



Board Report

File #: 2025-0436, **File Type:** Informational Report

Agenda Number: 51.

OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE JULY 16, 2026

SUBJECT: ZERO EMISSION BUS (ZEB) PROGRAM UPDATE

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE status update on the ZEB Program.

ISSUE

This report provides a status update on the ZEB transition plan, including bus acquisition, division electrification, and upcoming program activities.

BACKGROUND

In July 2017, the Board approved Motion 50 by Directors Bonin, Garcetti, Najarian, Hahn, and Solis (Attachment A), which endorsed a ZEB Strategic Plan to transition Metro's entire bus fleet to zero-emission by 2030. This was contingent upon cost and performance equivalence with Compressed Natural Gas (CNG) buses, as well as continued advancements in charging infrastructure. In 2018, the California Air Resources Board (CARB)'s Innovative Clean Transit (ICT) regulation mandated that all transit agencies in the state operate zero-emission fleets by 2040. In addition, ICT ZEB purchase requirements for large transit agencies require 25% of bus purchases to be zero emission by 2023, 50% by 2026, and 100% by 2029.

Metro has met all state-mandated program requirements. Furthermore, since October 2020, Metro has powered its bus fleet with 100% Renewable Natural Gas. Since the Board endorsed the ZEB Strategic Plan, staff prepared a ZEB Master Plan in 2022 and a Master Plan Update in 2023. In September 2024, staff prepared a more detailed plan to deliver a 100% ZEB fleet no later than 2035. This ensures Metro's ability to continue providing reliable bus service, including availability of operations and maintenance funding to support the full seven million annualized revenue service hours as planned through the NextGen Bus Plan.

In 2021, Metro electrified the G Line, which has accumulated more than six million miles of zero-emission service to date. In 2025, Metro installed all charging infrastructure to electrify the J Line. Electrification of Division 9 (El Monte) will be complete in late 2026, and design is underway for Divisions 18 (Carson) and 7 (West Hollywood).

In December 2025, Metro electrified the J Line. However, in January 2026, a mechanical problem with the BYD buses caused a pause in battery electric bus (BEB) service. Staff worked with BYD to determine the cause of the issue. Repairs are in progress, and BEBs are returning to the J Line.

Key developments from the last ZEB Program update include:

- Metro closed the response period for its 220 BEB solicitation, with the contract award pending Board approval.
- Metro launched and completed an extended range BEB pilot with Ebusco.
- Division electrification projects at Divisions 9, 18, and 7 continue to progress.
- Installation of the 8 replacement on-route chargers on the G Line is complete.

DISCUSSION

Current ZEB Fleet and Incoming Deliveries

Metro currently owns 140 ZEBs (representing 6.46% of the total bus fleet). An additional 9 BYD K9MD model buses are in production and will be delivered in 2026.

Metro will receive a transfer of 19 New Flyer battery-electric buses (BEBs), ranging in age from 3 to 4 years, from Lane Transit District in FY27, pending final regulatory approvals.

New Bus Acquisitions

In December 2025, Metro released two Requests for Proposals (RFPs), one for 220 BEBs, and another for 20 BEBs, for a total base buy of 240 BEBs, including options for up to 1,600 additional buses. The first contract for 220 BEB .

Metro is leveraging the Washington State Department of Enterprise Services contract to procure up to 40 BEBs targeting delivery to begin by the end of FY27.

Extended Range BEB Pilot

In April 2026, Metro launched a 6-week pilot of a 40-foot BEB manufactured by Netherlands-based Ebusco. With its lightweight body, the Ebusco bus advertises high battery energy efficiency and a range exceeding 300 miles on a single charge. The bus operated in shadow service in downtown Los Angeles and the San Fernando Valley to ensure operational compatibility with Metro's service. The Ebusco BEB showed substantially improved energy efficiency, being 2.2 to 3.3 times more efficient than existing Metro BEBs, and it has an estimated range of over 300 miles per charge, exceeding the current BEB fleet's range by more than 100 miles.

Division Electrification

Metro's bus fleet operates out of ten directly-operated and two contract-operated bus divisions. Metro's current plan to electrify its fleet anticipates electrification of all bus divisions no later than 2035. Since the last program update, staff have re-evaluated the division electrification schedule and re-sequenced the order. Staff evaluated several key considerations including fleet composition, block distance, demand load, utility capacity, site constraints, impact to operations, cost, and other factors.

The evaluation identified structural, operational, and utility capacity constraints at Divisions 5 and 13, which would likely impact the program delivery schedule. Therefore, Divisions 2 and 3, which represent the better options for division electrification, were moved up in the sequence to follow Divisions 9, 18, and 7, which will be the first three divisions to be electrified. No changes have been made to the 2035 timeline for program delivery. Staff will continue to evaluate the division electrification sequence at key program milestones and make adjustments as necessary to support achievement of schedule goals.

While staff have made adjustments to the sequence, it is important to note that funds for Division 2 electrification and the subsequent divisions have not yet been identified. While staff continue to advance an aggressive grant strategy for the ZEB program funding, a lack of funding represents a schedule risk for program delivery. In the event of a funding shortfall for full electrification of Division 2, the project could be scaled to available funding. Staff will continue to seek grant opportunities available to the project.

Division 9 civil construction was completed in February 2026, and the gantry structure was handed over for installation and commissioning of the four depot pantograph charging clusters. Pantographs have been mounted. Connecting hardware installation and wire pulling is in progress. Installation and commissioning will continue through Fall 2026, with the first charging cluster commissioned by this Summer.

Preconstruction Phase I of the Division 18 and 7 Progressive Design Build Operate and Maintain (PDBOM) contract is underway. Phase I consists of design, constructability review, site investigations, risk assessment, and schedule and phasing development. The project will construct charging infrastructure to power more than 400 BEBs between the two divisions.

En Route Charging Projects

Several stations across Metro's bus network have been identified as candidates to install en route charging to support BEBs that operate on lines with long bus blocks that cannot be completed without additional charging time during the work day. These lines include the North San Fernando Valley Transit Improvements Project, North Hollywood to Pasadena BRT, G Line, and J Line.

Metro has issued consultant task orders to prepare 100% design packages for the en route charging sites that will support the North Hollywood to Pasadena BRT and North San Fernando Valley Transit Improvements Project. The sites include North Hollywood Transit Center, Universal/Studio City Station, and Divisions 8 and 15. Charging equipment has been procured, utility service requests have been submitted, and staff aim to construct these sites no later than 2028.

All replacement opportunity chargers on the G Line have been commissioned and are in use to support G Line BEBs.

EQUITY PLATFORM

The purpose of this report is to provide a program-level status update; project-specific equity impacts are discussed in detail in their respective project reports. Divisions 9 is located within Equity Focus Community (EFC). Because residents of EFCs may have a higher reliance on bus transit, delays to

the electrification schedule could disproportionately impact EFCs by delaying air quality improvements through emissions reductions. However, despite these risks, the division electrification schedule and achievement of related air quality improvements currently remain on track.

VEHICLE MILES TRAVELED OUTCOME

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

As part of these ongoing efforts, this item is expected to contribute to further reductions in VMT. This item supports Metro's systemwide strategy to reduce VMT through operational activities that will maintain and encourage transit ridership. Metro's transition to a ZEB fleet will enhance the customer experience with vehicles that are quiet and use zero-emission technology. Metro's Board-approved VMT reduction targets were designed to build on the success of existing investments, and this item aligns with those objectives.

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

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The report supports Goal #3 to enhance communities and lives through mobility and access to opportunity and Goal #4 to transform LA County through regional collaboration and national leadership.

NEXT STEPS

Staff will continue to deliver on the charging infrastructure projects at Divisions 9, 18, and 7. Staff will also continue evaluating proposals to the bus procurements and will return to the Board this summer with recommendations for award.

ATTACHMENT

Attachment A - Board Motion 50

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A handwritten signature in black ink, appearing to read 'Step Wiggins', written over a horizontal line.

Stephanie Wiggins
Chief Executive Officer



Metro

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Metropolitan Transportation
Authority
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Los Angeles, CA

Board Report

File #: 2017-0524, File Type: Motion / Motion Response

Agenda Number: 50

**REVISED
REGULAR BOARD MEETING
JULY 27, 2017**

Motion by:

**DIRECTORS BONIN, GARCETTI, NAJARIAN, HAHN and SOLIS
AS AMENDED BY SOLIS, KUEHL and BARGER**

FRIENDLY AMENDMENT BY FASANA

July 27, 2017

Strategic Plan for Metro's Transition to Zero Emission Buses

LA Metro has developed a comprehensive plan to deliver a complete transition to zero emission electric buses by 2030. The transition plan is contingent on two primary factors: continuous advancements in electric bus technology (which must increase range, reduce bus weights, reduce charging times, extend battery life cycles), as well as a drop in prices as the technology develops.

As electric bus technology continues to advance, our electric grid is becoming cleaner by gradually eliminating coal from our energy portfolio and replacing it with renewable sources. A full transition to electric buses coupled with renewable energy sources promises mobility with significantly lower environmental impacts from this form of transportation.

In order to maintain our bus fleet in a state of good repair, Metro plans to continue replacing its aging bus fleet at approximately 200 buses per year. With firm local hiring requirements in Metro bus procurement, routine bus procurement presents a recurring opportunity that bolsters our local labor force in perpetuity.

In 2012, Metro's U.S. Employment Plan resulted in the award of an \$890 million contract to Kinkisharyo, a factory in Los Angeles County, and 404 quality railcar manufacturing jobs. Similarly, Metro can leverage recurring bus replacements to bolster labor throughout Los Angeles County

Metro plans to spend nearly one billion dollars on bus procurements in the next ten years. That level of investment, coupled with a transition to all electric buses, presents an opportunity for LA County to demonstrate leadership on combating climate change, and can make Los Angeles the central marketplace for new electric bus technology: a County rich with quality manufacturing jobs rooted in technologies that provide mobility, sustain a healthy environment and create career paths in clean

energy technologies.

**SUBJECT: MOTION BY BONIN, GARCETTI, NAJARIAN, HAHN
AND SOLIS AS AMENDED BY SOLIS, KUEHL AND
BARGER**

RECOMMENDATION

WE THEREFORE MOVE that the Board:

- A. ENDORSE the Strategic Plan for Metro's Transition to Zero Emission Buses;
- B. DIRECT the CEO to create a zero emission bus infrastructure working group comprised of Metro staff, federal and state regulators and local utility companies to track market availability and to cultivate ongoing collaboration among stakeholders. The working group will monitor market rates for emerging zero emission bus technology to support Metro's 2030 transition plan:
 - 1. Working group to report to the Board annually with the latest technology innovations to support the cost/benefit analysis of fleet conversion
 - 2. MTA to host an industry forum to solicit innovative solutions to delivering the 2030 plan;
- C. AMEND the Metro federal legislative plan to advocate for local jobs as a critical factor in the evaluation criteria of MTA procurements; and
- D. DEVELOP an equity threshold consistent with Title VI regulations for priority deployment of electric buses in underserved communities.

FURTHER MOVE that the Board direct staff to:

- A. As part of establishing a working group:
 - 1. EXPAND the invitation to regional air quality regulators (e.g. South Coast Air Quality Management District), the American Public Transportation Association and California Transit;
 - 2. EXAMINE and TRACK vehicle technology and performance, energy production and pricing, infrastructure needs and life-cycle analysis and creative funding opportunities.
- B. COORDINATE with the County of Los Angeles to explore opportunities to develop a countywide incentive structure to promote and attract more companies to manufacture, assemble and produce zero-emission transit vehicles and related technologies and infrastructure in Los Angeles County;
- C. Widely PROMOTE and ENCOURAGE municipal transit agencies/operators to participate in the established process by which to co-procure ("piggyback procurement" provisions) zero-

emission transit vehicles;

- D. ENSURE that MTA maintains the flexibility to explore the best available technologies that contributes to zero-emissions and/or net-negative emissions in the Los Angeles County public transit sector.

FRIENDLY AMENDMENT BY FASANA that staff report back to the board with a timeline and any commitments by parties before we undertake our next bus purchase and answers to the following questions:

- A. Will electric buses and their batteries deliver the guaranteed range and service?
- B. Can municipal and electric utilities timely invest in the grid in order to power electric buses?
- C. Which strategies will maximize Metro's ability to receive cap and trade credits?
- D. How and when can charging infrastructure be deployed at our bus divisions? More importantly, how will such infrastructure be paid for?
- E. Why is Metro's role critical for the adoption of low NOX engines in the trucking industry? What assurances do we have that this will take place when Metro has operated cleaner engines since the 1990s without adoption of these technologies by the trucking industry?
- F. What are the resiliency impacts to our service if electricity or natural gas service is disrupted? What is our back-up plan?
- G. Metro can intervene in regulatory proceedings at the California Public Utilities Commission for investor owned utilities regarding transportation electrification and equivalent natural gas proceedings as appropriate. Metro needs to assess the current regulatory schedule for such proceedings, develop advocacy position, and indicate that our adoption of electrification may be affected if electric transportation infrastructure is funded by shareholders, recovered through rates, and implemented on a timely basis.
- H. Conversely, how will Metro undertake the capital investments directly? Foothill Transit has intervened in the active proceeding. Antelope Valley and other providers are engaged. Metro needs to be more actively engaged and needs to report back to our Board on what is at stake. In SCE's service area, demand charges make the operating costs of electric buses more costly than natural gas vehicles. Are we working to influence changes to the rate schedules?
- I. Can RNG be adopted without direct Metro involvement by substituting RNG for natural gas purchased out of state? We should participate in any state framework that could create linkages between Metro's adoption of RNG and RNG implementation by the trucking industry.



Zero Emission Bus (ZEB) Program Quarterly Update

VEHICLE ENGINEERING & ACQUISITION

Operations, Safety, and Customer Experience Committee
July 16, 2026

Charging Infrastructure Project Updates



Division 9 & El Monte Transit Center

- EMTC and bus yard opportunity chargers are complete and supporting J Line.
- Civil construction complete. Charger installation and commissioning will be completed in phases through the fall.

Division 18 & 7

- Charging concept development and design in process.

Opportunity Charging Sites (Countywide)

- Civil design in process for North Hollywood Transit Center, North San Fernando Valley Transit Improvements Project sites, and sites supporting Division 9 buses.

J Line Electrification

- J Line soft launch on December 14, 2025.
- The mechanical issue that paused BEB service has been identified. Repairs are in progress, with buses returning to service as they are completed.
- Line currently averaging 65% electric service daily.

G Line Charger Replacements

- All 8 charger replacements completed and commissioned



Photo: G Line North Hollywood Station



Photo: Division 9 Depot Chargers



Metro

Status of Division Electrification (First Five Divisions)



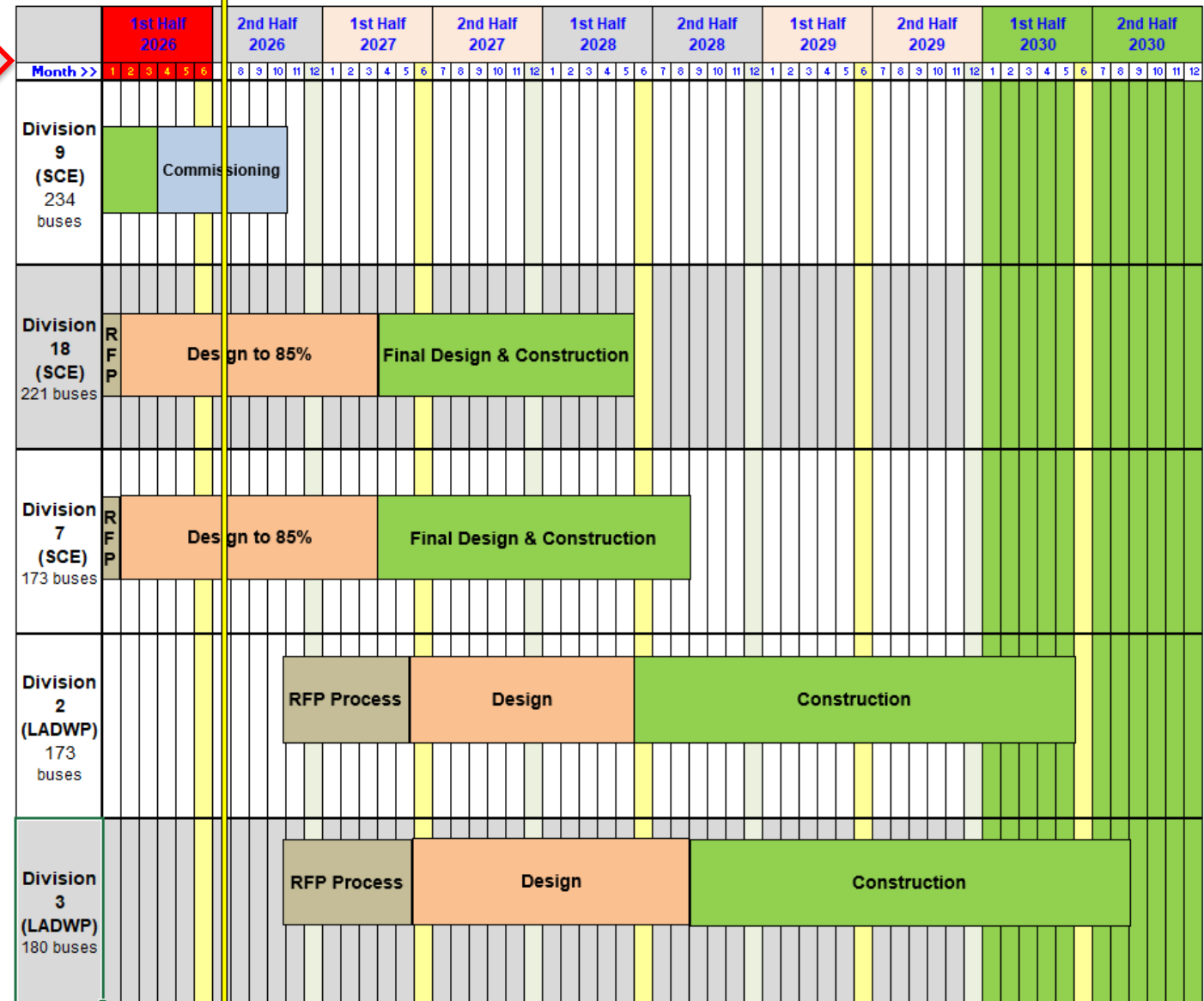
Electrification schedule for first five divisions

Staff adjusted the division sequence, moving Divisions 2 & 3 ahead of Division 5.

Staff evaluated divisions by fleet composition, block distance, demand load, utility capacity constraints, impact to operations, cost, and other factors.

The sequence will be re-evaluated at key program milestones.

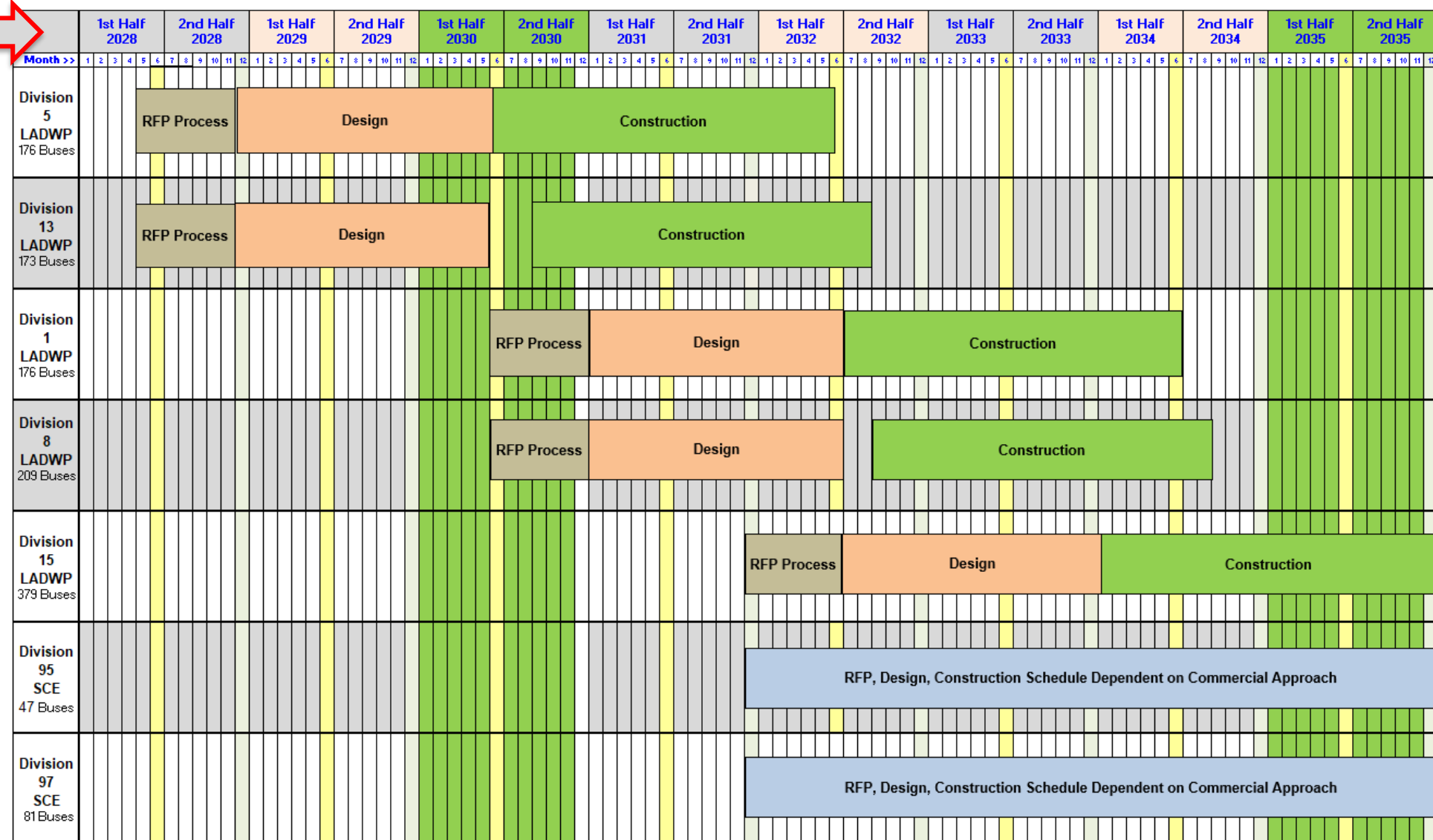
Funding for Division 2 and subsequent divisions remains to be identified.



Division Electrification (Latter Five and Contract Service Divisions)



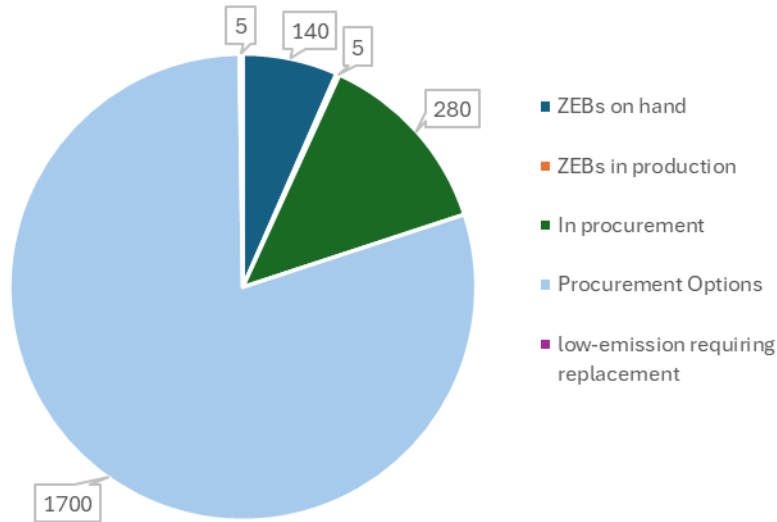
**Electrification
schedule for
latter five
directly-
operated and
two contract
service divisions**



Status of Bus Acquisition



Status of ZEB Fleet Transition



*Assumes future fleet size of 2,130 buses
Data as of 6/16/26



Bus Procurement

- New RFPs for 240 BEBs with options up to 1,600 released on December 22, 2025
 - Reduced prescriptive requirements
 - Focus on safety and proposers' ability to align with Metro's schedule
- State contract
 - Up to 40 BEBs
 - In the process of negotiating with OEMs to complete award

BYD Bus Deliveries

- 90 of 95 K9MD buses have been delivered
- BYD is currently 5 buses behind schedule
 - Liquidated damages (LDs) for delayed buses, buses out of service over 30 days and manuals
- Root cause of recent mechanical issues identified and repairs in process

Ebusco Pilot Results



Ebusco 3.0 40' BEB

6-week pilot conducted to evaluate long range European-manufactured BEB viability in LA Metro operating conditions.

Outcome

- Ebusco 3.0 demonstrated significantly better energy economy at 1.44 kWh/mile (2.2 to 3.3 times more efficient than Metro BEBs)
- Estimated range on a single charge is between 300 and 320 miles
- 41% regenerative braking recovery rate
- The feedback from operators was positive, particularly regarding ride quality, acceleration, and maneuverability.
- Challenges include time-consuming manual ride height adjustments and rear clearance issues due to the bus design.



Photo: Ebusco pilot bus

Continuing Activities



Upcoming project activities

- Finalize procurement processes for award of contracts for BEBs.
- Continue commissioning of Division 9 depot chargers.
- Continue concept development and design of Divisions 18 and 7 depot electrification projects.
- Pursuing aggressive grant strategy for Division charging infrastructure and buses.



Photo: BYD K9MD bus at Harbor Gateway Transit Center

THANK YOU

