



# 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



- July 2017** ● Metro’s Board endorsed a ZEB Strategic Plan to transition bus fleet to ZE by 2030 contingent on ZEBs achieving cost and performance parity with CNG
- 2018** ● Compliance with California Air Resources Board’s (CARB) Innovative Clean Transit (ICT) regulation mandates
- 2016-2019** ● ZEB Procurements/Workforce Development – RFPs issued and contracts awarded for 145 BEBs
- 2017-2020** ● Transition to Renewable Natural Gas (RNG) completed October 2020
- 2021** ● Electrification of the G Line (Orange) completed
- 2024** ● Secured \$446M in funding to date, one of most-awarded transit agencies in the nation
  - \$350 million in federal and State discretionary grants
  - Recently requested \$200 million through EPA CPRG and \$140 million through FTA LoNo
- Upcoming** ● **Project Milestones:**
  - Solicitation to procure 260 battery-electric buses (BEB) plus 800 option buses (**Apr 2024**)
  - Execute contract to construct charging infrastructure at Division 9 (**May 2024**)
  - Release a Progressive Design Build (PDB) solicitation to electrify Divisions 18 & 7 (**Jul 2024**)
  - J Line fully electrified (**2025**)
  - NSFV and North Hollywood-Pasadena BRTs electrified (**2026-27**)



# 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.

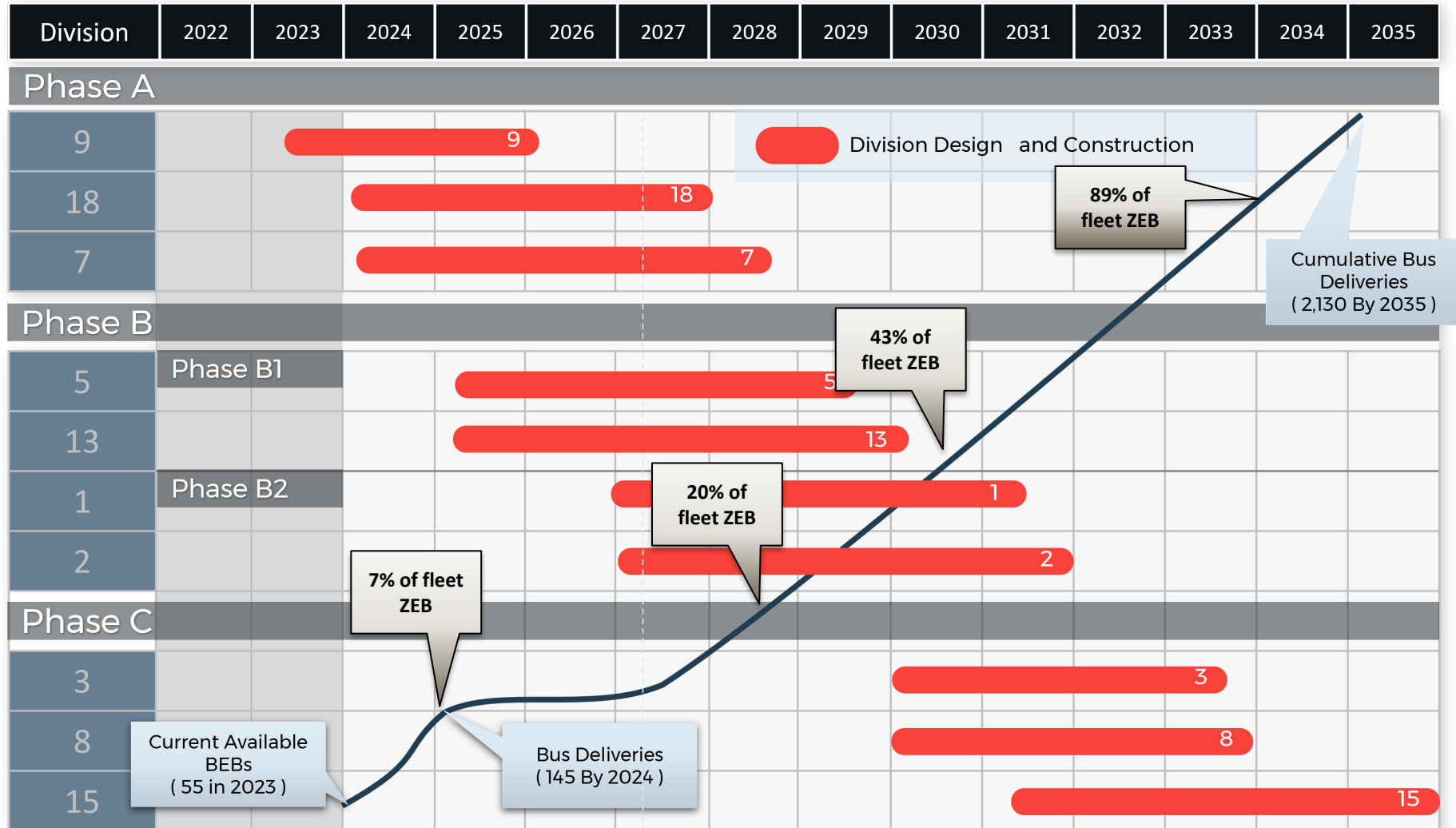
## Maintaining Reliable Service

- 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

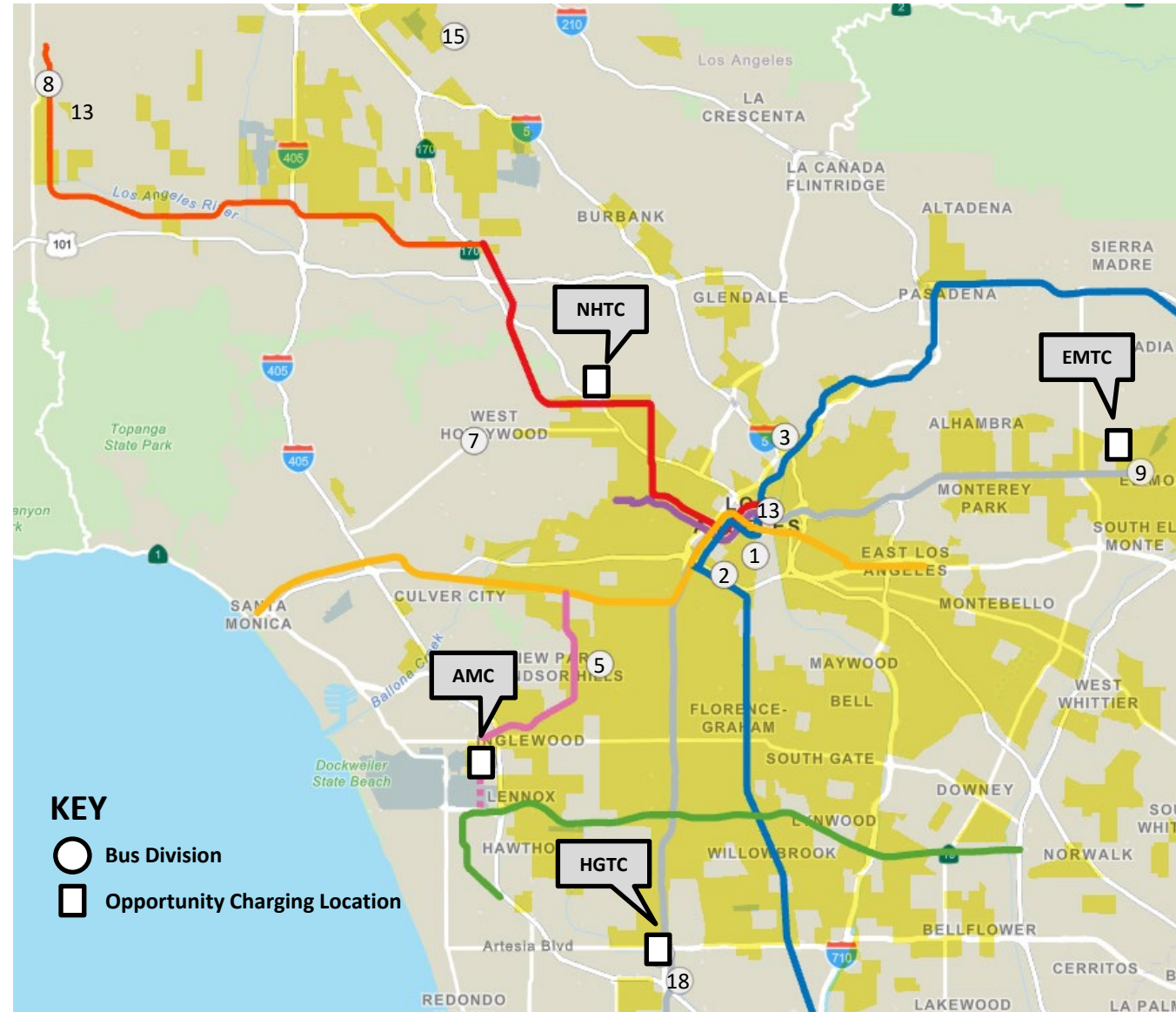
# Revised ZEB Program Phasing Schedule



# 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

