Long Beach-East Los Angeles Corridor Plan

Zero Emission Truck Working Group Meeting #20 Table of Contents

February 20, 2024

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Long Beach-East Los Angeles Corridor Mobility Investment Plan

Zero-Emission Truck Working Group Meeting #20 Summary

February 20, 2024

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ATTENDEES

TASK FORCE

Labor and Economic/Workforce Development

Jack Symington, Senior Program Manager, Transportation, Los Angeles Cleantech Incubator (LACI)

Community-Based Organizations and Advocacy Groups

Jocelyn Del Real, Energy Policy Organizer, East Yard Communities for Environmental Justice (EYCEJ)
Ambar Rivera, Researcher, Communities for a Better Environment (CBE)
Fernando Gaytan, Senior Attorney, Earthjustice

Business, Freight and Logistics Industry

Teresa Pisano, Marine Environmental Supervisor, Air, Port of Los Angeles (POLA)
Amber Coluso, Air Quality Environmental Specialist, Port of Los Angeles (POLA)
Leela Rao, Environmental Specialist, Port of Long Beach (POLB)
Matt Schrap, Chief Executive Officer, Harbor Trucking Association (HTA)
Steven Tilk, Manager of Commercial and Industrial Segment, Southern California Edison (SCE)
Damon Hannaman, Business Customer Division, Southern California Edison (SCE)

Environmental Organizations

Lynda Bybee, Associate, Client Relations, LSA Associates

Academic / Research / Policy / Foundations

Sue Dexter, METRANS Researcher, USC

Local Jurisdictions

Viviana Gomez, Transportation Deputy, County of Los Angeles, Supervisorial District 4
George Payba, Manager / Environmental Affairs Officer, Electrification of Transportation Networks and EV Policy, Los Angeles Department of Water and Power (LADWP)

Ex-Officio

Connell Dunning, Environmental Scientist, U.S. Environmental Protection Agency, Region 9 (EPA)
Kekoa Anderson, Consultant, Gateway Cities Council of Governments (GCCOG)

COMMUNITY LEADERSHIP COMMITTEE (CLC)

Natalie Diaz Rubio, Bell Gardens
Maria Reyes, Long Beach

PROJECT TEAM

Michael Cano, Executive Officer, Countywide Planning & Development, Metro
Akiko Yamagami, Transportation Manager, Countrywide Planning & Development, Metro
Steve Lee, Manager, Transportation Planning, Metro
Erick Robles, Transportation Associate I, Metro

Zero-Emission Truck Working Group Meeting #20 Summary

Robert Cálix, Principal, Cal Strategic Management
James Shankel, Senior Environmental Planner, Caltrans District 7
Erika Morales, Facilitator, Morales+MoralesPartners
Susan DeSantis, Senior Project Manager, Arellano Associates
Nora Casillas, Deputy Project Manager, Arellano Associates
Parker Wojciechowski, Assistant Project Coordinator, Arellano Associates

Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) and the California Department of Transportation (Caltrans) District 7 initiated the Long Beach-East Los Angeles Corridor Task Force to develop a community-supported, regionally significant, multimodal approach to addressing major mobility, safety, air quality, and equity needs for moving people and goods through the I-710 South Corridor between the Ports of Los Angeles and Long Beach and State Route 60. The Long Beach-East Los Angeles Task Force will review and assess the purpose and need for investment in the Long Beach-East Los Angeles Corridor, develop multi-modal improvement strategies, identify programs and projects to advance these strategies, create an investment and implementation plan, and provide recommendations to the Metro Board in April 2024.

The Zero-Emission Truck Working Group Meeting #20 was held virtually on Monday, February 20, 2024. The intent of this meeting was to:

(1) Provide an Overview of the ZET Working Group Accomplishments
(2) Present and discuss the ZET Recommended Projects & Programs in the Draft LB-ELA Corridor Investment Plan
(3) Present and discuss the Mobile Source Pollution Reduction Review Committee (MSRC) Cooperative Agreement and joint Request for Proposal (RFP)

Spanish interpretation was provided simultaneously for this meeting. Prior to the meeting, the Zero-Emission Truck Working Group received the agenda ***(Appendix A),*** meeting presentation ***(Appendix B),*** and meeting materials ***(Appendix C)***.

Zero-Emission Truck Working Group #20 Virtual Meeting

1. **Welcome, Introductions, Agenda Review, and Purpose of the Zero-Emission Truck Working Group**
   > Erika Morales, Facilitator, Morales-Partners, opened the meeting by providing a brief overview of the meeting objectives and the meeting agenda.
   > Meeting objectives included:
   - Provide an Overview of the ZET Working Group Accomplishments
   - Present and discuss the ZET Recommended Projects & Programs in the Draft LB-ELA Corridor Investment Plan

- Present and discuss the Mobile Source Pollution Reduction Review Committee (MSRC) Cooperative Agreement and joint Request for Proposal (RFP)

2. Agenda Item #1: Metro Update

> Akiko Yamagami, Transportation Manager, Metro reviewed the Metro Board Direction on the development of the ZET Program, Metro's Vision of implementing Regional Zero-Emissions MD/HD Truck Charging Facilities, and the eight (8) approved ZET Program Principles.

> Ms. Yamagami provided a summary of the ZET working group's progress over the last 2 years, including a list of industry presenters and presentation topics.

- See slides 13-17 in ***Appendix B*** for detailed information.

> Michael Cano, Executive Officer, Metro Countywide Planning & Development, emphasized that the efforts of this working group is complementary to what is happening in the Zero-Emission space in the private sector, the Ports, the regulators, the California Energy Commission, and in the federal government. Mr. Cano indicated that Metro is committed to exploring all viable zero-emission technologies, including battery-electric and hydrogen, to meet regulatory mandates and sustainability goals without endorsing one solution. All Investment Plan funds will be in alignment with and advance the LB-ELA Corridor Task Force's Vision, Goals, and Guiding Principles.

- See slide 18 in Appendix B for detailed information.

> Mr. Cano noted that WattEV received a $5 million grant from the California Energy Commission for ZET Infrastructure Deployment at the Port of Long Beach. Metro provided a support letter for this effort.

3. Agenda Item #2: ZET Recommended Projects & Programs in the Investment Plan

> Mr. Cano presented an overview of project milestones and emphasized that the ZE Truck and Infrastructure Program is part of the LB-ELA Corridor Mobility Investment Plan and is aligned with the LB-ELA Corridor Vision, Goals, and Guiding Principles.

> Mr. Cano noted Metro's coordinated planning efforts, highlighting Metro's Strategic Plan: Vision 2028 and California State Transportation Agency's Core Four Priorities:

- Safety, Equity, Climate Action, Economic Prosperity

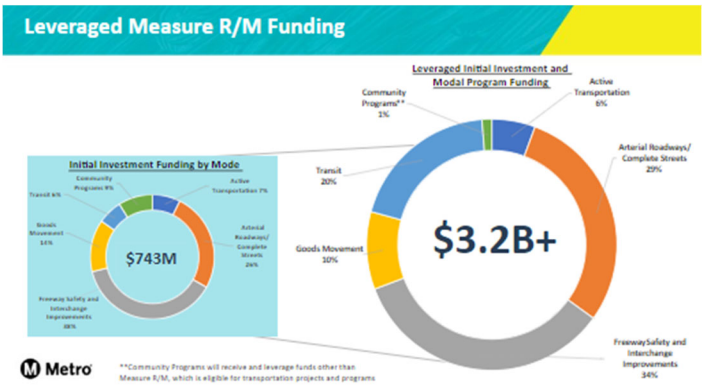
> A review of the Investment Plan's Vision, Guiding Principles, and Goals was presented.

- See slides 24-25 in ***Appendix B*** for detailed information.

> Mr. Cano stated that- the Investment Plan is improving Local and Regional Air Quality:

- The Plan emphasizes air quality goals established by the Task Force with input by the Community Leadership Committee and the ZE Truck Working Group. The Investment Plan also tracks environmental indicators like air quality trends and tree coverage to uphold the Air Quality Goal and Sustainability Guiding Principle in project selection.

> Mr. Cano presented information on how the Investment Plan will leverage Measure R/M Funding:



> Mr. Cano presented an overview of new and better ways to move freight that is proposed in the Investment Plan and highlighted Metro's intent to decrease negative impacts on local communities.
    - The Investment Plan prioritizes freight projects that reduce environmental impacts, enhance technology, and update infrastructure. This includes initiatives such as zero-emission truck infrastructure and freight rail electrification, which would increase cargo throughput via the Alameda Corridor while partnering with communities and agencies to develop strategies for mitigating particulate matter from truck tire wear alongside tailpipe emission reduction efforts.
> Mr. Cano provided a breakdown of key projects and programs in the Investment Plan:
    - Clean Truck Infrastructure (ZET), I-710 Particulate Matter (PM) Reduction Pilot Project, Arterial Roadways/Complete Streets, and Active Transportation.
    - For detailed information see slides 31-39 in ***Appendix B***.
> Mr. Cano presented the plan for Community Programs and the Community Program Working Groups
    - Community Programs incorporate a range of benefits responsive to equity issues facing the LB-ELA Corridor and not addressed through typical transportation infrastructure investments.
    - The Investment Plan recommends $40M of Initial Funding for the development of fifteen Community Programs, across four topic areas. The Working Groups will be sorted by the topic areas:
        - Air Quality/Community Health, Environment, Housing Stabilization/Land Use, and Job Creation/Work Opportunities
    - The Investment Plan will lift up the local community by providing economic opportunities through workforce development, targeted hiring, and new jobs.
        - Metro's Measure-funded Projects advanced to construction resulting from this Investment Plan would be subject to Metro's Project Labor Agreement (PLA) and corresponding Construction Careers Policy (CCP), which are applied to all federal projects with a construction value greater than $2.5 million.
        - Implementation Guidance for Community Programs will include workforce development, targeted hire, and new jobs as evaluation criteria.

- See slides 42-43 in ***Appendix B*** for detailed information.

  - Additional Working Groups are being established to:
    - provide continuity and stewardship of the Investment Plan's vision, goals, and guiding principles, to hold Metro accountable to Community Program commitments, and to build upon the successes and lessons learned in the ZET Program.
    - Metro is looking for Working Group members and program partners to serve complementary roles, possess technical knowledge, and community relationships, and for other agencies to fill gaps in Metro's jurisdictional authority.
  - For a complete list of potential partners by Community Program topic area, see slide 46 in ***Appendix B***.
  - The Preliminary Timeline for Community Program Working Groups was shared with Task Force members:
    - February-March 2024: Member Outreach/Recruitment
    - March-May 2024: Development of Working Group Structures
    - May-June 2024: Confirm Membership
    - July-August 2024: Working Group kick-offs.

> Zero-Emission Truck Working Group members engaged with Metro on a number of issues:
  - An Expert Panel exploring viable zero-emission technologies, including battery-electric and hydrogen, to meet regulatory mandates and sustainability goals without endorsing one solution. The panel is currently being planned by Metro.
  - ZET Members are encouraged to recommend speakers and topics for the Expert Panel Discussion.
  - Metro is committed to implementing a zero-emission plan that aligns with the values, goals, and guiding principles of the corridor

4. Agenda Item #3: Mobile Source Air Pollution Reduction Review Committee (MSRC) - Cooperative Agreement and joint Request for Proposal (RFP)

> Ms. Yamagami provided information on the Mobile Source Air Pollution Reduction Review Committee's (MSRC) Cooperative Agreement and Joint Request for Proposal
  - MSRC supports and funds publicly accessible charging and fueling infrastructure for heavy-duty vehicles in the South Coast Air Basin.
  - A cooperative agreement between Metro and South Coast AQMD (MSRC's administrative agency) was reviewed and approved by the AQMD's Governing Board on February 2, 2024.
  - Metro has an opportunity to Partner with MSRC to release a joint RFP and include evaluation criteria that reflect the ZET Program Principles
    - Community Engagement
    - Corridor Community Benefits
    - Equitable Outcomes

- For more detailed information, see slides 49-50 in ***Appendix B.***

5. Closing Remarks, Upcoming Meetings & Next Steps

> Ms. Morales encouraged working group members to contact Mr. Cano should they have any questions or concerns.

> Mr. Cano thanked Working Group members for their involvement over the past couple of years and encouraged members to provide feedback on the draft Investment Plan to ensure it is reflective of what we are trying to accomplish in this corridor.

> Mr. Cano also reminded the group that the Investment Plan is an opportunity to make a tremendous statement for Metro, communities, cities, the Corridor, and the County of working together to draw much-needed investment to the corridor. He emphasized the need for consensus as the Draft Plan is presented to the Metro Board in April 2024.

> The meeting adjourned at 2:14pm.

Meeting Format Logistics

- Meeting Format: Zoom Meeting
- Participants: Task Force, CLC, ZE Industry Representatives

Meeting Materials

Presentation
Agenda
CEHAJ letter
Metro response letter to CEHAJ

Zero-Emission Truck Working Group Meeting #20

Date and Time: Tuesday, February 20, 1-2:30pm
Location: Held Virtually via Zoom
Meeting Link
Meeting ID: 810 9541 7093
Passcode: 5851

Meeting Objectives and Agenda

Objectives

- Provide an Overview of the ZET Working Group Accomplishments
- Present and discuss the ZET Recommended Projects & Programs in the Draft LB-ELA Corridor Investment Plan
- Present and discuss the Mobile Source Pollution Reduction Review Committee (MSRC) Cooperative Agreement and joint Request for Proposal (RFP)

Agenda Overview (90 minutes)

Time	Agenda Item
1:00–1:05pm (5 mins)	**Welcome, Agenda Review, and Purpose of the Zero-Emission Truck Working Group**
1:05-1:15pm (10 mins)	**Agenda Item #1: Metro Update**
1:15-2:00pm (45 mins)	**Agenda Item #2: ZET Recommended Projects & Programs in the Investment Plan**
2:00pm (15 mins)	**Agenda Item #3: Mobile Source Air Pollution Reduction Review Committee (MSRC) - Cooperative Agreement and joint Request for Proposal (RFP)**
2:15pm (15 mins)	**Closing Remarks & Next Steps**
2:30pm	**Adjournment**

Welcome!

We will begin in a few moments.

LB-ELA Corridor Task Force
Zero-Emission Truck Working Group
Meeting #20
February 20, 2024

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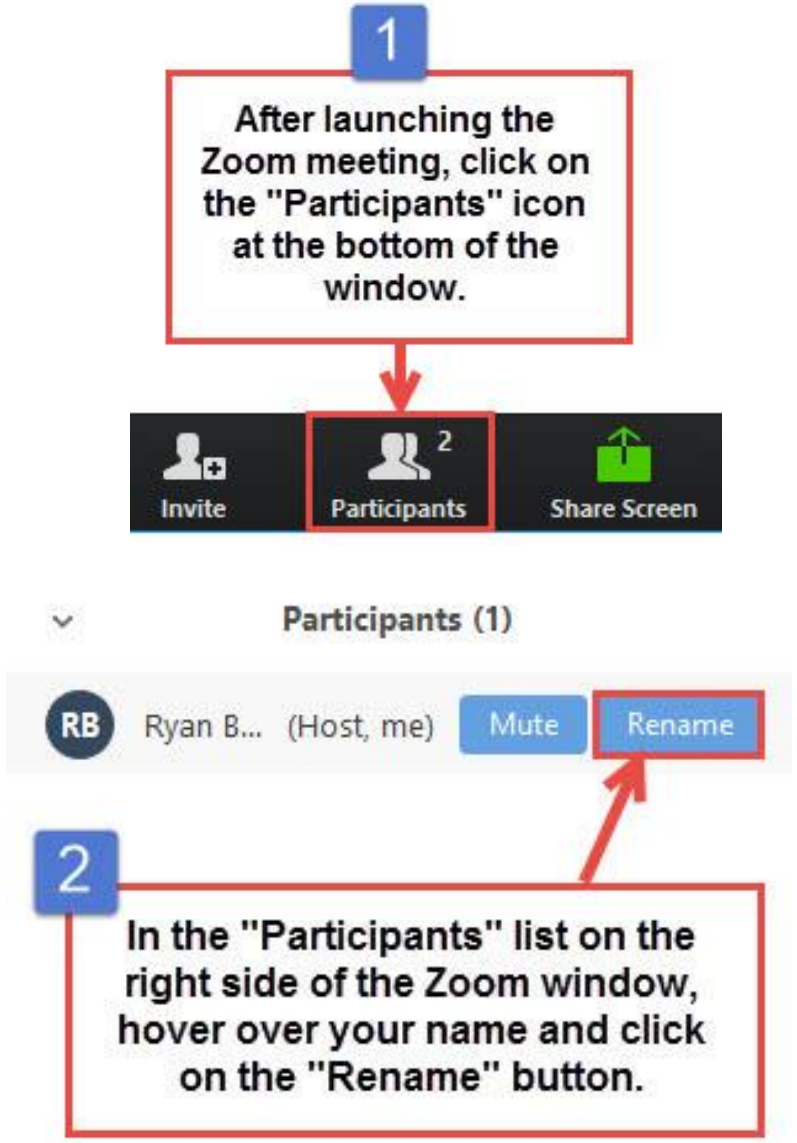
Working Group Member Identification



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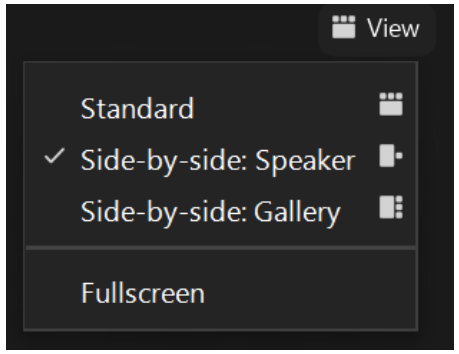
Turn on Camera

- To **start** and **stop** your video, click the camera icon at the bottom left of your control panel

- To switch between views during the meeting click or tap on **Standard**, **Side-by-side Speaker View**, and **Side-by-side Gallery View** at the top right corner of your zoom screen



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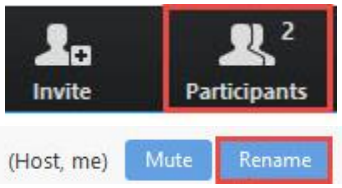
Logistics

Click **Interpretation** to choose your language.

> To hear the interpreted language only, click **Mute Original Audio** (Optional).



Change your Zoom screen name to include name, agency/organization.

> Click **Raise Hand** in your meeting controls, **Press*9** on the phone line, or raise your hand physically.

> To lower your hand, click **Raise Hand** in your meeting controls.

> The **Q&A** button is located on the control panel at the bottom of your screen.

> To **mute** and **unmute**, click the microphone icon on the bottom left of your control panel.

> To **start** and **stop** your video, click the camera icon at the bottom left of your control panel.

> **Technology & interpretation support:** 323.609.3345

Metro

Welcome!

We will begin in a few moments.

LB-ELA Task Force
Zero-Emission Truck Working Group
Meeting #20
February 20, 2024

Metro

Facilitator

Erika C.B. Morales

Partner, Morales + Morales Partners

Welcome, Agenda Review, and Purpose

Zero-Emission Truck (ZET) Working Group

Long Beach – East Los Angeles Corridor Task Force

Metro

Meeting Objectives

- Provide an Overview of the ZET Working Group Accomplishments
- Present and discuss the ZET Recommended Projects & Programs in the Draft LB-ELA Corridor Investment Plan
- Present and discuss the Mobile Source Pollution Reduction Review Committee (MSRC) Cooperative Agreement and joint Request for Proposal (RFP)

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Detailed Agenda

1:00pm Welcome, Agenda Review, and Purpose of the Zero-Emission Truck Working Group

1:05pm Agenda Item #1: Metro Update

1:15pm Agenda Item #2: ZET Recommended Projects & Programs in the Investment Plan

2:00pm Agenda Item #3: Mobile Source Air Pollution Reduction Review Committee (MSRC) -Cooperative Agreement and joint Request for Proposal (RFP)

2:15pm Closing Remarks & Next Steps

2:30pm Adjournment

Metro

Agenda Item #1:

Metro Update

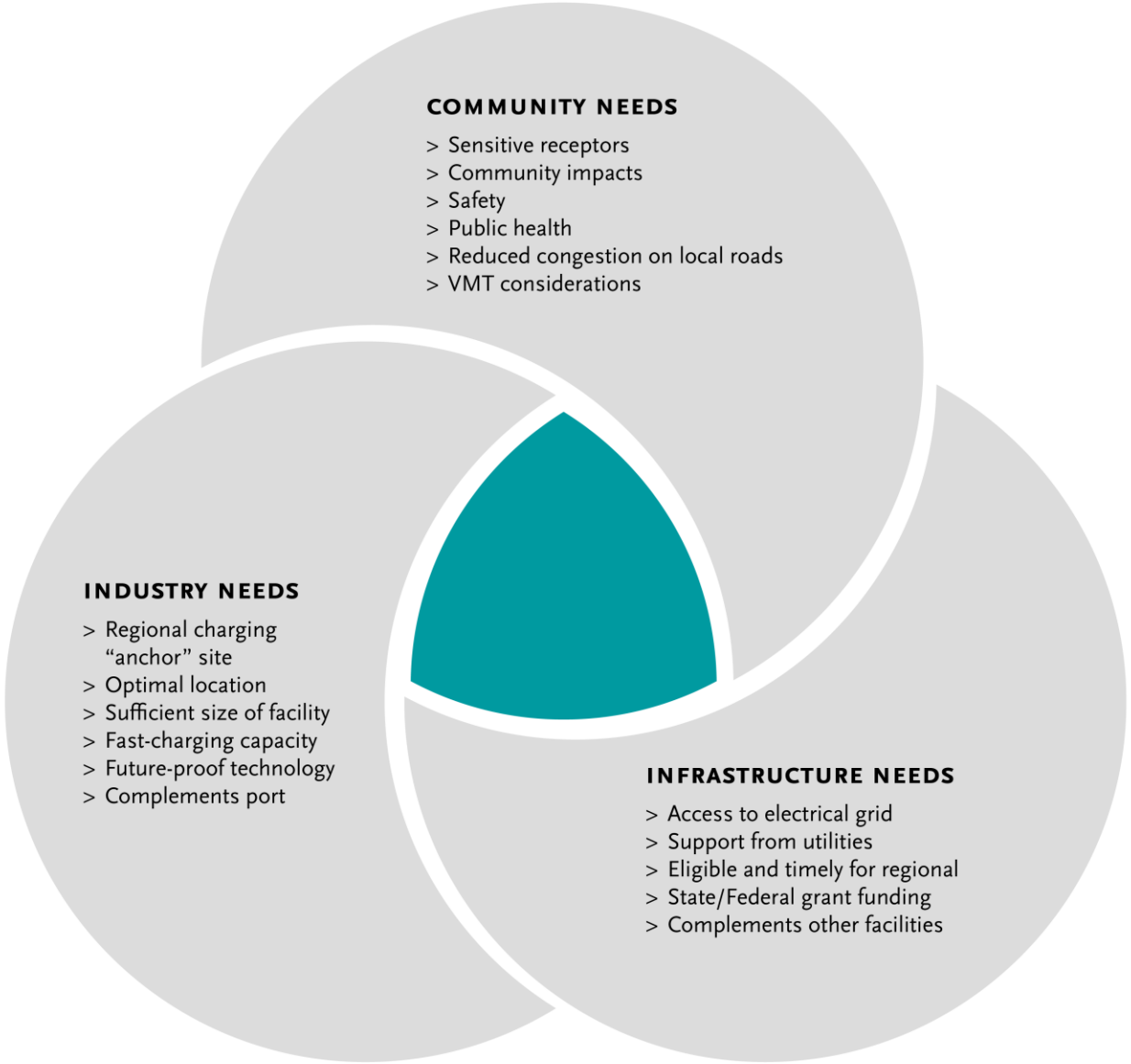
ZET Program – Metro Board Direction

> **Metro Board Direction and desired outcomes**
  - $200 million minimum funding target
  - Leverage Board-approved $50 million with private, regional, state, and federal funding
  - Accelerated ZE deployment in the Long Beach-East LA (LB-ELA, formerly I-710 South) Corridor
  - Collaboration with regional stakeholders
  - Independent from but aligned with overall LB-ELA Corridor Mobility Investment Plan process

> **Strategies to accomplish outcomes**
  - Convene and collaborate with community and regional stakeholders
  - Develop a scope of work for the ZET Program
  - Identify regional funding partners
  - Identify discretionary grant opportunities
  - Identify near and long-term opportunities
  - Identify policy and legislative barriers to implementation
  - Develop approaches to understanding potential community impacts and creating community benefits

Metro

Metro Vision:
Regional Zero-Emissions MD/HD Truck Charging and Fueling Facilities



Metro

ZET Working Group Progress

ZET Working Group members and key partners vetted the following topics in shaping the ZET Program:

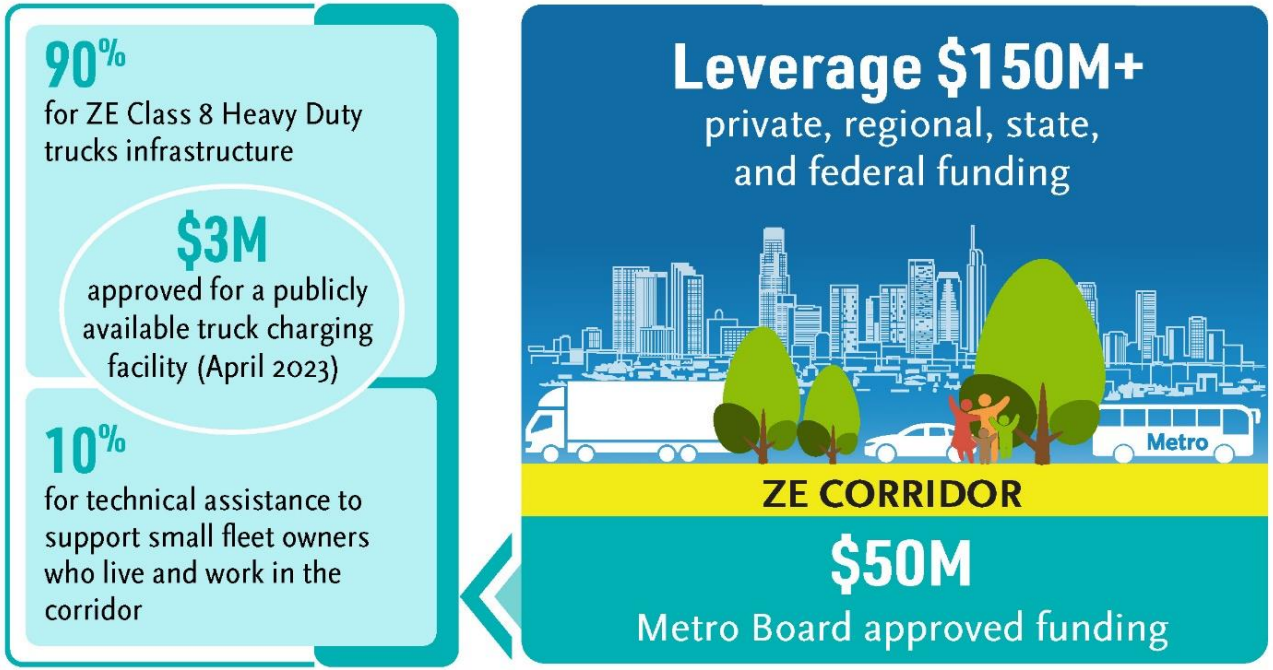
- Goals and objectives for the ZET Program in the context of Motion 16 (Directors Hahn and Dutra);
- Industry perspectives and the role of stakeholders in the LB-ELA Corridor Task Force;
- Air quality and environmental justice challenges and opportunities for the LB-ELA Corridor, as brought forward by the EPA;
- Air quality context from the South Coast Air Quality Management District (SCAQMD)
  - challenges in meeting upcoming federal air quality attainment deadlines due to the slow rollout;
  - scaling of ZET technology and infrastructure to replace the large volume of diesel trucks moving goods in the region;
- State of clean truck technology
  - efforts to accelerate the commercialization of the ZE Class 8 heavy-duty trucks;
  - Governor's annual budget and the prospects for ZE trucks & infrastructure funding opportunities

Metro

ZET Working Group Progress - Continued

- Federal funding opportunities and collaboration with United States Department of Transportation representatives;
- Strategies to ensure proper community participation through engagement activities at key planning decision points regarding ZE Infrastructure siting;
- Strategies to best leverage Metro's $50 million in seed funding:
  -with the state and federal governments' existing and future resources,

  -while exploring partnerships with organizations already offering incentives to deploy ZE truck technology and infrastructure, such as the POLA, POLB, the CARB, and SCAQMD.



ZET Working Group Progress - Continued

> **Through focus group discussions, stakeholder interviews, guest speakers, and panel presentations, the Working Group determined the need to:**

- Create a structured outreach plan to connect supply and demand on workforce development and training opportunities
- Establish a regional collaborative to improve coordination, sequencing, and efficiency in the development of corridor-specific Zero-Emission charging infrastructure
- Identify several initiatives that require additional research
- Understand the current and future state of hydrogen as an alternative clean transportation fuel, including potential impacts to local communities

> **Approved up to $3 million in seed funding to support the development of a publicly available ZE Charging Facility.**

- This Wilmington facility will support the advancement of Board direction by catalyzing other regional agencies, including the Port of LA, and private partners to fully fund the project and leverage Metro's contribution with an additional $12 million.

Metro

ZET Presenters

Transportation & Environmental Agencies

Federal

- Andrew Wishnia, Deputy Assistant Secretary for Climate Policy, US Department of Transportation
- Charles Small, Deputy Assistant Director for Intergovernmental Affairs, US Department of Transportation
- Morgan Capilla, U.S. Environmental Protection Agency
- Karina O'Connor, U.S. Environmental Protection Agency

State

- Peter Christensen, Air Resource Supervisor, California Air Resource Board (CARB)
- Hannah Walter, Associate Deputy Director, California Transportation Commission (CTC)
- Kayla Giese, SB 671 Assessment Coordinator, California Transportation Commission (CTC)
- John Frala, Professor Alternative Fuels Technology, Rio Hondo College; Clean Transportation Program Advisor, California Energy Commission (CEC)
- Micah Wofford, Energy Commission Specialist, California Energy Commission (CEC)
- Michelle Vater, Freight and Transit Unit Supervisor, California Energy Commission (CEC)

Regional/County

- Dr. Matt Miyasato, First Element Fuel
- Seungbum Ha, Program Supervisor – Electric & Hybrid Vehicles, SCAQMD
- Alison Linder, Accelerated Electrification Team and Clean Technology Program, Southern California Association of Governments (SCAG)
- Jannet Malig, Statewide Director Advanced Transportation & Logistics, Cerritos College; Co-Director, Long Beach Clean Cities
- Sean Wilder, Energy and Environmental Services, LA County Internal Services Department
- Cris Liban, Chief Sustainability Officer, LA Metro
- Quintin Sumabat, Deputy Executive Officer, Vehicle Engineering and Acquisitions, LA Metro

Ports

- Leela Rao, Environmental Specialist, Port of Long Beach
- Jacob Goldberg, Environmental Specialist, Port of Los Angeles

Metro

ZET Presenters

Academic/Research/Policy Foundation

- Dr. Genevieve Giuliano, Ferraro Chair in Effective Local Government, Distinguished Professor at USC Sol Price School of Public Policy, USC METRANS
- Dr. Tyler Reeb, Director of Research and Workforce Development, Center for International Trade and Transportation(CITT), Cal State University of Long Beach (CSULB)
- Alycia Gilde, U.S. Department of Energy
- Tom Brotherton, Director, Market Acceleration, CALSTART
- Bill Van Amburg, Global Strategic Advisor Zero-Emission Commercial Vehicles, Energy and Sustainability, CALSTART
- Jack Symington, Senior Program Manager, Los Angeles Cleantech Incubator (LACI)

Labor and Economic/Workforce Development

- Robert Chavez, Program Manager, South Bay Workforce Investment Board

Private Sector

- Carlo Bertani, Environment, Sustainability and Decarbonization, Maersk
- Salim Youssefzadah, CEO, Watt EV
- Patrick Couch, SVP, Gladstein, Neandross, and Associates
- JT Steenkamp, Director, Infrastructure Projects and Technology, Prologis
- Henrik Holland, Global Head of Project Mobility, Prologis
- Keir Opie*, Principal, Cambridge Systematics, Project Team

Metro

*No longer with organization

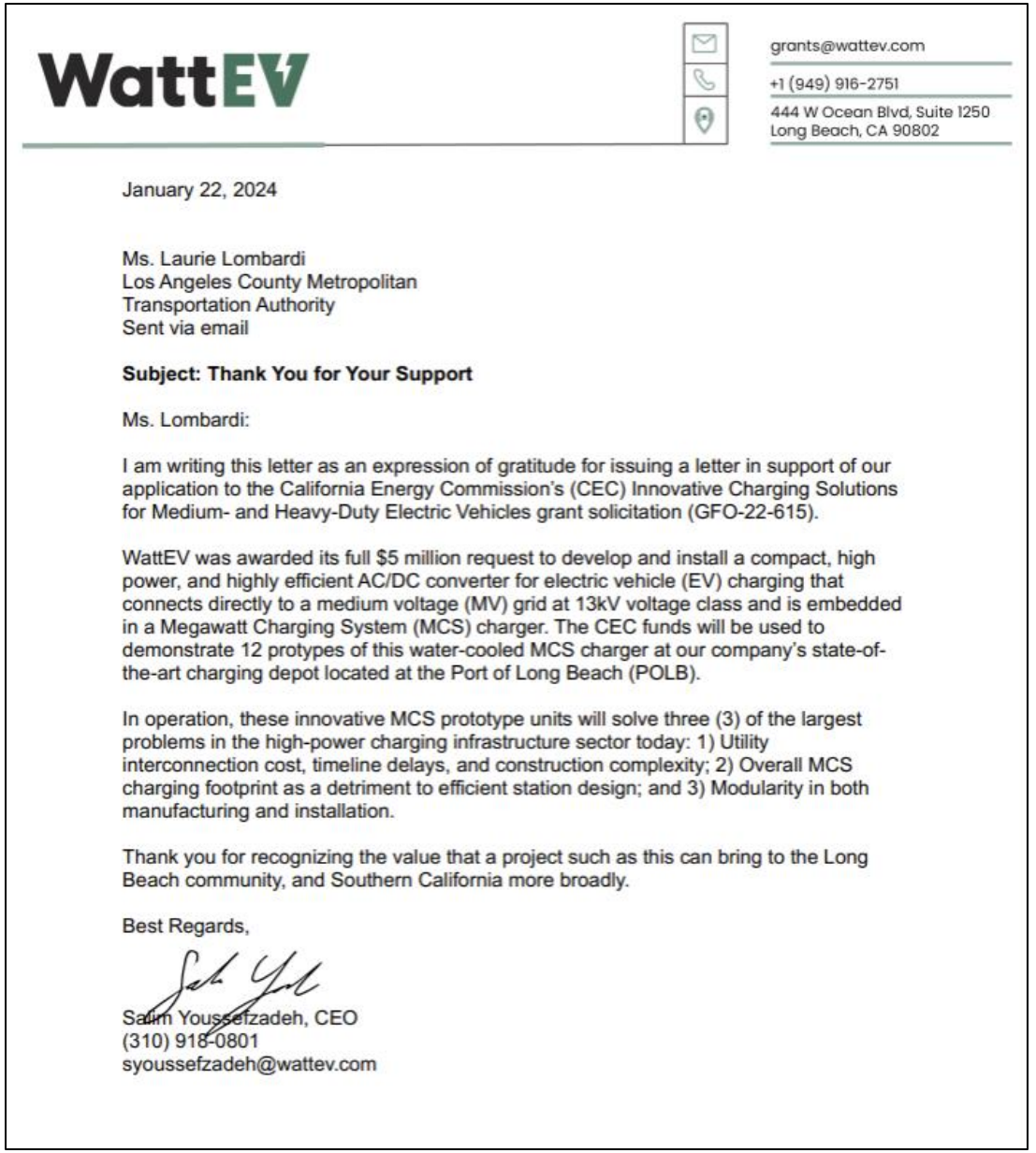
A Balanced Approach to Zero-Emissions

Metro is committed to exploring all viable zero-emission technologies, including battery-electric and hydrogen, to meet regulatory mandates and sustainability goals without endorsing one solution. Metro is also committed to investing its CMIP funds in a manner that aligns with and advances the LB-ELA Corridor Task Force Vision, Goals, and Guiding Principles.

- **Addressing Community Concerns:** Recognizes concerns regarding public health, emissions during hydrogen production, transportation safety, and potential leakage, affirming Metro's dedication to minimizing impacts and educating communities.
- **Compliance with Clean Fleets Rule**: California's 2035 Zero-Emission (ZE) drayage truck mandate focused on tailpipe emissions, highlighting the need for comprehensive approaches to achieve ZE outcomes.
- **State and Federal Investments:** Significant investments in hydrogen and battery-electric technologies, including up to $1.2 billion Regional Clean Hydrogen Hub (H2Hubs) award, indicating strong governmental support for diverse ZE solutions.
- **Community Advocacy and Education:** Metro aims to serve as a community advocate in ZE Truck (ZET) technology policy discussions, ensuring community concerns are addressed, supporting research, and facilitating educational initiatives on ZE technologies.
- **Expert Panel Discussions and Symposia:** Plans to organize expert panels, symposia, and community education events to deepen understanding of hydrogen technology, its state of development, and its implications for the LB-ELA Corridor.
- **Collaborative Efforts for ZE Future**: Continue collaboration with stakeholders to develop a ZE future that benefits the LB-ELA Corridor, emphasizing the importance of community input and guidance in educational and policy initiatives.

Metro

ZET Infrastructure Deployment – A Positive Step Forward



WattEV

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+1 (949) 916-2751
444 W Ocean Blvd, Suite 1250
Long Beach, CA 90802

January 22, 2024

Ms. Laurie Lombardi
Los Angeles County Metropolitan
Transportation Authority
Sent via email

Subject: Thank You for Your Support

Ms. Lombardi:

I am writing this letter as an expression of gratitude for issuing a letter in support of our application to the California Energy Commission's (CEC) Innovative Charging Solutions for Medium- and Heavy-Duty Electric Vehicles grant solicitation (GFO-22-615).

WattEV was awarded its full $5 million request to develop and install a compact, high power, and highly efficient AC/DC converter for electric vehicle (EV) charging that connects directly to a medium voltage (MV) grid at 13kV voltage class and is embedded in a Megawatt Charging System (MCS) charger. The CEC funds will be used to demonstrate 12 protypes of this water-cooled MCS charger at our company's state-of-the-art charging depot located at the Port of Long Beach (POLB).

In operation, these innovative MCS prototype units will solve three (3) of the largest problems in the high-power charging infrastructure sector today: 1) Utility interconnection cost, timeline delays, and construction complexity; 2) Overall MCS charging footprint as a detriment to efficient station design; and 3) Modularity in both manufacturing and installation.

Thank you for recognizing the value that a project such as this can bring to the Long Beach community, and Southern California more broadly.

Best Regards,

Salim Youssefzadeh, CEO
(310) 918-0801
syoussefzadeh@wattev.com

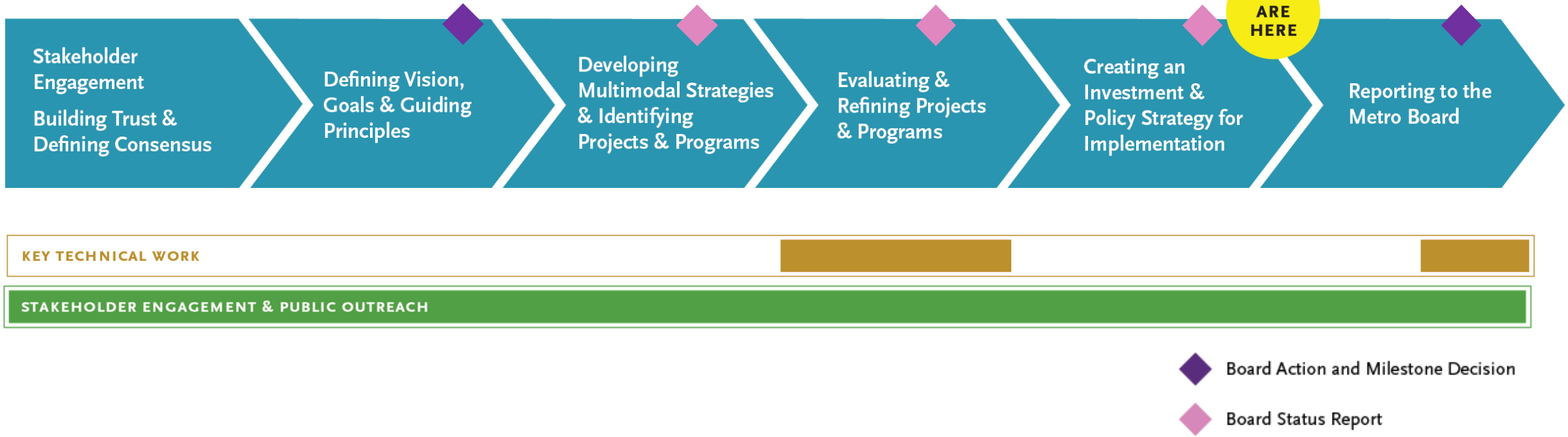
Metro

Agenda Item #2:
ZET Recommended Projects & Programs in The Investment Plan

Metro

ZET in the Investment Plan

The ZE Truck and Infrastructure Program is part of the LB-ELA Corridor Mobility Investment Plan and is aligned with the LB-ELA Corridor Vision, Goals, and Guiding Principles.



Metro

Investment Plan Update and Key Dates

The Public Comment Period is open for the Draft Corridor Mobility Investment Plan until March 1, 2024

Access the Investment Plan here

January 31-March 1	**Public Comment Period**
Wednesday, March 20	**Metro Planning and Programming Committee – 1:00 pm**
Thursday, March 28	**Metro Board of Directors – 10:00 am**

Metro's Coordinated Planning Efforts

CALSTA'S CORE FOUR PRIORITIES

SAFETY

Nearly 10% of all the year 2021 traffic deaths in the U.S. occurred on California roadways. Fatalities for Active Transportation users are also at a 16-year high. By embedding the Safe System approach into our investments, planning, design and innovation, we will be able to achieve better outcomes on this urgent responsibility.

EQUITY

Historically, transportation decisions prioritized movement of vehicles over the movement of people. We also built a transportation system that in some cases had detrimental impacts in underserved communities. We aim to create an equitable and accessible transportation network and to provide equitable opportunities for all people.

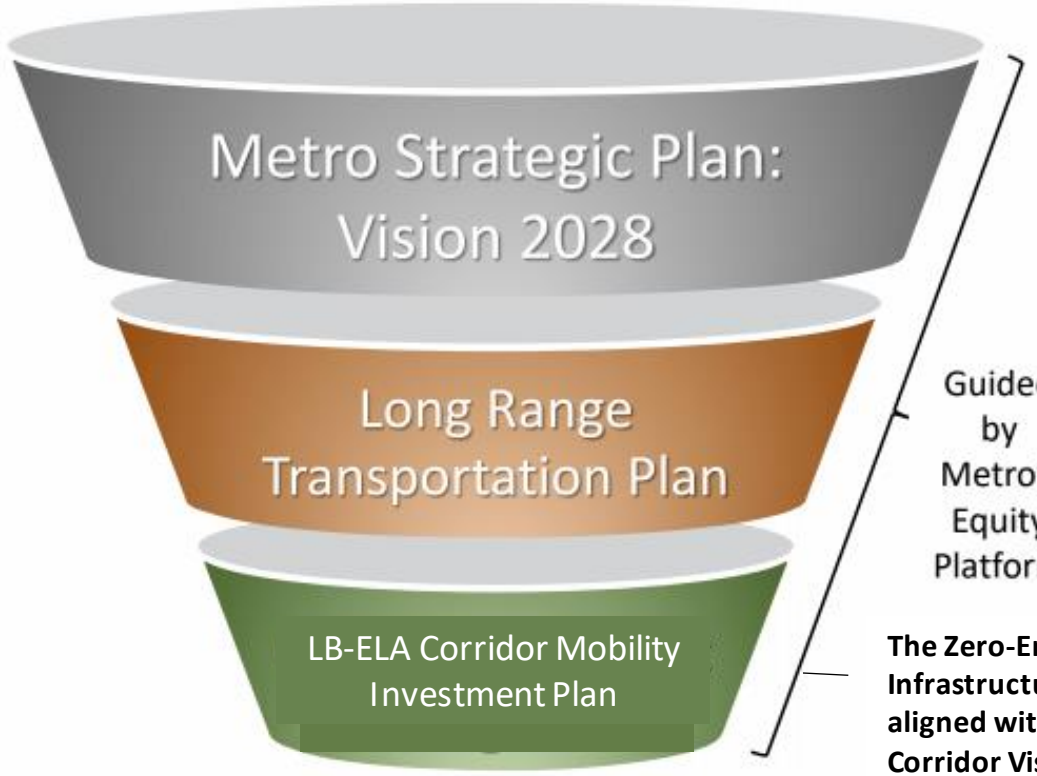
CLIMATE ACTION

Nearly half of all climate-changing pollution in California comes from the transportation sector, and this demands our action for a cleaner future for all Californians. We must continue making our carbon footprint smaller by investing in a more multimodal system, embracing smarter land use development and utilizing innovation around zero emission vehicles.

ECONOMIC PROSPERITY

Transportation policy done right creates well-paying jobs, provides affordable options, supports housing opportunities and powers our economy. This must be our focus as we strive for all people to be on equal footing, resulting in more thriving, robust communities.

Metro's Mission: *To provide a world-class transportation system that enhances quality of life for all who live, work, and play within LA County.*



The Zero-Emission Truck and Infrastructure Program is aligned with the LB-ELA Corridor Vision, Goals, and Guiding Principles and is folded into the Draft CMIP.

Investment Plan - Vision, Guiding Principles and Goals

Vision

An equitable, shared LB-ELA Corridor transportation system that provides safe, quality multimodal options for moving people and goods that will foster clean air (zero emissions), healthy and sustainable communities, and economic empowerment for all residents, communities, and users in the Corridor.

Guiding Principles

Equity

A commitment to

(1) strive to rectify past harms;

(2) provide fair and just access to opportunities; and

(3) eliminate disparities in project processes, outcomes, and community results.

The plan seeks to elevate and engrain the principle of Equity across all goals, objectives, strategies, and actions through a framework of Procedural, Distributive, Structural, and Restorative Equity, and by prioritizing an accessible and representative participation process for communities most impacted by the I-710.

Sustainability

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

A commitment to sustainability to satisfy and improve basic social, health, and economic needs/conditions, both present and future, and the responsible use and stewardship of the environment,

all while maintaining or improving the well-being of the environment on which life depends.

Goals

Metro

ZET Program Principles*

1

Maximize leverage of seed funding

by collaborating with regional partners and funding agencies.

2

Expeditious Deployment of Resources

to maximize the buying power and benefit of investment while supporting community engagement and effective outreach.

3

Coordination

with regional and funding partners, government agencies, and key stakeholders.

4

Community Engagement

that centers corridor residents and stakeholders throughout the development process.

5

Workforce Development

that ensures community benefits and access to opportunity through the pursuit and implementation of ZE Technology.

6

Corridor Community Benefits

by creating economic opportunities, improving air quality, and reducing long-standing health impacts generated by diesel trucks.

7

Equitable Outcomes

ensured by performance metrics that evaluate sustainable outcomes.

8

Legislative Platform

designed to support the accelerated, equitable deployment of ZE technology by reducing barriers and increasing incentives to adoption.

*The Zero-Emission Truck and Infrastructure Program Principles are aligned with the LB-ELA Corridor Vision, Goals, and Guiding Principles. The Program is part of the Draft CMIP.

The Investment Plan identifies air quality as the #1 challenge:

Chapters 1, 2, 3, 4

Foundational Chapters

- Air quality is the number one area of concern for respondents.
- The LB-ELA Corridor accounts for 20% of all particulate emissions in Southern California.
- The high levels of diesel pollutants affecting communities within a quarter mile of the freeway have earned the name “diesel death zone” referring to the linkage between diesel pollution and respiratory and cardiovascular health conditions.

6

Corridor Community Benefits

by creating economic opportunities, improving air quality, and reducing long-standing health impacts generated by diesel trucks.

Bold Steps - Improving Local & Regional Air Quality

The Investment Plan takes bold steps to combat air quality issues.

Chapters 1, 2, 3, 4

Foundational Chapters

- Includes a bold and clear statement about the negative impact of the freeway (and any potential freeway widening) on air quality.
- Describes air quality goals as key pillars of the Plan, with input from the ZE Truck Working Group.
- Tracks air quality trends, tree coverage, and other environmental indicators.
- **Lifts up the Air Quality Goal and Sustainability Guiding Principle, which guide all project selection.**

6

Corridor Community Benefits

by creating economic opportunities, improving air quality, and reducing long-standing health impacts generated by diesel trucks.

Metro

Decreasing negative impacts of the freight movement

The Investment Plan seeks to decrease negative impacts on local communities through new & better ways to move freight.

Chapters 1, 2, 3, 4

Foundational Chapters

6

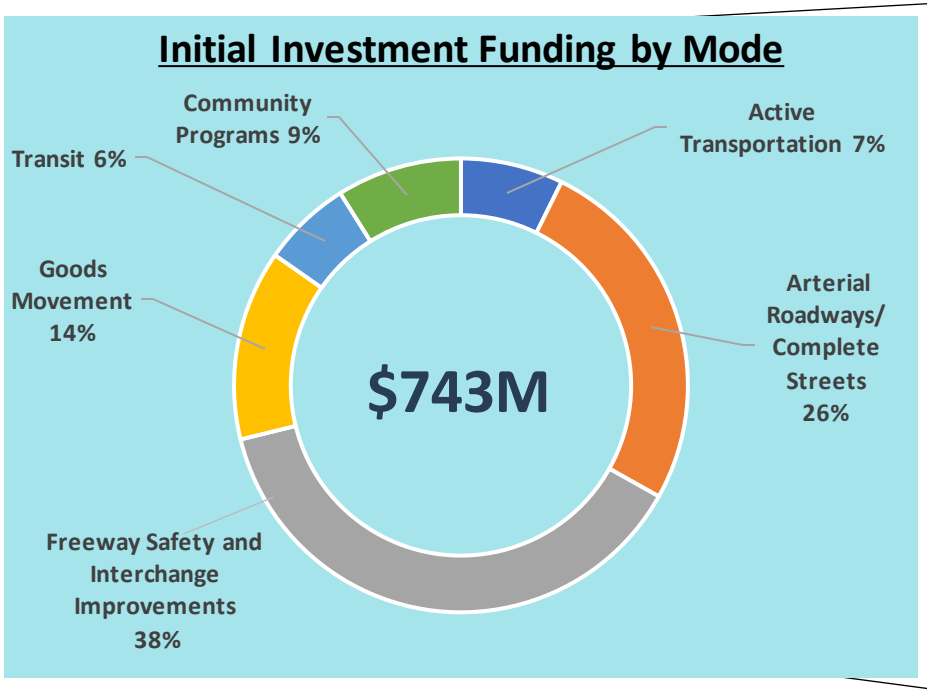
- Describes the national freight significance of the corridor, with substantial impacts borne by residents adjacent to the I-710.
- **Describes a policy shift from simply moving freight to serving the health, connectivity, and other quality-of-life needs of local communities.**

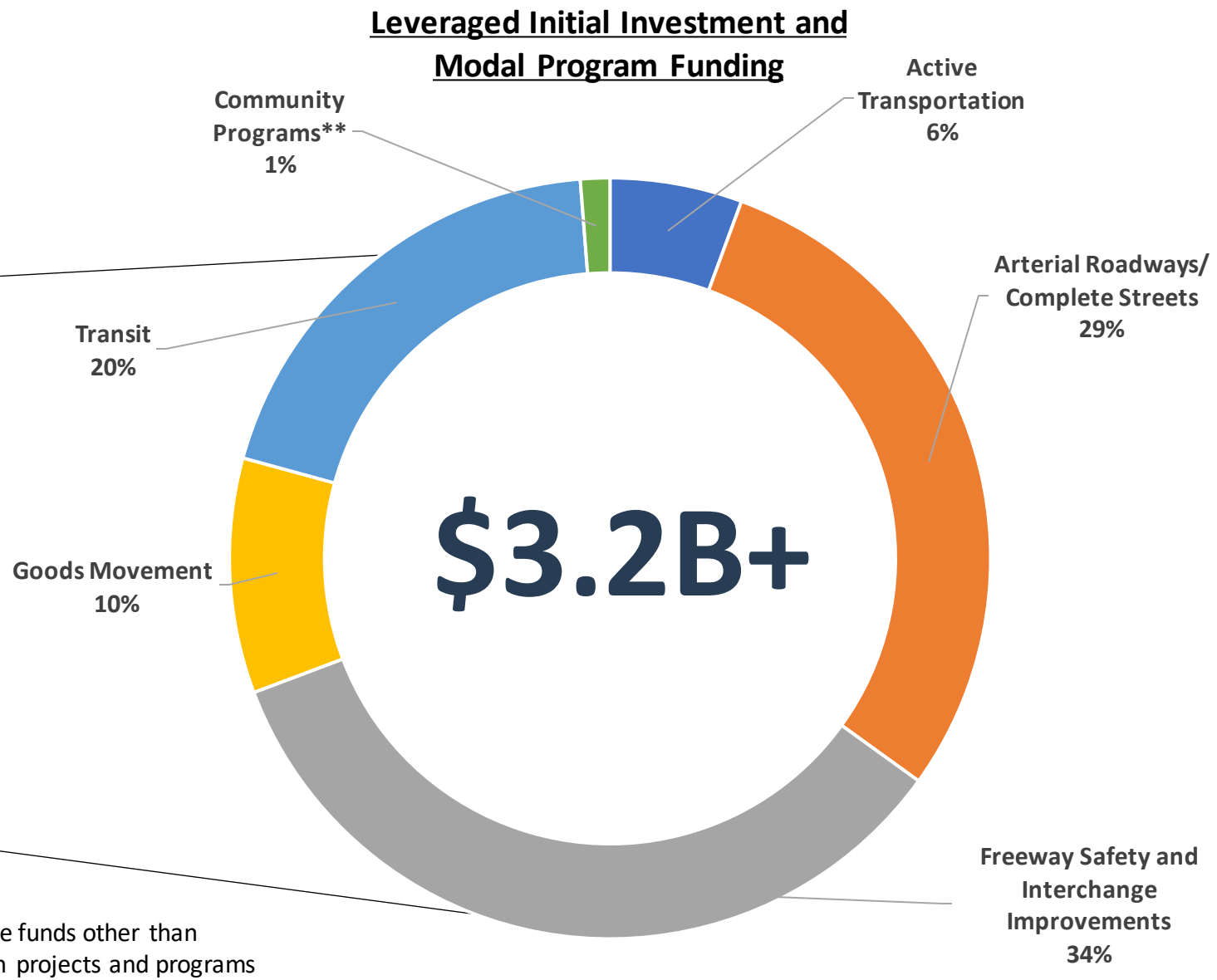
Corridor Community Benefits

by creating economic opportunities, improving air quality, and reducing long-standing health impacts generated by diesel trucks.

Metro

Leveraged Measure R/M Funding





Metro

**Community Programs will receive and leverage funds other than Measure R/M, which is eligible for transportation projects and programs

Bold Steps – New & Better Ways to Move Freight

The Investment Plan supports new and better ways to move freight and goods to decrease negative impacts on local communities.

Chapters 5, 6, 7, 8

Actionable Chapters

- Freight/goods movement projects included in the Investment Plan are those that minimize negative environmental impacts, modernize technology, and upgrade infrastructure.
- **The List of Projects Recommended for Initial Investment includes ZE truck infrastructure and freight rail electrification projects/programs.**
- The Investment Plan supports moving more cargo through the Alameda Corridor, leveraging major on-dock rail investments by the Ports.
- Metro will lead and partner with communities and agencies to identify and pilot strategies to reduce, capture, and mitigate Particulate Matter generated from freeway usage to complement tailpipe emission reduction strategies.

Freight Rail Planning

Zero-Emission Locomotive

Metro

Clean Truck Infrastructure (ZET)

Project/Program name	**Clean Truck Infrastructure [LB-ELA_0023]**
Project/Program description	The Clean Truck Infrastructure project (0023) would install charging infrastructure for zero-emission trucks.
Project/Program lead	Metro/Caltrans/Ports
Metro role	Partner
Location	Study Area Wide
Top scoring goals/principles	Air Quality; Opportunity; Environment
Flags	Equity Flag: Medium See related implementation requirements/guidance below
Modes	Goods Movement only
Phase (life cycle)	Implementation
Implementation requirements/guidance	Siting of zero-emission truck infrastructure should avoid displacements, right-of-way and neighborhood impacts. Wherever these impacts are under consideration, Metro and jurisdictions should proactively engage residents, businesses, and property owners to understand site-specific conditions and discuss opportunities for relocation assistance and other community benefits. Construction impacts such as noise pollution, dust emissions, traffic delays/diversion, and business interruptions should be carefully assessed and planned with mitigation strategies in place. Facilities that require the expansion or addition of paved areas should incorporate materials and designs that maintain or increase pervious cover, and/or landscaping elements that allow for sufficient stormwater runoff.
Potential for packaging	Combined with 0004
Estimated cost	NA
Funding sources and eligibility	0023 may be funded exclusively through Measure R, in which case it would be led by Metro. Trade Corridor Enhancement Program
Estimated Metro match (R&M) and eligibility	$50 million * *Already committed by Metro board (shared with LB-ELA_0004) Minimum local matches are as follows: 10 percent – CIF; 20 percent – PIPD, Reduction of Truck Emissions at Port Facilities

Bold Steps – New & Better Ways to Move Freight
Decreasing negative impacts of freight movement

Goods Movement

Project ID	Name	CMIP Initial Investment ($ in millions)	Estimated Total Cost* ($ in millions)	Phase
LB-ELA_0004	Long Beach-East Los Angeles Corridor Clean Truck Program (Also referred to as ZE Truck Program)	$50.0	$200.0	Implementation
LB-ELA_0023	Clean Truck Infrastructure			
LB-ELA_0217	Freight Rail Electrification Pilot Project	$10.0	-	Implementation
LB-ELA_0151	Goods Movement Freight Rail Study	$1.0	-	Implementation
Goods Movement Initial Investment		**$61.0**		
Goods Movement Modal Program		**$19.0**		
Total Goods Movement Investment		**$80.0**		

Estimated project costs are totaled from individual city submissions.

Metro

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Metro

I-710 Particulate Matter (PM) Reduction Pilot Project

Project/Program name	I-710 Particulate Matter (PM) Reduction Pilot Project (LB-ELA_0157)
Project/Program description	Implement a pilot project on I-710 to deploy and evaluate measures to reduce exposure of nearby populations to particulate matter, specifically localized sources of entrained/fugitive dust, tire wear, and brake wear associated with traffic on the freeway. These measures may include roadside vegetation barriers within available Caltrans' right-of-way, air filters for nearby schools or community facilities, pavement materials, frequent street-sweeping, and deployment of air quality monitoring systems, among others. In addition, include options to examine the effectiveness of "cool pavement" applications to reduce heat island effects. As part of the work plan, the pilot project would include a study element to assess and document the efficacy of the various measures
Project/Program lead	Metro
Metro role	Partner/Fund
Top scoring goals/principles	Community and Sustainability Principle
Flags	none
Modes	Freeway, Goods Movement
Phase (life cycle)	Development Define and conduct a study of the efficacy of various methods to reduce particulate matter emissions from the I-710 freeway, especially from non-tailpipe emissions. Also included in the study is determining the heat island reduction effects of "cool pavement."
Implementation requirements/guidance	N/A
Potential for packaging	The findings of this study may lead to projects that can be implemented by other programs and projects in the CMIP.
Estimated cost	$7 million for the design, execution and documentation of the pilot program
Funding sources and eligibility	Congestion Mitigation and Air Quality (CMAQ) Improvement Program
Estimated Metro match (R&M) and eligibility	$3 million

Freeway Safety and Interchange Improvements

Freeway Safety and Interchange Improvements

Project ID		Name	CMIP Initial Investment ($ in millions)	Estimated Total Cost* ($ in millions)	Phase
Various	12 Interchanges + 2 Auxiliary Lanes	Freeway Alternative Analysis**	$5.0	$5.0	Development
	Top 3-4 Priority Projects	Freeway CEQA/NEPA Phase***	$34.0	$34.0	Pre-implementation
	Top 2-3 Environmentally Cleared Projects	Freeway Construction****	$114.6	$573	Implementation
LB-ELA_0156		Traffic Controls at LB-ELA Freeway Ramps	$10.0	-	Development / Implementation
LB-ELA_0181		Freeway Lids, Caps, Widened Bridge Decks	$5.0	-	Development
LB-ELA_0157		LB-ELA Particulate Matter (PM) Reduction Pilot Project	$2.0	-	Development
Freeway Safety and Interchange Improvements Initial Investment			**$170.6**		
Freeway Safety and Interchange Improvements Modal Program Investment			**$49.4**		
Total Freeway Safety and Interchange Improvements Investment			**$220.0**		

* *Estimated project costs are totaled from individual city submissions*

***LB-ELA Interchange Improvements: I-710/* Firestone, Florence, Willow, Del Amo, Long Beach Blvd, Alondra and Modifications of SB LB-ELA to SR 91 Connectors, Imperial. Anaheim, PCH, Wardlow; *LB-ELA Auxiliary Lanes*: Willow St to Wardlow St, Del Amo Blvd to Long Beach Blvd; *Connector Project Improvements:* I-710/I-405, I-710/I-105

***Freeway Alternative Analysis will determine 3-4 priority projects that undergo Freeway CEQA/NEPA phase.

****Freeway CEQA/NEPA Phase will determine top 2-3 Environmentally Cleared Projects.

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Metro

Arterial Roadways/Complete Streets

Initial Investment Recommendations: $115.9M

- Development $0.0M
- Pre-Implementation $9.0M
- Implementation $106.1M

Modal Program Recommendations: $72.1M

- Development $7.2M
- Pre-Implementation $3.6M
- Future Implementation $61.3M

Total Initial Investment and Modal Programs: $188.0M

Intersection Improvements

Intersection Improvements

Metro

Arterial Roadways/Complete Streets

Project ID	Name	CMIP Initial Investment ($ in millions)	Estimated Total Cost* ($ in millions)	Phase
LB-ELA_0057	Atlantic Complete Street Corridor	$68.6	$457.2	Implementation
LB-ELA_0058	Florence Complete Street Corridor	$24.9	$124.5	Implementation
LB-ELA_0010	Shoemaker Bridge/Shoreline Drive	$9.0	$560.0	Pre-implementation
LB-ELA_0060	Alondra Complete Street Corridor	$9.0	$45.0	Implementation
LB-ELA_0061	Slauson Complete Street Corridor	$3.6	$18.0	Implementation
LB-ELA_0062	Long Beach Complete Street Corridor	$0.8	-	Pre-implementation
Arterial Roadways/Complete Streets Initial Investment		**$115.9**		
Arterial Roadways/Complete Streets Modal Program		**$72.1**		
Total Arterial Roadways/Complete Streets Investment		**$188.0**		

**Estimated project costs are totaled from individual city submissions.*

Metro

Arterial Roadways/Complete Streets

Project/Program name	Shoemaker Bridge/Shoreline Drive [LB-ELA_0010]
Project/Program description	I-710 Improvements/Shoemaker Bridge Replacement: Replace the Existing Shoemaker Bridge with a New Bridge. The New Bridge Will Be Reduced to Have Two Mixed-Flow Lanes in the NB and in the SB Directions to Tie the Flow into I-710. The New Bridge Will Also Include Pedestrian and Bicycle Access. Additionally, Bicycle, Pedestrian, and Street Enhancements Will Be Provided on Adjacent Thoroughfares.
Project/Program lead	Long Beach/COG
Metro role	Support
Location	Long Beach
Top scoring goals/principles	Safety, Mobility, Equity
Flags	Equity Flag: Moderate *See related implementation requirements/guidance below to address equity issues*
Modes	Arterial Roadway, Freeway Safety and Interchange Improvements, Active Transportation
Phase	Pre-Implementation
Implementation requirements/guidance	Although the Investment Plan investment is recommended for design-only, there are several implementation recommendations when the project continues to implementation: **Displacements and Physical Impacts:** The project entails a major roadway redesign and bridge reconstruction with both temporary and permanent impacts to the existing right-of-way and surrounding recreational facilities, however the project will result in a permanent net gain in parkland acres due to roadway consolidation. Design should minimize impacts to existing facilities where possible, and Long Beach should proactively engage the community to set expectations around the project's potential impacts, in the context of its broader benefits. **Construction Impacts:** Noise pollution, dust emissions, traffic delays/diversion, interruptions to recreational facility access, and business interruptions should be carefully assessed and planned with mitigation strategies in place.
Potential for packaging	Congestion Pricing [LB-ELA_0153] I-710 LA River Bike Path [LB-ELA_0055] Integrated corridor management (ICM) Phase 2 Ocean Blvd to SR-91 [new proposed project]
Estimated cost	$500 million
Potential funding sources	BIP, RAISE, INFRA, TCEP
Grant matching fund requirements	Minimum Local Match: 0% – RAISE (Rural, HDC, APP), TCEP (if Caltrans nominated) 20% – RAISE (Urban), BIP (Planning, non-large bridge) 30% – TCEP 40% – INFRA 50% – BIP (large bridge)
Recommended Measure R/M investment	$9.03 million (for partial design)

Arterial Roadways/Complete Streets

Intersection Improvements

Traffic Management Features

Traffic Calming Features

Complete Streets

Visual Improvements

Active Transportation

Project/Program name	Humphreys Avenue Pedestrian/Bicycle Overcrossing [LB-ELA_0139]
Project/Program description	The Los Angeles County Metropolitan Transportation Authority (Metro), in collaboration with the California Department of Transportation (Caltrans) and Los Angeles County Department of Public Works (LADPW), plans to construct a pedestrian and bicycle overcrossing (Humphreys Avenue Crossing) near the existing Humphreys Avenue vehicle bridge in East Los Angeles. The project aims to reconnect the historically divided East L.A. neighborhood caused by Interstate 710 (I-710). The Crossing, serving as a dedicated pedestrian/cyclist route, addresses the barrier created by I-710 and enhances accessibility for vulnerable populations, connecting to essential facilities and Humphreys Avenue Elementary School. Originating from Metro Board's Motion 22.1 in 2015, the Humphreys Avenue Crossing received approval and funding, signifying a step towards rectifying past planning decisions. Although not selected for a Reconnecting Communities Pilot grant, the project earned high ratings and continues to expand in collaboration with LA County to incorporate pedestrian accessibility improvements, further maximizing its community benefits.
Project/Program lead	Metro/Caltrans/LA County/COG
Metro role	Partner
Location	East Los Angeles
Top scoring goals/principles	Community, Safety
Flags	Equity Flag: NA CIC Flag: NA
Modes	Active Transportation/TDM
Phase	Implementation
Implementation requirements/guidance	NA
Potential for packaging	NA
Estimated cost	$24.3 million
Potential funding sources	State: Reconnecting Communities (Pilot) grant in September 2023
Grant matching fund requirements	Minimum local match: 20% – RCP
Recommended Measure R/M investment	$1 million (study)

Traffic Calming Features

What are Community Programs?

Community Programs incorporate a range of benefits that are responsive to equity issues facing the LB-ELA Corridor, and which are not addressed through typical transportation infrastructure investments.

- Some are focused on addressing current burdens that exist as a result of past policy, disinvestment, and infrastructure development;
- Others are proactive measures to sustain community stability and maximize benefits as projects are implemented in the future.
- The Investment Plan recommends $40M of Initial Funding for development of 15 Community Programs

Community Programs by Topic Area

Working Group Topic Area	Programs
Air Quality/ Community Health	Bus Electrification Projects
	LB-ELA Corridor Community Health Benefit Program
	Zero-Emission Infrastructure for Autos
	Air Quality Monitoring Stations
Environment	LB-ELA Corridor Energy Reduction/Greenhouse Gas (GHG) Emissions Reduction Program
	LB-ELA Corridor "Urban Greening" Initiative
	Public Art/Aesthetics
Housing Stabilization/ Land Use	WSAB Transit-Oriented Development Strategic Implementation Plan and Program (TOD SIP)
	Transit-Oriented Communities/Land Use
	Homeless Programs
	Housing Stabilization Policies
Job Creation/ Work Opportunities	Vocational Educational Programs
	Targeted Hire Programs
	Employment/Recruitment Initiatives
	Economic Stabilization Policies

Metro

Lifting Up the Local Community

The Investment Plan will provide economic opportunities by addressing workforce development, targeted hire, and new jobs

> Metro's Measure-funded Projects advanced to construction resulting from this Investment Plan would be subject to Metro's Project Labor Agreement (PLA) and corresponding Construction Careers Policy (CCP), which are applied to all federal projects with a construction value greater than $2.5 million.
  - Metro's PLA is unique in that Metro is the first transit agency in the nation to adopt such an agreement with national targeted hiring goals for federally funded projects with Federal Transit Administration (FTA) approval. The PLA and CCP were approved by Metro's Board of Directors on January 26, 2012, and subsequently renewed on January 26, 2017.
  - The PLA and CCP require prime contractors to ensure that a minimum of 40 percent of all hours of project work are performed by local targeted workers, with priority given to those in Community Areas, defined as economically disadvantaged areas within a five-mile radius of the project.

> The CCP and PLA have exceeded their goals since they were implemented.
  - Between 2012 and 2018, close to 60 percent of workers on Metro projects were from economically disadvantaged communities, 22 percent of work was performed by apprentices, and close to 12 percent of all hours worked were performed by workers with disadvantaged backgrounds.

Metro

Lifting Up the Local Community

The Investment Plan provides economic opportunities by addressing workforce development, targeted hire, and new jobs

Implementation Guidance for Community Programs will include workforce development, targeted hire, and new jobs as evaluation criteria. Issues to be addressed in Implementation and Next Steps:

- Ensure existing policies and programs position the local labor force of today to support the goods movement industry of tomorrow
- Identify education and skill gaps that need to be addressed
- Identify opportunities to partner across industries and regions to enhance the labor force
- Provide adequate mobility options to connect existing and future workers to these jobs and industries
- **Add a variety of Equity Criteria into project evaluation to accomplish these goals.**

Metro

Establish Working Groups by Topic Area

Why are we setting up more working groups?

- **Continuity and stewardship** of Vision/Goals/Guiding Principles
- **Hold Metro accountable** to Community Program commitments
- **Build upon ZET Program** successes/lessons learned

What are we looking for in working group members and program partners?

- **Complementary roles** – Leadership / Funding / Technical Expertise
- **Technical knowledge and community relationships**
- **Other agencies to fill gaps** in Metro's jurisdictional authority

Metro

Working Group Objectives/Activities

- **Identify existing programs** that Metro can support
- **Identify additional funding opportunities** for Community Programs
- **Define detailed program objectives, parameters, and actions**
- **Determine funding allocations** within topic areas

Potential Partners by Community Program Topic Area

Air Quality/Community Health

- Gateway Cities COG
- SCAQMD
- CARB
- AB617 Community Steering Committees
- Southern California Clinics Association
- EYCEJ
- Earthjustice
- LBACA
- SELA Collaborative
- Coalition for Clean Air
- LA County ISD Clean Transportation Team
- Southern California Edison
- LACI
- **Metro Partners:** Sustainability Team; I-710 ZET Program; Metro Bus Electrification

Environment

- GCCOG Regional Climate Collaborative
- SCAQMD
- EYCEJ
- Earthjustice
- CBE
- Compton Community Garden
- Eastmont Community Center
- SELA Collaborative
- TreePeople
- GrowGood
- Friends of the LA River
- Caltrans District Art Coordinator
- SoCalREN
- **Metro Partners:** Metro Art Program; Sustainability Team, LRTP Team

Housing Stabilization/Land Use

- Gateway Cities COG
- Legal Aid Foundation of Los Angeles
- LA Care
- Fair Housing Foundation
- PATH
- BASTA Long Beach
- East LA Women's Center
- Fair Opportunity for Change
- Forgotten Children, Inc.
- InnerCity Struggle
- ACT-LA Coalition
- Jordan's Disciples
- Kingdom Causes Bellflower
- Restoration Diversion Services
- Salvation Army
- **Metro Partners:** TOC Programs; Homeless Outreach Pilot; Room to Work; Joint Development Team; First/Last Mile Team

Job Creation/Work Opportunities

- LA County Economic Development Corporation Business Support Program
- LA County Department of Economic Opportunity
- CALSTART
- Vocational Schools, Training Centers, and Workforce Development Organizations
- SELA Collaborative
- **Metro Partners:** Diversity and Economic Opportunity Department (DEOD); WIN-LA; Room to Work; Internship and Entry-Level Trainee Program; E3 (Expose-Educate-Employ); Transportation Career Academy Program

Preliminary Timeline (near-term)

When will Community Program Working Groups be formed?

Metro

Agenda Item #3:
Mobile Source Air Pollution Reduction Review Committee (MSRC)

- Cooperative Agreement
- Joint Request for Proposal (RFP)

Metro

MSRC Cooperative Agreement

Motivations to Partner

> A leading organization that supports and funds publicly accessible charging and fueling infrastructure for heavy-duty vehicles in the South Coast Air Basin

> A long-standing relationship with the South Coast AQMD, San Pedro Bay Ports, and private entities that develop their sites to support zero-emission trucks

- MSRC's experience, expertise and established relationship will help Metro advance the ZET Program expeditiously.

> Jointly pursue funding opportunities to leverage Metro's seed funding, and jointly support promising projects within the LB-ELA Corridor

Past Engagement

> MSRC's Request for Information for Publicly Accessible Zero Emission Infrastructure to Support Goods Movement in November 2022

> Proposed projects within the LB-ELA Corridor were evaluated against the LB-ELA ZET Program Principles and shared with the Working Group in March 2023.

> One of the projects was the Port of Los Angeles owned land, and submitted by LACI

- Working Group supported Metro to contribute a portion of the ZET seed funding.

Cooperative Agreement

> A cooperative agreement between Metro and South Coast AQMD (MSRC's administrative agency) was reviewed and approved by the AQMD's Governing Board on February 2, 2024.

Metro

MSRC Joint Request for Proposal

Background:

> The November 2022 MSRC RFI projects have been funded through the proposers' own funds, MSRC, and other mechanisms.

> There are new near-term proposals for charging and fueling sites within the LB-ELA corridor.

Opportunities for Metro

> Partner with MSRC to release a joint RFP and include evaluation criteria that reflect the ZET Program Principles
  - **Community Engagement –** willingness to engage communities to identify equitable outcomes and community benefits, and provide more information to increase awareness
  - **Corridor Community Benefits –** willingness to use this opportunity to address local community needs and enhance quality of life
  - **Equitable Outcomes –** willingness to strive for equitable outcomes through Metro supported projects

> Leverage the seed funding to accelerate the ZET support infrastructure deployment

Metro

Closing Remarks & Next Steps

Metro

Stay connected to this project

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losangelesmetro

Metro

Thank you!

Metro

Transit

Initial Investment Recommendations: $29.0M

- Development $0.0M
- Pre-Implementation $5.0M
- Implementation $24.0M

Modal Program Recommendations: $96M

- Development $9.6M
- Pre-Implementation $4.8M
- Future Implementation $81.6M

Total Initial Investment and Modal Programs: $125.0M

Metro

Transit

Project ID	Name	CMIP Initial Investment ($ in millions)	Estimated Total Cost* ($ in millions)	Phase
LB-ELA_0203	Bus Stop Improvements	$19.0	$19.0*	Development / Implementation
LB-ELA_0175	Install Quad Safety Gates at all A Line [Blue Line] Crossings	$5.0	$5.0*	Development / Pre-implementation
LB-ELA_0168	Compton Transit Management Operations Center Enhancements	$2.0	$27.0**	Pre-Implementation / Implementation
LB-ELA_0146	Metro Bus Priority Lane Corridor along Line 260 (Atlantic Blvd.)	$1.0	-	Pe-implementation
LB-ELA_0144	Metro Bus Priority Lane Corridor along Line 111 (Florence)	$1.0	-	Pre-implementation
LB-ELA_0141	Metro Bus Priority Lane Corridor along Line 60 (Long Beach Blvd.)	$0.5	-	Pre-implementation
LB-ELA_0142	Metro Bus Priority Lane Corridor along Line 108 (Slauson)	$0.5	-	Pre-implementation
Transit Initial Investment		**$29.0**		
Transit Modal Program		**$ 96.0**		
Total Transit Investment		**$ 125.0**		

Estimated project costs are totaled from individual city submissions.
*** Total cost based on installation of a defined number of improvements.*
****Project cost based on Blue Line First Last Mile estimate for Compton.*

Metro

Active Transportation

Initial Investment Recommendations: $32.9M

- Development $0.5M
- Pre-Implementation $4.5M
- Implementation $27.9M

Modal Program Recommendations: $57.1M

- Development $5.7M
- Pre-Implementation $2.9M
- Future Implementation $48.6M

Total Initial Investment and Modal Programs: $90M

Metro

Active Transportation

Project ID	Name	CMIP Initial Investment ($ in millions)	Estimated Total Cost ($ in millions)*	Phase
LB-ELA_0017	Regionally significant bike projects from the Metro Active Transportation Plan	$15.7	$41.4**	Development / Implementation
LB-ELA_0008	Blue Line First/Last Mile Plan Improvements	$9.8	$13.5	Development / Implementation
LB-ELA_0111	West Santa Ana Branch Bike & Pedestrian Trail	$3.8	$7.6**	Development / Pre-implementation
LB-ELA_0006	Rail to River Active Transportation Corridor Segment B	$3.2	$6.3	Pre-implementation
LB-ELA_0165	Compton Creek Bike Underpasses	$0.5	-	Development / Pre-Implementation
Active Transportation Initial Investment		**$32.9**		
Active Transportation Modal Program		**$57.1**		
Total Active Transportation Investment		**$90.0**		

Metro

**Estimated project costs are totaled from individual city submissions.*
***Estimated project cost based on miles of bike facilities.*

Project/Program name	Goods Movement Freight Rail Study [LB-ELA_0151]
Project/Program description	Conduct an assessment to evaluate options for deriving greater utilization of the Alameda Corridor as a potential means for reducing truck trips in the Southern California subregion. This assessment would include options such as opportunities to increase on-dock freight rail mode share; implementation of short-haul, freight rail shuttle service to new inland rail facilities; and increased use/improved operational efficiencies of existing near-dock and off-dock intermodal facilities. This evaluation would take into account updated cargo forecasts, economic factors and projections, current trends associated with the goods movement logistics chain, including transload truck trips, and railroad and intermodal capacity constraints in the Southern California region. The Goods Movement Freight Rail Study would assess options from a systemwide perspective and would include factors such as changes in truck trip travel patterns, land use implications, and the potential for environmental impacts as well as institutional constraints.
Project/Program lead	Metro/Ports/Railroads
Metro role	Partner
Location	Nevin; Clement Junction; Vernon; Huntington Park; Nadeau; Firestone Park; South Gate; Lynwood; Compton; Willowbrook; Rancho Dominguez; Thenard; Long Beach
Top scoring goals/principles	Opportunity, Mobility
Flags	Equity Flag: NA – this is a study. CIC Flag: The study should focus on the potential for pollution reduction and impacts on local communities. Study should include assessment of long-term funding needed to maintain environmental sustainability.
Modes	Goods Movement only
Phase	Planning
Implementation requirements/ guidance	NA – this is a study.
Potential for packaging	NA
Estimated cost	$1 million (study)
Potential funding sources	Fed: INFRA, PIDP State: TCEP
Grant matching fund requirements	Minimum local match: 0% – TCEP (if Caltrans nominated) 20% – PIDP 30% – TCEP 40% – INFRA
Recommended Measure R/M investment	$1 million (study)

Metro

C.E.H.A.J.
coalition for environmental health and justice

Michael Cano, Deputy Executive Officer
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Via email: canom@metro.net

December 19, 2023

Re: LB-ELA Taskforce Draft Investment Plan- Caution Against Blanket Endorsement of Hydrogen Projects

On behalf of the undersigned organizations and members of the Coalition of Environmental Health & Justice ("CEHAJ"), we write to express our deep concerns regarding the potential safety, climate, and health impacts from hydrogen-related outlined in the current list of investment projects. (See **Attachment A**). Over the past two years, we have worked with staff to develop what has been touted as a "re-envisioning" of investments for the 710 corridor to promote greater equity in impacted communities and repair the racist legacy of freeway building.

As Metro prepares to present its draft investment plan to the Metro Board next month, we are alarmed by Metro's swift endorsement of hydrogen as a "zero-emissions" solution without adequate scrutiny or robust community engagement. Our concerns stem from the dearth of information about these projects—raising serious questions about the potentially harmful effects of hydrogen production, transportation, and end-use on already impacted communities.

We urge Metro to stay focused on its promise to deliver on community stakeholders' vision for mobility that **advances equity and sustainability**. In this letter, we propose the following recommendations for Metro's Draft LB-ELA 710 investment plan as it relates to zero-emissions transportation along the corridor:

- **Prioritize Funding for Battery-Electric and Catenary Zero-Emissions Transportation:**
  - Allocate resources to projects that promote available battery-electric and catenary zero-emissions transportation.
  - Develop a Metro Board policy that prioritizes investments in battery-electric, catenary, and/or catenary/battery technology and infrastructure.

- **Recognize Limited Applications of "Green" Hydrogen:**
    - Acknowledge that "green" hydrogen's limited sector applications extend beyond the scope of this investment plan.

CEHAJ has been consistent in its calls for change along the 710. We have been consistent in our demands for greater protection of public health for impacted residents, the deployment of only truly zero-emissions solutions, non-displacement, opportunity for high-road jobs for local residents, and community-centered decision-making with impacted communities as co-designers of a plan to help repair past harms. To advance a vision that centers on equity and sustainability, Metro needs to align its commitment to zero emissions with solutions that electrify transportation while minimizing harm to the community.

I. Hydrogen Presents Risks Too High to Endorse Through this Investment Plan.

There are some members of the Task Force who are enthusiastic about using hydrogen in multiple sectors of the economy and are requesting funding from various sources. This enthusiasm fails to recognize how leveraging Metro's limited funding to support hydrogen projects will perpetuate the environmental injustices which have plagued these communities. Testing dangerous, poorly studied hydrogen gas infrastructure in communities that already suffer from the 710 corridor's toxic legacy is unacceptable. Our concerns about endorsing hydrogen projects are grounded in the risks associated with various production methods, upstream impacts, storage, and transportation. It is critical to consider the significant environmental and public safety risks associated with such projects. We cannot afford to disregard the well-being of communities who have historically borne the brunt of environmental pollution.

Ignoring these impacts also risks perpetuating the fossil fuel industry, directly contrary to the Long Beach-East Los Angeles Corridor's Vision Statement, Equity and Sustainability Guiding Principles and Air Quality, Environment and Community goals. Currently, more than 95% of hydrogen production comes from fossil fuels. As a result, nearly 830 million tons of CO2 are generated per year to produce only 74 million tons of hydrogen.[1] The primary process for making hydrogen heavily relies on methane gas, and both the upstream production of methane and its conversion to hydrogen leads to the release of carbon dioxide, methane, and other pollutants.[2] These by-products are not harmless and pose a further threat to communities already impacted by the industry and freight along the corridor. Globally, hydrogen production is

[1] Massachusetts Institute of Technology, *Hydrogen Explainer*, Climate Portal, https://climate.mit.edu/explainers/hydrogen (last accessed December 13, 2023).
[2] United States Department of Energy, Office of Fossil Energy, *Hydrogen Strategy: Enabling A Low-Carbon Economy* (July 2020), https://www.energy.gov/sites/prod/files/2020/07/f76/USDOE_FE_Hydrogen_Strategy_July2020.pdf (last accessed December 13, 2023).

having a significant impact on the climate as it produces more greenhouse gas emissions than the entire country of Germany.[3]

Hydrogen–the smallest and lightest molecule–is prone to leakage and can add to the problem of climate change and undermine the efforts of states and regions to reduce greenhouse gases that are harmful to the climate and communities. When hydrogen is introduced into the atmosphere, it can contribute to climate change by prolonging the life of greenhouse gases such as methane.[4] This prolongation of GHG life is likely to undermine efforts to reduce their emissions elsewhere. Hydrogen is a greenhouse gas that is at least five times more potent than carbon dioxide on a 100-year timescale and much higher on shorter timescales, which are highly relevant to our current climate crisis.[5]

End uses involving hydrogen combustion may result in hazardous amounts of Nitrogen Oxide (NOx), a pollutant known to cause ozone.[6] This pollutant disproportionately impacts health in communities that are already overburdened in our region. In fact, it can produce up to six times more NOx emissions than burning methane.[7] The pollution caused by NOx has severe health consequences, including respiratory illness and asthma. It is also a precursor to particulate matter and ozone[8] which we already know has a disproportionate impact on vulnerable communities along the corridor. If the primary goal of the Metro's Investment Plans and the ZET Truck Program is to avoid further harming already impacted communities, then wholehearted support of hydrogen projects will surely undermine it.

The transportation and storage of hydrogen present further safety risks to surrounding communities. Three principal methods for hydrogen transportation involve pipelines, trucks, rail, and ships.[9] Each of these presents its own set of risks. Regarding pipelines, most current proposals include using fossil gas pipelines as a "quick fix" for transportation. Unfortunately, this "quick fix" reflects and perpetuates the environmental racism which resulted in fossil gas pipelines being co-located with low-income communities of color. Hydrogen's energy density

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[3] Sara Gersen and Sasan Saadat, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emissions Solutions*, Earthjustice Report (August 2021), p.10, https://earthjustice.org/feature/green-hydrogen-renewable-zero-emission.

[4] Zhiyuan Fan et al., *Hydrogen Leakage: A Potential Risk for the Hydrogen Economy,* Columbia University Center on Global Energy Policy (2022), https://www.energypolicy.columbia.edu/publications/hydrogen-leakage-potential-risk-hydrogen-economy (last accessed December 13, 2023).

[5] Gersen & Sadaat, *supra,* at 19; *see also* Alissa B. Cook and Steven P. Hamburg, *Climate consequences of hydrogen emissions, Atmospheric Chemistry and Physics* (July 20, 2022), https://acp.copernicus.org/articles/22/9349/2022/acp-22-9349-2022.pdf.

[6] *Id; see also* E4tech (UK) Ltd for the Department for Business Energy and Industrial Strategy (BEIS), *H2 Emission Potential Literature Review* (2019), p. 26, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/798243/H2_Emission_Potential_Report_BEIS_E4tech.pdf.

[7] Sierra Club, *Hydrogen: Future of Clean Energy or a False Solution?*, p. 4, https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/Sierra%20Club%20Hydrogen%20factsheet_External.pdf (last accessed December 13, 2023), citing to Leeds City Gate, H21 Report.

[8] *Id.,* citing *Basic Information about NO2*, www.EPA.gov.

[9] Gerson & Sadaat*, supra,* at 19.

and small size make transporting with generic pipeline materials dangerous. It can cause "embrittlement" in pipes, is highly flammable, and is prone to leaks.[10] Due to its flammability, an explosion would have devastating consequences for densely populated areas like the corridor. Current research shows that fossil gas pipelines are not a safe method of transporting hydrogen.[11]

Given the limited extent of existing hydrogen pipelines, it is very likely that most hydrogen will be transported by truck. Transporting hydrogen by truck and rail brings additional air pollution to our region and has greenhouse gas impacts unless these trucks and locomotives are themselves zero-emission. This adds either unnecessary pollution or unnecessary cost relative to powering zero-emission vehicles directly from the grid. Regarding ships, the required liquefaction, refrigeration, or conversion from ammonia to hydrogen are each costly and energy-intensive.

The storage of hydrogen is also challenging due to its low energy density. Hydrogen storage requires large amounts of space to contain.[12] Theoretically, the volume challenge can be addressed by cooling and compressing hydrogen into a liquid state or converting it to ammonia, and some proposals may include these storage options. Still, each option comes with added energy and resource challenges and potential health hazards to nearby communities.[13]

Finally, the latest Intergovernmental Panel on Climate Change (IPCC) report finds that the use of fossil fuels must be phased out to avoid catastrophic warming past the 1.5℃ threshold long held as the point of no return.[14] Notably, the recent United Nations COP28 summit concluded with nearly 200 countries entering a first-ever agreement calling for transitioning away from fossil fuels. Current hydrogen production perpetuates the expansion of fossil fuel infrastructure, production, and resulting emissions. Metro can avoid perpetuating the fossil fuel dependency cycle by not funding hydrogen projects that extend fossil fuel infrastructure and reliance.

II. Hydrogen Production Impacts Water Supplies

Hydrogen production is energy and resource-intensive, including using freshwater as a feedstock. Large-scale hydrogen production is resulting in even greater inequities. Although only 1% of hydrogen is produced through electrolysis, it can significantly impact freshwater supplies. Producing hydrogen through electrolysis uses approximately 9 kilograms (kg) of water for every 1 kg of hydrogen.[15] As the Sierra Club cites in its recent report on hydrogen, supplying

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[10] *Id.*
[11] Accufacts, *Report: Safety of Hydrogen Transportation by Gas Pipelines* (November 28, 2022), pp. 4, 10-12, https://pstrust.org/wp-content/uploads/2022/11/11-28-22-Final-Accufacts-Hydrogen-Pipeline-Report.pdf.
[12] Gerson & Sadaat, *supra*, at 20.
[13] *Id.*
[14] Intergovernmental Panel on Climate Change, *Climate Change 2023 Synthesis Report: Summary for Policymakers* (2023), p. 21, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf.
[15] Sierra Club, *supra*, at 5.

a 288-megawatt power plant with 100% hydrogen would call for the equivalent of draining an Olympic-size pool every 12 hours.[16] This is simply unsustainable for regions with extreme drought risk like ours.

We must also recognize that much of the local water supply is from Tribal lands to the north, including Mono Lake. In 1941, the Los Angeles Department of Water & Power (DWP) began diverting water from Mono Lake's tributary streams, sending it 350 miles south to meet the growing water demands of Los Angeles. As a result, over the next 40 years Mono Lake dropped by 45 vertical feet, lost half its volume, and doubled in salinity.[17] Projects that will perpetuate the vast water consumption from these regions without protecting Tribal communities must be opposed.

Water usage has played a limited role in the development and talks surrounding hydrogen policy. However, the substantial water requirements of hydrogen production pose potential negative environmental justice concerns and impact local ecosystems, particularly in regions with constrained water resources such as Southern California. Substantial quantities of fresh water are required for hydrogen production, a resource already strained globally.[18]

III. The Challenges of "Green Hydrogen"

Many hydrogen-related projects may propose using only "green hydrogen". But even green hydrogen presents a slew of challenges as a zero-emissions solution in most applications today. Primarily, the lack of legislative or regulatory certainty around the definition of green hydrogen means that many such projects propose empty promises. Presently, it costs more to produce green hydrogen than hydrogen derived from fossil fuels.[19]

Green hydrogen that is made using 100% renewable electricity from wind or solar power to split hydrogen from water molecules does not exist on an industrial scale in California.[20] True green hydrogen is in short supply, representing 0.02% of hydrogen produced through electrolysis.[21] Green hydrogen production is still energy-intensive, requiring large amounts of electricity generated from renewable sources, with anywhere from 20-40% of the energy lost.[22] This makes delivering green hydrogen for many applications inherently inefficient and costly. By some estimates, green hydrogen costs between $2.50/kilogram and $4.50/kilogram to produce

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[16] *Id.*
[17] Mono Lake Committee, *State of the Lake,* https://www.monolake.org/learn/stateofthelake/.
[18] Ahmed Osman et al., *Hydrogen production, storage, utilisation and environmental impacts: a review,* Environmental Chemistry Letters (2021), pp. 156-158, https://link.springer.com/article/10.1007/s10311-021-01322-8 (last visited Dec. 14, 2023).
[19] International Renewable Energy Agency & World Trade Organization, *International Trade and Green Hydrogen Supporting the Global Transition To A Low-Carbon Economy,* p. 10, https://www.irena.org/Publications/2023/Dec/International-trade-and-green-hydrogen-Supporting-the-global-transition-to-a-low-carbon-economy (last visited Dec. 14, 2023).
[20] Gersen and Sadaat, *supra*, at 3.
[21] *Id.*, at 20; *see also* International Renewable Energy Agency, *Hydrogen*, https://www.irena.org/Energy-Transition/Technology/Hydrogen (last visited Dec. 14, 2023).
[22] *Id.*, at 16.

as compared to the cost of conventional (and more polluting) fossil hydrogen, which is between $1.25/kilogram and $2/kilogram.[23] The possibility of a market where green hydrogen is affordable is largely dependent on if the price of renewable energy and electrolyzers, which is technology used in the production of green hydrogen, continues to drop.[24]

Green hydrogen production also challenges the state's water needs, requiring large amounts of water to produce hydrogen through electrolysis. Also, once produced, green hydrogen presents storage challenges similar to those produced by other means. Due to these limitations, only hard-to-electrify sectors should be considered, not sectors that could decarbonize and cut emissions more efficiently through direct electrification. For Metro's LB-ELA Corridor investment plan, funding should focus on the direct electrification of freight transit along the corridor with electricity generated through renewables to deliver air quality and health benefits while promoting greater equity on a more reasonable timetable and with fewer risks.

IV. The LB-ELA 710 Investment Plan and the ZET Truck Program should advance projects that support only direct transportation electrification.

Direct electrification of transportation is safer and cleaner, and Metro can prioritize those projects that offer support to charging battery electric zero-emissions vehicles that will be more accessible. Solutions in battery electric and catenary zero-emissions transportation are available in multiple transportation sectors for the corridor, including freight, HD trucks, locomotives, and public transportation. These are areas where investments from LB-ELA Corridor Investment Plan and the ZET Truck Program may be better suited.

A. Medium and Heavy-Duty Battery Electric Trucks

Medium- and heavy-duty battery electric trucks are already available. They are projected to offer a lower total cost of ownership compared to current diesel models and are more readily available than Hydrogen Fuel Cell trucks. Direct electrification of transportation is safer and cleaner, and Metro can prioritize those projects that offer support to charging battery electric zero-emissions vehicles that will be more accessible. Solutions in battery electric and catenary zero-emissions transportation are available in multiple transportation sectors for the corridor, including freight, HD trucks, locomotives, and public transportation. These are areas where investments from LB-ELA Corridor Investment Plan and the ZET Truck Program may be better suited.

We often hear proponents of hydrogen technology make the unsupported claim that battery-electric technology is infeasible due to costs. Medium- and heavy-duty battery-electric trucks are already available and have long been projected to offer a lower total cost of ownership compared to current diesel models. Even with the upfront and infrastructure installation costs,

[23] *Id.*, at 17.
[24] International Renewable Energy Agency & World Trade Organization, *supra*, pp. 4, 10.

Class 7-8 tractor EV's have a dramatic cost advantage over their current diesel equivalents when considering fuel, maintenance, health, and avoided environmental externalities.[25]

Battery-electric trucks also have a lower total cost of ownership when compared to hydrogen-powered trucks for long-haul applications.[26] This is true even when taking into account tax credits under the Inflation Reduction Act and is largely attributed to the lower cost of charging and maintenance.[27] When coupled with strategically placed megawatt charging, battery-electric long haul trucks are estimated to be the only zero-emissions transportation solution that can deliver lower cost per mile than long-haul diesel trucks.[28] Studies have suggested that for fuel cell electric vehicles (FCEVs) to compete economically with BEVs, green hydrogen fuel needs to be within a range of $3/kilogram (kg) to $6.50/kg by 2030. In 2023, retail green hydrogen fuel prices in California hit around $30/kg, and reasonable estimates have suggested that at-the-pump prices will remain between $8/kg and $10/kg even with federal incentives.[29] With large batteries for class 8 trucks expected to drop in price within this decade[30], the lower cost trend supporting battery-electric trucks is likely to continue.

Since drayage along the 710 corridor typically operates on shorter routes, these fleets are prime for electrification through existing battery electric technology. Most corridor trucking operations would benefit from strategically placed charging infrastructure co-designed with impacted communities to minimize additional harm, like the pilot project demonstrated through a partnership between this coalition and the Los Angeles Cleantech Incubator (LACI). Prioritizing charging infrastructure along the 710 is also aligned with the strategy of deploying electrification along "No Regrets" freight zones and corridors identified by researchers at The International Council on Clean Transportation (ICCT) as key to keeping national commercial trucking electrification aligned with climate goals.[31] ICCT staff further recognize that installing enough charging infrastructure is within reach and will help achieve 2030 climate milestones for long-haul trucks.[32] Metro should prioritize battery electric charging over hydrogen fueling for freight truck transportation along the 710 corridor.

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[25] UC Berkeley Goldman School of Public Policy, *Plummeting Costs and Dramatic Improvements in Batteries Can Accelerate Our Clean Transportation Future* (June 2021), http://www.2035report.com/transportation/wp-content/uploads/2020/05/GridLab_2035-Transportation-Appendix.pdf?hsCtaTracking= .
[26] Hussein Basma et al, *Total Cost of Ownership of Alternative Powertrain Technologies for Class 8 Long-Haul Trucks in the United States*, The International Council on Clean Transportation (April 2023), p. iii, https://theicct.org/wp-content/uploads/2023/04/tco-alt-powertrain-long-haul-trucks-us-apr23.pdf.
[27] *Id.*
[28] *Id.*
[29] Sam Wilson, *Hydrogen-Powered Heavy-Duty Trucks: A review of the environmental and economic implications of hydrogen fuel for on-road freight*, Union of Concerned Scientists (November 2023), p. 5, https://www.ucsusa.org/sites/default/files/2023-12/hydrogen-powered-heavy-duty-trucks.pdf.
[30] UC Berkeley Goldman School of Public Policy, *supra*.
[31] Yihao Xi and Ray Minjares, *Deploy Charging Infrastructure in "No Regrets" Freight Zones and Corridors to Keep the U.S. Commercial Truck Electrification Aligned with Climate Goals,* The International Council on Clean Transportation (December 13, 2023), https://theicct.org/deploy-charging-infrastructure-in-no-regrets-freight-zones-and-corridors-to-keep-us-commercial-truck-electrification-aligned-with-climate-goals-dec23/.
[32] *Id.*

B. Direct Electrification of Locomotives

Locomotives are another example of a transportation mode that currently impacts corridor communities but can potentially transition to battery-electric or catenary technology. Locomotives relying on hydrogen combustion pose a risk of air pollution stemming from NO_X emissions, as discussed in further detail above. Attempting to use such technology in commercial settings for hydrogen powered locomotives to mitigate the risk of NO_X emissions from hydrogen combustion could prove costly, less efficient, time consuming, and risky, especially when there are other technologies already in use elsewhere.

Metro should instead invest in technology for locomotives—like battery-electric, catenary, or hybrid– that has demonstrated success and efficiency in practice. Updating current diesel-fueled locomotives with battery electric or catenary technology could be more cost-effective and lessen negative environmental and health impacts caused by current diesel-powered technology while benefiting electrical grids.[33] For example, locomotives with flexibility in their recharging times can charge batteries primarily when there is surplus renewable electricity available, which can make locomotives cheaper to fuel with electricity than diesel, even in the near term.[34] Similarly, a 2018 simulation of line-haul locomotives found that it would be significantly cheaper for an electric locomotive powered by overhead catenary as compared to diesel.[35] By comparison, hydrogen fuel cell EV technology currently lags far behind battery electric and catenary in market readiness and cost effectiveness. Anecdotes concerning the alleged unsuitability of direct electrification of locomotive transportation should not serve to mold the investment plan towards endorsing hydrogen.

C. Direct Electrification of Public Transit

Finally, Metro can continue leading the way in the public transit sector by deploying battery-electric zero-emissions solutions for buses. Although Metro claims the nation's most battery-electric buses in service, there is still a long way to go to electrify its fleet fully. Fuel cell electric buses lag significantly behind battery electric technology, and their cost is much higher when compared to battery-electric versions. Therefore, Metro's investment strategies should focus on deploying the necessary charging infrastructure to advance progress in electrifying the region's bus fleet and remove polluting and climate-harming buses currently in service.

For these reasons, the expressed interest in committing Metro's limited funding and resources to hydrogen technology and infrastructure, whether for trucks, locomotives, or buses along the 710 corridor, is misguided.

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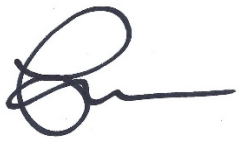
[33] Natalie Popovich et al. *Economic, environmental and grid-resilience benefits of converting diesel trains to battery-electric*, Nature Energy (2021), p. 1022, https://www.nature.com/articles/s41560-021-00915-5.
[34] *Id.,* at 1017-25.
[35] Federico Zenith et al*., Techno-economic Analysis of Freight Railway Electrification by Overhead Line, Hydrogen, and Batteries: Case Studies in Norway and USA,* Journal of Rail and Rapid Transit (July 7, 2019), p. 798, https://journals.sagepub.com/doi/pdf/10.1177/0954409719867495.

V. Conclusion

In conclusion, we urge Metro to uphold its commitment to the equity principles it has developed through this process. The community needs to be co-designers of solutions in this investment plan. Blanket endorsement of unproven and potentially dangerous hydrogen applications risks causing even greater harm to impacted communities. Community groups should not be shut out of this process at the eleventh hour by having Metro arbitrarily endorse unproven and potentially dangerous hydrogen applications along the corridor.

We have gathered a list of projects with a potential hydrogen invesment to illustrate these points in Attachment A. Thank you for your attention to this matter and we look forward to further engagement.

Sincerely,



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Attachment A - List of Projects with Potential Hydrogen Investments

Project Name	Project ID	Project Description	Potential Hydrogen-related Concerns
Long Beach-East Los Angeles Corridor Clean Truck Program	4	The objective of this program is to turn over diesel trucks in favor of zero emissions trucks in the LB-ELA Corridor. The program would contribute subsidy funding to deploy a number of zero emissions trucks on I-710 as well as seed funding to develop electric charging/refueling stations for zero emissions trucks.	Truck charging infrastructure should be the focus of the infrastructure investments. Hydrogen fueling infrastructure should not be funded through this program.
Clean Truck Infrastructure	23	Install charging infrastructure for zero emissions trucks.	While hydrogen is not currently part of this project description, “zero emission trucks” should be clearly defined as battery-electric. This project should remain limited to charging infrastructure, not hydrogen fueling infrastructure.
Metrolink Regional Rail Line between Union Station and Long Beach	219	Construct a new Metrolink regional rail line between Union Station and downtown Long Beach. Trains would be powered using electrical multiple unit (EMU) traction motors, which are anticipated to be required by the California Air Resources Board after 2030. Specific EMU technology has yet to be determined, but could be powered by overhead catenary, hydrogen fuel cell, or catenary/battery electric.	Catenary or catenary/battery electric should be the technology implemented as part of this project.

Freight Rail Electrification Pilot Project	217	Work with the Union Pacific (UP) and BNSF railroads to develop and test battery-electric locomotives for operation on the Pacific Harbor Line and in the Alameda Corridor with an ultimate goal of advancing a zero-emissions technology capable of entering commercial, revenue service operation.	While hydrogen is not currently part of this project description, it was suggested at the December 11, 2023 Task Force meeting that this project include hydrogen-fueled locomotives. This project should be limited to battery-electric operations as originally proposed.

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February 19, 2024

Re: Metro's Approach to Hydrogen as an Alternative Fuel to achieve Zero Emissions (ZE)

Thank you for meeting with us on February 5, 2024, to discuss your comprehensive letter expressing concern that Metro, through the Long Beach-East Los Angeles (LB-ELA) Corridor Mobility Investment Plan (Plan), might provide a blanket endorsement of hydrogen projects to be funded through the Plan. I understand, acknowledge, and appreciate your concerns raised in the letter about potential impacts on public health, emissions generated during the production of hydrogen, safety concerns during the transportation of hydrogen fuel, and potential leakage during the transportation and dispensing of the fuel.

We recognize that California's Advanced Clean Fleets Rule 2035 ZE drayage truck mandate is focused on tailpipe emissions and not the entire generation, transmission, and end use of the energy used by a ZE heavy-duty truck. We also recognize the differing maturity levels of the leading ZE technologies – battery-electric and hydrogen fuel cell – that are the focus of state and federal agencies in achieving ZE heavy-duty truck outcomes. These efforts have led to investment in both types of technologies by the state and federal governments in recent years, notably the recent Regional Clean Hydrogen Hub (H2Hubs) award of up to $1.2 billion for a California application submitted by the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) that will likely focus investment at the San Pedro Bay Ports.

I appreciated our mutual understanding that with these types of investments being made with full support of the state and federal governments to meet ZE regulatory mandates, we need to focus on ways to minimize impacts on and provide education for local communities, consider the potential externalities associated with planning for and implementing hydrogen fuel (and battery electric) technology deployed in the LB-ELA Corridor, and ensure that the ZE technology investments made through the LB-ELA CMIP are aligned with the Vision, Goals, and Guiding Principles of the plan.

Given the Board's direction to advance ZE truck technology adoption in the LB-ELA Corridor, the looming regulatory ZET deadlines, and the understanding that heavy-duty trucks that would use Metro-funded infrastructure are owned and operated by people and businesses other than Metro, we cannot prematurely eliminate any viable ZET technology options at this stage. However, we do understand that Metro can play a valuable role as a community advocate in the ZET policy discussion to ensure that we are informing our communities and policymakers about these technologies, supporting research, and identifying ways to support ZET adoption in ways that maximize benefits and reduce impacts for our LB-ELA Corridor communities.

Metro supports and honors your collective steadfast support for LB-ELA communities and your request to provide educational opportunities for community members and the ZET Working Group to identify and address areas of community concern (as presented in your letter), share facts, and research findings on the current state of hydrogen. As a starting point, I will work with my team to assemble an expert panel discussion, followed by a symposium and community education events, to elevate our ZET Working Group's understanding of the state of hydrogen. My team and I will seek your input and guidance in shaping the content for the discussions and development of community education events.

I thank Ambar for sharing her examples of educational outreach. We are reviewing those for possible use in our program. We are also reviewing your recommendations for other ZE investments to be made in the LB-ELA CMIP. I look forward to our continued collaboration as we strive to reach a ZE future that works for and benefits LB-ELA communities and stakeholders.

With great appreciation,

Michael Cano
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