Congestion Relief 2024 Grant Application

Metropolitan Area Planning Council & the City of Boston

April 22, 2024

MAPC
METROPOLITAN AREA PLANNING COUNCIL

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I. BASIC PROJECT INFORMATION

Project Description

The Metropolitan Area Planning Council (MAPC), in partnership with the City of Boston (CoB), MassDOT, and a coalition of TMAs, is requesting $22,779,443 through the USDOT FHWA Congestion Relief Program to implement "LINKUP Greater Boston" (Leveraging Innovative Networks to Keep Urban Pathways Uncongested in Greater Boston). MAPC believes that combating congestion requires a suite of initiatives that bolster public transit, provide robust micromobility options, and ease the transition away from single occupancy vehicles (SOVs). The four initiatives proposed in this project do just that:

- **Bolstered public transit:** Additional on-demand and fixed first-mile, last-mile shuttles in five selected neighborhoods throughout the City of Boston that currently lack robust public transit, thereby expanding the reach of the transit system.
- **Expanded bike availability:** Expand on the success of Greater Boston's Bluebikes program by adding e-bikes, pedal bikes, and requisite docking stations.
- **Cohesive access to the network:** One integrated trip planning and payment mobile application.
- **Transit incentives:** Research the impact of transit incentives on nudging SOV users towards the enhanced transit and bike networks.

Today, traffic congestion in the Greater Boston region has reached a breaking point. The severity of this issue is highlighted in the 2022 Global Traffic Scorecard released by transportation data company INRIX, listing Boston as the second most congested city in the country, and the fourth worst globally: the average Boston driver loses 134 hours to traffic annually, equating to more than five days of lost time or $2,270 in lost productivity. The Texas A&M Transportation Institute has ranked Greater Boston among the worst large urbanized areas for automobile congestion.

To realize a significant decrease in the region's reliance on SOVs, Greater Boston requires a significant investment in a targeted set of transportation options that, together, provide a strong alternative to driving alone. The initiatives proposed in LINKUP Greater Boston are designed to extend the reach of the public transportation network with an eye towards congested areas, gaps in transit, and disadvantaged communities. With an acknowledgement that public transit cannot efficiently serve every geography, we have included a Bluebikes expansion to fill additional FMLM gaps and serve short, localized trips for residents and commuters. To make it easier for residents to access these two initiatives, LINKUP Greater Boston is proposing to launch an industry-leading wayfinding and payment mobile application throughout the Boston region known as Citymapper). Last, the efficacy of these interventions will be assessed using a transit incentivization project, which will be custom designed to nudge travelers onto the enhanced transportation network. Below we describe these initiatives in greater detail.

Initiative 1: Expanded Public Transit

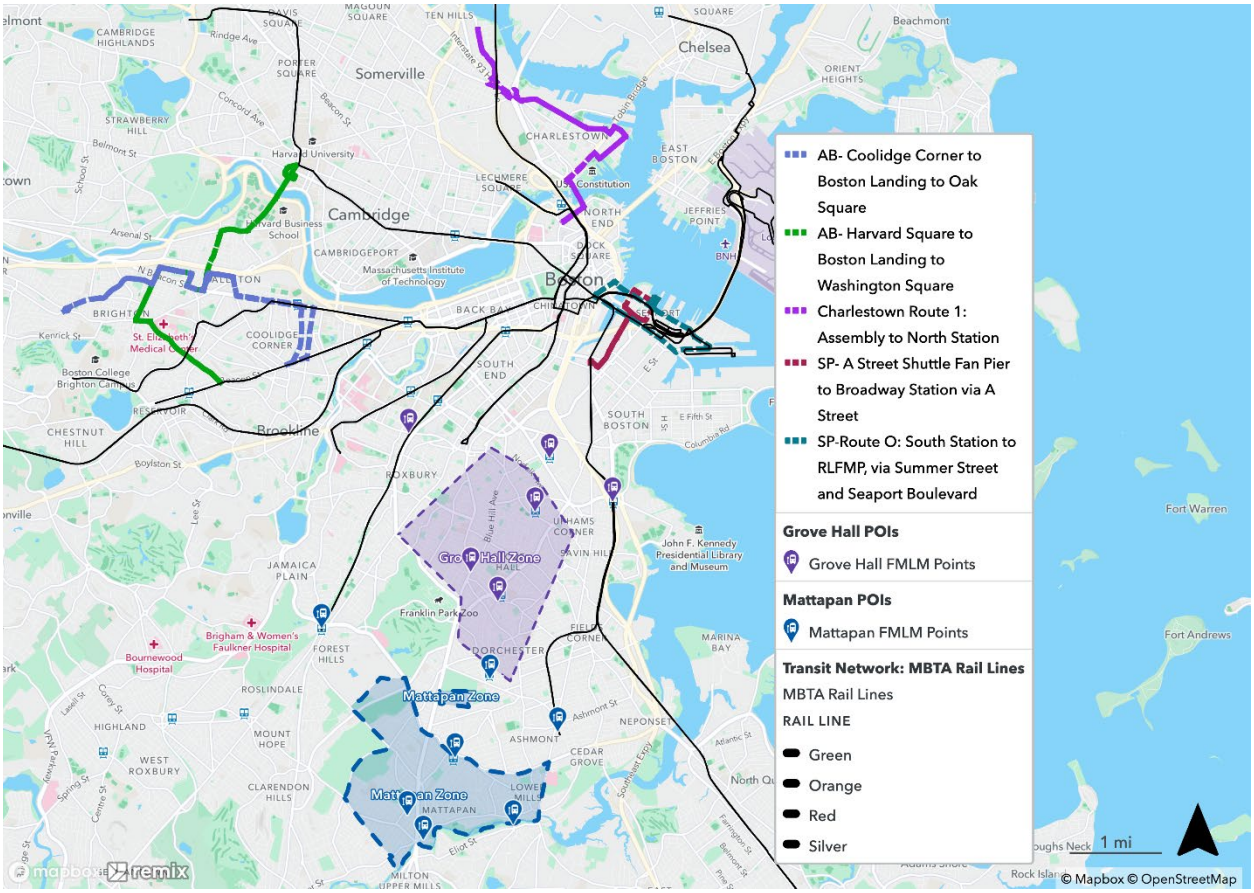
One of the most pressing challenges facing public transportation in Boston today is the first-mile, last-mile (FMLM) connection, which is the distance a transit rider needs to travel from a transit stop to their final destination, or vice versa. According to recent Census Bureau findings, just over 46% of all public transportation riders reported the bus as their primary commuting mode, behind other public transportation modes. However, transit often only provides transportation to preset,

high traffic locations, leaving many commuters to walk or bike the first leg or last leg of their trip. LINKUP Greater Boston proposes implementing innovative transit projects designed specifically to target FMLM connections. These improvements consist of:

- Fixed-route shuttles in three Boston neighborhoods (Allston-Brighton, Charlestown/Somerville, and the Seaport District); and
- On-demand microtransit zone-based services in two neighborhoods (Mattapan and Grove Hall).

The selected zones and shuttles (shown in Figure 1) are described in detail in the following section. These services will function as an extension of the Massachusetts Bay Transportation Authority (MBTA),[1] allowing travelers to easily connect into the broader network and reduce their private vehicle use.

Figure 1: Selected FMLM Zones and Shuttles



[1] CoB has a long history of collaborating with the MBTA and will leverage that relationship to implement this project. For instance, both CoB and the MBTA have collaborated on multiple projects including Mission Hill Link (a community-run bus service where both CoB and MBTA contribute); the Columbus Avenue Bus Lanes (CoB oversaw the planning and MBTA oversaw implementation); and the Summer Street Pilot Program (CoB implemented with MassDOT funding and received support from the MBTA).

The neighborhoods have been selected for a variety of reasons, including:

- Limited access to high-frequency MBTA service,
- Propensity to drive alone to work compared to other neighborhoods,
- Equity considerations, and
- Adjacency to highly congested arterial highways.

Initiative 2: Expanded Bluebikes Availability throughout Greater Boston

Greater Boston's bikeshare system, Bluebikes, is a vital publicly accessible mobility system, co-owned by 13 municipalities and providing rides for millions of people each year, including nearly four million rides in 2023. Bikeshare in Greater Boston began in 2011 serving Boston, Cambridge, Somerville, and Brookline and has scaled quickly over 13 years in operation.

During the 2023 calendar year, Bluebikes operated approximately 5,000 bikes and 500 stations within its network. Daily ridership averaged nearly 14,000 trips per day during peak season, and more than 9,500 trips per day annually. In December 2023, Bluebikes expanded with new battery-powered electric bikes (e-bikes), which have exceeded usage predictions. In the first quarter of 2024, there have been 209,294 e-bike trips on the 700 e-bikes that have been added to the system, representing approximately 32% of all Bluebikes rides taken.

The proposed expansion of the Bluebikes system includes adding 90 electric bikes and 32 electrified stations in the busiest locations. In addition, MAPC plans to expand the non-electric ("pedal") portion of the system to serve more people and more areas by adding approximately 32 non-electrified stations along with 290 pedal bikes. Pedal bikes will be added in Bluebikes' newer municipalities, densifying the Bluebikes presence there and allowing more travelers to choose bike share as their primary mode of transportation, especially in areas just outside of the rapid transit system.

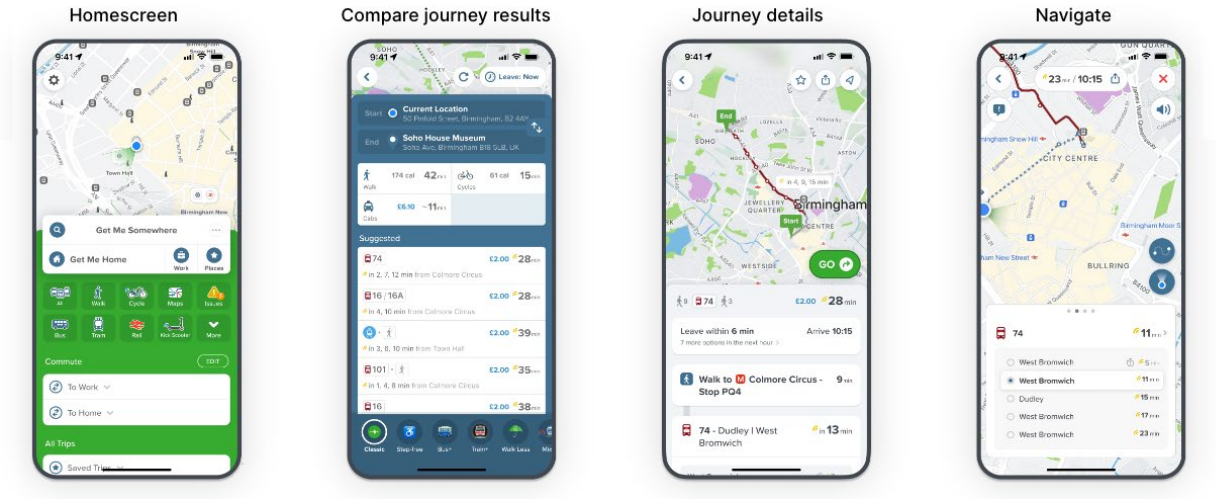
This Initiative will be part of continued efforts by the 13 municipal owners of the system to expand and fund the public bike share system to ensure Bluebikes can continue to be an effective congestion relief and mode shift strategy for the region.

Initiative 3: Integrated Trip Planning and Payment Application

LINKUP Greater Boston will introduce Citymapper as the Greater Boston regional trip planning and payment mobile application (app), allowing riders to visualize, book, and pay for intermodal trips on one interface (see Figure 2), thereby making the public transportation system, as a whole, far more accessible.

The app will provide travelers with information about available modes for their trip, including on-demand services, fixed route shuttles, subway lines, commuter rail services, MBTA buses, and Bluebikes cycle services. Moreover, the app will allow the user to set preferences, such as "quickest" trip or "least expensive" trip, etc., as well as allow the user to book/ticket and pay through the mobile application. With sufficient adoption, Citymapper will generate rich data from transit riders, such as the identification of trips that require long walks or that have poor journey times as compared to car rides. Data analysis will enable the LINKUP Greater Boston project team to identify and address the pain points that matter to riders so that the region can continue to increase transit accessibility, thus mitigating SOV use and the resulting congestion.

Figure 2: Citymapper User Interface Examples



Initiative 4: Transit Incentives Study

LINKUP Greater Boston is proposing a targeted research study to explore and address urban congestion and car dependency, aiming to foster more sustainable travel habits. The Transit Incentives Study will use the Citymapper app to test mode-based incentives, assessing if personalized rewards can effectively encourage more sustainable travel choices. Initially, the CoB will identify potential participants through an eligibility survey, evaluating their SOV use and the feasibility of using public transit for their commute. Second, the CoB will select a subset of survey respondents and test the ability to shift their travel behavior (from SOV to public transit or bikeshare) through mode-based financial incentives. The CoB will leverage this data to quantify the potential environmental impact of congestion reduction that results from this shift. The goal is to understand the relative efficacy of different transit incentives in reducing congestion and mitigating the environmental impact of SOVs. Conducting this study in Boston, a city known for high congestion and potential for public transit adoption, will allow researchers to accurately gauge the impact of incentivization on modal choice.

Project Location

The four initiatives will benefit residents throughout Greater Boston, with a particular focus on selected neighborhoods chosen for their potential to effectively alleviate congestion.

Initiative 1: Expanded Public Transit

Fixed Route Commuter Shuttles: Allston Brighton (AB), the Seaport District, and Charlestown/Somerville. (Each route will have two 14-passenger vans, 30-minute headways, and 14-hour daily operation.)

- Allston Brighton Shuttle 1: Oak Square to Coolidge Corner
- Allston Brighton Shuttle 2: Harvard Square to Washington Square
- Seaport District Shuttle 1: Seaport Circulator
- Seaport District Shuttle 2: A Street Shuttle
- Charlestown/Somerville Shuttle 1: Assembly to North Station

The increasing populations, rise of development activities, and limited public transit options in Allston Brighton, the Seaport, and Charlestown/Somerville highlight the need for expanded public transit services to target growing congestion.

In **Allston Brighton**, travel times to Downtown Boston remain long, ranging from 35 to 55 minutes depending on the route and traffic conditions. FMLM connections are inadequate, with only one connecting bus route from Boston Landing (Route 64 bus) and long walking distances to other parts of the neighborhood, such as Brighton Center (~20 minutes). As a result, car dependency in this neighborhood remains high: over 37.4% of Brighton commuters drove alone to work compared to 28.8% in neighboring Brookline.[2] Using route recommendations from the AB Mobility Plan, LINKUP Greater Boston proposes a "hop on/hop off" shuttle model to address FMLM gaps and provide connections in and out of Boston Landing, as pictured in Figure 3.

Figure 3: Allston-Brighton Commuter Shuttles

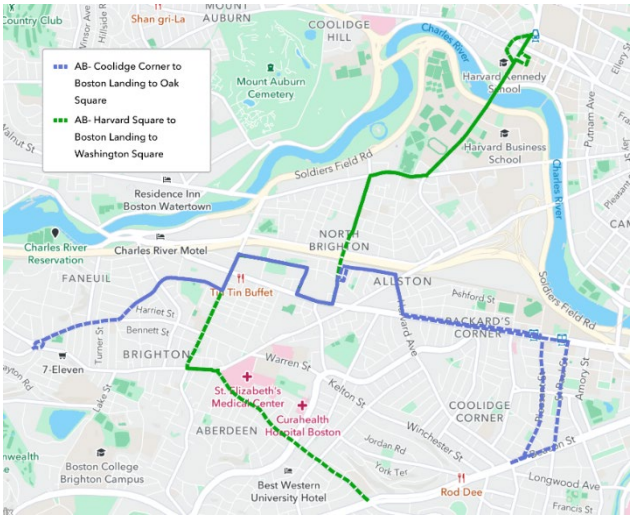
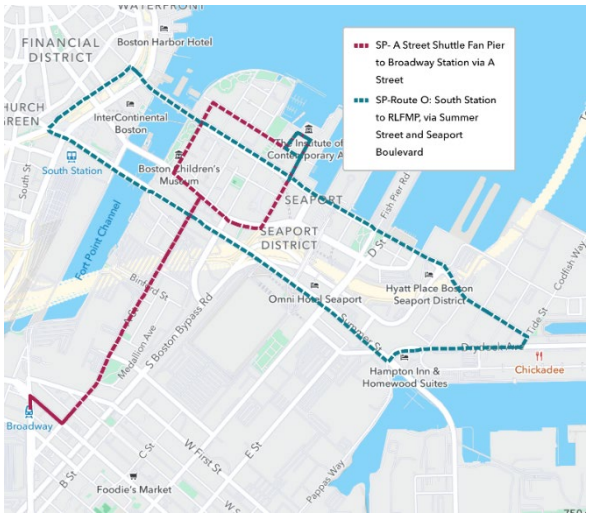


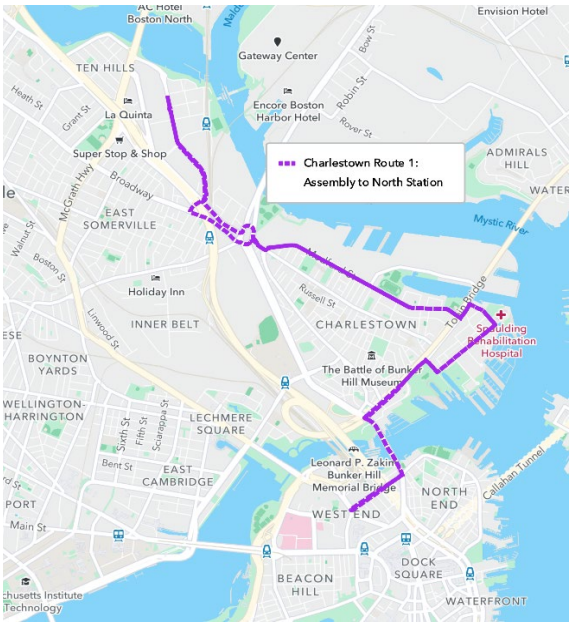
Figure 4: Seaport Circulator and A Street Shuttle



The **Seaport District**, roughly the size of Downtown Boston, is experiencing worsening congestion due to rapid development. In 2018, fewer than 38% of trips to the Seaport were made via transit, bicycle, or on foot, compared to 70% in Downtown Boston. With an additional 28 million square feet of development on the horizon, including Gillette's new campus, the Seaport's travel demand will surge beyond the current 110,000 daily trips. The district not only hosts 33,000 jobs but also serves as a 24-hour center for retail and dining activities. In response, LINKUP Greater Boston plans to fund two shuttle services, the Seaport Circulator and the A Street Shuttle, to improve connectivity and alleviate transit gaps, as depicted in Figure 4.

[2] American Community Survey 5-year; 2018-2022. This statistic is somewhat misleading in Allston, where only 24.8% drove alone, as there is a significant number of commuters who walk to work (18.1% compared to 6.9% in Brighton) due to the concentration of schools and universities in the Allston neighborhood.

Figure 5: Charlestown Commuter Shuttle



Charlestown/Somerville is accessible by only five vehicle bridges, emphasizing the need for robust public transit, cycling infrastructure, and alternative transport solutions to reduce car dependency. Despite having two MBTA stations, much of Charlestown/Somerville lacks convenient public transit access, with most transportation options not serving the area effectively.

To improve connectivity, LINKUP Greater Boston proposes a fixed-route shuttle to link Charlestown/Somerville residents to downtown Boston's public transportation at North Station, which connects to commuter rail, ferry, and the green and orange MBTA lines (see Figure 5).

On-Demand Microtransit Zones: Grove Hall and Mattapan (6AM - 8PM).

The urgent need for congestion mitigation strategies in Mattapan and Grove Hall is underscored by their connection to Downtown Boston via I-93 (recognized by INRIX as the fourth-worst traffic corridor in the U.S). Both neighborhoods are historically underserved. Mattapan (see Figure 6) and Grove Hall (see Figure 7) were selected for microtransit due to their lower density and dispersed travel patterns among residents.

Figure 6: Mattapan Microtransit Zone

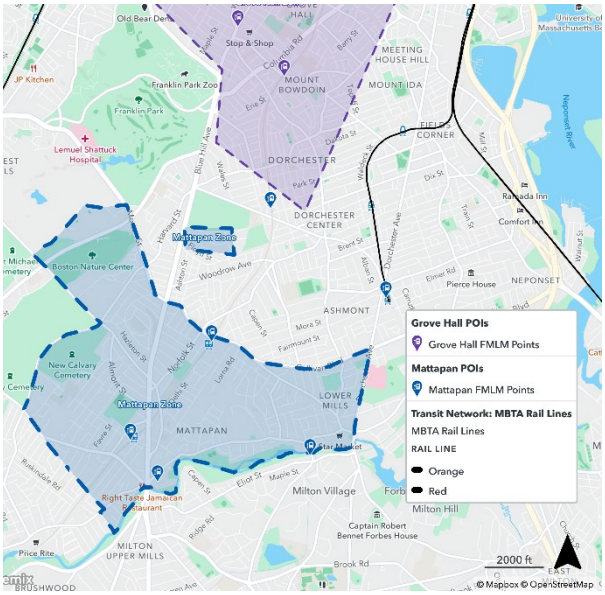
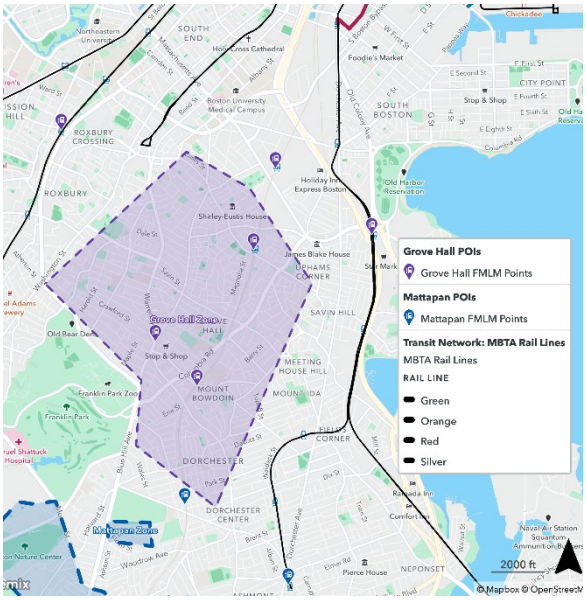


Figure 7: Grove Hall Microtransit



With the microtransit service, passengers can request on-demand trips, provided that one end of the trip is a transit stop, while the other can be their home or another destination.[3] Despite the high potential for transit use, the region suffers from notable service gaps. Although a commuter rail line passes through, most residents face a walk of over 10 minutes to access it, creating significant transit access challenges. Only a few Mattapan residents can reach the Red Line and Trolley, and those in Grove Hall have no subway access at all. According to the 2020 US census, Mattapan is home to 23,900 individuals, with 18% living in poverty, 19% experiencing disabilities, and 15% aged 65 and above. The Grove Hall zone is home to 62,400 individuals, with 25% living in poverty, 17% experiencing disabilities, and 12% aged 65 and above.

Initiative 2: Expanded Bluebikes throughout Greater Boston

The Bluebike system began in 2011, when four Original Municipalities – Boston, Cambridge, Somerville, and Brookline – worked together to launch the network. Since then, Additional Municipalities (AMs) – Arlington, Chelsea, Everett, Newton, Revere, Watertown, Salem, Medford, and Malden – joined the network such that 13 municipalities now partner on the Bluebikes program. The Bluebikes Governance Council (GC) consists of CoB, the City of Cambridge, the City of Somerville, the Town of Brookline, and the City of Everett. The GC meets monthly with the vendor, Lyft Bikes and Scooters, LLC and is responsible for making decisions about the system.

MAPC is currently facilitating a long-term planning process with the 13 municipalities to determine the ideal bike share system size for the region. This model includes reviewing data such as population and job density, transit access, bike infrastructure, environmental justice communities, and car ownership. Early findings show the need to expand the system, including potential expansion into communities without bike share as well as densification of stations in existing municipalities. Increasing the density of stations is critical to increasing ridership and promoting mode shift from vehicles to bikes. According to Lyft, since 2017, doubling the density of Bluebikes stations has more than doubled the ridership for the system. The Bluebikes system has approximately one station every quarter mile to a half mile, with a goal of stations every quarter mile to an eighth of a mile. Many of the AMs have only six to eight stations in their municipalities and need to densify their systems to see substantial ridership growth. New non-electrified (standard) stations will be placed in and owned by the AMs in Arlington, Chelsea, Everett, Newton, Revere, Watertown, Medford, and Malden, but the bikes will move throughout the system. (Note: Salem will not participate in this round of Bluebikes station expansion.) Locations for new standard stations will be determined with an eye to serving underserved communities.

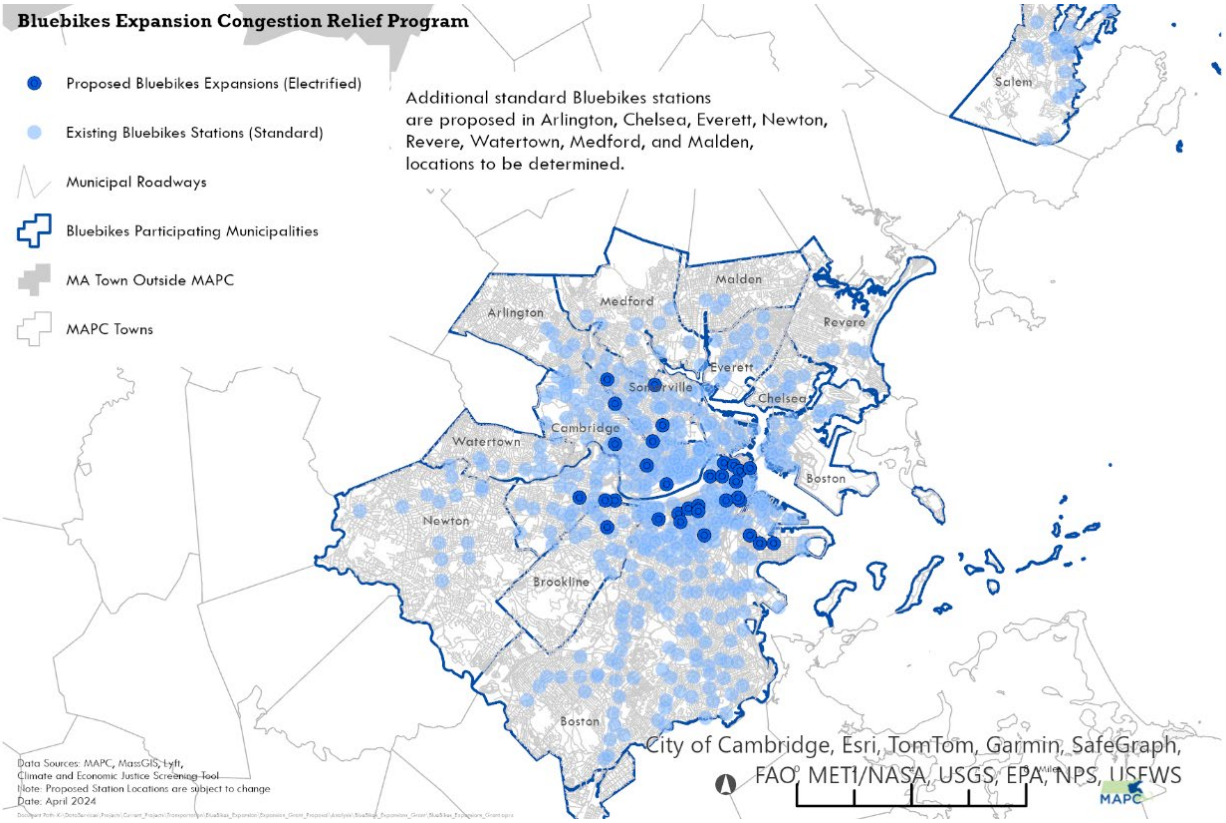
Additionally, electrification is a critical element of increasing system ridership and decreasing the region's dependency on SOVs. While biking may not offer feasible solutions for all trips, e-bikes have been shown to appeal to a broader segment of the population than pedal bikes – namely people who would not otherwise consider cycling – and to effectively replace vehicles for trips under 10 miles, particularly FMLM trips. Since adding e-bikes in December 2023, the e-bikes that comprise15% of the network are responsible for over 30% of total trips. Electrified stations are necessary system infrastructure for electric bikes to support charging, decrease the need for support vehicles to drive around the region to swap batteries, and ensure that electric bikes are

[3] The list of transit stops in Mattapan is: Blue Hill Avenue Station, Mattapan Station, Morton Street Station, Talbot Avenue Station, Ashmont/Peabody Square Station, Forest Hills Station, and Central Ave Station.

The list of transit stops in Grove Hall is: Blue Hill Avenue Station, Four Corners/Geneve Ave Station, Uphams Corner Station, JFK / UMass Station, Newmarket Station, and Roxbury Crossing Station.

reliable for users. These electrified stations have the potential to reduce battery swapping by 80%, effectively reducing e-bike operations costs by nearly half. See Figure 8 for existing standard and proposed electrified station expansion locations.

Figure 8: Bluebikes Existing and Proposed Expansion



The e-bikes will be owned by the Cities of Boston, Cambridge, and Somerville and will travel throughout the system. The electrified stations will be placed at the busiest station locations throughout the system to ensure that electric bikes have the best chance of charging without requiring a battery change. Exact locations will be determined based on ridership data, potential for transit connections, utility availability, safety, off-street space, and engineering analysis.

Initiatives 3 and 4: Regional Trip Planning App and Transit Incentive Study

Both of these initiatives will occur throughout the Greater Boston region. The study will focus on assessing the impact of interventions in project areas outlined in Initiative 1.

Lead Applicant

The Metropolitan Area Planning Council is the regional planning agency serving the people who live and work in the 101 cities and towns of Greater Boston, Massachusetts. Established in 1963, MAPC is a public agency created under Massachusetts General Law Chapter 40B, Section 24.

As the regional planning agency for Greater Boston, MAPC serves as the regional facilitator and convener for the Bluebikes municipalities, bringing municipal staff together through monthly coordinating meetings, special committees, and providing onboarding support to new and participating municipalities. MAPC has conducted several procurements to determine the system

operator and plays a key role in long-term planning for the system. MAPC is currently helping the municipalities plan for the next regional bikeshare procurement, finding sustainable funding for the system, and planning for system expansion.

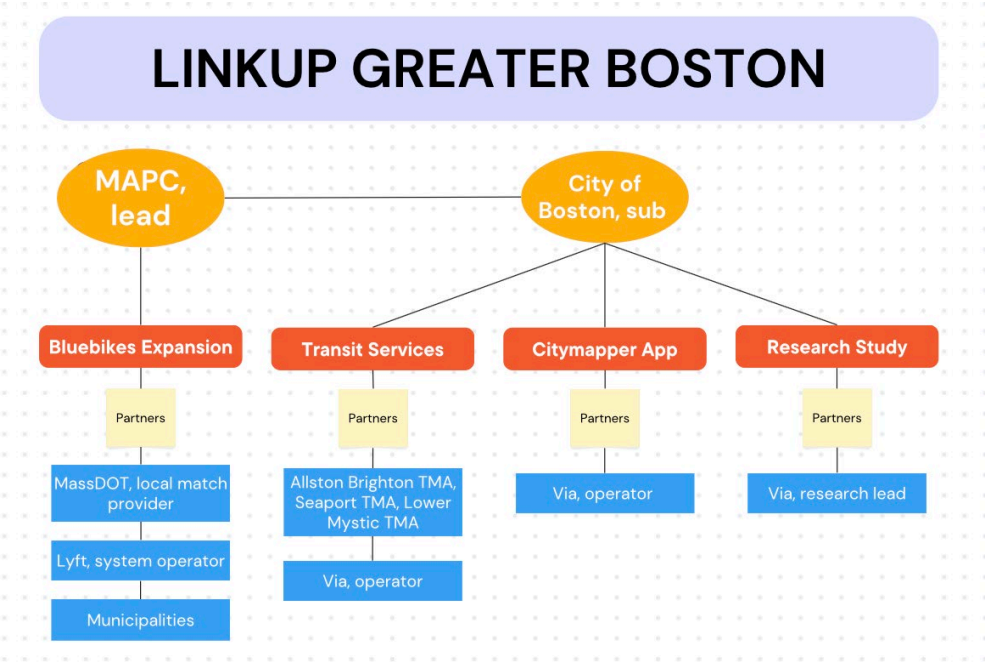
MAPC is currently managing a Safe Streets and Roads for All (SS4A) federal grant and has successfully managed other federal grants including an EPA Climate Pollution Reduction Grant, and Greater Boston Region Regional Workforce Training System grant under the Economic Development Administration-US Department of Commerce.

In many past and current projects, MAPC acts as a pass-through agency for federal or state funds to assist municipalities in many different programs. MAPC has existing systems in place to receive and manage large funding amounts and report on their usage and expenditure. MAPC will receive a portion of the grant funds to manage the grant and the Bluebikes Expansion Initiative.

Other Public and Private Parties

MAPC will partner with multiple other government entities, and private and nonprofit organizations to successfully implement the four initiatives (see Figure 9).

Figure 9: LINKUP Greater Boston Organizational Structure



City of Boston: The City of Boston (CoB) manages millions of federal dollars from various agencies such as FHWA and the U.S. Department of Housing & Urban Development (HUD) through MassDOT. The CoB has the technical experience for this project, the practical experience, and legal capacity to ensure compliance with state and federal requirements, and the financial capacity to complete the project. Notably, the CoB successfully implemented a $15.5 million TIGER grant and is expected to deliver a $15 million RAISE grant on time and within budget. The CoB will be a subrecipient to MAPC and will be responsible for all project components (procurement, system design, monitoring, reporting) other than the Bluebikes expansion (LINKUP Greater Boston Initiatives 1, 3, and 4).

Via Transportation, Inc. (Microtransit & Shuttle Operator, Software Provider): The CoB is proposing the implementation of two on-demand microtransit zones and five shuttle routes with Via Transportation, Inc. (Via) as the turnkey operator and software provider. As Boston's microtransit technology and service delivery partner, Via has worked closely to define the transit need and design the services in alignment with Boston's goals to decrease congestion and promote public transportation utilization. In 2023, Via acquired Citymapper; therefore, Via will also be responsible for the oversight and management of the trip planning and payment app. Established in 2021, Via is a global leader in innovative mobility with a mission to operate and power convenient and efficient mobility solutions.

Coalition of TMAs: The Allston Brighton TMA (ABTMA); The Seaport TMA; and The Lower Mystic TMA: All TMAs are private, nonprofit organizations made up of employers, institutions, and building owners working together to advance employee transportation options, improve air quality, and reduce traffic congestion. The ABTMA spearheaded the Allston Brighton Neighborhood Transit Link study in 2022, the Seaport TMA led the South Boston Seaport Strategic Transit Plan, and the Lower Mystic TMA led the Lower Mystic TMA Massachusetts Gaming Commission Shuttle Route Study (Charlestown/Somerville). The findings from these studies are currently guiding the recommendations for the LINKUP Greater Boston project. Each TMA will continue to lead community engagement activities in their respective communities.

MassDOT: The Massachusetts Department of Transportation will provide the non-federal match for the Bluebikes Expansion.

Lyft (Bluebikes System Operator): The current Bluebikes system operator is Lyft, Inc. d/b/a Lyft Bikes and Scooters, LLC and is under contract until April 2026. Lyft has individual contracts with each of the participating 13 municipalities. Lyft or any future operating vendor will be part of project implementation and will have a financial benefit if awarded. Lyft receives ridership revenue from the system. Lyft also received title sponsorship funding from Blue Cross Blue Shield (BCBS). Approximately a third of the Bluebikes Expansion budget will purchase equipment from Lyft and grant funds will be used to pay Lyft, or any future operating vendor, for operating costs of the new system equipment.

Municipalities: The Bluebikes municipalities will own the expanded stations and bicycles in their communities per their agreements with Lyft.

Photo credit: Lyft

II. GRANT FUNDS, SOURCES AND USES OF ALL PROJECT FUNDING

The total cost to implement LINKUP Greater Boston is $28,474,303. The applicants are requesting 80% federal funds (or $22,779,443) through the Congestion Relief Program and commit to matching the remaining 20% (or $5,694,861) using a diverse array of public and private funding sources. For more details on the match breakdown, please see **Appendix B.**

MAPC, as lead applicant for LINKUP Greater Boston, will administer the grant and coordinate the program, as well as directly oversee the Bluebikes Expansion (Initiative 2). The CoB, as subrecipient with experience in transit operations, will administer, coordinate, and oversee the Transit Initiatives (1, 3, and 4). The following tables (Table 1, Table 2, and Table 3) show the breakdown of budget by initiative, the percentage of operating costs, and year-over-year projections. More details on the project budgets are provided in **Appendix B**. The total percentage of operating costs amongst all four initiatives amounts to $14.01 million or 50% of the total budget.

Table 1: Federal and Non-Federal Funding and Percentages by Initiative

	Total ($) Amount	Federal Ask ($) (80%)	Local Match ($) (20%)	% of Total Budget
Initiative 1: Transit Services	$14,310,695	$11,448,556	$2,862,139	50.3%
Initiative 2: Bluebikes	$12,579,671	$10,063,737	$2,515,934	44.2%
Initiative 3: Trip Planning App	$140,000	$112,000	$28,000	0.5%
Initiative 4: Research Study	$1,443,937	$1,155,150	$288,787	5.1%
Total	$28,474,303	$22,779,443	$5,694,861	100.0%

Table 2: Funding Across the Four-Year Program

	Year 1	Year 2	Year 3	Year 4	TOTAL
FEDERAL ASK	$8,571,814	$8,426,754	$4,914,668	$866,206	$22,779,443
LOCAL MATCH	$2,142,954	$2,106,689	$1,228,667	$216,551	$5,694,861
TOTAL	$10,714,768	$10,533,443	$6,143,335	$1,082,757	$28,474,303

Table 3: Operating Costs and Percentages Across Initiatives

Operating Costs	Amount	% of Total Budget
Initiative 1: Transit Services	$11,541,646	40.5%
Initiative 2: Bluebikes	$2,473,237	8.7%
Initiative 3: Trip Planning App	$0	0.0%
Initiative 4: Research Study	$0	0.0%
Total	**$14,014,883**	**49.2%**

Program Components

Initiative 1: Expanded Public Transit Services

To implement Initiative 1, LINKUP Greater Boston is requesting $11,448,556 in Federal funds (80% of project costs), with the CoB and partnering TMAs providing the non-Federal match of $2,862,139 (20% of the project costs) for a total of $14,310,695. Initiative 1 will improve the current system by:

- Launching and operating five fixed route shuttles in Allston-Brighton, the Seaport District, and Charlestown/Somerville.
- Launching and operating two on-demand microtransit services in Grove Hall and Mattapan.

The budget for the proposed transit services is broken down into two main categories: capital expenditures (including vehicles and software) and operating expenses (including the cost to operate the vehicle/hour which includes driver pay, maintenance, and all other operating needs).

Grant Administration and Oversight. CoB will work with partnering TMAs and Via to undertake community engagement activities, finalize route and zone design, and oversee the launch and ongoing operations.

Eligible Operating Costs. Operating costs for Initiative 1 amount to $11.54 million or 82.3% of the transit services budget. This amount of grant funds does not exceed the amount of the cost for implementation. Once the grant funds have been expended, CoB and its partners pledge to cover the operating costs for the shuttle routes and microtransit zones. CoB is optimistic about sustaining these services because they already receive substantial private funding, as evidenced by the local matching funds committed in this application, primarily led by the coalition of TMAs.

Contingency Plan. CoB worked closely with Via to develop budgets for the public transit services, which includes a 5% contingency rate.

Scalable Project Options. If sufficient funding is not available to support Initiative 1at the requested amount, scaled back options could be considered to prioritize key FMLM services while still making meaningful impacts. However, each scaled funding option comes with its own set of potential impacts including reduced accessibility and convenience for residents, slower progress in shifting travel behaviors towards sustainable options, limited data for comprehensive decision-making, and challenges in meeting congestion mitigation targets in the short term. Should CoB be required to scale back interventions, it would first eliminate the Charlestown/Somerville route ($1,787,478) and then eliminate one (the Circulator) of the Seaport routes ($1,915,155). This would bring the total project amount for Initiative 1 down to $10,608,062 and the federal ask to $8,486,450.

Initiative 2: Expanded Bluebikes within Greater Boston

To implement Initiative 2, LINKUP Greater Boston is requesting $10,063,737 in Federal funds (80% of project costs), with MassDOT providing the non-Federal match of $2,515,934 (20% of project costs) for a total of $12,579,671. The Bluebikes Expansion will improve the current bike share system in the Boston Region by:

- Adding up to 90 electric bikes and 32 electrified bikeshare stations (each station with 18 bike ports) in the busiest locations, creating charging stations for the 700 e-bikes currently in the system and expanding e-bikes availability by 13%.
- Re-positioning non-electrified stations that will be replaced by e-bike stations to better balance and densify bike share options.
- Adding up to 290 pedal bikes and 32 new non-electrified stations (each station with 18 bike ports) to densify the system in municipalities that recently joined the system.
- Funding operations for the new pedal and e-bike services for the first three to four years.

The budget includes installation costs for new stations, including electric and non-electric stations, electric and standard bicycles, as well as costs to procure an engineering and design consultant to assist in installing the volume of stations requested in this funding proposal. The initiative also includes the operating costs of the new system stations and bicycles. The final number of bike share stations and bicycles installed will depend on a variety of factors, including the site suitability analysis and site selection under guidance from the Bluebikes Governance Council.

Grant Administration and Oversight. As the lead for Initiative 2, MAPC will work with the participating municipalities and others to undertake bike share station site suitability and

selection, assist in the community engagement, and evaluate how well the expanded bike share system is meeting program metrics for safety, equity, congestion relief, and decarbonization.

Eligible Operating Costs. Operating costs for the Bluebikes initiative are $2.47 million or 19.7% of the proposed Bluebikes Expansion budget. This amount of grant funds does not exceed the amount of the cost for implementation. Operation and state-of-good-repair costs for the existing Bluebikes system will continue to be funded under the existing cost sharing arrangements between the bike share operator and the owning municipalities as well as funds though the Boston MPO. Evaluation of the expanded system will be part of this initiative to ensure the expanded bike share system continues operation beyond the grant period of performance.

Contingency Plan. MAPC has included a 15% contingency rate across all Bluebikes cost categories to reflect the longer project period and the dynamic elements (such as utilities, materials, labor) with station procurement and installation. MAPC has used similar contingency rates for similar projects.

Scalable Project Options. If sufficient funding is not available to support the entire Bluebikes Expansion initiative at the requested amount, the Expansion Initiative is entirely scalable and can prioritize key new electric and pedal bike share stations while still making equitable system improvements.

Initiative 3: Integrated Trip Planning and Payment Application

To implement Initiative 3, LINKUP Greater Boston is requesting $112,000 in Federal funds (80% of project costs), with CoB providing the non-Federal match of $28,000 (20% of project costs) for a total of $140,000. The Integrated Trip Planning and Payment Application (also known as Citymapper) will improve the current public transit system by allowing riders throughout Greater Boston to plan, book, and pay for intermodal trips on one interface. The project budget for the Citymapper App includes the cost to maintain and store data collected from rider trips.

CoB will work with Via to launch and oversee the Citymapper app. There are no operating costs necessary to implement this project component. There is no contingency budget for this project component. There are no scalable options for this project.

Initiative 4: Transit Incentives Study

To implement Initiative 4, LINKUP Greater Boston is requesting $1,155,150 in Federal funds (80% of project costs), with CoB providing the non-Federal match of $288,787 (20% of project costs) for a total of $1,443,937. The Transit Incentives Study will improve the current system by providing CoB with accurate information on how to effectively incentivize mode shift from SOVs to public transit. The project budget for the transit incentives study includes the cost of personnel, fringe, travel, software configuration, and incentives for participants.

CoB will work with Via to oversee the transit incentives study. This will include a rider survey, two incentive-based pilots, and then a final analysis and publication. There are no operating costs necessary to implement this project component. CoB has included a 5% contingency budget for this specific component. There are no scalable options for this project.

III. MERIT CRITERIA

The LINKUP Greater Boston team has developed the proposed program to address the Project Merit Criteria listed in the Notice of Funding Opportunity, as described below.

Merit Criterion 1. Characterizing Congestion and Associated Impacts

The Greater Boston Region is notorious for having some of the worst traffic congestion in the world, consistently ranking among the most gridlocked cities globally. This severe congestion impairs regional mobility, undermines economic vitality, and exacerbates environmental conditions. The Texas A&M Transportation Institute (TTI) Urban Mobility report consistently ranks Greater Boston in the top 10 for traffic congestion under several metrics (see Table 4).

Table 4: TTI Vehicular Congestion Rankings for Greater Boston (2020)

Category	US Rank for Greater Boston
Total Delay	6th
Delay per Auto Commuter	2nd
Total Congestion Cost	6th
Congestion Cost per Auto Commuter	4th
Excess GHG Due to Congestion	7th

Source: Performance Measure Summary - Boston MA-NH-RI, Texas A&N Transportation Institute, 2021

The persistent congestion, alongside gaps in public transit options, underlines a critical need for innovative strategies to enhance mobility and reduce reliance on SOVs in the region.

- The **economic** toll from congestion in Boston is evident as it ranks sixth in the nation for the loss of job accessibility, highlighting the direct impact of traffic jams on employment opportunities.
- Regarding **mobility**, INRIX reported that drivers in the Boston area lost an average of 134 hours to traffic congestion in 2022, demonstrating a drain on time and productivity.
- **Environmentally**, congestion in Boston significantly worsens air quality through the emission of ultrafine particles from brakes and tires, disproportionally impacting people of color in Greater Boston.

Congestion in the Boston region is largely attributed to the persistent increase in vehicle miles traveled (VMT). During the COVID-19 pandemic, VMT briefly fell by 18% but quickly rebounded with a 12% rise from 2020 to 2021. As of 2023, traffic levels nearly matched pre-pandemic figures, demonstrated by nearly $215 million collected in driver tolls in Q1 and Q2—only $5 million less than the same period in 2019. This resurgence in travel is part of a broader trend across Massachusetts, a state which has seen some of the highest increases in VMT nationwide (ranking fourth nationally). Inadequate public transit options in Boston exacerbate the congestion problem, compelling many commuters to choose car travel over public transit. Furthermore, the Transportation Performance Management for the Greater Boston (2018-2021) report shows that not only are peak traffic volumes rebounding to pre-pandemic levels, but the congestion is also becoming more dispersed throughout the day, emphasizing the urgent need for more efficient transit solutions in the region.

MassDOT's 2019 "Congestion in the Commonwealth" report found that between 50-67% of major highways within the I-95/Route 128 core experience high levels of congestion. Among these critically congested highways are I-95, I-90, and I-93), all of which will see relief from LINKUP Greater Boston.

- I-95 encircles the Greater Boston region and is a critical north-south artery that links numerous suburban communities (many that are members of the Bluebikes coalition) to

central Boston. The 2019 the Commonwealth report highlighted the severity of this issue stating that "it has become easier to identify road segments along and inside I-95/128 that are not congested."

- On I-90, travel times see a substantial increase during peak hours, with the westbound segment of Route 9 between I-90 and I-95/128 taking about 18.3 minutes at 4 a.m. and escalating to 38.5 minutes by 8 p.m. Similarly, eastbound travel experiences a doubling of travel times during peak hours.
- I-93 is identified as one of the most congested corridors in Massachusetts, with severe congestion throughout its segments. During heavily congested periods, travel times on I-93 South can more than double, escalating from 49 minutes at 4 a.m. to a staggering 88 minutes at 4 p.m.

Merit Criterion 2: Congestion Management and Climate Change Consideration

Project LINKUP Greater Boston proposes an integrated strategy aimed at transforming Greater Boston's transportation landscape by reducing reliance on private vehicles and addressing the diverse transportation needs of the region's neighborhoods. This comprehensive congestion strategy includes targeting specific areas with enhanced FMLM transit services, while other neighborhoods will benefit from improvements in biking infrastructure. Additionally, the rollout of a regional trip planning app is designed to simplify the use of the public transit system across all areas, making it more accessible and efficient. Ultimately, LINKUP Greater Boston's goal is to decrease vehicle miles traveled on major transport arteries such as I-95, I-90, and I-93, thereby alleviating congestion and improving regional connectivity.

FMLM Transit Services Congestion Approach. To select the appropriate neighborhoods for effective FMLM services, the LINKUP Greater Boston team leveraged multiple recent planning studies and congestion analyses, such as the Boston Link Bus study and the Go Boston 2030 plan. Please refer to Section I, Project Location describing transit needs in each of the target neighborhoods and Section IV, Technical Feasibility outlining the process for selecting the appropriate transit intervention for each neighborhood. By targeting specific areas such as Mattapan, Grove Hall, the Seaport District, Allston-Brighton, and Charlestown/Somerville with enhanced FMLM transit options, commuters will have access to more efficient public transit, thereby reducing the number of cars and vehicle miles traveled on priority arterials (mainly I-90 and I-93).

Bluebikes Congestion Approach. The Bluebikes expansion initiative is a critical component to mitigate congestion by promoting bicycle use as a viable alternative to driving, especially for shorter trips within the city's inner core, which are often 6 miles or less. Research from a 2021 study highlights that adding a new bike share station can reduce vehicle ownership per household by 2.2%, vehicle miles traveled (VMT) per person by 3.3%, and vehicular emissions per capita by 2.9%. Additionally, areas where bike share stations are located within 1 km of transit connections see a 10% reduction in auto dependence. Amongst all Bluebikes riders in 2023, 60% would have used a car if Bluebikes were not available; moreover, 50% of riders who own a vehicle state they use that vehicle less as a result of having access to Bluebikes. This effect on vehicle ownership and reliance on cars underscores the potential of expanded bike share services to alleviate traffic congestion effectively.

Photo credit: Lyft

E-bikes have shown to significantly influence commuting behaviors in Greater Boston, making up over 30% of all Bluebikes trips since their introduction. Riders of e-bikes are 45% more likely to reduce their use of cars. For bike share riders, 32% of are more likely to have sold, donated, or discarded a car since using bike share, and 51% more likely to use public transportation more than 10 times per week. Expanded access to e-bikes across the region could also unlock latent demand from people who do not currently use bikes for transportation. Results from a 2022 MassINC poll revealed over half of respondents would be willing to shift to an e-bike for trips of 10 miles or less if they had access to one, and an April 2024 poll of Bluebikes e-bike riders found that 84% have and/or would replace SOV rides with e-bike trips.

Merit Criterion 3: Safety

The LINKUP Greater Boston project aims to improve bike and pedestrian safety across the region by reducing the number of SOVs on the roads. This initiative responds to the alarming increase in traffic-related fatalities throughout the region. Greater Boston recently saw a 54% rise in deaths, from 79 between 2010 and 2014 to 122 from 2014 to 2018. Similarly, during the same latter period, Massachusetts experienced 1,792 motor vehicle-related fatalities and 11,697 serious injuries, with Boston alone accounting for over 82% of the state's fatal pedestrian incidents. Additionally, the number of bicycle crashes and injuries in Massachusetts has remained steady since 2004 and increased slightly since 2020.

- Within the areas slated to receive FMLM transit services, there were six fatalities in the Allston-Brighton neighborhood, three in the Charlestown/Somerville neighborhood, five fatalities in the Mattapan zone, eight fatalities in the Grove Hall zone, and two in the Seaport District from 2015-2023.
- Between 2021 and 2023, there were nearly 1,000 crashes involving cyclists in the Bluebikes communities, resulting in five fatalities and 775 injuries.

CoB has already adopted a Vision Zero plan, the Boston MPO is developing a regional Vision Zero plan, and several of the participating Bluebikes municipalities already have local Vision Zero/bicycle plans. LINKUP Greater Boston incorporates strategies to further Vision Zero policies and improve safety for Boston roadway users. It is also aligned with the NHTSA Safe System Approach in the following ways:

Introduce trip planning app (Citymapper) with real-time data to suggest the safest and most efficient routes, especially convenient for bicyclists (furthers the NHTSA Safer Road Users goal).

The Citymapper trip planning app leverages real-time data to present users with the safest and most efficient routes. It factors in elements like traffic congestion and road closures to steer users away from potential hazards. This empowers users to compare different transportation options based on safety and travel time, enabling them to make informed decisions prioritizing safety. For example, if a user's route includes a high-traffic area during peak hours, the app proposals might encourage them to opt for public transit to avoid congestion and minimize accident risks.

Citymapper includes a safety feature tailored for bicyclists – the cycling router – which gives users the option of quiet, balanced, or fast routes. These routes consider various factors like road speeds, lane numbers, road surfaces, and elevation, providing users with routes that suit their preferences and confidence levels.

Decrease SOV-use and overall VMT, contributing to a car-lite environment that is safer for all roadways users, especially pedestrians (furthers the NHTSA's Safer Roads goals).

The project aims to boost safety in Greater Boston by expanding public transit options and reducing the number of SOVs, all of which is expected to cut traffic congestion and reduce collisions. The initiatives will bridge FMLM gaps with various transportation modes, giving residents flexible choices that best meet their needs.

Ensure equitable and targeted Bluebikes placement in high-risk locations (furthers the NHTSA's Safer Roads goal).

Examine existing crash data to determine high risk locations. If these locations fall within the areas planned for Bluebikes expansion, MAPC will collaborate with the local municipality, MassDOT, and other stakeholders to integrate necessary safety improvements into the bicycle network. This would involve determining if quick-build interventions (such as flex posts) are possible and if so, implementing those changes simultaneously with the Bluebikes expansion.

Leverage previous successes in other Bluebikes communities. The City of Cambridge demonstrates that expanding bike share can be safely achieved. Between 2019 and 2022, as bike share usage and bicycle trips in Cambridge hit record highs, the rates of bicycle crashes and injuries decreased. This improvement in safety follows the city's adoption of the Vision Zero policy, adopted in 2016, which led to the implementation of numerous street safety and bicycle infrastructure projects. These initiatives have not only made the streets safer but also contributed to the popularity of Bluebikes stations in Cambridge. Moving forward, MAPC will encourage all partnering municipalities to add Bluebikes into Vision Zero prioritization plans.

Commit to driver vigilance and safe operational performance on all transit services (furthers the NHTSA's Safety System Approach for Safer Speeds).

Driver Vetting Process and Continuous Monitoring. All drivers of FMLM public transit services will undergo a thorough vetting process including background checks, driving record reviews, and verification of appropriate licenses and certifications. LINKUP Greater Boston will implement continuous monitoring to track driver behavior and performance, using GPS, onboard systems, and feedback from passengers and supervisors. Unsafe driving practices such as speeding or reckless maneuvers will be quickly addressed with corrective actions, additional training, or disciplinary measures.

Encourage safe passenger boardings. For the proposed shuttle services, passengers will board and alight at designated stops away from traffic, ensuring their safety during transit. For the

microtransit services, pick-up and drop-off points will be easily configured (and continuously updated) to ensure that they are in safe and accessible locations.

Merit Criterion 4. Public Engagement, Collaboration, and Partnerships

The LINKUP Greater Boston team is drawing on insights from a variety of sources, including multiple transit studies and collaborative efforts, to shape their application. These inputs have involved extensive public engagement, with a particular focus on vulnerable groups who rely heavily on transit. These activities were designed to be inclusive and accessible, allowing for contributions from individuals across all backgrounds, regardless of race, color, national origin, disability, age, or sex. The key studies and collaborative efforts include:

- The Boston Link Bus Study (2023)
- The Allston-Brighton Neighborhood Transit Link Study (2022)
- The South Boston Seaport Strategic Transit Plan (2030)
- The Lower Mystic TMA Massachusetts Gaming Commission Shuttle Route Study (2023)
- The Go Boston 2030 plan (updated 2024)
- MAPC Bluebikes Working Group

The **Boston Link Bus Study (Link Study)** set the stage for filling gaps in the City of Boston's existing transit network. It is a compilation of findings and recommendations based on six months of analysis and stakeholder engagement. The recommendations for microtransit zones in Mattapan and Grove Hall are informed by this planning exercise. Public engagement activities centered on guidance from a Stakeholder Advisory Committee (SAC) which included about 25 community members who participated in monthly meetings between August and November 2023.

The **Allston-Brighton Neighborhood Transit Link Study (AB Study)** provides a blueprint for improving how people move around Allston and Brighton by making it safer and more efficient for all modes of transportation—walking, biking, transit, and cars. The recommendations for the AB shuttle expansions are informed by this planning exercise. More than 1,600 comments informed the preliminary and final recommendations for the AB shuttles. The AB Study also conducted a community survey in Spring 2022, receiving 273 responses.

The **South Boston Seaport Strategic Transit Plan (Seaport Transit Plan)** was the first plan of its kind to look exclusively at transit, including public transit and private shuttles, expanding transit service, new and improved transit infrastructure, improved access to transit, and transit-first policies. The plan oversaw four in-person and virtual public meetings, ongoing virtual correspondence and information sharing, and coordination with transportation providers and major stakeholders in the neighborhood. To develop the recommendations, the team also relied on community input gleaned throughout the South Boston Waterfront Sustainable Transportation Plan (published in 2015), which involved more than 50 outreach meetings.

The **Lower Mystic TMA Massachusetts Gaming Commission Shuttle Route Study** leveraged community engagement activities from PLAN: Charlestown. Community engagement activities for the PLAN included the Charlestown Advisory Group, which consisted of 26 Charlestown residents and community organization leaders, nominated by elected representatives. PLAN also oversaw 19 public meetings and workshops, four walking tours, seven listening sessions, two open office hour sessions, and a survey which collected nearly 1,400 responses.

The **Go Boston 2030 Plan** set a goal to decrease the number of Boston commuters driving alone to work by 50% and increase the percentage of commuters taking public transit by a third. To

achieve this goal, CoB would have to facilitate a dramatic shift in mode choices, incentivize non-auto travel, and increase multimodal connectivity and transit options. The Imagine Boston 2030 Plan recognizes that reducing drive alone rates is closely related to improving the convenience of choosing modes other than SOVs. Community engagement for GoBoston began in 2015, when CoB collected 5,000 questions and sorted them into nine themes. In February of 2015, community and agency partners came together to identify priority questions for each theme. In May of 2015, over 650 people attended a two-day Visioning Lab to shape the goals of Go Boston 2030.

The **MAPC Bluebikes Working Group**, consisting of member municipalities and the bike share operator, has driven significant expansions of the bike share system, including new stations and e-bikes in 2019 and 2023, respectively. The Working Group has effectively used community feedback gathered by Lyft, which is contractually required to perform outreach as part of its operating agreement. Lyft participates in events, offers promotions like free Earth Day rides, and conducts surveys, particularly targeting group memberships and the income-eligible program, which saw a 40% membership increase since 2022. Lyft's efforts in engaging low- to moderate-income communities are ongoing, with the MAPC Working Group supporting these initiatives to ensure effective outreach and feedback collection as the system expands.

Moving forward, LINKUP Greater Boston will leverage a consensus-based approach and extensive stakeholder networks to continuously prioritize community feedback. Community engagement efforts will be spearheaded by different organizations in specific areas to foster meaningful dialogue, cultivate trust, and ensure that local perspectives are at the forefront of decision-making processes. The approach will encompass both online and offline methods, drawing from successful practices employed in the aforementioned studies and collaborative efforts such as:

1. **Town Halls** within each of the Bluebikes municipalities and communities receiving new transit services to describe the projects and get pre-launch insights.
2. **Focus Groups** on a bi-annual basis and within each community, allowing individuals to provide feedback on the project within an intimate setting.
3. **Attend pop-up events and related activities** that allow the team to talk to curious passersby about the projects while handing out educational materials.
4. **Launch targeted promotions, personalized communications, and subscription incentives** to boost ridership. The incentives will be designed to reach communities of color, lower-income groups, people with disabilities, youth, and older adults.

Merit Criterion 5. Equity and Justice40

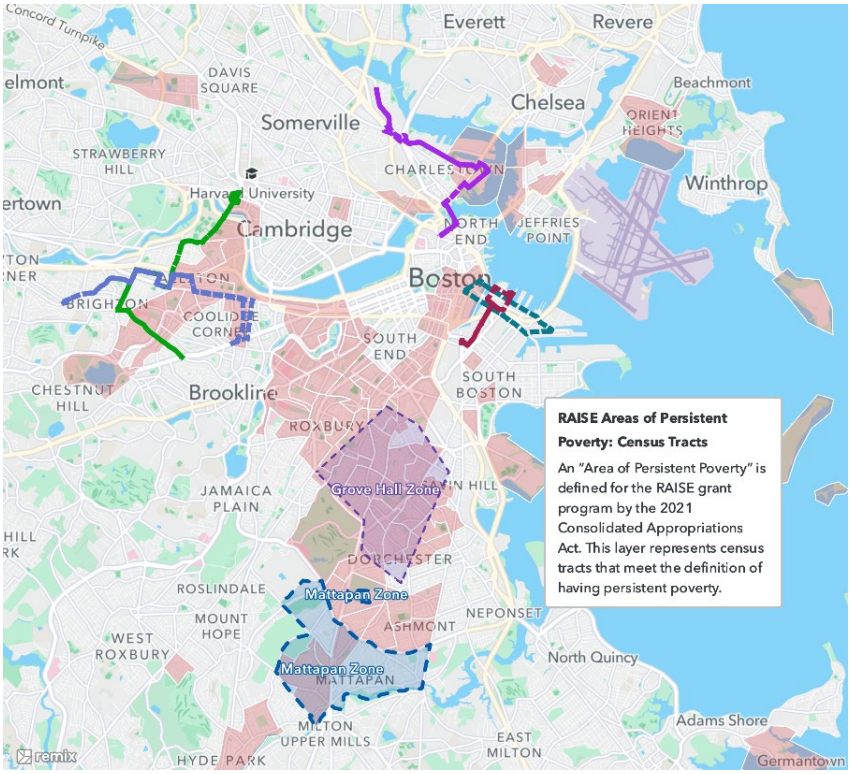
In addition to mitigating congestion, the LINKUP Greater Boston initiatives aim to enhance accessibility in historically underinvested communities. LINKUP Greater Boston is designed to ensure that Justice40 communities receive at least 40% of the project benefits in the following ways:

- For Initiative 1, the communities in the selected project areas encompass a total area of 11.2 square miles across five neighborhoods: Allston-Brighton, Charlestown/Somerville, Grove Hall, Mattapan, and the Seaport. Among these neighborhoods, five square miles fall within Areas of Persistent Poverty (AoPP) census tracts (there are 33 AoPP tracts total across all of the neighborhoods, see Figure 10). This distribution ensures that nearly 50%

of the project benefits will be directed to these Justice40 census tracts. Notably, 90% of the Grove Hall zone is located in an Area of Persistent Poverty census tract.

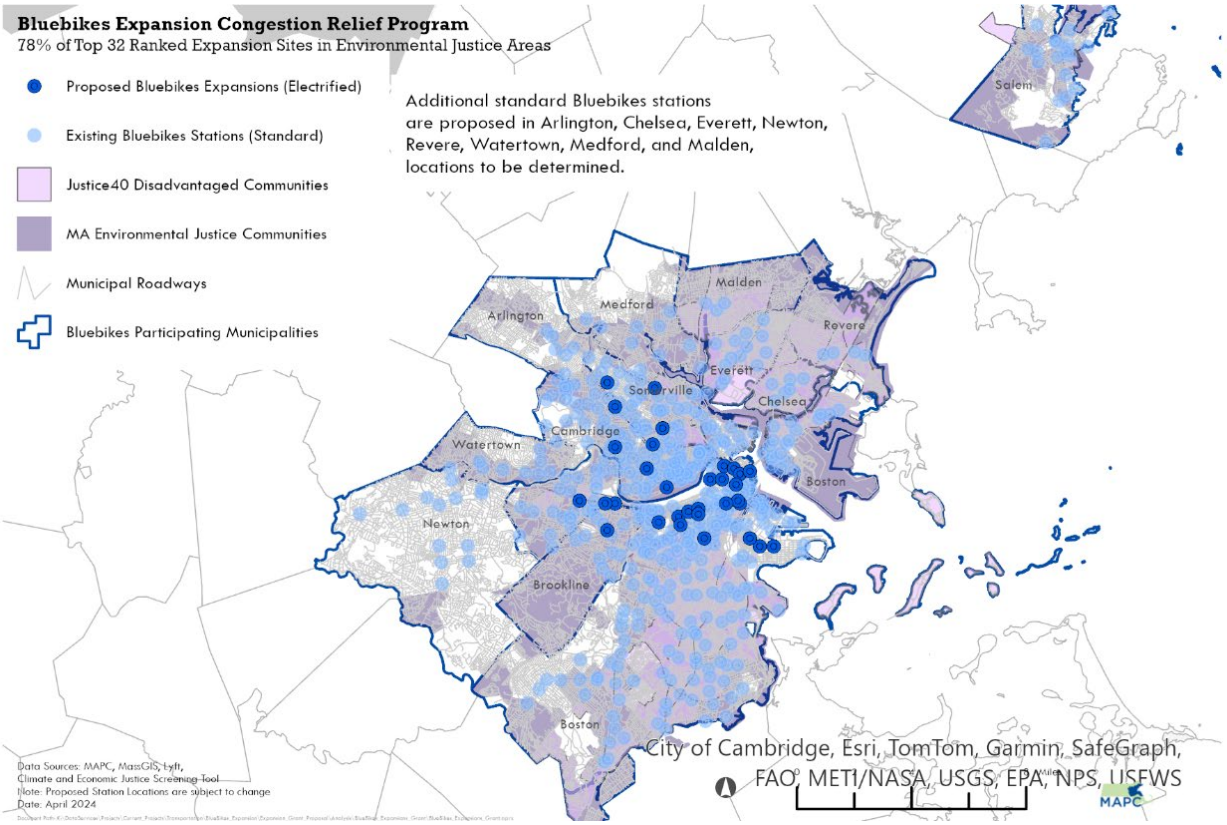
- For Initiative 2, 84% of the top 32 ranked sites for Bluebike expansion fall within Environmental Justice (EJ) areas. The proposed expansion under this grant application would add 5 new e-bike stations in Justice 40 areas, and 25 of the 32 (78%) stations would be in EJ areas (see Figure 11). With this expansion, 30% of the total existing and proposed Bluebikes stations will be in Justice40 areas and 84% will be in both Justice40 and EJ areas.[4]

Figure 10: Areas of Persistent Poverty Census Tracts in FMLM Neighborhoods



[4] Census block groups in Massachusetts identified by the Commonwealth as environmental justice (EJ) Populations based on demographic criteria set by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) and can be viewed via maps at https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts.

Figure 11: Bluebikes Expansion Sites in EJ Areas



LINKUP Greater Boston is guided in part by the city's racial equity framework, "Resilient Boston: An Equitable and Connected City," which included an extensive equity assessment to identify disadvantaged communities. The study found that one in five Bostonians – and nearly one in three children under 18 – live in poverty, with these rates disproportionately affecting racial minorities. Median household (family and non-family) earnings for non-Latinx/Hispanic White Bostonians ($79,802) continue to outpace those of Black ($38,454), Latinx/Hispanic ($30,883), and Asian ($38,802) residents. The Resilient Boston document outlines multiple key goals and targets related to public transportation that have guided the planning for LINKUP Greater Boston, as shown in Table 5.

Apart from reducing congestion and travel time, LINKUP Greater Boston will bring significant benefits to the communities involved, contributing to more equitable growth across the Boston region.

Table 5: Resilient Boston Goals Guiding LINKUP Greater Boston Strategies

Resilient Boston Overarching Goal: Develop a redundant and reliable public transportation network to provide equitable accessibility for all Bostonians	
RESILIENT BOSTON Sub-Goal	**LINKUP GREATER BOSTON Strategy**
Ensure that every home in Boston will be within a ten-minute walk of a rail station or key bus route stop.	The Bluebikes system has approximately one station every quarter mile to a half mile, with a goal of stations every quarter mile to an eighth of a mile. The introduction of on-demand microtransit services in Mattapan and Grove Hall will guarantee that every residence in these neighborhoods is within a ten-minute walking distance from a public transit stop, as the service is designed to ensure that no rider is asked to walk more than .25 miles to their requested pick-up or drop-off location.
Reduce the transportation cost burden for very low-income individuals to the citywide average for a median household.	The Bluebikes service is affordable at $2.95 per trip (up to 30 minutes) and memberships at $13 per month with unlimited 45-minute rides. Both single rides and monthly passes are less than the price of the MBTA options. The service also provides an income-eligible program at $50 per year, or $5 per 30 days of riding. All proposed transit services will be free for community members who qualify as transit-dependent (e.g., low income, older adults, experiencing a disability)
Reduce Bostonians' average commute to work time by 10%. Decrease average commute times for families of color by 15%.	The Citymapper transit planning app reduces Bostonians' commute time by providing real-time departure data, allowing riders to select the most efficient transit route with reliability, ultimately streamlining travel experiences. With many trips in the Bluebikes service area under 6 miles, and with participating municipalities expanding their separate bike lanes and trails, Bluebikes provides a direct, consistent, and time competitive option for travel.

Reducing Barriers to Economic Opportunity: LINKUP Greater Boston significantly enhances economic opportunities and job access for priority populations. For instance, Bluebikes operates 24/7, providing reliable transportation outside of MBTA's regular hours and on holidays, which is particularly beneficial for third-shift workers. Additionally, the introduction of microtransit services promises to dramatically expand employment opportunities. With the new service, residents living in Mattapan and Grove Hall have access to thousands more jobs within a 60-minute commute.

Improving Overall Quality of Life: Throughout Boston, transportation is often cited as a major barrier to accessing critical services—including grocery stores, healthcare appointments, and educational institutions—the lack of which can negatively impact life outcomes. Educational and health outcomes vary significantly depending on race and neighborhood. According to ACS data, only 16% of Mattapan's residents have obtained a bachelor's degree or higher, compared to 53.4% citywide. Access to food also varies throughout the city, as the Harvard Political Review identified Dorchester (a neighborhood within the Grove Hall zone) as the second worst food desert within the city, next to West Roxbury. Additionally, Black and Latino residents make up 40% of the city population, but bear a disproportionate burden of disease. The project will provide transit-dependent residents with better transportation options so that they can more effectively reach critical services.

IV. PROJECT READINESS AND ENVIRONMENTAL RISK

Technical Feasibility and Assessment

As explained in Merit Criterion 4, all proposed initiatives are based on thorough technical analysis, design studies, and robust community engagement efforts.

Allston-Brighton Shuttle Technical Feasibility: The Allston-Brighton (AB) study evaluated potential transit improvements in Allston-Brighton by conducting a technical analysis that included a needs assessment and needs overlay analysis. The study proposed initial shuttle concepts based on several criteria including coverage, efficiency, cost, simplicity, and convenience. Community members were invited to comment on the proposals and planners incorporated that feedback into the next round of design. The two AB shuttles chosen for this application emerged as the top selections from the study.

Seaport Shuttles Technical Feasibility: The Seaport Transit Plan thoroughly evaluated numerous transit concepts in South Boston's Seaport area, identifying opportunities and limitations within the transit network. Planners ultimately proposed 44 strategies to improve the operations, capacity, and connectivity of the transit network serving the neighborhood. Of the strategies, the A Street Shuttle and Seaport Circulator were specifically selected for this application due to their ability to address FMLM gaps in transit coverage and promote a shift away from SOVs.

Charlestown Shuttles Technical Feasibility: The Lower Mystic TMA Massachusetts Gaming Commission Shuttle Route Study assessed potential shuttle routes in the Lower Mystic area, including Charlestown. This project incorporated findings from "PLAN: Charlestown," which was published in 2023 by the Boston Planning & Development Agency (BPDA). The route study systematically evaluated route options using six priority criteria: coverage, equity, efficiency, cost, simplicity, and convenience. The route from Assembly to North Station, which scored the highest across these criteria, is the one proposed in this application.

On-Demand Microtransit Zones Technical Feasibility: CoB used extensive community input from the Boston Link study and data from various design tools—including Via's in house on-demand planning tool, Remix On-Demand—to design the microtransit zones. The process included:

1. Draft service zones by selecting the geographic areas that connect into highly congested arterials and/or lack sufficient public transit services.
2. Estimate demand by assessing the population, employment, and demographic attributes of each zone alternative.
3. Run simulations to determine the number of necessary vehicles and assess the tradeoffs between service parameters.
4. Cost-benefit analysis using the results of the simulations and projected operating costs, evaluate the cost-effectiveness of each alternative.

Moving forward, LINKUP Greater Boston can configure wait times, walking distances, and other service parameters for the microtransit services at any point. Parameters can also be adjusted over time as rider behavior, data, and community input are collected.

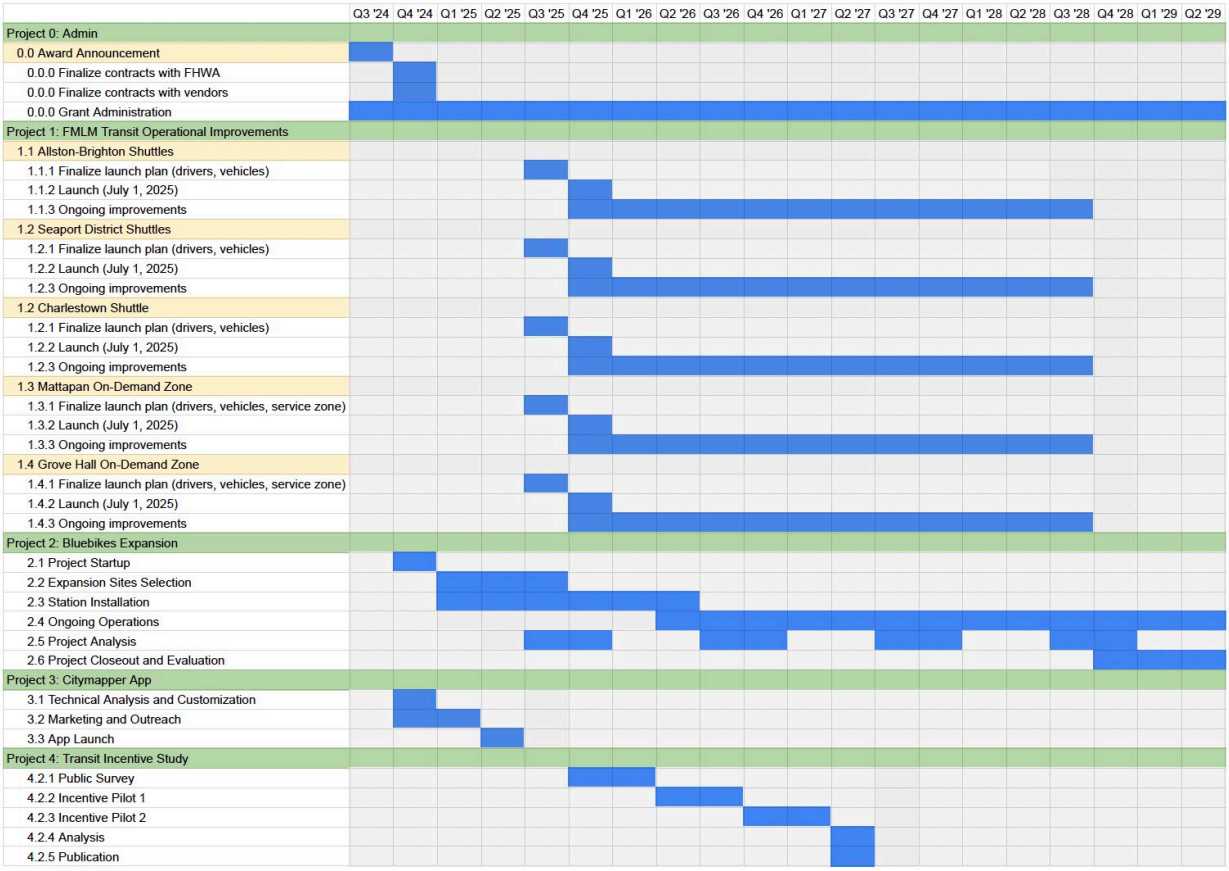
Bluebikes Expansion Technical Feasibility: The Bluebikes expansion is the outcome of analysis by MAPC, the 13 Bluebikes municipalities and the system operator (Lyft) on the needs and expected impacts of densifying the bike share system. The expansion to add stations and bicycles is an outgrowth of similar expansions in 2019 (adding nine municipalities) and 2023 (adding e-

bikes). Lyft will use its recent experience in expanding and densifying the NYC and Chicago systems, including e-bike stations.

Project Schedule

Much of the work completed to date for LINKUP Greater Boston has been transit plans and community engagement activities which inform the initiatives. That work and the resulting community support of the project will pay dividends during service launch and ongoing operations. As illustrated in Figure 12, MAPC has drafted a realistic and conservative project schedule for the four project interventions. A more detailed project schedule for LINKUP Greater Boston is found in **Appendix D**.

Figure 12: LINKUP Greater Boston Initiative Schedule



- The estimated timeline for the transit operational improvements (Initiative 1) is three years. If awarded, the initiative will launch on October 1, 2025, and will operate through September 30, 2028.
- The estimated timeline for the Bluebikes Expansion Program (Initiative 2) is four years (to account for the initial construction and installation). If awarded, MAPC would likely start in the last quarter of calendar year 2024 and complete the program in June 2029. The three years of operation will occur from April 1, 2026, through June 30, 2029.
- The Citymapper App is already readily available to the Greater Boston public. CoB will begin collecting and storing data through the Citymapper app on July 1, 2025.

- The Transit Incentive Study will occur while Initiatives 1, 2, and 3 are all deployed, likely in 2026/2027.

Required Approvals

Environmental Permits and Reviews

The environmental permitting and approval process for LINKUP Greater Boston is expected to be straightforward, as MAPC does not foresee the need for any state or federal environmental permits for the project. The initiatives within LINKUP Greater Boston, including transit services and Bluebikes stations, are not projected to impact natural resources, adversely affect historic properties, Section 4(f) resources, or Environmental Justice populations. Notably, transit services will be operational without the necessity for construction, and Bluebikes stations will be integrated within existing sidewalks and parking areas. Should there be a need to adjust the bicycle stations to minimize impacts on sensitive sites, such as historical locations, MAPC will coordinate with MassDOT and other relevant bodies to secure a Categorical Exclusion if required.

State and Local Approvals

LINKUP Greater Boston meets state and local approvals and federal transportation planning requirements. As discussed in Merit Criteria 4, all initiatives are supported by meaningful public involvement. Additionally, MAPC has been working with MassDOT and the Boston MPO to fund various improvements and expansions to the Bluebikes system since 2011. This includes the Boston MPO's decision to fund $1M annually for State of Good Repair for replacing stations and bicycles starting in FY2025.

LINKUP Greater Boston supports MassDOT's draft 2025 Beyond Mobility Plan, as well as the Commonwealth's Clean Energy and Climate Plan for 2050, published in 2022, and MAPC's decarbonization and clean energy goals outlined in the recently adopted regional plan, MetroCommon 2050.

Federal Transportation Requirements Affecting State and Local Planning

If awarded the grant, MAPC, as a member of the Boston MPO and in coordination with the CoB and MassDOT, will include all LINKUP Greater Boston initiatives in the TIP and STIP.

- MassDOT is fully supportive of the Bluebikes expansion and suggested that MAPC apply for this Congestion Relief grant; MassDOT also has committed to providing the non-federal match for this grant.
- CoB also maintains long standing relationships with MassDOT and the Boston MPO, which oversee the STIP and TIP, respectively. If awarded, all transit operational interventions will be incorporated into the STIP and TIP.

Assessment of Project Risks and Mitigation Strategies

The LINKUP Greater Boston project partners identified risks and developed mitigation strategies for each project initiative. Some risks are common to all initiatives, while others are unique to the transit operations component. These risks were categorized accordingly and thoroughly discussed, as shown below.

Risk 1, Community Resistance to Adoption: One significant risk is the potential for community resistance to changes in transit services or new technologies, which could lead to delays or setbacks.

- Mitigation Strategies: LINKUP Greater Boston project leads will continue robust community engagement efforts. For the Bluebikes expansion, MAPC and participating municipalities will survey both riders and non-riders and use outreach methods (including social media) to inform the community about the bikes and gather feedback. For transit services, CoB will work with the TMAs to engage residents (especially older adults), businesses, and advocacy groups.

Risk 2, Data Privacy Concerns: Another key risk involves data privacy concerns related to collecting and analyzing user data through the microtransit and Citymapper apps.

- Mitigation Strategies: CoB recognizes the importance of robust data privacy and security protocols and will adhere to best practices and international standards to address any concerns. Via, the platform handling the sensitive data, will ensure security with robust data protection and safeguarding protocols, and is fully certified in ISO 27001, an international standard for risk management.

Risk 3, Community Displacement: New transit and micromobility services present their own set of risks, particularly regarding potential community displacement in at-risk neighborhoods.

- Mitigation Strategies: Mitigation strategies for this risk include employing local residents as drivers at a living wage, helping households reduce expenses by decreasing car dependency, and facilitating home-based businesses by improving access to underserved areas with transit or parking limitations.

Risk 4, Driver Shortages and Supply Chain Issues: The driver shortage in this climate has prevented many transit agencies from scaling and even running efficient service.

- Mitigation Strategy: All drivers will be offered a competitive salary and will also receive training opportunities to invest in their own employability over time, contributing to overall driver retention.

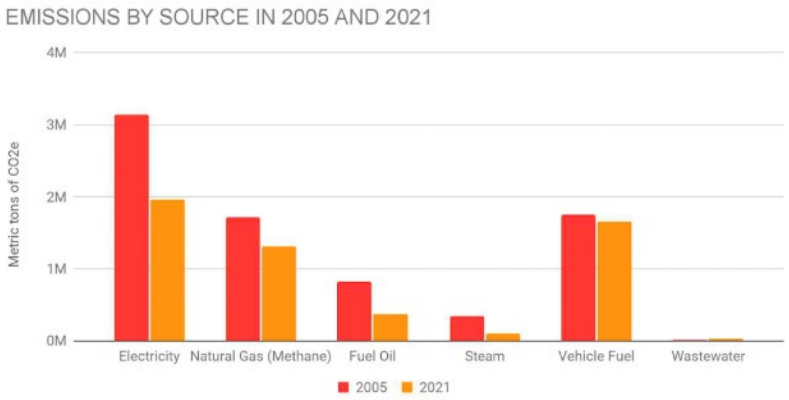
Risk 5, Installation Delays for Bikeshare: The installation process presents several challenges, such as potential delays from utility connections, equipment lead times, and construction setbacks.

- Mitigation Strategy: The Bluebikes working group will regularly coordinate to monitor and address project risks, drawing on past successes and challenges from similar expansions in cities like New York and Chicago. To further reduce risks, special attention will be paid to schedule management, planning all construction activities during favorable weather conditions to prevent delays.

V. ADMINISTRATION PRIORITIES AND DEPARTMENTAL STRATEGIC PLAN GOALS

Climate Change and Sustainability

Figure 13: Massachusetts GHG Emissions by Source, 2005 and 2021



The transportation sector is responsible for 37% of the greenhouse gas emissions (GHGs) in Massachusetts. Despite significant reductions in greenhouse gases (GHGs) from electricity, increasing fuel efficiency, and the growing number of electric vehicles, transportation emissions have not declined at the same rate. Although the average vehicle registered in Massachusetts has improved its fuel efficiency from 18.6 miles per gallon (mpg) in 2005 to an estimated 23.4 mpg in 2021, the overall volume of vehicle miles traveled (VMT) continues to rise, which limits the reduction in GHGs from transportation. Currently three-quarters of transportation-related emissions come from private passenger vehicles, with only 10% coming from transit buses.

The Carbon Free Boston plan emphasizes the need for a fundamental shift in Boston's transportation culture to achieve a carbon-neutral system. The plan's primary goal is to transition trips from cars to public transit, biking, and walking—a strategy that aligns closely with the initiatives proposed in this application. This success depends on the intelligent adoption of new technologies, influencing behavior with strong, equitable, and clearly articulated planning and investment, and effective collaboration with state and regional partners.

LINKUP Greater Boston will address climate change in two ways:

1. **Switch trips from Single Occupancy Vehicles to public transit and bike share.** Project LINKUP Greater Boston is set to significantly reduce private vehicle usage by fulfilling FMLM gaps and enhancing connectivity within Greater Boston, thereby increasing transit accessibility and mitigating congestion. Collectively, the initiatives are projected to eliminate nearly 2,700 single-occupancy vehicle (SOV) trips daily, amounting to nearly 700,000 annually. Considering the average distance of SOV trips from each targeted neighborhood, this initiative is expected to cut nearly 12,500 vehicle miles traveled (VMT) daily and approximately 3.3 million VMT annually. These reductions correspond to a decrease of about 1,345 tons of CO2 emissions annually. Please see **Attachment E** for VMT and SOV calculations.
2. **Support households to be car-free and car-lite.** The project is strategically designed to support households in becoming car-lite or car-free by leveraging the proven benefits of bike-sharing and other sustainable transit options. A 2021 study examining the impact of bike share in Metro Boston revealed that introducing new bike stations significantly reduces vehicle ownership, miles traveled per person, and vehicular emissions. This reduction in vehicle use is nearly immediate and sustainable over time. Lyft's annual survey further supports these findings, with 57% of Bluebikes users not owning personal vehicles and 50% of vehicle owners using their cars less frequently due to bike share access.

Furthermore, the increasing adoption of e-bikes and e-mopeds, which displaced approximately 1 million barrels of oil daily in 2022, highlights the shift towards less fossil fuel-dependent transportation options. LINKUP Greater Boston also introduces a trip planning app which will encourage sustainable transportation habits by making it easier for users to choose environmentally friendly modes of transportation. Additionally, the transit incentive research study will serve as a jumping-off point to test potential climate impacts of mode shift.

Together, these initiatives not only promote a shift away from car dependency but also foster a more sustainable and equitable urban transport system.

Workforce Development, Job Quality, and Wealth Creation

The LINKUP Greater Boston team is dedicated to the use of minority-owned, women-owned, disadvantaged businesses (MWBE/DBE), and small businesses in the selection of vendors. The team is also committed to advancing a workforce that supports the creation of good-paying jobs with the free and fair choice to join a union. For example, CoB is required to solicit responses to Requests for Proposals from at least three DBE/MWBE firms. Additionally, any vendors selected to help with installation of Bluebikes stations will be hired under Massachusetts 30B Uniform Procurement Act after the grant award. MAPC will work with regional business groups and will reach out to businesses listed in the Massachusetts Supplier Diversity Office (SDO), or similar certified entities that support socio-economic disadvantaged businesses, minority-owned businesses, women-owned businesses, or small businesses. Furthermore, MAPC will require that interested vendors indicate how much (or what percentage) of their offered services will support those businesses in bids and proposals.

LINKUP Greater Boston is poised to significantly enhance connectivity across the city, with a particular focus on underserved areas like Mattapan and Grove Hall. This initiative includes expanding the Bluebikes network, which will make it easier for residents to access a broader spectrum of job opportunities. By improving transit options and reducing transportation barriers, LINKUP Greater Boston enables residents to reach diverse employment hubs more easily, driving economic activity and increasing workforce participation. This broader access to jobs not only boosts residents' earning potential but also contributes to overall wealth creation within EJ communities.

Furthermore, the LINKUP Greater Boston initiative will directly create new jobs through its various programs. The expansion of the Bluebikes network, for example, is expected to create 36 new jobs as part of the system design, station installation, and daily operations, based on the metric that one permanent job is created for every 2.5 bike share stations. Also, the FMLM transit initiatives will hire 50 local drivers, enhancing employment opportunities within the community. Boston is committed to investing in training for these drivers and dispatchers, enhancing skill development through interactive workshops and a comprehensive suite of resources. Moreover, the city plans to adopt best practices from its operating partner, Via, to ensure fair wages and effective management, thereby fostering a sustainable and supportive working environment for new employees.

Please see Section **III. Merit Criteria** for how LINKUP Greater Boston will address the Administration Priorities and Departmental Strategic Plan Goals of **Safety** and **Equity/Justice40**.

VI. STATUTORY REQUIRED PROJECT SELECTION PRIORITY

Boston's congestion problem is among the worst globally, as highlighted by the 2022 INRIX Global Traffic Scorecard ranking it as the fourth-worst city for congestion worldwide. This congestion leads to significant time and financial losses, with the average Boston driver losing 134 hours and $2,270 annually due to traffic. The Texas A&M 2021 report further accentuates these challenges, showing a 12% increase in vehicle miles traveled (VMT) between 2020 and 2021 and a near return to pre-pandemic levels.

Inefficient public transit options force many to rely on cars, contributing to increased congestion and longer commute times. These congestion problems are particularly acute on major roadways like I-95, I-90, and I-93, as well as on local roads. According to the Boston MPO travel data, many trips within Greater Boston are less than six miles, showing that bike share and FMLM transit services can provide an affordable, equitable option to driving in Boston area traffic, and that LINKUP Greater Boston will help provide congestion relief in the region.

VII. FHWA PRIORITY SELECTION CONSIDERATIONS

The LINKUP Greater Boston Congestion Relief program will meet the following FHWA program priorities.

- **Grant Need:** Without funding from the Congestion Relief Program, LINKUP Greater Boston will not occur. Since 2019, MAPC has been working with MassDOT and the 13 bike share municipalities to find a path to both replace the current bike share equipment that is reaching the end of its useful life and expand the system, particularly with e-bikes. The CoB has been working closely with the TMAs over the last few years to find start-up funds for the FMLM transit services.
- **Project Start:** The project can start within six months of the date of the Program grant award is announced. MAPC, the member municipalities, and the Bluebikes operator already have a working group that meets regularly, and the siting of stations and additional Bluebikes can begin within six months of grant execution. The CoB has already selected its vendors and performed the technical analysis necessary to implement the transit components.
- **Innovative, integrated, multimodal solutions to congestion:** LINKUP Greater Boston incorporates innovative, integrated, multimodal solutions to congestion relief by implementing a broad array of complementary initiatives. The initiatives will result in multimodal solutions to the FMLM challenge including innovative transit services coupled with Bluebikes expansion at transit stations, all of which will be supported by a unified trip planning and payment application. Together, these initiatives will enhance connectivity and reduce vehicle dependency.
- **Local economic development:** For any vendor selection, the LINKUP Greater Boston partners will seek vendors who employ or are owned by women, person of color, persons with disabilities, and hire local workers from economically disadvantaged communities. The expanded bike share network will be an affordable and consistently available transportation option to access jobs. For the FMLM transit expansions, all partnering vendors will be instructed to hire drivers from within the community.

VIII. LETTERS OF SUPPORT

The LINKUP Greater Boston team received the following Letters of Support for its proposed program, which are included as a separate PDF attachment, **Appendix A**:

- City of Boston
- Boston City Council
- City of Chelsea
- LivableStreets Alliance
- Lyft Bikes
- TransitMatters
- Via Transportation, Inc.
- Massachusetts Bicycle Coalition (MassBikes)
- Seaport TMA
- Allston Brighton TMA
- City of Salem
- Town of Arlington
- Town of Brookline
- Lower Mystic TMA
- City of Watertown
- City of Cambridge
- City of Revere
- We have also confirmed that we are receiving letters from U.S. Senator Elizabeth Warren and U.S. Senator Edward Markey on Behalf of Massachusetts Delegation; Massachusetts Department of Transportation (MassDOT); and Massachusetts Bay Transportation Authority (MBTA). We will forward those letters to FHWA immediately upon receipt.

APPENDICES

The appendices included in this application are:

- Appendix A Letters of Support
- Appendix B Budget Detail
- Appendix C Maps
- Appendix D Project Schedule
- Appendix E VMT Calculations
- Shapefiles