**January 11, 2021**

Massachusetts Bay Transportation Authority
10 Park Plaza
Boston, MA 02110

*Via electronic submission: stephanie.pollack@dot.state.ma.us, Steven.Poftak@dot.state.ma.us, publiccomment@dot.state.ma.us*

**Re: Electrification of the MBTA Bus Fleet and Modernization of Bus Facilities**

Dear Secretary Pollack, General Manager Poftak, Fiscal and Management Control Board Members Chair Aiello, Vice Chair Tibbits-Nutt, Director Lang, Director Kornegay, and Director Sullivan:

The undersigned members of the Zero-Emission Vehicles (ZEV) Coalition are writing to urge the Massachusetts Bay Transportation Authority (MBTA) to commit to a clear timeline and pathway for full fleet electrification that is centered in equity. We are concerned that bus purchases planned for the next five years do not show a meaningful procurement shift to electric buses and that the MBTA is doing little to plan for a smooth transition to zero emission bus service.

While expressing an intent to switch over to electric buses, the MBTA in the last decade has steadily converted a majority of its fleet to diesel hybrids and continues to heavily invest in polluting fossil fuel buses. The most recent procurement of 45 diesel hybrid buses for the Silver Line was a missed opportunity to move towards zero-emission replacements.

To meet our public health and climate goals a majority of buses that are being retired need to be replaced by electric buses now. The Governor's Commission on the Future of Transportation report calls for buses purchased with state resources to be zero emission by 2030.[1] The Massachusetts 2050 Roadmap[2] and the interim 2030 Clean Energy and Climate Plan (CECP)[3] identify electrification of our vehicle fleets, including transit fleets as a key strategy to reduce

[1] Choices for Stewardship: Recommendations to Meet the Transportation Future, Volume 1, Commission of the Future of Transportation in the Commonwealth, https://www.mass.gov/doc/choices-for-stewardship-recommendations-to-meet-the-transportation-future-volume-1/download.
[2] Massachusetts 2050 Decarbonization Roadmap, December 2020, https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download.
[3] Interim Clean Energy and Climate Plan for 2030, December 30,https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download.

emission from the transportation sector. The MBTA must move quickly to electrify our transit fleets to help meet the 2030 statewide emission limit of 45% below 1990 levels.

We once again call on the MBTA to accelerate the adoption of electric buses and offer the following recommendations:

- **Publicly commit to full bus fleet electrification by 2030 and release a final implementation plan by the end of 2021**

Transit agencies across the country including in New York, Chicago, Philadelphia, Seattle, and Denver have already committed to full electrification and are taking concrete steps to begin that transition. Given the public health and climate emergency, it is disappointing that the MBTA will not be taking a decision on fleet electrification until the late 2020's and plans to indefinitely procure polluting diesel hybrids.

A gradual shift to electric buses over the next 10 years is well within the MBTA's reach. As a first but critical step towards planning for full fleet electrification the MBTA should publicly commit to achieving a 100% electric fleet by 2030, upgrading its bus maintenance facilities and infrastructure, and releasing a draft implementation plan for public input. Further, we urge the MBTA to finalize the draft implementation plan by the end of 2021 by carrying out a robust and equitable public input process.

- **Increase the number of electric bus procurements to meet the goal of 100% new bus procurements to be electric by 2023**

The November 2020 bus fleet and facilities modernization update indicates that the MBTA will purchase over 300 diesel hybrid buses and only 35 electric buses in the next five years.[4] This decision does not indicate an interest or commitment in moving away from polluting fossil fuels and continues to ignore the health impacts to our most vulnerable, transit dependent communities.

In contrast, Toronto has 60 electric buses in operation and is developing specifications to order 300 more electric buses.[5] New York will be adding 500 electric buses in the next five years.[6]

[4] Modernizing our Bus Fleet and Facilities, MBTA Fiscal and Management Control Board meeting, Nov 9, 2020, https://cdn.mbta.com/sites/default/files/2020-11/2020-11-09-fmcb-O-bus-fleet-facilities-update.pdf.
[5] What cities can learn from the biggest battery-powered electric bus fleet in North America, CBC, Dec 2, 2020, https://www.cbc.ca/news/technology/electric-buses-transit-1.5823166.
[6] MTA retires old diesel buses as it moves toward all-electric fleet, Curbed New York, May 6, 2019, https://ny.curbed.com/2019/5/6/18533462/mta-retires-diesel-buses-rapid-transit-series-all-electric-fleet.

Seattle already operates 174 electric trolley buses and will add 120 battery electric buses to its fleet by 2022.[7] The MBTA is lagging far behind its peers and can and should be doing more.

To demonstrate its commitment to electrification the MBTA needs to show a shift in procurement and test more electric buses now to prepare for larger procurements within the next 5 years. As an immediate step, we urge the Fiscal and Management Control Board to amend the Silver Line 60-foot bus procurement to include, at a minimum, 20 electric buses. These buses can include a combination of in-motion charging buses and battery electric buses supported by in-route charging infrastructure to provide added range resiliency. We ask that this procurement be a part of the planned 2021 RFP for 35 electric buses and the RFP be released by spring of this year with an option to order additional electric buses for upcoming bus replacements in 2021 and 2022. Further, all new bus procurements by 2023 should be electric.

- **Prioritize deployment of electric buses in communities that face the highest pollution burdens**

Transportation-related air pollution disproportionately impacts communities of color in Massachusetts.[8] A Harvard study found that COVID-19 patients living in areas with historically long-term exposure to air pollution are 8 percent more likely to die than those who live in less polluted areas.[9] Communities hit hardest by air pollution are also often transit dependent and must be first in line when it comes to the roll-out of zero-emission technologies.

It is concerning that the MBTA is not focused on first deploying electric buses in communities like Roxbury, Dorchester, Lynn, Revere, Chelsea, and Mattapan where there is an urgent need for zero emission buses. Instead, the MBTA is focused on dismantling the existing electric trolleybus system and replacing them with battery electric buses. This like-for-like replacement does not take any fossil fuel buses off the road and will not result in pollution or emissions reductions.

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[7] Executive Constantine announces purchase of up to 120 battery-electric buses from New Flyer of America, Inc., King County, January 30, 2020, https://www.kingcounty.gov/elected/executive/constantine/news/release/2020/January/30-metro-battery-electric-bus-order.aspx.

[8] Inequitable Exposure to Air Pollution from Vehicles in Massachusetts, Union of Concerned Scientists, 2019,https://www.ucsusa.org/sites/default/files/attach/2019/06/Inequitable-Exposure-to-Vehicle-Pollution-MA.pdf.

[9] Wu, X., Nethery, R. C., Sabath, M. B., Braun, D. and Dominici, F., 2020. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. https://projects.iq.harvard.edu/covid-pm.

We urge the MBTA to replace the existing trolleybus fleet with in-motion charging (IMC) buses that can utilize the existing overhead wire network. This would help advance electrification on multiple routes across the bus network.

We strongly recommend that the MBTA's implementation plan for full fleet electrification prioritize deployment in environmental justice communities, include the electrification timeline for routes across the bus network, and a comprehensive stakeholder engagement plan.

- **Test and adopt readily available solutions like in-route charging and in-motion charging**

By procuring diesel hybrids for the Silver Line, the MBTA missed the opportunity to completely electrify the route today. Instead, using the existing electric infrastructure in the Silver Line tunnel to support the operation of in-motion charging (IMC) buses and operating the rest of the route emission-free on batteries, would have resulted in public health, climate, and economic benefits. These benefits to our communities are now delayed for another 12-15 years that these diesel hybrid buses are in operation.

While we are glad that the Fiscal and Management Control Board directed that new diesel hybrids on the Silver Line run on all-electric mode through portions of Chelsea, they will continue to pollute in East Boston. We request more information on geofencing and how pollution impacts on communities will be monitored and tracked to guarantee all-electric operation through environmental justice populations. While cleaner than diesel buses, diesel hybrid buses do not entirely eliminate toxic diesel exhaust and leave behind ultra-fine particulate matter that is a threat to human health.[10] Moreover, air pollution travels and can harm people away from its point of origin. We need to rapidly decarbonize our bus fleet with each new bus procurement. The faster and more robust the electrification, the greater the benefits to Massachusetts residents and the planet.

We recommend that the MBTA test readily available and proven technologies like IMC and in-route charging (IRC, where buses charge small batteries at route terminals) to provide added range resiliency on routes and support the faster expansion of electrified routes. Several cities

[10] Lane, K.J., et al. (2016). Association of modeled long-term personal exposure to ultrafine particles with inflammatory and coagulation biomarkers. Environ Int. https://www.researchgate.net/publication/301611510.

including Seattle, San Francisco[11] and Dayton[12] are replacing and expanding their trolleybus networks using IMC buses that have up to a 15 mile off-wire capability.

An effective charging strategy that complements overnight depot charging will be central to building a reliable bus network. In-route charging should be introduced at high traffic nodes like Quincy Center, Nubian Square, Mattapan and other strategic locations to allow buses to cover longer routes without having to return to the depot for charging. It is important that the MBTA actively engages with utilities to better understand infrastructure upgrades and investments needed to support this transition.

- **Fast track bus facility modernization and replacement program**

It is critical that the MBTA fast tracks and adequately funds the bus facility modernization and replacement program to efficiently house electric buses, meet the needs of the fleet and workforce, and create capacity for future growth.

As per the MBTA's bus fleet and facilities plan the $280 million required for the Quincy bus facility is currently not programmed in the Capital Investment Plan (CIP).[13] Also, the target replacement date for the Southampton, Arborway, Lynn, and Fellsway bus facilities is listed as TBD (2026-2035). This means that for the next 15 years or more the infrastructure needed to support the transition to full electrification will be unavailable, significantly impeding the procurement and deployment of electric buses. Instead of a to be determined range of dates, we request the MBTA to release a facilities plan with specific dates (year) for replacement of each garage.

If the MBTA is serious about electrification and moving to an equitable transportation system in a timely manner, it should expedite the process to identify and finalize suitable real estate, fast track facilities planning and design, and allocate the resources (staff and funding) needed. All new garages including Quincy in 2024 must start housing an electric bus fleet from day one. To support a 100% electric fleet, construction of new garages and modernization of existing garages must be completed at least one year prior to full bus fleet electrification in 2030.

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[11] Kiepe Electric, IMC Electric Buses on Trend in the USA, https://www.kiepe.knorr-bremse.com/news/press-releases/trend-zu-imcae-elektrobussen-in-den-usa-kiepe-electric-liefert-185-ausruestungen-fuer-san-francisco.

[12] First new trolleybuses in Dayton/Ohio with In-Motion-Charging, Urban Transport Magazine, August 2019, https://www.urban-transport-magazine.com/en/first-new-imc-trolleybuses-in-dayton-ohio-with-in-motion-charging/.

[13] Modernizing Our Bus Fleet and Facilities, Fiscal and Management Control Board meeting, Nov 9, 2020, https://cdn.mbta.com/sites/default/files/2020-11/2020-11-09-fmcb-O-bus-fleet-facilities-update.pdf.

In conclusion, we urge the MBTA to engage with stakeholders, including members of the Zero-Emission Vehicles (ZEV) coalition in a meaningful way to advance the transition to an all-electric bus fleet. We look forward to working with you.

If you have any questions about this letter, please contact Veena Dharmaraj (veena.dharmaraj@sierraclub.org), Staci Rubin (srubin@clf.org), or Matt Casale (mcasale@masspirg.org).

Sincerely,

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