Inner Core Committee (ICC)

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



Winter 2020



WHAT TRANSPORTATION NEEDS DID THE MPO IDENTIFY IN ICC COMMUNITIES?

The Boston Region Metropolitan Planning Organization (MPO) conducted an assessment of transportation needs in the Boston region to inform the MPO's current Long-Range Transportation Plan (LRTP), *Destination 2040*, adopted in August 2019. 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 their transportation needs and opportunities to improve transportation in their communities. The resulting LRTP Needs Assessment serves as a tool for planning the region's future transportation network, and for prioritizing the MPO's limited funding for transportation projects and studies.

The tables that follow highlight some of the transportation needs identified in the ICC subregion based on MPO analysis, and the lists below highlight needs identified from past visits to ICC communities for the Needs Assessment. For more information, please refer to the *Destination 2040* Needs Assessment report and interactive applications on our website: **bostonmpo.org/lrtp**.

Location of Identified Need	Municipality	HSIP Crash Cluster	Intersects Bicycle Crash Cluster(s)	Intersects Pedestrian Crash Cluster(s)	Intersects MPO Staff-Identified Truck Crash Cluster(s)	Intersects Massachusetts Top Crash Location(s)	Bike Crash Cluster	Pedestrian Crash Cluster	Truck Crash Cluster	Priority Congested Location
Route 60	Arlington	•								•
Interstate 93 at Columbia Road (north of Exit 15)	Boston	•			•				•	
Interstate 93 at North Washington Street	Boston	•		•	•					
Interstate 93 at Route 3A (Gallivan Boulevard)	Boston	•			•					
Interstate 93 (northbound) near Exit 23 (Government Center)	Boston	•			•					
Interstate 93 at ramps to Victory Road (south of Exit 13)	Boston	•			•					

Transportation Needs Identified in the *Destination 2040* Needs Assessment

Location of Identified Need	Municipality	HSIP Crash Cluster	Intersects Bicycle Crash Cluster(s)	Intersects Pedestrian Crash Cluster(s)	Intersects MPO Staff-Identified Truck Crash Cluster(s)	Intersects Massachusetts Top Crash Location(s)	Bike Crash Cluster	Pedestrian Crash Cluster	Truck Crash Cluster	Priority Congested Location
Interstate 93 at Columbia Road (south of Exit 15)	Boston	•			•					
Interstate 93 at Morrissey Boulevard	Boston	•			•					
Interstate 93 (southbound) near East Berkeley Street	Boston	•			•					
Interstate 93 at Leverett Connector	Boston	•			•					
Interstate 93 (southbound) at Exit 23 (Interstate 90 to Purchase Street)	Boston	•			•					
Route 28 at Route 3 (Leverett Circle)	Boston	•			•					
Interstate 93 south of Exit 20 (Massachusetts Avenue Connector)	Boston	•			•					
Route 28 (Embankment Road) at Route 3 (near Longfellow Bridge)	Boston	•		•						
Morton Street at Harvard Street	Boston	•				•				
Interstate 93 at Massachusetts Avenue Connector	Boston	•			•	•				
Interstate 93 (near Zakim Bridge)	Boston and Cambridge	•			•					

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Interstate 93 near Long Wharf	Boston	•			•					
Interstate 93 at ramps to Frontage Road (southbound)/ South Hampton Street	Boston	•			•					
Massachusetts Avenue near Commonwealth Avenue	Boston						•			
Boston Common and Downtown Crossing (Tremont, Washington, Essex and Boylston Streets)	Boston							•		
Soldiers Field Road at North Harvard Street	Boston	•			•					
Interstate 93 near ramps to Albany Street	Boston								•	
Interstate 93 near Exit 20A (South Station)	Boston								•	
Interstate 93 at North Washington Street	Boston								•	
Kosciuszko Circle	Boston								•	
Route 1A, Boardman Street flyover	Boston									•
Downtown Boston (near Court, Summer, Park, and India Streets)	Boston							•		

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Interstate 93, Southeast Expressway	Boston, Quincy, and Milton	•								•
Harvard Street (near Coolidge Corner)	Brookline							•		
Route 2A/16	Cambridge and Arlington	•								•
Cambridge Street and Broadway (near Harvard Square)	Cambridge						•			
Massachusetts Avenue from Harvard Square to Memorial Drive	Cambridge						•			
Beacon and Hampshire Streets and Broadway (Park Street to Galileo Galleli Way)	Cambridge and Somerville						•			
Massachusetts Avenue (near Porter Square)	Cambridge and Somerville						•			
Massachusetts Avenue near Memorial Drive	Cambridge	•	•		•	•				
Cambridge Street (Quincy Street to Maple Avenue, near Harvard Square)	Cambridge and Somerville						•			
Broadway and Inman Street (near Central Square)	Cambridge						٠			
Massachusetts Avenue near Cedar Street	Cambridge						•			

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Massachusetts Avenue at JFK Street (near Harvard Square)	Cambridge						•			
Prospect and Cambridge Streets (Inman Square)	Cambridge							•		
Massachusetts Avenue (Hancock Street to Landsdowne Street, and neighboring streets, near Central Square)	Cambridge							•		
Prospect and Cambridge Streets (Inman Square)	Cambridge							•		
Cambridge Street (Sciarappa Street to East Street, near Route 28)	Cambridge							•		
Mt. Auburn Street and Massachusetts Avenue (Harvard Square)	Cambridge							•		
Downtown Chelsea (Broadway, Everett Avenue, and surrounding streets)	Chelsea							•		
Revere Beach Parkway at Webster Avenue	Chelsea	•			•	●				
Route 99 Critical Urban Freight Corridor	Everett	•								•

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Downtown Lynn (Essex, Union, Liberty, and Central Streets, and surrounding streets)	Lynn							•		
Western Avenue (Mall Street to Franklin Street)	Lynn							•		
Broadway at Route 129 (Lynnfield Street)	Lynn	•			•	•				
US Route 1, Quarry Bypass	Malden	•	-	-						•
Route 1 at Salem Street	Malden and Revere	•			•					
Route 60	Medford	•	-	-		-				•
Route 28 at Route 16	Medford	•		•	•	•				
Interstate 95 at ramps to Route 16	Newton	•			•					
Interstate 90, Exits 16-17	Newton	•								•
Newton Centre (Beacon Street, Centre Street, and surrounding streets)	Newton							•		
Hammond Pond Parkway at Route 9 (Boylston Street)	Newton	•			•					

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Interstate 93 near ramps to Furnace Brook Parkway (north of Exit 8)	Quincy	•			•				•	
Interstate 93 near ramps for Furnace Brook Parkway (south of Exit 8)	Quincy	•			•				•	
Quincy Center (Hancock Street from Washington to School Streets)	Quincy							•		
Route 3A (Southern Artery) at Broad Street	Quincy	•		٠		•				
Hancock Street (Adams Street to Washington Street near Quincy Center)	Quincy							•		
Route 3A in Quincy (Sea Street to Brackett Street)	Quincy							•		
Interstate 93 near Upton Street	Quincy	•			•					
Route 3A	Quincy	•								•
Broadway (Mountain Avenue to Revere Beach Parkway) and Park Avenue	Revere							•		
Interstate 93 Embankment	Somerville	•								•
Davis Square	Somerville and Cambridge							•		

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Somerville Avenue, Summer Street, and Bow Street (near Union Square)	Somerville						•			
Interstate 95 at Totten Pond Road	Waltham	•			•					
Interstate 95 (northbound) at Route 20	Waltham	•			•	•				
Interstate 95 (southbound) at Route 20	Waltham	•			•					
Central Square	Waltham							•		
Interstate 95 at Route 20	Waltham								•	
Main Street (approximately from Grant to Banks Streets)	Waltham							•		
Watertown Square (Main, Mt. Auburn, North Beacon, and Galen Streets)	Watertown							•		

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. US = United States.

Projects Programmed in the Federal Fiscal Years 2020–24 Transportation Improvement Program for the Inner Core Subregion

TIP Identification Number	Project	Category	Municipality	Year (FFY) Programmed
606453	Improvements on Boylston Street	Complete Streets	Boston	2021
606226	Reconstruction of Rutherford Avenue	Major Infrastructure	Boston	2022–24
608078	Reconstruction of Broadway, from City Hall to the Revere City Line	Complete Streets	Chelsea	2022
607652	Reconstruction on Ferry Street	Complete Streets	Everett	2020
609257	Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line	Complete Streets	Everett	2024
609252	Rehabilitation of Essex Street	Complete Streets	Lynn	2024
602077	Reconstruction on Route 129 (Lynnfield Street)	Complete Streets	Lynn	2021
608275	Exchange Street Downtown Improvement Project	Complete Streets	Malden	2020
606635	Reconstruction of Highland Avenue, Needham Street, and Charles River Bridge	Major Infrastructure	Newton and Needham	2020
608707	Reconstruction of Sea Street	Complete Streets	Quincy	2023
1570	Green Line Extension to College Avenue with the Union Square Spur	Major Infrastructure	Somerville and Medford	2020–21
607777	Rehabilitation of Mount Auburn Street (Route 16)	Complete Streets	Watertown	2022
607244	Revere Street Roadway Improvements	Complete Streets	Winthrop	2023

FFY = federal fiscal year. TIP = Transportation Improvement Program.

Transportation Studies Conducted in the Inner Core Subregion through the Unified Planning Work Program

- Safety and Operations Analyses at Selected Intersections:
 - Adams Street at Furnace Brook Parkway and Common Street in Quincy (FFY 2020)
 - ^o Broadway at Fourth and Fifth Street in Chelsea (FFY 2016)
 - Western Avenue (Route 107) at Washington Street (Route 129) in Lynn (FFY 2013)
 - ° Lexington Street and Beaver Street in Waltham (FFY 2013)
 - Southern Artery (Route 3A) and Sea Street/Coddington Street McGrath Highway/Field Street in Quincy (FFY 2012)
 - Massachusetts Avenue and Appleton Street/Appleton Place in Arlington (FFY 2011)
 - ° Main Street and Mountain Avenue in Malden (FFY 2011)
 - ° Crafts Street and Albemarle Road/North Street in Newton (FFY 2011)
 - Broadway and Congress Avenue/Third Street/Everett Avenue/Cross Street in Chelsea (FFY 2010)
 - Western Avenue/Stanwood Street/Waitt Avenue/Maple Street in Lynn (FFY 2009)
 - Alewife Brook Parkway (Route 16) and Broadway in Somerville (FFY 2009)
 - Neponset Valley Parkway and Brush Hill Road/Milton Street in Milton (FFY 2011)
- Fairmount Line Station Access Analysis in Boston (FFY 2017 and 2018)
 - ° Newmarket Station area
 - ° Four Corners/Geneva Avenue Station area
 - ° Talbot Avenue Station area
 - ° Morton Street Station area
 - ° Blue Hill Avenue Station area
 - Bicycle facilities
- Regional Transit Service Planning Technical Support
 - ° Mission Hill link in Boston (FFY 2018)
 - Bus Priority Feasibility at Alewife Station in Cambridge (FFY 2018)
- Bicycle Network Gaps: Feasibility Evaluations in Cambridge (FFY2018)
 - Central Square (Existing Signed Bicycle Route)
 - Prospect Street
- Review of and Guide to Implementing Transit Signal Priority in the MPO Region (FFY 2018)
 - ° Cambridge

- First and Last Mile Transit Connections Study in Cambridge (FFY 2016)
 - Alewife Bus Priority
- Addressing Priority Corridors from the LRTP Needs Assessment
 - ° Route 28 in Milton (FFY 2020)
 - Route 138 in Canton and Milton (FFY 2017 and 2018)
 - Route 203 in Boston (Gallivan Boulevard and Morton Street) (FFY 2012); this study resulted in the following projects:
 - MassDOT Project #60631—Intersection Improvements at Gallivan Boulevard and Morton Street
 - MassDOT Project #608755—Intersection Improvements at Morton Street and Blue Hill Avenue and Courtland Road/Havelock Street, programmed in FFY 2019 TIP
 - MassDOT Project #606896—Reconstruction on Gallivan Boulevard from Neponset Circle to east of Morton Street intersection, in preliminary design
 - AssDOT Project #606897—Improvements on Morton Street from west of Gallivan Boulevard to Shea Circle, in preliminary design
 - Route 1A (Lynnway and Carroll Parkway) in Lynn (FFY 2015)
 - ° Route 16 in Chelsea and Everett (FFY 2019)
- Subregional Roadway Study Location
 - Washington Street in Newton (FFY 2014)
 - Route 60 and major roadways in Medford Square (FFY 2018)
 - ° Route 9 in Brookline (FFY 2019)

Transportation Needs Identified through Outreach in the ICC Subregion

Roadway

- Implement more Complete Streets redesigns to enable safe transportation by all modes and to increase mobility by improving safety for people who bike and providing ways for people to travel to transit stations
- Redesign McGrath Highway in Somerville as a ground-level urban boulevard
- Reduce congestion and pollution by making infrastructure more accommodating for people who walk and bicycle
- Create a safer crossing at Alewife Brook Parkway near Rindge Towers to create better access between housing, Fresh Pond Mall, and Alewife Station
- Redesign Putnam Avenue in Cambridge to support more multimodal transportation and increase safety especially for children traveling to school
- Reconstruct road network in Everett Industrial District, which includes Beacham Street, Second Street, and Market Street
- Increase connectivity in East Cambridge, including by providing access to grocery stores and schools, via multiple modes

- Redesign Washington Street from Forest Hills in Boston to the Dedham town line
- Replace the River Street and Western Avenue bridges
- Improve the Route 16 and Route 99 intersection to reduce bottlenecks and increase safety
- Redesign Bowker Overpass in Boston to ground level
- Protect trees as part of the redesign of Melnea Cass Boulevard in Boston
- Improve multimodal reverse-commute options

Transit

- Dedicate more street space in Boston for high capacity bus service and a robust bus rapid transit (BRT) network to help decrease the number of single-occupancy vehicles on the road and reduce greenhouse gas emissions
- Expand bus infrastructure in Medford and Malden, such as by adding more shelters, crosswalks, and curb cuts at bus stops, and by maintaining all bus shelters
- Reduce the impact of flooding at stations close to the ocean
- Extend MBTA bus Route 96 beyond the current terminus at Medford Square on to Salem Street and to the Medford and Malden town line to serve the Fulton Heights neighborhood
- Add more exits to the MBTA's Malden Center Station
- Expand transportation service to grocery stores so people can get access to healthy food; MBTA bus Route 112 stops at Market Basket in Everett, but more routes are needed
- Add bus service on Route 16
- Extend MBTA bus Route 112 from its current terminus at Wellington Station to Commercial Street and to Malden Center Station
- Reroute MBTA bus Route 66 so that the route remains on Harvard Avenue and not on Brighton Avenue and Cambridge Street
- Add more commuter rail service from Boston Landing Station to stations in Newton
- Expand the bus system to incorporate BRT and improve accessibility to reduce bus bunching and shorten headways
- Expand more long-range train options that are affordable and safe
- Increase reliable transit options, especially for older adults and families with young children
- Support late-night bus service and more frequent off-peak bus service from the Orange Line
- Better manage MBTA facilities to make them safe and pleasant spaces to wait and transfer
- Create more reliable bus service for low-income and minority communities
- Run commuter rail trains more frequently on the Needham Line
- Decrease the interval time on MBTA bus Route 47
- Increase the reliability of the Red Line

- Install clearer signage and standard protocols on buses
- Use MBTA advertising space to promote social services in the area
- Implement more efficient bus service and priority bus routes across the Inner Core
- Implement more dedicated bus lanes or signal priority and queue jumps on Massachusetts Avenue
- Improve bus service in Watertown
- Require private and university shuttles to be open to the public
- Install pilot bus lanes in both directions between Alewife Station and Route 2
- Support new West Station in Allston
- Support commuter rail service within Route 128 that approaches the frequency of Green Line service
- Create more cross connections between the Red, Green, Blue, and Orange Lines
- Connect the Blue Line to the Green Line's D Branch via the outside tracks at Park and Boylston Stations
- Implement a dedicated bus lane for MBTA bus Route 77
- Increase reliability of MBTA bus Route 69
- Support Grand Junction connector in Kendall Square
- Invest in queue jumps for bus priority to increase bus ridership in Malden to Orange Lines stations
- Improve bus service between Cambridge and the Longwood Medical Area
- Expand the Silver Line beyond Chelsea to Everett Square and Sullivan Square
- Support more rapid transit or BRT on the Broadway/Route 99 corridor in Everett
- Consider transit infrastructure in Sweetser Circle, Everett
- Increase transit, biking, and walking connectivity between Newton business districts
- Improve MBTA bus Route 83 service
- Increase speeds on MBTA bus Route 77
- Electrify the rail system
- Increase service on MBTA bus Route 64
- Construct the Green Line Extension to Mystic Valley Parkway

Pedestrian

- Prioritize pedestrian crossings in Inman Square, Cambridge
- Implement pedestrian infrastructure on Second Street in Everett
- Invest in pedestrian infrastructure to increase safety
- Support more pedestrian infrastructure for low-income and minority communities

- Implement more safe, direct, and attractive walking and biking paths, especially connecting to markets, schools, and transit service
- Increase pedestrian crossing timings to 50 second cycles

Bicycle

- Expand protected bicycle infrastructure in the Inner Core
- Expand the Emerald Network to include Beacon Street in Brookline (Bridle Path)
- Create safer corridors for bicycling
- Incorporate separated bike facilities in all major road reconstruction
- Create more distinctive bike lanes to increase safety
- Create more bike connections to transit service to encourage mode shift
- Construct a bike bridge at Alewife Station in Cambridge
- Secure places to store bikes in public housing areas
- Construct a multi-use path in Roslindale Village
- Support the full build out of the Community Path along the Green Line Extension to connect to an expansive bike network
- Expand Bluebikes and create new bike-share stations
- Extend the Watertown Community Path
- Install more bike racks at transit stations
- · Invest in better bike facilities in Melrose
- Create more bike and pedestrian connections between Melrose and Spot Pond and Middlesex Fells west of Pond Street
- Extend the Northern Strand Community Trail from Everett to Assembly Square
- Complete the bike path network along Department of Conservation and Recreation (DCR) parkways, including the planned path in Medford Square
- Implement a contra-flow bike lane on Charles Street plaza and create the Chandler-Charles bike connection
- Improve bike facilities and safety at the following intersections:
 - ° Massachusetts Avenue and Newbury Street
 - ° Forsyth Street and Huntington Avenue
 - Connection from Medford Street in Malden to the Northern Strand Community Trail
 - ° Hallet Street connection to the Neponset River Greenway
 - ° Entrance to the Neponset River Trail in Mattapan
 - ° Western Avenue and Soldiers Field Road
- Connect all the gaps in the regional multi-use path network in metropolitan Boston: Somerville Community Path, Grand Junction Path, Minuteman Path, Mystic-to-Charles Connector, Bike-to-the-Sea/Northern Strand Trail, and East Coast Greenway

Land Use and Technology

- Work with developers of new housing to expand public transit service, possibly through public/private partnerships
- Install designated drop-off and pickup locations for ride-hailing
- Create infrastructure to support electric shared autonomous vehicles
- Support more housing development that excludes parking near transit hubs and rapid transit stations
- Install more escalators and elevators in MBTA stations
- Install more electric vehicle charging stations
- Reduce the development parking requirements and increase building heights near transit
- Support more on- and off-street bicycle accommodations for access to other transportation modes and destinations, especially to improve multimodal access to schools for young people
- Implement more pedestrian-only zones
- Restore Alewife Reservation and cut off through traffic on Ridge Avenue making the bridge over the train tracks more friendly for people who walk and bike
- · Create more accessibility and connectivity for people with disabilities

Equity

- Lower costs of transportation for populations such as the elderly, people with low incomes, and people with disabilities
- Upgrade accessibility infrastructure on the commuter rail system
- Prioritize transportation investments that serve the elderly, people with low incomes, and people with disabilities
- Prioritize the needs of the most vulnerable populations by making improvements to transportation options that are available to everyone; taking the bus should not be the option of last resort but the best choice for all, regardless of income
- Increase funding for safe, accessible transportation systems for all, with a focus on a core, reliable transit system that makes biking and walking possible and safer

Parking

- Remove parking on Harvard Avenue between Commonwealth Avenue and Cambridge Street to create an express bus corridor
- Enforce parking rules
- Expand parking around medical services to improve access for patients and caretakers
- Reduce street parking options
- Increase the cost of parking permits

Study Ideas and Opportunities in the ICC Subregion

Roadway

- Analyze the traffic impact of making Massachusetts Avenue and Harvard Bridge one way in each direction with turn lanes at each end, and using the extra space for buffered bike lanes and a wider sidewalk
- Study the feasibility of safer and more pleasant bicycle and pedestrian crossings over the Charles River near the Charles River Dam
- Study the Boston University Bridge rotary and recommend safety and congestion improvements
- Study how to reduce the number of cars in Cambridge by making options for biking, walking, and transit usage more accessible
- Move away from level of service as an evaluation metric for improvements
- Analyze mode choice behavior and how to incentivize shifts to sustainable modes

Transit

- Study an efficient North Station–South Station connection
- Explore BRT capacity next to freight corridors in Everett (on Beacham Street, Second Street, and Broadway)
- Research opportunities to connect the Red and Blue Lines as well as reduce congestion in Boston's Seaport area

Land Use and Technology

- Explore opportunities for addressing transportation needs with fleets of autonomous electric vehicles
- Study the impact on safety from public art light projects on commuter rail underpasses in Lynn

SELECTED FINDINGS FROM BOSTON 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 (a total of 66), 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 the downtown areas of 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 the Interstate 90 and Interstate 95 interchange in Weston and the interchange of Interstate 95 and the Middlesex Turnpike 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, such as positive train control and rapid transit vehicle upgrades
- Monitor advancements in autonomous vehicle technology and analyze the safety impacts of autonomous vehicle 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 their condition, 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, and increase capacity at park-andride lots that are at or approaching capacity
- Improve the reliability of bus service as bus speeds are projected to decline due to increased congestion; 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 planning 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 facilitates 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 by means of MPO-funded transportation projects and programs that help meet the requirements of the Global Warming Solutions Act, particularly by supporting 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 for developing municipal greenhouse gas inventories and energy reduction plans
- Reduce volatile organic compounds, nitrogen oxides, carbon monoxide, and particulate matter emissions by means of MPO-funded transportation projects and programs (particularly those that help to reduce vehicle-miles traveled) and 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 project designs incorporate infrastructure to reduce storm water pollution and provide resilience in the event of natural hazard events (for example, flooding or winter storms)

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 bike-share facilities in the Inner Core for 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 regional transit authorities
- Expand transit service (late night, early morning, and reverse-commute service) between job-rich centers, such as Longwood Medical Area and the Seaport in Boston, suburban job centers, and underserved neighborhoods
- Provide new transit service between low-income residential communities in the suburbs 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 their ability to access transportation may be affected

Economic Vitality Needs

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



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