



# Zero Emission Bus (ZEB) Program Update



Metro®

April 25, 2024

# ZEB Environmental Benefits



- LA Metro is committed to reducing regional carbon pollution and using clean fuel sources to power our bus fleet.
- While Metro's bus fleet contributes only 0.2% of LA County transport emissions, transitioning to ZEB is an impactful strategy for reducing emissions, especially as local utilities also transition to a carbon-free grid power.
- 45 ZEB buses are in service. Remaining buses use renewable natural gas (RNG), equipped with ultra-low NOx engines, which emit 90% less NOx than that allowed by EPA emissions standards.
- While Metro faces significant cost and service-related challenges as we transition the fleet, staff recognizes the urgency of improving air quality and reducing carbon emissions and remains committed to being a local and national leader in zero emission technology.



## GHG Reduction by Vehicle Replacement (BEB)

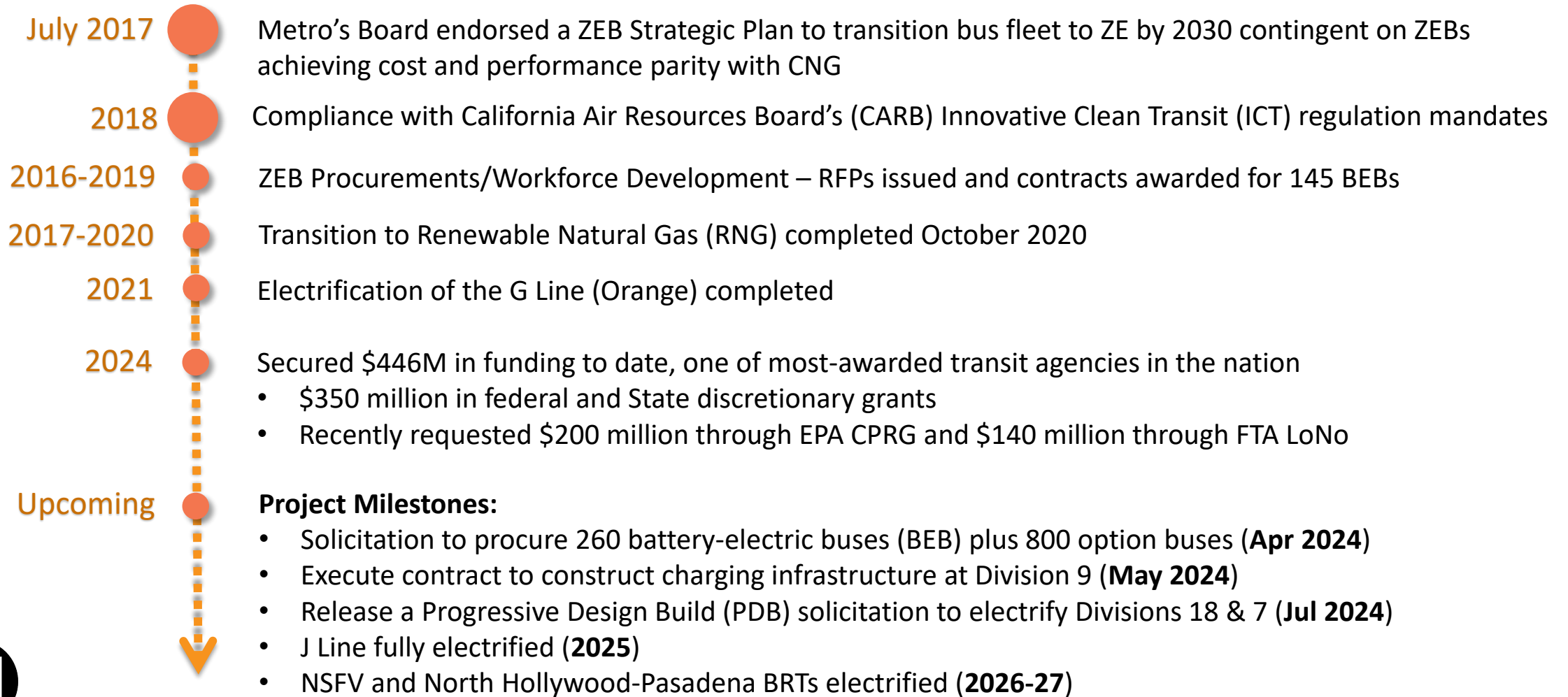
Annual reduction per bus **75** metric ton CO<sub>2</sub>e

Total bus fleet reduction\* **152,325** metric ton CO<sub>2</sub>e

Per mile reduction\* **1.26** pounds CO<sub>2</sub>e

Future economic damages that can be avoided by reducing GHG emissions per year\*\* **\$9.6M**

# Progress Made to Date



# Metro's ZEB Program Leadership



- Vice Chair APTA Bus Technical Maintenance Committee since 2019
- Board Member California Transit Training Consortium (CTTC), a leading provider of technical training to the transit industry
- Active member UITP Working Groups and Bus Committee, worldwide association of public transport stakeholders (*hosted committee in April 2024*)
- CEO participated in the White House Roundtable on Clean Bus Manufacturing in January 2024
- Founding member and Vice President of Advanced Transit Vehicle Consortium (ATVC) Ad Hoc Committee of local agencies exploring alternative fuels
- Evaluation of alternative delivery options (Charging-as-a-Service) and market soundings (2021 - 2023)
- Developing a regional procurement approach for ZEB purchases that includes municipal operators (November 2023 – present)



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# Acknowledging Challenges



## BEB Performance

- Range
- Reliability
- Maintainability
- Operability
- Obsolescence

## Utility, Infrastructure, & Supply Chain

- Long lead time for grid upgrades
- Grid capacity
- Market availability

## Costs

- ZEB continues to cost more to purchase than CNG buses
- Charging infrastructure costs are significant
- Operating costs of BEBs have been high with initial deployments.
- The 2030 target requires an estimated \$675 million in annual cash flow.

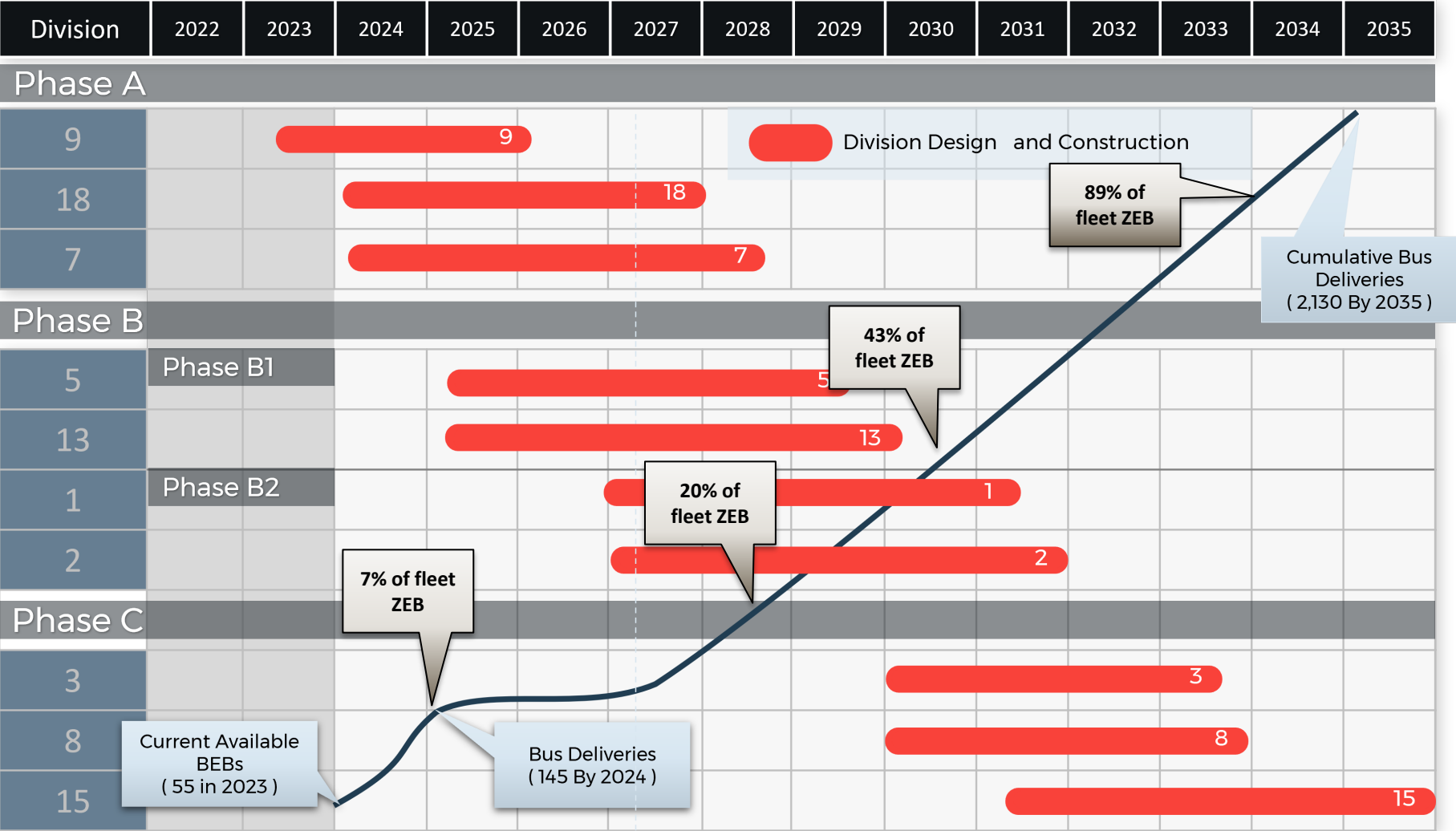
## Maintaining Reliable Service

- Ensure reliable operation of Metro's 7 million annual revenue service hours
- ZEB technology must prove reliable and able to support the majority of bus routes
- Phase Division construction to avoid impacts to storage, maintenance, and operation of 2,000+ bus fleet

## U.S. Bus Market

- Two Buy America compliant OEMs remain (three exited market past 12 months)
- Historically, one of the remaining OEMs does not participate in large solicitations

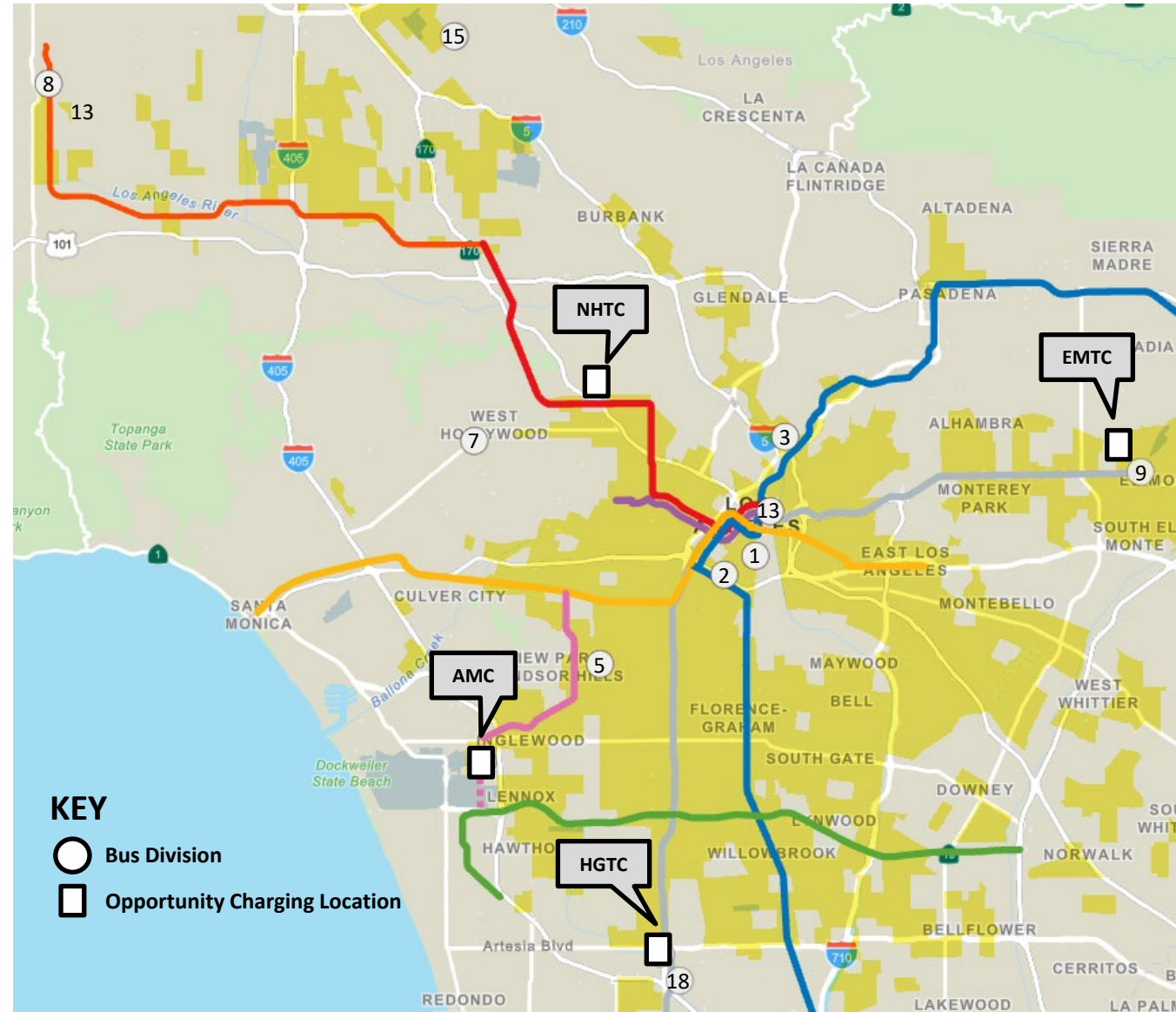
# Revised ZEB Program Phasing Schedule





## Current Status – Phase A Equity Lens

- Prioritizing the **J Line** will bring environmental benefits to some of the region's most densely populated, congested, and polluted communities, many of which are EFCs
- **Division 9** is located within an EFC and CalEnviroScreen DAC. 59% of communities served are designated DACs.
- **Division 18** is located within a DAC. 70% of communities served are designated DACs.
- **Division 7** - 52% of communities served are designated DACs.



THANK YOU

