



Board Report

File #: 2021-0588, File Type: Motion / Motion Response

Agenda Number: 25.

OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE JANUARY 20, 2022

SUBJECT: STATUS UPDATE OF MOTION 40: ELECTRIFICATION OF THE J (SILVER) LINE AND METRO'S FLEET

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE response to Motion 40: Electrification of the J (Silver) Line and Metro's Fleet.

ISSUE

At the November 18, 2020 Planning & Programming committee meeting, Metro Board Directors Hahn, Garcetti, Solis Butts and Bonin introduced Motion 40 directing the CEO to:

- A. Meet with the County of Los Angeles, City of Los Angeles, the Ports of Long Beach and Los Angeles, and neighboring transit agencies to discuss the potential private property, joint-use, and public right of way opportunities for charging stations that could serve the Harbor Area, beginning with the Silver Line
- B. Provide recommendations on how to fully electrify the Silver Line in the Zero Emission Bus Implementation Master Plan due before the Board in Spring of 2021
- C. Continue Silver Line service to San Pedro until the Board discusses and chooses a recommendation on how to move forward

BACKGROUND

Metro's Zero Emission Bus Program continues to progress the goal of systemwide electrification in line with the March 2021 ZEB Rollout plan and Board directives. As part of the Program, it is staff's intent to fully electrify the entire J Line service from its northeastern terminus at the El Monte Transit Center to its southern terminus in San Pedro as expeditiously as possible in the most fiscally and technically responsible manner. To that end, staff has pursued state and federal funding applications with a focus on the J Line to enact the first phases of systemwide electrification.

From the onset, staff has been aware of the challenges with introducing a Battery Electric Bus (BEB) with limited range into our service environment. Given the range and performance challenges coupled with the absence of empirical data, staff proposed BEB services be transitioned to the BRT

segments of the bus system starting with the G (Orange) Line and thereafter the J (Silver) Line.

The J Line was first implemented in December 2009, providing service between Harbor Gateway Transit Center (HGTC) and El Monte Station via downtown LA. In December 2015, specific trips were extended to provide a one seat ride every 20-30 minutes between San Pedro and downtown LA. The NextGen Bus Plan, approved in October 2020, proposed to terminate all J Line service at HGTC to improve service reliability. A new Line 450 would be implemented between San Pedro and downtown LA during the weekday peak hours with the service operating between San Pedro and HGTC during off-peak periods and weekends. While approved, this service change may not be implemented or may be modified, contingent on the resolution of the ZEB roll-out strategy for J Line.

Metro staff is committed to converting the J Line to a cleaner and quieter electrified bus service for the benefits of the ridership along the alignment. Lessons learned from the G Line would be applied to the J Line service plan to minimize service risks and reduce negative patron impacts. Ultimately, the plan for the J Line is to provide BEB services from El Monte to San Pedro. This transition will be executed in strategic phases to ensure similar implementation successes as the G line and will accomplish this task with to minimize risk to operations and impacts to patrons. The initial phase would electrify the trips operating between HGTC and El Monte Station. Thereafter, staff will provide electrified service between San Pedro and downtown LA as charging infrastructure is added and/or as bus range improvements are realized. With assistance from the Office of Supervisor Hahn, staff has been proactive in its outreach to identify potential partners for charging infrastructure installation (s) in the southern terminus of the J Line.

In parallel, Metro staff continues to pursue all available funding sources, including a recent application submitted in November 19, 2021 for Federal grant support under Section 5307 Bus and Bus Facilities grant.

DISCUSSION

Operations is tasked with providing an efficient and fiscally responsible level of service. To that end, buses with greater range capabilities optimize the efficiency of labor and equipment for service scheduling. Currently CNG buses provide services along the 38.8 mile one way trip between the El Monte Station and San Pedro. On average, CNG buses have a range of 300-320 miles. This compares against BEBs which can provide approximately 155 miles of range on a single charge with 20% charge remaining in reserve. Ideally, a 30% reserve will permit the bus to reliably return to the depot. Range limitations of 40' foot BEBs prevent staff from assigning one seat electrified service from El Monte to San Pedro. Therefore, based on current BEB range capabilities, electrified service will need to terminate at HGTC. There are other options to electrify service to San Pedro:

- 1) Implement the NextGen Bus Plan proposal and electrify Line 246, providing service between San Pedro and HGTC. This proposal does not provide a one seat ride between San Pedro and downtown LA as in the current service plan.
- 2) Implement the NextGen Bus Plan proposal and identify charging opportunities in San Pedro, downtown LA, and/or en-route. Electrify new Line 450, providing a one seat ride service

between San Pedro and downtown LA during weekday peak hours and between San Pedro and HGTC during off-peak periods.

- 3) No change to current J Line service which provides a one seat ride between San Pedro and downtown LA all day and on weekends, and electrify these trips once manufacturers increase battery capacity and range capability on the BEBs.

Motion 40 item A requested Metro staff meet with parties for potential charging installation opportunities. To address item A, Metro staff revisited its strategic plan to identify opportunity locations for charging infrastructure installations to support the southernmost San Pedro portion of the J Line. Guiding principles to identify charging infrastructure locations were applied and are presented as follows:

- 1) Metro owned and managed properties and facilities to ensure continued ownership and access to charging equipment; including sites in the ownership and control of public/governmental entities which agree to continuous access by Metro
- 2) Proximity to layover locations on service routes to preclude added dead-heading and associated inefficient operating costs.
- 3) Restricted access to Metro BEB vehicles and other transit carriers for which cost and use agreements are in place with Metro.

In early summer, Metro coordinated with LADOT staff to identify if joint installation opportunities were possible. Reviewing service routes and applying these principles yielded two potential LADOT owned park and ride locations in San Pedro for consideration. The meeting agenda included discussions on other potential locations beyond the identified sites. Due to differences in planned bus types, charging interfaces, and minimal route commonalities, it was found that LADOT and Metro interests did not intersect for San Pedro installations to support J Line electrification at this time.

Late September 2021, Metro staff prepared an information package and reached out to the entities below. Metro staff will continue to follow up with the respondents who have responded or expressed potential interest.

Ln	Agency	Status as of Nov 03, 2021
1	Gtrans	Committed to depot charging for the foreseeable future
2	LA Cleantech Incubator	Will assist in coordination and advocacy optys in utility / facility works
3	LADOT	No Interest. LADOT policy is to pursue overnight depot charging only
4	Long Beach Transit	Interested in participating in further assessments and planning
5	Palos Verdes Transit	Under review. Potential interest for route 225 terminating at Pacific / 7th.
6	Port of Long Beach	Interested to coordinate if optys arise, especially in joint utility work
7	Port of Los Angeles	Under review. Initial questions submitted to Metro.
8	Torrance Transit	Under review. Metro info to be shared with their BEB Team

Metro continues to pursue range extending options with battery technology. Continued outreach and coordination with other BEB transit carriers and port authorities are planned to discuss potential opportunities.

Item B requested staff provide recommendations on how to fully electrify J Line in the ZEB Implementation Plan. The following is provided.

- Full J Line electrification can be achieved by identifying a location(s) to add en-route charging or by increasing BEB range, or a combination of the two.
- Although not yet successful in identifying a viable en-route charging location(s); staff will continue looking to partner with other transit carriers and agencies.
- Evaluate and test the latest generation of longer-range BEBs from BYD to upgrade the range on the buses ordered.
- Staff requested a \$50M Life of Project (LOP) to further develop range and charging solutions along the J Line alignment to meet objectives A and B of Motion 40. This LOP request was presented as Item 44 in June 2021 under Legistar ID # 2021-0193.

By extending BEB range, the need for southern charging infrastructure can be reduced and fully electrified J Line service to San Pedro may be considered in future service plans. The extended range battery appears to be the most comprehensive solution to allow for longer distance BEB services to meet the Motion 40 objectives and meet the agency’s long-term objectives for BEB conversion. Staff will continue to evaluate and negotiate the battery capacity redesign to address longer distance service needs.

EQUITY PLATFORM

The J Line provides bus services to Equity Focused Communities (EFC’s) from El Monte Station to Downtown Los Angeles to Harbor Gateway Transit Center. The J Line runs through the 10 and 110 Freeways along a dedicated BRT lane and serves the following ridership (Fall 2019 Silver Line Rider Survey):

- 48% below \$25K household income (42.5% below poverty line)
- 68.3% had no car available

- 74% use transit 5+ days a week
- Rider Ethnicity: Latino 58.3%; Black 15.2; White 10.6%; Asian/Pacific Islander 9.8%; Other 6.1%

It is recognized that BEBs provide improved air quality and quieter services compared to current Renewable Natural Gas (RNG) bus fleet. Accordingly, BEBs stand to improve air quality, reduce noise pollution, improve overall health and quality of life aspects for affected J Line EFCs. However, RNG compared to BEB ranges are not at the point where 1 for 1 service replacement can be provided without increasing risks to the quality of service. Staff will provide options for further electrified J Line services as BEB range performance is improved and/or additional charging infrastructure installations are completed.

DETERMINATION OF SAFETY IMPACT

This item will not have an impact on safety at Metro.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

This item supports the following Strategic Goal: 1) Provide high-quality mobility options that enable people to spend less time traveling.

NEXT STEPS

Metro will continue investigating feasible and applicable solutions for BEB range improvements as well as enhancing en-route charging capabilities. In parallel, staff will continue to pursue funding sources, technology partnerships and develop solutions in battery electric technology to mimic RNG bus range. Staff will provide updates as change order(s) are negotiated and service changes are proposed to meet the intent of Motion 40 BEB service along J line.

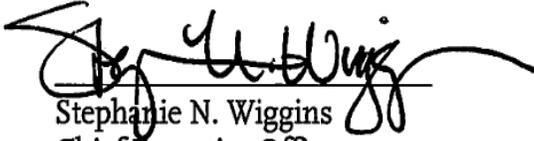
ATTACHMENTS

Attachment A - Motion 40-Dated November 18, 2020

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ATTACHMENT A



Metro

Board Report

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

File #: 2020-0781, **File Type:** Motion / Motion Response

Agenda Number: 40.

PLANNING AND PROGRAMMING COMMITTEE NOVEMBER 18, 2020

Motion by:

DIRECTORS HAHN, GARCETTI, SOLIS, BUTTS, AND BONIN

Electrification of the Silver Line and Metro's Fleet

Over the last few years, the Board has aggressively pursued many strategies that will require Metro to do their part to tackle climate change. One of them is to convert Metro's bus fleet to Zero Emission Buses by 2030, as was directed by the Board in April of 2016.

In October of 2016, the Board also directed Metro to develop an implementation plan for the electrification of the Orange Line by 2020, and to report back on the feasibility of electrifying the Silver Line. A year later in October of 2017, the Board approved a Strategic Plan for Metro's Transition to Zero Emission Buses. Metro is currently developing a Zero Emission Bus Implementation Master Plan, which anticipates replacing Metro's aging bus fleet at a rate of 200 buses per year, completing the Metro Orange Line transition to Zero Emissions by 2020, and transitioning the Silver Line by approximately 2021.

In December 2015, Metro extended the Silver Line to San Pedro via existing Harbor Freeway transitway stations south of Harbor Gateway Transit Center. This service delivered a valuable direct connection between Harbor communities and Downtown Los Angeles and provided enhanced Silver Line frequency north of Harbor Gateway.

Last month, the Board approved the NextGen Bus Plan, which would terminate the Silver Line at the Harbor Gateway Transit Center, effectively undoing the December 2015 San Pedro extension. This service change is planned to go into effect in December 2021. While there is plenty of ridership on the San Pedro segment, Metro cited operational constraints due to the lack of Metro-owned land for charging stations and battery range limitations as the reason for this future service change. Metro also disclosed that the forthcoming Zero Emission Bus Implementation Master Plan currently only considers land already owned by Metro for potential locations for charging infrastructure as a means of reducing risk. This Plan has not yet been finalized by Metro or considered by the Board.

Electrifying the transportation system will require unprecedented levels of coordination among many different government agencies. The California Air Resources Board (CARB) passed regulations

ATTACHMENT A (continued)

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requiring public agencies to transition to Zero Emission Fleets by 2040, both the Ports of Los Angeles and Long Beach have committed to build infrastructure to transition to Zero Emission Goods Movement, and our very own agency is developing a Regional Clean Truck Initiative and Clean Truck Program. These changes provide Metro with the opportunity to develop new partnerships with other agencies trying to achieve the same goals. Metro should thoroughly evaluate the feasibility of leveraging these partnerships to provide critically needed charging infrastructure before making any service changes to the Silver Line that will affect ridership.

SUBJECT: ELECTRIFICATION OF THE SILVER LINE AND METRO'S FLEET

RECOMMENDATION

APPROVE Motion by Directors Hahn, Garcetti, Solis, Butts, and Bonin that the Board direct the CEO to:

- A. Meet with the County of Los Angeles, City of Los Angeles, the Ports of Long Beach and Los Angeles, and neighboring transit agencies to discuss potential private property, joint-use, and public right of way opportunities for charging stations that could serve the Harbor Area, beginning with the Silver Line
- B. Provide recommendations on how to fully electrify the Silver Line in the Zero Emission Bus Implementation Master Plan due before the Board in Spring of 2021
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