expand existing partnerships with institutions like Cerritos College and LA Trade Tech to deliver **targeted technical certifications** in EV systems, solar PV, and energy management software.
- > Use labor contract negotiations to **embed sustainability and energy transition language**, aligning job classifications and duties with the EMP's goals.

Construction Workforce Expansion and Skills Demands

The buildout of energy infrastructure is expected to increase demand for skilled trades such as electricians, laborers, HVAC technicians, solar PV installers, and control systems technicians. Through the PLAs mandated use of union labor and apprenticeship programs, Metro will be positioned to:

- > Scale up its Helmets to Hardhats initiative for veterans.
- > Expand opportunities for Local and National Targeted Workers, as defined by residency in economically disadvantaged areas.
- > Provide thousands of hours of union apprenticeship work, of which at least 50% must be performed by Local Targeted Workers.

This alignment allows EMP projects to become a direct catalyst for career pathways in high-road green jobs, while reinforcing Metro’s Construction Careers Policy. Each new capital project can serve as a training ground for future journeymen in the clean energy economy.

Equity, Inclusion, and Labor Protections

Under Metro’s PLA, Metro is committed to equitable access to job opportunities for workers historically excluded from construction trades. This includes:

- > Hiring a minimum of 40% of labor hours from Local Targeted Workers, with priority to residents living within five miles of the project site.
- > Guaranteeing that at least 10% of labor hours are completed by Disadvantaged Workers (e.g., veterans, formerly incarcerated, single parents, or foster youth).
- > Allocating 20% of labor hours to state-certified apprentices, ensuring long-term industry sustainability

Recommendation 4.3: Socialize energy goals and constraints with regional energy partners

Community engagement will also be part of Metro’s ongoing conversation with utilities and regional energy partners including the LA 100 Plan advisory group. The LA100 Plan documents are updated periodically and incorporate community input through robust outreach and engagement. Sharing the EMP findings with other regional energy partners (e.g. SoCalREN, LA County) is also recommended to help identify resiliency co-funding opportunities and also to bolster support for conversations with utilities and state energy agencies.

Recommendation 4.4: Communicate Progress and Benefits of Energy Planning

A important tool to support more proactive engagement with Metro’s riders, the general public and community partners involve planning for and prioritizing Metro’s communications around energy usage, clean energy deployment and community co-benefits.

Some strategies that Metro could consider include:

- > Development of a one-page fact sheet about the EMP post Board approval. This can be posted on the website along with the EMP report. Include visualization of metrics such as percent renewable energy, GHG reduction and capital projects in ways that are familiar with the public.
- > Develop a “call to partner” targeting key regional energy planning and utility partners. Disseminate the fact sheet and EMP report to those partners from the CEO’s office with an invitation and call to action around community projects and how we can scale our efforts more collaboratively.
- > Leverage the SC to help communicate Metro’s needs around innovative funding, make technology partners introductions and help expand project partner opportunities and support CBO engagement.
- > Enhance the existing public-facing Metro Energy Dashboard to include the EMP fact sheet and report.
- > Explore a way to include signage at upgraded facilities and EV charging stations to indicate clean energy or environmental benefits of projects.

RECOMMENDATION 4.0: EXPAND COMMUNITY-BASED AND WORKFORCE PARTNERSHIPS TO ACCELERATE AND STRENGTHEN ENERGY INVESTMENTS	EXPECTED OUTCOMES: PHASE 1 (FY 2026-2027)	KEY PERFORMANCE INDICATORS
> Recommendation 4.1: Community Partners • Expand SC to support energy goals; operationalize initial feedback from CBOs on energy planning > Recommendation 4.2: Labor/ Workforce Development Partners • Leverage community partners as workforce enablers (skills and job development) > Recommendation 4.3: Regional Energy Partners • Socialize energy goals and constraints, identify resiliency co-funding opportunities and needs > Recommendation 4.4: Communicate Progress and Benefits of Clean Energy and Energy Resiliency Benefits	> Extend co-benefits and cost sharing of resiliency investments > Operational approach to sharing and receiving best practices on energy technology implementation > Support workforce development and energy transition equity objectives > Increase community awareness of and engagement around energy planning and resiliency investments	> Equity considerations are developed as part of directional assessments during project planning > Community engagement is included as part of planning stage of energy-related project development > Job training partnerships expanded; training needs assessment and educational development plan created > Public facing materials about energy planning process are updated and easily available via Metro’s website and other public-facing dashboards

Table 21: Summary of Stakeholder Engagement Recommendations

EMP Equity Impacts

EMP recommendations include the development of additional on-site clean energy generation, energy management and resiliency technologies at critical sites to provide local health benefits, and opportunities for continued workforce development partnerships. These recommendations will support long-term operational sustainability of the growing transit system, positively impacting Equity Focus Communities (EFCs), customers, and broader transit system users across LA County.

As part of the development of the EMP, the team engaged the Office of Equity and Race to develop a plan for community feedback to better understand the implications of the EMP strategies and recommendations. The team conducted a stakeholder outreach effort during the development of the plan with the goal of soliciting early perspectives from organizations across Metro's service area as to needs of – and insights from – local communities. This was primarily accomplished via interviewing five CBOs that had not previously engaged in other Metro sustainability or climate-related efforts. This engagement opportunity was posted through the CBO Database and aligned with Metro's CBO Partnering Strategy.

Several key recommendations were incorporated from this CBO outreach into the EMP including ongoing CBO engagement, exploring workforce development partnerships, and ensuring that energy equity indicators and benefits are communicated publicly via Metro's website and/or data dashboards.

To achieve equity objectives, the EMP recommendations include the integration of equity assessments in early project and program planning phases using the data and resources from the forthcoming Equity Toolkit, Community Demographic Profiles, and Metro's Cost Benefit Analysis for larger capital projects. The data and insights collected from these assessments are intended to support the ongoing evaluation and continual improvement of energy equity as part of Metro's Equity Platform.

Next steps in the implementation of equity objectives as part of energy planning will include an equity directional assessment for the Division-18 distributed energy resource feasibility plan. Community engagement will also be part of Metro's ongoing conversation with utilities and regional energy partners including the LA 100 Plan advisory group. The LA100 Plan documents are updated periodically and incorporate community input through robust outreach and engagement.

EMP Vehicle Miles Traveled Impacts

Vehicle Miles Traveled (VMT) and VMT per capita in Los Angeles County are lower than national averages, the lowest in the Southern California Association of Governments (SCAG) region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.¹⁹ Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. While this item does not directly encourage transit, sharing a ride, or using active transportation, it is a vital part of Metro operations, as it supports operational resiliency, environmental and sustainability goals and cost-effective energy management strategies. Because the Metro Board has adopted an agency-wide VMT Reduction Target, and this item supports the overall function of the agency, this item is consistent with the goals of reducing VMT.

¹⁹ Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

Implementation Plan and Proposed Performance Metrics

Schedule- what are the priorities for the next 12 months look like?

Who is responsible for implementation? How do various departments coordinate going forward?

What are the Key Performance Indicators?

The next steps to implement Metro’s EMP will involve developing a comprehensive plan that addresses all four areas of recommendations, with clearly defined next steps, ownership, and deliverables. As the draft of this plan is shared and feedback is further incorporated, additional details and refinements are expected.

At a high level, the agency can anticipate the following over the next 12–18 months, as summarized in the high-level plan below. The OOS and the EMP Steering Committee will play critical stewardship roles in driving progress and providing ongoing updates. Support and collaboration from various Metro departments and functions—including Office of Management and Budget (OMB), Procurement, Capital Planning, Program Management, and FM—will be essential to advancing in a more strategic and proactive manner. Additionally, all capital project funding mechanisms will need to be identified and planned for.

Phased implementation of the plan will be key to ensuring a systematic and cost-effective roll-out, while also providing opportunities to incorporate lessons learned into future planning phases. Over the next 12–18 months, Metro’s Board and leadership can expect to see progress in each of the recommended areas, laying a strong foundation and building confidence as the agency prepares for larger capital investments in resiliency, clean energy generation, and cost-effective energy management technologies.

The benefit of this approach is that it will create an opportunity for Metro to come together as an organization, working collaboratively toward a more resilient and cost-effective clean energy future. This strategy will foster greater buy-in, stronger collaboration, and a shared understanding of the energy-related opportunities ahead.

RECOMMENDED ACTIONS		LEAD	FY 2026-2027 KPIS	TIMING	KEY MILESTONES/ DECISIONS
RECOMMENDATION 1.0: ENERGY MANAGEMENT PLANNING					
1.1	Develop Energy Management Steering Committee	OOS, Steering Committee	Meeting frequency and committee charter established		
1.1	Quarterly meetings	OOS	Identify participants	Begin Q4 2025	Kick-off November 2025
1.2	Socialize EMP with utilities and energy regulatory agencies.	OOS	EMP forecast and energy cost and resiliency concerns communicated to key utility and state energy partners.	Winter 2025-Spring 2026	Develop engagement plan with SCE/LADWP; share EMP forecasts and energy cost concerns
1.3	Develop SOPs and process requirements for energy project implementation	OOS	Technology roadmap and implementation schedule developed for prioritized energy management sites		
1.3	Develop capital project for EMP (solar O&M, additional solar)	OOS	Solar Capital Project Developed	Late Fall 2025-June 2026	Decision point late Fall 2025 on how to fund EMP implementation
1.3	Develop full checklist for all EMP projects CBA and site screening process	OOS	Sustainability and Resiliency cost-benefit factors for Construction projects developed	In progress	Begin process with current DER pilots. Draft checklist developed December 2025. Full screening process implemented by June 2026 with capital cost projections
1.4	Build backbone data and information management requirements	OOS	Gaps identified and plan developed; ESRI dashboards developed	June 2026	Additional costs
1.5	Update energy demand forecast (annual)	OOS	Data collection process and SOP included as part of EMP steering committee	Spring 2026	Updated forecast available and annual report delivered to Board in May/June 2026
RECOMMENDATION 2.0: ENERGY SUPPLY					
2.1	Report out on essential use designation	OOS	Essential use designation expanded to requested sites	In progress	Designation received January 2026
2.2	Present recommendation and outline the process for determining an increase in renewable energy supply content	OOS, Procurement	Decision point by January 2026	January 2026	Prior to Metro budget setting

RECOMMENDED ACTIONS		LEAD	FY 2026-2027 KPIS	TIMING	KEY MILESTONES/ DECISIONS
2.3	Finalize plan for PV O&M repairs, replacement cycle, and EAMs	OOS	Solar O&M plan completed by December with additional costs to replace system components. Integrate PV systems into EAMS	In progress	On-boarding of replacement O&M provider, Fall 2025
2.4	Develop capital project for ongoing PV O&M and replacements	OOS	O&M strategy finalization milestone (date) Percent of systems addressed System replacement completion rate (%) Preventative maintenance completion rate (%) Generation vs. expected output (%)	January - March	Informed by O&M plan for existing systems
RECOMMENDATION 3.0: ENERGY TECHNOLOGY IMPLEMENTATION AND WORKFORCE DEVELOPMENT					
3.1	Internal education workshops	OOS	Establish quarterly workshops, energy security/cybersecurity workshop held	In progress	Launch first educational webinar, Fall 2025
3.1	Metro Workforce Development	OOS/Metro Workforce/FM	Develop skills gap assessment for resiliency technologies; Develop coordination plan with FM and Union Labor	January 2026	Additional skills and training needs identified as part of existing Cerritos College workforce training plan.
3.2	Develop Division 18 energy technology and resiliency roadmap and costing	OOS	Division 18 Energy Resiliency Roadmap and Cost-Benefit analysis completed	In progress	December 2025 report out on KPIs and expected outcomes
3.2	TPSS + BESS roadmap and costing	OOS	Traction Power Substation Energy Resiliency Roadmap and Cost-Benefit analysis completed	In progress	December 2025 report out on KPIs and expected outcomes
3.2	Prioritize and evaluate high impact sites for potential resiliency and energy technology implementation	OOS	Priority sites agreed upon	Begin after Division 18 pilot (early 2026)	Identify number of sites for next phase (2-4 sites)
3.2	Building automation pilot	OOS	Cost-Benefit of building automation and enterprise wide plan developed	In progress	December 2025, identify enterprise wide implementation plan and estimated O&M cost savings

RECOMMENDED ACTIONS		LEAD	FY 2026-2027 KPIS	TIMING	KEY MILESTONES/ DECISIONS
3.3	Develop resiliency costing and incorporate into CBA process	OOS, Finance	Agency has standardized approach to energy technology investments and can capture cost-benefits of resiliency	Incorporate CBA output from Division 18 pilot in December 2025	Document and socialize recommendation framework for EMP projects
RECOMMENDATION 4.0: STAKEHOLDER ENGAGEMENT					
4.1	Expand SC with CBOs	OOS			
4.1	Operationalize CBO feedback into equity assessment screening	OOS, Finance	Equity directional screening used in FY 2026 DER pilot projects	In progress	Use Division 18 pilot as test case for expanded CBA
4.2	Expand community workforce development partnerships	OOS, Metro FM, HR	Socialize energy technology training and workforce development needs with community education partners	January 2026 formalize	Input from DER and BAS pilots
4.3	Socialize EMP and energy goals with community partners	OOS	SC updates; fact sheet creation; communications plan	Begin January 2026	By March 2026, fact sheet and community engagement blast
4.4	Communicate progress and community benefits	OOS, DER	Communications plan developed		
4.4	Expand website and ESRI dashboard	OOS	Website and dashboards updated	Begin January 2026	Create fact sheet by December 31, 2025
4.4	Signage proposed for existing DERs/charging stations	OOS, Marketing	Signage for EV charging stations and existing solar	Begin March/April 2026	Initial signage installed by June 30, 2026

Appendices

Appendix A: List of Completed and In-Process Studies

- > 2011 – Energy Conservation and Management Plan
- > 2011 – Renewable Energy Policy (Needs Update)
- > 2012 – Climate Action and Adaptation Plan
- > 2019 – Climate Action and Adaptation Plan
- > 2019 – Microgrid Phase I Feasibility Study
- > 2020 – Moving Beyond Sustainability Plan
- > 2020 – Building Management Systems Assessment
- > 2020 – Microgrid Phase II Report
- > 2021 – ZEB Master Plan
- > 2020 – ESFV Distributed Energy resources opportunity study
- > 2022 – Electric Vehicle Parking Strategic Plan
- > 2022 - All Hazards Mitigation Plan
- > 2022 – Long Term Energy Efficiency Plan 2023-2033
- > 2024 – Building Automation Integration Roadmap (In Process)
- > 2025 – Moving Beyond Sustainability Plan – Update pending
- > 2025 – Climate Action and Adaptation Plan – Update pending
- > 2025 – In progress
 - Division 18 – Battery Storage to support ZEB roll-out
 - Battery Storage to support Traction Power (in progress)
 - Building Automation System pilot

Appendix B: Data Sources

1. 2023 Metro PV Performance Report (02.16.2024)
2. 2024 Metro PV Repair Approaches Report (04.29.2024)
3. Airport Metro Connector Completion.msg
4. All-Hazards Mitigation Plan (07.13.2022)
5. ChargeSim Analysis All Divisions Report (9.12.2023)
6. Clean Power Alliance Non-Residential Rates (07.01.2024)
7. East San Fernando Valley Transit Corridor TPSS
8. Eastside Transit Corridor Phase II Project
9. Electric Vehicle Strategic Plan 2023-2028 (May 2022)
10. ElectricNG_Water Meter Validation.xlsx (06.25.2020)
11. Energy Efficiency Long Term Plan 2023-2033
12. Energy Master Planning Workshop Sustainability Council (03.11.2022)
13. EVGateway LA Metro EV Charging Activity Report
14. Firm Fixed Price Contract Between Los Angeles County Metropolitan Transportation Authority and Peacock Systems (03.21.2023)
15. FM – Projects List (11.22.2024)
16. Green Power for a Green L.A.™ Program | LADWP
17. Greenbutton
18. Interval Data Account Info.xlsx
19. K(C) Line Extension to Torrance TPSS Sites
20. LA Metro DER Opportunities List.xlsx (10.1.2021)
21. LA Metro Priority Locations for Distributed Energy Resources Memo (06.28.2021)
22. LA Metro Proposed Forecast Assumptions (11.05.2018)
23. LADWP: Power Capacity GIS Map
24. Los Angeles County LA Metropolitan Transportation Authority Office of the Inspector General “Is LA Metro Ready for Climate Change?” (07.18.2019)
25. Los Angeles County Metropolitan Transportation Authority Energy Efficiency Long Term Plan 2022-2032
26. Los Angeles County Metropolitan Transportation Authority Final Rollout Plan (March 2021)
27. Los Angeles County Metropolitan Transportation Authority Zero-Emission Vehicle (ZEV) Purchasing Policy (12.9.2024)
28. MCP LEED Energy Model SUB 00266 Summary Page
29. Metro 2020 Long Range Transportation Plan
30. Metro Climate Action and Adaptation Plan 2019
31. Metro DER CRITERIA-Master List.xlsx (06.10.2021)
32. Metro Gold Line Foothill Extension – Submittal Review Form
33. Metro NR Fleet Vehicle Procurement Plan_Delay_2024.02.04.xlsx
34. Metro Operating Divisions and Other Major Facilities (2016)
35. Metro Program Management Master Schedule (January 2024)
36. METROPOLITAN TRANSIT AUTHORITY November 2024 CPA Report
37. Microgrid Feasibility Study (July 2019)
38. Microgrid Feasibility Study Phase II (June 2020)
39. Moving Beyond Sustainability, Sustainability Strategic Plan (2020)
40. Utility Power Content Labels
41. Program Management Major Capital Projects Quarterly Schedule Report (September 2024)

42. Rooftop Solar Potential & Financial Assessment for Metro Facilities in LADWP (12.10.2021)
43. Rooftop Solar Potential for Metro Facilities in LADWP (July 2022)
44. SCE Capacity Constraints.xlsx
45. Southeast Gateway Line Transit Corridor Traction Power System Traction Power Substation No. 17 Site Plan (03.06.2025)
46. Systemwide Baseline Change Notice (SBCN) (11.03.2021)
47. TPBC Doc Log #15983200-2021-10-13-A
48. Transmission Generation Interconnection Planning Regions (12.06.2010)
49. USG – Projects List (11.13.2024)
50. Washington Metropolitan Area Transit Authority Zero-Emission Bus Transition Plan (March 2023)
51. Watchwire
52. Westside Purple Line Extension Section 2 Century City Constellation Station
53. Westside Purple Line Extension Section 2 Wilshire/Rodeo Station Site Plan
54. Westside Purple Line Extension Section 3 Stations Tunnels, Cross Packages, & Track
55. ZEB Capacity Upgrade Forecast (7.10.2024)
56. ZEB Program Division Electrification Detailed Schedule
57. ZEB Upgrades.msg
58. ZEB Program Quarterly Update (01.16.2025)
59. Zeroing in on Zero-Emission Buses (February 2024)

Appendix C: Modeling Methodology

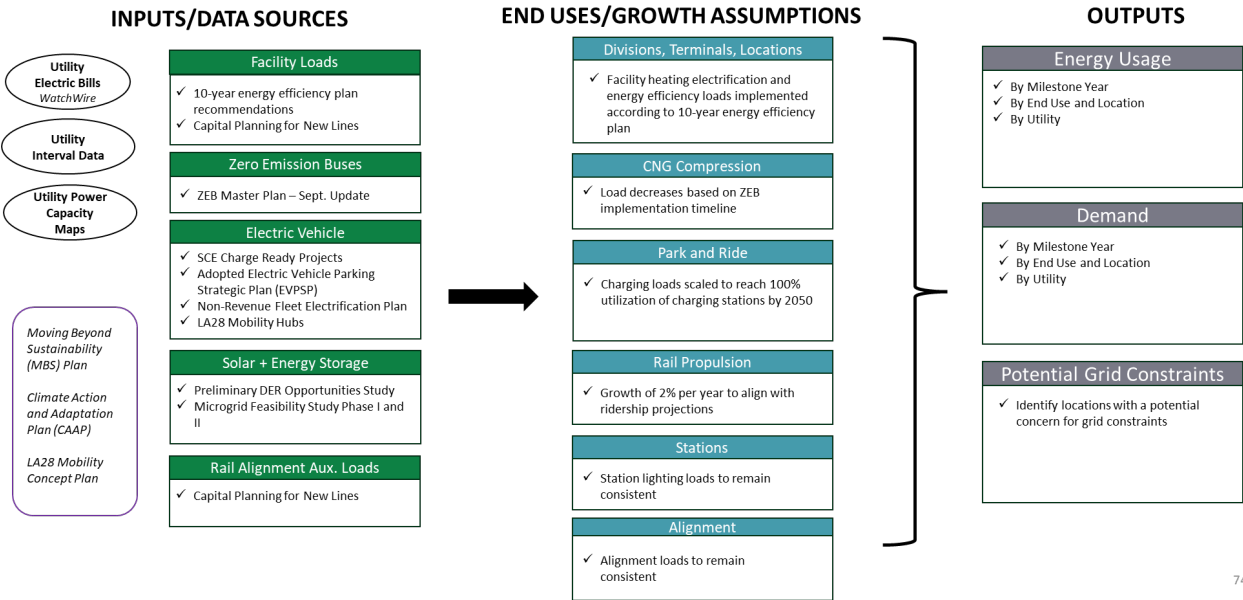


Figure 17: Modeling Methodology

Appendix D: Forecasting Assumptions

Utility Assumptions

- > Assumed an overall 6% growth rate in utility costs, for electricity and natural gas. This was used based on historical average rate/inflation increases 3-13%.

Electric Energy Projected Cost Increases Due to Inflation and Rate Increases

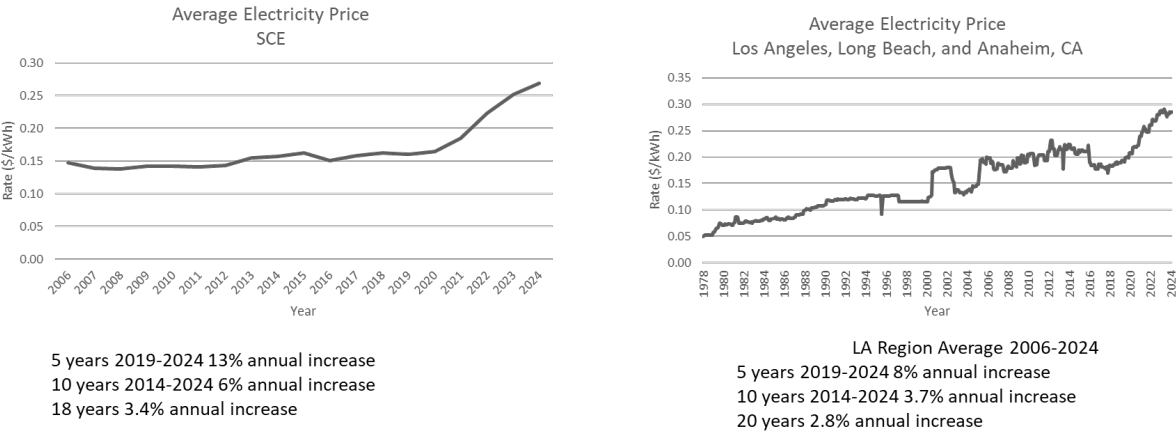


Figure 18: Average Electricity Prices

Sources:
<https://fred.stlouisfed.org/series/APUS49A72610>
<https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/historical-electric-cost-data/bundled-system-average>
<https://www.eia.gov/todayinenergy/detail.php?id=65284>
<https://www.latimes.com/california/story/2024-02-28/ladwp-and-edison-bills-are-rising-what-you-can-do-to-keep-the-price-down>

Solar Assumptions

- > Assumed solar installation capacity would follow the “METRO DER CRITERIA -Master List” file. Installation importance was determined using a weighted scoring system based on several factors outlined in the table below.

CATEGORY	WEIGHTING SCALE
Solar Rating	> One to four (Four most potential)
Utility Costs	> One to three (Three most expensive \$/kWh)
ZEB and On-route Chargers Proximity	> Zero or two (has charger installation or not)
EVSE Employee Sites Priority	> Zero or two (has charger installation or not)
EVSE Park and Ride Priority	> Zero or two (has charger installation or not)
EFC	> Zero or one (in EFC area or not)

Table 22: Weighted Scoring System for Installation Importance

- > Assumed solar PV installations would be evenly distributed through 2050 and would be installed at priority site first.

- > Assumed a representative temperature and solar curve for each month, that are used in heating and solar calculations. The temperature and solar curves are averages from TMY3 weather data from the Los Angeles area.

Zero Emissions Bus Assumptions

- > Assumed the zero-emission bus implementation schedule provided in “Attachment E – ZEB Program Division Electrification Detailed Schedule,” as presented to the Metro Board in September 2024.
- > Assumed zero emission bus charging demand would follow the schedule outlined in “ZEB Capacity Upgrade Forecast” obtained from Metro Bus Operations. The one exception is Division 9 which used a “back-of-envelope” calculation to assume demand load and is not finalized.
- > Zero-emissions bus charging magnitude and daily charging schedules were assumed to follow “ChargeSim Analysis All Divisions Report”.
- > On route chargers were assumed to be installed from “ZEB Capacity Upgrade Forecast”. The estimated opening year spans a two-year period; therefore, it was assumed that chargers would be implemented at half of the sites in the first year and the remaining half in the second year.
- > Assumed a 2% growth rate in bus charging loads to account for growing ridership and future bus additions.

EV Charging Assumptions

- > Assumed Park and Ride charging stations and employee charging stations would be installed according to the board adopted “EV Parking Strategic Plan – P&R and Employee Sites”. For locations where installation has not yet been completed, the installation year was shifted forward by two years.
- > Non-renewable fleet charging capacity and installation year came from “NR Fleet Electrification Plan.”

Traction Power Substation Assumptions

- > Assumed a 2% growth rate in rail propulsion loads to account for growing ridership and future rail additions.
- > Assumed TPSS BESS would reduce 15% of TPSS’s energy consumption and reduce peak loads by 7.5%.
- > Assumed 75% of TPSS would have a BESS installed by 2050, with a linear installation growth from 2026 through 2050

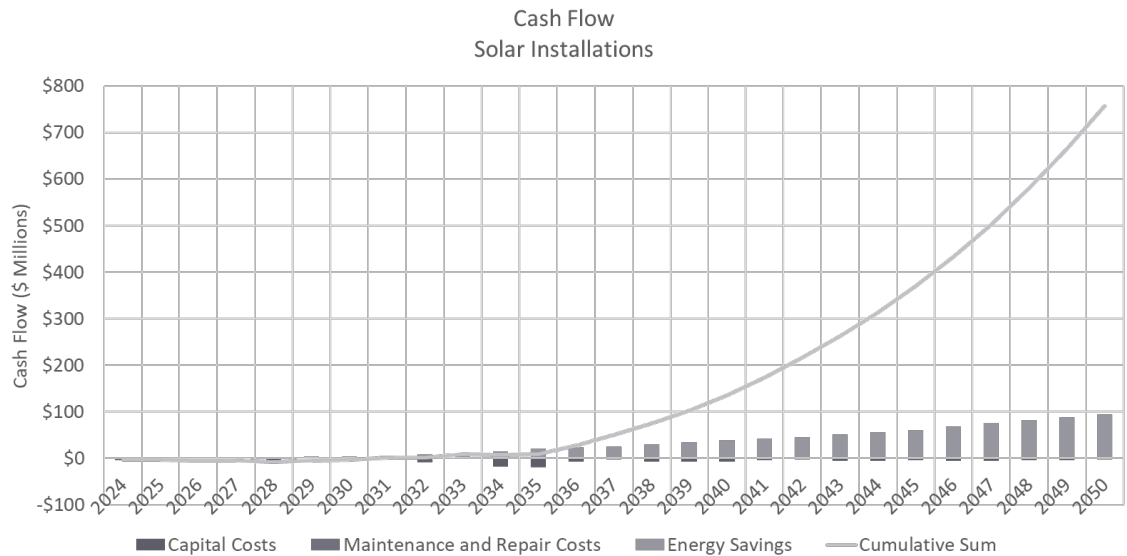


Figure 19: Cash Flow Analysis – Solar Installations

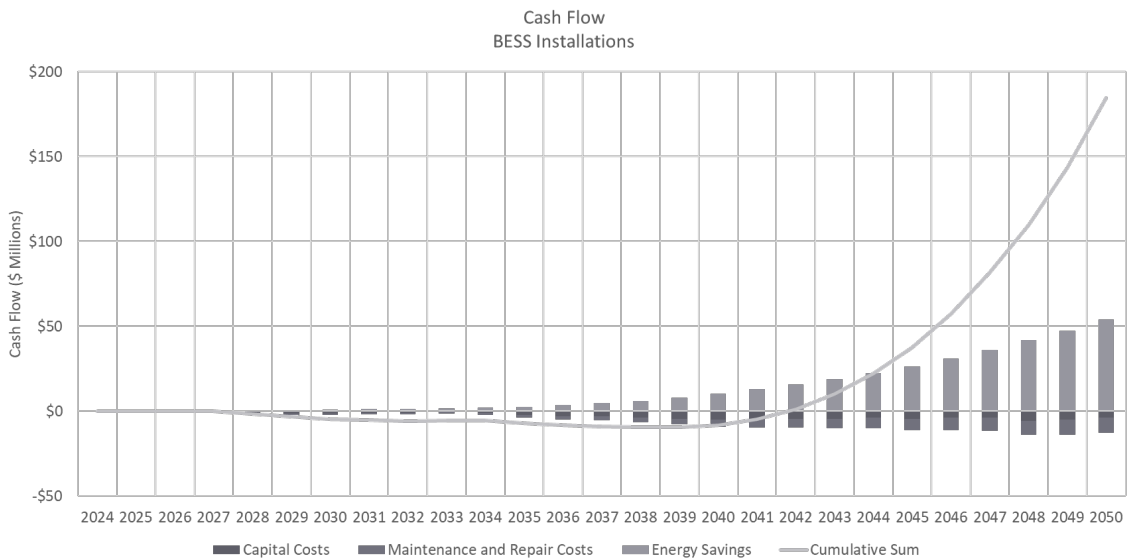


Figure 20: Cash Flow Analysis – BESS Installations

ECMP Energy Forecast 2010-2020 estimates

Metro's 2010 Energy Conservation and Management Plan projected a 90% increase in energy usage from 2010-2020. Energy cost forecasts were not provided in this report.

Table 2-4: Metro Electricity Usage Projections (kWh)

Year	Total	Inc	Existing	Expo 1	Gold Line Foothill 2A	Expo 2	Gold Line Foothill 2B	Crenshaw	Regional C
2010	177,375,129	0%	177,375,129						
2011	179,503,631	1%	179,503,631						
2012	204,112,511	15%	181,657,674	22,454,837					
2013	206,561,861	16%	183,837,566	22,724,295					
2014	223,966,825	26%	186,043,617	22,996,986	14,926,222				
2015	246,414,683	39%	188,276,140	23,272,950	15,105,336	19,760,256			
2016	249,371,659	41%	190,535,454	23,552,225	15,286,600	19,997,379			
2017	252,364,119	42%	192,821,880	23,834,852	15,470,040	20,237,348			
2018	283,158,863	60%	195,135,742	24,120,870	15,655,680	20,480,196	16,643,398	11,122,977	
2019	333,555,264	88%	197,477,371	24,410,321	15,843,548	20,725,958	16,843,118	11,256,453	46,998,495
2020	337,557,927	90%	199,847,099	24,703,245	16,033,671	20,974,670	17,045,236	11,391,530	47,562,477

Figure 21: ECMP Energy Usage Forecast 2010-2020

Appendix E: Stakeholders Consulted

Internal Metro Stakeholders

The following stakeholders were consulted and the draft analysis and recommendations were shared to receive feedback.

DEPARTMENT/FUNCTION	STAKEHOLDERS CONSULTED/INVITED	DATE(S) OF MEETING OR (EMAIL)
Office of the CEO	> Senior leadership team	> July 22, 2025 > Follow-up meetings: > August 11, 2025; August 18 th ; August 28 th ; September 15 th
Procurement	> Theresa Arslanian > Joyce Percibali	> May 13, 2025
Facilities Operations	> Chris Limon > Eladio Salas > Errol Taylor > Thomas Haire > Ronald White	> May 13, 2025 > May 29, 2025
Bus Operations	> Michelle Quinn > Shaun Miller > Ryan Chan	May 12, 2025 July 31, 2025
Rail Operations	> Steve Moini > Marilyn Palacios > Diane Corral-Lopez > Christopher Reyes > Hector Guerrero > Leticia Solis > Kelvin Zan	March 11, 2025 May 27, 2025 May 27, 2025 (email)
Office of Equity and Race	> Jessica Medina > Kimberly Fisher > KeAndra Cylear-Dodds > Christopher Davis	January 15, 2025 March 10, 2025 August 13, 2025
Planning Department	> Allison Yoh	May 5, 2025 July 7, 2025
Government Relations	> Bernice Tato > Madeline Moore > Michael Turner	May 8, 2025 (email) May 13, 2025
Sustainability Council	> All members	January 2025 meeting

Table 23: Metro Stakeholders Consulted

Community Partner EMP Engagement Process

Sustainability Council

A high level summary of the EMP was shared at the January 2025 SC. SC members will be invited to provide more detailed at the end of August 2025 and their feedback will be incorporated into the final report. The OOS intends to include on-going energy master planning as a standing agenda item.

Community-Based Organizations

A request for information was sent to Metro’s entire CBO database to select a small group for targeted feedback on how they would like Metro to engage with community organizations as the EMP is implemented. Five organizations were selected on the process described below. This initial feedback is intended to inform a more detailed plan of action about future engagement with community partners.

Actions, timeframe and outcomes from the EMP stakeholder engagement process included:

ACTION	TIMEFRAME	OUTCOME
Developed CBO opportunity announcement with objectives and budgets targeting 3-5 participants to receive a \$500 stipend each.	March 3 – March 7, 2025	Opportunity announcement seeking compensated participation in a 1.5-hour interview and short follow-up survey.
Opportunity announcement posted on Metro CBO Database	March 11 – March 28, 2025	Received 15 responses from interested CBOs
Reviewed CBO responses against the following criteria: 1. Geographic range in Los Angeles County 2. Serving communities with an interest in, advocating for, or expanding energy related topics 3. Extending outreach beyond CBOs not normally engaged with on energy topics	March 24 – March 31, 2025	Invited 5 CBOs to participate in interviews
Conducted CBO interviews	April 14 – April 18, 2025	Project team conducted 5 CBO interviews. During the interviews, the team shared background on the EMP project, overarching goals for the EMP, other Metro resources, followed by a facilitated discussion, and questions and answers
CBO participants completed a short (6-question) survey	> April 15 – April 22, 2025	Collected additional insights, areas of interest for future partnership, and process feedback.
Stipend checks issued to CBO participants	> May 2, 2025	Confirmed stipend receipt

Table 24: EMP Stakeholder Engagement Actions, Timeframe and Outcomes

Appendix F: Best Practices – Reference Documents

SOURCE/DOCUMENT NAME	KEY TAKEAWAYS/RELEVANCE FOR METRO	LINK
A Guide to Energy Master Planning of High-Performance Districts and Communities - NREL	> Energy planning as a strategic comprehensive function > Need for utility engagement early in the process	A Guide to Energy Master Planning of High-Performance Districts and Communities - National Renewable Energy Laboratory
Foothill Transit Battery Electric Bus Evaluation: NREL Final Report (June 2021)	> Need to better coordinate ZEB delivery with charging infrastructure > Start discussions with utility partners early in the process to address demand and time-of-use charges > Need charger redundancy to avoid downtime > Develop a plan for how to provide service during an outage/emergency	NREL: Foothill Transit Battery Electric Bus Evaluation: Final Report
Electric bus charging infrastructure and microgrids: A grid edge case study Report Wood Mackenzie	> Need to factor in operational costs > Diesel to electric has large fuel switching cost savings > Plan for depot charging with Microgrids for additional savings > AVTA followed a pattern similar to other transit agencies: Microgrids and other distributed energy resources are not often considered until after transit authority has gained experience with its first electric buses. Microgrid players may want to begin conversations with agencies during this key window after their first e-bus purchases, when potential customers are likely to be most open to learning about solutions.	Electric bus charging infrastructure and microgrids: A grid edge case study Report Wood Mackenzie 4 Lessons From a California Transit Authority's Bus Electrification Rollout Greentech Media
Accelerating Renewable Energy Development and Promoting Community Resiliency in Los Angeles County	> Two strategies to create greater community resiliency is through the deployment of distributed energy resources (rooftop solar paired with batteries at individual buildings) and community-level microgrids powered by renewable energy. > Ensure community benefits > Apply best practices and standards	190264.pdf
UCLA Luskin – Regional Needs Assessment (August 2021)	> Rising electricity demand across Southern California will challenge grid reliability, especially during peak summer hours > Increased high heat days forecasted in inland and low-income areas will put added strain on transit riders and infrastructure > Broad electrification efforts are expected to stress local distribution grids > Equity gaps in energy resilience highlight the need for targeted investments in disadvantaged communities	Southern California Regional Energy Needs Assessment

SOURCE/DOCUMENT NAME	KEY TAKEAWAYS/RELEVANCE FOR METRO	LINK
LA100 (NREL + LADWP)	> Electricity demand will rise 45-85% by 2045, mainly due to transportation and building electrification > Peak demand will shift to evening hours, especially with widespread EV adoption > Smart Charging and load shifting will be critical to managing costs and grid impacts > Transit agency coordination with LADWP is necessary to align charging needs with capacity > Pairing on-site solar and storage can improve resilience and energy cost control > Co-located solar and storage offers operational and cost advantages > Multiple pathways exist to reach 100% renewable energy by 2045 > All requiring large scale additions of solar, wind, geothermal, and storage > Resource adequacy and transmission reliability remain top priorities	https://www.nrel.gov/analysis/los-angeles-100-percent-renewable-study
SCE	> Net-zero by 2045 will help shape the energy landscape > SCE plans to deliver 100% carbon free electricity by 2045 > SCE forecasts 35% higher electricity demand by 2035 due to building and transportation electrification > Clean firm resources are prioritized to ensure reliable power for critical transit infrastructure, especially during evening and seasonal demand peaks	Net Zero Fact Sheet-2024
NASEM Report	> Net zero emissions by 2025 is feasible but contingent on early action and deep cuts across all sectors > Double clean electricity share to 75% by 2030 through solar, wind, nuclear, and hydro > Electrify 50% of new vehicle sales by 2030 > Reduce energy use in new buildings by 50% and old buildings by 30% by 2030 > Ensure equity and justice in deployment > Support workers and communities impacted by decarbonization > Retain grid reliability through fossil gas during transition	Accelerating Decarbonization in the United States
U.S. DOE/Energy Transitions Initiative	> Importance of phased approaches > Detail current landscape > Develop pathways > Stakeholder engagement > Develop Action Plans > Performance Metrics	Energy Transitions Playbook

Table 25: Best Practices Reference Documents

Appendix G: Summary of PV System Existing Conditions and Recommended Actions

SITE NAME	OBSERVATIONS	SHORT-TERM: RECOMMENDED REPAIRS/ACTION ITEMS	LONG-TERM, CAPITAL PLANNING (FY27): RECOMMENDED REPAIRS/ACTION ITEMS
Division 8	> Transportation Bldg. (8T): Online and generating with monitoring fully functioning > Maintenance Bldg. (8M): Remote monitoring is functional. All inverters are functioning besides inverter 6.	> Transportation Bldg. (8T): N/A > Maintenance Bldg. (8M): • Solar technician needs to investigate and repair the root cause of Inverter 6 faults • Replace Combiner Box 7 (serves Inverter 6) • Replace fuses for Strings 41 and 42 for further underlying issues. Install 10A fuse links on 13 combined strings 2	> Replace string inverters 1-11 as they fail > Remove and replace existing conduit and combiner box support sleepers with new elevated support systems (e.g., Durablok or equivalent UV-resistant, non-penetrating rooftop supports) to ensure proper cable management and structural integrity > Repair and replace all wire management components, including cable ties, clips, and trays, for conductors routed beneath PV modules and between modules and combiner boxes to ensure compliance with NEC standards > Replace all combiner boxes
Division 13	> All inverters are functioning but the Data Acquisition System (DAS) is not functional	> Remove old Sierra Wireless Raven XE Cell Modem and replace it with a new Semtech RV50X Cell Modem (includes 12 months of service)	> Rewire/relocate inverters 2-4 (string inverters on façade) > Begin budgeting for full Solectria center inverter replacement (estimated for 2030); replace as fails

SITE NAME	OBSERVATIONS	SHORT-TERM: RECOMMENDED REPAIRS/ACTION ITEMS	LONG-TERM, CAPITAL PLANNING (FY27): RECOMMENDED REPAIRS/ACTION ITEMS
Division 15	> Transportation Bldg. (15T): Remote monitoring is online with the exception of inverter 9. Some inverters are faulting, likely due to water infiltration during rain events > Maintenance Bldg. (15M): System is experiencing inverter faults and monitoring is offline. Evidence of water corrosion in a combiner box	> Transportation Bldg. (15T): • Solar technician needs to inspect and troubleshoot Inverter 9 • Combiner boxes serving inverters 8 and 10 should be replaced to address water ingress/faults • Large termination boxes that did not show signs of water ingress should be monitored annually. Any that develop leaks, corrosion on terminals, or ground faults should be replaced > Maintenance Bldg. (15M): • Install 10A fuse links on 13 combined strings • Metro IT needs to come on-site to troubleshoot why the cluster controller and inverters are not communicating with the network • Combiner boxes 6 and 7 need to be replaced	> Replace string inverters 1-11 as they fail > Remove and replace existing conduit and combiner box support sleepers with new elevated support systems (e.g., Durablok or equivalent UV-resistant, non-penetrating rooftop supports) to ensure proper cable management and structural integrity > Repair and replace all wire management components, including cable ties, clips, and trays, for conductors routed beneath PV modules and between modules and combiner boxes to ensure compliance with NEC standards > Replace all combiner boxes
Division 18	> The existing Fat Spaniel Communication Gateway is outdated and needs replacement to get communications back online	> Remove the old Fat Spaniel Communications Gateway and install new DAS with device monitoring, data storage, and maintenance for 5 years	> Replace Satcon central inverter with string inverters (roof and parking structure) > Possible shade structure(s) for string inverter(s) on building roofs

SITE NAME	OBSERVATIONS	SHORT-TERM: RECOMMENDED REPAIRS/ACTION ITEMS	LONG-TERM, CAPITAL PLANNING (FY27): RECOMMENDED REPAIRS/ACTION ITEMS
Terminal 19	> Modules are in good condition with some vegetation growth causing shading on the southern portion of the array. Overall, module shading (from vegetation, light poles) explains performance deficiencies reported on monitoring platform in all but 4 microinverters. > 4 microinverters are not functional; respective solar modules are not producing	> Remove vegetation overgrowth, where possible > Replace 4 Enphase microinverters (under warranty)	N/A
Division 24	> The conduit is incorrectly sized and causing the system to trip during operation	> The team is reviewing options to address the incorrectly sized conduit	> Rewire/run conduit to adequately accommodate system (under tracks) > Begin budgeting for full Solectria inverter replacement (approximately 2030); replace as fails
CMF	> Completed combiner box replacement training in May 2025. FM staff are completing the replacement of combiner boxes > The site has a history of internet access problems with the customer LAN	> Install four new cellular modems in the existing DAS boxes	> Design system with string inverters > Remove central inverters 1-4 and install string inverters > Replace combiner boxes, as needed

Table 26: Metro's Existing PV System Conditions and Recommended Actions

Appendix H: Glossary of Terms Used

TERM	DEFINITION
Building Automation System (BAS)	An integrated network of hardware and software designed to monitor, control, and optimize a building’s mechanical, electrical, and plumbing systems. BAS typically manages systems such as HVAC (heating, ventilation, and air conditioning), lighting, security, and energy management, providing centralized control and automation to improve efficiency, comfort, and operational performance.
Charge Management	The control, monitoring and optimization of charging processes for electric vehicles. Charge management software efficiently manages charging times, controls energy loads, and optimizes charging during off-peak hours to minimize costs.
Distributed Energy Resources (DER)	Small-scale, localized energy systems that provide power to specific sites or operations. DERs include both energy generation and storage systems, which can be connected to electric grids or operate independently. Examples include solar PV systems, EV charging stations, microgrids and batteries for energy storage.
Electric Vehicle Supply Equipment (EVSE)	Charging stations that provide electric power to recharge electric vehicle batteries. EVSE facilitates the transfer of electricity from the grid or other sources to the vehicle.
Electrification	The process of converting energy-consuming devices from non-electric sources to electricity, such as transitioning from gas-powered systems to electric-powered systems.
Energy Management System	A combination of software and hardware tools that manage and distribute energy flows between connected distributed energy resources (DERs) to optimize energy use.
Fuel switching	The replacement of technologies that consume one type of fuel (e.g., natural gas or diesel) with technologies that consume a different type of fuel (e.g., electricity). Examples include switching from diesel-powered vehicles to electric vehicles or replacing a natural gas heating system with an electric air-source heat pump.
Load Management	The active control and optimization of power consumption through software and automated systems to reduce energy costs and improve efficiency.
Microgrid	Small-scale power grid that operates independently to generate electricity for a localized area. Microgrids typically include some type of energy generation (e.g., solar PV, wind or fuel cells), energy storage and control software (microgrid controller) to manage energy distribution. Microgrids can function as part of a grid-connected system or an off-grid system, with defined electrical boundaries that allow them to act as a single controllable entity.

TERM	DEFINITION
Power Purchase Agreement (PPA)	A long-term contract between an energy generator and an energy user. Under a PPA, a third party installs energy assets, and the customer purchases the energy output from the system for a specified period.
Solar Photovoltaic (PV) system	A system of one or more solar panels combined with an inverter and other hardware that converts sunlight into electricity. Solar PV systems are considered renewable energy because their input source, the sun, is naturally replenished. They are also referred to as clean energy because the conversion process does not require carbon-based or fossil fuels. Solar PV systems can operate as part of a utility grid-connected system or an off-grid system.
Virtual Power Plant (VPP)	Systems that aggregate distributed energy resources to create a flexible energy network. VPPs use cloud-based software to connect to and manage energy use across multiple buildings or sites.

*Table 27: Glossary of Terms***ABBREVIATIONS / ACRONYMS**

BAS	Building Automation System
BEMS	Building Energy Management System
BESS	Battery Energy Storage System
CAAP	Climate Action and Adaptation Plan
CBO	community-based organizations
CNG	Compressed Natural Gas
COOP	Continuity of Operations Plan
CPA	Clean Power Alliance
CPUC	California Public Utilities Commission
DER	Distributed Energy Resource
EaaS	Energy-as-a-Service
EAMS	Enterprise Asset Management System
ECMP	Energy Conservation and Management Plan
EE	Energy Efficiency
EELTP	Energy Efficiency Long Term Plan
EFC	Equity Focused Communities
EV	Electric Vehicle
FY	Fiscal Year
GHG	Greenhouse Gas
HVAC	Heating, Ventilation, and Air Conditioning
ISO	International Organization for Standardization
KPI	Key Performance Indicator
LA28	2028 Summer Olympic and Paralympic Games
LADWP	Los Angeles Department of Water and Power
LRTP	Long Range Transportation Plan
MBS	Moving Beyond Sustainability
NPV	Net Present Value

NREL	National Renewable Energy Lab
OOS	Office of Sustainability
O&M	operations and maintenance
P3	Public-Private Partnership
PDBOM	Progressive Design Build Operate and Maintain
PPA	Power Purchase Agreement
PV	Photovoltaic
RPS	Renewable Portfolio Standard
RNG	Renewable Natural Gas
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SOP	Standard Operating Procedure
TPSS	Traction Power Substation
UPS	Uninterruptible Power Supply
VMT	Vehicle Miles Traveled
ZEB	Zero Emissions Buses

Appendix I: SCE Accounts with Essential Use Designation

PROPERTY NAME	ESSENTIAL USE DESIGNATION STATUS	EXEMPTION CRITERIA	TOTATING OUTAGE ID
Willow TPSS/Willow Street Station	CPUC Decision 01-08-071	Exclusive ROW, Ballasted Track	N001
Firestone TPSS/Firestone Station	CPUC Decision 01-08-071	Exclusive ROW, Aerial	N001
Wardlow TPSS/Wardlow Station	CPUC Decision 01-08-071	Exclusive ROW, Ballasted Track	N001
Florence TPSS/Florence Station	CPUC Decision 01-08-071	Exclusive ROW, Aerial	N001
Slauson TPSS/Slauson Station	CPUC Decision 01-08-071	Aerial	N001
Artesia TPSS/Artesia Station	CPUC Decision 01-08-071	Ballasted Track	N001
Compton TPSS/Compton Station	CPUC Decision 01-08-071	Ballasted Track	N001
Del Amo TPSS/Del Amo Station	CPUC Decision 01-08-071	Aerial	N001
Dominguez TPSS	CPUC Decision 01-08-071	Aerial	N001
Imperial TPSS	CPUC Decision 01-08-071	Ballasted Track	N001
Piru TPSS/Railroad Signals	CPUC Decision 01-08-071	Ballasted Track	N001
Crenshaw TPSS	CPUC Decision 01-08-071	Ballasted Track	N001
SANTA FE AVE TPSS (TPSS10/SFS125)	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
Wright Rd TPSS	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
Western Ave. TPSS (TPSS 85)	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
Vermont TPSS/Vermont-Athens Station (TPSS 6)	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
Long Beach TPSS	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
Hawthorne Bl TPSS/HAWTHORNE/LENNOX STATION	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
El Segundo TPSS	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
DIVISION 22 TPSS A (Hawthorne Yard TPSS)	CPUC Decision 01-08-071	Exclusive ROW	N001
Bellflower TPSS	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
Norwalk TPSS	CPUC Decision 01-08-071	Ballasted Track (Median)	N001

PROPERTY NAME	ESSENTIAL USE DESIGNATION STATUS	EXEMPTION CRITERIA	TOTATING OUTAGE ID
Lakewood TPSS	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
MARSH AV TPSS	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
Douglas TPSS (TPSS 19)/ Douglas Station	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
Paramount TPSS (TPS14/SFS145)	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
WILMINGTON TCCB	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
C LINE - MISCELLANEOUS SIGNALS, STOPS, LIGHTS	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
Division 11 TPSS and Facility	CPUC Decision 01-08-071	Ballasted Track, Aerial	N/A
DIVISION 22 TPSS B and Facility	CPUC Decision 01-08-071	Ballasted Track, Exclusive ROW	N001
REDONDO BEACH STATION	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
EL SEGUNDO STATION	CPUC Decision 01-08-071	Ballasted Track, Aerial	N001
CRENSHAW BLVD/I-105 STATION	CPUC Decision 01-08-071	Ballasted Track (Median)	N001
PARAMOUNT TC&B STATION	CPUC Decision 01-08-071	Ballasted Track (Median)	N001

Table 28: Metro SCE Accounts with Essential Use Designations

Appendix J: Summary of Metro Sites with Solar PV and BESS Potential

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
DIVISION 1	Bus	1.47	3.02	Los Angeles Department of Water and Power	No	0	N/A	1458	2032	1458	N/A	N/A	2032
DIVISION 10	Bus	1.41	2.11	Los Angeles Department of Water and Power	No	0	N/A	2896	2032	2896	N/A	N/A	N/A
DIVISION 11	Rail	1.97	8.60	Southern California Edison	No	0	N/A	837	2046	837	N/A	N/A	N/A
DIVISION 12	Facility	0.20	0.13	Southern California Edison	No	0	N/A	0	0	0	N/A	N/A	N/A
DIVISION 14	Rail	0.69	3.04	Southern California Edison	No	0	N/A	512	2047	512	N/A	N/A	N/A
DIVISION 15	Bus	1.28	3.37	Los Angeles Department of Water and Power	No	247	2005	3505	2035	3752	N/A	N/A	2035
DIVISION 16	Rail	0.01	0.04	Los Angeles Department of Water and Power	No	0	N/A	901	2043	901	N/A	N/A	N/A
DIVISION 18	Bus	1.51	6.73	Southern California Edison	No	437	2007	2399	2028	2836	N/A	N/A	2028
DIVISION 2	Bus	1.96	4.10	Los Angeles Department of Water and Power	No	0	N/A	435	2032	435	N/A	N/A	2032
DIVISION 20	Rail	3.37	11.88	Los Angeles Department of Water and Power	No	0	N/A	1022	2038	1022	N/A	N/A	N/A
DIVISION 21	Rail	0.71	2.59	Los Angeles Department of Water and Power	No	0	N/A	306	2045	306	N/A	N/A	N/A
DIVISION 22	Rail	1.48	5.03	Southern California Edison	No	0	N/A	452	2047	452	N/A	N/A	N/A
DIVISION 24	Rail	1.77	8.86	Southern California Edison	No	178	2016	1395	2047	1573	N/A	N/A	N/A
DIVISION 3	Bus	1.07	3.40	Los Angeles Department of Water and Power	Yes	0	N/A	2251	2034	2251	N/A	N/A	2034
DIVISION 4	NR Vehicle	0.20	0.41	Southern California Edison	N/A	0	N/A	1815	2039	1815	N/A	N/A	N/A
DIVISION 5	Bus	1.64	4.09	Los Angeles Department of Water and Power	Yes	0	N/A	2308	2030	2308	N/A	N/A	2030
DIVISION 7	Bus	1.14	4.53	Southern California Edison	No	0	N/A	1467	2028	1467	N/A	N/A	2028
DIVISION 8	Bus	2.97	5.16	Los Angeles Department of Water and Power	No	247	2005	5035	2034	5282	N/A	N/A	2034
DIVISION 9	Bus	1.61	6.30	Southern California Edison	No	0	N/A	1458	2026	1458	N/A	N/A	2026
A LINE - C LINE - TRACTION POWER SUBSTATION - 1	TPSS					0	N/A	0	N/A	0	Yes	2035	
A LINE - C LINE - TRACTION POWER SUBSTATION - 2	TPSS					0	N/A	0	N/A	0	Yes	2039	
A LINE - E LINE - TRACTION POWER SUBSTATION - 1	TPSS					0	N/A	0	N/A	0	Yes	2031	
A LINE - TRACTION POWER SUBSTATION - 1	TPSS					0	N/A	0	N/A	0	Yes	2045	
A LINE - TRACTION POWER SUBSTATION - 10	TPSS					0	N/A	5	2046	5	Yes	2029	
A LINE - TRACTION POWER SUBSTATION - 11	TPSS					0	N/A	4	2048	4	Yes	2050	
A LINE - TRACTION POWER SUBSTATION - 12	TPSS					0	N/A	0	N/A	0	Yes	2038	
A LINE - TRACTION POWER SUBSTATION - 14	TPSS					0	N/A	4	2048	4	Yes	2041	
A LINE - TRACTION POWER SUBSTATION - 15	TPSS					0	N/A	4	2050	4	Yes	2037	
A LINE - TRACTION POWER SUBSTATION - 16	TPSS					0	N/A	6	2050	6	Yes	2041	
A LINE - TRACTION POWER SUBSTATION - 17	TPSS					0	N/A	9	2048	9	Yes	2036	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
A LINE - TRACTION POWER SUBSTATION - 18	TPSS					0	N/A	4	2046	4	Yes	2045	
A LINE - TRACTION POWER SUBSTATION - 19	TPSS					0	N/A	0	N/A	0	Yes	2045	
A LINE - TRACTION POWER SUBSTATION - 2	TPSS					0	N/A	0	N/A	0	Yes	2049	
A LINE - TRACTION POWER SUBSTATION - 20	TPSS					0	N/A	721	2043	721	Yes	2038	
A LINE - TRACTION POWER SUBSTATION - 21	TPSS					0	N/A	42	2048	42	Yes	2033	
A LINE - TRACTION POWER SUBSTATION - 22	TPSS					0	N/A	4	2046	4	Yes	2046	
A LINE - TRACTION POWER SUBSTATION - 25	TPSS					0	N/A	21	2048	21	Yes	2048	
A LINE - TRACTION POWER SUBSTATION - 26	TPSS					0	N/A	7	2047	7	Yes	2036	
A LINE - TRACTION POWER SUBSTATION - 28	TPSS					0	N/A	4	2050	4	Yes	2046	
A LINE - TRACTION POWER SUBSTATION - 29	TPSS					0	N/A	7	2049	7	Yes	2044	
A LINE - TRACTION POWER SUBSTATION - 30	TPSS					0	N/A	4	2049	4	Yes	2040	
A LINE - TRACTION POWER SUBSTATION - 33	TPSS					0	N/A	51	2048	51	Yes	2042	
A LINE - TRACTION POWER SUBSTATION - 34	TPSS					0	N/A	6	2046	6	Yes	2036	
A LINE - TRACTION POWER SUBSTATION - 35	TPSS					0	N/A	306	2045	306	Yes	2044	
A LINE - TRACTION POWER SUBSTATION - 36	TPSS					0	N/A	33	2046	33	Yes	2049	
A LINE - TRACTION POWER SUBSTATION - 37	TPSS					0	N/A	4	2045	4	Yes	2040	
A LINE - TRACTION POWER SUBSTATION - 38	TPSS					0	N/A	5	2048	5	Yes	2031	
A LINE - TRACTION POWER SUBSTATION - 39	TPSS					0	N/A	27	2046	27	Yes	2037	
A LINE - TRACTION POWER SUBSTATION - 6	TPSS					0	N/A	0	N/A	0	Yes	2032	
A LINE - TRACTION POWER SUBSTATION - 9	TPSS					0	N/A	0	N/A	0	Yes	2043	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 1	NEW TPSS					0	N/A	0	N/A	0	Yes	2040	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2041	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 3	NEW TPSS					0	N/A	0	N/A	0	Yes	2042	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 4	NEW TPSS					0	N/A	0	N/A	0	Yes	2043	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 5	NEW TPSS					0	N/A	0	N/A	0	Yes	2045	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 6	NEW TPSS					0	N/A	0	N/A	0	Yes	2046	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 7	NEW TPSS					0	N/A	0	N/A	0	Yes	2047	
AUTHORITY BILL PROJECT FOOTHILLS EXTENSION - 8	NEW TPSS					0	N/A	0	N/A	0	Yes	2048	
C LINE - TRACTION POWER SUBSTATION - 1	TPSS					0	N/A	0	N/A	0	Yes	2040	
C LINE - TRACTION POWER SUBSTATION - 10	TPSS					0	N/A	0	N/A	0	Yes	2038	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
C LINE - TRACTION POWER SUBSTATION - 11	TPSS					0	N/A	351	2043	351	Yes	2043	
C LINE - TRACTION POWER SUBSTATION - 12	TPSS					0	N/A	0	N/A	0	Yes	2042	
C LINE - TRACTION POWER SUBSTATION - 14	TPSS					0	N/A	5	2049	5	Yes	2041	
C LINE - TRACTION POWER SUBSTATION - 15	TPSS					0	N/A	918	2039	918	Yes	2028	
C LINE - TRACTION POWER SUBSTATION - 16	TPSS					0	N/A	0	N/A	0	Yes	2039	
C LINE - TRACTION POWER SUBSTATION - 17	TPSS					0	N/A	5	2050	5	Yes	2030	
C LINE - TRACTION POWER SUBSTATION - 18	TPSS					0	N/A	5	2049	5	Yes	2035	
C LINE - TRACTION POWER SUBSTATION - 2	TPSS					0	N/A	0	N/A	0	Yes	2039	
C LINE - TRACTION POWER SUBSTATION - 20	TPSS					0	N/A	6	2049	6	Yes	2042	
C LINE - TRACTION POWER SUBSTATION - 3	TPSS					0	N/A	0	N/A	0	Yes	2048	
C LINE - TRACTION POWER SUBSTATION - 5	TPSS					0	N/A	5	2046	5	Yes	2030	
C LINE - TRACTION POWER SUBSTATION - 6	TPSS					0	N/A	11	2048	11	Yes	2039	
C LINE - TRACTION POWER SUBSTATION - 7	TPSS					0	N/A	0	N/A	0	Yes	2043	
C LINE - TRACTION POWER SUBSTATION - 8	TPSS					0	N/A	0	N/A	0	Yes	2047	
C LINE - TRACTION POWER SUBSTATION - 9	TPSS					0	N/A	0	N/A	0	Yes	2028	
C LINE EXTENSION - 1	NEW TPSS					0	N/A	0	N/A	0	Yes	2034	
C LINE EXTENSION - 3	NEW TPSS					0	N/A	0	N/A	0	Yes	2036	
C LINE EXTENSION - 5	NEW TPSS					0	N/A	0	N/A	0	Yes	2038	
C LINE EXTENSION - 6	NEW TPSS					0	N/A	0	N/A	0	Yes	2039	
E LINE - TRACTION POWER SUBSTATION - 11	TPSS					0	N/A	23	2046	23	Yes	2043	
E LINE - TRACTION POWER SUBSTATION - 12	TPSS					0	N/A	0	N/A	0	Yes	2046	
E LINE - TRACTION POWER SUBSTATION - 13	TPSS					0	N/A	0	N/A	0	Yes	2048	
E LINE - TRACTION POWER SUBSTATION - 14	TPSS					0	N/A	5	2048	5	Yes	2034	
E LINE - TRACTION POWER SUBSTATION - 15	TPSS					0	N/A	4	2048	4	Yes	2047	
E LINE - TRACTION POWER SUBSTATION - 16	TPSS					0	N/A	5	2049	5	Yes	2041	
E LINE - TRACTION POWER SUBSTATION - 17	TPSS					0	N/A	0	N/A	0	Yes	2042	
E LINE - TRACTION POWER SUBSTATION - 18	TPSS					0	N/A	4	2048	4	Yes	2045	
E LINE - TRACTION POWER SUBSTATION - 20	TPSS					0	N/A	4	2048	4	Yes	2044	
E LINE - TRACTION POWER SUBSTATION - 21	TPSS					0	N/A	0	N/A	0	Yes	2037	
E LINE - TRACTION POWER SUBSTATION - 5	TPSS					0	N/A	5	2049	5	Yes	2047	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
E LINE - TRACTION POWER SUBSTATION - 6	TPSS					0	N/A	5	2049	5	Yes	2049	
E LINE - TRACTION POWER SUBSTATION - 7	TPSS					0	N/A	31	2049	31	Yes	2035	
E LINE - TRACTION POWER SUBSTATION - 8	TPSS					0	N/A	5	2049	5	Yes	2032	
E LINE - TRACTION POWER SUBSTATION - 9	TPSS					0	N/A	0	N/A	0	Yes	2050	
EAST SAN FERNANDO VALLEY - 1	NEW TPSS					0	N/A	1000	2027	1000	Yes	2040	
EAST SAN FERNANDO VALLEY - 10	NEW TPSS					0	N/A	0	N/A	0	Yes	2041	
EAST SAN FERNANDO VALLEY - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2042	
EAST SAN FERNANDO VALLEY - 3	NEW TPSS					0	N/A	0	N/A	0	Yes	2043	
EAST SAN FERNANDO VALLEY - 4	NEW TPSS					0	N/A	0	N/A	0	Yes	2044	
EAST SAN FERNANDO VALLEY - 5	NEW TPSS					0	N/A	0	N/A	0	Yes	2045	
EAST SAN FERNANDO VALLEY - 6	NEW TPSS					0	N/A	0	N/A	0	Yes	2046	
EAST SAN FERNANDO VALLEY - 7	NEW TPSS					0	N/A	0	N/A	0	Yes	2047	
EAST SAN FERNANDO VALLEY - 8	NEW TPSS					0	N/A	0	N/A	0	Yes	2048	
EAST SAN FERNANDO VALLEY - 9	NEW TPSS					0	N/A	0	N/A	0	Yes	2049	
EAST SIDE PHASE 2 - 1	NEW TPSS					0	N/A	0	N/A	0	Yes	2037	
EAST SIDE PHASE 2 - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2038	
EAST SIDE PHASE 2 - 3	NEW TPSS					0	N/A	0	N/A	0	Yes	2039	
EAST SIDE PHASE 2 - 4	NEW TPSS					0	N/A	0	N/A	0	Yes	2040	
EAST SIDE PHASE 2 - 5	NEW TPSS					0	N/A	0	N/A	0	Yes	2041	
K LINE - TRACTION POWER SUBSTATION - 1	TPSS					0	N/A	0	N/A	0	Yes	2050	
K LINE - TRACTION POWER SUBSTATION - 2	TPSS					0	N/A	61	2049	61	Yes	2035	
K LINE - TRACTION POWER SUBSTATION - 3	TPSS					0	N/A	0	N/A	0	Yes	2044	
K LINE - TRACTION POWER SUBSTATION - 4	TPSS					0	N/A	0	N/A	0	Yes	2038	
K LINE - TRACTION POWER SUBSTATION - 5	TPSS					0	N/A	0	N/A	0	Yes	2040	
K LINE - TRACTION POWER SUBSTATION - 6	TPSS					0	N/A	0	N/A	0	Yes	2029	
PLE 2 - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2028	
PLE 3 - 1	NEW TPSS					0	N/A	0	N/A	0	Yes	2029	
PLE 3 - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2030	
SEGL - 10	NEW TPSS					0	N/A	0	N/A	0	Yes	2036	
SEGL - 11	NEW TPSS					0	N/A	0	N/A	0	Yes	2037	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
SEGL - 13	NEW TPSS					0	N/A	0	N/A	0	Yes	2039	
SEGL - 14	NEW TPSS					0	N/A	0	N/A	0	Yes	2040	
SEGL - 15	NEW TPSS					0	N/A	0	N/A	0	Yes	2041	
SEGL - 2	NEW TPSS					0	N/A	0	N/A	0	Yes	2042	
SEGL - 3	NEW TPSS					0	N/A	0	N/A	0	Yes	2043	
SEGL - 4	NEW TPSS					0	N/A	0	N/A	0	Yes	2044	
SEGL - 5	NEW TPSS					0	N/A	0	N/A	0	Yes	2045	
SEGL - 6	NEW TPSS					0	N/A	0	N/A	0	Yes	2046	
SEGL - 7	NEW TPSS					0	N/A	0	N/A	0	Yes	2047	
SEGL - 8	NEW TPSS					0	N/A	0	N/A	0	Yes	2048	
SEGL - 9	NEW TPSS					0	N/A	0	N/A	0	Yes	2049	
EL MONTE TERMINAL	LOCATIONS					89	2024	550	2024	639	No	N/A	
CENTRAL MAINTENANCE FACILITY	LOCATIONS					1172	2024	0	2024	1172	No	N/A	
17TH STSMC STATION PARKING LOT	PARKING					0	N/A	31	2049	31	No	N/A	
26TH STBERGAMOT STATION	STATION					0	N/A	61	2049	61	No	N/A	
5TH ST STATION	STATION					0	N/A	31	2048	31	No	N/A	
A LINE E LINE - MISCELLANEOUS SIGNALS, STOPS, LIGHTS	ALIGNMENT					0	N/A	46	2049	46	No	N/A	
A LINE - MISCELLANEOUS SIGNALS, STOPS, LIGHTS	ALIGNMENT					0	N/A	27	2048	27	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 23	TPSS					0	N/A	5	2048	5	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 24	TPSS					0	N/A	237	2045	237	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 3	TPSS					0	N/A	60	2046	60	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 31	TPSS					0	N/A	38	2048	38	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 7	TPSS					0	N/A	5	2048	5	No	N/A	
A LINE - TRACTION POWER SUBSTATION - 8	TPSS					0	N/A	5	2046	5	No	N/A	
ALLEN STATION	STATION					0	N/A	23	2049	23	No	N/A	
AMC STATION	STATION					0	N/A	251	2025	251	No	N/A	
ANAHEIM ST STATION	STATION					0	N/A	31	2048	31	No	N/A	
ARCADIA STATION	SHARED					0	N/A	31	2049	31	No	N/A	
ARCADIA STATION	SHARED					0	N/A	31	2049	31	No	N/A	
ATLANTIC STATION	STATION					0	N/A	20	2048	20	No	N/A	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
AVALON STATION	STATION					0	N/A	405	2039	405	No	N/A	
AVIATIONLAX STATION	STATION					0	N/A	69	2048	69	No	N/A	
BALBOA STATION	STATION					0	N/A	665	2040	665	No	N/A	
BD LINE - TRACTION POWER SUBSTATION - 6	TPSS					0	N/A	24	2049	24	No	N/A	
BEVERLY GLEN - RADIO STATION	LOCATIONS					0	N/A	31	2049	31	No	N/A	
C LINE - TRACTION POWER SUBSTATION - 19	TPSS					0	N/A	7	2048	7	No	N/A	
C LINE - TRACTION POWER SUBSTATION - 4	TPSS					0	N/A	5	2048	5	No	N/A	
CANOGA STATION	STATION					0	N/A	548	2041	548	No	N/A	
CENTRAL MAINTENANCE FACILITY	LOCATIONS					1172	2009	0	N/A	1172	No	N/A	
CHATSWORTH STATION	SHARED					0	N/A	3053	2035	3053	No	N/A	
CHATSWORTH STATION	SHARED					0	N/A	3053	2035	3053	No	N/A	
COMPTON STATION	STATION					0	N/A	374	2050	374	No	N/A	
CRENSHAW BLVDI-105 STATION	STATION					0	N/A	31	2049	31	No	N/A	
DE SOTO STATION	STATION					0	N/A	18	2049	18	No	N/A	
DOWNTOWN SANTA MONICA STATION	STATION					0	N/A	76	2049	76	No	N/A	
E LINE - TRACTION POWER SUBSTATION - 10	TPSS					0	N/A	4	2048	4	No	N/A	
E LINE - TRACTION POWER SUBSTATION - 19	TPSS					0	N/A	4	2050	4	No	N/A	
E LINE - TRACTION POWER SUBSTATION - 22	TPSS					0	N/A	138	2049	138	No	N/A	
E LINE - TRACTION POWER SUBSTATION - 23	TPSS					0	N/A	4	2048	4	No	N/A	
EAST LA CIVIC CTR STATION	STATION					0	N/A	4	2048	4	No	N/A	
ECHO PARK DONALDSON LAYOVER	LOCATIONS					0	N/A	31	2050	31	No	N/A	
EXPOBUNDY STATION	STATION					0	N/A	46	2049	46	No	N/A	
EXPOCRENSHAW STATION	STATION					0	N/A	28	2049	28	No	N/A	
EXPOLA BREA STATION	STATION					0	N/A	139	2049	139	No	N/A	
EXPOSEPULVEDA STATION	STATION					0	N/A	336	2043	336	No	N/A	
EXPOUSC STATION	STATION					0	N/A	55	2050	55	No	N/A	
EXPOVERMONT STATION	STATION					0	N/A	23	2050	23	No	N/A	
EXPOWESTERN STATION	STATION					0	N/A	23	2050	23	No	N/A	
FILLMORE STATION	STATION					0	N/A	270	2046	270	No	N/A	
GRANDLATIC STATION	STATION					0	N/A	21	2048	21	No	N/A	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
HARBOR FWY STATION	STATION					0	N/A	164	2048	164	No	N/A	
HAWTHORNELENOX STATION NORTH-WEST LOT	PARKING					0	N/A	577	2046	577	No	N/A	
HERITAGE SQUARE STATION	STATION					0	N/A	177	2040	177	No	N/A	
HIGHLAND PARK STATION	STATION					0	N/A	11	2048	11	No	N/A	
INDIANA STATION	STATION					0	N/A	15	2048	15	No	N/A	
IRWINDALE STATION PARKING GARAGE	PARKING					0	N/A	558	2044	558	No	N/A	
JEFFERSON LOOP - BUS LAYOVER	LOCATIONS					0	N/A	46	2048	46	No	N/A	
JEFFERSONUSC STATION	STATION					0	N/A	46	2050	46	No	N/A	
LA CIENEGAJEFFERSON STATION	STATION					0	N/A	221	2040	221	No	N/A	
LAKE STATION	STATION					0	N/A	28	2049	28	No	N/A	
LATTCORTHO INSTITUTE STATION	STATION					0	N/A	38	2049	38	No	N/A	
LAUREL CANYON STATION	STATION					0	N/A	12	2049	12	No	N/A	
LINCOLNCPRESS STATION	STATION					0	N/A	280	2045	280	No	N/A	
LOCATION 110 - EAST LOS ANGELES CUST. SVC. CTR.	LOCATIONS					0	N/A	23	2050	23	No	N/A	
LOCATION 34 - VERNON YARD	LOCATIONS					0	N/A	413	2044	413	No	N/A	
LOCATION 55 - LOST AND FOUND	LOCATIONS					0	N/A	14	2045	14	No	N/A	
LOCATION 60 - RAIL OPERATIONS CONTROL	LOCATIONS					0	N/A	237	2045	237	No	N/A	
LOCATION 64	SHARED					0	N/A	237	2025	237	No	N/A	
LOCATION 66 - LIGHT RAIL MAINTENANCE OF WAY FACILITY	LOCATIONS					0	N/A	277	2048	277	No	N/A	
LOCATION 76 - HARBOR TRANSITWAY - CARSON	LOCATIONS					0	N/A	1922	2038	1922	No	N/A	
LOCATION 77 - HARBOR TRANSITWAY - PCH	LOCATIONS					0	N/A	30	2048	30	No	N/A	
MAPLE LOT - BUS LAYOVER	LOCATIONS					0	N/A	24	2048	24	No	N/A	
NORTH HOLLYWOOD STATION	STATION					0	N/A	1385	2034	1385	No	N/A	
PALM PLACE LOOP - BUS LAYOVER	LOCATIONS					0	N/A	31	2048	31	No	N/A	
PARAMOUNT TCB STATION	STATION					0	N/A	5	2048	5	No	N/A	
PICO-RIMPAU LOOP - BUS LAYOVER	LOCATIONS					0	N/A	61	2048	61	No	N/A	
PICOALISO STATION	STATION					0	N/A	45	2050	45	No	N/A	
PIERCE COLLEGE STATION	STATION					0	N/A	920	2044	920	No	N/A	
RESEDA STATION	STATION					0	N/A	671	2046	671	No	N/A	
RIO HONDO COLLEGE - RADIO STATION	LOCATIONS					0	N/A	15	2050	15	No	N/A	

ENERGY MASTER PLAN - ENERGY DEMAND FORECAST AND ENERGY MANAGEMENT

Site Name	Site Function	Peak Demand (MW)	Annual Consumption (GWh)	Service Feed	Anticipated Energy Supply Constraints due to Future Growth	Existing PV kW DC	Existing PV Installation Year	Estimated PV kW DC	Estimated PV Installation Year	Existing + Currently Planned + Additional PV kW	BESS	BESS Installation Year	ZEB Charging
ROSCOE STATION	STATION					0	N/A	18	2050	18	No	N/A	
SAN FERNANDO VALLEY SERVICE SECTOR	LOCATIONS					0	N/A	46	2048	46	No	N/A	
SEPULVEDA STATION	ALIGNMENT					0	N/A	2850	2036	2850	No	N/A	
SHERMAN WAY STATION	STATION					0	N/A	511	2040	511	No	N/A	
SIERRA MADRE VILLA STATION	SHARED					0	N/A	53	2048	53	No	N/A	
SIERRA MADRE VILLA STATION	SHARED					0	N/A	53	2048	53	No	N/A	
SOUTH PASADENA STATION	STATION					0	N/A	14	2050	14	No	N/A	
SOUTHWEST MUSEUM STATION	STATION					0	N/A	31	2050	31	No	N/A	
TAMPA STATION	STATION					0	N/A	18	2050	18	No	N/A	
U.S.C. MEDICAL CENTER BUSWAY STATION	STATION					0	N/A	18	2049	18	No	N/A	
UNION STATION EAST	LOCATIONS					0	N/A	805	2042	805	No	N/A	
UNIVERSAL CITY/STUDIO CITY STATION	STATION					0	N/A	621	2040	621	No	N/A	
VALLEY COLLEGE STATION	ALIGNMENT					0	N/A	11	2042	11	No	N/A	
VAN NUYS STATION	STATION					0	N/A	763	2037	763	No	N/A	
WEST LA TRANSIT CENTER	LOCATIONS					0	N/A	11	2048	11	No	N/A	
WESTCHESTER VETERANS STATION	STATION					0	N/A	61	2050	61	No	N/A	
WILLOW ST STATION PARKING GARAGE	SHARED					0	N/A	755	2040	755	No	N/A	
WILSHIRE/VERMONT STATION	STATION					0	N/A	163	2049	163	No	N/A	
WILSHIRE/WESTERN STATION	STATION					0	N/A	129	2049	129	No	N/A	
WOODLEY STATION	STATION					0	N/A	37	2050	37	No	N/A	
WOODMAN STATION	ALIGNMENT					0	N/A	37	2049	37	No	N/A	
Division 13	DIVISION					266	2015	0	N/A	266	No	N/A	

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.9200 Tel
213.922.5259 Fax
metro.net



Item 2025-0801: Energy Master Plan

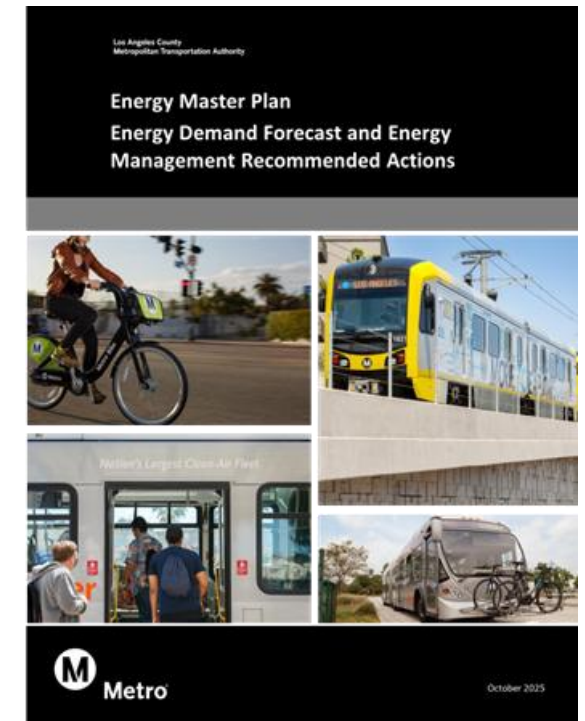
Adopt Metro's Energy Master Plan

Executive Management Committee
October 16, 2025

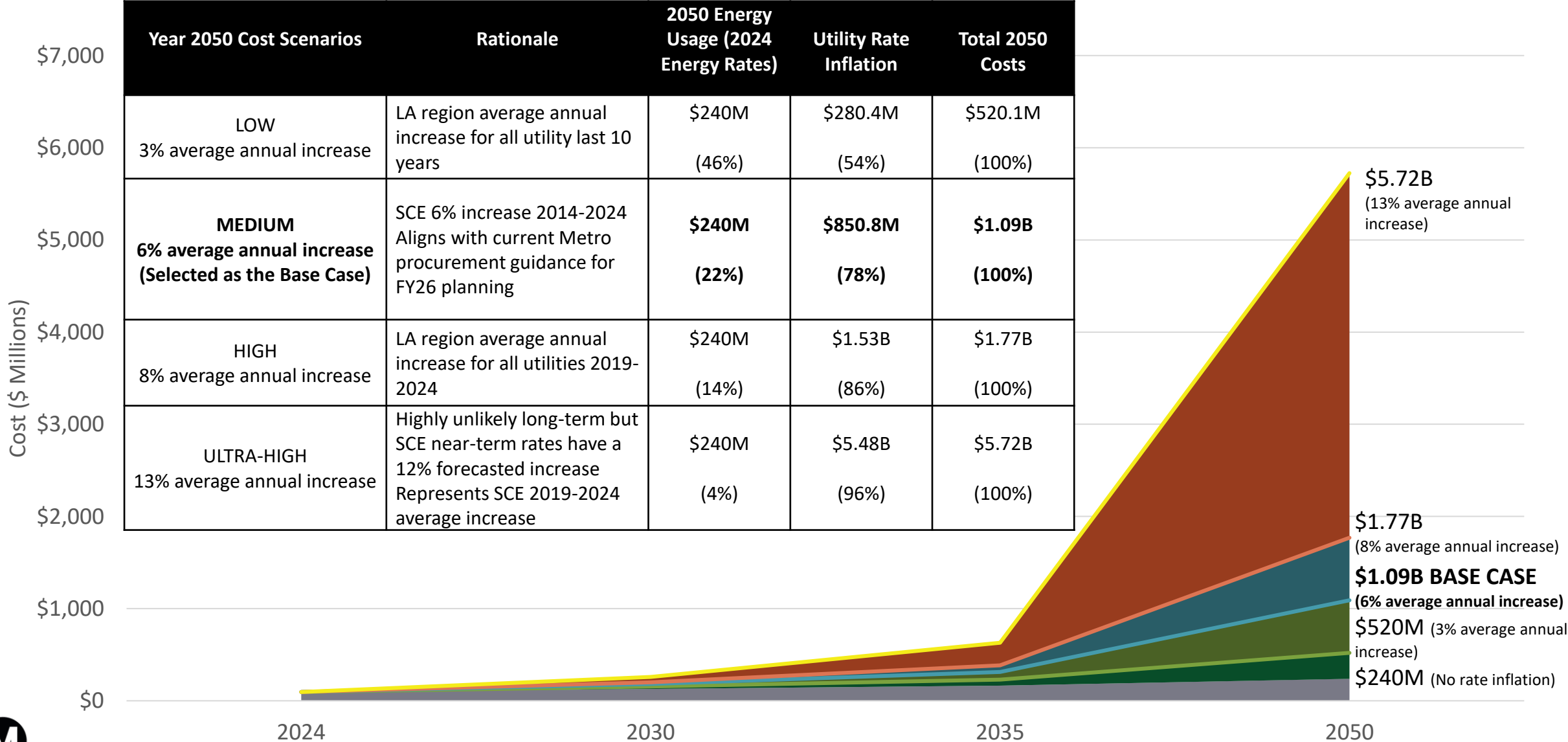
Key Findings

Metro's energy profile will undergo a significant transformation over the next 25 years.

- > Electricity use is projected to increase 140% between now and 2050
- > Energy costs could escalate from \$95M/year (2024) to \$1BN (2050) due to higher consumption and continued rising energy prices
- > Resiliency pressures will intensify as electrification expands into areas with known grid supply constraints and also due to changing climate
- > Solar will continue to be a key technology to meet renewable energy goals, support resiliency and reduce energy costs
- > Limited deployment of energy management and building automation currently reduces opportunities for energy cost savings
- > Electrification and resiliency initiatives require new workforce training and education

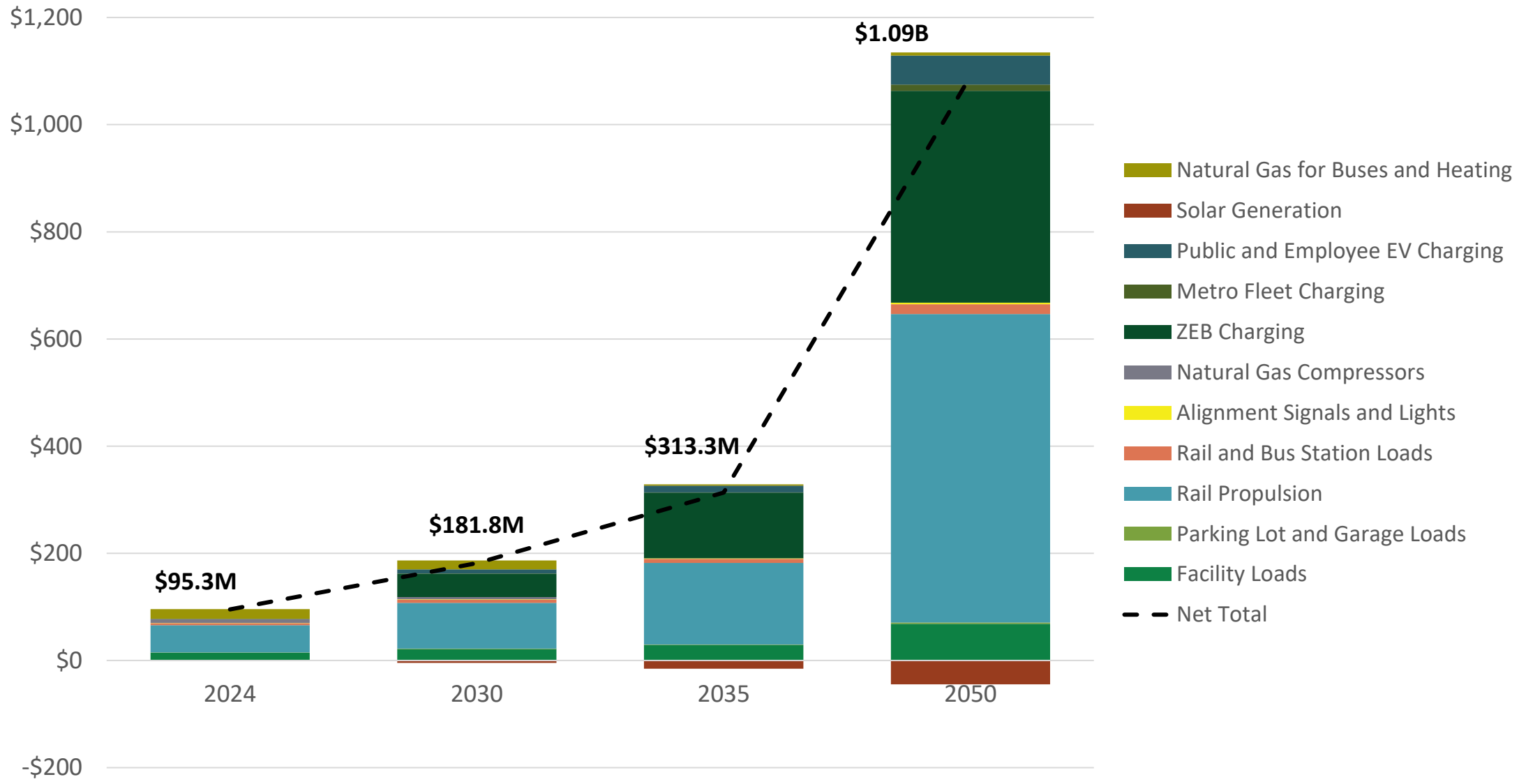


Projected Energy Costs: Impact of Rate Increases



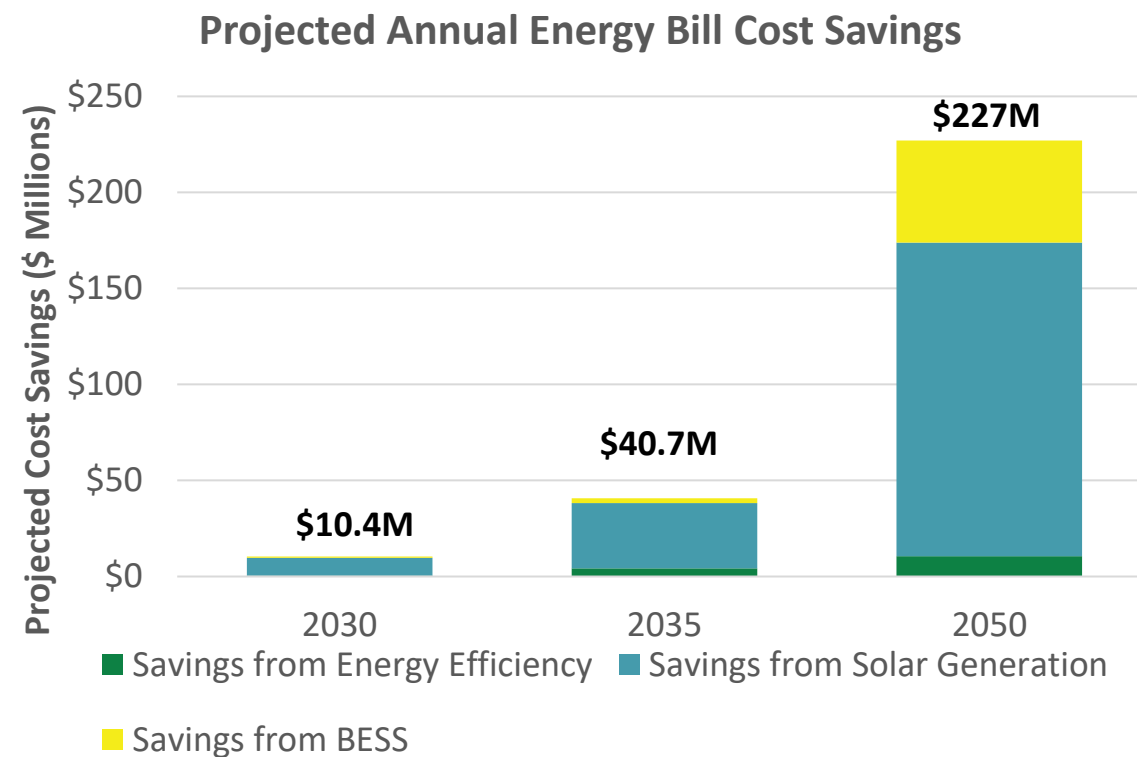
Base Case Forecast: Based on 6% annual rate inflation

Total Projected Spend by End Use

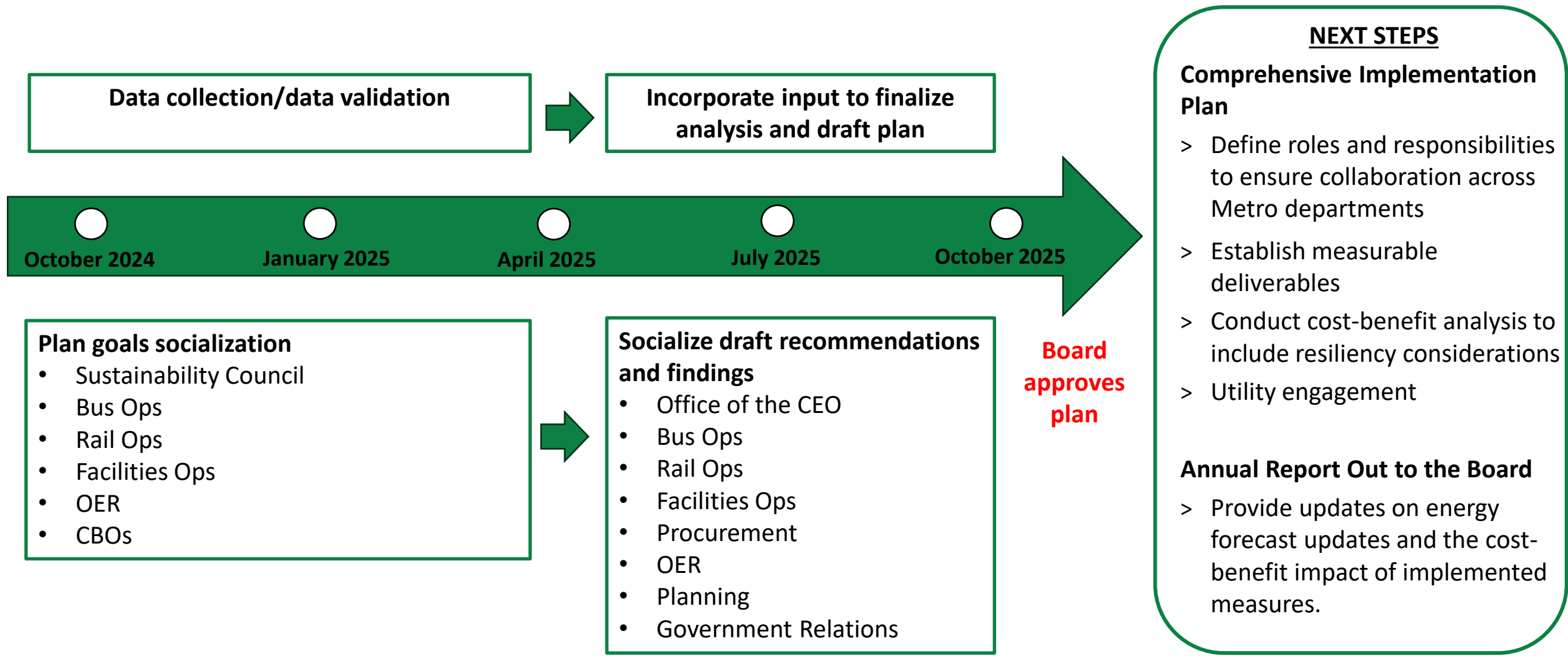


Recommendations and Projected Energy Cost Savings

RECOMMENDATIONS	
Energy Planning	• Creation of energy management steering committee • Data and information management requirements to support annual energy forecasting, energy security and energy project impacts.
Energy Supply	• Increase cost-neutral utility supplied clean energy • Accelerate on-site renewable energy supply and strengthen O&M of existing systems. • Prioritize utility engagement to increase “essential use” designation at critical sites; proactively address energy costs; secure support for mitigation.
Energy Technology Deployment and Workforce Development	• Develop comprehensive, site-level energy management plan to holistically and cost-effectively address energy and resiliency needs. • Expand energy education to support technical training for resiliency and energy management technologies. • Webinars to socialize energy security and resiliency technologies.
Stakeholder Engagement	• Increase community-based organizations’ presence on sustainability council • Leverage regional and community energy partners for joint funding and workforce development • Communicate progress and benefits of energy planning



Development Process, Engagement & Path Forward





Board Report

File #: 2025-0863, **File Type:** Policy

Agenda Number: 23.

**EXECUTIVE MANAGEMENT COMMITTEE
OCTOBER 16, 2025**

SUBJECT: 2025 CLIMATE ACTION AND ADAPTATION PLAN

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE status report on 2025 Climate Action and Adaptation Plan Update (Attachment A).

ISSUE

Metro plays a critical role in reducing greenhouse gas and other emissions and in supporting efforts to meet global, state and local climate action goals. At the same time, Metro can be a regional leader in planning and preparing for the impacts of climate change. Metro last articulated commitments and contributions in both climate action and resilience in the 2019 Climate Action and Adaptation Plan (CAAP). This 2025 Climate Action and Adaptation Plan Update reflects the progress Metro has made since the 2019 CAAP and incorporates new Board-adopted Vehicle Miles Traveled (VMT) targets. As of 2023, Metro has reduced operational GHG emissions by over 65% from the 2017 baseline and is forecasted to achieve a 76% reduction of 2017 GHG levels by 2030.

BACKGROUND

In 2019, the Metro Board adopted a Climate Action and Adaptation Plan for the agency. This Plan outlined Metro's strategies and measures to mitigate and adapt to climate change, identified steps to further reduce emissions and build resilience, and set major goals including a goal of reducing operational emissions by 79% by 2030.

This 2025 Climate Action and Adaptation Plan Update responds to the Board's request in April 2024 to track the adopted Vehicle Miles Traveled reduction targets in the CAAP and to also provide an update of this document. The 2025 CAAP Update demonstrates Metro's progress since the release of the 2019 CAAP and describes how Metro is contributing to regional and state emissions reductions goals, delivering on the agency operational GHG reductions goals, and preparing for the impacts of climate change by assessing and addressing our main vulnerabilities.

DISCUSSION

The 2025 CAAP Update highlights how Metro is contributing to regional and state emissions reductions goals by providing a safe, accessible, and sustainable transportation alternative to single-occupancy vehicles. The CAAP Update also demonstrates that Metro is delivering on operational greenhouse gas emissions reductions goals while preparing for the impacts of climate change by assessing and addressing our main vulnerabilities.

Contributing to Regional Greenhouse Gas Emissions Reduction Goals

Metro's fundamental role in the region is to provide reliable and sustainable public transportation options. Through operation of rail and bus services, major capital project investments and the implementation of an ambitious Long Range Transportation Plan, Metro is reducing transportation emissions by providing low-carbon transportation options to LA County residents, employees, and visitors. In 2023, Metro's services were responsible for 1.07 million metric tons of carbon dioxide equivalent of avoided emissions. Additionally, achieving the established VMT targets is projected to result in an additional reduction of around 500,000 metric tons of CO₂ equivalent (MTCO₂e) by 2045. These reduction benefits could be even more pronounced as the State's policy goals around the adoption of zero emission vehicles and fuel efficiency are realized.

As Metro pursues these VMT reduction targets, staff are also committed to ongoing collaboration with regional partners to achieve greater regional VMT reductions. Metro coordinates these efforts in plans like the Regional Transportation Demand Management (TDM) Program, which strives to empower LA residents to choose alternative forms of transportation that reduce congestion, improve air quality, and save time.

Meeting Emissions Reductions Goals

As of 2023, Metro has reduced operational GHG emissions by over 65% from the 2017 baseline and is forecasted to achieve a 76% reduction of 2017 GHG levels by 2030. Much of the operational emissions reduction is largely due to Metro's transition from diesel to Renewable Natural Gas (RNG) to power Metro buses, the implementation of Zero Emission Buses (ZEBs) on the Metro G Line, and other initiatives such as the enrollment of electric accounts into the Clean Power Alliance. To meet the goal of 79% reduction of 2017 GHG levels by 2030 established in the 2019 CAAP, the electricity Metro relies on to power Metro's vehicles and facilities must transition to carbon-free energy sources.

Increasing Climate Resilience

In 2022, Metro conducted a climate risk screening of rail, subway, buses, employees and riders to better understand the degree of exposure to the impacts of climate change. Extreme heat poses significant challenges to Metro's system and riders, with disproportionate impacts on Equity Focus Communities (EFCs). Many bus stops in these areas lack adequate infrastructure, leaving passengers vulnerable to heat-related illnesses such as heat exhaustion and heat stroke.

To address heat impacts, Metro has undertaken several initiatives since 2019, including the adoption of the Tree Policy, replacing the light rail system's overhead wires with heat-resilient equipment, and identifying priority bus stops throughout the service region and partnering with local jurisdictions to increase cooling features at these stops. In August, Metro hosted a shade workshop highlighting the

critical role of mitigating extreme heat episodes at bus stops.

Stakeholder Engagement

Metro consulted with groups of stakeholders during the development of the 2025 CAAP Update. Metro Departments came together in December 2024 to provide feedback on this plan, and staff also consulted with Metro's Sustainability Council.

EQUITY PLATFORM

Metro's Climate Action and Adaptation Plan is unique in how it centers equity. For example, the 2025 CAAP Update highlights Metro's 2022 Climate Risk Screening and reports that many at-risk bus routes serve Equity Focus Communities (EFCs). Similarly, fewer than a quarter of Metro's bus stops have adequate shelter to protect riders from extreme heat. Metro's commitment to equity includes adopting the Equity Platform, investing in a zero-emission bus (ZEB) transition along the Metro G line that serves EFCs across North Hollywood, and advancing our *Bus Stop Improvement Plan* which identified a priority list of 153 highest-need bus stops. Additionally, Metro is supporting the Long Beach-East LA (LB-ELA) Corridor Mobility Investment Plan which aims to implement transit improvements, working directly with communities impacted by a disproportionately higher air pollution. Equity considerations are also central to Metro's TDM programs strategy, which not only contributes to regional emissions, but also provide strategies that meet the unique needs of different communities, providing mobility options that empower residents to reach jobs, schools, and essential services regardless of where they live or their economic background.

Investing in these types of programs - in addition to providing the critical public transportation services that the public relies on - delivers equity co-benefits to Metro riders and the region, resulting in a healthier, safer future for LA County and its residents by improving air quality outcomes and providing vulnerable communities with improved transit access. Equity strategies are embedded in this plan and our update to ensure that historically underserved places and people, including Metro's Equity Focus Communities, are prioritized for climate action and adaptation measures.

VEHICLE MILES TRAVELED OUTCOME

VMT and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential effect on VMT.

As part of these ongoing efforts to achieve climate goals, this item is expected to contribute to further reductions in VMT. This item supports Metro's systemwide strategy to reduce VMT through planning activities that will benefit and further encourage transit ridership, ridesharing, and active transportation. Specifically, this item provides an update on the status of Metro's ongoing efforts to

reduce regional emissions through achievement of the VMT targets. Metro's Board adopted VMT reduction targets were designed to build upon the success of existing investments, and this aligns with those objectives.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The 2025 CAAP Update supports Metro's second, third, and fourth Strategic Plan Goals. The actions listed in the update outline Metro's commitment to delivering outstanding trip experiences for all users of Metro's system (Goal #2). The strategies and actions outlined in this policy advocate for equitable access to opportunities in alignment with Metro's Equity Platform (Goal #3). This policy also aligns with the need to collaborate with regional agencies to maintain and enhance sustainable transit services (Goal #4).

NEXT STEPS

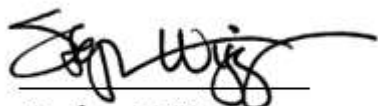
Upon Board adoption, the Office of Sustainability Policy is committed to working across internal departments and with external partners and stakeholders to continue implementing the work identified in the plan. The Office of Sustainability Policy has trained internal staff and will continue to provide tools to understand VMT and the emissions impacts of travel as staff prepare Board Reports that now include a VMT analysis section.

ATTACHMENT

Attachment A - 2025 Climate Action and Adaptation Plan (CAAP) Update

Prepared by: Susana Reyes, Deputy Executive Officer, (213) 393-9742

Reviewed by: Nicole Englund, Chief of Staff, (213) 974-3333


Stephanie Wiggins
Chief Executive Officer

2025 Los Angeles County Metropolitan Transportation Authority Climate Action and Adaptation Update – Final

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Executive Summary

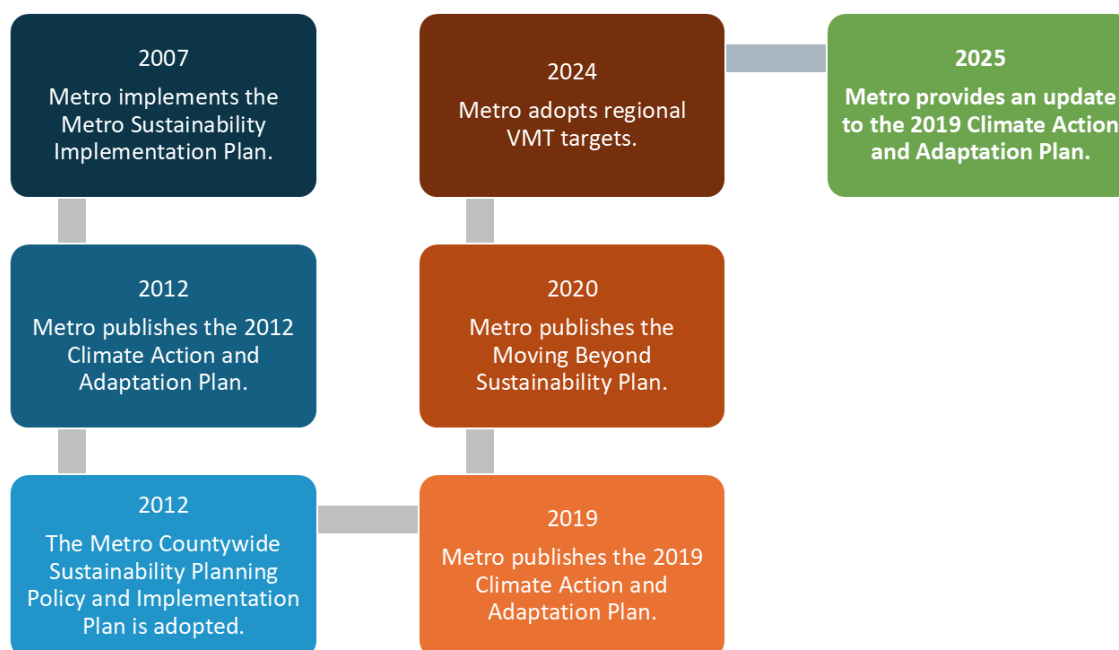
The Los Angeles (LA) County Metropolitan Transportation Authority (Metro) system serves a broad range of mobility needs in a large, interconnected region. The goals set out in our 2019 *Climate Action and Adaptation Plan* (CAAP) support Metro’s overarching mission to deliver a world-class transportation system that enhances the quality of life for all who live, work, and play in LA County, while reducing greenhouse gas (GHG) emissions and increasing system resilience.

The 2019 CAAP outlines a set of policies, programs, and projects for Metro to reduce operational GHG emissions, displace regional GHG emissions, and become more resilient to the impacts of climate-related events such as extreme heat, flooding, or power disruptions. By focusing on both adaptation and mitigation, Metro is reducing operational emissions while investing in systems that can resume service quickly after extreme weather events and ensure the safety of transit riders.

2025 Climate Action and Adaptation Plan Update Objective

The objective of the 2025 CAAP Update is to share progress made to reduce GHG emissions and prepare for the impacts of climate change since the publication of the 2019 CAAP. This CAAP Update also integrates GHG reductions related to the adoption of regional Vehicle Miles Traveled (VMT) targets in 2024 (**Figure 1**).

Figure 1. Metro Climate Action and Adaptation Timeline



A Holistic View of Metro's Climate Actions

Public transportation is a powerful tool for reducing GHG emissions. Metro's fundamental role in the region is to provide reliable and sustainable public transportation options. Through operation of our rail and bus services, major capital project investments and the implementation of an ambitious Long Range Transportation Plan, Metro is reducing transportation emissions by providing low-carbon transportation options to LA County residents, employees, and visitors. By continuing to decarbonize our operations, Metro also contributes to achieving regional and statewide emissions reduction goals. This CAAP Update offers insights into the transformative climate actions that Metro has undertaken above and beyond providing foundational, low-carbon rail and bus services, including an overview of the regional and local collaborations Metro participates in to support wider climate goals.

Operational Greenhouse Gas Emissions Reductions

The 2019 CAAP established an operational GHG reduction goal of 79% from 2017 levels by 2030, or roughly 300,000 metric tons of carbon dioxide equivalent (MTCO_{2e}). As of 2023, Metro reduced emissions by over 65% from the 2017 baseline, demonstrating steady progress toward achieving our 2030 goal.

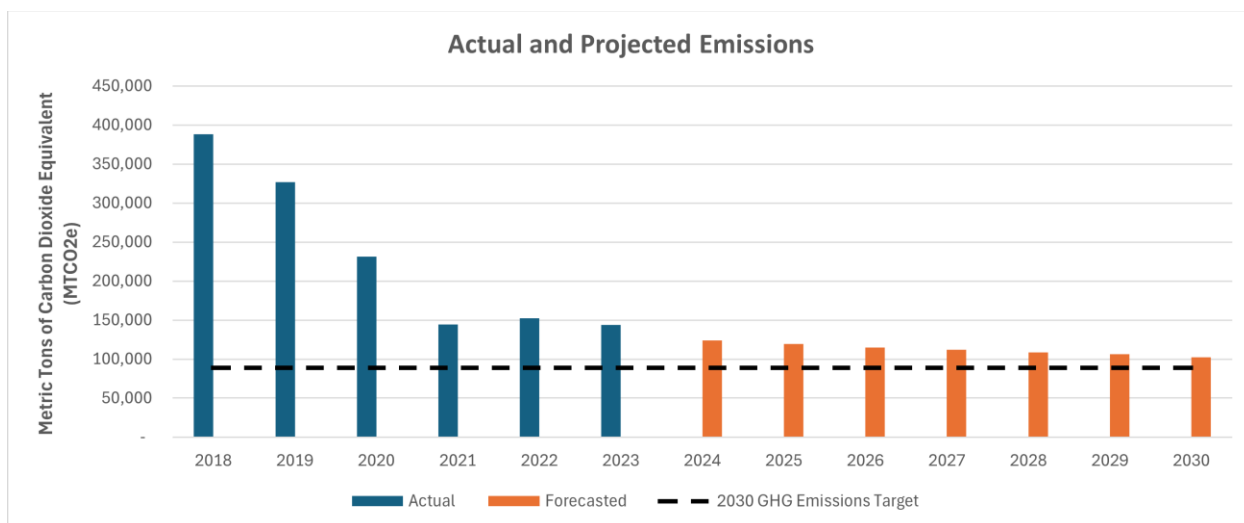
This achievement is largely due to Metro's transition away from the use of diesel fuel for our buses. Since 2017, Metro's bus fleet transitioned to renewable compressed natural gas (biomethane or renewable natural gas). Zero Emissions Buses (ZEBs) were introduced on the Metro G Line in the San Fernando Valley in 2019 and Metro expects to achieve a fully ZEB fleet by 2035.

As shown in **Figure 2**, the forecast projects that Metro will reach 76% reduction from 2017 GHG levels by 2030, slightly less than the 79% goal established in the 2019 CAAP.¹ This is largely due to Metro's reliance on utilities including LADWP and Southern California Edison to provide the electricity that power our vehicles and facilities. While Metro's electricity providers are transitioning to carbon-free sources, per the State Renewable Portfolio Standard or the commitments in the LA Green New Deal, the pace of grid energy decarbonization is a hinderance to Metro's ability to meet the 2030 goal. Pursuing initiatives, such as the purchase of "green power," or electricity with higher levels of renewable energy content from LADWP or from the region's community choice energy provider, Clean Power Alliance, are options to further reduce

¹The forecast assumes that future years will maintain the same level of service as in 2023. Additionally, it incorporates assumptions from the LA Metro Fleet Transit plan, including the transition from renewable natural gas to a battery electric fleet, continually reduced emissions grid-delivered electricity, and renewable energy generated by solar panels at Metro facilities. The forecast also integrates assumptions from the "Energy Efficiency Long Term Plan," aiming for Metro to achieve a 17% reduction in GHG emissions from facilities by 2030.

emissions from Metro operations by 2030 and support Metro’s long-term goal of carbon neutrality by 2050.

Figure 2. Metro Greenhouse Gas Emissions Reduction Progress



Regional Leadership in Achieving Greenhouse Gas Emissions Reduction Goals

The 2019 CAAP determined that Metro’s mobility services displace 903,000 MTCO₂e annually. This reduction in single-occupancy VMTs underscores the critical role that the agency plays in regional climate action. These displaced or “avoided” emissions are the result of people shifting to lower-carbon alternatives to driving (referred to as “mode shift”) and to Metro’s infrastructure and services encouraging land use patterns that result in shorter and fewer personal vehicle trips. This CAAP Update uses an updated methodology to calculate displaced emissions. The 2023 calculation determined that Metro’s services were responsible for avoiding 1.07 million metric tons of carbon dioxide equivalent (MMTCO₂e) emissions.²

The 2025 CAAP Update builds on the present-day snapshot of displaced transportation emissions that Metro services enable, incorporating a longer view of Metro’s important role in reducing LA County’s transportation-related emissions into the future. In April 2024, Metro adopted a VMT target that reflects a 15.4% reduction in daily VMT per LA County resident by 2045 (from a 2016 baseline). This target reflects a long-term commitment to shaping travel behavior to, from, and

² Fehr & Peers. (2024). *LA Metro Climate Action and Adaptation Plan Greenhouse Gas Emissions Displacement Calculation Methodology*. Memorandum.

within LA County.³ The target captures the future VMT reductions that are possible from implementing our ambitious portfolio of adopted plans, policies, and projects, and focuses on opportunities to accelerate non-capital programs, given the urgency of achieving climate action this decade. Metro's committed actions include improved bus frequency reflecting the implementation of the *NextGen Bus Plan*, rail infrastructure enhancements, dedicated bus lanes, and development of affordable, transit-oriented housing at Metro station areas.

Meeting the VMT reduction targets will represent approximately 500,000 MTCO₂e of additional avoided emissions in 2045. Reductions in VMT provide other important environmental and health benefits above and beyond climate emissions reductions, such as reductions in air pollution, land consumption for roadway infrastructure, and collisions.

California's policy goals also call for steady advancements in clean vehicle technologies, such as increased fuel efficiency and expansion of zero emission vehicles (ZEVs). Achieving the VMT reduction targets in a future where the anticipated technology improvements and ZEV adoption rates are realized would nearly halve emissions related to passenger travel in LA County, from 46.94 million MTCO₂e in 2016 to 25.62 million MTCO₂e in 2045, a 54% reduction.

Continuing to reduce GHG emissions in the region necessitates a systemwide perspective and collaborative approach with regional stakeholders. This includes coordinated implementation of programs like the Regional Transportation Demand Management (TDM) Program and regional partnerships to obtain the funding needed to advance climate action goals. Regional and state efforts to reduce emissions are advanced by encouraging the adoption of transit-supportive land use or transit-oriented communities policies by local jurisdictions, continuing to participate in the statewide Transit Transformation Task Force, and continuing to support regional planning with agencies like the Southern California Association of Governments (SCAG).

Climate Change Risk and Resilience

Metro conducted a climate risk screening of assets, staff, and customers in 2022 to better understand the degree of exposure to the impacts of climate change. Using the top climate-related risks identified in the 2019 CAAP, the screening evaluated the impacts of heat, flooding, power outages, landslides, and mudslides on the entire operating region. Using downscaled climate model data consistent with the California Fourth Climate Assessment Report from current conditions through 2050, the screening analyzed the impacts of these hazards on bus, subway, and light rail infrastructure and operations, as well as passenger and employee health and safety. The results included both systemwide trends and more granular analysis that

³ The baseline year of the VMT reduction analysis that underpinned the selection the VMT reduction target was 2016 and the horizon year was 2045 to align with the calibrated and validated baseline/horizon years of the Southern California Association of Governments Activity Based Model.

identified specific bus lines, subway lines, light rail corridors, and infrastructure at the highest risk of specific hazards. The screening led to a 2023 evaluation of Metro's current adaptation measures and recommendations for additional measures to address climate risks. This CAAP Update provides a high-level overview of the findings of this work.

A Continued Focus on Equity

The 2019 CAAP is unique in how it centers equity in climate action and adaptation. Metro's commitment to equity includes adopting the Equity Platform, investing in a ZEB transition, and advancing our *Bus Stop Improvement Plan*. Investing in these programs, in addition to providing the critical transportation services that the public relies on, benefits Metro riders and the region by improving air quality and providing vulnerable communities with improved transit access. Equity strategies are embedded in the 2019 CAAP to ensure that historically underserved places and people, including Metro's Equity-Focused Communities, are prioritized for climate action and adaptation measures. This equity focused approach is carried forward into the 2025 CAAP Update.

Section 1. Introduction – Why a Climate Action and Adaptation Plan Update?

Metro provides safe, efficient, reliable and accessible transportation services to nearly one-third of California’s residents. Our services offer more sustainable transportation options that produce fewer GHG emissions than relying on single occupancy vehicles. Metro’s services are critical to helping the region and the State of California meet their GHG reduction goals for the highest emitting sector: transportation.⁴

Climate change is already impacting Angelenos. Extreme heat is the deadliest climate hazard in the United States, leading to more deaths than hurricanes, floods, and tornadoes combined. The 2021 *LA County Climate Vulnerability Assessment* found that the countywide daily maximum temperature will increase by an average of over 5° F to a mid-century average of nearly 99° F. These patterns underscore the urgent need to redouble attention on reducing GHG emissions and build a resilient system that continues to connect Angelenos to opportunity, even under current and future climate hazard conditions.

The purpose of this CAAP Update is to share Metro’s progress since the release of the 2019 CAAP and highlight how our role in regional climate action has evolved beyond the initial strategies set out in the 2019 CAAP. This update details how we are reducing GHG emissions as a fundamental part of advancing our mission to provide a world-class transportation system that enhances the quality of life for all who live, work, and play in LA County.

Metro’s climate action and adaptation efforts encompass measures to reduce operational GHG emissions, influence regional mode shift to lower-carbon mobility options, and adapt to the natural hazards of today and tomorrow. Highlights of progress since 2019 include the following:

- Providing updated accounting for the GHGs avoided as a result of Metro’s services
- Reducing operational emissions through efforts like our *ZEB Rollout Plan*
- Influencing regional travel patterns through expanded transit service
- Adapting to address the impacts of climate hazards like extreme heat on system operations, staff, and riders
- Integrating carbon reduction and climate risk management responsibilities into employee duties, operations and maintenance procedures, long-term planning, and project development processes

⁴California Air Resources Board. (2024). *2022 Scoping Plan Documents*. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

Centering Equity in Climate Action and Adaptation

Climate change disproportionately impacts underserved communities.⁵ Since 2019, Metro made significant progress in defining the relationship between transportation and equity by operationalizing our Equity Platform through the Equity Information Hub. The Equity Platform was designed to continually inform, shape, and guide every facet of our projects, investments, and new initiatives. Incorporating equity into Metro’s climate action and adaptation work ensures that people who are most transit-dependent and have the least resources are beneficiaries of our climate strategies.

This CAAP Update identifies the climate action and adaptation strategies that deliver the greatest equity co-benefits to Metro riders and the region, resulting in a healthier, safer future for LA County. For example, electrifying Metro’s bus fleet reduces GHG and criteria air pollutant emissions. These reductions may help reduce the risk of cardiovascular and respiratory disease in the communities we serve and in turn reduce healthcare costs for individuals and households across LA County.

⁵ Environmental Protection Agency. (2021). *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts*. U.S. Environmental Protection Agency, EPA 430-R-21-003.

Section 2. What is Metro's Role in Regional Transportation Emissions?

Public transportation is critical to supporting our state and regional climate goals. In California, the transportation sector is the largest contributor to the state's GHG emissions. Nationally, the use of public transit saved 63 MMTCO₂e emissions in 2018, the equivalent of taking 16 coal power plants offline for a year⁶.

Today, Metro's services enable residents, workers, and visitors to shift their travel to a lower-carbon alternatives to single-occupancy vehicles. Metro's presence in the region also catalyzes land use patterns that result in shorter and fewer personal vehicle trips. Metro services were responsible for 1.07 MMTCO₂e of avoided emissions in 2023.⁷

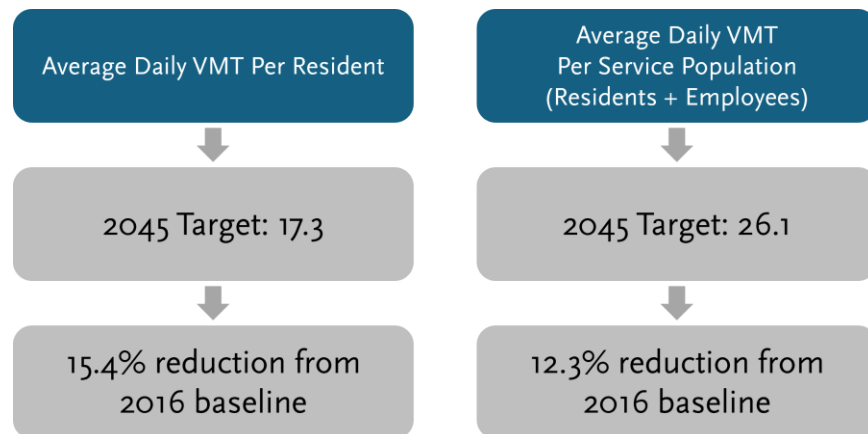
In addition to the climate benefits that Metro brings to the region today, we have also committed to additional future emissions reductions. Metro is one of the first transit agencies in the United States to adopt regional targets for Vehicle Miles Traveled (VMT) reductions per capita, connecting investments in transportation system improvements with climate-related outcomes (**Figure 3**). With a horizon year of 2045, the VMT reduction targets reflect a long-term commitment to shaping travel behavior to, from, and within LA County, and capture the VMT outcomes from implementing a portfolio of adopted plans, policies, and projects.⁸ Metro has also committed to accelerating non-capital components of our plans, policies, and projects, recognizing the urgency of achieving climate action this decade.

⁶ TRCP (2021). *Research Report 225: An Update on Public Transportation's Impacts on Greenhouse Gas Emissions*.

⁷ Fehr & Peers. (2024). *LA Metro Climate Action and Adaptation Plan Greenhouse Gas Emissions Displacement Calculation Methodology*. Memorandum.

⁸ The baseline year of the VMT reduction analysis that underpinned the selection the VMT reduction target was 2016 and the horizon year was 2045 to align with the calibrated and validated baseline/horizon years of the Southern California Association of Governments Activity Based Model.

Figure 3. Metro's Adopted Vehicle Miles Traveled Targets

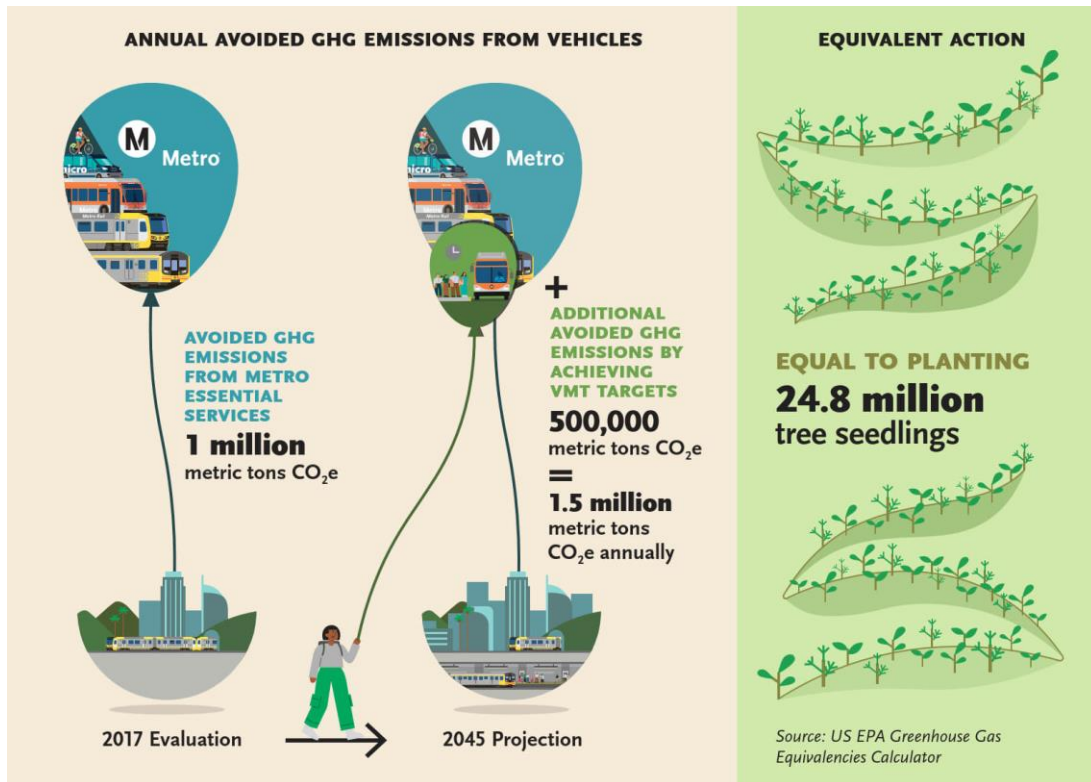


The targets complement those adopted by the City and County of Los Angeles and demonstrate a commitment to achieving the reductions identified in the SCAG *Connect SoCal* plan. The targets also contribute to the State VMT per capita reduction goal of 25% below 2019 levels by 2030 and 30% below 2019 levels by 2045.⁹ Meeting these VMT reduction targets would represent an additional approximately 500,000 MTCO₂e avoided emissions in 2045 in Los Angeles County. These reductions in VMTs provide other important environmental and health benefits such as reduced air pollution, land consumption for roadway infrastructure, and collisions. Metro's adoption of VMT targets underscores the agency's commitment to enabling and shaping sustainable transportation choices for LA County residents, workers and visitors.

Metro plays a critical role in reducing GHG emissions by providing sustainable, low-carbon transportation options for LA County residents, employees, and visitors. **Figure 4** shows the annual avoided GHG emissions due to Metro's transit services in 2023 as well as the additional GHG emissions avoided if the VMT targets are achieved by 2045. Metro services offer sustainable alternatives to driving.

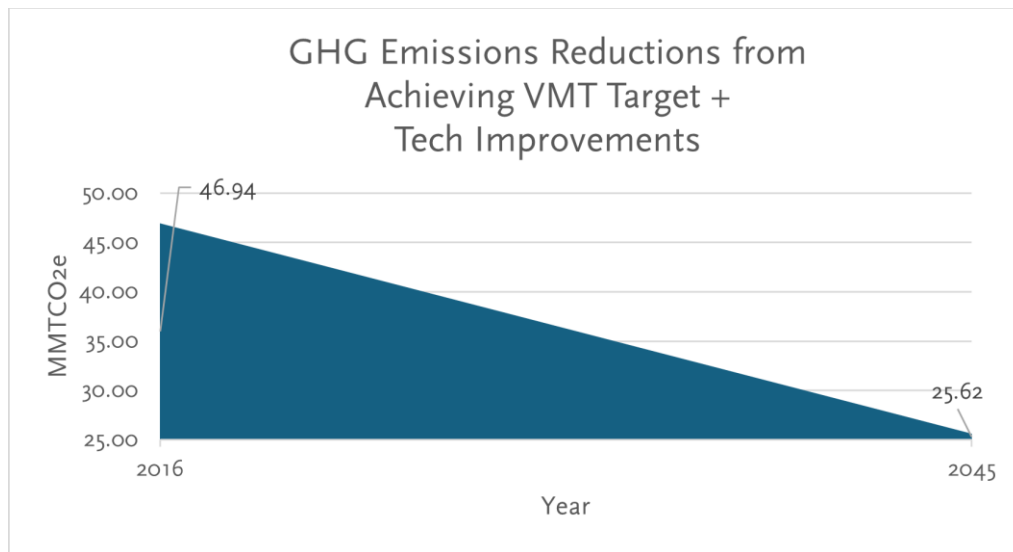
⁹California Air Resources Board. (2024). *2022 Scoping Plan Documents*. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

Figure 4. Annual Avoided Greenhouse Gas Emissions from Vehicles



California’s policy goals also call for steady advancements in clean vehicle technologies, such as increased fuel efficiency, and expansion of Zero Emission Vehicles. Achieving the VMT reduction targets in the context of a future where the anticipated technology improvements and ZEV adoption rates are realized would cut emissions related to passenger travel in LA County nearly in half, from 46.94 million MTCO₂e in 2016 to 25.62 million MTCO₂e in 2045, a 54% reduction. **Figure 5** shows the GHG reduction potential of meeting the VMT targets by 2045, in the context of major ZEV adoption and aggressive improvements to passenger vehicle fuel efficiency.

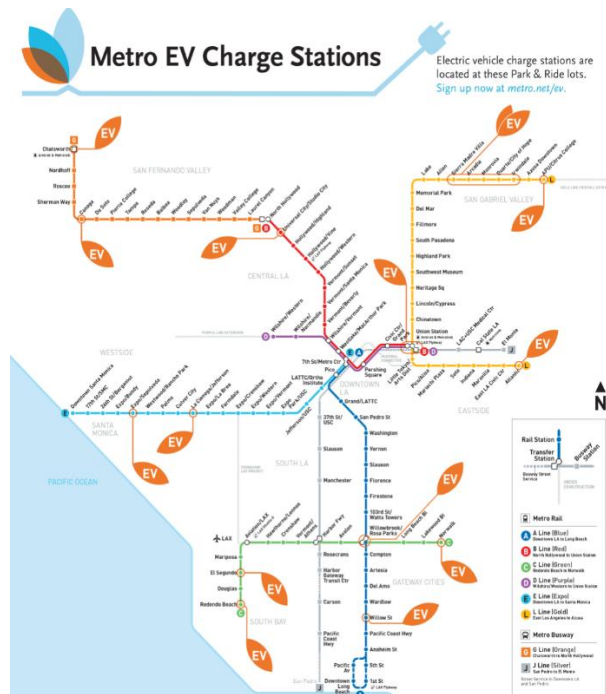
Figure 5. Greenhouse Gas Emissions Reductions from Achieving Vehicle Miles Traveled Targets and Technological Improvements



Aside from Metro’s own work to convert our bus fleet to zero emissions technology (as discussed in Section 3), Metro does not have direct control over the development and adoption of passenger vehicle ZEV technology and improvements to fuel efficiency. However, the agency remains committed to partnering and advancing this work where feasible. The agency adopted a five-year *Electric Vehicle Parking Strategic Plan* to encourage the transition to electric vehicles among Metro employees, transit riders and the general public. **Figure 6** shows existing Metro Park-and-Ride locations. Metro serves in the Leadership Group of the Los Angeles Cleantech Incubator’s Transportation Electrification Partnership and continues to engage with heavy duty vehicle improvements.¹⁰

¹⁰ For more information about Los Angeles Cleantech Incubator’s Transportation Electrification Partnership, see <https://lincubator.org/transportation/>.

Figure 6. Metro Park and Ride Locations with Electric Vehicle Charging Stations



Vehicle Miles Traveled Mitigation Program

In April 2024, the Metro Board of Directors adopted the VMT Mitigation Program. This program aims to provide a streamlined VMT mitigation process for projects on the State Highway System through the development and sale of mitigation credits, which in turn can fund Metro programs that offset increases in VMT.

The stakeholder engagement process to develop this program involved virtual community meetings, presentations to Metro advisory bodies, and policy working groups. Attendees included councils of government executive directors and staff, transit operators, staff from local agencies, Caltrans and CARB. This extensive consultation ensured that numerous and diverse stakeholders in the region could provide input and shape the program.

The program includes a pilot VMT Mitigation Bank, which provides a clear and defensible approach to offset increases in VMT (**Figure 7**). The pilot bank creates a pathway to invest VMT mitigation dollars directly into VMT-reducing projects and Metro's related programs (or those of our public agency partners).

Figure 7. Goals of the Pilot Vehicle Miles Traveled Mitigation Bank

The Goals of the Bank

- **Provide a streamlined, effective and enforceable approach** to mitigate VMT impacts from highway capacity projects on the SHS
- **Develop and offer VMT mitigation credits** to SHS projects
- **Establish the credit values** of mitigation projects and programs
- **Identify procedures** for the sale of credits, including debiting the credit table
- **Establish oversight procedures** to regularly evaluate the Program

Cleaner Goods Movement

As the most populous county in the United States and home to one of its busiest ports, LA County experiences and facilitates massive daily goods movement. To address the environmental impacts of goods movement, Metro spearheaded collaborations through the 2021 *LA County Goods Movement Strategic Plan*. Metro worked with regional partners such as CARB, the Los Angeles Clean Tech Incubator, and the Ports of Los Angeles and Long Beach. The plan outlines how investing in freight rail, deploying cleaner truck technology to replace diesel, strategically managing the role of goods movement, and curbside management planning and policies can support a healthier and economically vibrant LA County.

Transportation Demand Management

Metro is developing a Transportation Demand Management strategy that outlines ways to shift from relying on private vehicles toward increased walking, biking, and transit. TDM programs reduce congestion and improve air quality. Incorporating equity into the TDM strategy, by viewing transportation through the eyes of systems users, is essential to ensure that access to diverse transit options is fair and just.

Metro currently manages TDM programs to reduce reliance on single-use vehicles and reduce regional VMT through rideshare. This includes the Metro Vanpool Program, which subsidizes the leasing of vanpools for LA residents to facilitate more sustainable modes of transportation. Through the TDM strategy, Metro has identified several additional initiatives for implementation:

- Mobility Hub Activation and Community Engagement
- Fostering Multimodal Kids for the Future
- New Transit Corridor Zones
- Carpool and Shared Mobility Solutions
- Transit Tourism

The Long Beach-East Los Angeles Corridor (Formerly I-710 South) Mobility Investment Plan

Metro is acting through the *Long Beach-East Los Angeles (LB-ELA) Corridor Mobility Investment Plan* to reinvest money from highway expansion and development to better support community needs, multimodal transportation, and active transportation.¹¹

In May 2021, Metro’s Board approved a motion to suspend work to advance the I-710 South Corridor Project. The motion also directed Metro to develop a plan to identify and support local projects that would advance mobility along the corridor. In September 2021, staff initiated the LB-ELA Corridor Task Force to engage locally impacted communities and inform recommendations for investments in multimodal projects along the corridor. A robust and diverse set of local stakeholders made up the Community Leadership Committee, which helped shape and develop the *LB-ELA Corridor Mobility Investment Plan*.

The vision of the plan is to deliver an equitable, shared LB-ELA corridor transportation system that provides safe, quality multimodal options for moving people and goods; a system that will foster clean air (zero emissions), healthy and sustainable communities, and economic empowerment for all residents, communities, and users in the corridor.

The plan includes over 200 projects and programs to meet its vision and goals:

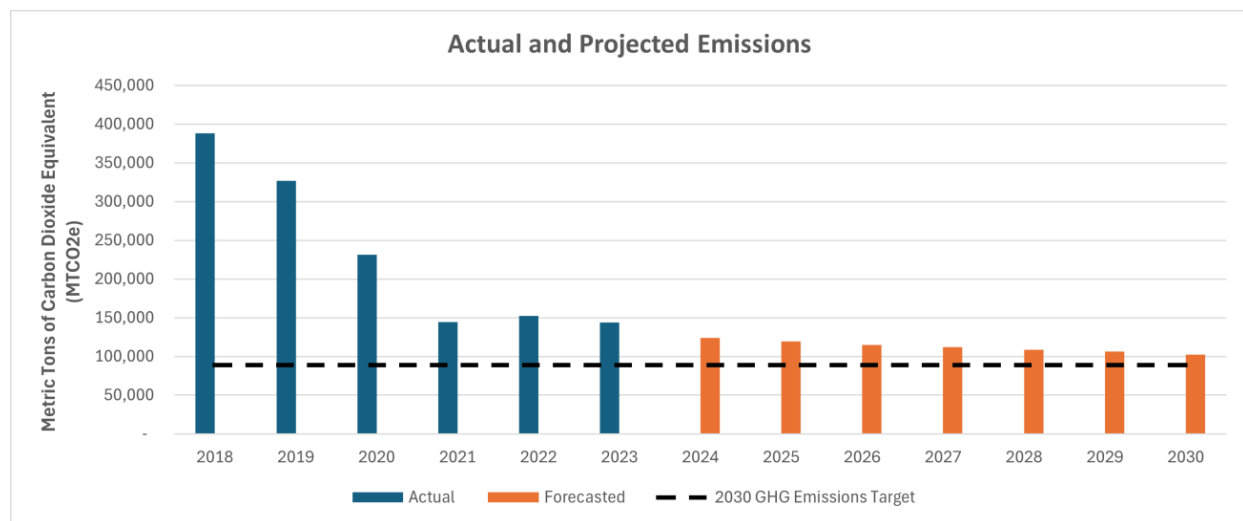
- Active transportation facilities
- Transit service and rider experience
- Multimodal complete street designs
- Zero-emission goods movement infrastructure
- Targeted investments to I-710 infrastructure that repair multimodal connections across the freeway and reduce its impacts on surrounding communities

¹¹ Metro. (2024). *Long Beach—East Los Angeles Corridor Mobility Investment Plan*.
<https://www.dropbox.com/scl/fo/of2kaxtofnamz4sre8vp/ANpNkDSmYOkUsGAvURSwhfl?dl=0&e=1&preview=1+English+LB-ELA+Final+CMIP.pdf&rlkey=9byndcgxpmzhzliirt6pr8zpII>

Section 3. How is Metro Delivering on Operational Emissions Reductions Goals?

Through our 2019 CAAP and 2020 ten-year strategic plan, *Moving Beyond Sustainability*, Metro committed to reducing operational GHG emissions by 79% by 2030 (relative to 2017 levels) and by 100% by 2050. To achieve these reductions 13 specific measures were identified in the 2019 CAAP. **Figure 8** demonstrates that Metro reduced our GHG emissions annually in five of the past six years, equating to an overall 65.5% decrease since 2017. In 2022, emissions increased slightly overall due to a rebound in service levels following the COVID-19 pandemic.

Figure 8. Metro's Greenhouse Gas Emissions: Forecasted vs. Actual



As shown in **Figure 8**, the forecast projects that Metro will reach 76% reduction of 2017 GHG levels by 2030, slightly less than the 79% goal established in the 2019 CAAP.¹² This is due to Metro's reliance on utilities, including LADWP and Southern California Edison, to provide the electricity that powers our vehicles and facilities. While Metro's electricity providers are transitioning to carbon-free sources, per the State Renewable Portfolio Standard or the commitments in the LA Green New Deal, the pace of grid energy decarbonization is a hinderance to Metro's ability to meet the 2030 goal. Pursuing initiatives, such as purchasing "green power," or electricity with a higher amount of renewables from LADWP or the region's community choice

¹² The forecast assumes that future years will maintain the same level of service as in 2023. Additionally, it incorporates assumptions from the LA Metro Fleet Transit plan, including the transition from renewable natural gas to a battery electric fleet, continually reduced emissions grid-delivered electricity, and renewable energy generated by solar panels at Metro facilities. The forecast also integrates assumptions from the "Energy Efficiency Long Term Plan," aiming for Metro to achieve a 17% reduction in GHG emissions from facilities by 2030.

energy provider, Clean Power Alliance, are options to further reduce emissions from Metro operations by 2030 and support Metro's long-term goal of carbon neutrality by 2050.

Since 2017, Metro's bus fleet transitioned to renewable compressed natural gas (biomethane or renewable natural gas). ZEBs were introduced on the Metro G Line in the San Fernando Valley in 2019 and Metro expects to achieve a fully ZEB fleet by 2035. Other initiatives, such as the purchase of electricity with a higher percentage of renewables from the region's community choice energy provider, Clean Power Alliance, further reduced emissions from Metro operations.

Metro continues to roll out ZEVs and is beginning to implement the *Electric Vehicle Parking Strategic Plan*, which will grow our network of 3,000 EV charging stations serving non-revenue vehicles, employees, and the public by 2028. The resulting increase in electric demand may contribute to short-term increases in GHG emissions associated with Metro operations. As the State of California moves toward its goal of 100% clean electricity by 2045, Metro will realize significant emissions reduction from the shift to ZEVs.

The following sections describe key actions Metro has taken to reduce operational GHG emissions in further detail.

Zero-Emission Vehicle Deployment

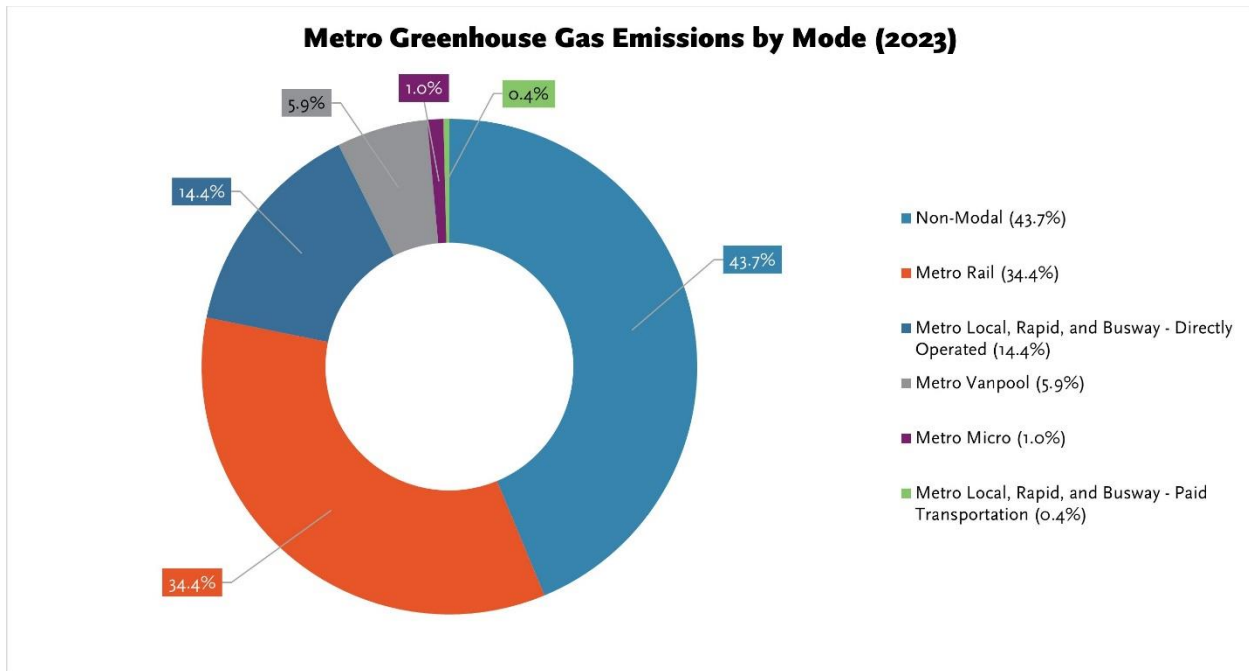
In 2021, Metro initiated 100% zero-emission bus rapid transit (BRT) service along the Metro G Line. To date, these vehicles have accumulated over 5 million miles of zero-emission service. All 60-foot articulated compressed natural gas buses on the Metro G Line were replaced with new, 60-foot articulated ZEBs that have zero-tailpipe emissions. The buses operate all day along the 18-mile corridor by using rapid en-route chargers installed at North Hollywood, Canoga, and Chatsworth Stations.

Delivering ZEBs for the G Line contributes to Metro's equity goals as over half of the Metro G Line's 36 stops are directly located in or adjacent to Equity Focus Communities in North Hollywood, Valley Village, Van Nuys, Lake Balboa, Reseda and Canoga Park.

Facility Energy Management and Renewable Energy

Metro's facility electricity represents one of our largest sources of non-modal GHG emissions (**Figure 9**). The 2019 CAAP identifies several energy savings measures, including a goal to replace all lighting fixtures with LED lights.

Figure 9. Metro Emissions by Mode (2023)



Metro also developed a blueprint for identifying and implementing proposed upgrades and replacements of building systems at facilities that will ultimately result in lower energy consumption, GHG emissions, and operating costs. The *Energy Efficiency Long Term Plan* identifies opportunities for implementing measures outlined in the 2019 CAAP at major operating facilities and to improve energy efficiency across operations.

Section 4. How is Metro Addressing Climate Risk?

It is imperative for Metro to continue monitoring and responding to the impacts of climate change on our system, staff, and riders. Metro conducted a 2022 Climate Risk Screening of top vulnerabilities identified in the 2019 CAAP, noting the ways in which buses, light rail, subway, employees, and riders can be impacted. Increased extreme heat, electric grid outages, inland flooding, and land and mudslides are the top climate-related hazards for Metro, based on the CAAP.

Extreme heat poses the greatest risk to the system and can damage buses and disrupt service by impacting electrical and mechanical equipment, deteriorating bus tires and reducing the battery life of electric buses. Nearly 90% of bus routes (by mile) are in areas that experience extreme heat that could cause partial system failure (**Figure 10**). Heat can also lead to buses losing air conditioning.

More than 70% of bus routes (by mile) are in high-risk heat areas and many highly vulnerable routes are in Equity Focus Communities, compounding the heat exposure risk for people traveling from and through these places.

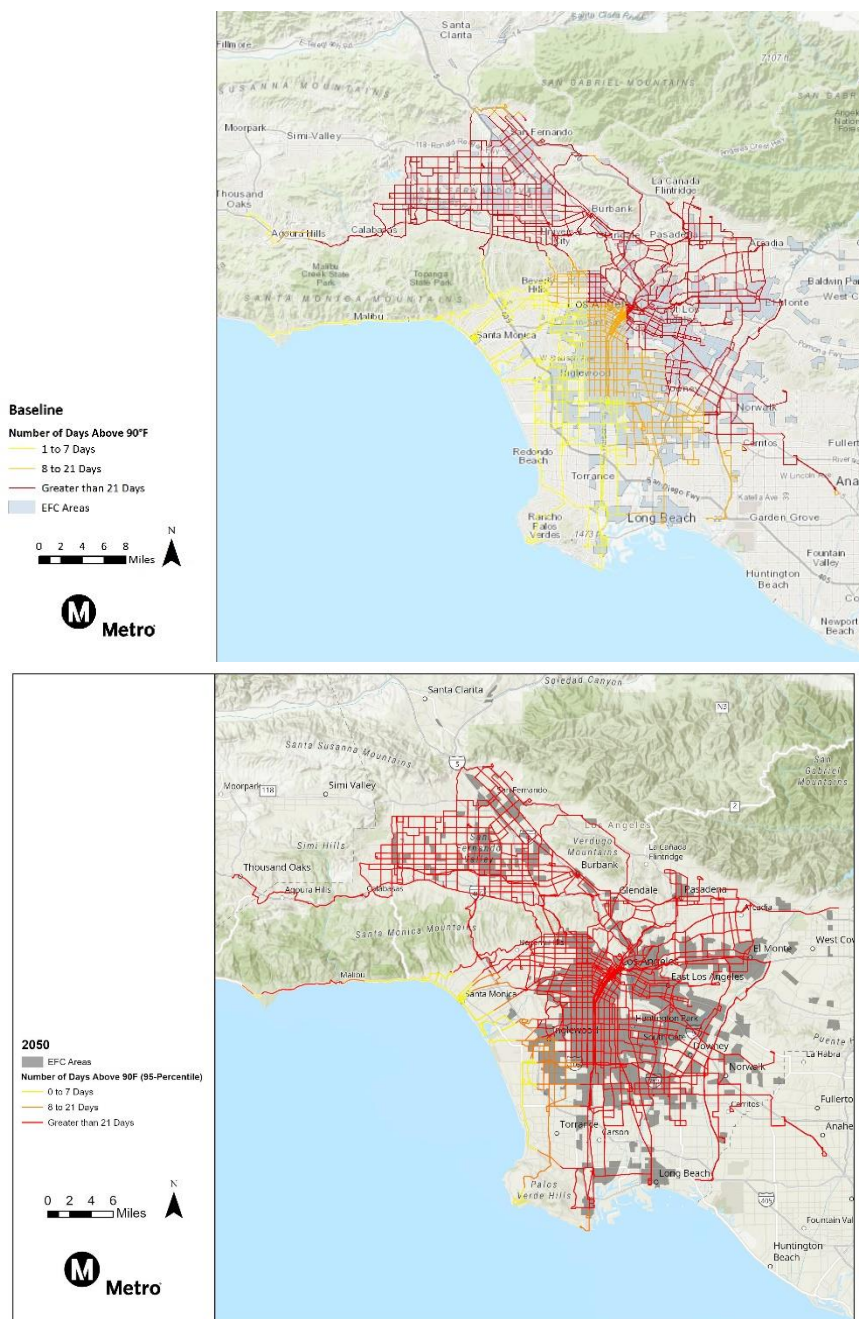
Bus stops along many of these routes are in areas of sustained high risk for high temperatures, increasing the risk to system users of heat exhaustion, heat stroke, and other heat-related illnesses. Bus shelters, which can help mitigate heat risk for passengers, are present at less than a quarter of Metro bus stops.

While heat risk is most prevalent for buses, heat also poses a risk across other modes, including light rail and subways. Similar to the risk posed at bus stops, extreme heat poses a risk to passengers at outdoor light-rail stations. Extreme heat can damage rail tracks, communications and information technology systems, signal systems, and overhead catenary lines. Extreme heat can also lead to service disruptions, as trains need to reduce speed and staff need to conduct rail inspections to ensure there is no damage that could create a safety hazard. The highest climate risks are along portions of the Metro L Line, A Line, and C Line. Further, extremely hot ambient temperatures can impact the operations of air conditioners and ventilation systems in subway stations, posing heat risks to passengers and potentially leading to damage to station rail infrastructure, electrical and mechanical systems, and elevators.

The 2022 Climate Risk Screening included an assessment of impacts of flooding, mudslides and landslides, and power outages, all of which are expected to increase in the coming decades due to climate change. Flooding, mudslides, and landslides have the potential to disrupt bus, light rail, and subway service, damaging assets and creating hazardous conditions for passengers. Climate change is also likely to result in more frequent power outages from increased temperatures, flooding, and storms. These outages disrupt bus, light rail, and subway service. Backup generators

provide some power to critical assets but are not able to support larger-scale system power loss. Power loss can leave subways and light rail inoperable, prevent electric buses from charging, and disrupt critical communications and operations systems.

Figure 10. Extreme heat (number of days over 90°F) overlaid with Metro bus lines for today and 2050



Increasing Metro’s Climate Resilience

Preparing Metro’s systems, assets, and operations for impacts from hazards like extreme heat, major storms, and wildfires is key to creating a resilient and forward-thinking agency. - The *All-Hazards Mitigation Plan* focuses on making climate change and emergency management an agency-wide consideration. Metro combined the climate risk screening results with adaptation options from the *All-Hazards Mitigation Plan* in 2023.

Table 1 outlines some of Metro’s actions to reduce climate risks. Some of these actions have already been implemented, while others are pending, ongoing, or in early planning stages.

Table 1. Metro Actions to Reduce Risks Due to Extreme Heat and Power Outages (adapted from 2023 Climate Risk Analysis)

Climate Impact	Metro Actions
EXTREME HEAT	
Sagging catenary lines	Metro is currently testing a spring tensioner system along the L Line. The C, A, and E Lines are noted in the <i>All-Hazards Mitigation Plan</i> for similar improvements.
Extreme temperatures in the subway tunnel	There are AC units in enclosures every 0.5 mile of rail (complies with American Railway Engineering and Maintenance-of-Way Association temperatures for train controller systems). Metro identified at-risk underground equipment and is designing for critical temperatures, cooling systems, or both.
POWER OUTAGES	
Impacts to subway system third rail power	The system is electrically continuous between several Traction Power Substations (TPSS). This means that if there is a loss of power to one TPSS, train operations can be maintained for at least two hours at maximum designated headway during rush hours (or longer duration during off-peak times).
Backup generators run out of fuel and stop operating	Generators provide a limited amount of backup power and after a certain amount of time, they must be shut down and refueled. However, during power outages, Metro staff may not know the site is running on backup power because the generators turn on automatically. To increase staff awareness, Metro is piloting a system that triggers a strobe light when the backup generator turns on. The <i>All-Hazards Mitigation Plan</i> calls for installing additional backup generators and establishing microgrids at Metro facilities.
Critical communications interrupted	The <i>All-Hazards Mitigation Plan</i> calls out the need to ensure power stability for communications at all bus and rail divisions by installing uninterruptible power systems to support mission -critical communications during a power outage.

Metro is committed to prioritizing improvements to reduce risk for locations, facilities, infrastructure, equipment, and operations. Ongoing improvements to reduce risks include the following:

- Maintaining a State of Good Repair program
- Increasing redundancy of communication systems
- Installing backup power
- Coordinating regional multi-agency resilience programs
- Preparing to provide resources to meet the post-disaster needs of staff and riders

The following sections highlight key Metro actions taken to increase system resilience since the 2019 CAAP.

Metro Tree Policy

As Metro works to create a more environmentally sustainable, equitable, and resilient public transportation system, the protection, planting, and maintenance of trees is a key component. Trees provide multiple community-wide benefits:

- Shade
- Reduced urban heat island effect
- Carbon storage
- Bird and other pollinator habitat
- Improved air quality
- Reduced psychological distress
- Stormwater management

In 2022, the Metro Board approved the Metro Tree Policy, which protects trees through planning, design/construction, and maintenance, and requires replacement of any removed trees, when necessary, at a 2:1 ratio (or at a 4:1 ratio in the case of heritage trees).

The policy directs the agency to adopt species, palette, and planting strategies that maximize opportunities for native species, carbon capture, mitigation of the urban heat island effect, stormwater capture, and the use of recycled water for irrigation (**Figure 11**). The policy commits to a three-year establishment period for newly planted trees and encourages creative approaches to planting replacement trees.

Figure 11. Recommended Tree Palette Microclimate Zones



Microclimate Zones



Transformative Climate Communities Grant Partnership

A \$35 million Transformative Climate Communities grant from the California Strategic Growth Council was awarded in 2022 to a coalition of community-based organizations including Community Partners, SLATE-Z, and the City of Los Angeles. The funding was secured to improve environmental conditions and reduce pollution in South LA by supporting the South LA Eco-Lab. Formed by Metro along with 11 other community partners, this community-driven project facilitates economic development through climate action to achieve the vision for a socially inclusive, sustainable, green community that is resilient to climate change—with improved quality of life, public health, and access to economic opportunity.

Station Evaluation Program

Metro's Station Evaluation Program is an important tool to identify and prioritize resilience improvements. The evaluation program provides actionable data points for maintenance staff to complete repairs and helps identify recurring issues reported by riders, allowing staff to seek remedial and preventative solutions.

In 2022 and 2023, Metro's proactive response to addressing station evaluation issues resulted in a 53% increase in scores for appearance criteria and a 51% increase in scores for functionality criteria. We completed aesthetic repairs at multiple sites, such as inserting updated maps, removing graffiti from map cases and elevator interiors, and replacing informational decals. Operational repairs focused on the condition of escalators, which improved because of reported maintenance orders. Specifically, the B Line corridor station escalators were found to be readily available for riders at all levels, having the biggest increase in functionality scores of all transit

lines with vertical transportation equipment. Recognizing the importance of providing functional, safe, and clean transit stations, Metro intends to strengthen this program through continued collaboration with surrounding jurisdictions and agencies.

Los Angeles County Extreme Heat Campaign Partnership

Metro, the LA County Department of Public Health, and the Los Angeles Regional Collaborative for Climate Action and Sustainability partnered to create content that highlights resources and tips for staying safe on extreme heat days. From August to September 2023, over 2,300 Metro buses featured an extreme heat public service announcement (**Figure 12**).

Figure 12. Los Angeles Regional Collaborative for Climate Action and Sustainability Extreme Heat Campaign, Bus Ad



Bus Stop Improvements Program

Shade and shelter at bus stops was identified as a top rider concern through the 2019 CAAP Rider Survey as well as in the 2020 *Metro Customer Experience Plan*. The 2022 *Customer Experience Plan* update noted that of the 12,268 Metro bus stops, only 24% have a shelter. Though Metro does not own the property where the bus stops are located, staff wanted to better support jurisdictions throughout the service region and formed an interdepartmental team to better address this multi-jurisdictional concern.

In June 2023, Metro launched the Bus Stop Improvement Program to provide regional coordination and inspire local jurisdictions to install bus stops that meet the needs and expectations of riders. We have also developed an initial list of priority bus stops throughout the

service region. Further, Metro provided a list of the 153 highest-need bus stops to the Metro Board based on criteria like Equity Focus Communities, Disadvantaged Communities, and California Heat Assessment Tool data, as well as tree canopy coverage. We've been working with the appropriate jurisdictions to identify funding and opportunities to increase shade/coverage at these bus stops, thereby creating cooler environments for our riders.

Section 5. What's Next?

Metro's overarching goal is to provide a reliable world-class transportation system that enhances quality of life for all who live, work, and play within LA County. The climate action and adaptation measures set out in the 2019 CAAP, and made current in this update to the plan, support this wider mission. Looking ahead, Metro remains committed to implementing these measures to provide a safe, reliable, and accessible transit system that is resilient to the impacts of climate change and supports wider regional emissions reductions goals.

As Metro continues to deliver on these measures for our riders, we're also preparing for Los Angeles to host the Olympic and Paralympic Games in 2028. This major event will draw visitors from around the world and will increase demand for Metro's essential services. Metro is working to ensure the system is prepared to handle the influx of global visitors and provide world-class transportation for all who attend. Metro will continue to take a strategic and forward-thinking approach to ensure the success of the Games while delivering long-term benefits for the diverse communities of LA County.

By focusing on the programs and initiatives that address climate risks and support regional emissions reduction goals, Metro is poised to provide an essential, sustainable service that is resilient to the increasing impacts of climate change and meets the needs of LA County as well as the larger region.



Board Report

File #: 2025-0791, File Type: Policy

Agenda Number: 24.

EXECUTIVE MANAGEMENT COMMITTEE OCTOBER 16, 2025

**SUBJECT: LOCAL SMALL BUSINESS ENTERPRISE (LSBE) PREFERENCE PILOT PROGRAM
UPDATE**

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

CONSIDER:

- A. RECEIVING AND FILING the Local Small Business Enterprise (LSBE) Preference Program Pilot Final Report; and
- B. APPROVING the Local Small Business Enterprise (LSBE) Preference Program.

ISSUE

On February 17, 2022, the Board approved a three-year pilot of the Local Small Business Enterprise (LSBE) Preference Program in response to Motion 31 (Directors Hahn, Dupont-Walker, Butts, Mitchell, Dutra, and Kuehl (Attachment A)). This report provides final results and analysis, including procurement data from FY23-FY25, and a recommendation to make the LSBE Preference Program permanent based on its demonstrated success.

BACKGROUND

To boost the local economy and expand access to Metro contracts for small and underutilized businesses, the Board approved the creation of the Local Small Business Enterprise (LSBE) Preference Program in response to Motion 31 (Directors Hahn, Dupont-Walker, Butts, Mitchell, Dutra, and Kuehl). The program offers a 5% preference credit (bonus points) on non-federal negotiated procurements and a 5% price reduction, for evaluation purposes only, on competitive low-bid procurements greater than \$100K with Small Business Enterprise (SBE)/Disabled Veteran Business Enterprise (DVBE) goals.

LSBE Designation

To qualify, a firm must be Metro-certified as an SBE, headquartered in Los Angeles County, and have conducted and managed all of its operations from that location for at least six months prior to

receiving LSBE designation. At the time of the program's rollout, firms originally certified as a Metro SBE that met the LSBE requirements were automatically granted the designation. The LSBE Preference Program applies to non-federally funded state and local solicitations.

Metro only grants LSBE designation to a firm that demonstrates it meets all eligibility criteria. Metro reserves the right to request additional information deemed necessary to determine if a firm meets the eligibility for the LSBE designation. Metro also reserves the right to conduct an on-site visit to verify eligibility or continued eligibility as an LSBE.

LSBE Program Applicability

The LSBE Preference Program applicability is outlined in Table 1 below:

Table 1 LSBE Applicability (Non Federal RFPs, RFQs, and IFBs)

Action Type	Threshold	LSBE Requirement	Preference Type	Preference Amount	Federal	Non-Federal
Request for Proposal (RFP)	>\$100,000	LSBE Prime or Non-LSBE Prime that subcontract at least 30% of contract value with LSBEs	Bonus Evaluation Points	5% (or 5 pts. added to total score)	No	Yes
Invitation for Bid (IFB)			Bid Price Reduction (For Evaluation Only)	5% bid price reduction		

DISCUSSION

Since its launch in August 2022, Metro's LSBE Preference Program has achieved strong outcomes. Following the passage of Assembly Bill 2271 (AB-2271) in January 2023, the program was expanded to cover state- and locally funded competitive low-bid procurements, resulting in measurable gains in both participation and impact. This expansion has positioned local small businesses to better compete for Metro contracts, advancing equity while strengthening the local economy. Together, these results underscore Metro's commitment to embedding equity in procurement, supporting local business growth, and fostering inclusive economic opportunity.

Program Trends and Performance

Throughout the three-year pilot (August 25, 2022 - June 30, 2025), DEOD has been tracking the number of solicitations issued with an LSBE preference and they have increased steadily, as reflected in Table 2 - Key Metrics below. From Requests for Proposals (RFPs) and Requests for Qualifications (RFQs) to Invitations for Bids (IFBs), LSBE participation is now more consistently and

strategically integrated into Metro's procurement process.

Table 2 - LSBE Program Key Metrics

LSBE Award Data	FY23	FY24	FY25	Total
<i>RFPs solicited w/LSBE Preference</i>	8	21	18	47
<i>IFBs solicited w/LSBE Preference</i>	1	6	4	11
<i>RFQs solicited w/LSBE Preference</i>	1	0	0	1
Total Solicitations with LSBE Preference	10	27	22	59
<i>LSBE Primes</i>	0	7	3	10
<i>Non-LSBE Primes with ≥30% LSBE subcontracting</i>	4	4	13	21
<i>Non-LSBE Primes with ≤30% LSBE subcontracting</i>	5	11	15	31
Number of LSBE Subcontractors	12	34	20	66
<i>Total Dollars Committed to LSBEs</i>	\$20,223,283	\$72,817,209	\$46,725,105	\$139,766,197
<i>Average LSBE Prime Commitment (Percentage)</i>	0.00%	72.30%	68.87%	47.05%
<i>Average LSBE Commitment (Percent)</i>	16.76%	12.63%	14.38%	14.60%

LSBE Preference Program - Three-Year Pilot Outcomes

Based on an analysis of the LSBE metrics data in Table 2 above, staff has seen that Metro's LSBE Preference Program has generated measurable results, broadening opportunities for small businesses located in Los Angeles County, across Metro's contracting portfolio.

Key Outcomes (FY23 - FY25):

- **Expanded Solicitations:** A total of 59 solicitations included the LSBE preference (47 RFPs, 11 IFBs, and 1 RFQ). This consistent application across procurement types demonstrates the program's integration into Metro's contracting process.
- **Direct LSBE Prime Awards:** The program resulted in 10 LSBE prime contracts over the three-year pilot, with LSBE primes averaging a 47.05% LSBE participation rate on their awards.
- **Subcontracting Impact:** LSBE opportunities expanded beyond primes:

- 21 non-LSBE primes exceeded 30% LSBE subcontracting, showing strong alignment with program goals.
- 31 non-LSBE primes included LSBE subcontractors below 30%, reflecting room for growth.
- *Broad Access for Local Firms:* During the pilot, 66 LSBE subcontractors participated, reinforcing that opportunities were spread across a wide pool of firms rather than concentrated among a few.
- *Economic Impact:* The program generated more than \$139.7 million in commitments to LSBE firms. The highest annual commitment was in FY24 (\$72.8 million), but all three years demonstrated significant investment in local businesses.
- *Sustained Commitments:* Overall, LSBE subcontractor commitments averaged 14.60% participation across contracts, and remained in a steady range of 12-17%.

Program Effectiveness and Strategic Insights

The LSBE Preference Program has proven highly effective in advancing Metro's goals of equity, economic growth, and inclusive procurement while also offering important insights to guide future improvements.

- *Expanding Access and Driving Equity:* The program has expanded opportunities for local small businesses to compete as both primes and subcontractors. Thus ensuring contracting opportunities extend equitably to a wider range of small and diverse businesses.
- *Economic Growth and Impact:* Nearly \$140 million in commitments to LSBE firms demonstrate tangible contributions to the local economy, supporting job creation and business development. LSBE primes are successfully winning contracts, while an even larger impact is seen in non-LSBE primes subcontracting to LSBEs-evidence that the program is reshaping procurement culture across all contractors.
- *Opportunities for Growth:* While some non-LSBE primes exceeded 30% LSBE subcontracting, others fell below this threshold. This gap highlights opportunities to encourage or incentivize higher LSBE participation among underperforming firms, ensuring more consistent results across the program.
- *Alignment with Metro's Broader Goals:* The success of the LSBE Preference Program directly supports Metro's "48 by '28" Eight-Point Plan, which aims to achieve 48% small business participation by 2028. By strengthening local small business participation, Metro ensures transportation dollars remain in-and benefit-the communities we serve.

The results of the pilot provide strong evidence that the LSBE Preference Program is achieving its objectives and delivering lasting benefits to the region. Staff therefore recommends that the Board make the LSBE Preference Program permanent to sustain momentum, deepen impact, and advance Metro's commitment to equity and economic growth.

LSBE Designation Audit Review

When the Board approved the implementation of a three-year pilot Local Small Business Enterprise (LSBE) Preference Program in February 2022, it directed staff to conduct an external audit to ensure that eligible firms met the program's core requirement of being headquartered in Los Angeles County for at least six months.

Through Metro's Audit Management Services Department (MASD), the Diversity & Economic Opportunity Certification Unit commissioned an external audit of firms designated as LSBEs. The audit reviewed 1,110 firms in two phases: 560 firms (50%) in September 2024 and 550 (50%) firms in July 2025. Of these, 1,048 firms (95%) were confirmed as appropriately designated LSBEs, while 52 firms (5%) had the LSBE designation removed.

Although the audits confirmed a strong level of compliance, they also identified opportunities to strengthen verification practices, which was primarily vetted through the review of tax returns, business license, and other financial documents. Specifically, auditors recommended collecting new documentation that provides greater accuracy of a company or business' primary location, including:

- Utility bills from the first and sixth months of operations,
- Lease agreements, if applicable, and
- Reliable state filings such as Statements of Information for Corporations and LLCs.

In response to the September 2024 audit report, Metro updated its LSBE policies and procedures to incorporate these recommendations. Effective January 1, 2025, all firms seeking to maintain or obtain LSBE designation must submit Metro's Supplemental Questionnaire, supporting documentation such as utility bills and lease agreements, and the most recent Statement of Information (for Corporations and LLCs). Metro also established an LSBE Quality Assurance process, requiring an annual review of documentation to ensure continued eligibility. Staff sent notices to the SBE database in December 2024 to inform the small business community of the new LSBE pilot policy changes and requirements. These changes were also announced during Metro's monthly How To Do Business with Metro Workshop and updated on Vendor Portal.

The external audits, combined with Metro's policy enhancements, have significantly strengthened the LSBE Preference Program's verification standards. These actions ensure the accuracy and integrity of LSBE designations, while reinforcing Metro's commitment to supporting qualified local small businesses in Los Angeles County.

DETERMINATION OF SAFETY IMPACT

This Board action will not have an impact on safety standards for Metro.

FINANCIAL IMPACT

There is no financial impact with the approval of this recommendation.

EQUITY PLATFORM

Metro's Local Small Business Enterprise (LSBE) Preference Program plays a critical role in advancing regional economic equity by keeping more transportation dollars circulating within Los Angeles County while also expanding opportunities for firms that have historically faced barriers to entry in the transportation industry. The program does this by building on Metro's Small Business Enterprise (SBE) certification, which already targets firms that are small, diverse, and often disadvantaged. Currently, 71% of Metro-certified SBEs are also certified as DBEs, demonstrating a strong overlap between local small businesses and historically underrepresented firms. By focusing on local SBEs, the program supports regional economic recovery, strengthens the small business sector, and fosters long-term wealth-building in economically and socially disadvantaged communities. Metro now maintains a registry of 2,356 certified SBEs (up 5% from the last reporting), of which 1,191 firms hold LSBE designation (up 6%), and 1,671 are certified as DBEs. Approximately 900 or 75% of LSBE firms are headquartered within Equity Focus Communities (EFCs).

This overlap between DBE, SBE, and LSBE certification categories enables a powerful equity multiplier effect. By embedding local small businesses into a broader range of procurement types, including construction, commodities, professional services, and low-bid contracts, Metro is actively building an inclusive procurement ecosystem.

VEHICLE MILES TRAVELED OUTCOME

VMT and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. While this item does not directly encourage taking transit, sharing a ride, or using active transportation, it is a vital part of Metro operations, as it supports small, local businesses by providing them with access to contracting opportunities and helping them grow their capacity to participate in Metro's large-scale infrastructure projects and day-to-day operations. In addition, supporting local businesses supports job creation in LA County and may increase the percentage of our workforce that is able to commute using LA Metro's transit system and reduce car dependence for these workers. Because the Metro Board has adopted an agency-wide VMT Reduction Target, and this item generally supports the overall function of the agency, this item is consistent with the goals of reducing VMT.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The recommendations support strategic plan Goal 5.5, “Expanding opportunities for businesses and external organizations to work with Metro”.

ALTERNATIVES CONSIDERED

The Board could elect not to approve the Local Small Business Enterprise (LSBE) Preference Program. This is not recommended as it would limit Metro’s ability to advance equity in procurement, support local business growth, and foster inclusive economic opportunity.

NEXT STEPS

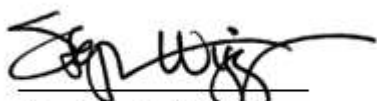
Upon Board approval, staff will proceed to transition the LSBE Preference Program from pilot status to a permanent program.

ATTACHMENT

Attachment A - Motion 31

Prepared by: Ramon Ortiz, Director of Certification, Diversity & Economic Opportunity
Department (213) 922-7591
Elke Campbell, Deputy Executive Officer, Diversity & Economic
Opportunity Department (213) 418-3081
Tashai Smith, Executive Officer, Diversity & Economic Opportunity
Department (213) 922-2128

Reviewed by: Sharon Gookin, Deputy Chief Executive Officer, (213) 418-3101



Stephanie Wiggins
Chief Executive Officer



Metro

Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
3rd Floor Board Room
Los Angeles, CA

Board Report

File #: 2021-0686, **File Type:** Motion / Motion Response

Agenda Number: 31.

CONSTRUCTION COMMITTEE MEETING OCTOBER 21, 2021

Motion by:

DIRECTORS HAHN, DUPONT-WALKER, BUTTS, MITCHELL, DUTRA, AND KUEHL

Local Preference

Every year, Metro pays hundreds of millions to contractors to build, operate, and plan transportation projects across Los Angeles County. Most of this comes from local sales taxes, which we all pay into to address our infrastructure needs.

In May 2021, the US Department of Transportation (DOT) authorized a four-year pilot program allowing agencies like Metro to use Federal dollars for local hire, to target these resources for workforce development in the communities where our transportation projects are being built.

As LA County emerges from the COVID-19 pandemic, it is more important than ever to support local economic opportunity, to ensure a path to economic recovery that especially targets communities where our transportation projects are being built and in economically and socially disadvantaged communities.

State law disallows the use of local preference in procurements awarded to the lowest bidder, and it is silent on giving local preference when procurements are awarded based on an array of criteria that are not limited to the lowest bidder.

So we can maximize our ability to support our region's local economic opportunity with regional transportation dollars, Metro should give local preference on applicable procurements. Doing this involves possible changes to Metro policies and State and Federal laws and regulations.

SUBJECT: LOCAL PREFERENCE

RECOMMENDATION

APPROVE Motion by Directors Hahn, Dupont-Walker, Butts, Mitchell, Dutra, and Kuehl that directs the CEO to:

A. Survey local preference best practices nationally and make recommendations for local preference

criteria;

- B. Evaluate and recommend changes to Metro policies regarding advancing local preference in small, medium, and disadvantaged business contracting;
- C. Review State and Federal laws and regulations and make recommendations for inclusion in future Federal and State Legislative Priorities; and,
- D. Report back on these requests in February 2022.



Local Small Business Enterprise (LSBE) Preference Pilot Program Update

Executive Management Committee

October 16, 2025



Metro

RECOMMENDATION / BACKGROUND

Receive and File the Local Small Business Enterprise (LSBE) Preference Program Pilot Final Report, and

Approve the Local Small Business Enterprise (LSBE) Preference Program

Background:

- Launched: August 2022
- Purpose: Expand opportunities for Local Small Business Enterprise
- Policy Expansion: Extended preference to state/local low-bid procurements in Jan 2023
- Applies to non-federally funded negotiated (RFP) and competitive low bid (IFB) procurements greater than \$100,000 with SBE/DVBE goals

LSBE DESIGNATION

To qualify as a LSBE:

- A firm must be SBE certified with Metro and headquartered in the County of Los Angeles for at least the last 6 months prior to receiving the designation
- Headquartered means that the business physically conducts and manages all its operations from a location in the County.
- To maintain the LSBE designation or if seeking the LSBE designation for the first time, firms are required to submit supporting documentation (i.e. Metro's Supplemental Questionnaire, Utility Bills, and Lease Agreements, etc.)

LSBE PREFERENCE APPLICABILITY

The 5% LSBE Preference is applied in two ways:

As a bid price reduction (for evaluation purposes only) on low-bid procurements; or

As bonus points added to the total score during the evaluation for negotiated procurement

To be eligible for the LSBE preference, Offerors must meet one of these LSBE requirements:

- (1) LSBE Prime; or
- (2) Non-LSBE Prime that subcontracts at least 30% of its contract value with LSBE subcontractors

Key Outcomes

Total Solicitations 59 (47 RFPs, 11 IFBs, 1 RFQ)	LSBE Primes 10 awards, avg. LSBE commitment 47.05%	Non-LSBE Primes w/>30% LSBE subcontracting Twenty-one	LSBE Subcontractors Sixty-six	Total Dollars Committed to LSBEs \$139.8M	Avg. LSBE Commitment 14.60%



Program Effectiveness

Expanding Access More LSBEs competing as primes & subcontractors	Driving Equity Contracts more evenly distributed	Economic Growth \$139.8M in commitments, supporting jobs and local growth	Sustainable Practice Consistently applied across RFPs, IFBs, RFQs



Strategic Insights

Preference influences both primes and subcontractors	High-dollar solicitations drive greatest LSBE impact	Gap exists between primes >30% and <30% subcontracting	Broad subcontractor pool (66 LSBEs engaged)	Program scalable and sustainable across procurement types	Strong alignment with equity & economic development goals



Q & A

Thank you



Metro



Metro

Board Report

Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
3rd Floor Board Room
Los Angeles, CA

File #: 2025-0805, File Type: Program

Agenda Number: 10.

REVISED
PLANNING AND PROGRAMMING COMMITTEE
OCTOBER 15, 2025
EXECUTIVE MANAGEMENT COMMITTEE
OCTOBER 16, 2025

**SUBJECT: LINK UNION STATION PROJECT FINAL SUPPLEMENTAL ENVIRONMENTAL
IMPACT REPORT CERTIFICATION**

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

CONSIDER:

- A. CERTIFYING the Final Supplemental Environmental Impact Report (Final SEIR) for the Link Union Station [Project <https://www.linkunionstation.com/>](https://www.linkunionstation.com/) (Link US) described in Attachment A;
- B. AUTHORIZING the Chief Executive Officer (CEO) to file a Notice of Determination (NOD) with the State of California Clearinghouse, and the Los Angeles County Clerk (Attachment B); and
- C. ADOPTING the following reports for Link US, in accordance with the California Environmental Quality Act:
 - 1. Findings of Fact and Statement of Overriding Considerations (Attachment C).
 - 2. Revised Mitigation Monitoring and Reporting Plan (Attachment D).

ISSUE

Implementation of Link US is expected to improve the overall efficiency of Metrolink, Amtrak, and future California High Speed Rail Authority (CHSRA) trains that serve patrons traveling to and through Los Angeles Union Station (LAUS) by reducing the amount of time it takes for trains to arrive and depart Union Station by up to 30 minutes per train. The viaduct would benefit services such as the Amtrak Coast Startlight, Amtrak Texas Eagle, Los Angeles-San Diego-San Luis Obispo rail corridor (LOSSAN) - Pacific Surfliner, Metrolink Antelope Valley, Orange County, Riverside County, San Bernardino Train Lines that connects to Pomona North new connection to LA Metro A line and

Ventura County, Metrolink 91/Perris Valley Line, future service of High Speed Rail from Los Angeles to Anaheim.

The Link US SEIR discloses changed circumstances that have occurred since certification of the Link US Final EIR on June 27, 2019, the subsequent approval of CEQA Addendum No. 1, and the adoption of the Revised Mitigation Monitoring Reporting Plan (MMRP) on October 28, 2021.

The Link US Final SEIR includes new design elements, refinements, and additional impacts that were not identified in the Final EIR. Certification of the Final SEIR will allow staff to continue to design and perform right-of-way activities, including the relocation work that started under the Phase 1 Preconstruction Services for Link US Phase A. Board approval is needed to certify the Link US Final SEIR.

BACKGROUND

Link US will transform LAUS from a stub-end to a run through track station by providing run-through capability, enabling one-seat rides between Orange and Ventura Counties and from San Diego to San Luis Obispo. Link US will address existing capacity constraints and improve schedule reliability by providing reduced trip times, reducing delays, and improving on-time performance of regional and intercity trains that operate out of LAUS, serving the southern California region on six Metrolink lines and the LOSSAN corridor. The proposed improvements include a new viaduct structure connecting eight (8) new run-through tracks for regional and intercity trains, south of LAUS Platforms 2 through 5. These tracks would merge into a minimum of four (4) tracks on a viaduct over US-101 and continue south to connect to mainline tracks along the west bank of the Los Angeles River. Link US would replace the existing pedestrian passageway under the platforms and tracks with a new expanded passageway. The viaduct would benefit Amtrak Coast Startlight, Amtrak Texas Eagle, LOSSAN Pacific Surfliner, Metrolink Orange County Line, Metrolink 91/Perris Valley Line, future service of High-Speed Rail from Los Angeles to Anaheim. Other Link US project improvements are depicted in Attachment A.

With CHSRA serving as the lead agency responsible for preparing the Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) and Metro serving as the lead agency responsible for preparing the Environmental Impact Report (EIR) under California Environmental Quality Act (CEQA), both agencies agreed to prepare a joint supplemental environment document for Link US to address the changed conditions and additional impacts that were discovered after the EIR was prepared in 2019.

In September 2020, and in response to the potential need for railroad improvements at Malabar Yard, CHSRA issued a revised Notice of Intent (NOI) to initiate additional scoping and solicit public agency input on the development of the Draft Environmental Impact Statement (DEIS). Metro anticipates CHSRA will approve the Final EIS in November 2025. NEPA clearance is necessary to ensure the Final EIS includes all required information to meet federal environmental guidelines, so Link US can be eligible to receive federal funding.

On October 28, 2021, Metro issued CEQA Addendum No. 1 and adopted the Revised MMRP to address the impacts affecting the city of Vernon. In December 2022, Metro elected to prepare a Final

SEIR to disclose minor additions/changes that were not included in the Final EIR that was certified.

Circulation of Draft EIS/SEIR

The Draft EIS/SEIR for Link US was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024. A total of 136 comments were received during the public comment period (including an additional five comments received after the public comment period). Refinements to the Preferred Alternative were made in response to public comments received during the comment period. Comments related to historic preservation, and consulting parties through the cultural resources process were considered. Additional modifications were made in response to engineering design opportunities aimed at reducing costs and minimizing project impacts, as compared to the Build Alternative considered in the Draft Environmental Document.

Public Hearing

A Public Hearing for Link US was held on Tuesday, July 9, 2024, from 6:00 p.m. to 8:00 p.m. in the Metro 3rd Floor Board Room at One Gateway Plaza, Los Angeles, CA 90012, with a simultaneous virtual session held via Zoom. Approximately 29 attendees signed up for the in-person hearing, while around 30 participants attended online. Link US received 133 comment submissions via comment card, email, info line, and online comment form. Language interpretation services were available in Mandarin, Cantonese, Spanish, and Japanese, but were not utilized by participants

DISCUSSION

As disclosed in the Final SEIR, the regional and intercity rail run-through track connection to the mainline track (lead track) would result in a temporary impact on Burlington Northern Santa Fe (BNSF) West Bank rail yard operations. After the certification of the Final EIR and before the start of the EIS/SEIR, it was determined that the permanent acquisition of a portion of the BNSF West Bank storage yard would be required to accommodate construction of a new rail embankment on the west bank of the Los Angeles River wide enough to support regional and intercity tracks and future high speed rail tracks. Off-site mitigation to address freight related impacts is proposed at BNSF's Malabar Yard in the City of Vernon (City), primarily on 46th Street and 49th Street. Malabar Yard, a BNSF-owned and operated facility, was selected to offset the permanent loss of 5,500 track feet of storage track capacity at the BNSF West Bank Yard. Currently, 49th Street bisects Malabar Yard. The proposed closure of 49th Street would accommodate 3,350 new track feet of freight storage track capacity that does not exist at BNSF's Malabar Yard. Additionally, a new track connection is proposed between two existing track segments along 46th Street to enable direct freight rail access to and from BNSF's Malabar Yard and Los Angeles Junction (Attachment E).

Following the release of the Draft SEIR/DEIS for public review and comment, and during the preparation of the Final EIS and Final SEIR, several modifications and changes were made to Link US. These changes were informed by public and agency comments, ongoing coordination with stakeholders, technical refinements, and updated environmental and engineering analyses. The modifications aim to reduce environmental impacts, respond to community comments and regulatory concerns, improve constructability, and enhance overall project feasibility.

The next paragraphs outline key modifications made between the presentation of the Draft and Final Environmental documents for Link US and are followed by general information about the Revised

MMRP and the environmental review process (i.e., Public Hearing, Community Engagement, and Response to Final SEIR Comments Received and the Availability of the Final SEIR). Additional information about updated mitigation measures and community engagement for the Final SEIR are summarized in Attachments F and G.

KEY MODIFICATIONS

Maintain Vignes Street Bridge

In lieu of replacing the Vignes Street Bridge as originally proposed in the Draft SEIR/EIS, space will be made available for an additional lead track within the LAUS rail yard throat just south of the bridge. This change will minimize construction-related impacts to the surrounding area, and facilitate enhanced train operations for Metrolink, Amtrak, and CHRSA in the future.

Modified Elevated Rail Yard

This change includes providing a shorter elevated rail yard with fewer raised platforms than originally proposed. Instead of six raised platforms, only four platforms would be raised nine to twelve feet above the existing grade. The new platform and track configurations are as follows:

- two (2) platforms for regional (Metrolink) and intercity (Amtrak) rail trains,
- two (2) platforms with four (4) tracks for future CHSRA trains constructed to meet level-boarding requirements, and
- two (2) tracks at existing grade with stub-end tracks would continue to be allocated for Metrolink regional and Amtrak intercity trains.

Revised Concourse-Related Improvements

The following revisions to the concourse will reduce construction complexity, project costs, and visual impacts:

- The West Plaza baggage handling and ticketing services in the Amtrak building, and canopy will be removed. No changes to the exterior loading dock or parking area outside of the Amtrak building will be required.
- The existing pedestrian passageway is 28 feet wide. The Draft SEIR/EIS proposed replacing it with a 140-foot-wide passageway. However, the modified design reduces the passageway width to 100 feet. This change will improve pedestrian capacity and comply with the Americans with Disabilities Act safety features.
- Providing a canopy to cover the entire rail yard is no longer being considered. Instead, four individual canopies 25 feet high (like the existing butterfly canopies, in style) will be adjusted to fit over the four new wider and longer platforms.

Fewer Run-Through Tracks for Modified Single Aerial Viaduct

South of the elevated platforms, a single bidirectional 75-foot-wide aerial viaduct that extends from LAUS, over US-101, to the west bank of the Los Angeles River, will be constructed, in lieu of the 205-foot-wide viaduct that was proposed in the Draft SEIR/EIS. This modified structure will reduce the total number of run-through tracks from ten (10) to eight (8). The eight (8) run-through tracks will merge into four (4) tracks on the portion of the viaduct that extends over US-101. The tracks will merge again into two (2) tracks on the portion of the viaduct west of Center Street and then connect

to the Amtrak lead (or mainline track) before transitioning to the BNSF West Bank Yard.

REVISED MITIGATION MONITORING REPORTING PROGRAM (MMRP)

The Revised MMRP summarizes minor updates and refinements to the mitigation measures that are identified in the original MMRP, and reports on any adverse impacts that remain after implementing the design options considered for the Malabar Yard railroad improvements. These changes will do the following:

- 1) Address the changed circumstances considered in the SEIR.
- 2) Clarify the implementation approach and responsibilities.
- 3) Cite new policies/regulations applicable to the mitigation.

Refer to Attachment G for an overview of enhancements included in the Final EIS/SEIR as additional mitigation measures (quiet zones, pedestrian and streetscape upgrades, transit amenities, active transportation and Transit Oriented Community (TOC) support).

ENVIRONMENTAL REVIEW PROCESS

California Environmental Quality Act (CEQA)

Metro, as the lead agency and project proponent, upon formally certifying the Final SEIR, affirms that the CEQA document was completed in full compliance with CEQA and was reviewed and considered prior to project approval. This certification confirms the legal adequacy of the environmental document and demonstrates that decision-makers have reviewed and understood the environmental consequences. As part of this action, the Board also adopts the required findings- including Statements of Overriding Considerations, if applicable- and the Mitigation Monitoring and Reporting Program (MMRP).

National Environmental Policy Act (NEPA)

The California High-Speed Rail Authority (CHSRA), as the NEPA lead agency, will certify the Final EIS and issue the Record of Decision (ROD) at its Board meeting. Metro staff will pursue financial assistance from CHSRA to support the engineering and construction of the project. NEPA clearance is essential to ensure the environmental document includes all information required to meet federal environmental guidelines and to maintain the Project's eligibility for federal funding. The project is supported by the California State Transportation Agency (CalSTA), Caltrans, and the Federal Railroad Administration (FRA).

Community & Stakeholder Engagement

A series of community engagement meetings were held with various stakeholders and staff briefings with Directors Bass, Los Angeles City Council Districts 1 and 14, and Directors Solis and Hahn were held before, during, and immediately after the Draft EIS/SEIR public review period that took place from June 21, 2024, through August 9, 2024. In-person meetings were also held within the project area near LAUS and the City of Vernon, and six virtual sessions were conducted via Zoom. Project materials and information were made available in English and Spanish during the in-person meetings and on Metro's website. Language interpretation services were available in Mandarin, Cantonese, Spanish, and Japanese. Community and stakeholder attendance varied across different forums

ranging from 3-20 attendees. Attachment F lists community and stakeholder meetings.

After the Public Hearing, there was ongoing coordination with members of the Little Tokyo and Los Angeles River Artists and Business Association (LARABA) communities to address the construction impacts related to the US-101 viaduct. The proposed mitigation measures include:

- Covered temporary night-time closures of the southbound ramps at Commercial Street.
- Aesthetic features for the viaduct columns.
- Streetscape improvements and bike lane enhancements.

On February 21, 2025, Metro received a letter of comment from the Housing Authority of the City of Los Angeles and William Mead Homes, requesting the following:

- Construction of a soundwall before work begins on the throat rail track area to mitigate noise.
- Coordination of aesthetic features of the soundwall.
- Air quality monitoring during construction.

The William Mead Homes and Hilda Solis Care First Village are located north of LAUS and near the proposed Link US improvements. To address the concerns raised by both organizations, soundwall abatement is proposed to help mitigate construction noise and dust and provide long-term noise reduction benefits for the surrounding communities.

Refer to Attachment F for an overview of other community/stakeholder engagement.

City of Vernon Workshops

After the Draft EIS/SEIR 45-day public comment period, Metro coordinated with City staff to address the concerns raised by the community, and in response, Metro proposed a suite of community improvements to offset the adverse effects of the Malabar Yard railroad improvements. When the City requested additional community improvements they were accommodated by the team. The Link US team participated in workshops with Vernon staff from September 2024 to May 2025, to gather the input needed to refine the mitigation strategies and to identify additional measures to be implemented to improve the quality of life for the surrounding communities. The topics discussed included traffic congestion, safety, air quality, emergency response, vehicle diversion, and quiet zones; and ensure there will be a comprehensive response to the City's concerns.

Metro evaluated alternative rail sites to mitigate impacts on the BNSF storage rail yard. Malabar Yard, located in the City of Vernon, is predominantly surrounded by industrial land uses and has a residential population of approximately 200 people. In contrast, other comparable rail yards are situated in similar land use areas that have at least 60 times more residential population or would require property acquisitions. Similarly, some rail areas are surrounded by communities that would be more affected by air quality and noise impacts. At Malabar Yard, most residences are located one-quarter to one-half mile away, minimizing potential community impacts.

Additionally, staff met with local business/property owners and the community at large. Metro staff met with Director Hahn on August 6, 2025, and November 4, 2025. These workshops helped to foster collaboration among community members and business owners; marked a shift from previous

outreach efforts that may have been limited; and helped to ensure the proposed mitigation strategies and design refinements being considered were aligned with affected communities and local priorities. The design refinements addressed public comments and concerns about construction impacts, property acquisitions, requests for additional traffic and grade crossing analysis and mitigation, and other issues. The Link US team completed several studies/reports that include, but are not limited to the following, to address the City's concerns:

- Train Redistribution Reduces Train Movements with the new 46th Street connection serving local customers between BNSF's Malabar Yard and BNSF's Los Angeles Junction
- Intersection Blockages would decrease with the use of Malabar Yard to build trains instead of using the street
- Additional Community Mitigation Measures include Train Detection Cameras & AI Traffic Control, Quiet Zones Infrastructure, pedestrian access, and transit amenities.

Refer to Attachment G for an overview of the additional City community mitigation measures and improvements that are proposed.

Comments Received, Responses to Comments & Final EIS/SEIR Availability

Metro staff received Draft EIS/SEIR public comments through multiple channels, including verbal testimony at the Public Hearing, and via email, regular mail, online comment form, written comment cards, and the Project hotline. A total of 479 specific comments were identified, and Metro provided detailed responses to each in the Final SEIR/EIS response to comment section. CHSRA and Metro reviewed all comments received and continued to consult with regulatory agencies, organizations, and members of the public to resolve various concerns and comments raised. These consultations resulted in revisions and updates to the Draft EIS/SEIR documentation, including refinement of the proposed mitigation measures.

When the Final EIS/SEIR is approved and certified it will be made accessible to all from the Link US project website. A digital copy of the Final EIS/SEIR will be mailed to agencies, impacted parcel owners, and Draft EIR commentors. Also, hard copies of the Final EIS/SEIR Executive Summary will be made available in English, Spanish, Cambodian, Korean, Japanese, Chinese, Khmer, and Vietnamese by request. Printed copies of the Final SEIR will be made available at 9 libraries.

Refer to Attachment F for a complete listing of the libraries that will make the Link US Final EIS/SEIR available to the public.

DETERMINATION OF SAFETY IMPACT

Approval of the staff recommendations has no known adverse impact on the safety of Metro's patrons, employees and/or users of the facility.

Link US is being planned and designed in accordance with LA Metro, Metrolink, CHSRA, Caltrans, and city of Los Angeles standards, as well as applicable state and federal requirements.

FINANCIAL IMPACT

This action will not have an impact on the approved FY26 budget. The current Fiscal Year (FY26) budget for Link US under Project No. 460089 is \$41,713,993.57, which includes funding for the Construction Management General Contractor Phase 1 Preconstruction Services.

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 funds required for completing the preliminary engineering and environmental certification are Measure R (3%) Metrolink Commuter Rail Capital Improvements fund and State Transit Intercity Rail Capital Program (TIRCP) fund.

These funds are not eligible for Metro bus or rail operating or capital expenditures.

EQUITY PLATFORM

The increased rail service provided by LinkUS will make it easier for Metrolink riders to access key destinations, such as jobs, housing, and healthcare appointments, as well as provide access to the greater LA Metro public transportation system at LAUS. Link US will also result in reduced train idling times, saving as much as 5 minutes for each ride linking the counties of San Diego, Orange, Riverside, San Bernardino, Ventura, San Luis Obispo, and Santa Barbara to LAUS. The project provides associated fuel savings and emission reductions.

Further, it is estimated that Link US will generate 4,500 jobs during construction, resulting in over 200 permanent jobs. In addition, during Early Work and Phase 2 Construction, the Project Labor Agreement (PLA) and the Construction Careers Policy (CCP) will require the Construction Manager/General Contractor (CM/GC) to hire 40% Targeted Local Workers, 20% Apprentice Workers, and 10% Disadvantaged Workers. Lastly, to mitigate impacts on the LAUS-adjacent William Mead Homes, the first public housing project in the City of Los Angeles constructed in the 1950s and located within a Metro Equity Focused Community, Link US includes construction of a new sound wall designed to reduce noise due to existing and future increases in train operations; and quiet-zone safety improvements at the railroad crossing on North Main Street to reduce the train horn noise in the area.

VEHICLE MILES TRAVELED OUTCOME

Vehicle Miles Traveled (VMT) and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. This

item supports Metro's systemwide strategy to reduce VMT through planning and investment activities that will improve and increase rail service, thereby encouraging taking transit, including Metrolink, Amtrak, Metro Rail, High-Speed Rail, Municipal Bus Systems, and High-Speed Ridesharing.

Metro staff have conducted preliminary analysis to show that the net effect of this multi-modal item is to decrease VMT. Using data provided by the Los Angeles, San Diego, San Luis Obispo Rail Corridor Agency (LOSSAN), Metrolink, and SCAG, it is estimated that this project will result in 299,889,346 additional passenger-miles per year; and an annual reduction in VMT of 239,911,477 per year, or a 679,687 daily VMT reduction.

*Based on population estimates from the United States Census and VMT estimates from the highway performance monitoring system data between 2001-2019.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Link US supports the following Metro Vision 2028 Strategic Goals:

1: Provide high-quality mobility options that enable people to spend less time traveling.

The proposed run-through tracks would increase regional and intercity rail capacity and reduce train idling at Los Angeles Union Station (LAUS), which would enable one-seat rides between Orange and Ventura Counties and from San Diego County to San Luis Obispo County through LAUS, and accommodate a new high-quality transportation option such as High-Speed Rail in Southern California.

2: Deliver outstanding trip experiences for all users of the transportation system.

The proposed new passenger concourse and the new outdoor plaza (West Plaza) would improve customer experience and satisfaction by enhancing transit and retail amenities at LAUS and improving access to train platforms with new escalators and elevators.

4: Transform LA County through regional collaboration and national leadership.

The project requires close collaboration with many local, regional, State and Federal partners including city of Los Angeles, Metrolink, the Los Angeles, San Diego, San Luis Obispo (LOSSAN) Rail Corridor Agency Caltrans, CHSRA, CalSTA, FRA and Amtrak.

ALTERNATIVES CONSIDERED

The Board could delay action to certify the Final SEIR, adopt the Findings of Fact and Statement of Overriding Considerations, as well as the MMRP. However, deferral is not recommended as it would delay the project schedule, including advancing preliminary design and meeting the requirements in existing funding agreements, and for discretionary programs for which staff will be submitting applications for a grant award.

In Fall 2024, Metro submitted an application to the FRA requesting an award from the Federal-State Partnership (FSP) for Intercity Passenger Rail Grant Program and to the California Transportation Commission (CTC) requesting a grant from the Solutions for Congested Corridors Program (SCCP). The FRA did not announce projects selected for a grant award from the FSP Program. The CTC did not select the project for a grant award from the SCC Program.

Staff will continue to explore federal and state funding opportunities, including from the FSP Program and California's Cap and Invest Program, to address the project's estimated funding gap of about \$650 M. Staff will also work with Caltrans in its initiative to develop a framework for Metro and other County Transportation Commissions in the SCAG region to consider for addressing the project's funding gap, including financing.

Any delay in SEIR certification would postpone platform improvements, affecting major events in and around Los Angeles. It would also disrupt timelines and cost estimates in future grant applications and existing funding agreements with the CHSRA and the California State Transportation Agency for Proposition 1A and Transit and Intercity Rail Capital Program (TIRCP) funds. A delay in certification would also directly delay the submittal of grant applications and decrease the opportunity for the project to be selected for awards due to the larger project cost and funding gap that can be reasonably expected for the grant programs to address.

NEXT STEPS

Upon Board approval of staff's recommendation, staff will make the Final EIS/SEIR accessible to all by posting it on Metro's Link US project website. In addition, staff will continue to engage and inform project stakeholders and the community about Link US, while completing the Final SEIR this Fall 2025.

Staff will also support CHSRA in delivering the Final EIS for CAHSR Board consideration this Fall 2025 for approval to help position Link US for federal funding as well as state funding.

ATTACHMENTS

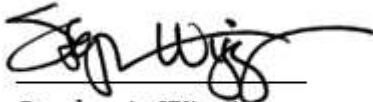
Attachment A - Link US Project Location Map
Attachment B - Link US Notice of Determination
Attachment C - Link US Findings of Fact & Statement of Overriding Considerations
Attachment D - Link US Final SEIR Mitigation Monitoring and Reporting Plan
Attachment E - Malabar Yard Railroad Improvements Location Map
Attachment F - Summary of Community Engagement
Attachment G - Summary of Additional Mitigation Measures

Prepared by: Carlos J. Montez, Deputy Executive Officer, Complete Streets & Highways, (213) 418-3241
Danielle Valentino, Manager, Community Relations, (213) 922-1249
Michelle Smith, Executive Officer, Complete Streets & Highways, (213) 922-3057
Scott McConnell, Executive Officer, Program Management, (213) 922-4980

Michael Cano, Senior Executive Officer, Multimodal Integrated Planning
(Interim), (213) 418-3010

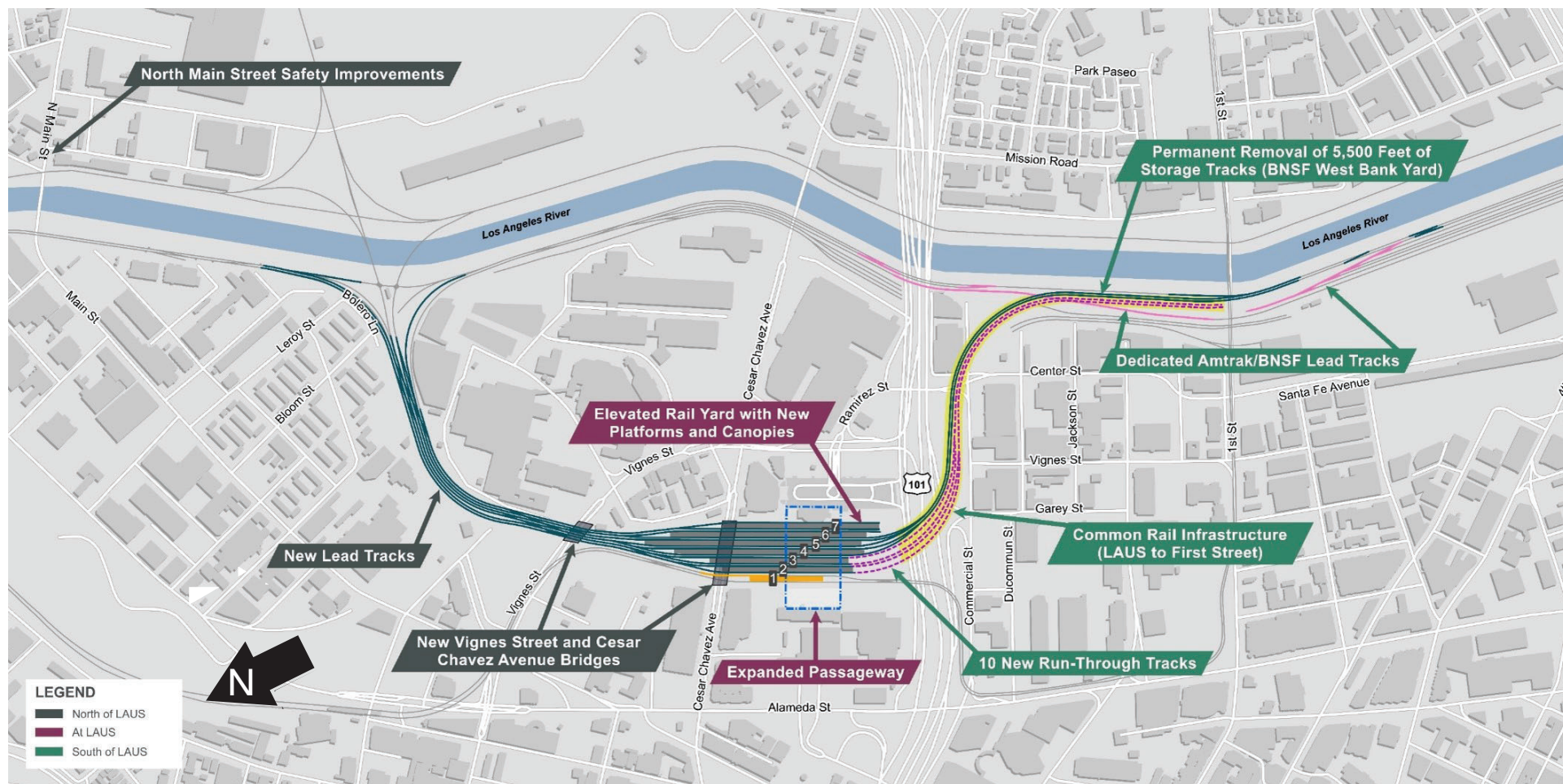
Nicole Ferrara, Deputy Chief Planning Officer, (213) 547-4322

Reviewed by: Tim Lindholm, Chief Program Management Officer, (213) 922-7297
Ray Sosa, Chief Planning Officer, (213) 547-4274



Stephanie Wiggins
Chief Executive Officer

Link US PROJECT LOCATION MAP



Notice of Determination

Appendix D

To:

☐ Office of Planning and Research
U.S. Mail: _____ Street Address: _____
P.O. Box 3044 1400 Tenth St., Rm 113
Sacramento, CA 95812-3044 Sacramento, CA 95814

☐ County Clerk
County of: _____
Address: _____

From:

Public Agency: _____
Address: _____

Contact: _____
Phone: _____

Lead Agency (if different from above): _____

Address: _____

Contact: _____
Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): _____

Project Title: _____

Project Applicant: _____

Project Location (include county): _____

Project Description:

This is to advise that the _____ has approved the above
(☐ Lead Agency or ☐ Responsible Agency)

described project on _____ and has made the following determinations regarding the above
(date)
described project.

1. The project [☐ will ☐ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☐ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☐ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☐ was not] adopted for this project.
6. Findings [☐ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:

Signature (Public Agency): _____ Title: _____

Date: _____ Date Received for filing at OPR: _____

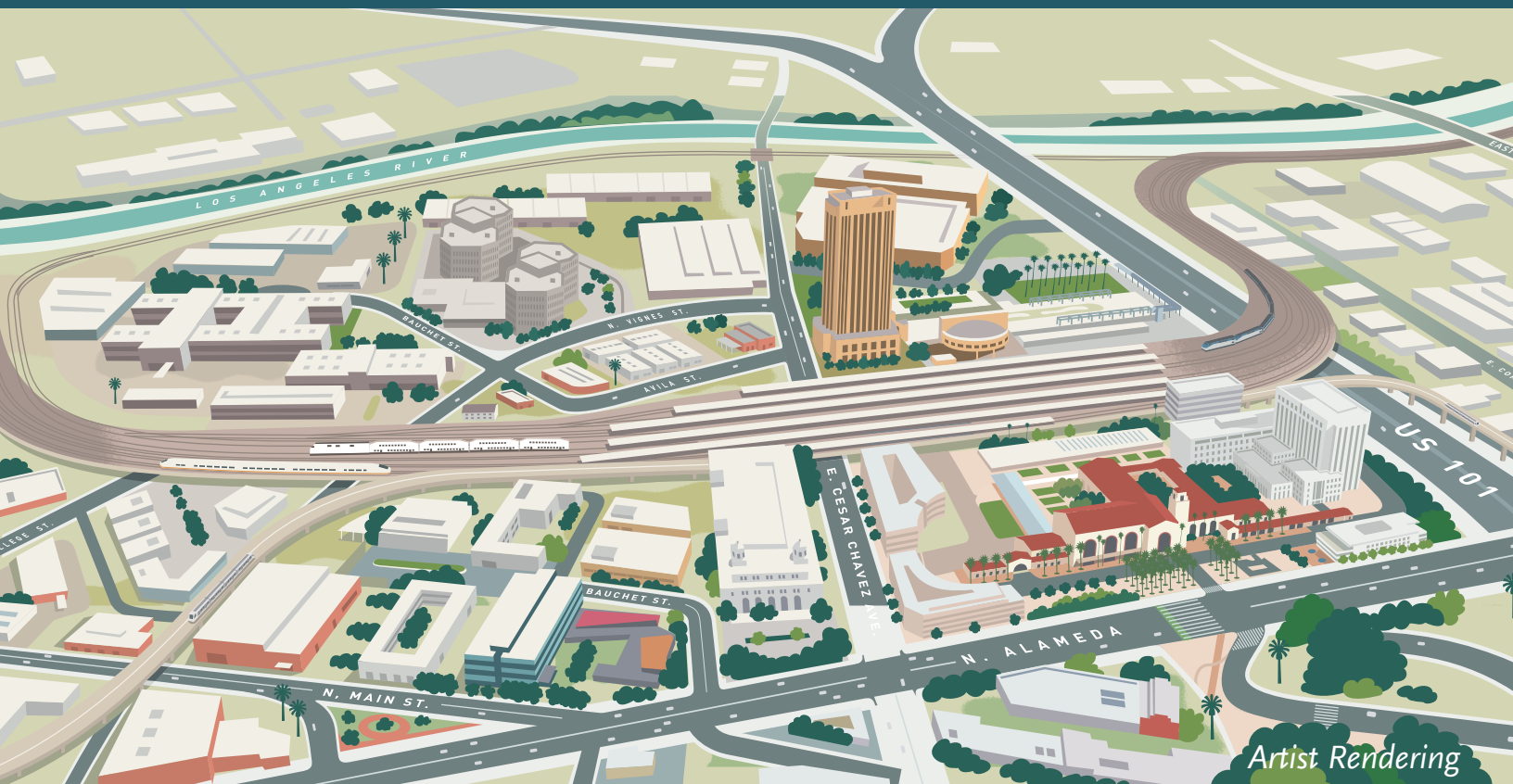
Link Union Station

Supplemental Environmental Impact Report

CEQA Findings of Fact and Statement of Overriding Considerations

State Clearinghouse No. 2016051071

October 2025



Artist Rendering

Independent of Metro's actions as the CEQA lead agency, the California High-Speed Rail Authority (Authority), as the NEPA lead agency pursuant to the NEPA Assignment MOU between FRA and the State of California dated July 23, 2019 (renewed July 22, 2024), is considering issuing a Combined Final EIS/Record of Decision for the Link Union Station Project.

Authority NEPA review and approval for the Project is in progress. Final documents, including the Mitigation Monitoring Reporting Plan (MMRP), will be published when the NEPA process is complete, and the Authority has signed the NEPA Record of Decision.



Metro

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ACRONYMS

ADA	Americans with Disabilities Act
ADI	Area of Direct Impacts
All	Area of Indirect Impacts
ATP	Archaeological Treatment Plan
Caltrans	California Department of Transportation
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGP	construction general permit
CHC	Cultural Heritage Commission
CHSRA	California High-Speed Rail Authority
City	City of Los Angeles
CRHR	California Register of Historical Resources
dBA	A-weighted decibel
EIR	Environmental Impact Report
ESA	Environmental Site Assessment
FTA	Federal Transit Administration
HASP	Health and Safety Plans
HACLA	Housing Authority of the City of Los Angeles
HMMP	Hazardous Materials Management Plan
HSR	High-Speed Rail
LADOT	City of Los Angeles Department of Transportation
LAUS	Los Angeles Union Station
LBP	lead-based paints
Link US	Link Union Station
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHR	Office of Historic Resources
OSHA	Occupational Safety and Health Administration
PM _{2.5}	particulate matter less than 2.5 microns
PM ₁₀	particulate matter less than 10 microns
PMP	Paleontological Mitigation Plan
Project	Link Union Station Project
PRC	Public Resources Code
REC	recognized environmental condition
ROW	right-of-way
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District

SCS	Sustainable Communities Strategy
SCRRA	Southern California Regional Rail Authority
SEIR	Supplemental Environmental Impact Report
SWPPP	stormwater pollution prevention plan
TMP	Traffic Management Plan
U.S.	United States
US-101	United States Highway 101
VCE	vertical circulation elements
WEAP	Worker Environmental Awareness Program Training

1.0 Introduction

The California Environmental Quality Act (CEQA) requires the Los Angeles County Metropolitan Transportation Authority (Metro), as the CEQA lead agency, to: 1) make written findings when it approves a project for which an environmental impact report (EIR) was certified, and 2) identify overriding considerations for significant and unavoidable impacts identified in the EIR.

A Draft EIR (State Clearinghouse No. 2016051071) for the Link Union Station (Link US) Project was distributed and made available for a 45-day public comment period from January 17, 2019, through March 4, 2019, pursuant to CEQA Guidelines Section 15105. The Metro Board of Directors certified the Final EIR and adopted CEQA Findings of Fact as part of their action in approving the Final EIR Project and certification of the Final EIR on June 27, 2019. On October 28, 2021, Metro approved CEQA Addendum No.1 to the Final EIR.

Since certification of the Final EIR and CEQA Addendum No.1 to the Final EIR, Project modifications and changed circumstances were identified which triggered a need for the preparation of a Supplemental EIR (SEIR) pursuant to Section 15163(a) of the CEQA Guidelines. Metro determined that the Project involved new information of substantial importance and could have one or more significant effects not discussed in the Final EIR and CEQA Addendum No.1 to the Final EIR, and these changes triggered the need for additional environmental review.

These CEQA Findings of Fact (Findings) are made relative to the specific conclusions of the Final SEIR prepared for the Project and supplement those associated with the Final EIR. Therefore, these Findings are hereafter referred to as Supplemental Findings. The Supplemental Findings have been submitted by Metro as Candidate Findings to be made by the decision-making body. They are attached to allow readers of this report an opportunity to review Metro's position on this matter and to review potential reasons for approving the Project despite the significant and unavoidable impacts identified in the Final SEIR. It is the exclusive discretion of the decision-maker certifying the Final SEIR to determine the adequacy of the proposed Supplemental Findings.

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2.0 Project Background and History

2.1 Overview of Final EIR Project

The Final EIR Project included three major Project components that are summarized north to south below and depicted on Figure 2-4 of the Final EIR. Figure 2-4 of the Final EIR also depicts the Project study area addressed in the Final EIR, which is divided into three segments that correspond with the major Project components (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment).

- **Throat and Elevated Rail Yard** – The Final EIR Project included subgrade and structural improvements in Segment 1 of the Project study area (throat segment) to increase the elevation of the tracks leading to the rail yard. The Final EIR Project included the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail service providers (Metrolink/Amtrak) and accommodate the planned High-Speed Rail (HSR) system within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The rail yard would be elevated approximately 15 feet. New passenger platforms would be constructed on the elevated rail yard, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (VCE) (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. Platform 1 serving the Gold Line would be lengthened and possibly elevated to optimize east-to-west passenger circulation. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of Control Point (CP) Chavez, the Final EIR Project also included safety improvements at the Main Street at-grade, public crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- **New Modified Expanded Passageway** – The Final EIR Project included expansion of the existing pedestrian passageway in Segment 2 of the Project study area (concourse segment) to a 140-foot width to accommodate a substantial increase in passenger capacity, with enhanced passenger amenities while providing points of safety to meet applicable building code and National Fire Protection Association (NFPA) 130 requirements for safe evacuation. The new modified, expanded passageway and associated concourse improvements would facilitate enhanced passenger circulation below the rail yard and provide space for ancillary support functions (back of house uses, baggage handling, etc.), transit-serving retail, and office/commercial uses while creating an opportunity for an outdoor, community-oriented space with new plazas east and west of the elevated rail yard (East and West Plazas). Amtrak ticketing and baggage check-in services would be enhanced, and new carousels would be constructed in a centralized location under the rail yard. A canopy would be constructed over the West Plaza up to 70 feet in height. Individual canopies that would extend up to 25 feet over each platform or a grand canopy that would extend up to 75 feet in height over the rail yard would also be

CEQA Findings of Fact and Statement of Overriding Considerations

constructed. Platform enhancements and amenities including a new or modified canopy and furnishings along Platform 4 may also be implemented in the interim condition. The new modified expanded passageway and associated concourse improvements would be functionally modern with enhanced safety elements, Americans with Disabilities Act (ADA) accessibility, and passenger amenities in accordance with the basic Project objectives.

- **Run-Through Tracks** – The Final EIR Project included up to 10 new run-through tracks (without a loop track) south of Los Angeles Union Station (LAUS) in Segment 3 of the Project study area (run-through segment). Run-through track infrastructure extending from LAUS to the area where the Amtrak lead track is located would be constructed on common infrastructure wide enough to support regional/intercity rail trains in the interim and full build-out condition, as well as HSR trains in the full build-out with HSR condition.

The Final EIR Project also required modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, PTC, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

The MMRP, adopted by the Metro Board of Directors on June 27, 2019 with certification of the Final EIR identified mitigation measures specific to the following topics: land use and planning, transportation and traffic, aesthetics, air quality and global climate change, noise and vibration, biological resources, hydrology and water quality, geology and soils, hazards and hazardous materials, and cultural resources.

In addition, the Final EIR disclosed significant and unavoidable impacts related to air quality (short-term construction), noise (short-term construction), and cultural resources (long-term operations), but no feasible mitigation measures were identified to reduce impacts to a level less than significant.

2.2 Overview of Link US CEQA Addendum No. 1

On October 28, 2021, Metro approved CEQA Addendum No. 1 to the Link US Project Final EIR and adopted a Revised MMRP. Pursuant to Section 15164(a) of the CEQA Guidelines, CEQA Addendum No. 1 was prepared to address the following:

1. Requirements of SB 743 and the 2018 CEQA Guidelines Appendix G environmental checklist, and the City of Los Angeles Department of Transportation (LADOT) new VMT analysis guidance (July 2019) and methodology requirements (July 2020).
2. Changes to the approved MMRP including:
 - a. Seven minor corrections to previously approved mitigation measures.

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- b. Removal of one mitigation measure because LOS, considered in the 2019 Final EIR, is no longer a significant impact under CEQA, and the updated VMT analysis shows that the measure is no longer required.
3. Project modifications to the Final EIR Project in Segment 2, related to the construction approach for Platforms 2 and 3 and Tracks 3 through 6 in the LAUS rail yard and the associated configuration and length of VCEs for these platforms.

The Revised MMRP adopted in conjunction with the approval of CEQA Addendum No. 1 included updates to the text of the following mitigation measures:

- Mitigation Measures HIST-1a, HIST-1c, and HIST-4 were updated to allow for the City of Los Angeles Office of Historical Resources (OHR) and the City of Los Angeles Cultural Heritage Commission (CHC) to participate in the review of the alterations, demolition, and restoration plans for any locally designation resources that may be impacted by the Project. Mitigation Measures HIST-1d, HIST-2, and HIST-3 were also refined to establish Metro as the enforcement agency during compliance monitoring and reporting.
- Mitigation Measure HWQ-1 was updated to reflect a minor technical change to the risk level.
- Mitigation Measure TR-2 was removed from the MMRP, as traffic impacts based on LOS, as considered in the 2019 Final EIR is no longer a significant impact under CEQA, and the updated VMT analysis demonstrates that the measure is no longer required.

2.3 Changed Circumstances Addressed in Draft SEIR

The Draft SEIR addressed the following five (5) changed circumstances to the Final EIR Project certified in the Link US Project Final EIR on June 27, 2019.

The changed circumstances are as follows:

1. BNSF West Bank Yard - Modified Proposed Project and Malabar Yard Mitigation (Project Change)
2. Hilda L. Solis Care First Village Transitional Housing Facility (Changed Environmental Setting)
3. Kelite Factory Plant No. 1 and Archaeological Site CA-LAN-1575/H (Changed Environmental Setting)
4. Noise Model Calculation Assumptions (Minor Technical Adjustment)
5. Revised Mitigation Monitoring Reporting Program (Minor Updates and Refinements)

2.4 Changed Circumstances Addressed in Final SEIR

Air Quality Carbon Monoxide Screening Analysis (Minor Technical Adjustment)

After the close of the 45-day public comment period, a discrepancy in the traffic volume figures used to support the carbon monoxide (CO) hot-spot analysis and the traffic volume figures used to support the traffic impact analysis was identified. Supporting documentation with corrected figures to support the current CO hot-spot analysis conclusions is included in the Final SEIR. Upon completion of this reanalysis, the conclusion that the Project would not result in a CO hot-spot did not change.

Refinements to the Modified Proposed Project Considered in the Draft SEIR

The Draft SEIR was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024, pursuant to CEQA Guidelines Section 15105 and NEPA 40 Code of Federal Regulations (CFR) 1502.19. After the close of the 45-day public comment period, Metro proposed design modifications to the Modified Proposed Project considered in the Draft SEIR. The proposed design variations, refinements, and reductions that are addressed in the Final SEIR are in addition to the Project change noted above related to the BNSF West Bank Yard - Modified Proposed Project and Malabar Yard Mitigation, and are comprehensively considered as the refinements to the Modified Proposed Project considered in the Final SEIR.

The proposed design variations, refinements, and reductions as part of the Modified Proposed Project considered in the Final SEIR were developed based on new information from public comments received during the 45-day public comment period related to historic preservation, comments from the State Historic Preservation Officer (SHPO) and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Modified Proposed Project considered in the Draft SEIR, and reduce cost in a manner that would still allow Metro to meet the CEQA goals and objectives.

The modifications/reductions associated with the refinements to the Modified Proposed Project considered in the Final SEIR would occur throughout all segments of the Project study area. The reduced scope and scale of proposed infrastructure are summarized below:

- One bridge would be replaced north of LAUS, versus two bridges (50% less).
- Four versus six platforms are being elevated and reconstructed (33% less).
- The expanded passageway is 100 feet wide versus 140 feet wide (30% less).
- The run-through track structure south of LAUS is narrower (about 30% less deck area).

2.5 Description of Changed Circumstances

Descriptions of the changed circumstances addressed in the Final SEIR are summarized below.

1. BNSF West Bank Yard (Modified Proposed Project and Malabar Yard Mitigation) (Project Change)

In Segment 3 of the Project study area, the Final EIR Project included common rail infrastructure,¹ extending from LAUS to the area where the Amtrak lead track is located to support regional/intercity rail and HSR trains. The common rail infrastructure as part of the Final EIR Project did not extend over the Amtrak Bridge or along the west bank of the Los Angeles River. As disclosed in the Final EIR, the regional/intercity rail run-through track connection to the main line tracks would result in temporary impacts on the BNSF West Bank Yard because existing storage tracks could be restored to their existing capacity after regional/intercity rail main line connections are complete. In the Final EIR, potential impacts resulting from the displacement and relocation of the BNSF West Bank Yard were anticipated to be fully addressed in the EIS/EIR being prepared by California High-Speed Rail Authority (CHSRA) for the Los Angeles to Anaheim Project Section of the planned HSR system. At the BNSF West Bank Yard, the Final EIR Project also included a track configuration that would require Amtrak intercity rail trains and BNSF freight trains to operate on the same lead track to access to the Amtrak maintenance facility in the vicinity of Redondo Junction, and the remainder of the BNSF West Bank Yard, respectively. CEQA Addendum No. 1 did not address any updates to the Final EIR Project in Segment 3 of the Project study area or at the BNSF West Bank Yard.

In October 2019, after CHSRA assumed NEPA federal lead agency responsibilities from the FRA, CHSRA and Metro considered new alternatives that would include common rail infrastructure from LAUS to the main line tracks along the Los Angeles River and permanent impacts to the freight storage tracks at the BNSF West Bank Yard. In September 2020, at CHSRA's request, the FRA issued a Revised NOI, pursuant to the requirements of NEPA, to initiate additional scoping and solicit additional public and agency input for the Malabar Yard railroad improvements in the City of Vernon. The Malabar Yard railroad improvements were identified to offset the permanent loss of freight storage tracks at the BNSF West Bank Yard and avoid or reduce the potential for significant impacts on freight rail operations. In December 2022, Metro also elected to consider a track configuration at the BNSF West Bank Yard that would allow for Amtrak trains and BNSF trains to enter/exit the west bank area on separate and dedicated tracks. Dedicated BNSF and Amtrak lead tracks at the BNSF West Bank Yard was not a configuration studied by Metro until December 2022.

The Modified Proposed Project considered in the Draft SEIR includes common rail infrastructure from LAUS to the west bank of the Los Angeles River in conjunction with dedicated lead tracks for Amtrak and BNSF freight trains; thereby resulting in permanent loss of approximately 5,500

¹ Tracks, platforms, bridges, embankments, and associated civil/railroad infrastructure that would accommodate both regional/intercity rail trains and HSR trains.

CEQA Findings of Fact and Statement of Overriding Considerations

feet of freight storage track capacity at the north end of the BNSF West Bank Yard (majority of lost capacity would occur north of 1st Street). Approximately 24,645 feet of existing track at the BNSF West Bank Yard (south of 1st Street) would not be affected by the Modified Proposed Project.

Permanent loss of storage tracks at the BNSF West Bank Yard would result in a significant impact, and mitigation is proposed to offset the loss of storage track capacity at the BNSF West Bank Yard. Mitigation Measure TR-3 requires implementation of the following two railroad improvements at BNSF's Malabar Yard in the City of Vernon:

- **49th Street Closure:** Closure of the 49th Street at grade railroad crossing would accommodate approximately 3,350 track feet of storage capacity that does not exist at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. Two design options are considered for the closure of the at-grade crossing at 49th Street.
- **46th Street Connector:** An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction. Two design options are considered for the new track connection along 46th Street.

Railroad improvements to the BNSF Malabar Yard may result in potential significant impacts on the environment. Therefore, Metro as the CEQA Lead Agency, prepared a full environmental evaluation of the Malabar Yard railroad improvements in the City of Vernon for each of the environmental topic areas listed in Appendix G of the 2023 CEQA Guidelines. The full environmental evaluation for the Malabar Yard railroad improvements is included in the Final SEIR.

2. Hilda L. Solis Care First Village Transitional Housing Facility (Changed Environmental Setting)

On September 29, 2020, the Los Angeles County Board of Supervisors voted to approve the *Vignes Street Interim Housing Project*, which is referred to in this SEIR as the Hilda L. Solis Care First Village Transitional Housing Facility (Care First Village). The 60,500-square-foot transitional housing facility opened in May 2021 and was developed using prefabricated modular units, using 60 locally repurposed shipping containers, and 20 custom-manufactured mobile trailers that provide 232 housing units with associated kitchen space, dining areas, laundry facilities, dog park and landscaped areas, and administrative spaces.

Care First Village is considered a sensitive receptor due to the presence of residential populations and is evaluated as such within the Final SEIR as this facility was not present during preparation of the EIR from 2018 to 2019.

CEQA Findings of Fact and Statement of Overriding Considerations

3. Kelite Factory Plant No. 1 and Archaeological Site CA-LAN-1575/H (Changed Environmental Setting)

Since certification of the Final EIR and approval of CEQA Addendum No. 1, changes were made to the Project design that resulted in an expansion of the Area of Direct Impacts (ADI) and Area of Indirect Impacts (All), thus representing the current ADI and All for the Modified Proposed Project considered in the SEIR.²

Additional cultural resource reports have been prepared to 1) identify historical resources in the updated All that have crossed the 45-year age threshold for evaluation; and, 2) update known information of previously identified historical resources based on recent cultural resource investigations performed for other Metro projects. Based on these cultural resource reports, two additional built environment properties have been identified:

- **934 Avila Street.** The 934 Avila Street property was identified during preparation of the Second Supplemental Cultural Resource Report. It consists of a concrete block masonry modern industrial warehouse building constructed circa 1977. The property was found not to meet any of the eligibility criteria under the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) and is therefore not discussed further within this SEIR. The California SHPO concurred with the determination of ineligibility on June 28, 2023.
- **Kelite Factory Plant No. 1.** The Kelite Factory Plant No. 1 is located at 1250 Main Street in the City of Los Angeles at the northeast end of the parcel. The property was determined eligible for listing in the NRHP at the local level of significance under Criterion C as an excellent example of an industrial loft with Art Deco style elements in the City of Los Angeles. SHPO concurred with this determination in a letter dated May 2, 2019. The California Historical Resource status code for the property is 2S2 (individual property determined eligible for the NRHP by consensus through Section 106 process and eligible for listing in the CRHR). The period of significance is 1918 to 1930, the years during which Plant No. 1 was constructed. Kelite Factory Plant No. 1 was not previously evaluated within the Final EIR or CEQA Addendum No. 1; therefore, potential impacts on this eligible historical resource are evaluated within the Final SEIR.

Additionally, minor technical revisions to one existing archaeological site have been made since preparation of the Final EIR and CEQA Addendum No. 1 and are summarized below:

- **Archaeological Site CA-LAN-1575/H.** Archaeological Site CA-LAN-1575/H is a multicomponent, NRHP/CRHR-eligible archaeological site that was evaluated in support of the Final EIR (2019). CA-LAN-1575/H is situated throughout the entire ADI in the vicinity

² The Project Footprint is non-contiguous and comprises a portion in the City of Los Angeles and a portion in the City of Vernon. The ADI and All coincide with the Project Footprint and likewise comprises two portions. The portion in the City of Los Angeles corresponds to the Modified Proposed Project and is discussed in Section 7.5.3 of the Final SEIR. The portion in the City of Vernon corresponds to the Malabar Yard railroad improvements and is discussed in Section 7.6 of the Final SEIR.

of LAUS. A portion of the archaeological site extends within California Department of Transportation (Caltrans) ROW and is considered a state-owned historical resource pursuant to Public Resource Code (PRC) §5024(f). Recent cultural resource investigations undertaken for local Metro projects between 2017 and 2021 identified a total of 46 additional archaeological features and human interments in the area immediately east and southeast of LAUS. Of these, 33 features were recommended to contribute to the significance of CA-LAN-1575/H. The boundaries of CA-LAN-1575/H have been extended to encompass the new features.

4. Noise Model Calculation Assumptions (Minor Technical Adjustment)

During updates to the SoundPLAN noise model (version 8.2) to address potential for noise impacts on Care First Village, a manual confirmation of each noise model calculation assumption was conducted. During the confirmation process, it was discovered that one noise model calculation (Ldn for nighttime noise) did not appropriately account for the nighttime noise penalty. This resulted in higher noise levels being previously disclosed in the Final EIR and a greater number of sensitive receptors reported as severely or moderately impacted than would actually occur once the nighttime noise penalty was applied. Minor technical adjustments to the noise model calculations for Ldn for nighttime noise were made, which resulted in a slight modification to the range of noise levels for each of the sensitive receptors and an overall reduction to the number of previously reported severe and moderate impacts. With implementation of the minor technical adjustment, the same receptors are affected by severe and moderate noise impacts (William Mead Homes and Mozaic Apartments, and now Care First Village), although to a lesser degree than previously reported in the Final EIR. This minor technical adjustment is acknowledged in Section 7.5.5 of the Final SEIR.

5. Revised Mitigation Monitoring Reporting Program (Minor Updates and Refinements)

Minor updates and refinements to mitigation measures identified in the Revised MMRP adopted with CEQA Addendum No. 1 (October 2021) were made during the preparation of the Draft and Final SEIR. The minor updates or refinements to the MMRP were made during the preparation of the Draft and Final SEIR to 1) address the changed circumstances considered in this SEIR; 2) clarify the implementation approach and responsibilities; and 3) cite new policies/regulations applicable to the mitigation. The Revised MMRP includes one new measure resulting from the project change at BNSF West Bank Yard and associated impacts on freight operations (Mitigation Measure TR-3), 26 new mitigation measures for the Malabar Yard railroad improvements in the City of Vernon, as well as twelve new offsetting mitigation measures (OMMs) incorporated into the Final SEIR. Minor technical edits were also made to the text of mitigation measures; however, these technical edits do not result in substantive changes to the text or requirements of the mitigation.

A summary of the updates and refinements are as follows:

- TR-1 – Updates to include Los Angeles Unified School District to the list of entities to coordinate with regarding the Construction Traffic Management Plan (TMP) and

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provisions for signal timing and early notifications to LADOT and Caltrans for street closures, detours, or temporary lane reductions.

- TR-2 – As part of CEQA Addendum No. 1, Mitigation Measure TR-2 from the Final EIR was removed. As part of this SEIR, the previously identified Mitigation Measure TR-3 was renumbered to TR-2 and minor refinements were made to language.
- TR-3 – New mitigation measure proposed to offset the loss of storage track capacity at the BNSF West Bank Yard.
- AES-1 – Updates to include provisions for aesthetic treatments on the proposed sound wall at Care First Village.
- AES-3 – Updates to incorporate references to Metro Rail Design Criteria, Southern California Regional Rail Authority (SCRRA) Design Criteria manual, Illuminating Engineering Society Standards, and CALGreen glare ratings, and LEED standards.
- AQ-1 – Minor refinement to text regarding monthly updates to the comprehensive inventory list.
- AQ-3 – Minor refinements to clarify language.
- NV-1 – Updates to include a sound wall at Care First Village.
- NV-2 and NV-3 – Minor refinements to text for clarification and updates to include Care First Village and Metro Gateway Childhood Development Center (NV-2 only).
- BIO-1 – Minor refinements to text regarding qualified biologists.
- BIO-2 – Updates to include provisions for mandatory training for all Project personnel and contractors on site during construction and changes to nest removal and bird preconstruction survey requirements.
- BIO-3 – Minor refinements to text regarding the City of Los Angeles Protected Tree and Shrub Regulation.
- HWQ-1, HWQ-2, HWQ-3, HWQ-4, HWQ-5, HWQ-7 – Minor refinements to text for grammar, clarification and to reflect updates to permits.
- HAZ-1, HAZ-2, HAZ-3, HAZ-5 – Minor refinements to text for grammar and clarification.
- HAZ-4, HAZ-6, and HAZ-8 – Minor refinements to reflect to address site specific instances and/or clarify how the measure shall be implemented.
- HIST-1, HIST-4, HIST-5, HIST-6, HR-1, and TCR-1 (now consolidated as CUL-1 and CUL-2) – Previous cultural resources mitigation measures were identified with “HIST” naming convention. To align with subsequent treatment plans for archaeology and built environment resources, all provisions of HIST-1, HIST-4, HIST-5, HIST-6, HR-1, and TCR-1 were consolidated within the new mitigation measures CUL-1 and CUL-2. HIST-2 was removed because it was determined no significant impact to William Mead Homes would occur and Mitigation Measure AES-1 still remains applicable.

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- PAL-1 – Minor refinements to text regarding excavation depths and removal of pile driving exception language.
- PAL-2 and PAL-3 – Minor refinements to text to clarify language in each mitigation measure.

A summary of new mitigation measures and OMMs is below.

- OMM AQ-4 – One new measure added for construction air quality monitoring plan specific to William Mead Homes.
- MY TR-1 through MY TR-6, MY AQ-1, MY AQ-2, MY BIO-1, MY BIO-2, MY HWQ-1 through MY HWQ-5, MY GEO-1, MY HAZ-1 through MY HAZ-6, MY CUL-1, MY PAL-1 through MY PAL-3 – 26 new mitigation measures to reduce impacts associated with Malabar Yard railroad improvements.
- OMM MY SS-1 through MY SS-3, MY NV-1, MY NV-2, MY TR-7 through MY TR-12 – 11 new measures added to offset effects of the Malabar Yard railroad improvements.

After the close of the Draft SEIR public comment period, minor updates and refinements to mitigation measures were made, along with other minor technical edits to the text of mitigation measures; however, these technical edits do not result in substantive changes to the text or requirements of the mitigation. A summary of the updates and refinements are as follows:

- Mitigation Measure TR-1
 - Revised Mitigation Measure TR-1 to include Los Angeles Union School District to the list of entities to coordinate with regarding the Construction TMP.
- Mitigation Measure AES-1
 - Revised Mitigation Measure AES-1 to state Metro’s responsibility of future on-going maintenance of the proposed retaining wall/soundwall.
- Mitigation Measure NV-1
 - Revised Mitigation Measure NV-1 to specify timing of construction of the proposed retaining wall/sound wall to be prior to any construction activities, including demolition.
- Malabar Yard Mitigation Measure BIO-2
 - Revised Malabar Yard Mitigation Measure BIO-2 to remove all mentions of the City of Vernon Tree Protection Bylaw and replace with City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees).
- Malabar Yard Mitigation Measure TR-1
 - Revised Malabar Yard Mitigation Measure TR-1 to include Los Angeles Union School District to the list of entities to coordinate with regarding the Construction TMP, remove the City of Vernon as a responsible party, clarifying the city will not provide mitigation for the Malabar Yard railroad improvements, and add “the contractor” as an option

responsible for notifying City of Vernon business days in advance of street closures, detours, or temporary lane reductions.

6. Air Quality Carbon Monoxide Screening Analysis (Minor Technical Adjustment)

After the close of the 45-day public comment period, a discrepancy in the traffic volume figures used to support the carbon monoxide (CO) hot-spot analysis and the traffic volume figures used to support the traffic impact analysis was identified.

The 2019 Final EIR Carbon Monoxide Screening Analysis was based on the 2031 and 2040 traffic volume figures to establish the conclusion that air quality would not significantly worsen; therefore, a re-assessment was performed on February 6, 2025 using the corrected traffic volume figures to verify the conclusions are still accurate for the 2031 and 2040 scenarios (by assessing the difference in traffic volumes between No Build and with Project).

CO Hot-Spot Analysis Traffic Volume Figures – During the re-assessment, it was determined that two of the four traffic volume figures that supported the Final EIR CO screening analysis were incorrectly appended to the 2019 *Final EIR Appendix H – Link US Air Quality and Health Risk Assessment Report* – Appendix F, Carbon Monoxide Hot-Spot Analysis. The figures to support the current CO hot-spot analysis were revised and replaced as summarized below:

- Figure 7-3 (2040 No Project Peak Hour Traffic Volumes) had a minor revision to Intersection #110 where there was a typo on the southbound AM Peak traffic volume along N Alameda St.
- Figure 7-23 (2040 Plus Project – Peak Hour Traffic Volumes) was replaced to match Figure 7-32 (2040 plus Project - Peak Hour Traffic Volumes) from the 2019 *Final EIR Appendix E – Link US Traffic Impact Assessment* – there was no change to traffic counts or volumes since the Final EIR was certified.

The Final SEIR cites supporting documentation with corrected figures to support the current CO hot-spot analysis conclusions in the Final SEIR.

Traffic Impact Analysis Traffic Volume Figures – During the re-assessment, it was determined that one of the traffic volume figures was incorrectly included in the *Link US Traffic Impact Assessment* that was circulated for public review with the Draft SEIR. After the close of the public comment period, the *Link US Traffic Impact Assessment*, Figure 7-22 (2031 Plus Project – Peak Hour Traffic Volumes) was replaced to match Figure 7-31 (2031 plus Project - Peak Hour Traffic Volumes) from the 2019 Final EIR Appendix E – Link US Traffic Impact Assessment – there was no change to traffic counts or volumes since the Final EIR was certified.

CO Hot-Spot Analysis Re-Assessment – Utilizing the appropriate traffic volume figures for 2031 and 2040, Figure 7-22 (2031 Plus Project – Peak Hour Traffic Volumes and Figure 7-23 (2040 Plus Project – Peak Hour Traffic Volumes) identified in the revised *Link US Traffic Impact Assessment* and the *Link US Air Quality and Global Climate Change Assessment and Health Risk Assessment* Appendix E: Carbon Monoxide Screening Analysis Supporting Documentation, a manual confirmation of the traffic volume increase from the no-build scenario was conducted.

The revisions to the traffic volume figures discussed above resulted in changes to the CO screening analysis as the incorrect values were originally depicted. Upon completion of this reanalysis, the conclusion that the Project would not result in a CO hot-spot did not change. This minor technical adjustment is acknowledged in Section 7.5.2 of the Final SEIR and Appendix E: Carbon Monoxide Screening Analysis Supporting Documentation of the revised *Link US Air Quality and Global Climate Change Assessment and Health Risk Assessment*.

7. Refinements to the Modified Proposed Project

The Draft SEIR was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024, pursuant to CEQA Guidelines Section 15105. Based on public comments received during the 45-day public comment period related to historic preservation, comments from the SHPO and consulting parties as part of the Section 106 process, and engineering design opportunities that would reduce cost and avoid and reduce the magnitude and intensity of Project-related environmental effects as compared to the Modified Proposed Project considered in the Draft SEIR, refinements to the Modified Proposed Project were made and considered in the Final SEIR.

The design modifications/reductions associated with the refinements to the Modified Proposed Project are summarized below and shown in Figure 2-1.

- ***Retaining the Existing Vignes Street Bridge Instead of Replacing it*** – The refinements to the Modified Proposed Project would not require replacement of the Vignes Street Bridge because a run-through track alignment with 8 total run-through tracks requires a reduced raise of the railyard; however, space for a future sixth lead track in the throat area would be maintained. In conjunction with the removal of Garden Tracks the throat tracks supported by the Vignes Street Bridge would be configured to accommodate space for one new lead track over the existing bridge. South of the Vignes Street Bridge, the westernmost lead tracks through the throat area would be raised to tie into the raised platforms and associated Tracks 3 through 10 at the LAUS Rail Yard.
- ***Fewer Raised Platforms and Reduced Extent of Elevated Rail Yard*** – The refinements to the Modified Proposed Project would include an elevated rail yard; however, only four platforms would be raised nine feet to twelve feet higher than the existing condition, instead of six platforms raised to 15 feet as previously proposed. Platforms 2 through 5 and eight corresponding platform tracks (Tracks 3 to 10) would be raised. The reduced extent of the elevated railyard would still allow for the connecting run-through track viaduct to meet vertical clearance requirements for the El Monte Busway and US-101 (16.5 feet minimum vertical clearance per Caltrans standards). The platform and track allocation would include Platforms 2 and 5 allocated for SCRRA and Amtrak for regional/intercity rail trains and Platforms 3 and 4 (and Tracks 5 through 8) would be allocated to CHSRA for CHSRA trains - Platforms 3 and 4 would be constructed to meet level-boarding requirements. Platforms 6 and 7 would remain at existing grade with stub-end tracks and would continue to be allocated for SCRRA and Amtrak long distance trains.

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The reduced extent of the elevated rail yard also decreases the length required for the elevated rail yard. As discussed above, lead tracks through the throat area would begin south of the Vignes Street Bridge thereby allowing for the existing Vignes Street Bridge to remain in place.

- ***Partial Reconstruction of Cesar Chavez Avenue Bridge*** – The refinements to the Modified Proposed Project would include partial reconstruction of the portion of the existing railroad bridge over Cesar Chavez Avenue, instead of a full reconstruction as previously proposed. As the rail yard would only be partially elevated, only the western portion of the bridge that would support the four new platforms is required to be reconstructed.
- ***Reduced Extent of Concourse-Related Improvements*** – The refinements to the Modified Proposed Project would include several reductions to the extent of concourse-related improvements, as summarized below.
 - ***Removal of West Plaza and West Plaza Canopy*** – The West Plaza, as well as modifications to the baggage handling operations and ticketing services within the Amtrak building, would be removed as part of the refinements to the Modified Proposed Project. No modifications to the exterior loading dock or parking area outside of the Amtrak building would be required.
 - ***Reduced Width of Expanded Passageway*** – The width of the expanded passageway would be 100-feet-wide instead of 140-feet-wide, as previously proposed.
 - ***Reduced Canopy Coverage and Change in Type*** – Removal of the West Plaza would no longer require canopy coverage for this area. Individual canopies would extend up to 25 feet above the 4 new platforms. Rail Yard Canopy Design Option 2 (Grand Canopy over Rail Yard) is not feasible to be implemented in conjunction with the Modified Proposed Project because all platforms would be required to be raised to support a Grand Canopy. Furthermore, the Grand Canopy was planned to connect to the West Plaza Canopy, which was also removed from the Modified Proposed Project.
- ***Fewer Run-Through Tracks on Single Aerial Viaduct from LAUS to West Bank of Los Angeles River*** – The Modified Proposed Project considered in the Draft SEIR included 10 run-through tracks for regional/intercity trains and HSR trains and the refinements to the Modified Proposed Project would include 8 run-through tracks for regional/intercity trains and HSR trains. A single aerial viaduct would support the run-through tracks instead of a combination of viaducts and retained fill embankments, as previously proposed. The single aerial viaduct would extend from LAUS, over US-101, north Commercial Street, over Center Street, and over the lowered Amtrak lead track before transitioning to a retained fill section at the BNSF West Bank Yard. With fewer run-through tracks, the corresponding width of the portion of the viaduct over US-101 has been substantially reduced from 205-feet-wide as previously proposed to 75-feet-wide as currently proposed.

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South of the elevated platforms at LAUS, the 8 run-through tracks would converge to 4 run-through tracks on the portion of the viaduct that extends over US-101. The run-through tracks would converge again to 2 run-through tracks on the portion of the viaduct west of Center Street.

The refinements to the Modified Proposed Project would still accommodate 4 run-through tracks for HSR trains that would be available for northbound/southbound bidirectional CHSRA operations at LAUS. Similarly, 4 run-through tracks for regional/intercity trains would accommodate northbound/southbound bidirectional operations.

2.6 Supplemental EIR Evaluation

2.6.1 Changed Circumstances

Environmental Topics Addressed in the Final SEIR and Supplemental Findings

Six environmental topic areas required additional analysis due to the nature of the changed circumstances. The environmental topic areas addressed in the Final SEIR and Supplemental Findings are as follows:

- Aesthetics
- Air Quality and Greenhouse Gas Emissions
- Cultural Resources
- Land Use and Planning
- Noise and Vibration
- Transportation

For the refinements to the Modified Proposed Project considered in the Final SEIR, all CEQA environmental topic areas listed in Appendix G of the 2023 CEQA Guidelines were reviewed and addressed to confirm the magnitude and intensity of impacts for the Modified Proposed Project considered in the Draft SEIR are reduced. Therefore, the Supplemental Findings for the Modified Proposed Project are focused to the six environmental topics above.

Environmental Topics Not Addressed in the Final SEIR and Supplemental Findings

The following thirteen environmental topic areas listed in Appendix G of the 2023 CEQA Guidelines would not be significantly affected by the identified changed circumstances as compared to the Final EIR and CEQA Addendum No. 1; and therefore, are not addressed in detail in the Final SEIR and Supplemental Findings. Those environmental topic areas include:

- Agriculture and Forestry Resources
- Biological Resources
- Energy
- Geology and Soils (including Paleontological Resources)
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

2.6.2 Malabar Yard Railroad Improvements

All CEQA environmental topic areas listed in Appendix G of the 2023 CEQA Guidelines were addressed for the Malabar Yard railroad improvements in the Final SEIR and Supplemental Findings.

2.7 Offsetting Mitigation Measures in Response to Community Input**2.7.1 Modified Proposed Project**

Metro sought input from minority and/or low-income communities as part of the Draft SEIR public review process to understand community concerns about the Project and its potential effects. Public notification and outreach included, but was not limited to William Mead Homes, Care First Village, Little Tokyo, and First 5 LA. Input provided by the Little Tokyo community, First 5 LA, and residents of William Mead Homes was evaluated and determined to have been previously addressed by design features, construction phasing, and mitigation measures. For example, Quiet Zone infrastructure would be constructed at North Main Street near William Mead Homes, noise walls would be constructed at William Mead Homes and Care First Village, and construction haul routes would not travel adjacent to First 5 LA or through the Little Tokyo District. As a result of coordination with HACLA and based on comments received after the 45-day public comment period, Mitigation Measure NV-1, Construct Sound Walls, was revised to include additional detail about the timing and future maintenance of the sound wall at William Mead Homes.

At the request of HACLA, Metro adopted Offsetting Mitigation Measure (OMM)-4 to complement existing construction mitigation measures to further limit impacts and be sensitive to community feedback related to William Mead Homes, a minority and/or low-income community with

immediate proximity to construction. OMMs are separate from the direct mitigation measures in the Draft SEIR and separate from improvements required by local, state, or federal mandates. OMM AQ-4 is incorporated in the MMRP.

OMM AQ-4, Construction Air Quality Monitoring at William Mead Homes provides an opportunity to limit construction-related air quality effects to public health and provides additional environmental controls to offset potential localized construction-related air quality effects. OMM AQ-4 will complement AQ-1, Fugitive Dust Control, AQ-2, U.S. EPA Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment, and AQ-3, Adaptive Air Quality Management Plan.

Prior to the start of construction, Metro will develop a construction air quality monitoring plan specific to William Mead Homes in coordination with HACLA, South Coast Air Quality Management District (SCAQMD), and the U.S. EPA. This construction air quality monitoring plan will identify locations along the fence line and within the William Mead Homes property for stationary air quality monitoring to be set up during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The construction air quality monitoring plan will identify the monitoring methodology, inspection procedures, threshold levels for alerts, compliance measures in the event of an alert, and reporting requirements. Compliance measures to be implemented by the construction contractor may include, but are not limited to, additional watering or use of dust suppressants, limiting vehicle speed to 5 mph on unpaved surfaces, covering open-bodied trucks, and installing wheel washing stations or rumble plates. The construction air quality monitoring plan will also provide contact information for a construction representative to be identified for inquiries by residents of the William Mead Homes community and guidance for community notifications.

Metro will be responsible for operating and maintaining the air quality monitoring equipment during construction. Metro will have a dust control supervisor on-site during construction to ensure the construction air quality monitoring plan is being followed and that the air quality monitoring equipment remains operational during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The dust control supervisor will maintain a daily log of the construction activity by location, verify the air monitoring measurements, and coordinate back to Metro for validation of the data before release to the public.

OMM AQ-4 consists of monitoring during construction and does not include infrastructure development or construction, therefore, it would not result in physical impacts on the environment.

2.7.2 Malabar Yard Railroad Improvements

After the close of the Draft SEIR 45-day public comment period, Metro coordinated substantially with the City of Vernon staff to develop community improvements that could be implemented in the community. In response to concerns raised by the City of Vernon and in consideration of the historic and cumulative effects that the community has experienced that create more adverse existing conditions, Metro proposed a suite of community improvements to offset the significant

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impacts of the Malabar Yard railroad improvements. The City requested additional community improvements, and Metro expanded the suite of community improvements to accommodate the City's requested improvements. Metro has evaluated these community improvements, and in consideration of the potential for impacts on the City of Vernon community, Metro adopted these community improvements as OMMs.

The proposed OMMs were developed through engagement with the City of Vernon and would complement the City's planning initiatives as part of the Westside Zone Change and General Plan Amendment and further citywide goals and objectives. The OMMs are separate from the direct mitigation measures in the Draft SEIR; and separate from improvements required by local, state, or federal mandates.

The following list is a summary of the community improvements proposed as OMMs in the Final SEIR and incorporated in the MMRP:

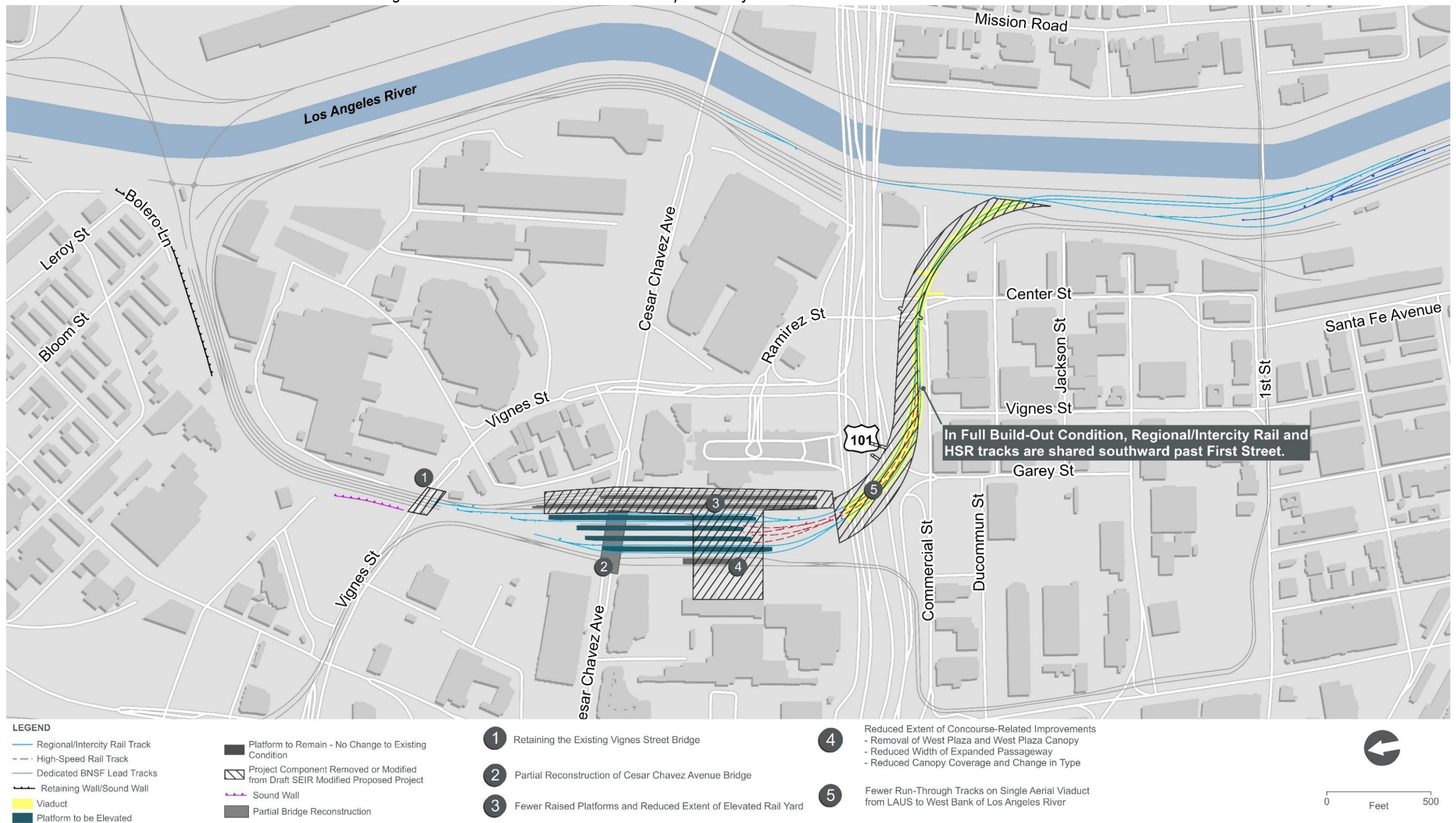
- OMM MY SS-1. Train Detection Cameras - New train detection cameras would be installed at four existing at-grade crossings at 37th Street, 38th Street, Vernon Avenue, and Pacific Boulevard.
- OMM MY SS-2. Mobile Emergency Operations Center (EOC) - Metro would provide funding for a new Mobile EOC to provide the City of Vernon with redundancy in its emergency management system. It would serve as a backup or field EOC during large scale events or natural disasters.
- OMM MY SS-3. Communications and Radio-Systems Upgrade – Upgrades to communication and radio systems would improve coordination and response among different departments and agencies, such as the police department, public utilities department, public works department, and the LA County fire department, which serves the City of Vernon.
- OMM MY NV-1. Quiet Zone Design and Physical Infrastructure – New safety infrastructure to support a future Quiet Zone, where train horns would not be routinely sounded, would be designed and installed at five grade crossing locations: 37th Street, 38th Street, Vernon Avenue, Pacific Boulevard, and 49th Street.
- OMM MY NV-2. Quiet Zone Technical Support. Associated with OMM MY NV-1, Metro, BNSF and the City of Vernon will enter into an agreement for Metro to provide technical support and help the City of Vernon to complete the regulatory process for a Quiet Zone designation along the Harbor Subdivision.
- OMM MY TR-7. High Visibility Crosswalk, Mid-Block Location - A high visibility crosswalk would be installed at Santa Fe Avenue near the Vernon City Elementary School and the Holy Angels Catholic Church of the Deaf.
- OMM MY TR-8. High Visibility Intersection Crosswalk Improvements with Cool Street Paving – new high visibility crosswalk improvements would be implemented at the intersections of Santa Fe Avenue with 37th Street, 38th Street, Vernon Avenue, Pacific

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Boulevard, and Fruitland Avenue, and at the intersections of 46th Street with Pacific Boulevard and Seville Avenue.

- OMM MY TR-9. Bus Shelters – new bus shelters would be installed at 25 locations throughout the city.
- OMM MY TR-10. Pan/Tilt/Zoom (PTZ) Smart Cameras, Software, and Screens for Traffic Monitoring. Metro would provide funding for new PTZ cameras at five intersections (Downey Road at Bandini Boulevard, 25th Street at Santa Fe Avenue, Fruitland Avenue at Malabar Street, Vernon Avenue at Santa Fe Avenue, and Pacific Boulevard at Santa Fe Avenue).
- OMM MY TR-11. AI-Based Traffic Control System (Traffic System Upgrades) - Metro would provide funding for 47 new traffic controllers and associated software to enable signal controls to adapt to real time traffic conditions, improving traffic circulation and safety for the community, particularly at the 46th Street and Seville Avenue, where queueing is expected to occur.
- OMM MY TR-12. Metro Transit Oriented Communities Program Support. Metro would provide the City with support under the Metro Transit Oriented Communities (TOC) Program. Metro would provide the City with grant writing assistance, technical assistance for land use feasibility/planning studies, joint development projects, and development of first/last mile strategies from Metro transit stops to proposed development sites identified in the 2023 Vernon Westside Zone Change and General Plan Amendment.

Figure 2-1. Refinements to the Modified Proposed Project – Overview of Modifications and Refinements



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3.0 Modified Proposed Project and Malabar Yard Railroad Improvements

3.1 Modified Proposed Project

3.1.1 Project Location and Study Area

The Modified Proposed Project consists of infrastructure improvements in Downtown Los Angeles in the vicinity of LAUS (Figure 3-1). LAUS is located at 800 Alameda Street in the City of Los Angeles, California. LAUS is bounded by United States Highway 101 (US-101) to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. The northern Project limit is at North Main Street (Mile Post 1.18) and the southern Project limit is in the vicinity of CP Olympic, south of Interstate 10 and Olympic Boulevard (Mile Post 142.70).

Figure 3-2 depicts the Project study area, which is generally used to characterize the affected environment, unless otherwise specified, and provide a geographic context for the existing and proposed infrastructure improvements at and within the vicinity of LAUS. The Project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment). The existing conditions within each segment are summarized north to south below:

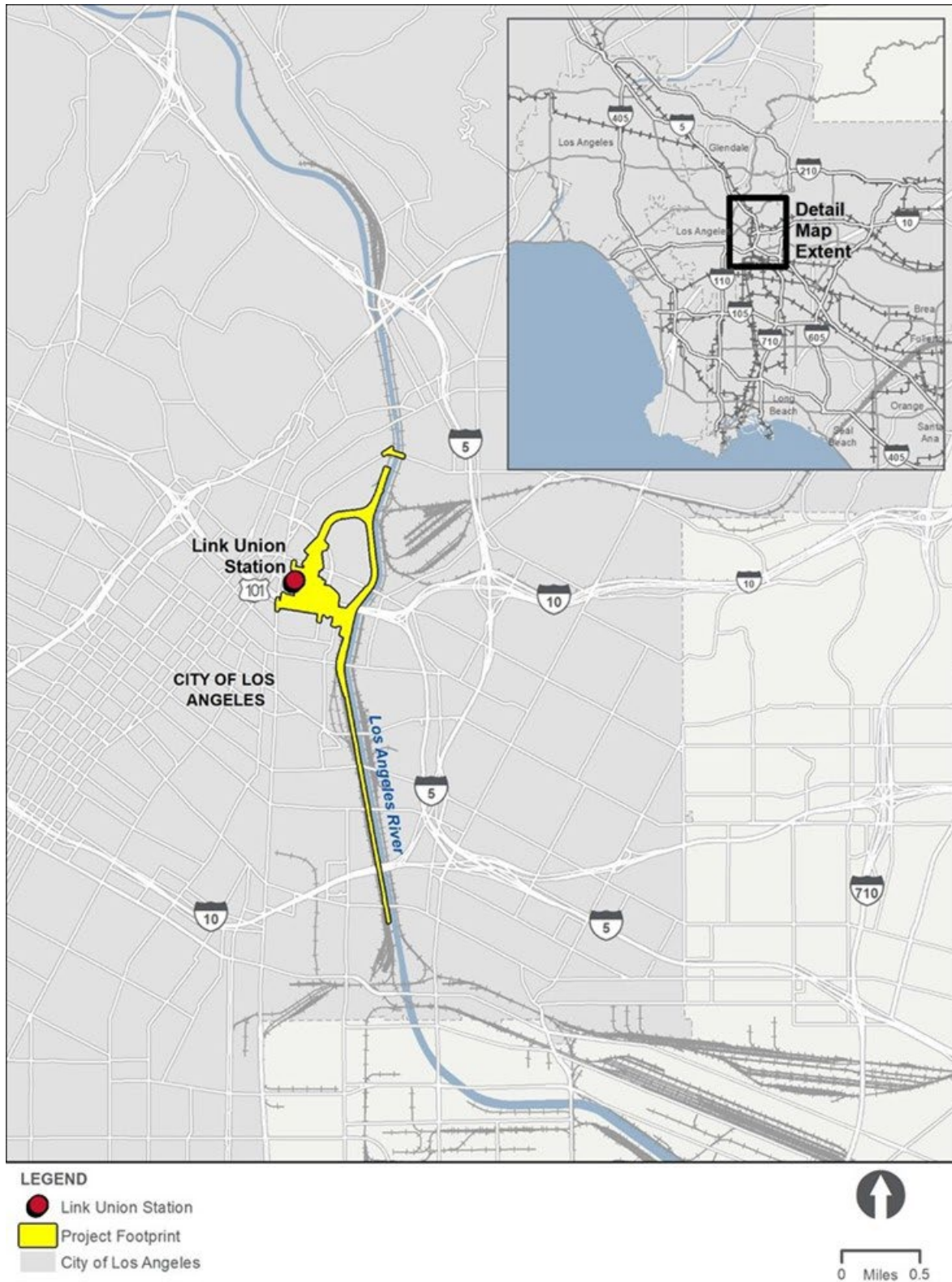
- **Segment 1: Throat Segment** – This segment, known as the LAUS throat, includes CP Chavez and the area north of the platforms at the LAUS rail yard, from North Main Street at the north to Cesar Chavez Avenue at the south. In the throat segment, all arriving and departing trains are required to traverse through a complex network of lead tracks, switches, and crossovers. Five lead tracks provide access into and out of the rail yard, except for one location near the Vignes Street Bridge, where it reduces to four lead tracks. Currently, special track work consisting of multiple turnouts and double-slip switches are used in the throat to direct trains into and out of the appropriate assigned terminal platform tracks. The Garden Tracks (stub-end tracks where private train cars are currently stored) are also located just north of the platforms. Land uses in the vicinity of the throat segment are residential, industrial, and institutional.
- **Segment 2: Concourse Segment** – This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the East Portal Building, the baggage handling building with associated parking areas and access roads, the ticketing/waiting halls, and the 28-foot-wide pedestrian passageway with connecting ramps and stairways below the rail yard. Land uses in the vicinity of the concourse segment are residential, commercial, and public.
- **Segment 3: Run-Through Segment** – This segment is south of LAUS and extends east to west from Alameda Street to the west bank of the Los Angeles River and north to south from Keller Yard to CP Olympic. This segment includes US-101, the Commercial Street/Ducommun Street corridor, Metro Red and Purple Lines Maintenance Yard

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(Division 20 Rail Yard), BNSF Railway (BNSF) West Bank Yard, Keller Yard, the main line tracks on the west bank of the Los Angeles River from Keller Yard to CP Olympic, and the Amtrak lead track connecting the main line tracks with Amtrak's Los Angeles Maintenance Facility in the vicinity of 8th Street. Land uses in the vicinity of the run-through segment are primarily industrial and manufacturing.

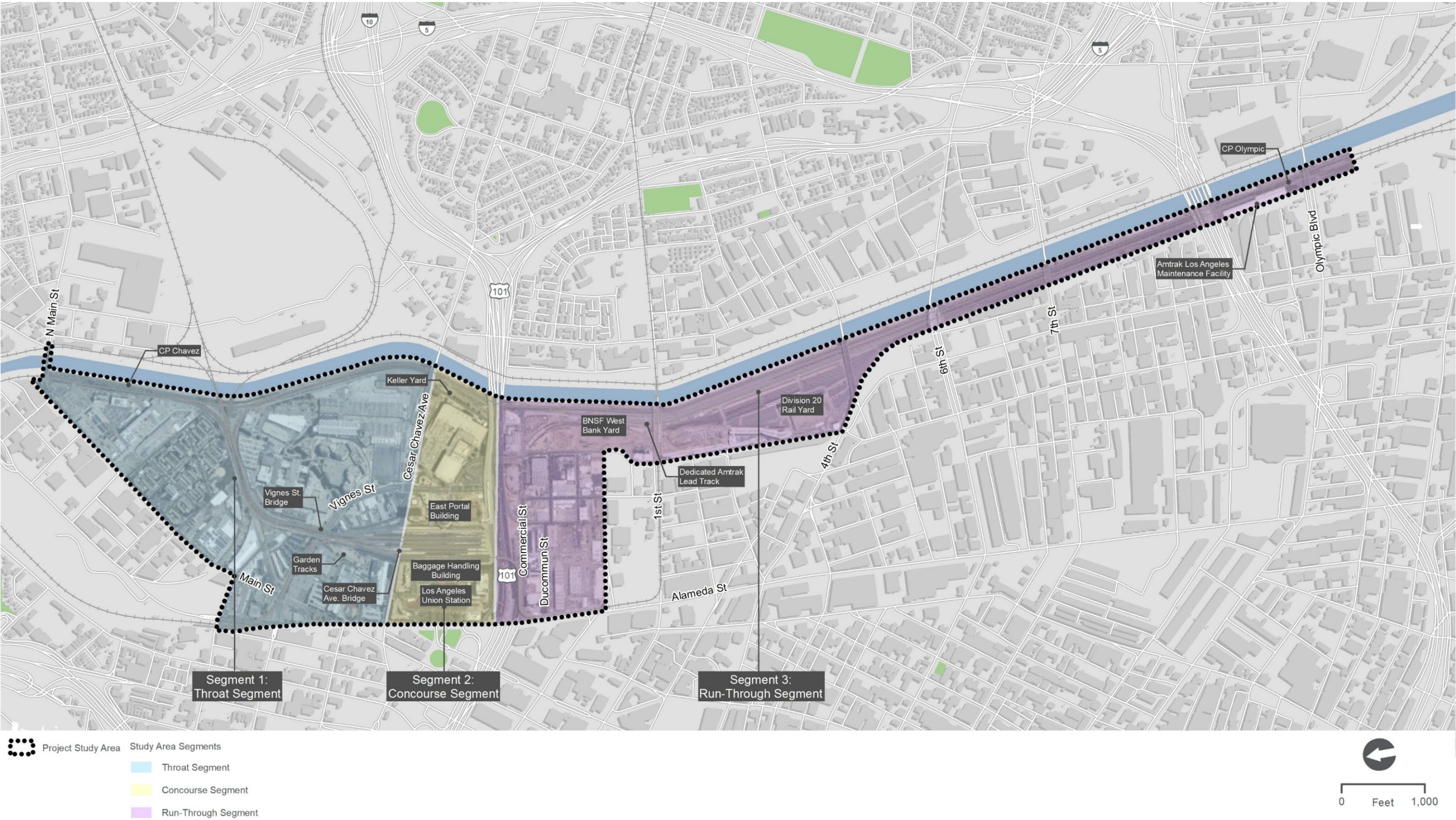
The Project study area has a dense street network ranging from major highways to local city streets. The roadways within the Project study area include the El Monte Busway, US-101, Bolero Lane, Leroy Street, Bloom Street, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, Main Street, Aliso Street, Avila Street, Bauchet Street, and Center Street.

Figure 3-1. Project Location and Regional Vicinity



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Figure 3-2. Project Study Area



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3.1.2 Key Components

The key components associated with the Modified Proposed Project with refinements considered in the Final SEIR are summarized north to south below:

- **Segment 1: Throat Segment (lead tracks and throat track reconstruction)** – The Modified Proposed Project considered in the Final SEIR would include subgrade and structural improvements in Segment 1 of the Project study area (throat segment) to increase the elevation of the tracks south of the Vignes Street Bridge leading to the rail yard. The Modified Proposed Project considered in the Final SEIR would include the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail trains (Metrolink/Amtrak) and operations for HSR trains within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. A portion of the existing Cesar Chavez Avenue Bridge would be reconstructed; however, no modifications or replacement to the Vignes Street Bridge would be required. North of CP Chavez on the west bank of the Los Angeles River, the Modified Proposed Project considered in the Final SEIR includes safety improvements at the Main Street public at-grade railroad crossing (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- **Segment 2: Concourse Segment (partially elevated rail yard and expanded passageway)** – The Modified Proposed Project considered in the Final SEIR includes a partially elevated rail yard, partially reconstructed Cesar Chavez Avenue Bridge, and expansion of the existing 28-foot-wide pedestrian passageway in Segment 2 of the Project study area (concourse segment). The rail yard would be elevated approximately nine to twelve feet. Four passenger platforms would be reconstructed on the partially elevated rail yard with associated VCEs (stairs, escalators, and elevators) to enhance safety elements and improve Americans with Disabilities Act (ADA) accessibility. Platform 1 would continue to serve the Gold Line, and Platforms 6 and 7 serving SCRRRA, Amtrak, and Amtrak long distance trains would continue to operate stub ended at present elevation. The pedestrian passageway would be expanded at the current grade to a 100-foot width to accommodate a substantial increase in passenger capacity with new functionally modern passenger amenities while providing points of safety to meet applicable California Building Code (CBC) and National Fire Protection Association 130 Standards for Fixed Guideway Transit Systems. The expanded passageway and associated concourse improvements would facilitate enhanced passenger circulation and provide space for ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, and office/commercial uses while creating an opportunity for an outdoor, community-oriented space east of the elevated rail yard (East Plaza). Amtrak ticketing and baggage check-in services would be enhanced, and new baggage carousels would be constructed in a centralized location under the rail yard. New canopies that would extend 25 feet over each of the four new reconstructed platforms are proposed. New individual canopies would be similar in form to the existing butterfly canopies but sized to fit the widened and lengthened platforms.

- **Segment 3: Run-Through Segment (8 run-through tracks)** – The Modified Proposed Project considered in the Final SEIR includes 8 new run-through tracks on a single aerial viaduct south of LAUS in Segment 3 of the Project study area (run-through segment). The Modified Proposed Project considered in the Final SEIR includes common rail infrastructure from LAUS to the west bank of the Los Angeles River (vicinity of First Street Bridge) to support run-through tracks for both regional/intercity rail trains and HSR trains. At the BNSF West Bank Yard, dedicated lead tracks for Amtrak trains and BNSF trains, in combination with implementation of common rail infrastructure would result in permanent loss of freight rail storage track capacity at the north end of BNSF West Bank Yard (5,500 track feet).

The Modified Proposed Project considered in the Final SEIR would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); improvements to railroad signal, positive train control, and communication systems; modifications to the main line tracks on the west bank of the Los Angeles River; lowering of the Amtrak lead track; addition of access roadways to the railroad right-of-way (ROW); land acquisitions; addition of utilities; utility relocations, replacements, and abandonments; and addition of drainage facilities/water quality improvements.

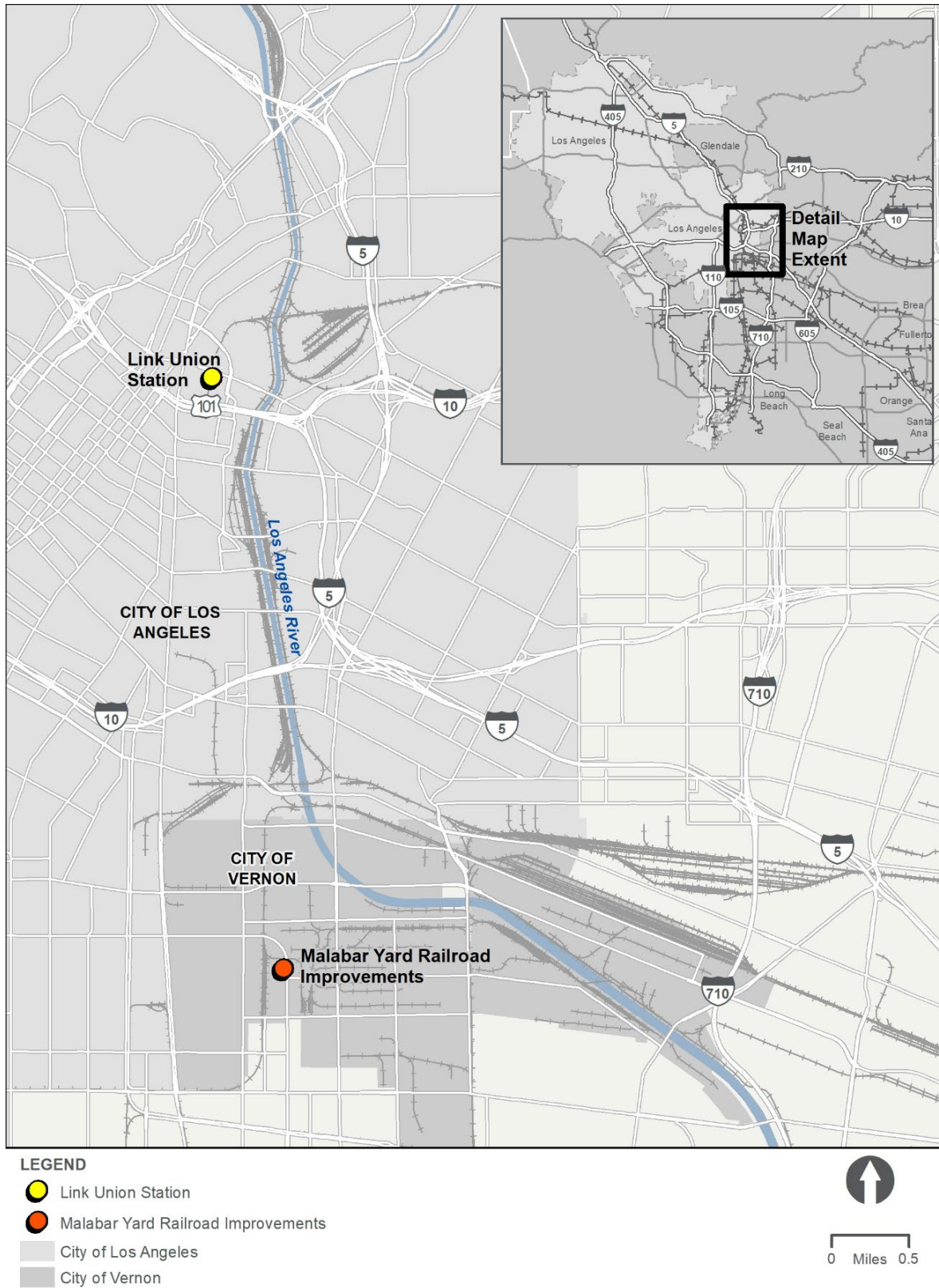
3.2 Malabar Yard Railroad Improvements

3.2.1 Project Location and Study Area

BNSF's Malabar Yard is approximately 8 acres located on the Harbor Subdivision approximately 3.9 miles south of LAUS in the City of Vernon, California (Figure 3-3). The railroad improvements are located in the vicinity of Malabar Yard primarily on 46th Street and 49th Street, between Santa Fe Avenue and Soto Street, in the City of Vernon, California.

The Malabar Yard study area is bound on the north by Vernon Avenue, to the east by Soto Street, to the south by Fruitland Avenue, and to the west by Santa Fe Avenue and is generally used to characterize the affected environment at, and within, the vicinity of Malabar Yard, unless otherwise specified, to support the environmental evaluation of railroad improvements in the City of Vernon (Figure 3-4). The Malabar Yard study area is primarily industrial. Existing businesses in the area include warehouses, wholesale and distribution services, and other commercial enterprises. Roadways in the vicinity of the proposed railroad improvements include Pacific Boulevard, Seville Avenue, Santa Fe Avenue, Fruitland Avenue, Soto Street, 46th Street, and 49th Street.

Figure 3-3. Location and Regional Vicinity



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Figure 3-4. Malabar Yard Study Area



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3.2.2 Malabar Yard Railroad Improvements Design Options

An overview of the Malabar Yard railroad improvements and the design options considered at each location are described below:

- **49th Street Closure** – Closure of the at-grade railroad crossing at 49th Street would accommodate BNSF storage capacity at the BNSF Malabar Yard by approximately 3,350 track feet. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. Two design options are being considered for a closure of the at-grade crossing at 49th Street, as described below:
 - o 49th Street Closure Design Option 1 – Offset Cul-de-Sac: this design option includes a typical cul-de-sac configuration with a rounded curve edge, with the offset being the portion of the roadway that encroaches into private property south of the existing roadway.
 - o 49th Street Closure Design Option 2 – Hammerhead Cul-de-Sac: this design option includes a non-typical cul-de-sac configuration in the shape of a “T,” with areas on each side of the existing roadway for large trucks to maneuver in and out of adjacent private properties.
- **46th Street Connector** – An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF’s Malabar Yard and BNSF’s Los Angeles Junction. Two design options are being considered for a new track connection along 46th Street as described below:
 - o 46th Street Connector Design Option 1 – Southern Alignment: this design option includes an alignment that encroaches into multiple private properties on the south side of 46th Street to avoid narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.
 - o 46th Street Connector Design Option 2 – Northern Alignment: this design option includes an alignment that avoids most private properties on the south side of 46th Street and includes narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.

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4.0 Statutory Requirements

The CEQA Guidelines require that no public agency shall approve or carry out a project which identifies one or more significant environmental impacts of a project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
3. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

CEQA requires that the lead agency adopt mitigation measures or alternatives where feasible to avoid or mitigate significant environmental impacts that would otherwise occur with the implementation of the project. Project mitigation or alternatives are not required, however, where they are infeasible or where the responsibility for modifying the proposed project lies with another agency (Guidelines Section 15091(a)(b)). For those significant impacts that cannot be mitigated to a less than significant level, the lead agency is required to find that specific overriding economic, legal, social, technological, or other benefits of the proposed project outweigh the significant effects on the environment (CEQA Section 21081(b) and Guidelines Section 15093). If such findings can be made, the Guidelines state in Section 15093 that “the adverse environmental effects may be considered acceptable.” CEQA also requires that findings made pursuant to Section 15091 be supported by substantial evidence in the record (CEQA Guidelines, Section 15091(b)). Under CEQA, substantial evidence means enough relevant information has been provided (reasonable inferences from this information may be made) to support a conclusion, even though other conclusions might also be reached. Substantial evidence includes facts, reasonable assumptions predicated on facts, and expert opinion supported by facts (CEQA Guidelines, Section 15384).

The findings reported in the following pages incorporate the facts and discussions in the Final SEIR for the Project as fully set forth therein. For each of the significant impacts associated with the Project, the following sections are provided:

- *Impact*: A specific description of the environmental effects identified in the Final SEIR.
- *Finding*: One or more of the three specific findings set forth in CEQA Guidelines Section 15091.

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- *Mitigation Measures*: Identified feasible mitigation measures or actions that are required as part of the project and, if mitigation is infeasible, the reasons supporting the finding that the rejected mitigation is infeasible.
- *Rationale*: A summary of the reasons for the finding(s).

4.1 Record of Proceedings

For the purposes of CEQA and the findings set forth herein, the record of proceedings for Metro's decision on the Project consists of: (a) matters of common knowledge to Metro, including, but not limited to, federal, state, and local laws and regulations; and (b) the following documents which are in the custody of Metro Records Management Center, One Gateway Plaza, Plaza Level, MS 99-PL-5, Los Angeles, California 90012:

- Notice of Preparation and other public notices issued by Metro in conjunction with the Project
- The Draft SEIR dated June 2024, including all associated technical appendices and documents that were incorporated by reference
- All testimony, documentary evidence, and all correspondence submitted in response to the Project during the 45-day public comment period of the Draft SEIR; and responses to those comments
- The Final SEIR dated October, 2025, including all associated technical appendices and documents that were incorporated by reference
- The Mitigation Monitoring and Reporting Program
- All findings and resolutions adopted by Metro in connection with the Project; and all documents cited or referenced to therein
- All final technical reports, studies, maps, correspondence, and all planning documents prepared by Metro or the consultants relating to the Project
- All documents submitted to Metro by agencies or members of the public in connection with development of the Project
- All actions of Metro with respect to the Project
- Any other materials required by PRC Section 21167.6(e) to be in the record of proceedings.

5.0 Findings - Modified Proposed Project

5.1 Environmental Impacts Found to be Less than Significant After Mitigation

5.1.1 Aesthetics

Substantially Degrade the Existing Visual Character or Quality of the Site or its Surroundings (Operations)

Impact 7.5.1-C The Modified Proposed Project would introduce a new linear infrastructure element (retaining walls/sound walls) to the visual landscape that would contribute to a substantial degradation to existing visual character for the residents of William Mead Homes, Care First Village, and Mozaic Apartments. The retaining walls would present dominant features substantially larger than any of the current surroundings within the residential community. Construction of the sound walls on top of the retaining walls would further contribute to the form, dominance, and scale because a higher wall would be constructed at William Mead Homes and Care First Village, resulting in a change to the existing visual quality. Viewer response would be high at William Mead Homes and Care First Village; therefore, visual impacts would be high. In addition, viewer response would be moderately high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units, thereby resulting in a change to existing visual character. As such, a moderately high level of viewer response at the Mozaic Apartments would result in moderately high visual impacts.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

AES-1 **Aesthetic Treatments:** Retaining walls in Segments 1 and 2 and the sound walls in Segment 1 of the Project study area shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes, Care First Village, and Mozaic Apartments. Based on feedback received during project development from residents of the William Mead Homes property, Metro shall coordinate with HACLA regarding aesthetic enhancements to the retaining wall/sound wall at that location. Materials, color, murals, landscaping, and/or other aesthetic treatments shall be integrated into the design of the retaining walls/sound walls to minimize the dominance and scale of the retaining wall/sound wall. Before construction is complete, Metro shall be responsible for the structural maintenance of the sound wall. In most cases,

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right-of-way agreements require the property owner to perform routine wall maintenance. Additionally, Metro shall collaborate with HACLA and Care First Village to determine the aesthetics and materials for the sound wall. As the property owner, HACLA and Care First Village shall enter into a maintenance agreement with Metro.

Rationale Mitigation Measure AES-1 requires Metro to design the retaining walls/sound walls in consideration of the scale and architectural style of the adjacent William Mead Homes complex and Care First Village. As part of Mitigation Measure AES-1, Metro will be required to coordinate the Housing Authority of the City of Los Angeles (HACLA) and Care First Village regarding aesthetic enhancements to the retaining walls/sound walls. Materials, color, murals, landscaping, and/or other aesthetic treatments would be integrated into the design of the retaining walls/sound walls to minimize the dominance and scale of the retaining walls/sound walls. Mitigation Measure AES-1 would reduce impacts to a level less than significant.

Create a New Source of Light or Glare That Would Adversely Affect Day or Nighttime Views in the Area (Construction)

Impact 7.5.1-D During nighttime construction activities, temporary lighting would be used for certain construction activities. Due to the proximity of Care First Village to the construction work zone, residents of Care First Village would be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout Project construction.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

AES-2 **Minimize Nighttime Work and Screen Direct Lighting:** Nighttime construction activities near residential areas shall be avoided to the extent feasible. If nighttime work is required, the construction contractor shall install temporary lighting in a manner that directs light toward the construction area and shall install temporary shields as necessary so that light does not spill over into residential areas.

Rationale Mitigation Measure AES-2 requires the construction contractor to install temporary lighting in a manner that directs light toward the construction area and to install temporary shields as necessary so that light spill does not occur into residential areas. To the maximum extent feasible, nighttime construction activities near residential areas will be avoided. Mitigation Measure AES-2 would reduce construction-related light impacts for the residents of Care First Village to a level less than significant.

5.1.2 Air Quality and Greenhouse Gas Emissions

Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region is Nonattainment Under an Applicable Federal or State Ambient Air Quality Standard (Operations)

Impact 7.5.2-B The Modified Proposed Project would have potential long-term operational air quality impacts from increased train activity, mobile source emissions associated with vehicular trips in the Project study area, and stationary source emissions from on-site energy consumption. The Modified Proposed Project's net increase in daily emissions would exceed the South Coast Air Quality Management District's (SCAQMD) threshold for NO_x.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

AQ-3 **Adaptive Air Quality Mitigation Plan:** Prior to implementation of regional/intercity rail run-through service, an Adaptive Air Quality Mitigation Plan shall be prepared by Metro, in coordination with the SCRRA, as the operator of the commuter rail service in Southern California and the program manager and grant recipient of the SCORE Program, Amtrak, and the LOSSAN Rail Corridor Agency. The Plan shall identify the methodology and requirements for annual emission inventories to be prepared by Metro, based on actual/current train movements and corresponding pollutant concentrations through the Year 2040.

Mitigation Plan Requirements: Upon implementation of regional/intercity run-through service, and on an annual basis, Metro shall compile and summarize the current Metrolink, Pacific Surfliner, and Amtrak long-distance train schedules to determine the actual level of daily and peak-period train movements (including non-revenue train movements) that operate through LAUS.

On an annual basis, Metro shall retain the services of an air quality specialist to conduct an annual emissions inventory to determine if actual train movements through LAUS are forecasted to increase criteria pollutant emissions to a level that would exceed the SCAQMD significance thresholds or diesel pollutant concentrations to a level that would exceed the SCAQMD's 10 in a million threshold at any residential land use in the Project study area. An annual report shall be prepared by Metro that summarizes the quantitative results of pollutant emissions and diesel pollutant concentrations in the Project study area. If pollutant emissions and diesel pollutant concentrations are projected to exceed the SCAQMD thresholds, the regional and intercity rail operators in coordination with Metro, who has authority as the owner of Union

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Station, and CalSTA, shall either implement rail fleet emerging technologies consistent with 2018 California State Rail Plan Goal 6: *Practice Environmental Stewardship*, Policy 4: *Transform to a Clean and Energy Efficient Transportation System* (Caltrans 2018a, pg. 10 and 110), or reduce the train movements through LAUS to lower the criteria pollutant emissions below the SCAQMD significance thresholds and the diesel pollutant concentrations below the SCAQMD thresholds in the Project study area.

After implementation of emerging technologies, Metro shall continue to prepare an emissions inventory in coordination with SCRRA, Amtrak, and the LOSSAN Rail Corridor Agency annually to report the quantitative results of criteria pollutant emissions and diesel pollutant concentrations in the Project study area. The annual report shall include an analysis of the actual (current) and proposed changes in train schedules relative to criteria pollutant emissions and diesel pollutant concentration levels in the Project study area. The report shall be prepared annually by December 31 of each year, beginning the calendar year after implementation of regional/intercity rail run-through service through 2040 and shall include results of the emissions inventory and effectiveness of the measures implemented.

Rail Fleet Emerging Technologies: To achieve a reduction of criteria pollutant emissions below the SCAQMD thresholds and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds, the regional and intercity rail operators may replace, retrofit, or supplement some or all of their existing fleet with zero or low-emission features. The types of emerging technologies that can be implemented, include, but are not limited to the following:

- Electric multiple unit systems.
- Diesel multiple units.
- Battery-hybrid multiple units.
- Renewable diesel and other alternative fuels.

Metro shall coordinate with regional rail/intercity rail operators to incorporate these emerging technologies into existing and/or future funding and/or operating agreements to reduce locomotive exhaust emissions in the Project study area.

Rationale

Mitigation Measure AQ-3 would require implementation of emerging technologies to reduce the CO, NO_x, reactive organic gases, PM₁₀, and PM_{2.5} exhaust emissions by 10, 10, 5, 30, and 30 percent, respectively. Mitigation Measure AQ-3 also requires an adaptive air quality mitigation plan to be implemented, in conjunction with replacement of the rail fleet with zero- or low-emission locomotives consistent with the 2018 California State Rail Plan,

to achieve a reduction of pollutant concentrations below a level that would not exceed SCAQMD's 10 in 1 million cancer risk threshold at any of the residential uses in the Project study area. To achieve a reduction of criteria pollutant emissions below the SCAQMD thresholds and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds, the regional and intercity rail operators may replace, retrofit, or supplement some or all of their existing fleet with zero or low-emission features. Metro will coordinate with regional rail/intercity rail operators to incorporate these emerging technologies into existing and/or future funding and/or operating agreements to reduce locomotive exhaust emissions in the Project study area.

With implementation of Mitigation Measure AQ-3, the net increase in daily emissions would be reduced to below the SCAQMD thresholds. Therefore, upon implementation of Mitigation Measure AQ-3, impacts would be reduced to a level less than significant.

Expose Sensitive Receptors to Substantial Pollutant Concentrations (Construction and Operations)

Impact 7.5.2-C Construction Impacts: Project construction would result in emissions of diesel particulate matter from heavy-duty construction equipment and trucks operating in the Project study area (e.g., water trucks and haul trucks). Diesel particulate matter is characterized as a toxic air contaminant by the California Air Resources Board. Cancer risk is defined as the increase in lifetime probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased probability in 1 million. Based on the modeled cancer risks during construction, the peak cancer risks during construction would exceed the SCAQMD's threshold of 10 in 1 million at the following receptors:

- Hilda L. Solis Care First Village – 26.5 in 1 million
- William Mead Homes – 28.6 in 1 million
- Mission Road Residences – 10.5 in 1 million
- Mozaic Apartments – 82.0 in 1 million
- Metro Gateway Childhood Development Center – 74.9 in 1 million

Operational Impacts: Implementation of the Modified Proposed Project would alter the flow of rail operations within the Project study area. In addition, the Modified Proposed Project would facilitate an increase in rail operations in the future by increasing the current train capacity. When compared with conditions without the project, the project-related increase in cancer risk would exceed SCAQMD's threshold of 10 in 1 million. However, when compared to the existing (2016) conditions, the cancer risks would be substantially lower at all

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of the receptor locations. The reductions between the existing and future conditions is due to the gradual replacement of the existing rail fleet with new Tier 4 locomotives.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

AQ-1 Fugitive Dust Control: In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403:

- Minimize land disturbed by clearing, grading, and earth moving, or excavation operations to prevent excessive amounts of dust.
- Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done.
- Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
- Securely cover trucks when hauling materials on or off site.
- Stabilize the surface of dirt piles if not removed immediately.
- Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads.
- Minimize unnecessary vehicular and machinery activities.
- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
- Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.

The following measures shall also be implemented to reduce construction emissions:

- The construction contractor shall prepare and update on a monthly basis a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy.

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- Ensure that all construction equipment is properly tuned and maintained.
- Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible.
- Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operations at the site and obtain CARB Portable Equipment Registration with the state or local district permit for the portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable.

These control techniques shall be included in Project specifications and shall be implemented by the construction contractor.

AQ-2

Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment: In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations.

In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.

AQ-3**Adaptive Air Quality Mitigation Plan****Rationale**

Mitigation Measures AQ-1 requires the construction contractor to implement construction emission control measures as specified in the project specifications. Construction emission control measures include demonstrating how the construction fleet is consistent with Metro's Green Construction Policy requirements, ensuring all construction equipment is properly tuned and maintained, minimizing idling time to 5 minutes, and utilizing existing power sources (e.g. power poles) or clean fuel generators rather than temporary power generators. Mitigation Measure AQ-2 requires all off-road equipment to meet or exceed U.S. EPA's Tier 4 final emissions standards and to be fueled using 100 percent renewable diesel. The anticipated peak cancer risk at all modeled receptors would be below the SCAQMD's threshold of 10 in 1 million with implementation of Mitigation Measures AQ-1 and AQ-2. After mitigation,

the peak cancer risk at the previously mentioned receptors would be reduced to below the SCAQMD's threshold of 10 in 1 million:

- Hilda L. Solis Care First Village – 2.7 in 1 million
- William Mead Homes – 2.9 in 1 million
- Mission Road Residences – 1.1 in 1 million
- Mozaic Apartments – 8.4 in 1 million
- Metro Gateway Childhood Development Center – 7.7 in 1 million
- Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce cancer risk impacts to a level less than significant.

Mitigation Measure AQ-3 requires an adaptive air quality mitigation plan to be implemented, in conjunction with replacement of the rail fleet with zero- or low-emission locomotives consistent with the 2018 California State Rail Plan, to achieve a reduction of pollutant concentrations below a level that would not exceed SCAQMD's 10 in 1 million cancer risk threshold. For operations, Mitigation Measure AQ-3 would reduce the locomotive emissions by 30 percent in 2026 and by 50 percent in 2031 and 2040 in addition to the Tier 4 locomotive assumptions.

Upon implementation of Mitigation Measure AQ-3, the operational health risk impacts would be reduced to a level less than significant.

5.1.3 Cultural Resources

Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to §15064.5 (Construction and Indirect)

Impact 7.5.3-B Construction Impacts: Ground disturbance during construction for any phase of the project has a high potential to impact recorded and unrecorded archaeological deposits in this highly sensitive area of direct impacts because project components, such as bridges, would have deep excavations. A single multicomponent NRHP/CRHR-eligible resource, Archaeological Site CA-LAN-1575/H, is recorded within the area of direct impacts, and there is also the potential to encounter previously unrecorded archaeological resources buried within the area of direct impacts. Archaeological Site CA-LAN-1575/H is situated throughout the entire LAUS footprint and likely extends further than the currently defined boundary. Ground-disturbing construction activities during any phase of work would occur in areas known to contain Archaeological Site CA-LAN-1575/H and in areas that may contain previously undiscovered prehistoric and historical archaeological features or sites.

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Indirect Impacts: The Modified Proposed Project would result in an indirect impact to archaeological resources during construction resulting from looting or vandalism activities by construction personnel due to increased accessibility to archaeological resources.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

CUL-1 Archaeological Treatment Plan (ATP): Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in the analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the actions to be taken to resolve adverse effects on historic property CA-LAN-1575/H and the procedures to address inadvertent discoveries. The California SHPO, Caltrans, and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence.

The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990).

The ATP shall include, at a minimum, the following elements:

- Research design – The ATP shall include a robust research design to be used in evaluating whether archaeological features and deposits that may be encountered contribute to the NRHP eligibility of CA-LAN-1575/H under Criterion D, and in recovering scientific data from those features and deposits that are determined to contribute. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions.
- Site-specific sensitivity model – The ATP shall include provisions for the development of a site-specific sensitivity model to guide efforts to avoid or minimize adverse effects on known portions of CA-LAN-1575/H. The sensitivity model shall compare Project-related infrastructure, based on final design, to available information on previous disturbance from as-built plans, historical maps, geotechnical borings, and past archaeological

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reports that identify fill depth. A three-dimensional model, a series of stratigraphic profiles, or other relatable graphic depiction shall be created to assist in determining the level of sensitivity for encountering buried archaeological features or deposits for each element of the Project design. Consulting tribes shall have an opportunity to review the sensitivity model and provide insight informed by traditional tribal knowledge.

- Phased testing, evaluation, and data recovery of known features and deposits – Based on the results of the site-specific sensitivity model, protocols for phased testing, significance evaluation, and data recovery of known features and deposits shall be developed. Due to the extreme constraints posed by the location of the Project (affecting public transportation through closure of roads, transit, etc.), testing shall occur as part of the preconstruction activities. The ATP shall include a summary of anticipated features and artifacts potentially associated with CA-LAN-1575/H, including references to the pertinent research domains and data requirements contained in the research design, as well as standards for documentation, evaluation, data recovery, and analysis. The ATP shall rely on OSHA requirements regarding the safety of testing, evaluation, and data recovery locations and the potential for encountering contaminated soils or other hazards.
- Archaeological and Native American monitoring – The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction and provisions for determining monitoring locations based on final design, potential impacts to archaeological resources as assessed through the site-specific sensitivity model, and the potential to impact tribal resources including human remains that may be contained in both intact and disturbed contexts (e.g., previously disturbed soils or fill). The ATP shall include the requirement that archaeological monitoring take place under the supervision of an Archaeological Field Director meeting the minimum professional qualifications as defined in 2016 by the Society for California Archaeology, along with the demonstrated ability to identify human and non-human remains. The ATP shall also include requirements that all Archaeological Monitors for project construction have completed at least 12 semester units of undergraduate or graduate coursework in archaeology plus 12 months of archaeological-related field experience in California. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards.
- Provisions for the inadvertent discovery of archaeological features or deposits – The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These

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provisions shall include stop work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant under Criterion D, then data recovery and analysis procedures outlined for known resources shall be implemented.

- Provisions for the inadvertent discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony – The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner as determined through consultation with the Native American tribe identified by the NAHC as the Most Likely Descendant, and in accordance with applicable regulations.
- Public participation or outreach plan for CA-LAN-1575/H – The ATP shall include provisions for the development of a public participation or outreach plan for CA-LAN-1575/H that includes continued consultation with Native American tribes, cultural resource professionals, and other potential stakeholders, such as local historical societies. The plan may include preparation of visual/educational exhibits or murals within LAUS and development of an application for handheld electronic devices, or other published or digital educational material that may be used to inform the public regarding the significance of Historic Chinatown or earlier use and sacredness of the area as it relates to Native Americans. Any materials prepared for public distribution shall comply with applicable regulations regarding the confidentiality of culturally sensitive data and information about archaeological resources.
- Cultural resource WEAP training – The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas.
- Standards for reporting – The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format*.

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- Guidelines for curation – The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79 and the California Guidelines for the Curation of Archeological Collections (May 7, 1993).
- Covenant for transfer of responsibilities under Section 5024 of the California PRC – The ATP shall contain provisions for the negotiation of a covenant between the tribes, Caltrans, Metro and SHPO in order to transfer Caltrans' responsibilities under Section 5024 of the California PRC to Metro for the acquisition of the parcel in Caltrans ROW on the south side of U.S. 101 at Commercial Street, located within the boundary of archaeological site CA-LAN-1575/H. The covenant cannot be completed until the CEQA environmental document and Section 106 agreement documents have received SHPO concurrence, as the final mitigation measures must also be included in the covenant.

Rationale

Mitigation Measure CUL-1 requires Metro's qualified archaeologist to develop an ATP that details the treatment and management for known historical resources, determines thresholds of significance for each of the feature types encountered, and the process for treating unanticipated discoveries. Metro will retain archaeological monitors who will be supervised by a qualified archaeologist who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and experienced in analysis and evaluation of the types of material anticipated to be encountered, outlined in the ATP. The ATP will also contain provisions for the development of a public outreach and educational plan that includes continued consultation and input from Native American Tribes consulting under AB 52 and other potential stakeholders. This plan will be used to inform the public regarding the significance of Historic Chinatown or earlier use and sacredness of the area as it relates to Native Americans. Additionally, a qualified archaeologist will be retained by Metro to prepare a cultural resource-focused Worker Environmental Awareness Program Training (WEAP) training that will be given to all ground-disturbing construction personnel to minimize harm to Archaeological Site CA-LAN-1575/H and any previously undiscovered archaeological resources. The ATP will also include a robust research design, a data recovery plan, a monitoring plan for sensitive areas, and a plan for the analysis and long-term curation of archaeological materials recovered during construction.

Upon implementation of Mitigation Measures CUL-1, impacts would be reduced to a level less than significant.

Disturb any human remains, including those interred outside of formal cemeteries (Construction)

Impact 7.5.3-C Ground-disturbing construction activities associated with the Project during all phases of work would occur in areas with the potential to contain human remains.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures**CUL-1 Archaeological Treatment Plan (ATP)**

Rationale Mitigation Measure CUL-1 requires construction be halted in the area where remains are found, notification to all applicable parties, and the proper treatment of human remains as determined through consultation with the Native American tribe identified by the Native American Heritage Commission as the Most Likely Descendant. All parties involved will ensure that any such remains are treated in a respectful manner and that all applicable local, state, and federal laws are followed. These provisions will be further detailed in the ATP. Implementation of Mitigation Measure CUL-1 would reduce impacts to a level less than significant.

5.1.4 Land Use and Planning**Cause a Significant Impact Due to a Conflict with Any Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect (Operation)**

Impact 7.5.4-B The permanent loss of storage tracks at the BNSF West Yard as part of the Modified Proposed Project would conflict with policies, programs, and goals contained in the City of Los Angeles Mobility Plan 2035 and the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures**TR-3**

Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street): Metro and BNSF shall implement the following two railroad improvements at BNSF's Malabar Yard:

- 49th Street Closure: Closure of the 49th Street at-grade railroad crossing would accommodate approximately 3,350 track feet of storage capacity at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. One of the two design options considered for the closure of the at-grade crossing at 49th Street shall be implemented.
- 46th Street Connector: An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction. One of the two design options considered for the new track connection along 46th Street shall be implemented.

The timing for implementation and operation of this mitigation measure shall be before elimination of tracks at the West Bank Yard unless Metro and CHSRA, in its capacity as NEPA lead agency, mutually agree and conclude removing those tracks first would not cause adverse freight rail impacts.

Rationale

Mitigation Measure TR-3 is proposed to implement railroad improvements at BNSF's Malabar Yard. Implementation and operation of the 49th Street Closure and 46th Street Connector would offset the loss of storage track capacity at the BNSF West Bank Yard through implementation of railroad improvements at Malabar Yard.

Upon implementation of the railroad improvements associated with Mitigation Measure TR-3, significant impacts associated with conflicts with plans that promote goods movement would be reduced to a level less than significant.

5.1.5 Noise and Vibration

Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Project in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (Operations)

Impact 7.5.5-A In the 2031 and 2040 condition, the Project would result in severe operational noise impacts to noise-sensitive receptors including William Mead Homes, Mozaic Apartments, and Care First Village.

- In the 2031 condition, moderate impacts would occur at 34 multifamily dwelling units (16 William Mead Homes dwelling units, 15 Care First Village dwelling units and 3 Mozaic Apartment dwelling units) and severe impacts at 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 Care First Facility dwelling units) and one park/athletic field near William Mead Homes.
- In the 2040 condition, moderate impacts would occur at 25 multifamily dwelling units (16 dwelling at William Mead Homes and 9 dwelling units at the Mozaic Apartments) and severe impacts would occur at 34 multifamily dwelling units (24 dwelling units at the William Mead Homes complex and 10 dwelling units at Care First Village units) and 1 park/athletic field near William Mead Homes.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

NV-1 **Construct Sound Walls:** As early as possible in the Project construction phase, including prior to any demolition, and in any event prior to substantial construction-related activities, Metro shall construct two permanent sound walls. The first sound wall shall be located between the William Mead Homes and the train tracks near the railroad ROW and shall extend to 22 feet in height and 1,144 feet long to reduce operational noise impacts to William Mead Homes. The second sound wall shall be located between the Care First Village and the train tracks near the railroad ROW and shall extend to 13-feet in height and 347 feet long to reduce operational noise impacts to reduce operational noise impacts at Care First Village. The sound wall shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have a surface density of at least 4 pounds per square foot.

Rationale Mitigation Measure NV-1 requires the construction of a sound wall up to 22 feet in height and 1,144 feet long to reduce operational noise impacts at William Mead Homes and another wall up to 13-feet in height and 347 feet long to

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reduce operational noise impacts at Care First Village. Construction of the sound walls for the Modified Proposed Project would mitigate significant impacts on William Mead Homes and Care First Village in 2031 and 2040 by blocking the line of sight from the receptors to the noise source (e.g., locomotives and railcars). A sound wall's effectiveness is a function of the path length difference between the noise source (trains), receiver (William Mead Homes and Care First Village residents), and wall. The projected sound levels at the receiver decrease in response to the placement of a sound wall, which increases the path length difference. Upon implementation of Mitigation Measure NV-1, noise levels at the severely-impacted units would be reduced at impacted locations. Based on these reductions, upon implementation of mitigation, significant operational noise impacts would be reduced to a level less than significant.

Generation of Excessive Groundborne Vibration or Groundborne Noise Levels (Construction)

Impact 7.5.5-B Construction of the Modified Proposed Project would result in temporary vibration from use of heavy equipment and machinery. Temporary vibration from use of heavy equipment and machinery, including the pile driver and vibratory roller) would exceed FTA's frequent impact threshold for Category 2 land uses of 72 VdB (velocity in decibels), including Care First Village. From an annoyance perspective, impact pile driving would be characterized as a frequent source of vibration, as there would be more than 70-pile strikes (i.e., events) per day. Mozaic Apartments are the nearest sensitive land uses and are within 300 feet from pile driving activities (if this construction technique is utilized). Additionally, use of the vibratory roller may occur near some sensitive land uses continuously over the course of several days and would be considered a frequent vibration source during construction. The vibratory roller would be used in closer proximity to sensitive areas, such as William Mead Homes and Care First Village (Category 2 land use).

Vibration from construction of the Modified Proposed Project could be considered an annoyance to residential land uses situated within approximately 300 feet of an impact pile driver and 140 feet of the vibratory roller. Because construction would occur within 300 feet of an impact pile driver and 140 feet of the vibratory roller from sensitive land uses, a severe impact would occur related to William Mead Homes, Mozaic Apartments, and Care First Village from an annoyance perspective.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

NV-2

Employ Noise- and Vibration-Reducing Measures during Construction:

The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Through weekly and monthly meetings with Metro and the contractor, the means and methods to comply with the overall contract specifications and applicable mitigation measures shall be discussed with Metro and applicable parties prior to implementation. Noise and vibration reduction measures that would be implemented include, but are not limited to, the following:

- Design considerations and project layout:
 - Construct temporary noise walls, such as temporary walls or piles of excavated material, between construction activities and noise-sensitive receivers.
 - Acoustic blankets or soundproof window inserts along facades of sensitive buildings as deemed necessary by the construction contractor.
 - Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available.
 - When in use, locate equipment on the construction site as far away from noise-sensitive sites as possible.
 - Construct walled enclosures around especially noisy activities or clusters of noisy equipment (e.g., shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures).
- Sequence of operations:
 - Restrict pile driving to daytime periods.
 - Combine loud operations to occur in the same time period.
 - The total noise level produced would not be substantially greater than the level produced if the operations were performed separately.
 - Avoid nighttime activities to the maximum extent feasible.
 - Sensitivity to noise increases during the nighttime hours in residential neighborhoods.
- Alternative construction methods:
 - Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible.

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- Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use.
- Use specially-quieted equipment, such as quieted and enclosed air compressors and properly-working mufflers on all engines.
- Select quieter demolition methods, where possible (e.g., sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers).
- Use vibratory rollers in static mode (vibrating motor turned down or off) when operating in close proximity to sensitive buildings.

In an effort to keep construction noise levels below Federal Transit Administration's (FTA) construction noise or vibration criteria, Metro shall monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring shall be conducted at the first row of residences at William Mead Homes, Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments, within approximately 300 feet of construction activities. Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance farther away. If FTA's construction noise or vibration criteria are exceeded, the contractor shall be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (examples above).

NV-3

Prepare a Community Notification Plan for Project Construction: To proactively address community concerns related to construction noise and vibration, prior to construction, Metro and/or the construction contractor shall prepare and maintain a community notification plan. Components of the plan shall include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Updates to the plan shall be prepared as necessary to indicate changes to the construction schedule or other processes. Metro shall identify a project liaison to be available to respond to questions and complaints from the community or other interested groups.

Rationale

Mitigation Measure NV-2 requires the construction contractor to employ measures to minimize and reduce construction vibration. Vibration reduction measures that would be implemented include, but are not limited to, the following:

- Construct temporary noise walls, such as temporary walls or piles of excavated material, between construction activities and noise-sensitive receivers

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- When in use, locate equipment on the construction site as far away from noise-sensitive sites as possible
- Restrict pile driving to daytime periods
- Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible
- Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use

In an effort to keep construction noise levels below FTA's vibration criteria, Metro will monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring will be conducted at the first row of residences at William Mead Homes, Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments, within approximately 300 feet of construction activities. In the event FTA's vibration criteria is exceeded, the contractor will be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (as identified in Mitigation Measure NV-2).

Mitigation Measure NV-3 requires Metro and/or the construction contractor to prepare and maintain a community notification plan to proactively address community concerns related to construction noise and vibration. Components of the plan will include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Metro will identify a project liaison to be available to respond to questions from the community or other interested groups.

Upon implementation of Mitigation Measures NV-2 and NV-3, significant impacts from construction-related vibration would be reduced to a level less than significant.

5.1.6 Transportation

Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities (Construction, Operations, and Indirect)

Impact 7.5.6-A Construction Impacts: The Modified Proposed Project would generate construction related traffic and result in temporary street closures. The Modified Proposed Project would also cause decrease performance for rail operators at LAUS and LADOT's Dash Route D and generate hazardous conditions along existing pedestrian/bicycle routes.

Operational Impacts: The permanent loss of storage tracks at the BNSF West Yard as part of the Modified Proposed Project would conflict with policies,

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programs, and goals contained in the City of Los Angeles Mobility Plan 2035 and the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change.

Indirect Impacts: The Modified Proposed Project would potentially create increased emissions and traffic queuing/delay as freight trains may be required to occupy the San Bernardino Subdivision, shared by passenger and freight trains.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

TR-1 Prepare a Construction TMP: During the final engineering phase and at least 30 days prior to construction, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro, LADOT, and Caltrans, where applicable.

The street closure schedules in the construction TMP shall be coordinated among the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, Los Angeles Unified School District, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. The signal timing at affected intersections and on and off ramps shall also be adjusted to reduce detoured traffic volumes and maintain traffic flow to the safest degree feasible. LADOT and Caltrans shall be notified in advance of street closures, detours, or temporary lane reductions. During planned closures, traffic shall be re-routed to adjacent streets via clearly marked detours and notice shall be provided in advance to applicable parties (nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours so as to avoid heavily congested areas during peak hours, where feasible. The following provisions shall be included in the TMP:

- Traffic flow shall be maintained, particularly during peak hours, to the degree feasible.
- Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, and residences at all times, as feasible.

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- Metro or the contractor shall post advance notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction.
- Metro shall notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions.
- Metro shall coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to mitigate detoured traffic volumes.
- Closed-circuit television cameras shall be installed at some of the impacted intersections (as approved by LADOT) to monitor traffic in real-time by the Automated Traffic Surveillance and Control department of LADOT during construction. This will allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements.
- Contractor shall avoid concurrent closures of Cesar Chavez Avenue and Vignes Street north of LAUS.

TR–2

Prepare Rail Operations Temporary Construction Staging Plan: During final engineering design and prior to construction, Metro shall prepare an MOU with each current rail operator, including, but not limited to SCRRA, LOSSAN, and Amtrak, to outline mutually agreed upon on-time performance goals to be achieved throughout construction, and how construction sequencing and railroad operational protocols shall be incorporated into applicable construction documents (plans and specifications).

Prior to construction, Metro and the construction contractor shall prepare detailed temporary construction staging plans for each phase of construction that the contractor implements to maintain mutually agreed upon on-time performance goals while minimizing impacts on pedestrians and passengers at LAUS. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to ensure that any rail-to-bus or rail-to-rail connections are uninterrupted throughout construction. Detailed temporary construction staging plans shall be deemed acceptable by the current rail operators prior to commencement of construction activities that could reduce on-time performance.

Throughout the duration of construction, SCRRA shall monitor on-time performance during construction and participate in weekly construction coordination meetings to ensure that the mutually agreed upon on-time performance is met.

TR-3**Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**

Metro and BNSF shall implement the following two railroad improvements at BNSF's Malabar Yard:

- 49th Street Closure: Closure of the 49th Street at-grade railroad crossing would accommodate approximately 3,350 track feet of storage capacity at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. One of the two design options considered for the closure of the at-grade crossing at 49th Street shall be implemented.
- 46th Street Connector: An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction. One of the two design options considered for the new track connection along 46th Street shall be implemented.

The timing for implementation and operation of this mitigation measure shall be before elimination of tracks at the West Bank Yard unless Metro and CHSRA, in its capacity as NEPA lead agency, mutually agree and conclude removing those tracks first would not cause adverse freight rail impacts.

Rationale

Mitigation Measure TR-1 requires the preparation and implementation of a TMP to minimize construction related vehicular traffic impacts during peak hours. The TMP will identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours so as to avoid heavily congested areas during peak hours, where feasible. The TMP requires coordination with LADOT and Caltrans to adjust the timing at affected intersection and on- or off-ramps to mitigate detoured traffic volumes and the installation of closed-circuit television cameras to monitor traffic in real-time and allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements.

Mitigation Measure TR-2 requires the preparation of an MOU with current rail operators to outline on-time performance goals as well as coordination to ensure rail-to-bus or rail-to-rail connections are uninterrupted during construction. Implementation of Mitigation Measure TR-2 would increase performance for rail operators at LAUS and LADOT's Dash Route D; thereby reducing the significant construction-related transportation impacts to a level less than significant.

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Mitigation Measure TR-3 is proposed to implement railroad improvements at BNSF's Malabar Yard. Implementation and operation of the 49th Street Closure and 46th Street Connector would offset the loss of storage track capacity at the BNSF West Bank Yard through implementation of railroad improvements at Malabar Yard.

Upon implementation of the railroad improvements associated with Mitigation Measures TR-1, TR-2, and TR-3, significant impacts associated with conflicts with transportation plans that promote connectivity and accessibility would be reduced to a level less than significant.

Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment) (Construction)

Impact 7.5.6-C Construction activities would result in temporary construction-related roadway hazards in the traffic study area. Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations throughout the traffic study area. The US-101 main line and on- and off-ramps at Commercial Street would be subject to temporary lane width reductions. Additionally, short-radius curves and/or short sight distances may occur during construction.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

TR-1 Prepare a Construction TMP

Rationale Mitigation Measure TR-1 requires the preparation and implementation of a TMP to minimize construction related roadway hazards. The TMP requires coordination with LADOT and Caltrans to adjust the timing at affected intersection and on- or off-ramps to mitigate detoured traffic volumes; maintaining traffic flow to the degree feasible; posting advance notice signs prior to construction in areas where access to local businesses could be affected; and notification to LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions. Implementation of Mitigation Measure TR-1 would reduce the impact associated with construction-related roadway hazards to a level less than significant.

Result in Inadequate Emergency Access (Construction)

Impact 7.5.6-D Based on a review of disaster route maps for the Los Angeles County Operational Area, the project is located within Area H of the Los Angeles Central Evacuation Map, of which Cesar Chavez Avenue and Alameda Street

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are designated as disaster routes, and US-101 is designated as a disaster route freeway. The Modified Proposed Project would interfere with emergency response times and access. Modifications to the Cesar Chavez Bridge would result in temporary closure of one lane in each direction for a temporary duration throughout construction. Closures would require traffic detouring and traffic would be diverted to local roadways, thereby affecting the LOS of adjacent intersections. Construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could interfere with emergency response times and access.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measure

TR-1 Prepare a Construction TMP

Rationale Mitigation Measure TR-1 requires the preparation and implementation of a TMP to minimize construction related vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided in advance to applicable parties (nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events). The TMP requires coordination with LADOT and Caltrans to adjust the timing at affected intersection and on- or off-ramps to mitigate detoured traffic volumes; maintaining traffic flow to the degree feasible; and notification to LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions. Implementation of Mitigation Measure TR-1 would reduce the impact associated with emergency response times and access to a level less than significant.

5.2 Environmental Impacts Found to be Significant and Unavoidable

5.2.1 Air Quality and Greenhouse Gas Emissions

Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region is Nonattainment Under an Applicable Federal or State Ambient Air Quality Standard (Construction)

Impact 7.5.2-B Construction of the Modified Proposed Project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, material delivery trips, and heavy-duty haul truck trips generated from construction activities during each construction phase. In addition, earthwork activities would result in fugitive dust emissions

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and paving operations would release reactive organic gases from off-gassing. Construction emissions associated with the Modified Proposed Project and Malabar Yard Railroad Improvements would exceed the SCAQMD's daily criteria pollutant thresholds for NO_x, PM₁₀, and PM_{2.5}.

Finding (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Mitigation Measures

AQ-1 Fugitive Dust Control

AQ-2 Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment

Rationale Mitigation Measure AQ-1 requires compliance with the SCAQMD's Rule 403 (fugitive dust control measures) and would reduce on-site fugitive dust emissions by 50 percent. Mitigation Measure AQ-2 requires all on-site construction equipment to meet or exceed U.S. EPA's Tier 4 final emission standards for all off-road construction equipment to be fueled using 100 percent renewable diesel. This measure would reduce the on-site exhaust emissions by up to 95 percent when compared with the average construction fleet for the South Coast Air Basin. After implementation of Mitigation Measures AQ-1 and AQ-2, the peak daily construction emissions would still exceed the SCAQMD's PM₁₀ threshold and the calculated emissions rates for the on-site construction activities associated with the proposed project would continue to exceed the localized significance thresholds for PM₁₀ and PM_{2.5}. Impacts would remain significant and unavoidable.

5.2.2 Noise and Vibration**Generation of a Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Project in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (Construction)**

Impact 7.5.5-A Construction related noise would exceed the City's applicable noise threshold at sensitive receptors nearest to the Project, including William Mead Homes, Mozaic Apartments, Care First Village, and the Metro Gateway Childhood Development Center.

Finding (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for

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highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Mitigation Measures

NV-2 Employ Noise- and Vibration-Reducing Measures during Construction

NV-3 Prepare a Community Notification Plan for Project Construction

Rationale Mitigation Measure NV-2 requires the construction contractor to employ measures to minimize and reduce construction noise. Noise reduction measures that would be implemented include constructing temporary noise walls between construction activities and sensitive receptors; using acoustic blankets or soundproof window inserts along facades of sensitive buildings; combining loud operations to occur in the same time period; avoiding nighttime activities to the maximum extent feasible; and using specially-quieted equipment. In an effort to keep construction noise levels below FTA's vibration criteria, Metro will monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring will be conducted at the first row of residences at William Mead Homes, Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments, within 300 feet of construction activities, approximately). In the event FTA's vibration criteria is exceeded, the contractor will be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (as identified in Mitigation Measure NV-2).

Mitigation Measure NV-3 requires Metro and/or the construction contractor to prepare and maintain a community notification plan to proactively address community concerns related to construction noise and vibration. Components of the plan will include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Metro will identify a project liaison to be available to respond to questions and complaints from the community or other interested groups.

Although Mitigation Measures NV-2 and NV-3 would reduce noise generated during construction noise levels at Category 2 land uses (i.e., residential) would exceed applicable FTA thresholds during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit:

- William Mead Homes - 17 dwelling units and one recreational use;
- Care First Village - approximately 25 dwelling units and a playground/park;
- Mozaic Apartments - 23 dwelling units; and,

- Metro Gateway Childhood Development Center.

Based on these considerations, impacts related to construction would remain significant and unavoidable.

5.3 Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact

CEQA does not require findings to be adopted for impacts that are determined to be less than significant or no impact. Table 5-1 identifies the environmental impacts found to be less than significant or no impact.

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Table 5-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Aesthetics	7.5.1-A: Have a substantial adverse effect on a scenic vista.	Construction – No Impact Operations – No Impact Indirect – No Impact
	7.5.1-B: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Construction – No Impact Operations – No Impact Indirect – No Impact
	7.5.1-C: Substantially degrade the existing visual character or quality of the site or its surroundings.	Construction – Less than Significant Indirect – No Impact
	7.5.1-D: Create a new source of light or glare that would adversely affect day or nighttime views in the area.	Operations – Less than Significant Indirect – No Impact
Air Quality and Greenhouse Gas Emissions	7.5.2-A: Conflict with or obstruct implementation of the applicable air quality plan.	Construction – No Impact Operations – Less than Significant Indirect – No Impact
	7.5.2-B: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	Indirect – Beneficial
	7.5.2-C: Expose sensitive receptors to substantial pollutant concentrations.	Indirect – Beneficial
	7.5.2-D: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	Construction – Less than Significant Operations – Less than Significant Indirect – No Impact

Table 5-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	7.5.2-E: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Construction – Less than Significant Operations – Less than Significant Indirect – No Impact
	7.5.2-F: Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Construction – Less than Significant Operations – Less than Significant Indirect – No Impact
Cultural Resources	7.5.3-A: Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.	Construction – No Impact Operations – No Impact Indirect – Less than Significant
	7.5.3-B: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	Operations – No Impact
	7.5.3-C: Disturb any human remains, including those interred outside of dedicated cemeteries.	Operations – No Impact Indirect – No Impact
Land Use and Planning	7.5.4-A: Physically divide an established community.	Construction – No Impact Operations – Less than Significant Indirect – No Impact
	7.5.4-B: Cause a significant impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Construction – Less than Significant Indirect – No Impact

Table 5-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Noise	7.5.5-A: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Indirect – Less than Significant
	7.5.5-B: Generation of excessive groundborne vibration or groundborne noise levels.	Operations – Less than Significant Indirect – Less than Significant
	7.5.5-C: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.	Construction – No Impact Operations – No Impact Indirect – No Impact
Transportation	7.5.6-B: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	Construction – N/A Operations – Less than Significant Indirect – No Impact
	7.5.6-C: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	Operations – No Impact Indirect – No Impact
	7.5.6-D: Result in inadequate emergency access.	Operations – Less than Significant Indirect – No Impact

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6.0 Findings - Malabar Yard Railroad Improvements

6.1 Environmental Impacts Found to be Less than Significant After Mitigation

6.1.1 Biological Resources

Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Any Species Identified as a Candidate, Sensitive, or Special Status Species in Local or Regional Plans, Policies, or Regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service (Construction and Indirect)

Impact A **Construction Impacts:** The Malabar Yard railroad improvements could have a significant impact on nesting bird species protected by the Migratory Bird Treaty Act (MBTA) during construction. Suitable habitat for these species is present within the Malabar Yard study area and construction of the Malabar Yard railroad improvements could pose a significant impact by removing naturally occurring or ornamental trees, disturbing roost sites causing abandonment, or interfering with nesting birds during the nesting season.

Indirect Impacts: Construction and operation of the Malabar Yard railroad improvements could result in indirect impacts on MBTA-protected bird species that may be present within the Biological Study Area. Indirect impacts on an active nest include increased construction noise above ambient noise levels, vibration, excess dust, night lighting, and human encroachment, all of which may result in nest failure.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY BIO-1 **MBTA Species:** During construction, vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be adjusted

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based on species-specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active.

Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at buildings, or other structures that will be removed before the nesting season (February 1 through September 30) to prevent nesting at the bridges, buildings, or other structures by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA.

Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction. Metro's Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory WEAP training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and RWQCB jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.

Rationale

Malabar Yard Mitigation Measure BIO-1 requires the removal of vegetation to occur outside of bird nesting season, as feasible, or a combination of preconstruction surveys, establishment of nest buffers, and the use of exclusion devices for birds, thus avoiding direct impacts on nesting birds.

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Malabar Yard Mitigation Measure BIO-1 would require guidance and observation from a qualified biologist in the scenario that removal of partially constructed nests is necessary. Additionally, mandatory WEAP training would be required for any new Project personnel or contractors that come on board after the initiation of construction. Implementation of Malabar Yard Mitigation Measure BIO-1 would reduce construction and indirect impacts on special-status species to a level less than significant.

Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance (Construction)

Impact E Construction of the Malabar Yard railroad improvements may result in damage and/or removal of tree species that are considered protected by the City of Vernon Tree Ordinance. The cutting and/or removal of any protected City-owned trees without a tree removal permit would conflict with the City of Vernon Tree Ordinance.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY BIO-2 **Protected Trees:** Prior to construction, City-owned trees (outside of private property) shall be identified and overlaid on Project footprint maps to determine which trees may be protected in accordance with the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). Prior to removal of any City-owned tree, Metro shall prepare a Tree Removal/Tree Protection Plan for review and approval by the City of Vernon Public Works Department that identifies:

- Trees proposed to be cut or removed;
- Trees proposed to be retained; and
- Trees proposed to be provided in replacement of the trees that are to be cut or removed.

All street trees shall be planted per the street tree master plan on file in the City of Vernon Public Works Department. In addition, all construction shall preserve and protect the health of trees to remain, relocated trees, and new trees planted to replace those removed in accordance with Section 12.24.090 of the City's Tree Ordinance.

Rationale Malabar Yard Mitigation Measure BIO-2 requires the identification of the specific trees within the Project footprint that are to be protected in accordance with the City of Vernon's Tree Ordinance. Removal and/or damage of protected trees would require a tree removal permit from the City of Vernon and any

removed trees would require replacement. Upon implementation of Malabar Yard Mitigation Measure BIO-2, impacts would be reduced to a level less than significant.

6.1.2 Cultural Resources

Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to §15064.5 or Disturb Any Human Remains (Construction and Indirect)

Impact B, C **Construction Impacts:** No archaeological resources have been identified within or near the Project footprint for the Malabar Yard railroad improvements; however, ground-disturbing construction activities would occur in areas along 46th Street and 49th Street with elevated potential to contain buried archaeological sites, which may include human remains.

Indirect Impacts: Even though the construction site would be fenced and off limits to the general public, indirect impacts may result from increased accessibility to buried archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY CUL-1 **Archaeological Treatment Plan (ATP).** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence.

The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990).

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The ATP shall include, at a minimum, the following elements:

- **Research Design:** The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions.
- **Archaeological and Native American monitoring:** The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards.
- **Provisions for the accidental discovery of archaeological features or deposits:** The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented.

Provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony – The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes.

- **Cultural resource WEAP training:** The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas.

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- **Standards for reporting:** The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's Archaeological Resources Management Reports: Recommended Contents and Format.
- **Guidelines for curation:** The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.

Rationale

Malabar Yard Mitigation Measure CUL-1 requires Metro's qualified archaeologist to develop an ATP that details the treatment and management for known historical resources, determines thresholds of significance for each of the feature types encountered, and the process for treating unanticipated discoveries. Metro will retain archaeological monitors who will be supervised by a qualified archaeologist who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and experienced in analysis and evaluation of the types of material anticipated to be encountered, outlined in the ATP. The ATP will also contain provisions for the development of a public outreach and educational plan that includes continued consultation and input from Native American Tribes consulting under AB 52 and other potential stakeholders. Additionally, a qualified archaeologist will be retained by Metro to prepare a cultural resource-focused WEAP training that will be given to all ground-disturbing construction personnel to minimize harm to archaeologically sensitive areas and any previously undiscovered archaeological resources. The ATP will also include a robust research design, a data recovery plan, a monitoring plan for sensitive areas, and a plan for the analysis and long-term curation of archaeological materials recovered during construction.

Upon implementation of Malabar Yard Mitigation Measure CUL-1, impacts would be reduced to a level less than significant.

6.1.3 Geology and Soils

Directly or Indirectly Cause Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, Ground Failure Including Liquefaction, or Landslides (Indirect)

Impact A (i-iv) Construction activities associated with Malabar Yard railroad improvements would not cause a regional increase in groundwater elevations or accelerate the potential for liquefaction or other types of seismically induced ground failure beyond existing conditions. However, the Malabar Yard study area includes soils that are potentially liquefiable, such soils may need stabilization during construction.

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Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY GEO-1 **Prepare Final Geotechnical Report:** During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following:

- Site preparation
- Soil bearing capacity
- Appropriate sources and types of fill
- Liquefaction
- Lateral spreading
- Corrosive soils
- Structural foundations
- Grading practices

The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of Malabar Yard railroad improvements in accordance with the *Manual for Railway Engineering* and applicable local city codes. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.

Rationale Malabar Yard Mitigation Measure GEO-1 requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the Project. The final geotechnical report will address and include site-specific design recommendations. The final geotechnical report will also include results of subsurface testing of soil and groundwater conditions and will provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Project infrastructure would be constructed in accordance with standard engineering practices to minimize the impacts of liquefaction throughout construction. Implementation of Malabar Yard

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Mitigation Measure GEO-1 would reduce impacts to a level less than significant.

Be Located on a Geologic Unit or Soil that is Unstable, or that Would Become Unstable as a Result of the Project and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction or Collapse (Construction and Operations)

Impact C **Construction Impacts:** Potentially collapsible soils may be present in localized areas within the Malabar Yard study area and construction activities may be subject to hydrocollapse. There is also an increased risk of corrosive soils that may be exposed during construction.

Operational Impacts: Due to the limited amount of site-specific geotechnical information available and the high to low corrosion potential of soils, the Malabar Yard railroad improvements could result in an increased risk of damage from corrosive soils.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY GEO-1 **Prepare Final Geotechnical Report**

Rationale Malabar Yard Mitigation Measure GEO-1 requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the Project. The final geotechnical report will address and include site-specific design recommendations on collapsible and corrosive soils. The final geotechnical report will also include results of subsurface testing of soil and groundwater conditions and will provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. The Malabar Yard railroad improvements would be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared. Implementation of Malabar Yard Mitigation Measure GEO-1 would reduce impacts to a level less than significant.

Be Located on Expansive Soil, as defined in Table 18-1B of the Uniform Building Code (1994), Creating Substantial Direct or Indirect Risk to Life or Property (Construction)

Impact D Construction of the Malabar Yard railroad improvements would occur in an area with potentially expansive soils which could result in uplift pressures that lead to structural damage.

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Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures**MY GEO-1 Prepare Final Geotechnical Report**

Rationale Malabar Yard Mitigation Measure GEO-1 requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the Project. The final geotechnical report will address and include site-specific design recommendations on soil bearing capacity and structural foundations. The final geotechnical report will also include results of subsurface testing of soil and groundwater conditions and will provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. The Malabar Yard railroad improvements would be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared. Implementation of Malabar Yard Mitigation Measure GEO-1 would reduce impacts to a level less than significant.

Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature (Construction and Indirect)

Impact F **Construction Impacts:** Construction of the Malabar Yard railroad improvements may result in direct significant impacts on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located.

Indirect Impacts: Even though the construction site would be off limits to the general public, indirect impacts during all phases of work may result from increased accessibility (rather than damage or destruction) by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may occur.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY PAL-1 **Paleontological Mitigation Plan (PMP):** It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using

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final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery.

The PMP shall include a requirement for full-time paleontological monitoring if excavations will occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that affect only artificial fill and Quaternary younger alluvium (Qa/Qal).

The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery), and Metro's qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in other areas of the Project footprint for Malabar Yard railroad improvements while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by Metro's qualified paleontologist.

MY PAL-2

Paleontological WEAP Training: Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP.

MY PAL-3

Curation: Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow taxonomic identification of the fossils. All field notes, photographs, stratigraphic sections,

and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.

Rationale

Malabar Yard Mitigation Measure PAL-1 requires a qualified Paleontologist to prepare a PMP. The PMP will use final excavation plans to determine where geologic units that have a high paleontological potential would be impacted, and Metro will be required to implement the PMP prior to the start of any ground-disturbing construction activities. The PMP will include site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP will detail a discovery protocol in the event potentially significant paleontological resources are encountered during construction. If necessary, appropriate salvage measures and mitigation measures will be developed in conformance with state guidelines and best practices.

Malabar Yard Mitigation Measure PAL-2 requires Metro's qualified paleontologist to prepare a paleontological resource-focused WEAP training that will be given to all ground-disturbing construction personnel. All site workers will be required to complete WEAP training with a focus on paleontological resources, including a review of what to do in the case of an unanticipated fossil discovery, as identified in the PMP.

Malabar Yard Mitigation Measure PAL-3 requires Metro to arrange for the curation in perpetuity of significant fossils recovered during construction at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils will be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition of any salvaged specimens) by Metro's qualified paleontologist.

Implementation of Malabar Yard Mitigation Measures PAL-1 through PAL-3 would reduce impacts on paleontological impacts to a level less than significant.

6.1.4 Hazards and Hazardous Materials

Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials (Construction)

Impact A

Construction of the Malabar Yard railroad improvements require the use of hazardous materials and substances. This would pose a hazard in the event that an accidental release or spill occurs. Additionally, contaminated soil and groundwater is expected to be encountered during soil excavations. Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils during construction.

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Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP):
Prior to construction, an HMMP shall be prepared by the contractor that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the Project footprint for Malabar Yard railroad improvements, and include, but not be limited to, the following:

- A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200)
- A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120)
- Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38)
- A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; and (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910)
- Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200)
- Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120).

Rationale Malabar Yard Mitigation Measure HAZ-1 requires Metro to prepare an HMMP prior to construction. The HMMP will outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. Implementation of Malabar Yard Mitigation Measure HAZ-1 would reduce impacts related to the routine transport, use, and disposal of contaminated soils to a level less than significant.

Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Likely Release of Hazardous Materials into the Environment (Construction)

Impact B The Malabar Yard study area contains two high-risk recognized environmental condition (REC) sites that contain documented hazardous material contamination. During construction activities, The REC sites could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants. Construction activities could also have the potential to release heavy metals, herbicides, or volatile contaminant vapors.

Construction of either design option at 46th Street would include demolition of at least one building that may have structural components that contain asbestos and/or lead.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HAZ-1 Prepare a Construction HMMP

MY HAZ-2 **Prepare Phase II ESA:** Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint for the selected design options that would be affected by excavation. Phase II activities shall consist of:

- Collection of soil, groundwater, and soil vapor samples from borings, for geologic and environmental analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the Project area.
- Laboratory analysis of samples for contaminants of concern, which vary by location, but may include: VOCs, PAHs, TPH, PCBs, and CCR Title 22 metals.

A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA recommendations. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites.

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MY HAZ-3 **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan:

- General worker health and safety procedures
- Dust control
- Management of soil stockpiles
- Traffic control
- Stormwater erosion control using BMPs

MY HAZ-4 **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP):** Prior to construction, the contractor shall prepare parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites. The nature and extent of contamination is expected to vary widely across the Project footprint for the selected design options, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following:

- Soil disposal protocols
- Protocols governing the discovery of unknown contaminants
- Management of soil on properties within the Project footprint of the selected design options with known contaminants

Prior to construction on individual properties with known contaminants, parcel-specific HASPs shall also be prepared by contractors undertaking work activities to be submitted to and approved by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state, and local regulations and agency ordinances related to the management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASP provisions shall also be implemented:

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- Training requirements for site workers who may be handling contaminated material
- Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property
- Mitigation and monitoring measures that are protective of site worker and public health and safety

Prior to construction, Metro or BNSF shall coordinate soil management measures and reporting activities shall be coordinated with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the Project, and each of the contaminated sites.

MY HAZ-5

Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered: Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials are encountered. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, underground storage tanks, ACM (e.g., transit pipes) encountered during the construction process.

MY HAZ-6

Pre-Demolition Investigation: Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.

Rationale

Malabar Yard Mitigation Measure HAZ-1 requires Metro to prepare an HMMP prior to construction. The HMMP will outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials,

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contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal.

Malabar Yard Mitigation Measure HAZ-2 requires Metro to prepare a Phase II Environmental Site Investigation (ESA) prior to final design. The Phase II ESA will focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. A Phase II ESA Report will be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro will implement the recommendations in the Phase II ESA.

Malabar Yard Mitigation Measure HAZ-3 requires Metro to prepare a General Construction Soil Management Plan prior to construction. The General Construction Soil Management Plan will include general provisions for how soils will be managed within the Project footprint for the duration of construction.

Malabar Yard Mitigation Measure HAZ-4 requires Metro to prepare parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites. For individual properties with known contaminants, parcel-specific HASPs will also be prepared for submittal and approval by DTSC. The HASPs will be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities.

Malabar Yard Mitigation Measure HAZ-5 requires contractors to halt construction work and follow procedures outlined in the HMMP and Soil Management Plans immediately upon discovery of potentially hazardous materials.

Malabar Yard Mitigation Measure HAZ-6 requires contractors to perform a pre-demolition survey to investigate the presence of hazardous building materials, in addition to an asbestos survey report conducted by a Certified Asbestos Consultant. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements.

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Implementation of Malabar Yard Mitigation Measures HAZ-1 through MY HAZ-6 would reduce the potential impacts related to a release of hazardous materials during construction to a level less than significant.

Be Located on a Site Which is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5 and, as a Result, Would it Create a Significant Hazard to the Public or the Environment (Construction and Indirect)

Impact D **Construction Impacts:** Two REC sites with high-risk rankings were identified within the Malabar Yard study area. The close proximity of these existing RECs to potential construction activities would carry the potential for encountering contaminated soil and/or groundwater.

Indirect Impacts: indirect impacts could occur in the event hazardous materials migrate from the aforementioned two REC sites into other properties during construction of the Malabar Yard railroad improvements.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HAZ-1 **Prepare a Construction HMMP**

MY HAZ-2 **Prepare a Phase II ESA**

MY HAZ-3 **Prepare a General Construction Soil Management Plan**

MY HAZ-4 **Prepare Parcel-Specific Soil Management Plans and HASP**

Rationale Malabar Yard Mitigation Measure HAZ-1 requires Metro to prepare an HMMP prior to construction. The HMMP will outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal.

Malabar Yard Mitigation Measure HAZ-2 requires Metro to prepare a Phase II ESA prior to final design. The Phase II ESA will focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. A Phase II ESA Report will be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro will implement the recommendations in the Phase II ESA.

Malabar Yard Mitigation Measure HAZ-3 requires Metro to prepare a General Construction Soil Management Plan prior to construction. The General

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Construction Soil Management Plan will include general provisions for how soils will be managed within the Project footprint for the duration of construction. The topic of stormwater erosion control using BMPs will be addressed within the Soil Management Plan.

Malabar Yard Mitigation Measure HAZ-4 requires Metro to prepare parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites. For individual properties with known contaminants, parcel-specific HASPs will also be prepared for submittal and approval by DTSC. The HASPs will be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities.

Implementation of Malabar Yard Mitigation Measures HAZ-1 through MY HAZ-4 would reduce the potential for a release contaminated soil and/or groundwater during construction to a level less than significant.

Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan (Construction)

Impact F Construction activities associated with the Malabar Yard railroad improvements would require temporary road closures, detours, and additional vehicles on the existing roadway network. Increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers or emergency evacuation.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY TR-1 Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements: During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon.

Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, Los Angeles Unified School District, and emergency service providers to minimize construction-related vehicular and non-vehicular

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traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. The following provisions shall be included in the TMP:

- Traffic flow shall be maintained, particularly during peak hours, to the degree feasible.
- Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, as feasible.
- Metro or the contractor shall post advance-notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction.
- Metro or the contractor shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.

Rationale

Malabar Yard Mitigation Measure TR-1 requires the preparation and implementation of a TMP for Malabar Yard railroad improvements to minimize construction-related vehicular and non-vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP would also identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. Implementation of Malabar Yard Mitigation Measure TR-1 would reduce the impact associated with emergency response and access to a level less than significant.

6.1.5 Hydrology and Water Quality

Violate Any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Ground Water Quality (Construction and Operation)

Impact A **Construction Impacts:** Construction of either design option at both locations of the Malabar Yard railroad improvements could exceed waste, stormwater, and non-stormwater discharge requirements and result in a significant impact on water quality if stormwater runoff is not properly managed. Grading activities could result in short-term erosion and downstream sedimentation.

Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials, may also expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River Reach 2. Similarly, tainted soil may be subject to erosion from storm events. Improper handling of concrete mix could be carried away by runoff and result in degradation of surface water.

Operational Impacts: During operation of either design option at both locations of the Malabar Yard railroad improvements, minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge oil, grease, and other chemical pollutants into existing drainage systems.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HWQ-1 **Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements:** During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order No. 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during Project construction. Metro or BNSF shall comply with the Risk Level 2 sampling and reporting requirements of the CGP. A rain event action plan shall be prepared and implemented by a

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qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to the SWRCB within 90 days of completion of construction and stabilization of the site.

- MY HWQ-2 Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Vernon.
- MY HWQ-3 Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Vernon.
- MY HWQ-4 Prepare and Implement Industrial SWPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements:** Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable.
- MY HWQ-5 Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements:** For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges

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Originating from the City of Long Beach MS4 (Order No. 2021-0105, NPDES No. CAS004004), effective July 23, 2021 (known as the Phase I Permit). Metro or BNSF shall prepare a final LID report in accordance with the City of Vernon's *Low Impact Development Guidance Manual*. This document shall identify the required BMPs to be in place prior to Project operation and maintenance.

Rationale

Malabar Yard Mitigation Measure HWQ-1 requires Metro to comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. The contractor will implement all required aspects of the SWPPP during Project construction.

Malabar Yard Mitigation Measures HWQ-2 and MY HWQ-3 require Metro to comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction.

Malabar Yard Mitigation Measure HWQ-4 requires Metro or BNSF to comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements.

Malabar Yard Mitigation Measure HWQ-5 requires Metro or BNSF to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2021-0105, NPDES No. CAS004004), effective July 23, 2021 (known as the Phase I Permit) for the Malabar Yard railroad improvements in the City of Vernon.

Implementation of Malabar Yard Mitigation Measures HWQ-1 through HWQ-5 would reduce water quality impacts to a level less than significant.

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Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner Which Would:

- i. **Result in substantial erosion or siltation on- or off-site (Construction, Operations, and Indirect)**

Impact 3.8-C(i) Construction Impacts: If drainage is not properly managed during construction, any increases in sediment load from the construction area could lead to erosion and alterations in drainage patterns and/or flooding.

Operational Impacts: Reconfiguration of impervious surfaces could affect drainage in a manner that could change the rate of stormwater runoff entering the public storm drain system.

Indirect Impacts: During construction and operations, implementation of any combination of design options for the Malabar Yard railroad improvements may result in potential soil erosion and may alter drainage patterns as it may be necessary for the contractor to reroute drainage around one or more construction areas to ensure that connections to existing drainage infrastructure are maintained and/or improved.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HWQ-1 Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements.

MY HWQ-5 Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements.

Rationale Malabar Yard Mitigation Measure HWQ-1 requires Metro to comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. The contractor will implement all required aspects of the SWPPP during Project construction. A rain event action plan will be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration.

Malabar Yard Mitigation Measure HWQ-5 requires Metro or BNSF to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges

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Originating from the City of Long Beach MS4 (Order No. 2021-0105, NPDES No. CAS004004), effective July 23, 2021 (known as the Phase I Permit) for the Malabar Yard railroad improvements in the City of Vernon.

Implementation of Malabar Yard Mitigation Measures HWQ-1 and HWQ-5 would reduce hydrology and water quality impacts to a level less than significant.

Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner Which Would:

- iii. **Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (Construction, Operations, and Indirect)**

Impact 3.8-C(iii) Construction Impacts: During construction of either design option at both locations of the Malabar Yard railroad improvements, excavated soils would be exposed, resulting in increased potential for soil erosion. Additionally, excavated soils would likely be contaminated, and if not properly managed, hazardous materials and waste may be spilled or leaked and has the potential to be transported via stormwater runoff.

Operational Impacts: The Malabar Yard study area is largely covered with impervious surfaces and any reconstruction of impervious surfaces could affect stormwater runoff if not properly designed for and managed throughout operation.

Indirect Impacts: Construction of any combination of design options for the Malabar Yard railroad improvements may result in changes to existing drainage patterns within the Project footprint for the design options, which may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HWQ-1	Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements
MY HWQ-5	Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements
MY HAZ-1	Prepare a Construction Hazardous Materials Management Plan (HMMP)

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Rationale	Malabar Yard Mitigation Measure HWQ-1 requires Metro to comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. The contractor will implement all required aspects of the SWPPP during Project construction. Malabar Yard Mitigation Measure HWQ-5 would require Metro or BNSF to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2021-0105, NPDES No. CAS004004), effective July 23, 2021 (known as the Phase I Permit) for the Malabar Yard railroad improvements in the City of Vernon. Malabar Yard Mitigation Measure HAZ-1 would require Metro to prepare an HMMP prior to construction. The HMMP will outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. Implementation of Malabar Yard Mitigation Measures HWQ-1, HWQ-5, and HAZ-1 would reduce hydrology and water quality impacts to a level less than significant.

6.1.6 Public Services

Would the Project Result in Substantial Adverse Physical Impacts Associated with the Provision of New or Physically Altered Governmental Facilities, Need for New or Physically Altered Governmental Facilities, the Construction of Which Could Cause Significant Environmental Impacts, in Order to Maintain Acceptable Service Ratios, Response Times or Other Performance Objectives for Any Public Services (Construction)

Impact A	During construction of the Malabar Yard railroad improvements, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers.
Finding	(1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY TR-1	Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements

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Rationale Malabar Yard Mitigation Measure TR-1 requires the preparation and implementation of a TMP for Malabar Yard railroad improvements to minimize construction-related vehicular and non-vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). Implementation of Malabar Yard Mitigation Measure TR-1 would reduce the impact associated with emergency response and access to a level less than significant.

6.1.7 Transportation**Conflict with a Program Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities (Construction and Indirect)**

Impact A **Construction and Indirect Impacts:** Construction of the Malabar Yard railroad improvements would result in construction-related traffic (equipment, employee vehicles, deliveries of construction material, and hauling of landfill materials in trucks, along with temporary street closures. The temporary road closures within the traffic study area may potentially affect public transit and other non-motorized modes of travel. Construction of any combination of design options would require detour routes and temporary traffic disruptions that may cause decreased performance for transit operators or subject pedestrians and bicyclists to hazardous conditions near work zones.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**

Rationale Malabar Yard Mitigation Measure TR-1 requires the preparation and implementation of a TMP for Malabar Yard railroad improvements to minimize construction-related vehicular and non-vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP would also identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested

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areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. Implementation of Malabar Yard Mitigation Measure TR-1 would reduce impacts associated with conditions for transit operators and pedestrians and bicyclists to a level less than significant.

Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)? (Construction)

Impact C Construction activities would require temporary road closures and would result in temporary construction-related roadway hazards in the traffic study area to motorists, pedestrians, and bicyclists.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**

Rationale Malabar Yard Mitigation Measure TR-1 requires the preparation and implementation of a TMP for Malabar Yard railroad improvements to minimize construction-related vehicular and non-vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP would also identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. Implementation of Malabar Yard Mitigation Measure TR-1 would reduce impacts associated with temporary construction-related roadway hazards to a level less than significant.

Result in Inadequate Emergency Access (Construction)

Impact D Construction activities would require temporary road closures, detours, and additional vehicles on the existing roadway network which may impede access for emergency responders throughout construction. Increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers or emergency evacuation.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**

Rationale Malabar Yard Mitigation Measure TR-1 requires the preparation and implementation of a TMP for Malabar Yard railroad improvements to minimize construction-related vehicular and non-vehicular traffic impacts during peak hours. During planned closures, traffic would be re-routed to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP would also identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. Implementation of Malabar Yard Mitigation Measure TR-1 would reduce impacts associated with emergency access to a level less than significant.

6.1.8 Tribal Cultural Resources

Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource, Defined in Public Resources Code § 21074 as Either a Site, Feature, Place, Cultural Landscape That is Geographically Defined in Terms of the Size and Scope of the Landscape, Sacred Place, or Object with Cultural Value to a California Native American tribe (Construction and Indirect)

Impact A (i, ii) **Construction Impacts:** No archaeological resources have been identified within or near the ADI for the Malabar Yard railroad improvements; however, ground-disturbing construction activities would occur in areas along 46th Street and 49th Street with elevated potential to contain previously unrecorded and buried archaeological sites, which may also qualify as tribal cultural resources.

Indirect Impacts: Even though the construction site would be fenced and off limits to the general public, indirect impacts may still result from increased accessibility to previously unrecorded and buried archaeological resources (which may also qualify as tribal cultural resources) by construction personnel that could lead to resource looting or vandalism activities.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY CUL-1 **Preparation of an Archaeological Treatment Plan (ATP)**

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Rationale	Malabar Yard Mitigation Measure CUL-1 requires Metro's qualified archaeologist to develop an ATP that details the treatment and management for known historical resources, determines thresholds of significance for each of the feature types encountered, and the process for treating unanticipated discoveries. Metro will retain archaeological monitors who will be supervised by a qualified archaeologist who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and experienced in analysis and evaluation of the types of material anticipated to be encountered, outlined in the ATP. The ATP will also contain provisions for the development of a public outreach and educational plan that includes continued consultation and input from Native American Tribes consulting under AB 52 and other potential stakeholders. Additionally, a qualified archaeologist will be retained by Metro to prepare a cultural resource-focused WEAP training that will be given to all ground-disturbing construction personnel to minimize harm to archaeologically sensitive areas and any previously undiscovered archaeological resources. The ATP will also include a robust research design, a data recovery plan, a monitoring plan for sensitive areas, and a plan for the analysis and long-term curation of archaeological materials recovered during construction. Upon implementation of Malabar Yard Mitigation Measure CUL-1, impacts would be reduced to a level less than significant.

6.1.9 Utilities and Service Systems

Require or Result in the Relocation or Construction of New or Expanded Water, Wastewater Treatment or Storm Water Drainage, Electric Power, Natural Gas, or Telecommunications Facilities, the Construction or Relocation of Which Could Cause Significant Environmental Effects

Have Sufficient Water Supplies Available to Serve the Project and Reasonably Foreseeable Future Development During Normal, Dry and Multiple Dry Years

Result in a Determination by the Wastewater Treatment Provider, which Serves or May Serve the Project that it has Adequate Capacity to Serve the Project's Projected Demand in Addition to the Provider's Existing Commitments (Construction and Operations)

Impact A-C	Construction Impacts: Construction of the Malabar Yard railroad improvements would require grading and excavation which could have direct impacts on prevailing drainage patterns and the rate and volume of stormwater runoff entering the public storm drain system. Although the grading and excavation would be minimal due to the existing grade of the Project footprint for the design options considered and extent of proposed improvements, construction-related changes in drainage patterns, including changes to the

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volume and rate of runoff, may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area.

Operational Impacts: Any reconstruction of impervious surfaces could affect drainage in a manner that could change the rate of stormwater runoff entering the public storm drain system.

Finding (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

Mitigation Measures

MY HWQ-1 Prepare and Implement an SWPP for the Malabar Yard Railroad Improvements

MY HWQ-5 Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements

Rationale Malabar Yard Mitigation Measure HWQ-1 requires Metro to comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. The contractor will implement all required aspects of the SWPPP during Project construction.

Malabar Yard Mitigation Measure HWQ-5 would require Metro or BNSF to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2021-0105, NPDES No. CAS004004), effective July 23, 2021 (known as the Phase I Permit) for the Malabar Yard railroad improvements in the City of Vernon.

Implementation of Malabar Yard Mitigation Measures HWQ-1 and MY HWQ-5 would reduce impacts on existing storm drains and stormwater facilities to a level less than significant.

6.2 Environmental Impacts Found to be Significant and Unavoidable

6.2.1 Transportation

Substantially Increase Hazards due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment) (Operations)

Impact C The New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. While blocking an intersection is not a legal vehicular maneuver, the increase in queue at this location may introduce a potential roadway hazard.

Finding (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Mitigation Measures

MY TR-6 **Obtain Required Approvals for At-Grade Railroad Crossings:** For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain required approvals from the City of Vernon and submit a Formal Application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 *CEQA Compliance*, the Formal Application shall include the Link US Final EIR (June 2019) and Final EIS/SEIR.

Rationale Malabar Yard Mitigation Measure TR-6 requires Metro and BNSF to obtain all required approvals from the City of Vernon and submit a formal application to the CPUC to minimize potential roadway hazards at existing and new at-grade railroad crossings.

Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard as effectively as possible; however, further coordination with CPUC and the City of Vernon is required during subsequent phases of design to establish the level of effectiveness for this mitigation measure. Through the CPUC coordination and approval process, field diagnostics and additional roadway safety analysis are required to be conducted at each at-grade crossing location to maximize safety for vehicular and non-vehicular roadway users. Potential roadway safety devices that may be considered for future implementation include queue cutter traffic signals or pre-signals for the new railroad crossing on Seville Avenue. These measures do not reduce the queue; however, would

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prevent vehicle queueing from occurring on the tracks that currently extend across Seville Avenue south of New Railroad Crossing #5. Impacts would remain significant and unavoidable.

Result in inadequate emergency access (Operations)

Impact D A potential roadway hazard may occur from vehicle queueing along Seville Avenue, which in turn may impede access for emergency responders.

Finding (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Mitigation Measures**MY TR-6 Obtain Required Approvals for At-Grade Railroad Crossings**

Rationale Malabar Yard Mitigation Measure TR-6 requires Metro and BNSF to obtain all required approvals from the City of Vernon and submit a formal application to the CPUC to minimize potential roadway hazards at existing and new at-grade railroad crossings.

Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness of this mitigation measure, further coordination with CPUC and the City of Vernon is required. Impacts would remain significant and unavoidable.

6.3 Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact

CEQA does not require findings to be adopted for impacts that are determined to be less than significant or no impact. Table 6-1 identifies the environmental impacts found to be less than significant or no impact.

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Aesthetics	A) Have a substantial adverse effect on a scenic vista?	Construction – No Impact Operation – No Impact Indirect – No Impact
	B) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Construction – No Impact Operation – No Impact Indirect – No Impact
	C) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact
	D) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact
Agriculture and Forestry Resources	A) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Construction – No Impact Operation – No Impact Indirect – No Impact
	B) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	
	C) Conflict with existing zoning for, or cause rezoning of, Forest Land (as defined in PRC Section (12220(g))), timberland (as	

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	defined by PRC 4526), or timberland-zoned Timberland Production (as defined by CGC Section 51104(g))? D) Result in the loss of forest land or conversion of forest land to non-forest use? E) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of Forest Land to non-forest use?	
Air Quality	A) Conflict with or obstruct implementation of the applicable air quality plan?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact
	B) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact
	C) Expose sensitive receptors to substantial pollutant concentrations?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
	D) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact
Biological Resources	A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a	Operation – Less than Significant

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	
	E) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Construction – No Impact Operation – No Impact Indirect – No Impact
	F) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Construction – No Impact Operation – No Impact Indirect – No Impact
	G) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
	H) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Operation – No Impact Indirect – No Impact
	I) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Construction – No Impact Operation – No Impact Indirect – No Impact
Cultural Resources	A) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Construction – Less than Significant

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
		Operation – Less than Significant Indirect – No Impact
	B) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Operation – Less than Significant
	C) Disturb any human remains, including those interred outside of dedicated cemeteries?	Operation – Less than Significant
Energy	A) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
	B) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
Geology and Soils	A) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?	Construction – Less than Significant Operation – Less than Significant

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	B) Result in substantial soil erosion or the loss of topsoil?	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
	C) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	Indirect – Less than Significant
	D) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?	Operation – Less than Significant Indirect – Less than Significant
	E) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?	Construction – No Impact Operation – No Impact Indirect – No Impact
	F) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Operation – No Impact
Greenhouse Gas Emissions	A) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
	B) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Construction – Less than Significant Operation – Less than Significant Indirect – No Impact

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Hazards and Hazardous Materials	A) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Operation – Less than Significant Indirect – Less than Significant
	B) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the likely release of hazardous materials into the environment?	Operation – Less than Significant Indirect – Less than Significant
	C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Construction – No Impact Operation – No Impact Indirect – No Impact
	D) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create an adverse hazard to the public or the environment?	Operation – Less than Significant
	E) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Construction – No Impact Operation – No Impact Indirect – No Impact
	F) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Operation – Less than Significant Indirect – Less than Significant
	G) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Construction – No Impact Operation – No Impact

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
		Indirect – No Impact
Hydrology and Water Quality	A) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Construction – No Impact Operation – No Impact Indirect – No Impact
	B) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
	iv. impede or redirect flood flows?	Construction – No Impact Operation – No Impact Indirect – No Impact
	C) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Construction – No Impact Operation – No Impact Indirect – No Impact
	D) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Construction – No Impact Operation – No Impact Indirect – No Impact
Land Use and Planning	A) Physically divide an established community	Construction – No Impact

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
		Operation – Less than Significant Indirect – Less than Significant
	B) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Construction – No Impact Operation – No Impact Indirect – No Impact
Mineral Resources	A) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? B) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Construction – No Impact Operation – No Impact Indirect – No Impact
Noise	A) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
	B) Generation of excessive groundborne vibration or groundborne noise levels?	Construction – Less than Significant Operation – Less than Significant Indirect – Beneficial Impact
	C) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Construction – No Impact Operation – No Impact Indirect – No Impact

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Population and Housing	A) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? B) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Construction – No Impact Operation – No Impact Indirect – No Impact
Public Services	A) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: iii. Schools iv. Parks v. Other Public Facilities	Operation – Less than Significant Indirect – No Impact
Recreation	A) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? B) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Construction – No Impact Operation – No Impact Indirect – No Impact
Transportation	A) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Operation – Less than Significant

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	B) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
	C) Substantially increase hazards due to geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Indirect – Less Than Significant
	D) Result in inadequate emergency access?	Indirect – Less than Significant
Tribal Cultural Resources	A) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	Operation – Less than Significant

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
Utilities/Service Systems	A) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Indirect – No Impact
	B) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	Indirect – No Impact
	C) Result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	Indirect – No Impact
	D) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
	E) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Construction – Less than Significant Operation – Less than Significant Indirect – Less than Significant
Wildfire	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: A) Substantially impair an adopted emergency response plan or emergency evacuation plan? B) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to,	Construction – No Impact Operation – No Impact Indirect – No Impact

Table 6-1. Environmental Impacts Found to be Beneficial, Less than Significant, or No Impact from Malabar Yard Railroad Improvements		
Environmental Resource Area	Appendix G Threshold	Impact Determination
	pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? C) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? D) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post fire slope instability, or drainage changes?	

7.0 Findings Regarding Alternatives

Section 15126.6(a) of the CEQA Guidelines requires the discussion of “a reasonable range of alternatives to a project, or the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”

The following alternatives to the Project were considered during preparation of the Draft EIR in 2019:

- No Project/No Build Alternative
- Build Alternative
- Reduced Historic Impact Alternative

No changes to the findings regarding the alternatives to the Project that were considered under CEQA were part of the Final SEIR. Any changed circumstances addressed in the Final SEIR that avoid or substantially lessen any of the significant effects of the project are discussed as part of the refinements to the Modified Proposed Project considered in the Final SEIR, rather than a new alternative.

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8.0 Findings Regarding Mitigation Measures

Metro has considered every mitigation measure recommended in the Final SEIR. To the extent that these Supplemental Findings conclude that the mitigation measures outlined in the Final SEIR are feasible and have not been modified, superseded, or withdrawn, Metro hereby binds itself to implement, or as appropriate, require implementation of these measures. These Supplemental Findings, in other words, are not merely information, but rather constitute a binding set of obligations that will come into effect when Metro adopts a resolution approving the Project. The mitigation measures are referenced in the Final Revised Mitigation Monitoring and Reporting Program adopted concurrently with these Supplemental Findings and will be effectuated through the process of constructing and implementing the Project.

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9.0 Statement of Overriding Considerations

The Link Union Station Project Final SEIR and the Supplemental Findings conclude that implementing the Modified Proposed Project will result in certain significant impacts to the environment that cannot be avoided or substantially lessened with the application of feasible mitigation measures or feasible alternatives. This Statement of Overriding Considerations is therefore necessary to comply with Public Resources Code Section 21081(b) and CEQA Guidelines Section 15093(a) and (b). Metro is required to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. The significant and unavoidable impacts and the benefits related to the Modified Proposed Project and Supplemental Findings are described below. The [board] has carefully weighed these impacts and benefits and finds that each of the benefits of implementing the Modified Proposed Project, independently of the other described benefits, outweigh the significant and unavoidable environmental impacts.

9.1 General Findings on Significant and Unavoidable Impacts Associated with the Modified Proposed Project

Based upon the Final SEIR, the CEQA Findings of Fact contained herein, and the evidentiary materials supporting these documents, Metro finds that implementing the Modified Proposed Project and Malabar Yard Railroad Improvements could result in the following list of significant and unavoidable impacts to the environment:

- **Air Quality** (Modified Proposed Project and Malabar Yard Railroad Improvements)
 - o Construction emissions associated with the Modified Proposed Project would exceed SCAQMD's daily criteria pollutant threshold for NO_x, PM₁₀, and PM_{2.5}.
 - o Combined total emissions from construction activities of the Modified Proposed Project and Malabar Yard railroad improvements would exceed SCAQMD's daily criteria pollutant threshold for PM₁₀.
- **Noise** (Modified Proposed Project)
 - o Construction related noise would exceed the City's applicable noise threshold at sensitive receptors nearest to the Project, including William Mead Homes, Mozaic Apartments, Care First Village, and the Metro Gateway Childhood Development Center.
- **Transportation** (Malabar Yard Railroad Improvements only)
 - o Throughout operations, implementation of the Malabar Yard railroad improvements would cause a potential roadway hazard due to queuing which may also impede access for emergency responders and increase response times.

With the approval of the Modified Proposed Project and Malabar Yard Railroad Improvements and the adoption of the CEQA Findings of Fact, Metro has committed to implement the mitigation measures identified for the Modified Proposed Project and Malabar Yard Railroad Improvements to ensure that significant impacts are mitigated to a less than significant level to the extent feasible, and that the Project's contribution to cumulative impacts is minimized and mitigated to the extent feasible. Metro finds that the mitigation measures adopted with the Findings are the appropriate measures to approve at this time as they apply to the Modified Proposed Project and Malabar Yard Railroad Improvements.

Metro further finds that while the mitigation measures it adopts will substantially lessen or avoid many of the significant environmental impacts discussed in the Final SEIR and mitigation measures adopted to address one area may result in beneficial effects in other subject areas, the above impacts will not be mitigated to a less than significant level and will remain significant and unavoidable.

Metro finds that each of the following specific benefits and considerations of the Modified Proposed Project and Malabar Yard Railroad Improvements, separately and independently, outweigh the unavoidable adverse environmental effects, and each one is an overriding consideration independently warranting approval. Metro finds that the significant and unavoidable impacts of the Modified Proposed Project and Malabar Yard Railroad Improvements are overridden by each of these individual considerations standing alone. The significant and unavoidable environmental effects remaining after adoption of mitigation measures are considered acceptable in light of these significant benefits of the Modified Proposed Project and Malabar Yard Railroad Improvements, as described in this Statement of Overriding Considerations.

9.2 Overriding Considerations for the Modified Proposed Project and Malabar Yard Railroad Improvements

There are numerous considerable benefits of the Modified Proposed Project and Malabar Yard Railroad Improvements. These benefits outweigh the significant and unavoidable adverse effects of implementing the Modified Proposed Project and Malabar Yard Railroad Improvements. These benefits are in the areas of general Project benefits, land use and planning, transportation, air quality and global climate change, noise, hazardous waste and materials, economics and fiscal, safety and security, cumulative Project benefits, as well as additional community benefits for the City of Vernon, and are described below.

9.2.1 Modified Proposed Project

General Project Benefits:

- Enhanced passenger experience with new concourse, retail and other amenities and new expanded platforms

Land Use and Planning Benefits:

- Enhancement of neighborhood connectivity with future connections from LAUS to the Los Angeles River
- Improved pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit

Transportation Benefits:

- Improved intrastate, intercity, and local transit connectivity with High-Speed Rail; Metrolink, Amtrak, and Metro rail; Metro and municipal bus systems; and ridesharing platforms
- Improved regional connectivity with one seat rides to key destinations in Southern California
- Increased rail operational capacity to accommodate future demand
- Improved US-101 and local roadways

Air Quality and Global Climate Change Benefits:

- Reduced train idling times resulting in shorter wait times and fuel savings and emissions reductions per train

Noise Benefits:

- Reduced noise levels from existing train noise with the addition of sound walls at William Mead Homes and Care First Village

Hazardous Waste and Materials Benefits:

- Remediation of hazardous materials sites within the project area

Economic and Fiscal Benefits:

- Creation of future retail and transit-serving amenities and other transit-oriented development
- Generation of an estimated 4,500 temporary jobs per year over a 5-year construction period and 200+ permanent jobs

Safety and Security Benefits:

- Improved pedestrian access with enhanced mobility options and safety features

Cumulative Project Benefits:

- Indirect contribution to cumulative benefits for the region, including a reduction of greenhouse gas emissions and vehicle miles traveled in the region

9.2.2 Malabar Yard Railroad Improvements

Transportation Benefits:

- Fewer daily train movements in Vernon, decreased local emissions, minimized traffic delays
- Improved citywide circulation
 - Optimized emergency response (reduced delay at intersections results in a 5-minute improvement)
 - Reduced intersection blockage on local roadways (30-minute improvement) due to less train building on City streets reduces intersection blockage

Air Quality and Global Climate Change Benefits:

- Reduced fuel consumption by rail and associated rail emissions
- Redistribution of train movements would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place

Economic and Fiscal Benefits:

- Up to 143 and 151 temporary jobs are anticipated to be generated, along with \$9.4 to \$9.7 million in labor income, and \$3.3 to \$3.5 million in total federal, state, and local tax revenues generated.

Safety and Security Benefits:

- Improved traffic control with road restriping to maintain traffic flow, AI-based traffic control system, and pan-tilt-zoom smart cameras to monitor traffic, roads, intersections, and enable first responders to quickly identify incidents

Additional Community Benefits:

- Train detection cameras that provides real-time local emergency dispatch to identify trains approaching at-grade rail crossings
- Upgraded communications and radio systems and a mobile Emergency Operations Center to provide rapid deployment to disaster areas or large-scale events while contributing to faster, more effective emergency response efforts

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- Enhanced community features with crosswalk improvements to improve visibility and enhance pedestrian and driver safety, bus shelters to improve accessibility, convenience, comfort and provide weather protection for passengers
- Quiet zone Infrastructure to reduce train horn noise, promote safety, enhance pedestrian connectivity, and improve quality of life for existing and future residents and businesses

9.3 Conclusion

The Modified Proposed Project and Malabar Yard railroad improvements will result in certain significant impacts to the environment that cannot be avoided or substantially lessened with the application of feasible mitigation measures or feasible alternatives, as disclosed in the Final SEIR. Metro finds, however, that the benefits of the Modified Proposed Project and Malabar Yard railroad improvements described above outweigh the unavoidable adverse environmental effects against the Modified Proposed Project and Malabar Yard railroad improvements substantial environmental benefits, which render the adverse environmental effects acceptable.

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10.0 References

Los Angeles County Metropolitan Transportation Authority (Metro). 2024. *Draft Supplemental Environmental Impact Report*. Link Union Station. Prepared by HDR Engineering, Inc.

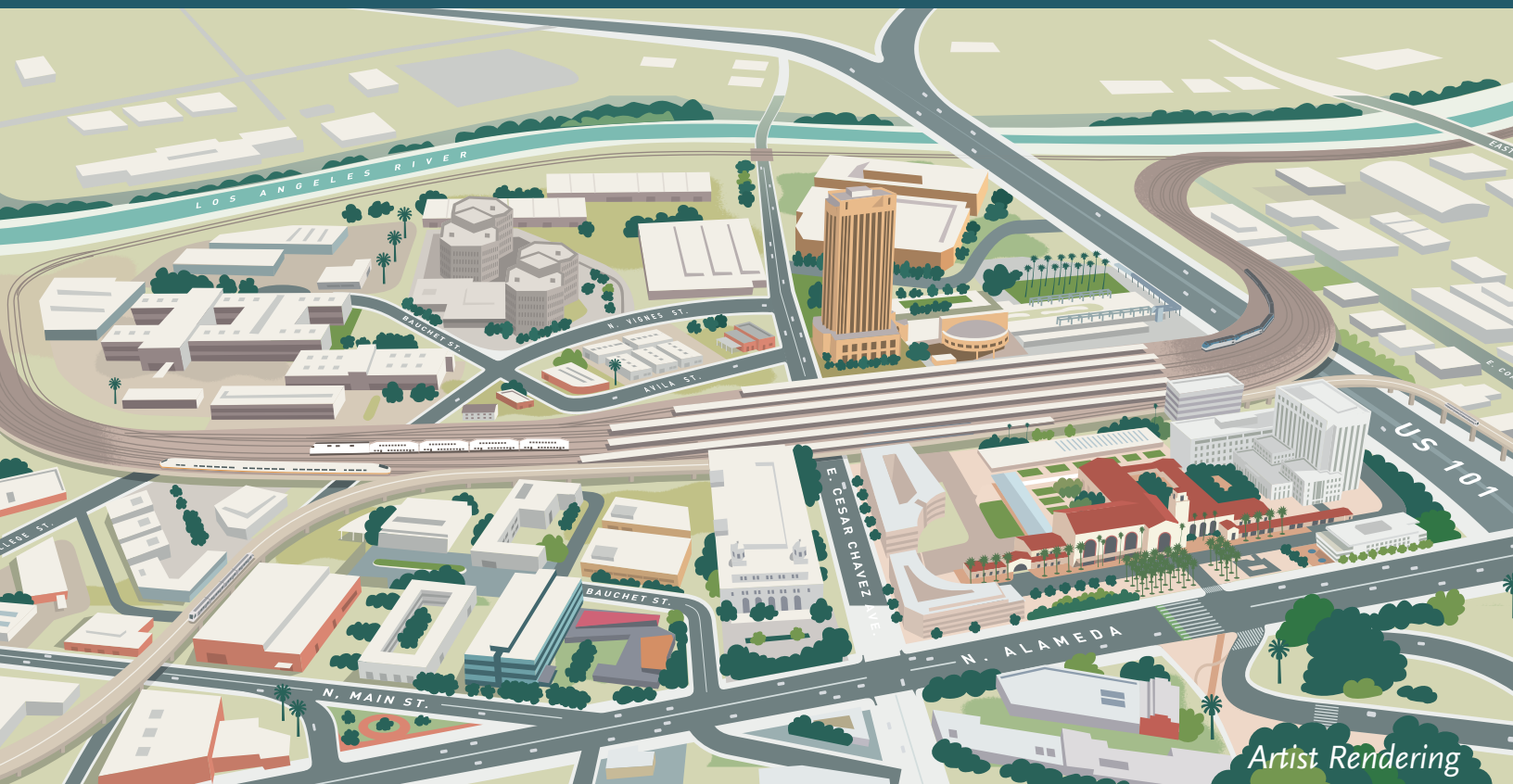
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Link Union Station

Final Supplemental Environmental Impact Report Final Revised Mitigation Monitoring and Reporting Program

State Clearinghouse No. 2016051071
October 2025



Independent of Metro's actions as the CEQA lead agency, the California High-Speed Rail Authority (Authority), as the NEPA lead agency pursuant to the NEPA Assignment MOU between FRA and the State of California dated July 23, 2019 (renewed July 22, 2024), is considering issuing a Combined Final EIS/Record of Decision for the Link Union Station Project.

Authority NEPA review and approval for the Project is in progress. Final documents, including the Mitigation Monitoring Reporting Plan (MMRP), will be published when the NEPA process is complete, and the Authority has signed the NEPA Record of Decision.

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ACRONYMS

AB	Assembly Bill
BMP	best management practice
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGP	construction general permit
CHC	Cultural Heritage Commission
CHSRA	California High-Speed Rail Authority
CRMMP	Cultural Resource Mitigation and Management Plan
DTSC	Department of Toxic Substance Control
EIR	environmental impact report
ESA	environmental site assessment
FTA	Federal Transit Administration
HABS	Historic American Buildings Survey
HACLA	Housing Authority of the City of Los Angeles
HCM	Historic-Cultural Monument
HMMP	Hazardous materials management plan
HSR	High-Speed Rail
IGP	industrial general permit
LA	Los Angeles
LABOE	Los Angeles Bureau of Engineering
LADOT	City of Los Angeles Department of Transportation
LAHCM	Los Angeles Historic-Cultural Monument
LAUS	Los Angeles Union Station
LID	low impact development
LOSSAN	Los Angeles-San Diego-San Luis Obispo
LUC	Land Use Covenant
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
MMRP	Mitigation Monitoring and Reporting Program
MOU	memorandum of understanding
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System
OHR	Office of Historic Resources
OSHA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbon
PMP	Paleontological Mitigation Plan
PRC	Public Resources Code
RIO	River Improvement Overlay District
ROW	right-of-way;
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion
SCRRA	Southern California Regional Rail Authority
SEIR	Supplemental Environmental Impact Report

SWRCB	State Water Resources Control Board
SWPPP	stormwater pollution prevention plan
TMP	traffic management plan
TPH	total petroleum hydrocarbons
VOC	volatile organic compound
WEAP	worker environmental awareness program

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1.0 Introduction

Consistent with Section 21081.6 of the Public Resources Code, it is required that a lead agency adopts a “reporting or monitoring program for the changes made to the project or conditions of project approval, adopted to mitigate or avoid significant effects on the environment” (Section 15097 of the California Environmental Quality Act [CEQA] Guidelines provides additional direction on mitigation monitoring or reporting). As CEQA lead agency, Metro is responsible for administering and implementing the Mitigation Monitoring and Reporting Program (MMRP). The measures contained in the MMRP were developed by Metro in consultation with appropriate agencies, as well as with input received from the public.

The primary purpose of the MMRP is to ensure that the mitigation measures identified in the Final Environmental Impact Report (EIR) (June 2019), and any subsequent addenda including CEQA Addendum No. 1 (October 2021), and the Final Supplemental Environmental Impact Report (SEIR) (October 2025) are implemented, effectively minimizing the identified environmental effects.

Table 1 includes the mitigation measures and Offsetting Mitigation Measures (OMMs) for the CEQA Modified Proposed Project considered in the Final SEIR. Table 2 includes mitigation measures and OMMs for the Malabar Yard railroad improvements. The OMMs are tracked similar to the mitigation measures in the Final SEIR. One OMM was added to Table 1 for the Modified Proposed Project and eleven OMMs were added to Table 2 for the Malabar Yard railroad improvements.

Minor changes and refinements to the mitigation measures that resulted after Metro’s approval of CEQA Addendum No.1 in October 2021 are indicated by ~~strikeout~~ (deleted) and underline (inserted) markings in Table 1 and Table 2 below. Each mitigation measure identified in Table 1 and Table 2 is categorized by topic and corresponding number, with identification of:

- Compliance Action/Deliverable – The criteria that would determine when the measure has been accomplished and/or the monitoring actions to be undertaken to ensure the measure has been implemented.
- Responsible Party – The entity accountable for implementing the action/deliverable.
- Enforcement Agency – The entity accountable for overseeing the implementation of mitigation.
- Implementation Phase (A or B) – The phase of the project when implementation would occur (as applicable for Modified Proposed Project only).
- Monitoring/Compliance Schedule – The compliance/monitoring schedule depends upon the progression of the overall project. Therefore, specific dates are not used within the “Schedule” column. Instead, schedule describes a logical succession of events (e.g., prior to construction, construction).

- Verification of Compliance – The monitor verifies completion of the particular mitigation measure by initialing and dating this column. Conclusion of the monitoring program concludes when all required signatures are obtained in the Verification of Compliance column.

Metro will implement an Environmental Management System consisting of strategic planning, policies, and procedures; organizational structure; staffing and responsibilities; milestones; schedule; and resources devoted to achieving Metro's environmental commitments. The Environmental Management System will also track the implementation of environmental requirements and compliance reports. This system will rely on data from the construction manager/general contractor, consultants, pre-construction services and permitting activities, monitoring, inspections, and other compliance activities. This process will be managed by Metro to demonstrate compliance activities and progress relevant to their regulatory requirements.

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
Land Use and Planning								
LU-1	Enhance Neighborhood Connectivity: Consistent with the Los Angeles River Revitalization Master Plan, RIO Overlay District guidelines, LAUS Sustainable Neighborhood Assessment, City of Los Angeles Mobility Plan, Metro’s LA River Path Project, and Metro’s Los Angeles Union Station Forecourt and Esplanade Improvements Project, to mitigate the identified significant impact, Metro, in coordination with the City of Los Angeles, shall implement either Class II or IV type bike lanes that consist of only pavement striping and bollards (no additional right-of-way and no raised median will be required) along Commercial Street from Alameda Street to Center Street, enhancing neighborhood connectivity south of US-101. If additional funding is identified, a dedicated bicycle/pedestrian bridge over US-101 could be constructed in addition to the new bicycle lanes described above.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A or B	During Final Design of these specific improvements	—	—
		Prepare infrastructure plans for review and approval by the City of Los Angeles	Metro	City of Los Angeles	Phase A or B	During Final Design of these specific improvements	—	—
		Implement either Class II or IV type bike lanes along Commercial Street from Alameda Street to Center Street	Contractor	City of Los Angeles	Phase A or B	Construction	—	—
Transportation and Traffic								
TR-1	Prepare a Construction TMP: During the final engineering phase and at least 30 days prior to construction, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro, LADOT, and Caltrans, where applicable. The street closure schedules in the construction TMP shall be coordinated among between the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, Los Angeles Unified School District, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. The signal timing at affected intersections and on and off ramps shall also be adjusted to reduce detoured traffic volumes and maintain traffic flow to the safest degree feasible. LADOT and Caltrans shall be notified in advance of street closures, detours, or temporary lane reductions. During planned closures, traffic shall be re-routed to adjacent streets via clearly marked detours and notice shall be provided in advance to applicable parties (nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours so as to avoid heavily congested areas during peak hours, where feasible. The following provisions shall be included in the TMP: - Traffic flow shall be maintained, particularly during peak hours, to the degree feasible. - Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, and residences at all times, as feasible. - Metro or the contractor shall post advance notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction. - Metro shall notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Prepare TMP	Contractor	Metro/City of Los Angeles/Caltrans	Phase A and B	Prior to Construction	—	—
		Implement TMP during construction	Contractor	Metro/City of Los Angeles/Caltrans	Phase A and B	Construction	—	—

Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
- Metro shall coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to mitigate detoured traffic volumes. - Closed-circuit television cameras shall be installed at some of the impacted intersections (as approved by LADOT) to monitor traffic in real-time by the Automated Traffic Surveillance and Control department of LADOT during construction. This will allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements. - Contractor shall avoid concurrent closures of Cesar Chavez Avenue and Vignes Street north of LAUS.							
TR-2 Prepare Rail Operations Temporary Construction Staging Plan: During final engineering design and prior to construction, Metro shall prepare a memorandum of understanding (MOU) with each current rail operator, including, but not limited to SCRRA, LOSSAN, and Amtrak, to outline mutually agreed upon on-time performance goals to be achieved throughout construction, and how construction sequencing and railroad operational protocols <u>shall</u> ~~would~~ be incorporated into applicable construction documents (plans and specifications). Prior to construction, Metro and the construction contractor shall prepare detailed temporary construction staging plans for each phase of construction that the contractor ~~would~~ <u>implements</u> to maintain mutually agreed upon on-time performance goals while minimizing impacts on pedestrians and passengers at LAUS. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to ensure that any rail-to-bus or rail-to-rail connections are uninterrupted throughout construction. Detailed temporary construction staging plans shall be deemed acceptable by the current rail operators prior to commencement of construction activities that could reduce on-time performance. Throughout the duration of construction, SCRRA shall <u>monitor on-time performance during construction and</u> participate in weekly construction coordination meetings to ensure that the mutually agreed upon on-time performance is met.	Prepare MOUs	Metro	Current Rail Operators (SCRRA, LOSSAN, Amtrak)	Phase A and B	Prior to Construction	—	—
	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
	Prepare temporary construction service plans	Metro/Contractor	Metro and Current Rail Operators (SCRRA, LOSSAN, Amtrak)	Phase A and B	Prior to Construction		
	Participate in weekly construction coordination meetings	Metro, in coordination with SCRRA, Amtrak and LOSSAN Rail Corridor Agency	Metro	Phase A and B	During Construction	—	—
TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street): Metro and BNSF shall implement the following two railroad improvements at BNSF’s Malabar Yard: 49th Street Closure: Closure of the 49th Street at-grade railroad crossing would accommodate approximately 3,350 track feet of freight storage capacity at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. One of the two design options considered for the closure of the at grade crossing at 49th Street shall be implemented. 46th Street Connector: An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF’s Malabar Yard and BNSF’s Los Angeles Junction. One of the two design options considered for the new track connection along 46th Street shall be implemented. The timing for implementation and operation of this mitigation measure shall be before elimination of tracks at the West Bank Yard unless Metro and CHSRA, in its capacity as NEPA lead agency, mutually agree and conclude removing those tracks first would not cause adverse freight rail impacts.	Closure of 49 th Street and construction of the 46 th Street Connector	Metro/Contractor	Metro	Phase A	During Construction		

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
Aesthetics								
AES-1	Aesthetic Treatments: Retaining walls in Segments 1 and 2 and the sound walls in Segment 1 of the Project study area shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes, Care First Village, and Mozaic Apartments. Based on feedback received during project development from residents of the William Mead Homes property, Metro shall coordinate with HACLA regarding aesthetic enhancements to the retaining wall/sound wall at that location. Materials, color, murals, landscaping, and/or other aesthetic treatments shall be integrated into the design of the retaining walls/sound walls to minimize the dominance and scale of the retaining walls/sound walls. Before construction is complete, Metro shall be responsible for the structural maintenance of the sound wall. In most cases, right-of-way agreements require the property owner to perform routine wall maintenance. Additionally, Metro shall collaborate with HACLA and Care First Village to determine the aesthetics and materials for the sound wall. As the property owner, HACLA and Care First Village shall enter into a maintenance agreement with Metro.	Coordinate with HACLA on aesthetic enhancements	Metro	Metro	Phase B	During Final Design	—	—
		Incorporate aesthetic treatments into applicable construction documents (plans and specifications)	Metro	Metro		During Final Design	—	—
		Apply aesthetic treatments	Contractor	City of Los Angeles (HACLA)		During Construction	—	—
AES-2	Minimize Nighttime Work and Screen Direct Lighting: Nighttime construction activities near residential areas shall be avoided to the extent feasible. If nighttime work is required, the construction contractor shall install temporary lighting in a manner that directs light toward the construction area and shall install temporary shields as necessary so that light does not spill over into residential areas.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	Prior to Construction	—	—
		Direct light toward the construction area and install temporary shields (as needed)	Contractor	Metro		During Construction	—	—
AES-3	Screen Direct Lighting and Glare: During final design, all new or replacement lighting shall comply with Metro Rail Design Criteria (Metro 2013), SCRRA Design Criteria Manual (SCRRA 2014), Illuminating Engineering Society standards (Illuminating Engineering Society 2011a, 2011b, 2014), maximum allowable CALGreen glare ratings (California Building Standards Code 2013 – Title 24, Part 11), and Leadership in Energy and Environmental Design® (LEED®) standards for new construction. In addition, all permanent lighting maximum allowable CALGreen glare ratings (California Building Standards Code 2013 – Title 24, Part 11) and shall be designed to be directed away from residential units. Screening elements, including landscaping, shall also be incorporated into the design, where feasible. Low-reflective glass and materials shall also be incorporated into the design of the new canopies to reduce daytime glare impacts.	Incorporate lighting, screening, and glare requirements into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Install permanent lighting that meets CalGreen requirements directed away from residences and install screening elements as needed.	Contractor	Metro		During Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
Air Quality and Global Climate Change								
AQ-1	Fugitive Dust Control: In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403: - Minimize land disturbed by clearing, grading, and earth moving, or excavation operations to prevent excessive amounts of dust. - Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done. - Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes. - Securely cover trucks when hauling materials on or off site. - Stabilize the surface of dirt piles if not removed immediately. - Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads. - Minimize unnecessary vehicular and machinery activities. - Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway. - Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities. The following measures shall also be implemented to reduce construction emissions: ~~The construction contractor shall prepare and update on a monthly basis~~ Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro’s Green Construction Policy. - Ensure that all construction equipment is properly tuned and maintained. - Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions. - Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible. - Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable. These control techniques shall be included in project specifications and shall be implemented by the construction contractor.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Implement dust control measures	Contractor	Metro		During Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
AQ-2 Compliance with U.S. EPA’s Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment: In compliance with Metro’s Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA’s Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—	
	Use construction equipment that meets Tier 4 exhaust emissions standards.	Contractor	Metro		During Construction	—	—	
AQ-3 Adaptive Air Quality Mitigation Plan: Prior to implementation of regional/intercity rail run-through service, an Adaptive Air Quality Mitigation Plan shall be prepared by Metro, in coordination with the SCRRA, as the operator of the commuter rail service in Southern California and the program manager and grant recipient of the SCORE Program, Amtrak, and the LOSSAN Rail Corridor Agency. The Plan shall identify the methodology and requirements for annual emission inventories to be prepared by Metro, based on actual/current train movements and corresponding pollutant concentrations through the Year 2040. Mitigation Plan Requirements: Upon implementation of regional/intercity run-through service, and on an annual basis, Metro shall compile and summarize the current Metrolink, Pacific Surfliner, and Amtrak long-distance train schedules to determine the actual level of daily and peak-period train movements (including non-revenue train movements) that operate through LAUS. On an annual basis, Metro shall retain the services of an air quality specialist to conduct an annual emissions inventory to determine if actual train movements through LAUS are forecasted to increase criteria pollutant emissions to a level that would exceed the SCAQMD significance thresholds or diesel pollutant concentrations to a level that would exceed the SCAQMD’s 10 in a million threshold at any residential land use in the p Project study area. An annual report shall be prepared by Metro that summarizes the quantitative results of pollutant emissions and diesel pollutant concentrations in the p Project study area. If pollutant emissions and diesel pollutant concentrations are projected to exceed the SCAQMD thresholds, the regional and intercity rail operators in coordination with Metro, <u>who has authority as the owner of Union Station</u> , and California State Transportation Agency, shall either implement rail fleet emerging technologies consistent with 2018 California State Rail Plan Goal 6: Practice Environmental Stewardship, Policy 4: Transform to a Clean and Energy Efficient Transportation System (Caltrans 2018a, pg. 10 and 110), or reduce the train movements through LAUS to lower the criteria pollutant emissions below the SCAQMD significance thresholds and the diesel pollutant concentrations below the SCAQMD thresholds in the Pproject study area. After implementation of emerging technologies, Metro shall continue to prepare an emissions inventory in coordination with SCRRA, Amtrak, and the LOSSAN Rail Corridor Agency annually to report the quantitative results of criteria pollutant emissions and diesel pollutant concentrations in the Pproject study area. The annual report shall include an analysis of the actual (current) and proposed changes in train schedules relative to criteria pollutant emissions and diesel pollutant concentration levels in the Pproject study area. The report shall be prepared annually by December 31 of each year, beginning the calendar year after implementation of regional/intercity rail run-through service through 2040 and shall include results of the emissions inventory and effectiveness of the measures implemented. Rail Fleet Emerging Technologies: To achieve a reduction of criteria pollutant emissions below the SCAQMD thresholds and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds, the regional and intercity rail operators may replace, retrofit, or supplement some or all of their existing fleet with	Prepare an Adaptive Air Quality Mitigation Plan	Metro, in coordination with SCRRA, Amtrak and LOSSAN Rail Corridor Agency	Metro, in coordination with SCAQMD	Phase A and B	Prior to implementation of run-through service	—	—	
	Compile current train schedules/Determine actual train movements	Metro	Metro		Annually by November 1 through 2040	—	—	
	Retain air quality specialist to conduct annual emissions inventory	Metro	Metro		Annually by November 1 through 2040	—	—	
	Prepare Annual Report	Metro	Metro		Annually by December 31 through 2040	—	—	
	Incorporate rail fleet emerging technology requirements into existing and/or future funding and/or operating agreements with provisions that require regional and intercity rail operators to replace, retrofit, or supplement some or all of their existing fleet with zero or low-emission features or reduce train movements through LAUS (only if Annual Report identifies an increase in health risks	Metro, in coordination with SCRRA, Amtrak and LOSSAN Rail Corridor Agency	Metro, in coordination with SCAQMD		Within 60 days of completing Annual Report (if SCAQMD thresholds are anticipated to be exceeded)	—	—	

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
zero or low-emission features. The types of emerging technologies that can be implemented, include, but are not limited to the following: - Electric multiple unit systems. - Diesel multiple units. - Battery-hybrid multiple units. - Renewable diesel and other alternative fuels. Metro shall coordinate with regional rail/intercity rail operators to incorporate these emerging technologies into existing and/or future funding and/or operating agreements to reduce locomotive exhaust emissions in the Pproject study area.		associated with diesel pollutant concentrations that would exceed SCAQMD thresholds)						
Noise and Vibration								
NV-1	~~Construct Sound Walls: Prior to reaching forecasted maximum daily regional/intercity train movements through LAUS in 2031 (770trains). As early as possible in the Project construction phase, including prior to any demolition, and in any event prior to substantial construction-related activities, Metro shall construct a two permanent sound walls. The first sound wall shall be located between the William Mead Homes and the train tracks near the railroad right-of-way and shall extend up to 22 feet in height and 1,144 feet long to reduce operational noise impacts at William Mead Homes. The second sound wall shall be located between the Care First Village and the train tracks near the railroad right-of-way and shall extend to 13-feet in height and 347 feet long to reduce operational noise impacts at Care First Village. The sound wall shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have a surface density of at least 4 pounds per square foot. Metro may construct the sound wall earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.~~	Incorporate design requirements into sound wall	Metro	Metro	Phase B	During Final Design	—	—
		Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro		During Final Design	—	—
		Construct sound wall	Contractor	Metro		During Construction	—	—
NV-2	Employ Noise- and Vibration-Reducing Measures during Construction: The construction contractor shall employ measures to minimize and reduce construction noise and vibration. <u>Through weekly and monthly meetings with Metro and the contractor, the means and methods to comply with the overall contract specifications and applicable mitigation measures shall be discussed with Metro and applicable parties prior to implementation.</u> Noise and vibration reduction measures that would be implemented include, but are not limited to, the following: - Design considerations and project layout: - Construct temporary noise walls, such as temporary walls or piles of excavated material, between <u>construction noisy</u> activities and noise-sensitive receivers. <u>Acoustic blankets or soundproof window inserts along facades of sensitive buildings as deemed necessary by the construction contractor.</u> - Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available. <u>When in use, Site-locate</u> equipment on the construction site as far away from noise-sensitive sites as possible.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Implement noise and vibration reduction measures	Contractor	Metro		During Construction	—	—
		Monitor noise and vibration levels at William Mead Homes and Mozaic Apartments during the loudest/most vibration intensive activities and notify Metro if FTA criteria is exceeded	Metro	Metro		During Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
- Construct walled enclosures around especially noisy activities or clusters of noisy equipment (i.e., e.g., shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures). - Sequence of operations: - Restrict pile driving to daytime periods. - Combine noisy loud operations to occur in the same time period. - The total noise level produced would not be ~~significantly~~ <u>substantially</u> greater than the level produced if the operations were performed separately. - Avoid nighttime activities to the maximum extent feasible. - Sensitivity to noise increases during the nighttime hours in residential neighborhoods. - Alternative construction methods: - Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible. - Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use. - Use specially-quieted equipment, such as quieted and enclosed air compressors and properly-working mufflers on all engines. - Select quieter demolition methods, where possible (e.g., sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers). - Use vibratory rollers in static mode (vibrating motor turned down or off) when operating in close proximity to sensitive buildings. In an effort to keep construction noise levels below FTA’s construction noise ~~or~~ <u>and</u> vibration criteria, Metro shall monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring shall be conducted at the first row of residences at William Mead Homes, <u>Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments</u>, within <u>approximately</u> 300 feet of construction activities, ~~approximately~~. Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance ~~farther~~ <u>further</u> away. If FTA’s construction noise or vibration criteria are exceeded, the contractor shall be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (examples above).	Implement additional noise reduction methods (if FTA’s construction noise and vibration criteria are exceeded)	Contractor	Metro		During Construction	—	—
NV-3 Prepare a Community Notification Plan for Project Construction: To proactively address community concerns related to construction noise and vibration, prior to construction, Metro and/or the construction contractor shall prepare and maintain a community notification plan. Components of the plan shall include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Updates to the plan shall be prepared as necessary to indicate changes to the construction schedule or other processes. Metro shall identify a project liaison to be available to respond to questions <u>and complaints</u> from the community or other interested groups.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
	Prepare community notification plan/Identify project liaison	Contractor	Metro		Prior to Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
	Mail information packets to all residences within 500 feet of construction area	Contractor	Metro		During Construction	—	—	
Biological Resources								
BIO-1	Bats: Preconstruction surveys for roosting special-status bats (including western mastiff bats and western yellow bats) and other native bat species shall be conducted by a Metro-approved qualified bat biologist within 2 weeks prior to construction. Surveys shall be conducted where suitable habitat and/or bridge structures that will be removed or that will have modifications to the substructure are present. All locations with suitable roosting habitat (including potential maternity roosts) shall be surveyed using an appropriate combination of structure inspection, exit counts, acoustic surveys, or other suitable methods. Surveys shall be conducted during the appropriate season and time of day/night to ensure detection of day- and night-roosting bats (i.e., preferably one daytime and one nighttime survey shall be conducted at each location with suitable roosting habitat during the maternity season, May 1 through August 31). If no roosts are detected, trees that provide suitable roosting habitat may be removed under the guidance of the qualified bat biologist. If a roost is detected, passive exclusion shall include monitoring the roost for 3 days to determine if the roost is active. If the roost is determined to support a reproductive female with young, the roost shall be avoided until it is no longer active. If the roost remains active during the 3 monitoring days and observations confirm it is not a maternity colony, a temporary bat exclusion device shall be installed under the supervision of a CDFW-Metro-approved qualified bat biologist. At the discretion of the biologist, based on his or her expertise, an alternative roosting structure(s) may be constructed and installed prior to the installation of exclusion devices. Exclusion <u>shall be</u> conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or torpid (overwintering) individuals during the winter. If it cannot be determined whether an active roost site supports a maternity colony, the roost site shall not be disturbed, and construction within 300 feet shall be postponed or halted until the roost is vacated and the young are volant (able to fly). Exclusion efforts shall be monitored on a weekly basis and continued for the duration of project construction activities and removed when no longer necessary. The following avoidance and minimization measures shall be implemented during construction: - All work conducted on bridges shall occur during the day. If this is not feasible, lighting and noise shall be directed away from night roosting and foraging areas. - Combustion equipment (such as generators, pumps, and vehicles) shall not be parked or operated under a bridge. Construction personnel shall not be present directly under a roosting colony. Construction activities shall not severely restrict airspace access to the roosts. - Removal of mature trees that provide suitable bat roosting habitat shall be conducted outside of the maternity season (May 1 through August 31); that is, removal shall be conducted between September 1 and April 30. Because bats may be present in a torpid state during the winter, suitable roosting habitat shall be removed before the onset of cold weather, <u>generally when temperatures drop below 40 degrees Fahrenheit</u>, (approximately November 1) or as determined by a qualified bat biologist). <u>Should removal of mature trees that provide suitable bat roosting habitat be necessary after the cold weather, a qualified bat biologist shall conduct pre-construction surveys when temperatures are greater than 40 degrees Fahrenheit to ensure that bats are not present during removal.</u> - When removing palm trees, the dead fronds shall be removed first before felling the palm to allow any bats to escape.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Retain a qualified bat biologist	Metro	Metro		Prior to Tree Removal/Bridge Removal	—	—
		Conduct preconstruction bat surveys	Metro	Metro		During Construction	—	—
		Implement avoidance measures and/or temporary bat exclusion devices (only if a roost with active nest is detected)	Metro	Metro		During Construction	—	—

Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
BIO-2 MBTA Species: Vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a CDFW-Metro-approved qualified bird biologist shall conduct preconstruction surveys to locate active nests within <u>72 hours</u> ~~7 days~~ prior to vegetation removal in each area with suitable nesting habitat. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be reduced based on species-specific and site-specific conditions as determined by the qualified biologist. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active. Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at the bridges that will be removed or that will have modifications to the substructure before the nesting season (February 1 through September 30) to prevent nesting at the bridges by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA. In addition, if work on existing bridges with potential nest sites that will be removed or will have modifications to the substructure is to be conducted between February 1 and September 30, all bird nests shall be removed prior to February 1. Immediately prior to nest removal, a qualified biologist shall inspect each nest for the presence of torpid bats, which are known to use old swallow nests. ~~Nest removal~~ Removal of <u>partially constructed nests</u> shall be conducted under the guidance and observation of a qualified biologist. Removal of <u>partially constructed</u> swallow nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion ~~unless a nest exclusion device has already been installed~~. ~~Nest removal~~ Removal of nest materials and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction. <u>All Project personnel and contractors who will be on site during construction shall complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on biological and potentially jurisdictional resources. At a minimum, the training shall include the following topics: (1) locations where special-status species may occur; (2) the purpose for resource protection; (3) protective measures to be implemented in the field; (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.</u>	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
	Retain a qualified bird biologist	Metro	Metro		Prior to Construction	—	—
	Conduct preconstruction bird surveys	Metro	Metro		Within 7 days prior to vegetation removal	—	—
	Implement/mark exclusionary buffer (only if nesting birds identified during pre-construction surveys)	Contractor	Metro		Prior to vegetation removal until nest is no longer active	—	—
	Install exclusionary devices (only if suitable nests are identified during preconstruction surveys)	Contractor	Metro	Phase B	Prior to February 1 (before bridge modifications at Vignes Street and Cesar Chavez Avenue)	—	—
	Remove bird nests	Contractor	Metro	Phase B	Prior to February 1 (before bridge modifications at Vignes Street and Cesar Chavez Avenue)	—	—
BIO-3 Protected Trees: Preconstruction surveys for protected trees (native trees 4 inches or more in cumulative diameter, as measured at 4.5 feet above the ground level, that are subject to protection under <u>the City of Los Angeles Protected Tree and Shrub Regulations</u> (Ordinance No. 186873477404), <u>and LA Metro's Tree Policy</u>, ~~Preservation of Protected Trees of the City of Los Angeles' municipal code~~, including oaks (<u>Valley Oak</u> [<i>Quercus lobata</i>], California Live Oak [<i>Quercus agrifolia</i>], or any other tree of the oak genus indigenous to California but excluding the Scrub Oak [<i>Quercus berberidifolia</i>]), southern California black walnut (<i>Juglans californica</i>), western sycamore (<i>Platanus racemora</i>), and California bay (<i>Umbellularia californica</i>); shall be conducted by a registered consulting arborist with the American Society of Consulting Arborists at least 120	Retain a registered arborist to conduct preconstruction surveys and prepare a Protected Tree Report	Metro	Metro	Phase A and B	180 days prior to Construction	—	—
	Conduct preconstruction protected tree surveys	Metro	Metro		120 days prior to Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
days prior to construction. The locations and sizes of all protected trees shall be identified prior to construction and overlaid on project footprint maps to determine which trees may be protected in accordance with Ordinance No. 186873477404. The registered consulting arborist shall prepare a Protected Tree Report and shall submit three copies to the City of Los Angeles Department of Public Works. Any protected trees that must be removed due to project construction shall be replaced at a 2:1 ratio (or up to a 4:1 ratio for protected trees on private property) except when the protected tree is relocated on the same property, the City of Los Angeles has approved the tree for removal, and the relocation is economically reasonable and favorable to the survival of the tree. Each replacement tree shall be at least a 15-gallon specimen, measuring 1 inch or more in diameter, 1 foot above the base, and shall be at least 7 feet in height measured from the base.	Prepare Protected Tree Report	Metro	Metro		Prior to Construction	—	—	
	Replace and/or relocate protected trees (as needed)	Metro	Metro		Within one year of removal of protected trees	—	—	
Hydrology and Water Quality								
HWQ-1	Prepare and Implement a SWPPP: During construction, Metro shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ, and Order No. 2022-0057-DWQ), which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022 and will become effective on September 1, 2023as they relate to Project construction activities. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during project construction. Metro shall comply with the Risk Level 2 sampling and reporting requirements of the CGP. A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to State Water Resources Board (SWRCB) within 90 days of completion of construction and stabilization of the site.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Prepare and submit Notice of Intent	Contractor/Metro	SWRCB		Prior to Construction		
		Prepare SWPPP/	Contractor	Metro/RWQCB		Prior to Construction	—	—
		Implement SWPPP (including preparation of rain event action plans)	Contractor	RWQCB		During Construction	—	—
		Prepare and submit Notice of Termination	Contractor/Metro	SWRCB		90 days prior to completion of construction	—	—
HWQ-2	Final Water Quality BMP Selection (Caltrans ROW): Metro shall comply with the provisions of the ~~Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), effective July 1, 2013 (known as the Caltrans MS4 permit)~~ Caltrans MS4 Permit (Order Number 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ) that was adopted June 22, 2022, and became effective January 1, 2023, and any applicable provisions of the Caltrans SWMP for long-term BMPs. This post-construction requirement shall only apply to the US-101 overhead viaduct improvements. Metro shall prepare a stormwater data report for the plans, specifications, and estimate phase that will address post-construction BMPs for the US-101 overhead viaduct in accordance with the Caltrans <i>Project Planning and Design Guide</i> (latest edition).	Incorporate applicable NPDES requirements (for the portions of project within Caltrans ROW) into applicable construction documents (plans and specifications)	Metro	Caltrans	Phase A and B	Final Design	—	—
		Prepare a stormwater data report	Metro	Caltrans		Final Design	—	—
HWQ-3	Final Water Quality BMP Selection (Railroad ROW): For the portion of the Pproject outside Caltrans ROW, and not under the jurisdiction of the City of Los Angeles, Metro shall comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), effective July 1, 2013 (known as the Phase II permit).	Incorporate applicable NPDES requirements into plans into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	Final Design	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
HWQ-4	Final Water Quality BMP Selection (City of Los Angeles): Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties ~~County, Except Those Discharges Originating from the City of Long Beach MS4~~ (Order No. 2012-0175 <u>R4-2021-0105</u> , NPDES No. CAS0040044), effective ~~December 28, 2012~~ <u>September 11, 2021</u> (known as the Phase I Permit). This post-construction requirement shall apply to the entire Project except for those portions under the jurisdiction of the Caltrans MS4 Permit and the Phase II Permit. Metro shall prepare a final LID report in accordance with the City of Los Angeles <i>Planning and Land Development Handbook for Low Impact Development</i> (LID Manual), May 9, 2016. This document shall identify the required BMPs to be in place prior to Project operation and maintenance.	Incorporate applicable NPDES requirements (project wide) into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	Final Design	—	—
		Prepare a final LID report	Metro	City of Los Angeles		Final Design	—	—
HWQ-5	Comply with Local Dewatering Requirements: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, ~~respectively~~ .	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Obtain Dewatering Permits (as needed)	Contractor	RWQCB/City of Los Angeles		Prior to Construction (Dewatering Activities)	—	—
HWQ-6	Comply with Local Dewatering Requirements for Contaminated Sites: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites affected during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Los Angeles, respectively.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Obtain Dewatering Permits for Contaminated Sites (as needed)	Contractor	RWQCB/City of Los Angeles		Prior to Construction (Dewatering Activities on Contaminated Sites)	—	—
HWQ-7	Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses: Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, <u>as amended by Order No. 2015-0122-DWQ</u> , NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Prepare Industrial SWPPP for relocated, regulated industrial uses	Contractor	RWQCB		Prior to Construction (on Industrial Sites)	—	—
Geology and Soils								
GEO-1	Prepare Final Geotechnical Report: During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following: Site preparation	Prepare final geotechnical report	Metro	Metro	Phase A and B	During Final Design	—	—
		Incorporate site-specific recommendations of the final geotechnical report	Metro	Metro		During Final Design	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
- Soil bearing capacity - Appropriate sources and types of fill - Liquefaction - Lateral spreading - Corrosive soils - Structural foundations - Grading practices The recommendations shall be prepared to mitigate the risk of seismic ground shaking and ground failure, including liquefaction. In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions, and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of project-related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria, California Amendments to the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications, and applicable local city codes (Appendix L of this EIR). The project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	into applicable construction documents (plans and specifications)							
	Construct infrastructure per the site-specific geotechnical recommendations	Contractor	Metro		During Construction	—	—	
Hazards and Hazardous Materials								
HAZ-1 Prepare a Construction Hazardous Materials Management Plan: Prior to construction, an HMMP shall be prepared by Metro that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the project footprint, and would include, but shall not be limited to, the following: - A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200). - A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120). - Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38). - A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910). - Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200). - Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120).	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	Prior to Construction	—	—	
	Prepare Hazardous Materials Management Plan	Contractor	Metro		Prior to Construction	—	—	
	Implement Hazardous Materials Management Plan	Contractor	Metro		During Construction	—	—	

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA): Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on the completed Phase I ESA) for properties within the project footprint that would be affected by excavation. Phase II activities shall consist of: - Collection of soil, groundwater, and soil vapor samples from borings, for geologic analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the project area. - Laboratory analysis of samples for contaminants of concern, which vary by location, but may include: VOCs, PAHs, TPHs, and California Title 22 metals. A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA findings. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in environmental site assessments and evaluation of contaminated sites.	Prepare Phase II ESA Investigation	Metro	Metro	Phase A and B	Prior to Final Design	—	—
	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro		Prior to Construction	—	—
	Implement Phase II recommendations/findings	Contractor	Metro		During Construction	—	—
HAZ-3 Prepare a General Construction Soil Management Plan: Prior to construction, Metro shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the project footprint for the duration of construction. Any soil imported to the project site for backfill shall be certified clean prior <u>per DTSC's Information Advisory Clean Imported Fill Material</u> to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan: - General worker health and safety procedures - Dust control - Management of soil stockpiles - Traffic control - Stormwater erosion control using BMPs	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
	Prepare Construction Soil Management Plan (project wide)	Contractor	Metro		Prior to Construction	—	—
	Implement Construction Soil Management Plan (project wide)	Contractor	Metro		During Construction	—	—
	Provide proof of certified clean imported soil	Contractor	Metro		During Construction	—	—
HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans: Prior to construction, ~~the contractor shall prepare Metro shall prepare~~ parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. The nature and extent of contamination <u>is expected to vary</u> ~~varies~~ widely across the project footprint, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during <u>construction</u> . The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: - Soil disposal protocols. - Protocols governing the discovery of unknown contaminants. - Management of soil on properties within the project footprint with LUCs or known contaminants.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
	Prepare parcel specific soil management plans (for known contaminated sites/LUC-adjudicated sites)	Metro/Contractor	DTSC		Prior to Construction	—	—
	Retain a Certified Industrial Hygienist to	Metro	Metro		Prior to Construction	—	—

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
Prior to construction on individual properties with LUCs or known contaminants, parcel-specific HASPs shall also be prepared ~~by contractors undertaking work activities for and submittal submitted to and approval by DTSC for approval~~. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASPs provisions shall also be implemented: • Training requirements for site workers who may be handling contaminated material • Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property • Mitigation and monitoring measures that are protective of site worker and public health and safety Prior to construction, Metro shall coordinate proposed soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the project, and each of the contaminated sites.	prepare parcel specific health and safety plans (for known contaminated sites/LUC-adjudicated sites)							
	Prepare a parcel specific health and safety plans (for known contaminated sites/LUC-adjudicated sites)	Metro/Contractor	DTSC		Prior to Construction	—	—	
	Coordinate proposed soil management measures and reporting activities with appropriate agencies including but not limited to SCRRA, City of Los Angeles, RWQCB	Metro	Metro		Prior to Construction	—	—	
HAZ-5	Land Use Covenant Sites and Coordination with the DTSC: Prior to construction on properties with an LUC, Metro shall coordinate with the DTSC regarding any plans specified in HAZ-4, construction activities, and/or public outreach activities needed to verify that construction activities on properties with LUCs would be managed in a manner protective of public health and the environment.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Coordinate with DTSC on LUC sites	Metro/Contractor	DTSC		Prior to Construction (on LUC sites)	—	—
HAZ-6	Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered: <u>Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials or abandoned oil wells are encountered.</u> Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, <u>underground storage tanks, asbestos containing materials (e.g., transite pipes),</u> and/or abandoned oil wells encountered during the construction process.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	Prior to Construction	—	—
		Halt work if potentially hazardous materials/abandoned wells are encountered	Contractor	Metro		During Construction	—	—
HAZ-7	Compliance with the City of Los Angeles Building Code Methane Regulations: Prior to final design, Metro shall verify that the design of infrastructure improvements located within Methane Buffer Zones (as defined by LABOE) comply with the City of Los Angeles Building Code regulations set forth in Ordinances 175790 and 180619. The ordinances require evaluation of methane hazards and mitigation of a methane hazard, if one exists, depending on the severity of the hazard.	Verify compliance with City of Los Angeles Building Code Methane Regulations	Metro	City of Los Angeles	Phase A and B	During Final Design	—	—

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Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
							Initial	Date
HAZ-8	Pre-Demolition Investigation: Prior to the demolition of any structures, ~~constructed prior to the 1970s~~ a survey shall be conducted for the presence of hazardous building materials, such as ~~asbestos-containing materials, lead-based paints~~ ACBs, LBPs, and other materials falling under the Universal Waste requirements. <u>An asbestos survey report signed by a Certified Asbestos Consultant shall be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD.</u> The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and <u>the survey report shall be submitted to the SCAQMD with an application for a Rule 1403 permit.</u> If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	Phase A and B	During Final Design	—	—
		Conduct pre-demolition survey (for buildings constructed prior to 1970 that require demolition)	Contractor	Metro		Prior to Building Demolition	—	—
		Prepare Removal Plan (only if hazardous building materials are discovered during the pre-demolition survey)	Contractor	OSHA/Los Angeles County Department of Public Health		Prior to Building Demolition	—	—
		Provide proof of appropriate licenses and certifications	Contractor	Metro		Prior to Building Demolition	—	—
		Secure the site and disconnect utilities	Contractor	Metro		Prior to Building Demolition	—	—
		Implement Removal Plan	Contractor	Metro		During Building Demolition	—	—
<u>Cultural and Paleontological Resources</u>								
CUL-1	Archaeological Treatment Plan (ATP): Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in the analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the actions to be taken to resolve adverse effects on historic property CA-LAN-1575/H and the procedures to address inadvertent discoveries. The California SHPO, Caltrans, and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. <u>The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP <i>Archaeological Resources Management Reports: Recommended Contents and Format</i> (OHP 1990).</u> <u>The ATP shall include, at a minimum, the following elements:</u> Research design – The ATP shall include a robust research design to be used in evaluating whether archaeological features and deposits that may be encountered contribute to the NRHP eligibility of CA-LAN-1575/H under Criterion D, and in recovering scientific data from those features and deposits that are determined to contribute. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of	Prepare ATP	<u>Metro</u>	<u>Metro</u>	Phase A and B	<u>Prior to Construction</u>		
		<u>Develop a site-specific sensitivity model</u>	<u>Metro</u>			<u>Prior to Construction</u>		
		<u>Retain archaeological and Native American monitors for all phases of work with potential to impact Archaeological Site CA LAN 1575/H or other previously undiscovered archaeological resources related to ethnohistoric or prehistoric archaeological deposits</u>	<u>Metro/Contractor</u>			<u>Prior to Construction and During Construction</u>		
		<u>Prepare public outreach and educational plan</u>	<u>Metro</u>			<u>Prior to Construction</u>		

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
features and deposits that are expected to be encountered, and outline the data requirements necessary to successfully address the research questions. Site-specific sensitivity model – The ATP shall include provisions for the development of a site-specific sensitivity model to guide efforts to avoid or minimize adverse effects on known portions of CA-LAN-1575/H. The sensitivity model shall compare Project-related infrastructure, based on final design, to available information on previous disturbance from as-built plans, historical maps, geotechnical borings, and past archaeological reports that identify fill depth. A three-dimensional model, a series of stratigraphic profiles, or other relatable graphic depiction shall be created to assist in determining the level of sensitivity for encountering buried archaeological features or deposits for each element of the Project design. Consulting tribes shall have an opportunity to review the sensitivity model and provide insight informed by traditional tribal knowledge. Phased testing, evaluation, and data recovery of known features and deposits – Based on the results of the site-specific sensitivity model, protocols for phased testing, significance evaluation, and data recovery of known features and deposits shall be developed. Due to the extreme constraints posed by the location of the Project (affecting public transportation through closure of roads, transit, etc.), testing shall occur as part of the preconstruction activities. The ATP shall include a summary of anticipated features and artifacts potentially associated with CA-LAN-1575/H, including references to the pertinent research domains and data requirements contained in the research design, as well as standards for documentation, evaluation, data recovery, and analysis. The ATP shall rely on OSHA requirements regarding the safety of testing, evaluation, and data recovery locations and the potential for encountering contaminated soils or other hazards. Archaeological and Native American monitoring – The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction and provisions for determining monitoring locations based on final design, potential impacts to archaeological resources as assessed through the site-specific sensitivity model, and the potential to impact tribal resources including human remains that may be contained in both intact and disturbed contexts (e.g., previously disturbed soils or fill). The ATP shall include the requirement that archaeological monitoring take place under the supervision of an Archaeological Field Director meeting the minimum professional qualifications as defined in 2016 by the Society for California Archaeology, along with the demonstrated ability to identify human and non-human remains. The ATP shall also include requirements that all Archaeological Monitors for project construction have completed at least 12 semester units of undergraduate or graduate coursework in archaeology plus 12 months of archaeological-related field experience in California. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. Provisions for the inadvertent discovery of archaeological features or deposits – The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant under Criterion D, then data recovery and analysis procedures outlined for known resources shall be implemented. Provisions for the inadvertent discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony – The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner as determined through consultation with the Native American tribe identified by the Native American Heritage Commission as the Most Likely Descendant, and in accordance with applicable regulations.	Conduct WEAP training with a qualified archaeologist to all ground-disturbing construction personnel	Metro/Contractor			Prior to Construction and during construction as new personnel join the project		

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
Public participation or outreach plan for CA-LAN-1575/H – The ATP shall include provisions for the development of a public participation or outreach plan for CA-LAN-1575/H that includes continued consultation with Native American tribes, cultural resource professionals, and other potential stakeholders, such as local historical societies. The plan may include preparation of visual/educational exhibits or murals within LAUS and development of an application for handheld electronic devices, or other published or digital educational material that may be used to inform the public regarding the significance of Historic Chinatown or earlier use and sacredness of the area as it relates to Native Americans. Any materials prepared for public distribution shall comply with applicable regulations regarding the confidentiality of culturally sensitive data and information about archaeological resources. Cultural resource worker environmental awareness program (WEAP) training – The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. Standards for reporting – The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior’s Standards and Guidelines for Archaeological Documentation and the California OHP’s <i>Archaeological Resources Management Reports: Recommended Contents and Format</i>. Guidelines for curation – The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79 and the California Guidelines for the Curation of Archeological Collections (May 7, 1993). Covenant for transfer of responsibilities under Section 5024 of the California Public Resources Code – The ATP shall contain provisions for the negotiation of a covenant between the tribes, Caltrans, Metro and SHPO in order to transfer Caltrans’ responsibilities under Section 5024 of the California Public Resources Code to Metro for the acquisition of the parcel in Caltrans ROW on the south side of U.S. 101 at Commercial Street, located within the boundary of archaeological site CA-LAN-1575/H. The covenant cannot be completed until the CEQA environmental document and Section 106 agreement documents have received SHPO concurrence, as the final mitigation measures must also be included in the covenant.							
CUL-2 Built Environment Treatment Plan (BETP): Prior to construction, Metro shall retain a qualified architectural historian, herein defined as a person who meets the Secretary of the Interior’s Professional Qualification Standards in Architectural History, to develop a BETP that details the actions to be taken to resolve adverse effects on the built environment historic properties. The California SHPO and continuing consulting parties with specific interest in the historic properties shall be afforded 30 days to review and comment on the draft BETP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised BETP shall be submitted to SHPO for 30-day review and concurrence. The BETP shall include, at a minimum, the following elements: HABS documentation – The BETP shall include provisions for the documentation to HABS standards of LAUS character-defining features proposed for demolition or alteration. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualification Standards in History or Architectural History and submitted to the Library of Congress as an addendum to HABS CA-2158. The level of HABS documentation will be selected by the National Park Service Regional Office and shall include, at a minimum, large-format photographic recordation and a written description of character-defining features of LAUS proposed for demolition or alteration that were not included in previous HABS documentation (HABS CA-2158, CA-2158-A, CA-2158-B, CA-2158-C, and CA-2158-D). At a minimum, the following character-defining features shall be reviewed for inclusion in this documentation:	Conduct HABS-Like documentation and further documentation for all character defining features at LAUS Consult with SHPO and the City of Los Angeles CHC and OHR during early design phases of the Project Prepare protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources	Metro	Metro	Phase A and B	During Final Design During Final Design Prior to Construction and During Construction		

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
- o <u>Pedestrian passageway</u> - o <u>Ramps</u> - o <u>Railings</u> - o <u>Platforms</u> - o <u>Butterfly shed canopies</u> - o <u>South retaining wall</u> - o <u>Terminal Tower</u> - o <u>Car Supply/Maintenance Building</u> - o <u>Cesar Chavez Avenue Undercrossing</u> - o <u>Vignes Street Undercrossing (this bridge, which was constructed as part of LAUS, does not require additional individual HABS documentation)</u> • <u>Restoration of the existing LAUS passenger concourse</u> – The BETP shall include provisions for the restoration of the existing LAUS passenger concourse (west of the pedestrian passageway) to its 1939 appearance in accordance with the Secretary of the Interior’s Standards for Restoration, where feasible, from an engineering and constructability standpoint. This includes possible redesign of the entrance to the Metro Red Line to be more compatible with the historic LAUS design. The Secretary of the Interior’s Standards for Rehabilitation shall be followed where restoration is not feasible. • <u>Educational display for LAUS</u> – The BETP shall include provisions for the development of an educational display for LAUS that could be viewed by the public to demonstrate the history of LAUS and how it was used by past railroad passengers. • <u>Relocation of the Terminal Tower</u> – The BETP shall include provisions to evaluate the feasibility by a multi-disciplinary team (e.g., architectural historian, structural, civil, geotechnical, and railroad engineers) to reorient at grade, vertically raise, or relocate the Terminal Tower. If any of those preservation methods are determined infeasible by the multi-disciplinary team, the Terminal Tower will be demolished. • <u>Cesar Chavez Avenue Undercrossing, Vignes Street Undercrossing, and south retaining wall design plans</u> – The BETP shall include provisions for the development of design plans for the replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings and alterations to the south retaining wall that are compatible with the historic character of LAUS, including assessing the feasibility of rehabilitation options that preserve historically significant portions of these structures as design progresses. • <u>North Main Street Bridge design plans</u> – The BETP shall include provisions for the development of design plans for work on the character-defining features of North Main Street Bridge, including, but not limited to, its sidewalks, decking, and wingwalls, in accordance with the Secretary of Interior’s Standards for the Treatment of Historic Properties, to the extent feasible. • <u>Design review</u> – The BETP shall identify parties—including SHPO, the City of Los Angeles OHR, and the City of Los Angeles CHC—to be consulted during early design phases of the Project regarding the following items: - o <u>alterations to or demolition of character-defining features of LAUS</u> - o <u>restoration of the existing LAUS passenger concourse</u> - o <u>educational display for LAUS</u>							

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project								
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance		
						Initial	Date	
- o <u>alterations to character-defining features of the North Main Street Bridge</u> - Metro shall take into consideration the feedback received in progressing the design to completion. • <u>Response plans – The BETP shall include requirements for the development of protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources.</u>								
HIST-3 Friedman Bag Company: Textile Division Building-City of Los Angeles Office of Historical Resources Review and Consultation and HABS-Like Documentation: Prior to demolition, the character-defining features of the historical resource shall be photographed in a manner similar to HABS standards, submitted to OHR for review and approval, and the archival documentation shall be donated to a suitable repository, such as the City of Los Angeles Public Library.	Conduct HABS-like documentation of the Freidman Bag Company building	Metro	~~Metro~~ City of Los Angeles OHR	Phase A	Prior to Building Demolition (Friedman-Bay Company building)	—	—	
	Submit documentation to OHR for review and approval	Metro	Metro		Prior to Building Demolition (Friedman-Bay Company building)	—	—	
	Donate archival documentation to a suitable repository	Metro	Metro		Prior to Operation of Run-Through Service	—	—	
PAL-1 ~~Prepare a Paleontological Mitigation Plan (PMP).~~ It is anticipated that Quaternary older alluvium or Puente Formation, which <u>are geologic units that have a high sensitivity level, would be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain A PMP shall be prepared by Metro's a qualified p</u> Paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted, ~~and~~ Metro shall implement the PMP prior to the start of any ground-disturbing construction activities <u>if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation.</u> The PMP shall include site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full-time paleontological monitoring if excavations would occur within native Quaternary older alluvium and/or Puente Formation, ~~with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process.~~ Monitoring is not recommended for excavations that only impact artificial fill and Quaternary <u>younger</u> alluvium. The PMP shall detail a discovery protocol in the event potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt ~~surface-disturbing~~ activities in the immediate area (within a 25-foot radius of the discovery), and ~~a~~ Metro's qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in <u>consultation with the responsible agencies and in conformance with federal and state guidelines and best practices.</u> Construction activities may continue in other areas of the ~~project~~ Project site while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by <u>Metro's a</u> qualified paleontologist.	Retain qualified paleontologist to prepare a PMP	Metro	Metro	Phase A and B	Prior to Construction	—	—	
	Prepare PMP	Metro	Metro		Prior to Construction	—	—	
	Implement PMP including full-time paleontological monitoring, discovery protocols, salvage measures, and evaluation and treatment of discovered paleontological resources	Metro	Metro		During Construction	—	—	
PAL-2 Paleontological WEAP Training: Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be ~~given delivered~~ to all ground-disturbing construction personnel, ~~All site workers shall be required to complete WEAP training with a focus on paleontological resources,~~	Prepare a paleontological resource-focused WEAP Training.	Metro	Metro	Phase A and B	Prior to Construction	—	—	

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
including a review of what to do of protocols to follow in the case of an unanticipated fossil discovery, as identified in the PMP.	Provide WEAP training to all ground-disturbing construction personnel	Contractor	Metro		Prior to Construction and during construction as new personnel join the project	—	—
PAL-3 Curation: Metro shall make arrangements for the curation in perpetuity of significant fossils recovered during construction shall be curated by Metro in perpetuity at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition of any salvaged specimens) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow identification of the fossils. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.	Prepare, identify, and catalogue significant fossils recovered for curation	Metro	Metro	Phase A and B	During Construction	—	—
	Provide significant fossils recovered field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens to an accredited repository for curation	Metro	Metro		Post Construction	—	—
	Incorporate Native American monitor requirements into ATP GRMMP (see Mitigation Measure CUL-1 HIST-5 above)	Metro	Metro		During Construction (at LAUS)	—	—
OMM AQ-4 Construction Air Quality Monitoring at William Mead Homes. Prior to the start of construction, Metro will develop a construction air quality monitoring plan specific to William Mead Homes in coordination with HACLA, South Coast Air Quality Management District (SCAQMD), and the US Environmental Protection Agency (USEPA). This construction air quality monitoring plan will identify locations along the fence line and within the William Mead Homes property for stationary air quality monitoring to be set up during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The construction air quality monitoring plan will identify the monitoring methodology, inspection procedures, threshold levels for alerts, compliance measures in the event of an alert, and reporting requirements. Compliance measures to be implemented by the construction contractor may include, but are not limited to, additional watering or use of dust suppressants, limiting vehicle speed to 5mph on unpaved surfaces, covering open-bodied trucks, and installing wheel washing stations or rumble plates. The construction air quality monitoring plan will also provide contact information for a construction representative to be identified for inquiries by residents of the William Mead Homes community and guidance for community notifications. Metro will be responsible for operating and maintaining the air quality monitoring equipment during construction. Metro will have a dust control supervisor on-site during construction to ensure the construction air quality monitoring plan is being followed and that the air quality monitoring equipment remains operational during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The dust control supervisor will maintain a daily log of the construction activity by location, verify the air monitoring measurements, and coordinate back to Metro for validation of the data before release to the public.	Develop a construction air quality monitoring plan specific to William Mead Homes	Metro	Metro	Phase A and B	Prior to construction and during construction		

Table 1. Mitigation Monitoring and Reporting Program: CEQA Modified Proposed Project							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Implementation Phase (A or B)	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date

Notes:
AB=Assembly Bill; BMP=best management practice; Caltrans=California Department of Transportation; CARB=California Air Resources Board; CBC=California Building Code; CCR=California Code of Regulations; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CGP=construction general permit; CHC=Cultural Heritage Commission; CHSRA=California High-Speed Rail Authority; CRMMP=Cultural Resource Mitigation and Management Plan; DTSC=Department of Toxic Substance Control; EIR=environmental impact report; ESA=environmental site assessment; FTA=Federal Transit Administration; HABS=Historic American Buildings Survey; HACLA=Housing Authority of the City of Los Angeles; HCM=Historic-Cultural Monument; HMMP=Hazardous materials management plan; HSR=High-Speed Rail; IGP=industrial general permit; LA=Los Angeles; LABOE=Los Angeles Bureau of Engineering; LADOT=City of Los Angeles Department of Transportation; LAHCM=Los Angeles Historic-Cultural Monument; LAUS=Los Angeles Union Station; LID=low impact development; LOSSAN=Los Angeles-San Diego-San Luis Obispo; LUC=Land Use Covenant; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MOU=memorandum of understanding; NAHC=Native American Heritage Commission; NPDES=National Pollutant Discharge Elimination System; OHR=Office of Historic Resources; OSHA=Occupational Safety and Health Administration; PAH=polynuclear aromatic hydrocarbon; PMP=Paleontological Mitigation Plan; PRC=Public Resources Code; RIO=River Improvement Overlay District; ROW=right-of-way; RWQCB=Regional Water Quality Control Board; SCAQMD=South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion; SCRRA=Southern California Regional Rail Authority; SWRCB=State Water Resources Control Board; SWPPP=stormwater pollution prevention plan; TMP=traffic management plan; TPH=total petroleum hydrocarbons; VOC=volatile organic compound; WEAP=worker environmental awareness program

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Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements							
Mitigation Measures		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
Transportation and Traffic							
MY TR-1	Prepare a Construction TMP for Malabar Yard Railroad Improvements During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon. Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, Los Angeles Unified School District, and emergency service providers to minimize construction-related vehicular and non-vehicular traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. The following provisions shall be included in the TMP: - Traffic flow shall be maintained, particularly during peak hours, to the degree feasible. - Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, as feasible. - Metro or the contractor shall post advance-notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction. - Metro or the contractor shall notify City of Vernon in advance of street closures, detours, or temporary lane reductions.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	During Final Design	—	—
		Prepare TMP	Contractor	Metro/City of Vernon	Prior to Construction	—	—
		Implement TMP	Contractor	Metro/City of Vernon	During Construction	—	—
MY TR-2	Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection: During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to temporarily restripe the westbound shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and add a right-turn overlap phase in the same direction. The temporary restriping shall remain in place for the duration of construction. Upon completion of the Malabar Yard railroad improvements, the lane shall be returned to its original condition as a shared through/right-turn lane and the right-turn overlap phase shall be eliminated.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro	Metro	During Final Design	—	—
		Install restriping	Contractor	City of Vernon	During Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements							
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance		
					Initial	Date	
MY TR-3 Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection: During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to restripe one eastbound through lane to an eastbound turn lane at Vernon Avenue.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—	
	Install restriping	Contractor	City of Vernon	During Construction			
MY TR-4 Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040): In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall restripe the northbound shared through/right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—	
	Install restriping	Contractor	City of Vernon	During Construction			
MY TR-5 Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040): In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall add a new westbound vehicular lane on Fruitland Avenue.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—	
	Install new lane	Contractor	City of Vernon	During Construction			
MY TR-6 Obtain Required Approvals for At-Grade Railroad Crossings: For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain required approvals from the City of Vernon and submit a Formal Application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 <i>CEQA Compliance</i> , the Formal Application shall include the Link US Final EIR (June 2019) and Final EIS/SEIR.	Prepare Plans for At-Grade Crossings	Metro/BNSF	Metro	Prior to Construction	—	—	
	Submit Formal Application to CPUC	Metro	City of Vernon/CPUC	Prior to Construction			
Air Quality and Global Climate Change							
MY AQ-1 Fugitive Dust Control: In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403: - Minimize land disturbed by clearing, grading, and earth moving, or excavation operations to prevent excessive amounts of dust - Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done - Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes - Securely cover trucks when hauling materials on or off site - Stabilize the surface of dirt piles if not removed immediately	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—	
	Implement dust control measures	Contractor	Metro	During Construction	—	—	

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
- Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads - Minimize unnecessary vehicular and machinery activities - Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway - Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities The following measures shall also be implemented to reduce construction emissions: - Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy - Ensure that all construction equipment is properly tuned and maintained - Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions - Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible - Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable These control techniques shall be included in project specifications and shall be implemented by the construction contractor.						
MY AQ-2 Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment: In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Use construction equipment that meets Tier 4 exhaust emissions standards	Contractor	Metro	During Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
Biological Resources						
MY BIO-1 MBTA Species: During construction, vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a CDFW approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be adjusted based on species specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active. Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at the bridges that will be removed or that will have modifications to the substructure before the nesting season (February 1 through September 30) to prevent nesting at the bridges by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction. Metro’s Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and Regional Water Quality Control Board [RWQCB] jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices;	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Retain a qualified bird biologist	Metro/BNSF	Metro	Prior to Construction	—	—
	Conduct preconstruction bird surveys	Metro/BNSF	Metro	Within 7 days prior to vegetation removal	—	—
	Implement/mark exclusionary buffer (only if nesting birds identified during pre-construction surveys)	Contractor	Metro	Prior to vegetation removal until nest is no longer active	—	—
	Install exclusionary devices (only if suitable nests are identified during preconstruction surveys)	Contractor	Metro	Prior to February 1 (before work that may affect nesting birds would occur)	—	—
	Remove bird nests	Contractor	Metro	Prior to February 1 (before work that may affect nesting birds would occur)	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
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and (5) the protocol to resolve conflicts that may arise at any time during the construction process.						
MY BIO-2 Protected Trees: Prior to construction, City-owned trees (outside of private property) shall be identified and overlaid on Project footprint maps to determine which trees may be protected in accordance with the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). Prior to removal of any City-owned tree, Metro shall prepare a Tree Removal/Tree Protection Plan for review and approval by the City of Vernon Public Works Department that identifies: - Trees proposed to be cut or removed. - Trees proposed to be retained; and - Trees proposed to be provided in replacement of the trees that are to be cut or removed. All street trees shall be planted per the street tree master plan on file in the City of Vernon Public Works Department. In addition, all construction shall preserve and protect the health of trees to remain, relocated trees, and new trees planted to replace those removed in accordance with Section 12.24.090 of the City's Tree Ordinance.	Prepare Tree Removal/Tree Protection Plan	Metro/BNSF	Metro/Vernon	Prior to Construction	—	—
	Replace and/or relocate protected trees (as needed)	Metro/BNSF	Metro/Vernon	Within one year of removal of protected trees	—	—
Hydrology and Water Quality						
MY HWQ-1 Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements: During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during Project construction. Metro or BNSF shall comply with the Risk Level 2 sampling and reporting requirements of the construction general permit (CGP). A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to the SWRCB within 90 days of completion of construction and stabilization of the site.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Prepare and submit Notice of Intent	Contractor/Metro/BNSF	SWRCB	Prior to Construction		
	Prepare SWPPP	Contractor	Metro/RWQCB	Prior to Construction	—	—
	Implement SWPPP (including preparation of rain event action plans)	Contractor	RWQCB	During Construction	—	—
	Prepare and submit Notice of Termination	Contractor/Metro/BNSF	SWRCB	90 days prior to completion of construction	—	—
MY HWQ-2 Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds	Incorporate applicable NPDES requirements into plans into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
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of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Vernon.	Obtain Dewatering Permits (as needed)	Contractor	RWQCB/City of Vernon	Prior to Construction (Dewatering Activities)	—	—
MY HWQ-3 Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Vernon.	Incorporate applicable NPDES requirements into plans into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Obtain Dewatering Permits (as needed)	Contractor	RWQCB/City of Vernon	Prior to Construction (Dewatering Activities)	—	—
MY HWQ-4 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements: Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable	Incorporate applicable NPDES requirements (project wide) into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
MY HWQ-5 Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements: For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (known as the Phase I Permit). Metro or BNSF shall also prepare a final LID report in accordance with the City of Vernon's <i>Low Impact Development Guidance Manual</i> . This document shall identify the required BMPs to be in place prior to Project operation and maintenance.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
Geology and Soils						
MY GEO-1 Prepare Final Geotechnical Report: During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following:	Prepare final geotechnical report	Metro/BNSF	Metro	During Final Design	—	—
	Incorporate site-specific recommendations of the final geotechnical report into applicable	Metro/BNSF	Metro	During Final Design	—	—

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Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
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- Site preparation - Soil bearing capacity - Appropriate sources and types of fill - Liquefaction - Lateral spreading - Corrosive soils - Structural foundations - Grading practices The recommendations shall be prepared to mitigate the risk of seismic ground shaking and ground failure, including liquefaction. In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of project-related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria, California Amendments to the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications, and applicable local city codes (Appendix L of this EIR). The project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	construction documents (plans and specifications)					
	Construct infrastructure per the site-specific geotechnical recommendations	Contractor	Metro	During Construction	—	—
Hazards and Hazardous Materials						
MYHAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP): Prior to construction, an HMMP shall be prepared by Metro that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the project footprint, and would include, but shall not be limited to, the following: - A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200) - A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120) - Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38) - A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Prepare Hazardous Materials Management Plan	Contractor	Metro	Prior to Construction	—	—
	Implement Hazardous Materials Management Plan	Contractor	Metro	During Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
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or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910) - Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200) - Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120).						
MYHAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA): Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint for the selected design options that would be affected by excavation. Phase II activities shall consist of: - Collection of soil, groundwater, and soil vapor samples from borings, for geologic analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the project area. - Laboratory analysis of samples for contaminants of concern, which vary by location, but may include: VOCs, PAHs, TPHs, and California Title 22 metals. A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation’s findings. Metro shall implement the Phase II ESA findings. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in environmental site assessments and evaluation of contaminated sites.	Prepare Phase II ESA Investigation	Metro/BNSF	Metro	Prior to Final Design	—	—
	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Implement Phase II recommendations/findings	Contractor	Metro	During Construction	—	—
MYHAZ-3 Prepare a General Construction Soil Management Plan: Prior to construction, Metro shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported to the project site for backfill shall be certified clean prior to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan: - General worker health and safety procedures - Dust control - Management of soil stockpiles - Traffic control - Stormwater erosion control using BMPs	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Prepare Construction Soil Management Plan (project wide)	Contractor	Metro	Prior to Construction	—	—
	Implement Construction Soil Management Plan (project wide)	Contractor	Metro	During Construction	—	—
	Provide proof of certified clean imported soil	Contractor	Metro	During Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
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MYHAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP): Prior to construction, Metro shall prepare parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. The nature and extent of contamination varies widely across the Project footprint for the selected design options, and the parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: • Soil disposal protocols • Protocols governing the discovery of unknown contaminants • Management of soil on properties within the project footprint with LUCs or known contaminants Prior to construction on individual properties with LUCs or known contaminants, a parcel-specific HASPs shall also be prepared for submittal and approval by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASP provisions shall also be implemented: • Training requirements for site workers who may be handling contaminated material • Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property • Mitigation and monitoring measures that are protective of site worker and public health and safety Prior to construction, Metro shall coordinate proposed soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the project, and each of the contaminated sites.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Prepare parcel specific soil management plans (for known contaminated sites/LUC-adjudicated sites)	Metro/Contractor	DTSC	Prior to Construction	—	—
	Retain a Certified Industrial Hygienist to prepare parcel specific health and safety plans (for known contaminated sites/LUC-adjudicated sites)	Metro/BNSF	Metro	Prior to Construction	—	—
	Prepare a parcel specific health and safety plans (for known contaminated sites/LUC-adjudicated sites)	Metro/Contractor	DTSC	Prior to Construction	—	—
	Coordinate proposed soil management measures and reporting activities with appropriate agencies including but not limited to SCRRA, City of Vernon, RWQCB	Metro/BNSF	Metro	Prior to Construction	—	—
MYHAZ-5 Halt Construction Work if Potentially Hazardous Materials are Encountered: Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials and/or abandoned oil wells encountered during the construction process.	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	Prior to Construction	—	—
	Halt work if potentially hazardous materials/abandoned wells are encountered	Contractor	Metro	During Construction	—	—

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MYHAZ-6 Pre-Demolition Investigation: Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities	Incorporate contractor responsibilities into applicable construction documents (plans and specifications)	Metro/BNSF	Metro	During Final Design	—	—
	Conduct pre-demolition survey (for buildings constructed prior to 1970 that require demolition)	Contractor	Metro	Prior to Building Demolition	—	—
	Prepare Removal Plan (only if hazardous building materials are discovered during the pre-demolition survey)	Contractor	OSHA/Los Angeles County Department of Public Health	Prior to Building Demolition	—	—
	Provide proof of appropriate licenses and certifications	Contractor	Metro	Prior to Building Demolition	—	—
	Secure the site and disconnect utilities	Contractor	Metro	Prior to Building Demolition	—	—
	Implement Removal Plan	Contractor	Metro	During Building Demolition	—	—
Cultural and Paleontological Resources						
MY CUL-1 Archaeological Treatment Plan (ATP). Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior’s Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. The ATP shall be prepared consistent with the Secretary of Interior’s Standards and Guidelines for Archaeological Documentation and the California OHP Archaeological Resources Management Reports: Recommended Contents and Format (OHP 1990). The ATP shall include, at a minimum, the following elements:	Prepare ATP	Metro	Metro	Prior to Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
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• Research Design: The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions. • Archaeological and Native American Monitoring. The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. • Provisions for the Accidental Discovery of Archaeological Features or Deposits. The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop-work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented. • Provisions for the Accidental Discovery of Human Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony. The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop-work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes. • Cultural Resource Worker Environmental Awareness Program (WEAP) Training. The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified	Develop a site-specific sensitivity model	Metro		Prior to Construction		
	Retain archaeological and Native American monitors for all phases of work	Metro/Contractor		Prior to Construction and During Construction		

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
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archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. • Standards for Reporting. The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's Archaeological Resources Management Reports: Recommended Contents and Format. • Guidelines for Curation. The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.	Prepare public outreach and educational plan	Metro		Prior to Construction		
	Conduct WEAP training with a qualified archaeologist to all ground-disturbing construction personnel	Metro/Contractor		Prior to Construction and during construction as new personnel join the project		
MY PAL-1 Paleontological Mitigation Plan (PMP): It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full time paleontological monitoring if excavations will occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile driving activities. While pile driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that affect only artificial fill and Quaternary younger alluvium (Qa/Qal). The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery) and Metro's qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered	Retain qualified paleontologist to prepare a PMP	Metro	Metro	Prior to Construction	—	—
	Prepare PMP	Metro	Metro	Prior to Construction	—	—
	Implement PMP including full-time paleontological monitoring, discovery protocols, salvage measures, and evaluation and treatment of discovered paleontological resources	Metro	Metro	During Construction	—	—

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
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paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in other areas of the Project site while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by Metro's qualified paleontologist.						
MY PAL-2 Paleontological WEAP Training: Metro's qualified paleontologist shall prepare paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP.	Prepare a paleontological resource-focused WEAP Training.	Metro	Metro	Prior to Construction	—	—
	Provide WEAP training to all ground-disturbing construction personnel	Contractor	Metro	Prior to Construction and during construction as new personnel join the project	—	—
MY PAL-3 Curation: Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow taxonomic identification of the fossils. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.	Prepare, identify, and catalogue significant fossils recovered for curation	Metro	Metro	During Construction	—	—
	Provide significant fossils recovered field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens to an accredited repository for curation	Metro	Metro	Post Construction	—	—
Offsetting Mitigation Measures (OMMs)						
OMM MY SS-1 Train Detection Cameras: Metro shall provide reimbursement for the purchase and installation costs of new train detection cameras at four at-grade railroad crossings at 37 th Street, 38 th Street, Vernon Avenue, and Pacific Boulevard to optimize emergency response routing when a train is present. The cameras would monitor the at-grade railroad crossings to detect occupancy and alert emergency dispatchers or notify local emergency service providers of train movements that could cause a delay in emergency access or response and assist with vehicular routing decisions. Cameras could be mounted on either an existing or new traffic pole near the gates of the at-grade railroad crossing and can be connected to the City's Traffic Management Center (TMC) by existing physical fiber optic lines that are present in the City. Metro will provide reimbursement for the purchase and installation costs of train detection cameras. The City will be responsible for purchasing and installing cameras, maintaining cameras, and providing staffing to monitor cameras and manage alerts.	Provide reimbursement to Vernon for purchase and installation costs of four train detection cameras	Metro	Metro	Prior to Operations	—	—

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OMM MY SS-2 Mobile Emergency Operations Center: Metro shall provide reimbursement to the City of Vernon for the purchase of one Mobile Emergency Operations Center (EOC), which is a self-contained, mobile command unit designed to provide critical emergency management capabilities in the field. It serves as a backup or replacement central for the City's primary offsite EOC, Los Angeles County Fire Station 56, during crises or, disasters, or when the EOC is inaccessible or inoperable due to earthquake, flooding, fires, hazardous spills, windstorms, or acts of terror. Metro will provide reimbursement for the purchase of one Mobile EOC and any basic required vehicle technology, anticipated to be between \$200,000 to \$300,000. The City will procure the vehicle and required technology and complete any required testing, training, deployment. The City will be responsible for long-term maintenance.	Provide reimbursement for the purchase of one Mobile EOC	Metro	Metro	Prior to Operations	—	—
OMM MY SS-3 Communications and Radio Systems Upgrade: Metro shall provide reimbursement to the City of Vernon for the purchase of upgraded communication and radio systems to improve coordination and response among different departments and agencies, such as the police department, public utilities department, public works department, and the LA County fire department, which serves the City of Vernon. Metro will provide reimbursement for the purchase of upgraded communication and radio systems equipment and associated software. The City will procure equipment, configure equipment, and coordinate with all applicable departments including LA County Fire to determine equipment and software compatibility, configuration, training, and testing of the new equipment.	Provide reimbursement for the purchase of upgraded communication and radio systems equipment and associated software	Metro	Metro	Prior to Operations	—	—
OMM MY NV-1 Quiet Zone Design and Physical Infrastructure: Metro shall provide design for and installation of new railroad safety measures to support a new Quiet Zone at five existing at-grade railroad crossings. The railroad safety measures would be constructed at five existing at-grade railroad crossings that are located on the Harbor Subdivision parallel to Santa Fe Avenue and within close proximity to planned mixed-use residential areas identified in the Westside Zone Change and General Plan Amendment. This OMM would include implementation of safety measures at each of the five existing at-grade railroad crossings that would serve as a substitute for the sounding of a train horn. Safety measures that can substitute for the sounding of a train horn can include widened medians, exit gates, overhead cantilevered signals, and/or pedestrian treatments such as detectible warning strips and flashing signals. Metro will prepare engineering design plans for the Quiet Zone safety measures and will be responsible for leading coordination with CPUC to process design reviews and facilitating the approval process (see OMM NV-2 below). The City would be responsible for submitting the Quiet Zone application to CPUC, maintaining Railroad Liability Insurance, and maintaining roadway-related Quiet Zone infrastructure (i.e. medians).	Prepare engineering design plans for the Quiet Zone safety measures	Metro/BNSF	Metro/City of Vernon	Prior to Operations		
	Submit Quiet Zone Application	City of Vernon	CPUC	Prior to Operations		

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
Implementation of this OMM will also require BNSF to coordinate with Metro and the City regarding the proposed Quiet Zone infrastructure and assist with construction of the safety measures within their railroad ROW. BNSF will also be responsible for the maintenance of railroad grade crossing elements (i.e. crossing gates). CPUC and FRA are the regulatory authorities that are responsible for review of the Quiet Zone application, as well as conduct periodic safety reviews of the Quiet Zone.						
OMM MY NV-2 Quiet Zone Technical Support: Associated with OMM MY NV-1, Metro, BNSF, and the City of Vernon shall be required to enter into an agreement to complete the regulatory process for a Quiet Zone designation along the Harbor Subdivision. Metro would support the City’s application for a Quiet Zone by conducting the following tasks: a. Prepare for and facilitate diagnostic reviews of highway-rail grade crossings within the proposed Quiet Zone with CPUC Rail Crossings and Engineering Branch b. Prepare for and facilitate diagnostic reviews of pedestrian crossings within the proposed Quiet Zone with CPUC Rail Crossings and Engineering Branch c. Complete updates to US DOT Crossing Inventory Forms to document current physical and operating conditions at each crossing within the proposed Quiet Zone d. Prepare Draft Notice of Intent to implement Quiet Zone (to be published and distributed by City) e. Prepare Draft Notice of Quiet Zone Establishment (to be published and distributed by City) Design and construction of the safety measures identified in the diagnostic reviews is discussed above as part of OMM MY NV-1. Metro, in coordination with the City of Vernon and BNSF, will be responsible for preparing the technical documents and application package for CPUC submittal and facilitating and attending all diagnostic reviews required to support the regulatory process for a Quiet Zone.	Prepare the technical documents and application package for CPUC submittal	Metro/BNSF/City of Vernon	Metro	Prior to Operations		
OMM MY TR-7 High Visibility Crosswalk, Mid-Block Location: Metro shall prepare engineering design plans and provide reimbursement to the City of Vernon for construction of a high visibility crosswalk at Santa Fe Avenue near the Vernon City Elementary School and the Holy Angels Catholic Church of the Deaf (Figure 3-1). This OMM would enhance pedestrian safety by making crossing areas more noticeable to drivers, and would include crossing signs that incorporate bright colors, bold text/symbols, and retroreflective materials to improve visibility at night [for example FHWA pedestrian crossing signs R1-6, W11-2, W16-7P (FHWA 2009)]. Additional elements could include pedestrian-activated flashing lights and	Prepare engineering design plans and provide reimbursement for construction costs of high-visibility mid-block crosswalk	Metro/BNSF	Metro/City of Vernon	Prior to Operations		

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
street lighting to help alert drivers. The high visibility crosswalk would complement Malabar Yard Mitigation Measure TR-3, Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection, by enhancing pedestrian safety at the intersection. Metro will prepare engineering design plans and provide reimbursement for construction costs. The City of Vernon will construct the high visibility crosswalk elements. The City of Vernon will coordinate with Metro on the design of the high visibility crosswalk elements and will be responsible for the maintenance of crosswalk elements.						
OMM MY TR-8 Intersection Crosswalk Improvements with Cool Street Paving: Metro shall prepare engineering design plans and provide reimbursement to the City of Vernon for construction costs associated with the implementation of crosswalk improvements at the intersections of Santa Fe Avenue with 37th Street, 38th Street, Vernon Avenue, Pacific Boulevard, and Fruitland Avenue, and at the intersections of 46th Street with Pacific Boulevard and Seville Avenue. These intersections are closest to the Malabar Yard railroad improvements and where future mixed-use residential land uses are planned as part of the 2023 Vernon Westside Zone Change and General Plan Amendment. The improvements at the five existing crosswalk locations on Santa Fe Avenue would consist of repainting/restriping the existing crosswalks with bolder, brighter colors that would be more visible to drivers. Cool street paving includes reflective materials that reflects light, reducing urban heat island effect and enhancing nighttime visibility. Tactile warning strips and bold restriping would be implemented at the existing crosswalk on 46th Street/Pacific Blvd. A new crosswalk would be constructed at the existing four way stop at 46th Street/Seville Avenue, and would include additional safety elements such as tactile warning strips and bold restriping. Metro will prepare the engineering design plans and provide reimbursement for construction costs of crosswalk improvements. The City will coordinate with Metro on the design plans as well as be responsible for the construction and maintenance of crosswalk elements.	Prepare engineering design plans and provide reimbursement for construction costs of crosswalk improvements	Metro/BNSF	Metro/City of Vernon	Prior to Operations		
OMM MY TR-9 Bus Shelters: Metro shall prepare design plans and provide reimbursement to the City of Vernon for construction costs associated with the installation of 25 bus shelters at the following locations as determined by Metro based on the location of where High-Quality Transit Areas are located. 1. Pacific Blvd / Railroad Crossing- south side 2. Pacific Blvd / 46th Street - east side 3. Pacific Blvd / 46th Street - west side 4. Pacific Blvd / Leonis Blvd - east side 5. Pacific Blvd / Leonis Blvd - west side	Prepare engineering design plans and provide reimbursement for construction costs of the bus shelters	Metro/BNSF	Metro/City of Vernon	Prior to Operations		

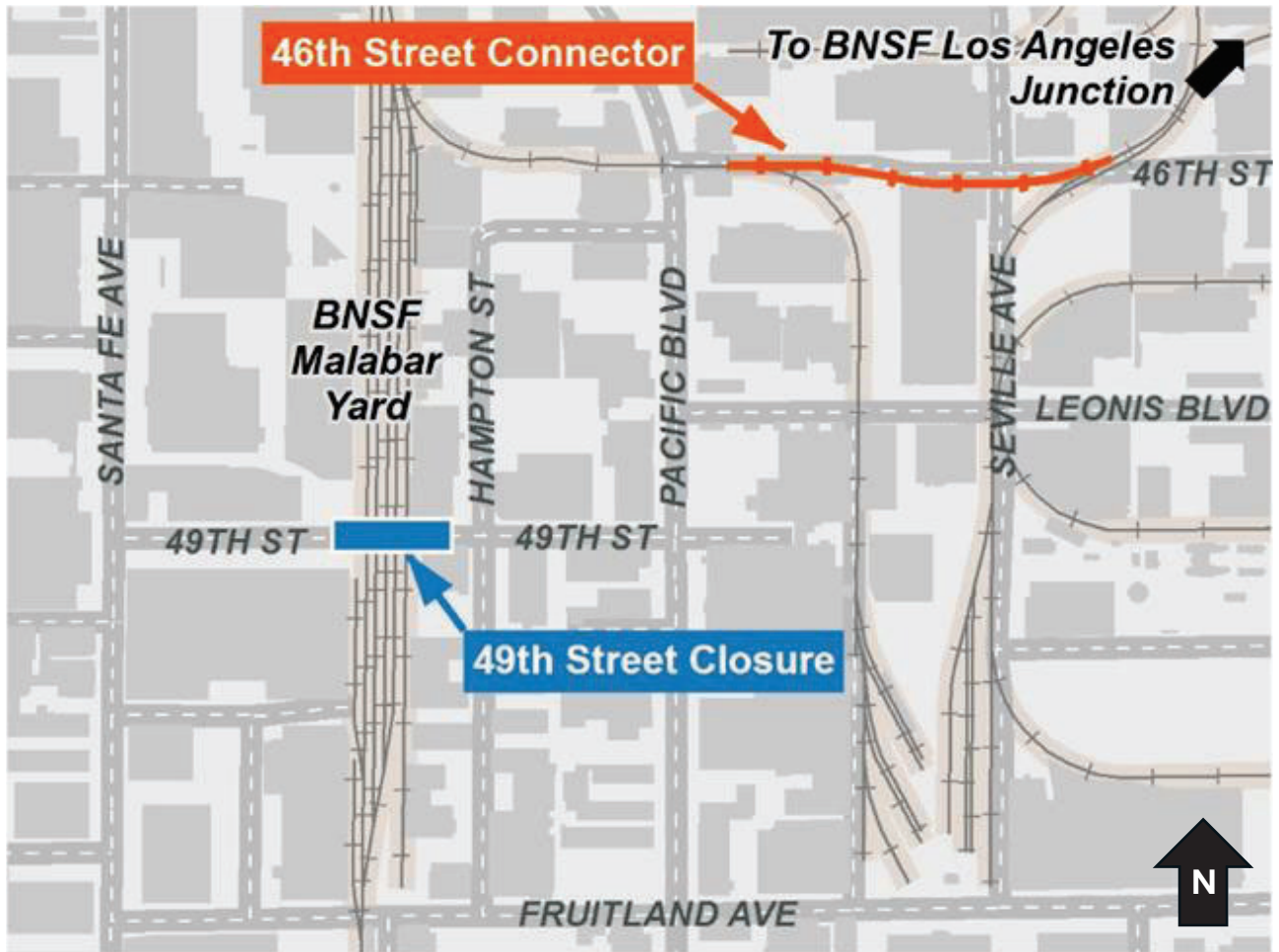
Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
6. Leonis Blvd / Pacific Blvd – south side 7. Santa Fe Ave / 30th Street – east side 8. Santa Fe Ave / 30th Street – west side 9. Santa Fe Ave / 27th Street – east side 10. Santa Fe Ave / 27th Street – west side 11. Vernon Ave / Saint Charles Street – south side 12. Vernon Ave / Saint Charles Street – north side 13. Vernon Ave / Alameda Street – north side 14. Vernon Ave / Alameda Street – south side 15. Soto Street / 37th Street – west side 16. Soto Street / 46th Street – west side 17. Soto Street / 46th Street – east side 18. Soto Street / Leonis Blvd – west side 19. Soto Street / Leonis Blvd – north side 20. Soto Street / 54th Street – west side 21. Soto Street / 54th Street – east side 22. Slauson Ave / Boyle Ave (north side) 23. Slauson Ave / Alcoa Ave (south side) 24. Slauson Ave / Bicket Street (north side) 25. Slauson Ave / Bicket Street (south side) The bus shelters would include a roof or canopy for weather protection, benches for seating, and transparent panels or walls to shield passengers from wind and rain while maintaining visibility. Additional features may include signage displaying route information, lighting for safety, and a waste bin or a map of nearby locations. The bus shelter design would be coordinated between Metro and the City of Vernon. As a result of feedback received from the City, a shade element would also be incorporated into the design to provide sun protection. Metro will prepare design plans and provide reimbursement for construction costs of the bus shelters. The City will coordinate with Metro on bus shelter designs and will be responsible for the construction and maintenance of the shelters.						
OMM MY TR-10 PTZ Smart Cameras, Software, and Screens for Monitoring: Metro shall provide reimbursement to the City of Vernon for the purchase of Pan Tilt Zoom (PTZ) smart cameras at five intersections: Downey Road at Bandini Boulevard, 25 th Street at Santa Fe Avenue, Fruitland Avenue at	Provide reimbursement for the purchase of five PTZ cameras with software and screens	Metro/BNSF	Metro/City of Vernon	Prior to Operations		

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
Malabar Street, Vernon Avenue at Santa Fe Avenue, and Pacific Boulevard at Santa Fe Avenue. Unlike train detection cameras, which are static and are only used for the purpose of train detection, PTZ cameras have the ability to remotely pan (move left and right), tilt (move up and down), and zoom to provide flexible and dynamic traffic monitoring of an area. The cameras would be equipped with automated tracking, motion detection, and real-time alerts to improve security and traffic management. OMM MY TR-10 would also include the purchase of associated PTZ smart software and screens for monitoring. Metro will provide reimbursement for the purchase of cameras. The City will procure the cameras, complete the traffic signal modification plan, complete the installation of cameras and software integration, and coordinate with the vendor for commissioning. The Vendor will coordinate with the City for the installation and commissioning of cameras and software integration.						
OMM MY TR-11 AI-Based Traffic Control System: Metro shall provide reimbursement to the City of Vernon for the purchase of 47 transportation controllers for an AI-based traffic control system, which uses machine learning and data analysis to optimize traffic flow, predict congestion, and respond to incidents in real time. The controllers and associated cloud-based software would provide an integrated platform that would enable signal controls to adapt to real time traffic conditions, improving traffic circulation and safety for the community, particularly at the 46th Street and Seville Avenue intersection, where new queueing is expected to occur. The system would also be capable of rerouting emergency vehicles along alternate routes, ensuring faster response times and minimizing delays for critical emergency services. Similar systems are used in the region, including by the City of Los Angeles. Metro will provide reimbursement for the purchase of controllers. The City will work with vendors to install and configure the controllers.	Provide reimbursement for the purchase of 47 transportation controllers	Metro/BNSF	Metro/City of Vernon	Prior to Operations		

Table 2. Mitigation Monitoring and Reporting Program: Malabar Yard Railroad Improvements						
Mitigation Measures	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
OMM MY TR-12 Metro Transit Oriented Communities Program Support: Metro shall provide the City of Vernon with staffing for grant writing services for the Metro Transit Oriented Communities (TOC) Program, which is a program that provides equitable access to a high-quality transportation system allowing people to drive less and access transit more. Metro would provide the City with grant writing assistance, technical assistance for land use feasibility/planning studies, joint development projects, and development of first/last mile strategies from Metro transit stops to proposed development sites. The TOC Program also provides opportunities for Metro to enhance the transit customer experience at existing Metro stations in the City of Vernon (i.e., Blue Line Station, Transit Stops) and can potentially support development projects on LA Metro owned properties (or adjacent properties). Metro will provide staffing to the City for grant writing services for TOC project applications in an amount not to exceed 2,000 hours.	Provide staffing for grant writing services for TOC project applications up to 2,000 hours	Metro/City of Vernon	Metro	Prior to Operations		

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ATTACHMENT B
MALABAR YARD RAILROAD IMPROVEMENTS LOCATION MAP



Malabar Yard railroad improvements in the City of Vernon offset the loss of storage track capacity at the BNSF West Bank Yard:

- (1) The 46th Street Closure provides a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction.*
- (2) The 49th Street Closure accommodates approximately 3,350 track feet of storage capacity at the BNSF Malabar Yard.*

ATTACHMENT F

SUMMARY OF COMMUNITY ENGAGEMENT

Elected Official Staff Briefings	
Elected Official	Date
Mayor Karen Bass Staff	May 2, 2024
Supervisor Hilda Solis Staff-SD1	May 2, 2024
Supervisor Janice Hahn-SD 4	May 6, 2024
Councilmember Kevin De León-CD14	May 7, 2024
Councilmember Eunisses Hernandez-CD1	May 9, 2024
Councilmember Jurado-CD14	March 26, 2025

City of Vernon Executive Staff Workshop Dates	
May 23, 2024	January 8, 2025
September 10, 2024	February 12, 2025
October 23, 2024	February 20, 2025
November 6, 2024	March 6, 2025
November 13, 2024	May 15, 2025
November 20, 2024	June 17, 2025
December 4, 2024	

City of Vernon Property Owner Meetings	
Property Location	Date
4535 Soto Street	December 18, 2024
4900 Santa Fe Avenue/2430 E. 49th Street	December 18, 2024,
46th Street & Seville Avenue; 4620 Seville Avenue	December 18, 2024
4585 Pacific Boulevard/4575 Pacific Boulevard	January 9, 2025
4550 Seville Avenue	January 9, 2025
4580 Pacific Boulevard	January 14, 2025
2665 Leonis Boulevard	January 17, 2025
LA Derby Dolls (2661 E 46th Street	January 24, 2025
4800-4824 Santa Fe Avenue	January 31, 2025
2725 E. 46th Street	January 31, 2025
4848 Santa Fe Avenue	February 3, 2025
4618 Pacific Blvd	February 17, 2025

Stakeholder Engagement	
Organizations	Date
LARABA/Arts District Community Council	April 11, 2024
Central City Association (CCA)	May 8, 2024
Westside/Central Service Council	May 8, 2024
City of Vernon Business & Industry Commission	May 9, 2024
LARABA/ADCCLA	May 9, 2024
William Mead Homes	May 13, 2024
Little Tokyo Community Council	May 15, 2024
Little Tokyo Business Improvement District (BID)	May 15, 2024
El Pueblo de Los Angeles Historical Monument	May 23, 2024
Little Tokyo Business Association/Business Improvement District	Feb 20, 2025
Vernon Chamber of Commerce	June 23, 2025

Vernon Community Meeting and Open House
Wednesday, March 26, 2025, from 5:30 to 7:00 p.m., Metro held a Community Meeting and Open House at Trattoria 25 (2501 S. Santa Fe Avenue) in Vernon.

Library Locations for Circulation of the Final SEIR		
Chinatown Branch Library	Care First Village Administrative Office	Little Tokyo Branch Library
Benjamin Franklin Branch Library	Metro Headquarters, Dorothy Peyton Gray Transportation Library	LA Central Public Library
Lincoln Heights Branch Library	William Mead Homes Administrative Office	Vernon City Hall
<i>(Hard copy of Executive Summary available in English, Spanish, Cambodian, Korean, Japanese, Chinese, Khmer, and Vietnamese)</i>		

ATTACHMENT G
SUMMARY OF ADDITIONAL MITIGATION MEASURES

Additional Community Mitigation	Description
Train Detection Cameras	4 Locations: 37th Street, 38th Street, Pacific Boulevard, Vernon Avenue
Mobile Emergency Operations Center (EOC)	Mobile EOC to be used during emergencies or if central EOC is shut down
Communications & Radio-Systems Upgrade	New cameras, dispatch, radios & antennae enables ability for all departments to communicate (PD, PUD, PW LA County Fire)
AI-Based Traffic Control System (Traffic Upgrades)	47 transportation controllers (locations specified by City)
PTZ Smart Cameras, Software & Screens	5 locations: Downey Road at Bandini Boulevard, 25th Street at Santa Fe Avenue, Fruitland Avenue at Malabar Street, Vernon Avenue at Santa Fe Avenue, Pacific Boulevard at Santa Fe Avenue
Bus Shelters	25 Locations: 5 existing locations, 20 additional locations
High Visibility Crosswalk	1 location: Santa Fe Avenue (Vernon City School)
Crosswalk Improvements (Restriping)	7 locations: Santa Fe Avenue/37th Street, Santa Fe Avenue/38th Street, Santa Fe Avenue/Vernon Avenue, Santa Fe Avenue/Pacific Boulevard, Santa Fe Avenue/Fruitland Avenue, 46th Street/Pacific Boulevard, 46th Street/Seville Avenue
Quiet Zone Infrastructure	5 locations: 37th Street, 38th Street, Vernon Avenue, Pacific Boulevard, 49th Street
Metro Transit-Oriented Communities (TOC) Program Support	Technical Assistance, Grant Writing Assistance

Mitigation Measures	Description of Changes Since Approval of the Final EIR
AES 1	Updates to include provisions for aesthetic treatments on the proposed sound wall at Care First Village.
AES 3	Updates to incorporate references to Metro Rail Design Criteria, SCRRA Design Criteria manual, Illuminating Engineering Society Standards, and CALGreen glare ratings, and LEED standards.
BIO 2	Updates to include provisions for mandatory training for all Project personnel and contractors on site during construction and changes to nest removal and bird preconstruction survey requirements.
NV 1	Updates to include a sound wall at Care First Village.
TR 1	Updates to include provisions for signal timing and early notifications to LADOT and Caltrans for street closures, detours, or temporary lane reductions.
TR 2	As part of CEQA Addendum No. 1, Mitigation Measure TR 2 from the Final EIR was removed. As part of this SEIR, the previously identified Mitigation Measure TR 3 was renumbered to TR 2 and minor refinements were made to language.
TR 3	New mitigation measure proposed to offset the loss of storage track capacity at the BNSF West Bank Yard.
AQ 1; BIO 3; HAZ 2,3, 4,5,6 and 8; HWQ 2, 3, 4 and 7; NV 2 and 3; Pal 1, 2 and 3	Various minor text refinements for grammar and to clarify language to reflect updates for each mitigation measure including qualified biologist and updates to tree and shrub regulations.

Abbreviations: AQ -Air Quality ; BIO- Biological; HAZ- Hazardous Waste; HWQ- Hydrology & Water Quality; NV- Noise Vibration; Transportation (TR) & Palentology (Pal).



Link Union Station (Link US) Project

Final SEIR Certification

File ID #2025-0805

Planning & Programming Committee October 2025

Recommendation

Consider:

- A. CERTIFYING the Final Supplemental Environmental Impact Report (Final SEIR) for the Link Union Station Project (Link US) described in Attachment A.
- B. AUTHORIZING the Chief Executive Officer (CEO) to file a Notice of Determination (NOD) with the State of California Clearinghouse, and the Los Angeles County Clerk (Attachment B).
- C. ADOPTING the following reports for Link US, in accordance with the California Environmental Quality Act:
 - 1. Findings of Fact and Statement of Overriding Considerations (Attachment C).
 - 2. Revised Mitigation Monitoring and Reporting Plan. (Attachment D).

Project Scope

- Converts LAUS from **stub-end to run-through station**
- Enables **one-seat rides** for Northbound and Southbound run-thru service
- Includes:
 - 8 new **run-through tracks**
 - **Expanded pedestrian passageway**
 - Acquisition of **BNSF West Bank Yard**
 - Off-site mitigation at **Malabar Yard**, Vernon

Key Changes in the Final SEIR

- **Design & Scope Refinements:**

- Preserve the Vignes Street Bridge replacement
- Reduction in elevated platforms (6 → 4)
- Simplified run-through track viaduct (205 ft → 75 ft)

- **Environmental/Community Benefits:**

- Delivering early soundwall abatement for William Mead Homes
- Providing enhanced support and mitigation for city of Vernon
- Advancing construction impact solutions to Little Tokyo and Los Angeles River Artists & Business Association (LARABA) communities
- Bringing early mobility and access improvements to LA Union Station (LAUS)

Vernon Benefits & Additional Mitigation

Working to Support the City's Long-term Vision Long-term



Reduced Train Impacts

3.5 Fewer
daily trains

Decreased
local emissions

Minimized
traffic delays

Reduced Train Crossing Blockage
32-minute circulation improvement

Faster Emergency Response
5-minute Improvement



Expanded Emergency Response System

Optimized
emergency response
time & routing

4 locations
with train detection
cameras
for at-grade crossings

Upgraded
communications &
radio-systems

New
mobile Emergency
Operations Center



Enhanced Community Features

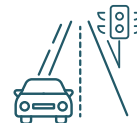
High visibility crosswalk
at Vernon Elementary

7 crosswalks
improved for visibility

25 new
bus shelters

Quiet Zone support
near planned
development

Grant support
for Metro Transit
Oriented Communities



Improved Traffic Control

Road restriping
to maintain
traffic flow

AI-based
traffic control
system

5 locations
with pan-tilt-
zoom smart
cameras,
software &
screens

Community Engagement

Resulting in \$24,564,000 worth of improvements to the City of Vernon



12 Property Owner Meetings



13 City of Vernon Workshops



14 Stakeholder Meetings



3 Scoping Meeting/Public
Hearing/Community Meeting





Board Report

File #: 2025-0784, **File Type:** Informational Report

Agenda Number: 25.

EXECUTIVE MANAGEMENT COMMITTEE OCTOBER 16, 2025

SUBJECT: TRAFFIC REDUCTION STUDY UPDATE

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE status report on Traffic Reduction Study (TRS).

ISSUE

Staff is providing a status update on the TRS. The update includes findings on the potential for congestion pricing to reduce heavy traffic in Los Angeles County, generating revenue for investment in high-quality transportation and low-income assistance programs. It also includes lessons from New York City Metropolitan Transit Authority's (NYCMTA) implementation of congestion pricing.

BACKGROUND

Addressing traffic congestion has long been among the top transportation priorities for LA County residents. For example, Measure M was formally titled the "Los Angeles County Traffic Improvement Plan," reflecting what mattered most to voters at the time and underscoring the measure's focus on reducing congestion and improving mobility across the region. Traffic congestion costs people and businesses time, stress, and money. It slows Metro's buses and street-running rail, pollutes the air, contributes to high rates of preventable traffic fatalities and injuries, and is a drag on the region's economy.

Traffic Congestion and Congestion Pricing

Traffic congestion occurs when too many vehicles use the same roadways at the same time. Congestion pricing is a proven demand-management tool that places a price on all lanes of a road or roads in an area with bad traffic. This reduces the number of vehicles on the road during the busiest times, enabling traffic to flow more smoothly and drivers to get to their destinations more reliably.

While not everyone has driven on a priced road, most people have experienced a form of pricing that is designed to smooth out demand when supplies are low. Many businesses and public agencies, including electric and water utilities, airlines, and parking providers, use pricing by charging more when and where demand is high.

The Traffic Reduction Study

A form of road pricing has been in operation in LA since 2012 with Metro's ExpressLanes network. Vision 2028 called for Metro to build upon its success and "[t]est and implement pricing strategies to reduce congestion... in the most traffic-clogged areas of the County... and simultaneously improve transportation equity and capacity by applying excess revenue to expand high-quality and rapid transit options." On February 28, 2019, the Board approved a Congestion Pricing Feasibility Study as part of "The Re-Imagining of LA County" motion.

This was renamed the Traffic Reduction Study in 2020 to focus on the desired outcome of reducing traffic congestion and improving mobility. Throughout the study, staff have focused on three interconnected goals:

1. Ease and improve traffic through affordable pricing.
2. Reinvest any net revenues from pricing in rapid, reliable, and safe transportation options.
3. Offer assistance to low-income households to address financial burdens and improve access to opportunities.

Modeling of Congestion Pricing Concepts

After identifying 14 potential congestion pricing concepts, staff completed three rounds of transportation modeling to test six of the 14 concepts to understand how congestion pricing, combined with reinvestment and low-income assistance, impacts traffic, revenue, transit usage and performance, job access, and other key metrics. Metro also conducted public outreach to help determine the goals of the study and to share and get feedback on the results of the first and second rounds of modeling. This public input informed and shaped the most recent third round of modeling.

The first round of modeling tested two versions of pricing in the Santa Monica Mountains, two versions for downtown Los Angeles (DTLA), and the I-10 between DTLA and Santa Monica. This initial round was conducted before the pandemic and assumed for modeling purposes that all drivers entering priced areas would pay.

The second round of modeling was an opportunity to test changes in travel patterns post-pandemic, and to adjust pricing assumptions to explore how to advance low-income assistance and encourage carpooling. As a result, staff designed modeling to assume that low-income drivers and vehicles with three or more people in them (HOV 3+) would not pay when entering priced areas. The results of the first round indicated that the Santa Monica Mountains Screen Line concept performed better than the I-5 and U.S. 101 Freeway pricing, so the Santa Monica Mountains version was modeled during this second round. Based on public input, staff also combined the two previous DTLA options into a second-round concept that priced surface streets into downtown (cordon pricing) and also priced the ring of freeways around DTLA. The I-10 West concept was the third concept included in the second round of modeling.

Staff focused on two concepts for third round modeling: the cordon version of DTLA, which had performed well in earlier rounds, along with a concept covering portions of West Los Angeles and

Santa Monica (WLA/SM) that the Southern California Association of Governments' (SCAG) 2019 Mobility Go Zone and Pricing Feasibility Study had identified as their most promising proof-of-concept area for congestion pricing.

Staff also used the third round of modeling to readjust parameters to seek the best possible outcomes for traffic reduction, investments in transportation, and low-income assistance. The second-round assumptions of full exemptions for low-income and HOV 3+ weakened the traffic reduction performance of the pricing concepts. In the third round, staff adjusted the HOV 3+ exemption from free to half price, and replaced full exemptions for low-income drivers with the distribution of mobility wallets to low-income households who commute into priced areas. This change in low-income assistance was a chance to model how giving a mobility wallet, a transportation budget that recipients could use to pay for congestion pricing tolls, transit, taxis, or other transportation options, would impact the outcomes tracked by the study.

NYCMTA Congestion Relief Zone

Since January 2025, NYCMTA has operated North America's first congestion pricing program. Metro staff have followed this implementation and early results to see if there are lessons for Metro's study and for Los Angeles County.

DISCUSSION

Staff have already publicly shared the results of round one and round two modeling and will focus this update on round three findings. Below is a snapshot of the evolution of the study's concept areas and modeling assumptions.

Initial 14 Potential Concepts

1. Santa Monica Mountains Screen Line Pricing
2. I-10 Corridor Screen Line Pricing
3. I-5 and U.S. 101 Freeway Pricing
4. Downtown LA Cordon Pricing
5. Pacific Coast Highway Freeway Pricing
6. I-5 Freeway Pricing
7. I-405 Freeway Pricing
8. I-605 Freeway Pricing
9. Downtown LA Freeway Pricing
10. Mid-City Area Pricing
11. Hollywood Area Pricing
12. County-wide Freeway Pricing
13. County-wide VMT Pricing
14. West LA/Santa Monica Cordon Pricing

Assumptions for Each Modeling Round

Modeling Round	Concepts modeled	Traffic data (Pre or Post COVID)	Reinvestments	Low-income Assistance + Exemptions
One	SMM, I-10, I-5/US101, DTLA cordon, DTLA freeway	Pre	SCAG regional plan 2028 assumptions	None
Two	SMM, I-10, DTLA cordon + freeway, WLA/SM*	Post	SCAG regional plan 2028 assumptions	Low-income and HOV 3+ free
Three	DTLA cordon, WLA/SM, DTLA + WLA/SM	Post	SCAG 2028 assumptions + additional transit frequency, CX, active transportation + transit project acceleration	HOV 3+ half-price and low-income commuters get \$900 annual mobility wallet

*WLA/SM concept was modeled during third round, but was also run with 2nd round assumptions during third round of modeling.

Round Three Findings

For round three, staff modeled a DTLA cordon concept, a West LA/Santa Monica cordon concept with boundaries derived from SCAG's 2019 study but tested it with Metro's modeling assumptions, and a version in which both of these concepts were operating at the same time. The results are in Attachment A - TRS Third Round Modeling Results. Strengths in the modeling results to note include the traffic reduction in the concept zones, increase in transit boardings countywide, increase in access to jobs by transit for residents in Equity Focus Communities (EFCs) countywide, and significant net revenue.

Considerations

Study shows that Congestion pricing meets the goals of the study

The results of the Traffic Reduction Study show that congestion pricing fulfills the goals of the study. It alleviates traffic, with over a 40% reduction in traffic delay in the congestion reduction zones and a 4% delay countywide. It improves transit performance, showing a 20% increase in daily transit boarding countywide. It also increases access to jobs by 8.9% countywide within 60 minutes by transit (14.8% for EFCs), and by 3.3% countywide within 30 minutes by driving (3.6% for EFCs).

Third round modeling assumptions improve results

Third round results showed improvements over previous rounds. There were substantially greater decreases to driver and transit delay, stronger improvements in the speed of vehicle flow, greater VMT reductions at both the County and concept zone levels, and large boosts over the second round

for access to jobs via both transit and driving and for increase in transit use countywide. For example, comparing the countywide impacts of the DTLA concept zone, the third-round results showed more than double the traffic delay reduction than the second round, more than five times in VMT reduction and increase in job access within 30 minutes, and a switch from a slight decrease in transit boardings to a large +387,000 transit boardings.

Improvements in traffic reduction between the second and third rounds of modeling were largely the result of the switch from full low-income exemptions to mobility wallets as the mechanism for low-income assistance. This is because full exemptions remove the incentive effect of pricing (the nudge to drive at different times or to use a different mode) from a sizable group of drivers (25 percent of commuter trips and 35 percent of non-commuter trips into DTLA, and 18 percent of commuter and 19 percent of non-commuter trips into WLA/SM). Mobility wallets, on the other hand, give low-income households a budget and a choice of when to spend funds on tolls or on other ways of travelling. As a result, mobility wallets create a stronger synergy between the traffic reduction and the assistance and equity goals of congestion pricing than exemptions. While the full exemptions reduced traffic reduction benefits by approximately 40 percent, mobility wallets only reduced them by 2 percent. Mobility wallets can also help low-income residents who commute or travel regularly into any potential congestion pricing zone whether they are regular drivers or whether they rely primarily on transit - as many Metro riders do.

Improvements in transit use in the third round of modeling came primarily from assumptions of reinvestment of net revenues in additional bus, rail, and commuter rail transit frequency, in new express routes into congestion pricing area, and in the acceleration of some Metro capital projects directly or indirectly serving potential pricing concept areas. Improvements in job access flowed from both the switch to mobility wallets and from increased reinvestment in transportation.

Summary of concepts' performance

The strongest performing modeling result was the third-round combined modeling of the DTLA and West LA/Santa Monica concepts.

The DTLA concept has performed well throughout the study. This is due to the greater reductions in regional traffic associated with DTLA's central location and the numerous existing transit options that serve and pass through downtown.

The West LA/Santa Monica Concept performs well in reducing congestion. It is also served by the A Line, buses from multiple agencies, and will soon be served by the D Line extension.

The Santa Monica Mountains Concept showed good reduction in traffic congestion and delay; however, the nature of this concept's geography means that it does not currently have many rapid transit alternatives besides the B Line. Staff chose not to conduct additional modeling for the third round because public feedback was split. Many commentators told staff that congestion pricing in this area should only be considered after the Sepulveda Transit Corridor is built, while others stated that pricing was needed sooner to address bad traffic and that revenue could help pay for the Sepulveda project. While the 1-10 West is an important corridor, modeling results were less promising. Congestion pricing did improve travel on the I-10, but when pricing was set on the higher side, the

model showed significant diversion off the freeway onto adjacent roads. When the pricing was set lower, there were no net revenues to reinvest. Staff would recommend converting an existing lane to an Express lane rather than implementing all-lane congestion pricing.

Round Two Public Feedback

In late 2023, staff conducted in-person and virtual public meetings and held conversations with community, business, transportation and cultural organizations, and Metro advisory bodies on the second round modeling results for the DTLA and the Santa Monica Mountains concepts. This input informed the design of round three concepts.

Staff heard that DTLA is a promising location for congestion pricing and that funding from congestion pricing could help fund service; potentially help complete and accelerate capital projects planned in or connecting to DTLA; and improve street safety and customer experience. Business organizations raised concerns about a post-COVID downturn in business conditions and safety issues. They shared concerns that congestion pricing should not act as an additional ‘barrier’ to visitors and employment and raised questions why Metro was not studying congestion pricing in other business districts. The same stakeholders were open to further discussions on mitigations and timing including studying economic impacts; investing in local priorities including safety and cleanliness and services and capital projects that would attract people to visit, work and live in DTLA; and exploring credits or exemptions for employees of companies that stay in or open in DTLA.

Many commentors in the Santa Monica Mountains area recognized that congestion pricing was one of the few solutions that could help address congestion, spill over traffic into neighborhoods, and unsafe driving. Some individuals, homeowner and neighborhood groups, and cultural institutions communicated with Metro stating they would not support congestion pricing in this area until after the Sepulveda rail project was open. Other residents and organizations commented that congestion pricing in this concept area could provide additional funding for the Sepulveda rail project, potentially allowing it to be completed sooner. Staff also heard from City of Los Angeles CD 4 that Metro should study impacts on a select list of surface streets.

Lessons from NYCMTA’s Congestion Relief Zone

NYCMTA launched its Congestion Relief Zone on January 5, 2025, charging vehicles entering Manhattan below 60th Street. The first eight months of data from this program have been promising, showing that MTA has so far met its goals of reducing traffic in the zone; avoiding traffic diversion to other parts of the region, especially low-income areas that are already burdened by air pollution; and raising revenue for subway maintenance, accessibility improvements, and capital projects.

Traffic delay is down 25% in the zone, without any spillover outside of its boundaries, and in fact delays are down by 10% in the Bronx. People driving inside and into the Congestion Relief Zone have quicker, smoother trips, with MTA buses in the Lincoln Tunnel traveling 24% faster in 2025 than in 2024. Bus and subway ridership are up 12% and 7% respectively as the price signal of the tolls encourages more people to use transit. Traffic injuries within the zone are down by 15%. Pedestrian traffic, office leases, and Broadway ticket sales are up (all indicators that the pricing has not hurt

business). From a quality-of-life perspective, roadway noise is down, with a 45% reduction in complaints about honking horns.

Southern California was the first place in the world with mass ownership of motor vehicles and has had high levels of traffic congestion for more than a century despite many attempts to address it. One solution that has worked to moderate traffic in the most congested parts of cities is roadway pricing, particularly congestion pricing. However, Manhattan is different than Los Angeles County. It has a very large subway network and transit mode share, and is an island where commuters are used to paying tolls for access through tunnels. Despite these unique features, from conversations with NYCTA employees and consultants who worked on planning this program, staff believe that there are four important lessons that can apply to our study.

- **State legislative authority was critical.** Local and state leaders had been considering congestion pricing in NYC for decades, but legislation authorizing congestion pricing was the crucial step to bring all local entities in alignment. Legislation was passed in April 2019 as part of the New York state budget.
- **Public opposition pre-implementation shifts after congestion pricing starts.** Polling in NYC and state, and in other places that have launched congestion pricing, has shown that public opinion tends to be low when pricing starts, because people do not like the idea of paying for something that has been free. Opinion tends to improve and become positive once pricing starts reducing bad traffic.
- **Well-planned congestion pricing works.** NY MTA and partners planned the pricing, technology, outreach, and investment for their program and have so far seen positive results close to what they predicted.
- **Federal collaboration was time-consuming and critical.** Under the National Environmental Policy Act (NEPA), any project utilizing the Value Pricing Pilot Program (VPPP) must undergo a review of its environmental impact. The FHWA greenlit the program in 2021. Full approval of the plans took another three years. In February 2025, USDOT terminated its approval of NYC's program, which NYC MTA challenged in court. In May 2025, a judge blocked USDOT from terminating the program, finding that the environmental review was sound.

EQUITY PLATFORM

From the beginning of the study, staff took the perspective that existing roadways were not planned equitably and do not always function today to achieve fair mobility for all. Introducing congestion pricing could help address challenges that make it harder for many residents to access opportunity or to travel safely. At the same time, many of the same people who need better transportation options in Los Angeles County also already face significant cost burdens. It is important that congestion pricing not become an additional financial burden on low-income households. As a result, each of the three primary study objectives of reducing traffic, reinvesting in transportation, and low-income assistance includes equity elements. These include how to help low-income drivers afford tolls, how to speed up and improve transit so that people without cars could access more jobs and other destinations, and how to avoid causing spill-over traffic into low-income neighborhoods that already see excessive levels of air pollution, collisions, and injuries.

TRS incorporated diverse voices into the study and modeling through surveys, focus groups, partnerships with community-based organizations (CBOs), and ethnographic research to ensure that the study incorporates lived experiences. Over 1,500 residents provided feedback, emphasizing the demand for reliable transit, less congestion, cleaner and safer stations, and safer walking and biking options.

Modeling for the study assessed the impacts of pricing on people by income quintiles so that staff could understand impacts on low-income commuters and residents. The study also overlaid Metro's EFC map, so that much of the study data can be examined just for residents in EFC's.

As summarized above, the second and third round of modeling were shaped significantly by staff's interest in testing different variations of low-income assistance programs. Third round results that assume use of mobility wallets seem to provide the best balance of traffic reduction and financial assistance. Benefits for low-income households and EFC residents include expansion in the number of jobs accessible by the average EFC resident by up to 130,000 (+ 15%), which is more than twice the increase of up to 50,000 for the average County resident. The modeling also assumed large-scale distribution of more than 100,000 mobility wallets, which would be a transformative expansion from Metro's current pilot program, which started with 1000 recipients in its first round and recently distributed approximately 2200 for the second-round pilot.

While the overall modeling results are positive for low-income residents and EFCs residents, if the study advances to more detailed operational planning, staff should plan to address hotspots in EFCs that show reduced speed on some small road segments near the DTLA and WLA/SM concepts. Staff and partners should also continue to talk to low-income residents who travel by a range of modes, and test messaging on congestion pricing and any assistance programs so that the County's diverse residents learn about future stages of the study and know what to expect if any concept(s) move towards future implementation.

VEHICLE MILES TRAVELED OUTCOME

VMT and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT.

This item supports Metro's systemwide strategy to reduce VMT through roadway pricing and reinvestment activities that will improve and further encourage transit ridership, ridesharing, and active transportation. Metro's Board-adopted VMT reduction targets were designed to build on the success of existing investments, and this item aligns with those objectives.

Metro conducted a preliminary analysis to show that the net effect of this multi-modal item is to decrease VMT. Modeling showed the potential for all four options to reduce VMT, with the largest

reductions for the third round of modeling:

Congestion Pricing Area	Daily VMT change within priced area	Daily VMT change Countywide
DTLA	-194,775 (-13.9%)	-1,892,800 (-.9%)
WLA/SM	-142,263 (-23.9%)	-1,152,800 (-.5%)
DTLA + WLA/SM	-336,182 (-16.8%)	-2,043,500 (-1%)

Metro also analyzed TRS congestion pricing concepts as part of the Vehicle Miles Traveled Reduction Target Setting report released in April 2024.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The study directly supports strategic plan goal # 1.3, which calls for testing and implementing roadway pricing and reinvesting net revenues in transit improvements.

Potential congestion pricing could advance goal 2 by helping fund customer experience improvements. Customer experience was factored into the model in round 3.

Potential congestion pricing could advance goal 3 by expanding access to jobs, which was modeled for drivers and for transit riders, and separated out for EFCs. Funding mobility wallets would also empower recipients to choose how to use a transportation budget to enhance their mobility and access.

Potential congestion pricing could advance goal 4 by requiring partnerships with local jurisdictions and agencies who control roadways.

Potential congestion pricing could advance goal 5 by generating net revenue to help with Metro operations and other financial needs while also requiring careful planning and implementation to assure the public that tolls were achieving traffic reduction goals and being invested wisely.

NEXT STEPS

Explore state legislative and administrative pathways to receive authority for potential future congestion pricing.

Work internally and with local partners on a more detailed operational plan for promising concept(s).

ATTACHMENT

Attachment A - TRS Third Round Modeling Results

Prepared by: Mark Vallianatos, Executive Officer, Office of Strategic Innovation (213) 922-5282

Reviewed by: Seleta Reynolds, Chief Innovation Officer, (213) 922-4098

A handwritten signature in black ink, appearing to read 'Step Wiggins', written over a horizontal line.

Stephanie Wiggins
Chief Executive Officer

Attachment A – TRS Third Round Modeling Results

Metric	DTLA cordon		WLA/SM		Both	
	Actual	%	Actual	%	Actual	%
Less delay countywide (hours daily)	-53,700	-3.3%	-51,900	-3.1%	-66,100	-4%
Less delay in traffic reduction zone (hours daily)	-7,216	-39.7%	-2127	-46.5%	-9459	41.6%
Faster travel in traffic reduction zone (mph)	1.8	+8.8%	1.3	+5.5%	1.7	+7.9%
VMT reduction countywide (miles daily)	-1,892,800	-.9%	-1,152,800	-.5%	-2,043,500	-1%
VMT reduction in traffic reduction zone (miles daily)	-194,775	-13.9%	-142,463	-23.9%	-336,182	-16.8%
Increase in bus trips, countywide		+1.49%		+2.07%		+2.55%
Increase in rail, commuter rail, BRT trip mode, countywide		+18.99%		+9.86%		+20.96%
Increase in active transportation trips, countywide		+6.23%		+6.08%		+6.19%
Increase in daily transit boardings, countywide	+387,716	+17.2%	+224,975	+10%	+464,251	+20.5%
Change in SOV trips, countywide		-1.02%		-.81%		-1.12%
Change in HOV trips, countywide		-.54%		-.43%		-.51%
Increase in job access, 60 mins by transit, countywide	+48,407	+8.61%	+26,307	+4.88%	+50,307	+8.92%
Increase in job access, 60	+134,292	+15.48%	+85,711	+10.47%	+127,622	+14.82%

mins by transit, EFCs						
Increase in job access, 30 mins by car, countywide	+44,877	+3.17%	+22,106	+1.59%	+46,726	+3.3%
Increase in job access, 30 mins by car, EFCs	+60,410	+3.49%	+28,801	+1.7%	+62,816	+3.63%
Gross Revenue, 20 years	\$10,630,800,000		\$3,395,000,000		\$13,798,900,000	
Net Revenue, 20 years	\$9,520,800,000		\$2,938,400,000		\$12,335,000,000	
Change in CO2 emissions (metric tons)	-525.91	-.81%	-325.52	-.5%	-594.31	-.91%
Change in NOx emissions (metric tons)	+.07	+.21%	+.12	+.36%	+.05	+.14%
Change in PM10 emissions (metric tons)	-.002	-36%	-.001	-16%	-.003	-43%



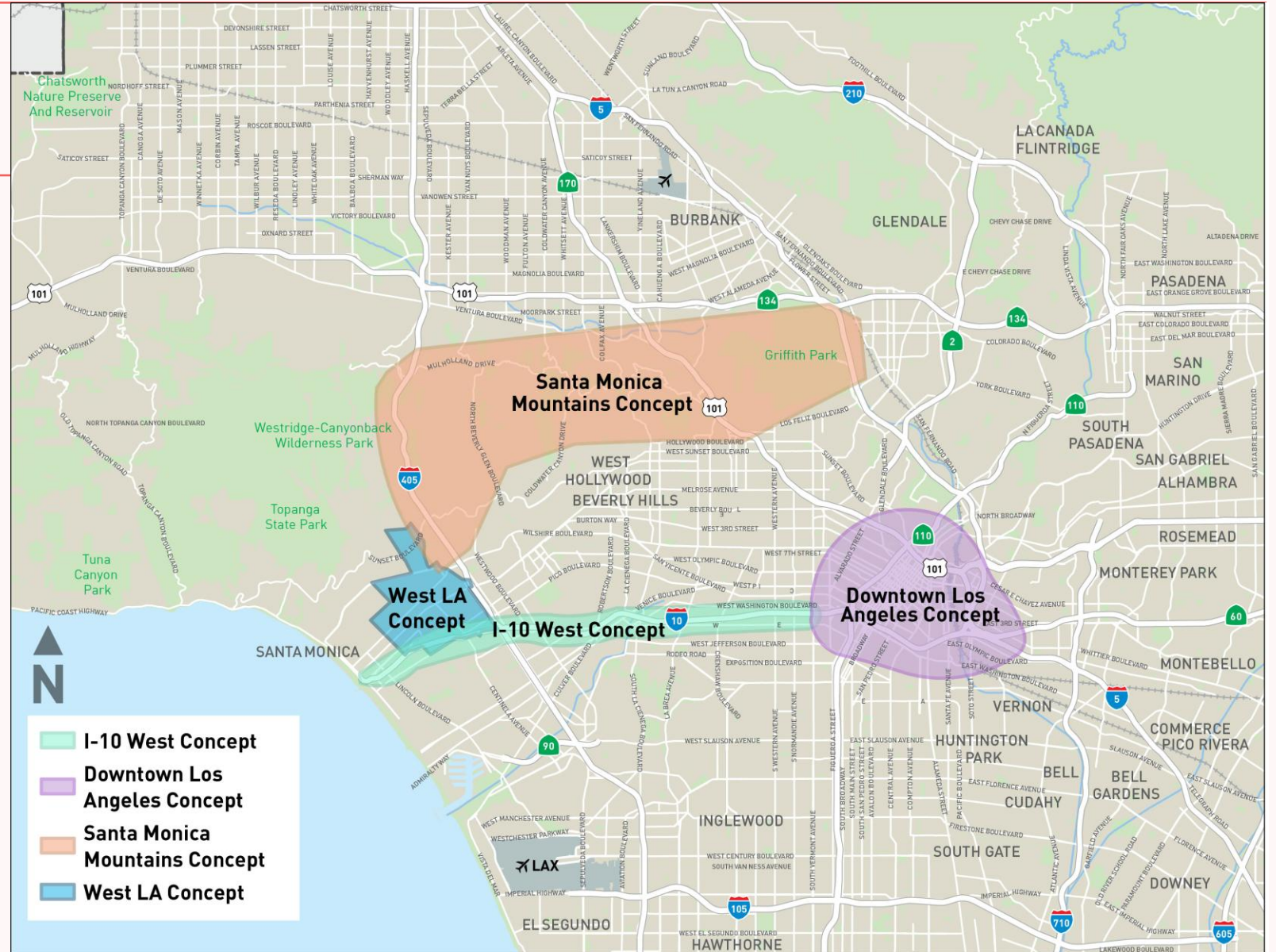
Traffic Reduction Study

3rd Round Results, Lessons from NYC, and Next Steps

October 2025

3rd Round Modeling Assumptions

- DTLA and WLA / SM areas
- Assumes additional transportation investments
- Low-income assistance by mobility wallets and HOV 3+ at ½ price



WHAT IF WE REDUCE TRAFFIC In LA?

41% less delay in traffic reduction zones, **4% less** countywide

17% fewer miles driven in traffic reduction zones, **1% VMT reduction** countywide

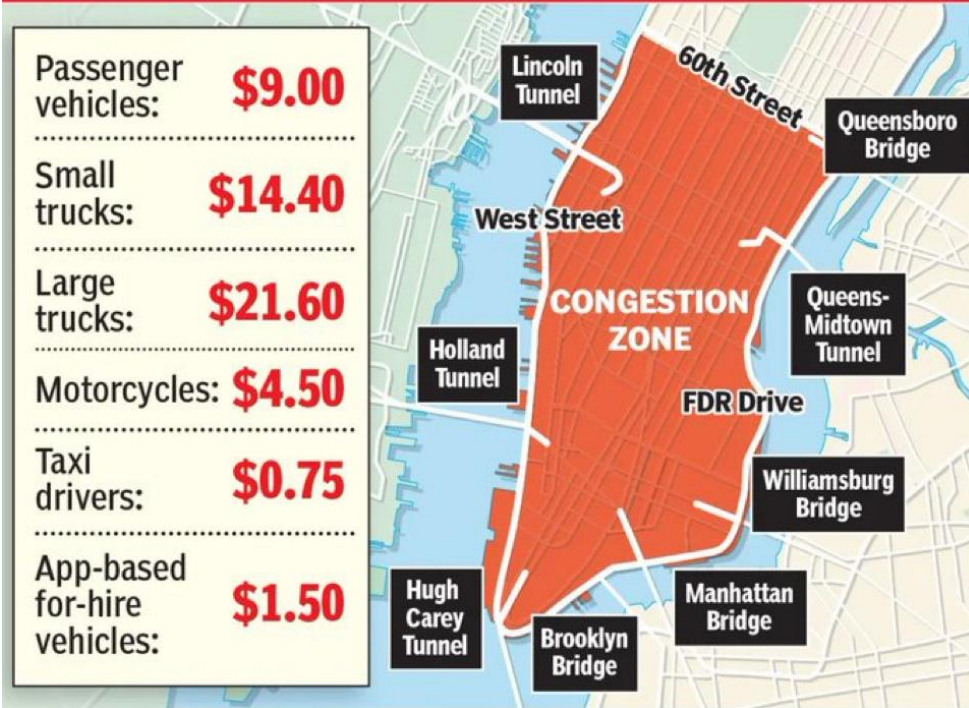
20% higher daily transit boardings countywide

\$616 million net revenue per year

More than 100,000 mobility wallets for low-income residents

8.9% more jobs accessible w/in 60 minutes by transit countywide (**14.8% more** for EFCs)

Here's the Manhattan money map detailing the new congestion-pricing zone and traffic routes into it.



- State Legislation made it happen
- MTA achieved its desired results
- Public opinion became more positive after implementation

**Traffic delay down 25% in the zone
(down 10% in the Bronx)**

**Bus and subway ridership are up
12% and 7%**

**Traffic injuries within the zone are
down by 15%.**

**Pedestrian traffic, office leases, and
Broadway ticket sales are up**

**45% reduction in complaints about
honking horns, noise pollution.**

**Results and Lessons
from NYMTA**

Key Takeaways

- Modeling results have met main study goals (traffic reduction + transportation investment + low-income assistance)
- 3rd round adjustments, with additional investments and mobility wallet, resulted in major boost to results
- Public comments after 2nd round modeling included concern over DTLA economy and lack of consensus on whether SM Mountains should proceed before or after Sepulveda project opens
- DTLA has shown most promising results and combines well with WLA / SM
- SM Mountains was promising in rounds 1 + 2 but it is challenging to promise high-speed transit options before completion of Sepulveda line
- Staff would recommend I-10W as an ExpressLane

Next Steps

- Explore state legislative and administrative pathways to receive authority for potential future congestion pricing
- Work internally and with local partners on a more detailed operational plan for promising areas