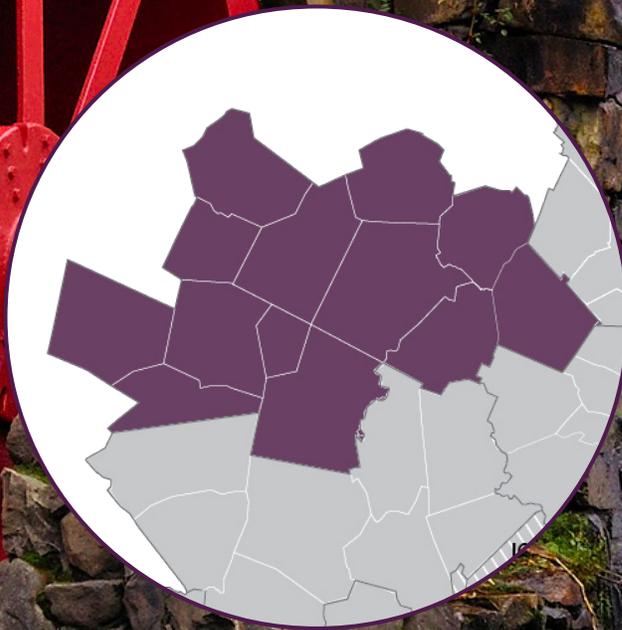


Minuteman Advisory Group on Interlocal Coordination (MAGIC)

Identifying Transportation Needs, Construction Projects,
and Studies in Your Subregion



Acton • Bedford • Bolton • Boxborough • Carlisle • Concord • Hudson • Lexington • Lincoln • Littleton • Maynard • Stow • Sudbury

FALL 2020

WHAT TRANSPORTATION NEEDS DID THE MPO IDENTIFY IN MAGIC COMMUNITIES?

The Boston Region Metropolitan Planning Organization (MPO)

conducted an assessment of transportation needs in the Boston region to inform the MPO's Long-Range Transportation Plan (LRTP), [Destination 2040](#). The MPO staff identified existing transportation conditions and made projections of future conditions and demand on the system. MPO staff also reached out to various subregional groups to discuss transportation needs and opportunities to improve transportation in the subregional communities. The resulting [LRTP Needs Assessment](#) serves as a tool for planning the region's future transportation network and prioritizing the MPO's limited funding for transportation projects and studies.

The information that follows highlights some of the transportation needs identified in the MAGIC subregion based on MPO analysis, and past visits to MAGIC communities. This information has been updated from Federal Fiscal Year (FFY) 2020 with comments MPO staff heard from fall 2019 to spring 2020.

Projects Programmed in the [FFYs 2021–25 TIP](#) in the MAGIC Subregion

TIP Identification Number	Project	Category	Municipality	Year Programmed
608229	Intersection improvements at Massachusetts Avenue (Route 111) and Main Street (Route 27) (Kelley's Corner)	Intersection Improvements	Acton	2022
607738	Minuteman Bikeway Extension	Bicycle/Pedestrian	Bedford	2023
609054	Reconstruction of Foster Street	Complete Streets	Littleton	2024
608443	Intersection improvements on Route 2A at Willow Road	Intersection Improvements	Littleton, Ayer	2021
608164	Bruce Freeman Rail Trail, Phase 2D	Bicycle/Pedestrian	Sudbury	2022

FFY = Federal Fiscal Year. TIP = Transportation Improvement Program.

MAGIC Transportation Projects in the TIP Universe of Projects

Project	Category	Municipality	Scored by the MPO
Reconstruction & Widening on Route 2, from Sandy Pond Road to Bridge over MBTA/B&M Railroad	Major Infrastructure	Concord	No
Route 4/225 (Bedford Street) and Hartwell Avenue*	Major Infrastructure	Lexington	No

MBTA = Massachusetts Bay Transportation Authority. TIP = Transportation Improvement Program.

* The Route 4/225 (Bedford Street) and Hartwell Avenue project in Lexington is programmed in the MPO's LRTP, *Destination 2040*, in the FFY 2030–34 time band.

Transportation Studies Conducted in the MAGIC Subregion through the [Unified Planning Work Program \(UPWP\)](#)

- Community Transportation Technical Assistance Program in Lincoln (FFY 2018)
- Bicycle Network Gaps: Feasibility Evaluations in Weston (FFY 2018)
- Low-Cost Improvements to Express Highway Bottlenecks in Lexington (FFY 2017)
- First- and Last-Mile Transit Connections Studies in Concord (FFY 2016)
- Addressing Priority Corridors from the LRTP Needs Assessment
 - Route 2 in Concord and Bedford (FFY 2013)
- Safety and Operations Analysis at Selected Intersections
 - Lincoln Street and Cox Street/Packard Street in Hudson (FFY 2011)
 - Main Street (Route 117) and Still River Road (Route 110) in Bolton (FFY 2010)
 - Boston Post Road and Landham Road in Sudbury (FFY 2009)

Read the studies on the [Boston Region MPO's Recent Publications webpage](#).

Region-wide Transportation Studies

- [How to Operate a Successful Community Shuttle](#)
- [Pedestrian Report Card Assessment Interactive Database](#)
- [New Emerging Metrics](#)



Transportation Needs Identified through Outreach in the MAGIC Subregion

The comments below include transportation needs identified in outreach for the LRTP Needs Assessment and new comments heard during MPO outreach from fall 2019 to spring 2020.

The new comments are in purple.



Roadway

- Improve Route 3 chokepoints at six bridge crossings
- Improve chokepoints over Concord Road (Route 225)
- Incorporate Complete Streets designs on Route 2 and 2A. (Massachusetts Department of Transportation [MassDOT] District 3 reconstructed Route 2A, but did not incorporate a bike lane)
- Fix safety challenges at the Landham Road/Route 20 intersection in Sudbury
- Improve the congestion in Lexington and Bedford on Route 4
- Improve Kelly's Corner in Acton. **TIP project #608229 programmed for FFY 2022**
- Improve the Concord Rotary
- Include dedicated bus lanes in all major infrastructure projects 20 years out



Transit

- **Add express bus service between Sudbury and Boston/Cambridge to replace hundreds of vehicle trips**
- **Create bus priority on Route 20 to increase bus reliability and time savings**
- **Support the Massachusetts Bay Transportation Authority's (MBTA) Rail Vision providing high-quality, high-frequency, electrified service throughout the region**
- **Create more sustainable transportation from Lowell to Framingham through the MAGIC subregion**
- **Improve Regional Transit Authority (RTA) coordination. Maynard and Acton are Lowell Regional Transit Authority (LRTA) communities but are not provided LRTA access connecting to career centers, older adult services, and workforce transportation.**
- **Support operational funding for Transportation Management Association providing public transit where there are gaps from RTAs**
- **Support transit services combined with transportation for students traveling to school to increase efficiency in Lexington**
- **Install a dedicated bus lane on Route 3 in Bedford to support bus rapid transit**
- **Create a dedicated bus lane from Lexington to Arlington to increase access and cut down on traffic in MAGIC subregion downtown areas to increase safety of people walking, biking, and taking transit**

- **Implement a shuttle program on Route 62 to service increased development and relieve congestion**
- **Construct more parking at MAGIC MBTA Commuter Rail Stations**
- **Increase transportation options for community college students accessing internships**
- **Implement fixed-route service to commuter rail stations, prison, prison farm, major hotels, and hospitals in Concord**
- **Incentivize transit-oriented development and density around transit stations through transportation project evaluation criteria**
- Add transit options where there are large parking lots on Route 3 and Route 128
- Add a new Bus Rapid Transit lane on Route 3
- Improve transportation options to access community colleges
- Expand transportation for seniors
- Support transit for suburban low-income residents
- Create connections from MAGIC subregion to Bedford and Lowell to access jobs and services
- Coordinate with the MBTA and Lowell Regional Transit Authority to improve cross subregional connections
- Provide transit service for off-peak times for service employees
- Create funding sources and space for RTA coordination
- Provide last-mile fixed-route transit and fixed-route service to connect transportation hubs to final destinations
- Provide incentives for people moving through multiple RTAs to encourage transit use and increase revenue for RTAs
- Create more transit hubs like Alewife Station in MAGIC subregion
- Create a local transit system serving Bedford and nearby communities
- Increase MBTA suburban bus service
- Implement reliable access for seniors and people with disabilities to commuter rail in Lincoln, Concord, and West Acton
- Incorporate efficient regional use of Council on Aging vans, which are often not used during commute hours nor on evenings, weekends, or holidays
- Create better options for last-mile connections to get people to jobs, including more frequent service in the evenings and on weekends when service workers work
- Encourage new affordable and/or senior housing developments to incorporate transit service (municipalities want to meet Chapter 40 requirements but residents in some of the already-built isolated developments are very concerned about the car dependency)
- Create more transportation and more connectivity options for low-income residents and others who cannot, or do not want to drive, or own a car

- Fund community transportation projects to fill the void in public transportation and cross-boundary cooperation and coordination (for example, between RTAs or regional planning agencies)
- Expand the presence of transportation network companies and transit-oriented development near commuter rail stations



Bicycle

- **Construct Assabet Rail Trail Bridge**
- Encourage opportunities to identify bikes in the Waze application
- Create connections to the Bruce Freeman Rail Trail in Framingham to establish bike connectivity from Lowell to Framingham
- Encourage businesses to support bikeshare to help employees get out during the day
- Create microhubs for transition points such as last-mile connections from trail systems for walking and biking
- Extend the Bruce Freeman Rail Trail to include the bridge over Route 2



Pedestrian

- **Create more Complete Streets in Sudbury to increase safety for people walking and biking**
- **Implement a pedestrian route to Littleton Commuter Rail station to increase connectivity**
- Update the sidewalk database
- Increase walkability so people can live near where they work and shop
- Create more walkable communities and build near train stations, especially to support people as they age



Parking

- Support parking applications to locate available parking spots
- Implement the CrossTown Connect model coordinating with businesses with large parking lots close to major highways



Land Use and Technology

- **Combat heat island effect with increased canopy coverage, especially over large parking lots (including MBTA commuter rail parking lots)**
- **Explore subsidies for older adults and people with disabilities to use ride share to access services in Carlisle**
- **Rezone office park in Boxborough to include mixed use and density**
- Develop policy on autonomous vehicles (AV) and multi-person AVs
- Provide transportation opportunities to help people get to medical appointments
- Support subregional workshops on suburban mobility issues and solutions

Study Ideas and Opportunities in the MAGIC Subregion



Roadway

- Create an inventory of unmet needs



Transit

- **Study feasibility of a new RTA for the MAGIC subregion, similar to CrossTown Connect but expanded to Concord**
- **Explore ways to get high school students to use available transportation options and not drive to schools as well as to more effectively use the Safe Routes to School program**
- **Provide communication advice on how to change both student and parent behavior when it comes to traveling to school to reduce the amount of people driving, traffic, and emissions**
- Explore transit opportunities and the hiring and training of drivers to provide transportation to medical appointments
- Explore north to south transportation
- Provide transportation technical assistance for smaller suburban municipalities to help develop transit and mode-switching opportunities
- Advise on inefficient bus service with underused buses in the subregion



Parking

- Create a cost-benefit analysis of parking to expand parking lots near transit stations



Pedestrian

- Research public health connections to pedestrian, bike, and transit opportunities to make the case to people who are more focused on car infrastructure



Bicycle

- **Study bike routes to transit stations in Littleton to increase connectivity. There are currently three rail trails around Littleton but not through Littleton. Explore possible connections to Bruce Freeman Rail Trail**



Land Use and Technology

- **Explore ways to study emissions reductions by transit numbers**
- **Explore ways to get people out of single-occupancy vehicles, especially the aging population, and implement more transit-oriented development**
- Map airport traffic and Massachusetts Port Authority parking
- Create an electric car inventory and infrastructure plan

- Research the impact of Waze on local streets, such as traffic generation from local development and lack of local development
- Research the impact of AVs and regional transportation effects

Public Comments on MAGIC Regional Target Funded TIP Projects FFY 2021–25

Project	Number of Comments	Comment
Intersection Improvements at Massachusetts Avenue (Route 111) and Main Street (Route 27) (Kelley's Corner) (Acton)	Municipal: 1 Support	Supports continued inclusion of the Intersection Improvements at Kelley's Corner in the FFY 2022 TIP element.
Minuteman Bikeway Extension (Bedford)	Municipal: 2 Support Organization: 1 Support	Supports continued inclusion of the Minuteman Bikeway Extension FFY 2022 TIP element. When completed, the trail will provide uninterrupted travel from the Town of Concord to Alewife Station and strengthen connections to Concord Center and open space. The proposed improvements included in the project will enhance accessibility and improve safety for pedestrians and cyclists.
Bruce Freeman Rail Trail (Phase 2D) (Sudbury)	Municipal: 6 Support Framingham residents: 2 Support Sudbury residents: 2 Support Organization: 3 Support	Supports continued inclusion of the Bruce Freeman Rail Trail (Phase 2D) in the FFY 2022 TIP element. The project has significant support from residents of Sudbury and surrounding communities, and would provide safe transportation for cyclists and pedestrians, as well as provide opportunities for healthy activity and recreation.

FFY = Federal Fiscal Year. TIP = Transportation Improvement Program.

Transportation Needs Identified in the *Destination 2040* Needs Assessment

Location of Identified Need	Municipality	HSIP Crash Cluster	Intersects MPO Staff-Identified Truck Crash Cluster(s)	Truck Crash Cluster	Priority Congested Location
Route 117	Bolton	●			●
Route 2 at Reformatory Circle	Concord	●	●		
Interstate 95 at Route 2	Lexington	●	●		
Interstate 95 at Route 4 (Bedford Street)	Lexington	●	●	●	
Interstate 495 at Route 2	Littleton	●	●	●	

Note: MassDOT-identified HSIP crash clusters, MPO staff-identified truck crash clusters, and MassDOT Top Crash Locations were identified using crash data collected from 2013–15. Pedestrian crash clusters were identified using data on crashes involving pedestrians collected from 2006–15. More information on these locations is available in the Safety Chapter of the *Destination 2040* Needs Assessment report, while the Capacity Management and Mobility chapter of that report provides details about MPO staff-identified Priority Congested locations.

HSIP = Highway Safety Improvement Program. MassDOT = Massachusetts Department of Transportation.
MPO = metropolitan planning organization.

FINDINGS FROM BOSTON MPO REGION-WIDE SURVEY ON TRANSPORTATION PRIORITIES FOR TIP CRITERIA

Clean Air/Sustainable Communities

Participants advocated for dramatically reducing emissions and pollution and recommended improving pedestrian and bicycle safety, increasing pedestrian and bike connectivity, and promoting equitable transportation mobility to achieve this goal. Respondents also argued for stronger assessments on air pollution and for addressing the disproportionate health effects on low-income and minority communities living near high-emission roadways. They also argued for projects that reduce the number of personal vehicles on the road and for enhancing tree canopy coverage and green space. For additional Clean Air/Sustainable Communities priorities, participants advocated for smart growth, transit-oriented development, supporting active transportation, and prioritizing non-car modes.

Safety

Participants primarily focused on improving pedestrian and bike safety through expanding pedestrian and bike infrastructure, bringing sidewalks up to Americans with Disabilities Act accessibility standards, increasing connectivity to transit, and reducing auto speeds to prevent accidents. Participants shared their support for maintaining and expanding the transit system to increase mode shift away from single-occupancy vehicles and to increase bike and pedestrian safety. Many argued for separated bike facilities to make it easier and safer for anyone to bike and not just the experienced bicyclist. They advocated for shifting of spending to focus on Vision Zero projects, improving dangerous crossings, installing light-up crosswalks, and fixing poorly timed lights and poorly painted crosswalks. They also advocated for safe and convenient walkable routes to access jobs, services, and schools. Many advocated for prioritizing areas that primarily serve equity populations, fixing broken sidewalks, and reducing conflicts between pedestrians crossing the street and turning vehicles.

System Preservations and Modernization

Participants were asked about maintaining and improving existing sidewalks, roads, and bridges. Many focused more on improving overall safety rather than on the maintenance and improvement of specific elements of the roadway. However, when asked about maintaining the existing transit system, many picked it as their top priority. Participants advocated for making the transit system reliable, functional, clean, safe, and dependable to increase ridership and reduce congestion. They advocated for transit expansion and prioritizing dedicated bus lanes. They supported investing in maintenance of the transit system and argued for equitable transportation mobility. Creating connections to jobs and services through transit options was also identified as important as was implementing more multimodal infrastructure.

Capacity Management and Mobility

Many participants advocated for creating new connections in the bike network and argued for enhanced connections to the transit system. Participants argued for more separated shared-use paths to increase bike usage. They saw increased bike infrastructure as a tool to reduce emissions, reduce congestion, and promote public health by enhancing exercise and recreation options. Many respondents highlighted the idea of implementing more dedicated bus lanes as a way to increase reliability, enhance access to jobs and services, increase equity in the transit system, and reduce emissions. Participants argued that dedicated bus lanes have a high impact for less investment, and can be more flexible to meet community needs. Bus frequency and reliability can increase ridership and reduce the number of single-occupancy vehicles on the road. Bus lanes can also be combined with bike lanes, which increase mobility options for residents. To reduce congestion, participants argued for more parking at commuter rail stations, enhancing walking options to commuter rail stations, and increasing safety for walking and biking. They advocated for prioritizing person throughput rather than vehicle throughput. To reduce congestion and conflicts with pedestrians and bicyclists, participants argued for implementing curb allocation policies for trucks and delivery vehicles.

Transportation Equity

Transportation equity was one of the most selected priorities in both the online survey and focus groups. To promote more equitable transportation mobility, participants argued for many of the other priorities with a focus on directing resources to those most overburdened by transportation emissions and underserved by a lack of adequate transportation options. They argued for enhancing transportation opportunities to jobs, food, education, services, and civic engagement opportunities. They advocated for safer connections to transit options and increased transit reliability. Expanding and fixing sidewalk infrastructure was also frequently mentioned. Many argued for prioritizing projects near affordable housing, supporting transit-oriented development, and incorporating more public health criteria.

Economic Vitality

To increase economic vitality, participants argued for more transportation access to jobs, services, and small businesses with increased transit, bicycle, and pedestrian infrastructure. Expanding the transit system was frequently mentioned as well as incorporating greater consideration for affordable housing and inclusionary zoning. Participants also advocated for supporting projects that serve multiple municipalities and maximize mobility for all using the most efficient means possible. They also argued for climate resiliency and safety to enhance access to jobs and services.

SELECTED FINDINGS FROM BOSTON REGION MPO REGION-WIDE NEEDS ASSESSMENT

Safety Needs

- Identify fatal and serious roadway crash factors and countermeasures
- Consider capital investment, education, enforcement, and other approaches to improve safety
- Address the MassDOT-identified Top 200 high crash intersections in the Boston region (66 total), such as those on Route 9 in Framingham, Route 107 in Lynn and Salem, and Route 16 in Chelsea, Everett, and Medford
- Improve pedestrian connections at intersections, especially in top-ranking pedestrian crash cluster locations, including those in downtown areas in Chelsea, Lynn, Quincy, Boston, and Framingham
- Expand well-maintained and connected sidewalk and bicycle networks
- Develop separated shared-use paths for pedestrians and bicyclists
- Address top-ranking bicycle crash cluster locations, including those in Boston, Cambridge, and Somerville
- Modernize obsolete interchanges, such as Interstate 90 and Interstate 95 (I-95) interchange in Weston and the I-95 Middlesex Turnpike interchange in Burlington, to reduce truck crashes
- Incorporate Complete Streets design and traffic calming principles in roadway projects
- Identify strategies to manage roadway user priority, parking, and curb space
- Identify and invest in priority transit state of good repair and modernization projects (for example, positive train control and rapid transit vehicle upgrades)
- Monitor advancements in AV technology and analyze the safety impacts of AV deployments, particularly in the Boston region

System Preservation and Modernization Needs

- Maximize the number of bridges in the region considered to be in good condition and minimize the number of bridges considered to be in poor condition
- Monitor the MassDOT Pavement Management program
- Identify the location of sidewalks and sidewalk conditions, specifically sidewalks around transit stations
- Support investments that improve the accessibility of transit stations, bus stops, and paratransit services
- Support investments that upgrade transit fleets, facilities, and systems to provide more efficient, reliable, and sustainable service
- Support climate vulnerability assessments and invest in projects and programs resulting from these processes

- Improve connections between intermodal facilities and the regional road network
- Improve resiliency of the region's transportation system to prepare for existing or future extreme conditions, such as sea level rise and flooding

Capacity Management and Mobility Needs

- Reduce congestion on expressways, interchanges, and arterials
- Reduce congestion at bottleneck locations on the regional roadway network
- Continue to monitor car sharing as it is poorly integrated with other modes and not accessible in all areas
- Continue to monitor Transit Demand Management (TDM) services
- Research strategies for TDM as relatively few municipalities in the Boston region have TDM ordinances
- Reduce congestion on regional roadways to facilitate the movement of freight
- Reduce conflicts between automobiles and delivery trucks that are competing for curb space
- Improve access to transit service that runs frequently
- Increase capacity at park-and-ride lots that are at or approaching capacity
- Improve the reliability of bus service as bus speeds are projected to decline due to increased congestion (for example, the introduction of more dedicated bus lanes could be a potential solution)
- Address increased transit delays resulting from the system's aging rapid transit infrastructure
- Address crowding on rapid transit lines and bus routes; according to a 2040 no-build scenario, crowding is projected to increase to unacceptable levels in some locations
- Address the need for sufficient MBTA garage space to fully modernize and expand the fleet
- Examine off-peak and reverse commute options between suburban areas and the Boston Central Business District as the commuter rail mostly serves peak-period travel
- Identify challenges to making first- and last-mile connections, which are major barriers to transit usage
- Expand pedestrian and bicycle infrastructure so that residential areas and employment locations are close to facilities that are conducive to regular use
- Connect the disjointed elements of the bicycle network to create a cohesive network
- Create a comprehensive inventory of existing sidewalk data, including sidewalk coverage and condition

Clean Air and Sustainable Community Needs

- Reduce carbon dioxide emissions from MPO-funded transportation projects and programs to help meet the requirements of the Global Warming Solutions Act, particularly projects that help to reduce vehicle-miles traveled
- Prioritize transportation projects that meet the Green Communities certification and assist municipalities in meeting or maintaining these certifications
- Provide data and assistance to municipalities in developing their greenhouse gas inventories and energy reduction plans
- Reduce volatile organic compounds, nitrogen oxides, carbon monoxide, and particulate matter emissions from MPO-funded transportation projects and programs (particularly those that help to reduce vehicle-miles traveled) to help maintain the air quality standards in the region
- Identify projects and programs that can meet criteria established to protect wetlands, cultural resources, open space, and wildlife
- Ensure that infrastructure to reduce storm water pollution and impacts from natural hazard events (for example, flooding or winter storms) is incorporated in project design

Transportation Equity Needs

- Address the lack of transit service for transportation equity (TE) populations compared to service available to non-TE populations
- Increase reliability of rapid transit and bus service for populations whose only option is transit
- Address inadequate access to safe bicycle facilities for elderly and youth populations
- Increase docked bikeshare facilities in the inner core for some communities with a high share of low-income or minority populations
- Increase off-road active transportation routes in communities with a high share of TE populations that live near congested roadways
- Improve coordination of schedules, routes, and services between towns and the MBTA and other RTAs
- Expand transit service (late night, early morning, and reverse commute) between job-rich centers, such as Longwood Medical Area, the Seaport, suburban job centers, and underserved neighborhoods
- Provide new transit service between low-income suburban residential communities and suburban job centers
- Consider building transit-oriented developments that provide affordable housing near transit hubs and employment centers to meet the needs of TE populations
- Improve sidewalks and street crossings, especially around schools, so that they are safe for children and elderly adults
- Document potential exposure of TE populations to climate change impacts and determine how the ability to access transportation may be affected

Economic Vitality Needs

- Administer infrastructure improvements to support growth in the priority development areas, including improving equitable access to employment and housing via public transit, walking, and biking options
- Arrange better commuter rail scheduling including more frequent, reliable off-peak, late-night, and weekend service to support reverse commuting, especially for service workers
- Coordinate with RTAs to address the needs of customers who travel between different RTA service areas
- Provide funding sources to connect RTA services



WELCOME. BEM VINDA. BIENVENIDO. AKEYI. 欢迎. 歡迎.

You are invited to participate in our transportation planning process, regardless of your race, color, national origin (including limited English proficiency), religion, creed, gender, ancestry, ethnicity, disability, age, sex, sexual orientation, gender identity or expression, veteran's status, or background. Read our full notice of rights and protections at www.bostonmpo.org/mpo_non_discrimination.

To request special accommodations, or if you need this information in another language, contact the MPO at 857.702.3700 (voice), 617.570.9193 (TTY) or civilrights@ctps.org (please allow 14 days).



Español (Spanish)

Si necesita esta información en otro idioma, por favor contacte la Boston Region MPO al 857.702.3700.

简体中文 (Simplified Chinese)

如果需要使用其它语言了解信息，请联系波士顿大都会规划组织 (Boston Region MPO) 《民权法案》第六章专员，电话 857.702.3700.

繁體中文 (Traditional Chinese)

如果需要使用其他語言瞭解資訊，請聯繫波士頓大都會規劃組織 (Boston Region MPO) 《民權法案》第六章專員，電話 857.702.3700.

Kreyòl Ayisyen (Haitian Creole)

Si yon moun vle genyen enfòmasyon sa yo nan yon lòt lang, tanpri kontakte Espesyalis Boston Region MPO Title VI la nan nimewo 857.702.3700.

Português (Portuguese)

Caso estas informações sejam necessárias em outro idioma, por favor, contate o MPO da Região de Boston pelo telefone 857.702.3700.



Minuteman Advisory Group on Interlocal Coordination (MAGIC)
Identifying Transportation Needs, Construction Projects,
and Studies in Your Subregion