



TRANSITMATTERS



Sandy Johnston, Manager
Boston Region Metropolitan Planning Organization
Unified Planning Work Program
sjohnston@ctps.org

January 15, 2021

Dear Sandy Johnston and Boston Region Metropolitan Planning Organization (MPO) Unified Planning Work Program Subcommittee:

We, the undersigned municipalities, advocacy groups, and oversight bodies, request that the Boston Region MPO fund the Central Transportation Planning Staff (CTPS) to conduct a study of bus electrification technologies and infrastructure to support progress toward our climate targets.^{1,2} The Intergovernmental Panel on Climate Change Special Report predicts that global warming will “reach 1.5°C between 2030 and 2052 if warming continues at the current rate.”³ Combating this change requires reaching net zero emissions by 2050.⁴ This gives us a short window to ratchet down emissions and the public transit bus fleets are a key opportunity for transitioning to zero-emission technology.

The Massachusetts Bay Transportation Authority (MBTA) and Regional Transit Authorities (RTAs) around the Commonwealth are in various stages of electrifying their bus networks. As of yet, though, there is no state-wide or Boston Region MPO strategic plan for bus electrification. To date, investments in electric charging infrastructure have been inadequate to support broader trials of electric buses. In addition to funding, one barrier to electrification has been the need for better understanding among municipalities, advocates, and transit authorities of the electric bus technologies available and their benefits and challenges. The Boston Region MPO is well positioned to help fill a knowledge gap regarding bus electrification, both for Greater Boston and the Commonwealth as a whole.

We propose that the Boston Region MPO fund a study of bus electrification technologies currently in operation domestically and internationally and how those technologies might work to meet the needs of the Boston Region. A bus electrification study could benefit the MBTA and RTAs in the Boston MPO, as well as other RTAs throughout the Commonwealth.

¹ St. 2008, c. 298, <https://malegislature.gov/Laws/SessionLaws/Acts/2008/Chapter298>.

² M.G.L. c. 21N, § 3(b).

³ The Intergovernmental Panel on Climate Change, *Summary for Policymakers*, at 4 (2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

⁴ *Id.* at 12.

This bus electrification technology study would ideally:

1. Examine zero-emission bus technologies used internationally and domestically, including in-motion charging from catenary wires (also known as battery trolleybus technology), simple trolleybus operations without batteries, and in-route charging, and compare them to one another and existing MBTA and RTA bus technologies, similar to the [TSP Guidebook prepared in 2018 by CTPS](#).
2. Determine the characteristics of the different service typologies (both spatial and temporal) that would be best served and enabled by different kinds of electrification.
3. Survey existing MBTA and RTA traction power infrastructure and investigate ease of integration thereof with different electrification types.
4. Estimate life cycle costs and investigate how costs scale with different kinds of electrification.
5. Estimate the upgrades to existing bus maintenance facilities needed to support different kinds of zero-emission bus technologies.

Some of these study components may be more engineering-based, and outside the focus areas of CTPS and the MPO - particularly the last three. Notwithstanding, we believe that even a study focused mainly on items 1 and 2 would be invaluable to stakeholders across the Boston MPO and the Commonwealth. Please contact us with questions.

Thank you for your consideration,

Len Diggins
*Select Board Member,
Town of Arlington*

Thomas Ambrosino
City of Chelsea

Jarred Johnson
TransitMatters

Staci Rubin
CLF

MBTA Rider
Oversight
Committee

Veena Dharmaraj
*Sierra Club of
Massachusetts*

Julia Wallerce
ITDP

Matt Casale
MassPIRG



March 25, 2021

Sandy Johnston,
Manager Boston Region Metropolitan Planning Organization
Unified Planning Work Program

Subject: Bus Electrification Technology Study (Project ID T-4)

Dear Sandy and members of the Boston Region Metropolitan Planning Organization (MPO)
Unified Planning Work Program Subcommittee:

I am writing in support of project T-4 to request that the Boston Region MPO fund the Central Transportation Planning Staff (CTPS) conduct a study of bus electrification technologies and infrastructure.

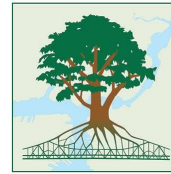
Climate science, the 2018 Governor's Commission on the Future of Transportation report, and the recent climate legislation requiring MA to reduce emission by 50% by 2030, all point to the urgency of decarbonizing our transportation systems. Electrification, starting with transit, is part of the solution. There is significant interest in electrification at the Massachusetts Bay Transportation Authority (MBTA) and Regional Transit Authorities (RTA) across the state. However, there is no state-wide plan to support this transition.

A study taking into account the characteristics of different service typologies and the electric bus and charging technologies that would best serve those needs would ensure that transit agencies, local governments and community groups have good, reliable information to speed up this transition. Further, investigating the life cycle costs of different technologies, service types they are best suited to, as well as upgrades needed to bus maintenance facilities would be invaluable to stakeholders across the state.

Thank you for your consideration.

Sincerely,

Veena Dharmaraj
Director of Transportation
Sierra Club Massachusetts



Celebrating **25** Years
of Fighting for Social and
Environmental Justice!

GreenRoots

March 25, 2021

Dear Manager Johnston and members of the Unified Planning Work Program Committee,

My name is Olivia Nichols and I am the transit justice organizer with GreenRoots, an environmental justice organization which is based in the communities of Chelsea and East Boston, MA. This morning, I would like to take this opportunity to voice GreenRoots' support for the Bus Electrification Study proposal that has been submitted by TransitMatters, the City of Chelsea, Conservation Law Foundation, and others.

As an environmental justice organization, we strongly believe that bus electrification is a crucial topic for the next decade of transportation investment across the region and state. Chelsea and East Boston are two of the environmental justice communities that continually shoulder a disproportionate share of the region's industrial burdens. As a result, these two communities have some of the highest levels of air pollution, and residents therefore have some of the most compromised public health. Chelsea and East Boston are also two of the communities hardest hit by COVID-19 in Massachusetts. Chelsea's per capita infection rates make it one of the most impacted cities in the nation. East Boston is identified as the hardest hit Boston community, with rates equaling or surpassing those in Chelsea. We are just now seeing the beginning of the long-term impacts, both health and economic, of COVID-19 in both these communities.

Always carrying in mind our communities' experiences with both the ongoing pandemic and high levels of air pollution are why we support this Bus Electrification Study, because this study will ensure that community organizations such as ourselves have access to good information to continue advocating that bus electrification should start in and be prioritized in environmental justice communities across the state and region.

Thank you for this opportunity to comment.

Sincerely,
Olivia Nichols
Transit Justice Organizer, GreenRoots

Comments from ITDP

1 message

Ari Ofsevit <ari.ofsevit@itdp.org>
To: Sandy Johnston <sjohnston@ctps.org>

Thu, Mar 25, 2021 at 4:52 PM

Hi Sandy,

Attached are the full comments from ITDP. Please distribute these to your committee.

Thank you for letting me speak regarding item item T-4 of the UPWP universe of proposed studies.

Item T-4 would comprise a thorough study of bus electrification. It scores 5 (out of 5) on three of the six scoring criteria. We believe that, as technology for transit electrification continues to emerge, it will be important for the MPO to take a leading role in examining how electrification can be best implemented in the region, since buses in the MBTA district and RTAs use more than 10 million gallons of diesel fuel per year, with the greatest impacts in environmental justice communities. While some progress has been made towards electrification, the MBTA currently possesses only five buses, and rarely runs more than two in service, and has been disappointed with the results of these vehicles. It is important for the agency, and others using buses, to know the best options for zero-emission vehicles going forwards.

Electrification needs to be taken into consideration with the transit technical assistance work that the MPO undertakes, and studies can be helpful both to the MBTA and to the RTAs. Since this is relatively new technology, if it is not currently within the MPO's engineering capacity, the MPO should look at adding it to its portfolio since this will be an important issue going forward. We feel that this will be an important issue going forward, and that the MPO should lead on creating a thorough report of how transit electrification can best be implemented in the region, especially as we plan to grow our fleet of buses to provide better service on existing corridors and as part of bus rapid transit plans.

We believe that this is an important field of expertise for the MPO and look forward to working with the MPO on bus electrification in future years.

Thank you,

Ari

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Ari Ofsevit | Boston Senior Associate

Institute for Transportation & Development Policy

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