ES

EXECUTIVE SUMMARY

THE LONG-RANGE TRANSPORTATION PLAN

The Long-Range Transportation Plan (LRTP), *Paths to a Sustainable Region*, is a guide to the future of transportation in the Boston region. In it, the Boston Region Metropolitan Planning Organization (MPO) describes how the transportation network is currently serving users and explores how it might be improved to better serve the region, considering the changes that are expected between now and 2035. *Paths to a Sustainable Region* was guided by a vision for the future, a respect for previous plans, and a realistic assessment of the maintenance needs of the existing system and the financial constraints to be faced during the next two decades. This LRTP is moving the region toward a sustainable future with careful consideration of all these factors.

Among the most important decisions faced in planning for the future are those involving how to spend scarce funds to achieve the best transportation value for the dollar. Transportation will be part of the solution to many critical regional, state, national, and even global problems, such as traffic congestion, air pollution, traffic fatalities and injuries, climate change, and environmental justice. With not nearly enough transportation funding available to build all of the needed and worthy projects to address these problems, investments should be guided by policies that help identify the strongest solutions. *Paths to a Sustainable Region* has established such policies based on its vision and goals for the future. It has documented the current needs of the system, and identified transportation investments that will move the region toward meeting its goals and addressing the needs.

The following sections of this summary provide information about the MPO and the steps taken to develop *Paths to a Sustainable Region*. It outlines the policies and the projects and programs that the MPO has identified for the future of transportation in the Boston region, specifically all regionally significant projects (those that add capacity to the transportation system) and major infrastructure projects (those costing more than $10 million).

WHAT IS THE MPO?

Decisions about how to spend transportation funds in a metropolitan area are guided by information and ideas from a broad group of people including elected officials, municipal planners and engineers, transportation and other advocates, and other interested persons. The forum for this process is known as a metropolitan planning organization (MPO). Each metropolitan area in the United States has an MPO, whose primary responsibility is to decide how to spend federal transportation funds for capital projects and planning studies. The Boston Region MPO is a 14-member board consisting of state agencies, regional organizations, and municipalities; its jurisdiction extends from Boston to Ipswich to the north, Duxbury to the south, and approximately Interstate 495 to the west. Federal law requires the MPO's work to be continuing, cooperative, and comprehensive – often referred to as the "3C process." This process allows all voices to be heard and many different perspectives to be reconciled into plans for the region's future. Developing the LRTP is part of this process. The MPO updates the LRTP at least every four years.

CRITICAL ISSUES TO ADDRESS

Paths to a Sustainable Region was developed in light of a set of current and emerging issues facing the region. Among these issues that decision makers have taken into account are preservation, modernization, and efficiency of the transportation system; mobility; safety and security; environmental justice; the environment; and emerging concerns about climate change and livability.

No issue is more critical than maintenance of the existing system. The transportation infrastructure is aging. The Massachusetts Bay Transportation Authority (MBTA) alone has a backlog of approximately $4 billion in maintenance projects for the region's transit system, and this backlog continues to grow. There are estimates that addressing the statewide needs for maintenance of all modes will cost between $18 billion and $20 billion. The necessity of maintaining the system needs no explanation. Maintenance must be given priority in investment decisions.

The region's transportation funds are limited. The challenge faced by the region is to determine how to invest in a way that both preserves the system and yields improvements addressing other critical issues.

Related to this and equally important is keeping the system safe and secure for all users. It is critical to reduce crashes and accidents, and protect the transportation infrastructure. It is also important to protect the system for emergency response and enabling the evacuation of populations in the event of natural or human-caused disasters.

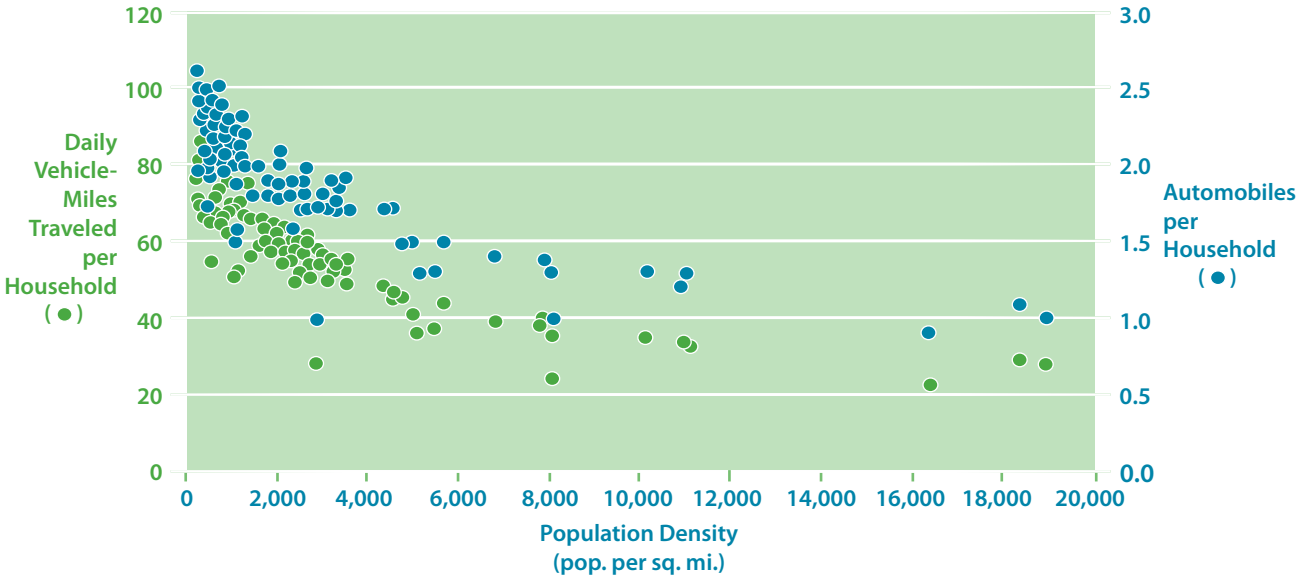
When making investments, the MPO also strives to provide access to transportation services on an equitable basis across the region; this includes providing options for low-income and minority communities, the elderly, and youth in urban, suburban, and rural communities. In addition, it is important to minimize impacts from transportation projects on critical resources such as air and water.

Two new areas of emphasis for this LRTP are climate change and livability. Transportation is the source of 31 percent of the greenhouse gas emissions produced in Massachusetts, which makes the sector an important part of the solution to climate change. Concerns about the possible consequences of climate change led the Massachusetts legislature to enact the Global Warming Solutions Act in 2008 and led the Massachusetts Department of Transportation to issue its GreenDOT policy directive in 2010 calling for a reduction in greenhouse gas emissions.

Concerns about our environment, health, and economy are leading to the new focus on livability. A livable community is one that provides its residents with convenient access, via more transportion choices to the places we need to get to each day. Land use and transportation policies can promote access by encouraging growth that brings origins and destinations closer together. This will help us realize the vision of livable communities in which more people are able to walk, bike, take transit, or take shorter auto trips to meet their needs. Livable communities will also help us address problems such as housing affordability, obesity, asthma, injuries and fatalities from auto accidents, and many more. Figure ES-1 shows how higher population density is associated with lower vehicle-miles traveled and lower automobile ownership rates – signs that denser development patterns can support more transportation choices.

FIGURE ES-1

Car Usage by Population Density in the 101 Cities and Towns



TRANSPORTATION NEEDS OF THE REGION

With a firm understanding of the planning and financial context, the MPO set out to catalogue the region's most serious transportation problems. Information about the transportation system was gathered, organized, and analyzed in order to understand the needs of all modes. This work produced the Needs Assessment, which is Volume II of the LRTP. The Needs Assessment considered the transportation needs for six radial corridors, two circumferential corridors, and the central area. The needs identified during this step of LRTP development helped the MPO select and prioritize the projects that have been proposed for the region.

The region's needs are numerous. Chapter 3 of this first volume of *Paths to a Sustainable Region* contains a succinct overview of the Needs Assessment, and in it you can learn about the region's needs in the areas of mobility, access, and safety, including details on the worst bottlenecks, most severe crash locations, greatest transit maintenance needs, transit reliability, freight issues such as weight and vertical clearance restrictions that affect the mobility of goods, sidewalk and bicycle facility coverage, transportation issues affecting residents of low-income and minority communities, land use developments that are planned, and more.

PURSUING THE VISION: POLICIES, PROJECTS, AND PROGRAMS

Realizing the MPO's vision and addressing the identified transportation needs is a daunting task given the severe fiscal constraints imposed on transportation work in the region and the massive maintenance needs of the existing system. However, the MPO is trying to address these issues by shaping the region's future transportation system through a set of policies, outlined by topic in Figure ES-2, that will guide future transportation spending.

With its policies in place, the MPO considered several investment strategies to advance its goals for the transportation system. It gathered information on all known proposed projects and programs in the region, including new proposals generated by the MPO for this LRTP. Each project and program in the resulting Universe of Projects and Programs was then evaluated by the MPO against its policies. Sets of projects and programs were organized in three different investment strategies for consideration. The first investment strategy focused on consistency by maintaining the MPO's commitment to the set of projects selected for JOURNEY TO 2030, the Plan preceding *Paths to a Sustainable Region*. The second strategy's set of projects address maintenance and mobility needs emphasized major regional infrastructure over smaller projects. A third strategy suggested investing in smaller-scale projects and programs to accomplish the MPO's goals. All three strategies proposed setting aside at varying levels a portion of funds for projects and programs that cost less than $10 million or do not add capacity to the transportation system, and therefore do not need to be specifically identified in the LRTP.

The first investment strategy, which honored commitments of the previous LRTP, was shown in the MPO's evaluation to advance important MPO policies in the areas of maintenance, mobility, and safety. Therefore, the MPO decided to follow this strategy, whose projects are listed in Tables ES-1 (highway and bicycle/pedestrian projects) and ES-2 (transit projects) and displayed in Figure ES-3. Funding this set of projects affirms

FIGURE ES-2
MPO Visions and Policies by Topic Area

VISIONS	POLICIES
SYSTEM PRESERVATION, MODERNIZATION, AND EFFICIENCY	
The transportation system is maintained, reliable, and efficient	Use low-cost strategies; achieve efficiency through ITS and M&O*
Achieve improvements through low-cost management and operations actions and strategic investments	Invest in technology before expansion
	Achieve a state of good repair for all modes
	Strengthen connections, close gaps
LIVABILITY	
People can get to daily destinations using healthy modes	Support MetroFuture development plans
Vibrant neighborhood centers support economic vitality	Promote healthy transportation, complete streets, context-sensitive design
	Support economic vitality
MOBILITY	
Access to daily destinations is improved by all modes	Improve transit service and access to transit
Delays and travel time are reduced	Strengthen connections, close gaps in the network
Transit and sustainable modes are better linked	Address constraints and bottlenecks before expansion
	Expand transit, pedestrian, and bicycle networks
ENVIRONMENT	
Air quality is improved; reduced emissions meet targets	Promote fleet modernization
Impacts on resources are avoided; brownfield cleanup is facilitated	Support high-occupancy-vehicle travel and nonmotorized modes
	Protect resources and health; avoid air and water impacts; reduce emissions; address brownfields
	Promote energy conservation and alternative sources
	Support meeting greenhouse gas emissions reduction targets
TRANSPORTATION EQUITY	
There is equitable mobility for low-income and minority persons; burdens are not inequitable	Address equity needs; minimize burdens (air, safety, community)
The mobility needs of the elderly, youth, and persons with limited English proficiency are addressed	Reduce transit trip times; increase capacity
	Improve heavily used networks before expanding
CLIMATE CHANGE	
Greenhouse gas emissions are reduced to Global Warming Solutions Act levels	Reduce vehicle-miles traveled
	Increase transit/bike/pedestrian options and TDM**
	Reduce energy use
SAFETY AND SECURITY	
The transportation system is safe	Implement all-hazards planning
The transportation infrastructure is protected	Reduce safety and security deficiencies, all modes
Transit has state-of-the-practice ITS	Protect critical infrastructure; address vulnerabilities
	Reduce crash severity

*Intelligent transportation systems and management and operations

**Transportation demand management

Table ES-1
Highway and Bicycle/Pedestrian Projects in *Paths to a Sustainable Region*

PROJECT	MUNICIPALITIES	2011 COST (IN MILLIONS)	CONSTRUCTION TIME BAND
Route 128 Improvement Program (ongoing project)	Randolph to Wellesley	$167.7	2012-15 & 2016-20
Crosby's Corner (ongoing project)	Concord & Lincoln	$65.0	2012-15
Route 18*	Weymouth	$31.3	2012-15
Trapelo Road	Belmont	$14.6	2012-15
Sullivan Square/Rutherford Ave.*	Boston	$71.0	2016-20
Middlesex Turnpike Phase III	Bedford, Billerica, & Burlington	$20.8	2016-20
Route 53	Hanover	$1.0	2016-20
Bridge St.	Salem	$11.2	2016-20
Assabet River Rail Trail	Hudson to Acton	$18.1	2016-20
New Boston St. Bridge	Woburn	$4.9	2021-25
Montvale Ave.	Woburn	$3.7	2021-25
Bruce Freeman Rail Trail	Acton & Concord	$18.7	2021-25
I-95/I-93 Interchange	Canton	$235.5	2021-25
I-95/I-93 Interchange	Woburn, Reading, Stoneham, & Wakefield	$276.0	2026-30
I-95 North/Dedham St. Ramp/Dedham St. Corridor	Canton	$35.0	2021-25
Route 126/135 Grade Separation	Framingham	$58.5	2026-30
Route 1 Add-a-Lane	Malden, Revere, & Saugus	$175.2	2031-35
Needham St./Highland Ave.	Newton & Needham	$18.4	2021-25
I-93/Route 3 Interchange (Braintree Split)	Braintree	$36.0	2031-35
Conley Haul Rd.*	Boston	$25.0	TBD
Clear Air & Mobility Program	Regionwide	$2.0	Each year

*Includes non-MPO funding sources

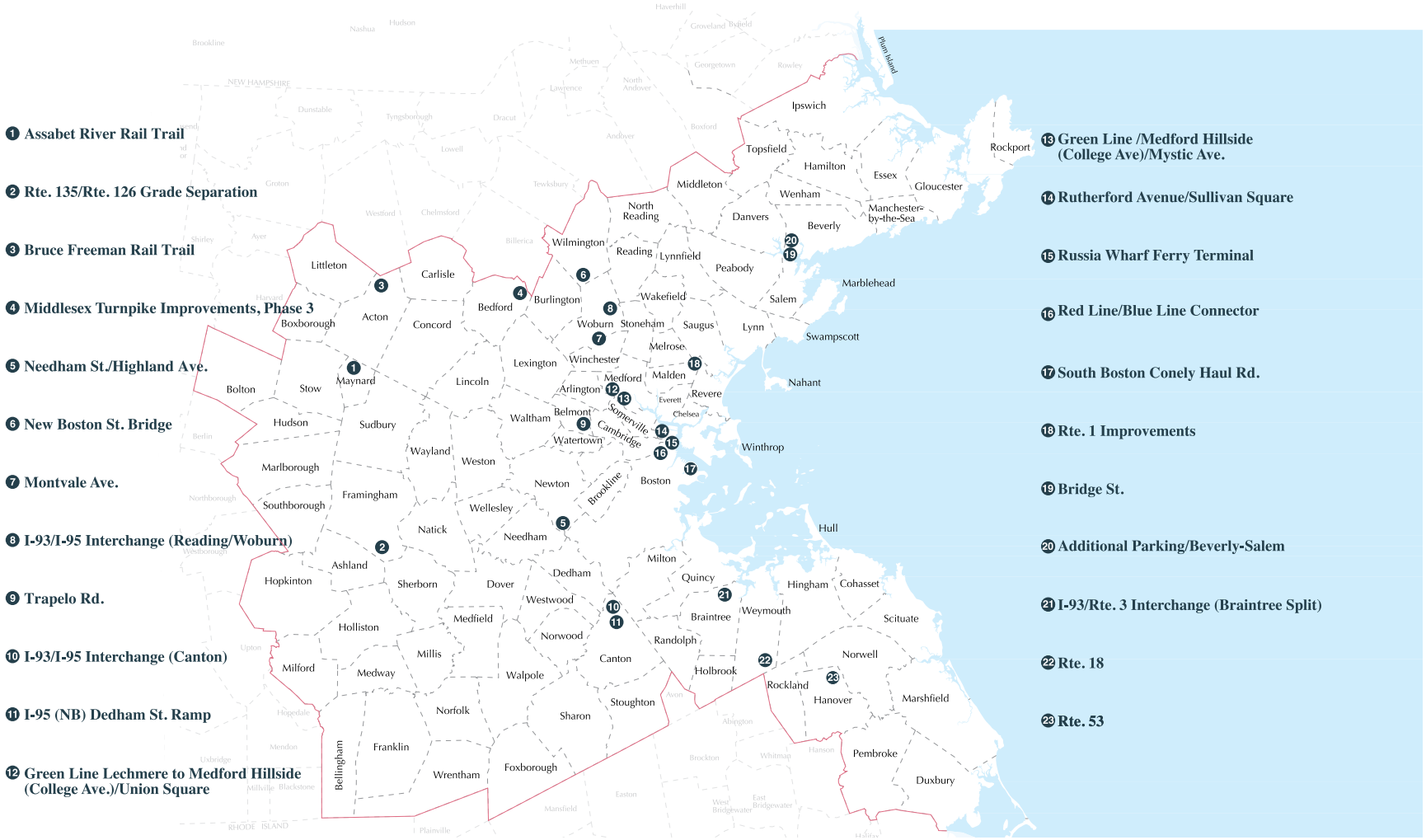
Table ES-2
Transit Projects in *Paths to a Sustainable Region*

PROJECT	MUNICIPALITIES	2011 COST (IN MILLIONS)	CONSTRUCTION TIME BAND
Fairmount Line Improvement Project (ongoing project)	Boston	$54.1	2012-15
1,000 New Parking Spaces (ongoing project)	Regionwide	$32.0	2012-15
Assembly Square Orange Line Station* (ongoing project)	Somerville	$50.0	2012-15
Red-Blue Connector (Design Only)	Boston	$49.0	2012-15
Russia Wharf Ferry Terminal	Boston	$2.2	2012-15
Additional Parking Spaces	Beverly & Salem	$50.0	2012-15
Green Line Extension, Lechmere to College Ave. (Phase I)	Cambridge, Somerville, & Medford	$1,120.0	2012-15 & 2016-20
Green Line Extension, College Ave. to Route 16 (Phase 2)*	Somerville & Medford	$185.0	2016-20

*Includes "flexed" highway funds

FIGURE ES-3

Paths to a Sustainable Region Projects Map



the decisions of previous long-range transportation planning work, and by setting aside funding, provides flexibility to select projects and programs in the future that may be even more effective in advancing the MPO's vision.

FISCAL CONSTRAINT

An important factor that limits the MPO's ability to include projects in *Paths to a Sustainable Region* is the federal fiscal constraint requirement. The total cost of projects the MPO includes in the LRTP must not exceed the estimate of transportation funding expected to be available between now and 2035. This means, unfortunately, that many worthy projects cannot be included in the LRTP.

Of the highway funds available to the MPO to use at its discretion, approximately 42 percent is set aside for smaller, maintenance projects that keep the system functioning and other smaller projects that enhance and improve mobility and the efficiency of the system. In addition, all of the annual federal funds received directly by the MBTA are dedicated to maintenance of the existing transit system. These projects are identified through the four-year Transportation Improvement Program (TIP), which is updated annually.

HOW ARE WE DOING?

After projects were selected, the MPO evaluated their collective effect on the transportation network using its travel demand model. The model is a computer planning tool used to evaluate the impacts of transportation alternatives given various assumptions about population, employment, land use, and travel behavior. The model is used to assess potential transportation scenarios in terms of several benefits, including air quality improvement, travel time savings, access improvements, and congestion reduction.

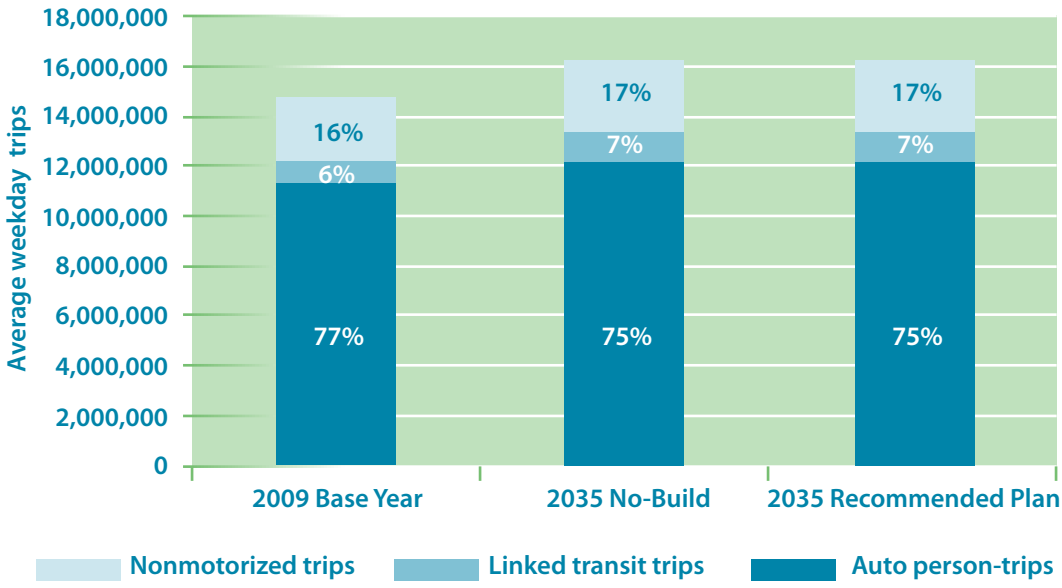
The model predicts that the number of trips made by people in the Boston region on an average weekday, regardless of mode, will increase by nearly 12 percent between 2009 and 2035. The model also predicts that daily transit trips will increase by approximately 30 percent, nonmotorized trips (biking and walking) by approximately 17 percent, and auto trips by approximately 7 percent. The share of all trips made by automobiles is predicted to decline from 77 percent to 75 percent during this time period, as shown in Figure ES-4.

The model is also used to examine the distribution of the transportation system's benefits and burdens among environmental justice and non–environmental justice neighborhoods. A neighborhood is defined as an environmental justice area or zone based on the percentage of the population identifying with a minority group and on its median income. If a neighborhood exceeds thresholds for minority populations or is below thresholds for income, it is identified as an environmental justice community. The analysis described in Chapter 9, Environmental Justice Assessment, found that the projects recommended in *Paths to a Sustainable Region* do not burden environmental justice areas more than a scenario in which none of the projects is built and, for several of the assessment measures, benefits them more.

In addition, an air quality conformity determination was performed to demonstrate that the LRTP is consistent with the State Implementation Plan for attaining air quality standards. The analysis is described in Chapter 10, Air Quality Conformity Determination, and shows that *Paths to a Sustainable Region* conforms to the Massachusetts air quality goals.

FIGURE ES-4

MODE SHARE SPLIT – BASE YEAR VS. NO-BUILD VS. RECOMMENDED PLAN



HOW CAN YOU GET INVOLVED?

Public input is an important aspect of the transportation planning process. Please visit **www.bostonmpo.org** for more information about the MPO and to view the full LRTP. You may also want to follow us on **Twitter (@BostonRegionMPO)** or sign up for our e-mail news updates by contacting us at **publicinformation@bostonmpo.org**.

To request a copy of the LRTP in CD or accessible formats, please contact us by any of the following means:

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