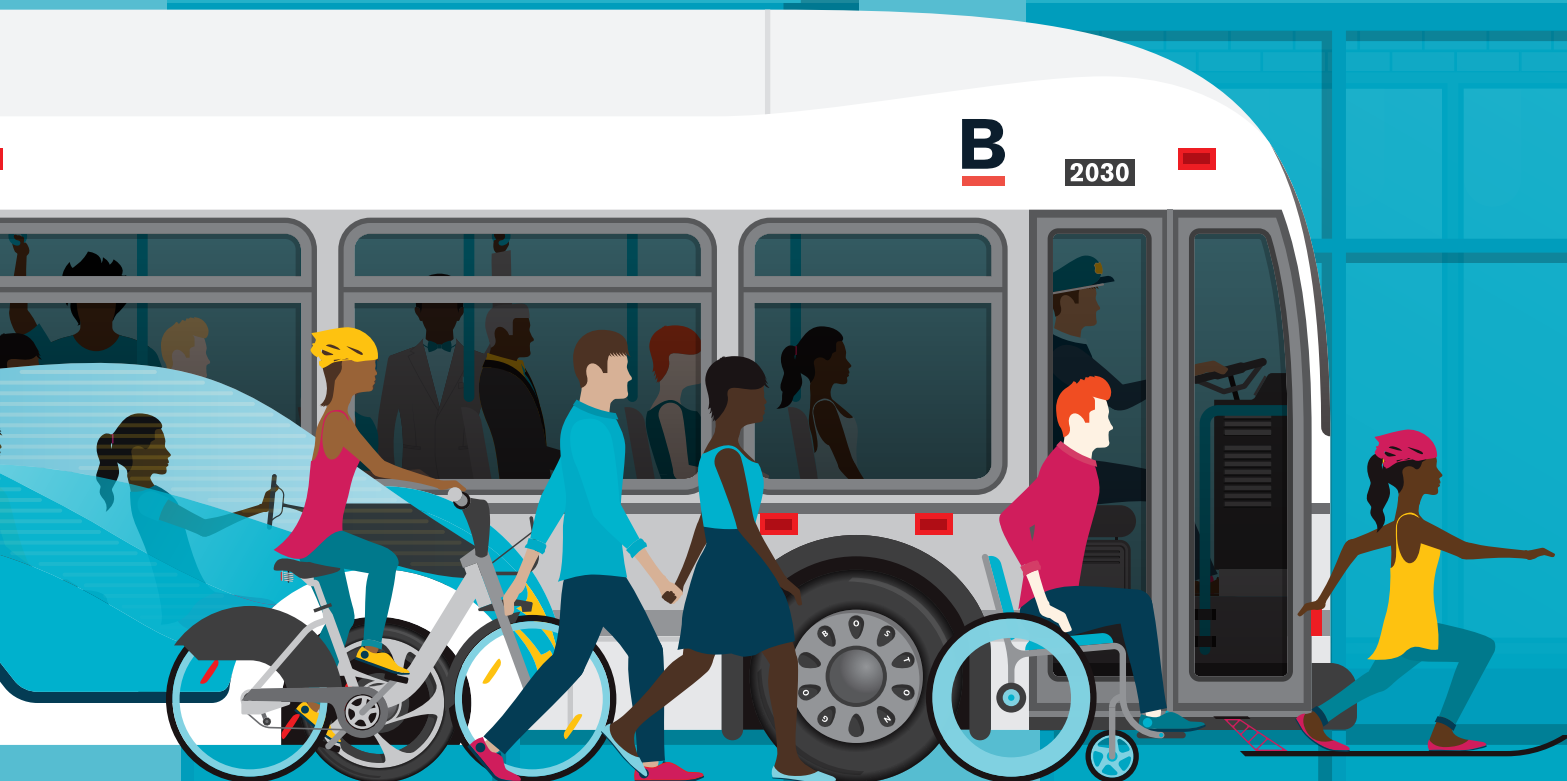


**GO
BOSTON
2030**

Imagining Our Transportation Future

Vision and Action Plan





CITY OF BOSTON • MASSACHUSETTS

OFFICE OF THE MAYOR
MARTIN J. WALSH

March 7, 2017

Dear Friends,

I am proud to present Go Boston 2030—our City’s long term mobility plan. This plan was written by you—our residents—to address the most pressing transportation challenges that Boston faces. In its depth of analysis and breadth of projects, this plan reflects your passion, your expertise, and your creativity. We look forward to working with all of you to get it done.

We hit the streets two years ago to launch this plan. On snowy days in January and at block parties in July, you stopped and shared your transportation visions with us. Five thousand ideas came pouring in during that first round of engagement, helping us set aspirational goals for the next fifteen years. When we transitioned from aspirational goals to specific projects, you stepped up again, contributing over 3,500 policy and project ideas. After analyzing these ideas, you then helped us prioritize them, with nearly 4,000 people voting on the projects they were most excited about.

We heard from you that too many of our residents are too far from reliable and affordable transit choices; this plan addresses that. We heard from you that our fastest growing job centers are tough to get to, especially from our neighborhoods with lower average incomes; this plan addresses that. We heard from you that, in some parts of our city, it is not comfortable to walk or bike—our greenest forms of transportation; this plan addresses that.

Because of this unprecedented engagement, we believe that we have a plan that will address long-term inequality, increase economic mobility, and improve climate resiliency within our neighborhoods, across the city, and throughout the region.

The hardest part—and the most exciting part—is now before us. As we implement this plan, we will take the same data-informed, community-driven approach that has been the hallmark of Go Boston 2030. Together, we will make our streets safer, good transportation options more accessible, and our entire network more reliable. Now, together, let’s get to work.

Sincerely,

Martin J. Walsh
Mayor of Boston

**GO
BOSTON
2030**

Imagining Our Transportation Future

Table of Contents

EXECUTIVE SUMMARIES

- 8 Vision Framework
- 10 Action Plan
- 16 From 5,000 Questions to an Action Plan

VISION FRAMEWORK

- 19 The People's Voice I, Visioning
- 33 Boston Today
- 59 Goals and Targets

ACTION PLAN

- 83 The People's Voice II, Action Planning
- 97 Boston in 2030
- 127 Projects and Policies
- 207 Realizing the Plan



Thank You, Residents of Boston

Go Boston 2030 is a product of the suggestions and collaboration of thousands of residents and workers who participated in the public planning process. Their willingness to set aside time to participate in-person and online, join roundtable discussions and review sessions, and write comments on postcards and via email has resulted in a document and that is both broadly ambitious and detailed in its recommendations. Their voice is present throughout this document and represents the collective aspirations of each of Boston's diverse communities and neighborhoods.

Go Boston 2030 is an initiative of the Boston Transportation Department with collaboration and input from a mayoral advisory committee, other city departments, state agencies, a team of consultants, community organizations, and advocacy partners.

The City of Boston would like to thank the Barr Foundation for their generous funding of this initiative.

Go Boston 2030 Mayoral Advisory Committee

Rick Dimino, Co-Chair President and CEO, A Better City
Russell Holmes, Co-Chair State Representative

Aimee Chan Mayor's Youth Council
Anne McGahan South Boston
Dave Queeley Codman Square NDC
David Lee Partner, Stull and Lee Architects
David Mohler Director, Transportation Planning, MassDOT
Geri Denterlein CEO, Denterlein
Jesse Brackenbury Executive Director, Rose Kennedy Greenway Conservancy
John Winske Boston Disabilities Commission Advisory Board
John Cusack Harvard-Allston Task Force
Kalila Barnett Executive Director, Alternatives for Community and Environment
Mahlet Shiferaw Mayor's Youth Council
Marilyn Swartz-Lloyd President/CEO, MASCO (represented by Sarah Hamilton)
Nika Elugardo Director of Applied Research, Emmanuel Gospel Center
Peter Furth Professor, Northeastern University
Ryan Chin CEO and Co-founder, Optimus Ride
Stacy Thompson Executive Director, LivableStreets Alliance
Wendy Landman Executive Director, WalkBoston

Chris Osgood Chief of Streets, City of Boston
Gina Fiandaca Commissioner of Boston Transportation Department

Former Advisory Committee members include: Beverly Scott and Frank DePaola (General Managers at the MBTA), Jackie Douglas (LivableStreets Alliance), Jennifer Molina (JP resident), Pete Stidman (Boston Cyclists Union), Sadiya Gurham (Mayor's Youth Council), and Vivien Li (The Boston Harbor Association).



Complementary Planning Initiatives

Go Boston 2030 is coordinated with ongoing and recently completed comprehensive plans at the city and state levels. These include:

Imagine Boston 2030

is a citywide plan, the first of its kind in 50 years that holistically pulls together planning initiatives in housing, health, education, economy, transportation, energy and the environment, technology, and arts and culture. The *Expanding Opportunity* report points to growth areas and strategies for supporting our dynamic economy, expanding opportunity for all residents, creating livable neighborhoods, and ensuring that Boston remains a thriving waterfront city for generations to come. An earlier document, *Guiding Growth*, describes the expanding population pressures and the need to carefully preserve, enhance, and grow our neighborhoods with an emphasis on housing affordability and reducing displacement.



Climate Ready Boston



is an initiative to consolidate the latest climate data and evaluate how sea level rise, coastal storms, extreme temperatures, and more intense rain and snow are likely to affect the city. After recently completing the first phase, the initiative will work in partnership with the Green Ribbon Commission to develop resilient solutions which will prepare our city for climate change.

This work builds on the *Climate Action Plan* from 2014, which focused on making Boston more sustainable. The focus now is on resilient solutions for buildings, infrastructure, environmental systems, and residents to ensure that the city continues to prosper in the face of long-term climate uncertainties.

Housing a Changing City

set the ambitious target in 2014 of producing 53,000 new housing units by 2030 in order to accommodate the projected population growth. Two years later, the city has made tremendous progress towards meeting, and hopefully surpassing, those targets so that stable and affordable housing for more than 700,000 residents can be a reality.



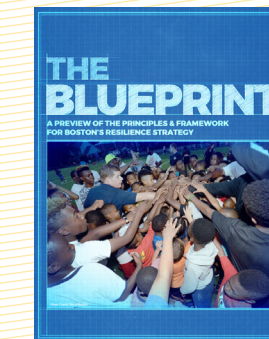
Boston Creates

is the City's first arts and culture plan. Developed in response to a surging interest in our vibrant arts and culture scene, as well as an awareness of the need for increased attention and public support, the plan outlines goals and strategies for overcoming the barriers to Boston's creative potential. Implementation of the plan focuses on supporting a sustainable arts and culture ecosystem, retaining and attracting creative talent, cultivating respect for many forms of cultural expression, integrating arts into many facets of civic life, and mobilizing partnerships.



100 Resilient Cities

is a planning initiative funded by the Rockefeller Foundation, which supports the work of Boston's Chief Resilience Officer. The resilience strategy that has emerged focuses on embedding principles of racial equity, social justice, and social cohesion within the City's planning for and implementation of new infrastructure, economic development, and



community building. As Boston prepares for climate change impacts, this plan seeks to guide resilient responses toward work that closes racial and economic gaps.

Focus 40

is an MBTA/MassDOT initiative to develop a long term investment strategy for the T. Looking beyond today's improvements, the planning process is incorporating an awareness of shifting demographics, changing climate, and evolving technologies to think more creatively about how the transit needs of Greater Boston will evolve over the next quarter century.



Vision Framework

Go Boston 2030 envisions a city in a region where all residents have better and more equitable travel choices, where efficient transportation networks foster economic opportunity, and where the City has taken steps to prepare for climate change.

Whether traveling by transit, on foot, on a bike, or by car, Bostonians will be able to access all parts of the city safely and reliably.

Guiding Principles

Equity

Boston will proactively address transportation infrastructure gaps in chronically under-served neighborhoods.

Economic Opportunity

Boston will connect its dynamic workforce with a growing number of well-paying and lasting jobs, particularly those in new-economy sectors.

Climate Responsiveness

Boston will provide opportunities for more trips to be taken by public transit to reduce greenhouse gas emissions and will prepare the transportation system for severe weather.



Large multi-lingual walls were created for each theme that emerged from the Question Campaign. Participants could offer their own vision through words or images, build on other people's ideas, and indicate what content resonated with them the most. The walls also included images that were submitted in advance by the public via the website.

Primary Goals and Targets

Expanding Access

Goal

Make Boston's neighborhoods interconnected for all modes of travel.

Aspirational Target

Every home in Boston will be within a 10 minute walk of a rail station or key bus route stop, Hubway station, *and* carshare.

Improving Safety

Goal

Substantially reduce collisions on every street through education, enforcement, and designs that reallocate street space to prioritize moving people safely rather than faster.

Aspirational Target

Eliminate traffic fatalities and severe injuries in Boston.

Ensuring Reliability

Goal

Prioritize making travel predictable on Boston's transit and roadway networks.

Aspirational Target

Bostonians' average commute to work time will decrease by 10%.

How We Get to Work Today and Aspire to in 2030

Mode for Bostonian Commutes	Today*	2030 Aspirational
Public Transit	34%	↑ Up by a third
Walk	14%	↑ Up by almost a half
Bike	2%	↑ Increases fourfold
Carpool	6%	↓ Declines marginally
Drive Alone	39%	↓ Down by half
Other/Work from Home	5%	↑ Slight increase in Work from Home

Mode for Commutes into Boston from the MAPC Region†	Today*	2030 Aspirational
Public Transit	40% (10% Commuter Rail)	Up by a third
Walk	2%	Doubles
Bike	1%	Increases fourfold
Carpool	8%	Increase by half
Drive Alone	50%	Down by half
Other/Work from Home	1%	Slight increase in other modes (taxi, motorcycle, etc.)

* 2014 ACS 1-year estimates

† 2010 ACS 5-year estimates, via CTPP

Action Plan Highlights

Go Boston 2030 has developed a list of projects and policies that will be implemented as early action projects in the near term and a set of long-term projects and policies that will require further planning processes to be implemented over the next 15 years. The top projects came out of an extensive public process and needs assessment analysis.

Top Projects

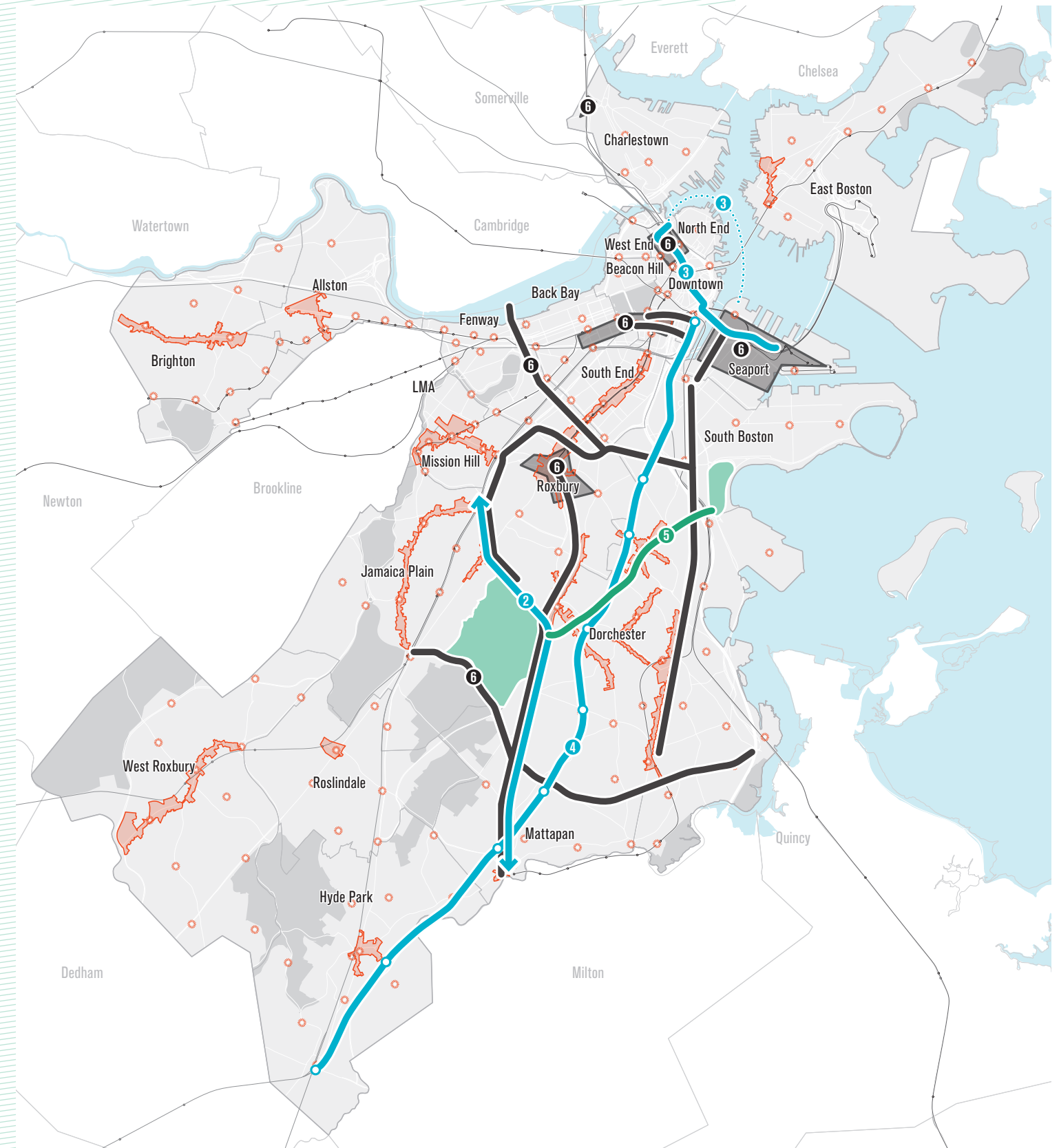
- 1 Walking and Bicycle Friendly Main Street Districts
- 2 Mattapan to LMA Rapid Bus
- 3 North Station to South Boston Waterfront Rapid Bus and Ferry
- 4 Fairmount Indigo Line Service Improvements and Urban Rail
- 5 Columbia Road Greenway
- 6 Smart Signal Corridors and Districts
- 7 Neighborhood Mobility microHUBS

Top Policies

- State of Good Repair—Particularly Bridges
- Restructure All Bus Routes
- Autonomous Vehicles
- Vision Zero Safety Initiatives (Corridors, Crossings, Slow Streets)



Key Go Boston 2030 Projects and Policies



Trends and Challenges

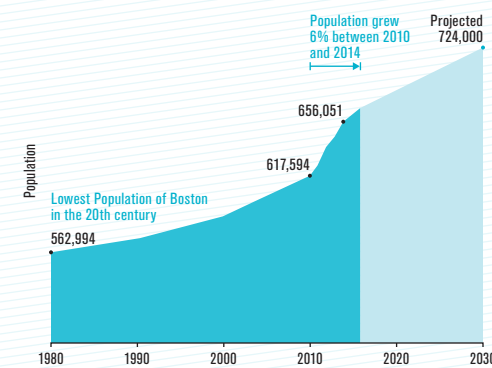
The mobility demands and range of transportation choices within Boston have always been unique—serving the needs of Boston’s residents and a larger metropolitan region as a job hub of New England. Changes in population density and demographics, income and wealth disparities, new kinds of employment clusters, sea level rise, responses to climate change, and disruptive technologies are creating new pressures on Boston to provide a fresh set of solutions to a new set of trends and challenges.

Diverse Population Growth

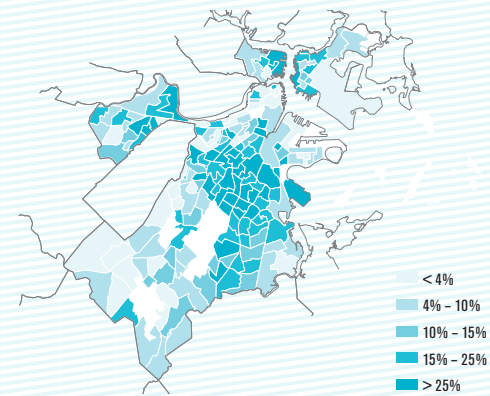
Between 2000 and 2010, Boston’s population grew by 5% to more than 620,000 residents. By 2030, the population is projected to exceed 700,000. Much of that growth comes from domestic and international immigration. Today, 27% of Bostonians are foreign-born, and in 2010, 35% of the city was between the ages of 20 and 34, giving Boston a higher percentage of millennials than any other US city.¹ The population is also aging though. By 2030, as much as 18% of Bostonians will be age 60 or older.² **Transportation options need to reflect the needs of this diversity of ages and backgrounds and their different needs and preferences.**

Data source: 2011 – 2015 ACS 1-Year Estimates, U.S. Census Bureau; BPDA Research Department, September 2016

Boston grew twice as fast as the nation between 2010 and 2014.



Percentage of Population Living in Poverty



Increasing Income Inequality

Despite economic gains, income inequality in Boston is significant and will continue to grow if not addressed. In a 2011 study, it was clear that race was a factor in household income with over a third of families of color having an annual income of less than \$25,000, while nearly half of Boston’s white families had annual incomes of \$100,000 or more and just 10% had incomes of less than \$25,000.³ Median incomes range from \$32,000 in Roxbury to \$182,000 in the Back Bay.⁴ **Finding ways to reduce the transportation cost burden for families living in poverty will be needed.**

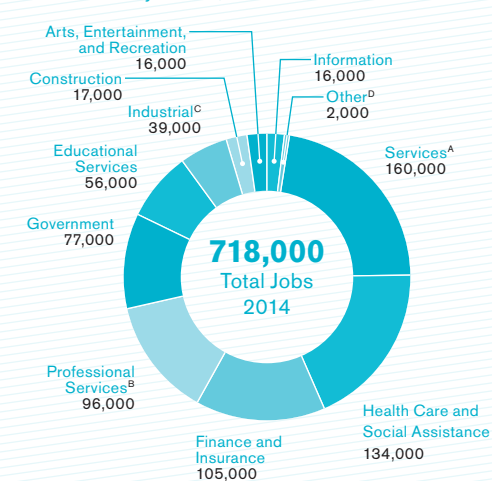
Data source: 2014 ACS 1-Year Estimate, U.S. Census Bureau; BPDA Research Department

Growing Knowledge Economy

Boston’s growing economy is dependent on a few key sectors. Health care and social assistance represent 18% of all jobs in the city. Professional and technical services, along with finance and insurance, make up over 23% of jobs.⁵ These sectors rely on a knowledge economy and support an expanding number of start-ups. New jobs and products are emerging in financial and education technology, digital health, and advanced manufacturing.⁶ **Workers in this “innovation economy” expect their transportation system to flex and adapt like other technologies in their lives.**

^A Includes Retail Trade, Administrative and Waste Services, Accommodation and Food Services, and Other Services
^B Includes Professional and Technical Services and Management of Companies and Enterprises
^C Includes Manufacturing, Transportation and Warehousing, and Wholesale Trade
^D Includes Natural Resources and Mining, and Utilities
^{*} Several industries, such as tourism and biotech, are comprised of jobs in multiple sectors.
 Source: BPDA Research Department

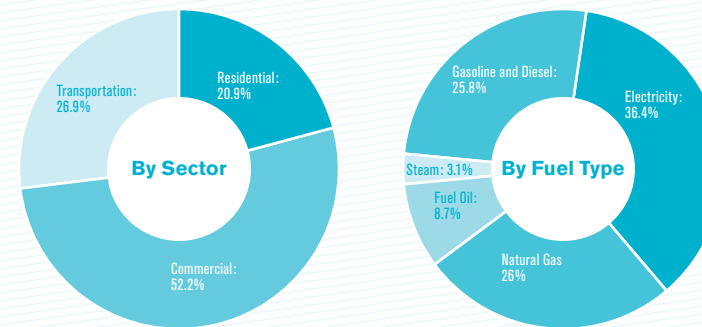
Boston Jobs by Sector, 2014



Rising Climate Risks

Over the past quarter century, 21 events in Boston have triggered federal or state disaster declarations. Whether due to increased rain fall or higher tides, flooding can result in physical damage to infrastructure and buildings, stress factors that lead to lost productivity, displacement costs, and business interruption. A 100-year storm event coupled with sea level rise of 21 inches could result in annualized losses of \$444 million and expose up to 43,000 Boston residents to flood risks by 2050.⁷ **For Boston to thrive in the coming decades, Boston’s infrastructure must be adapted.**

Greenhouse Gas Emissions, 2013



Decreasing Emissions

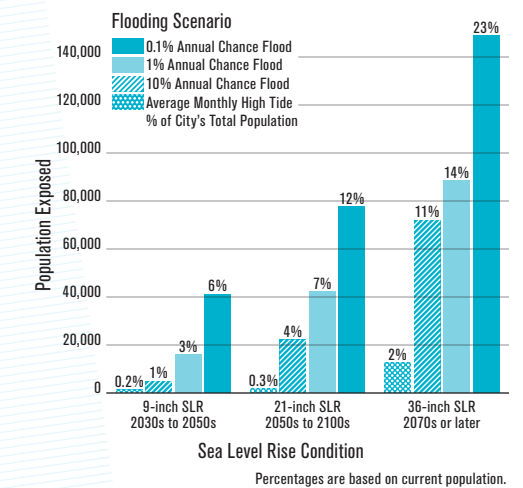
From 2005 to 2014, Boston’s greenhouse gas emissions declined by 17%. Electricity generation makes up the largest share of the city’s GHG emissions, but its share of the total has been steadily declining as cleaner grids are installed. In terms of sector contributions, large buildings and institutions are responsible for just over 50% of emissions, with transportation making up just over a quarter.⁸ **To achieve the City’s goal of 80% reduction by 2050, the contribution of transportation sources to overall emissions will need to be reduced significantly in the coming decades.**

Transformative Technology

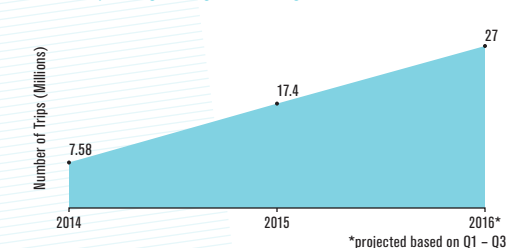
Mobile and digital technology is blurring the boundaries between where Bostonians live and work in the city while changing how people get around. Nearly 80% of Bostonians are now connected to broadband, and the number of “non-payroll” jobs has risen by 41%.⁹ The emergence of carshare companies such as Zipcar, bikeshare systems such as Hubway, and ride-hailing services such as Lyft and Uber are changing travel behavior with mobility on demand. Although personal choice and more alternatives to car ownership are welcome, **privately managed services are often not affordable or accessible to people with low incomes, with different mobility needs, or without access to a smart phone.**

¹ BRA 2013 Economy Report, www.bostonredevelopmentauthority.org/getattachment/86038673-b830-4152-9108-3c50978aa69e/ and Boston Indicators Report
² journal.aarpinternational.org/aib/2015/01/age-friendly-boston
³ The Measure of Poverty: A Boston Indicators Project Special Report www.neighborhoodindicators.org/sites/default/files/publications/final_poverty_report.pdf
⁴ Boston in Context: Neighborhoods www.bostonplans.org/getattachment/7b9b1201-8b4f-4fa9-b0f2-4acbbe083198
⁵ Boston’s Economy 2016 www.bostonplans.org/getattachment/bc3798b0-c79c-46c7-b97c-86abcb9ebba2
⁶ Imagine Boston: Expanding Opportunity 20222 presscdn.pagely.netdna-cdn.com/wp-content/uploads/2016/11/1b2030-Vision-Report-WEB-2016-11-17-SPREADS.pdf
⁷ Climate Ready Boston Report www.boston.gov/sites/default/files/20161207_climate_ready_boston_digital2.pdf
⁸ Greenovate Boston: 2014 Climate Action Plan Update www.cityofboston.gov/leofs/pdfs/Greenovate%20Boston%202014%20CAP%20Update_Full.pdf
⁹ Imagine Boston: Expanding Opportunity 20222 presscdn.pagely.netdna-cdn.com/wp-content/uploads/2016/11/1b2030-Vision-Report-WEB-2016-11-17-SPREADS.pdf

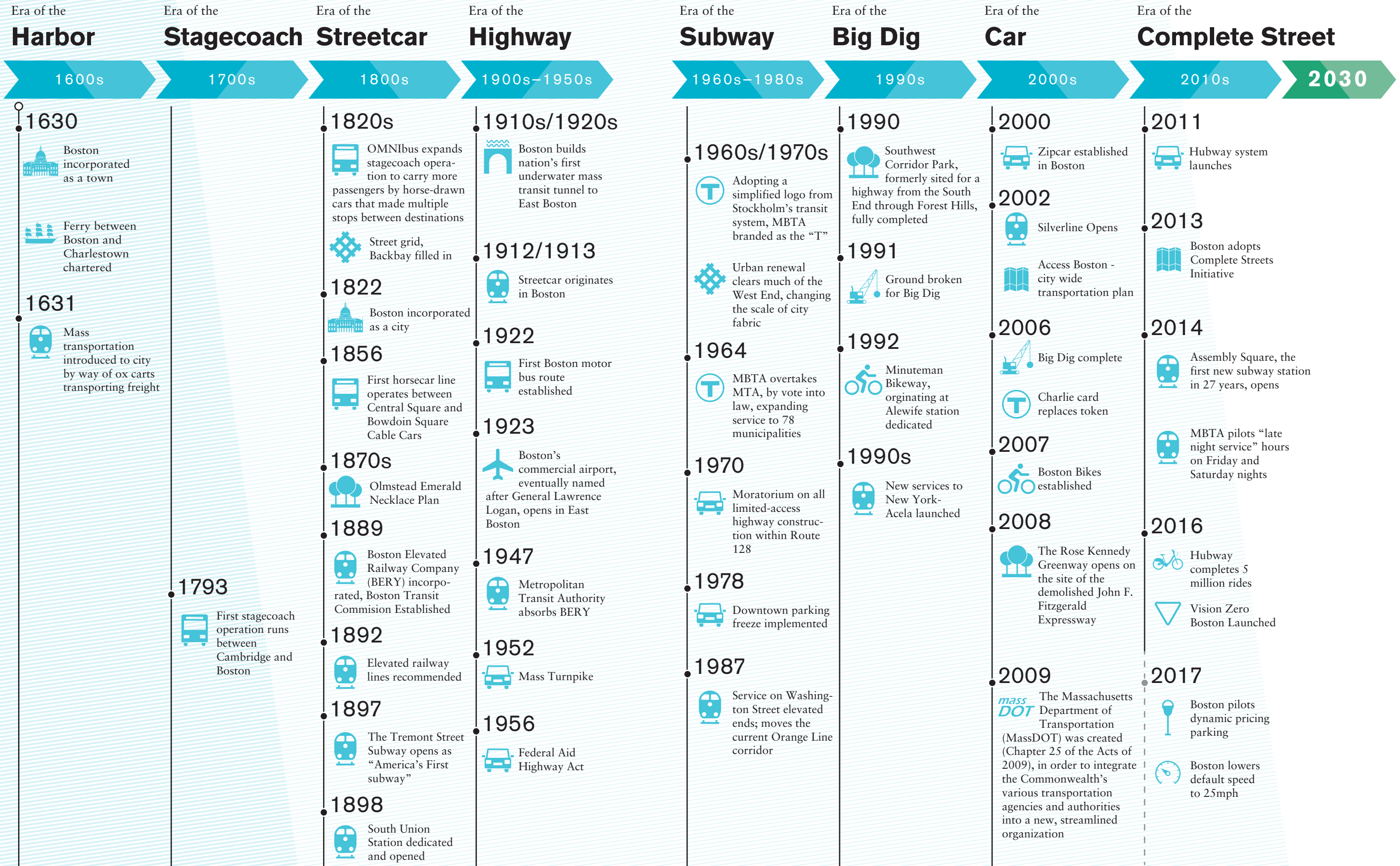
Percentage of Citywide Population Exposed



Uber Trips beginning or ending in Boston



As a comparison, MBTA ridership in 2014 totaled 400.8 M trips, a 1.8% increase from 2013.



The Process from Vision

to Action Plan

Winter 2015 Question Campaign



More than 5,000 questions were donated in response to the query, "What's your question about getting around Boston in the future?"

Questions were collected via

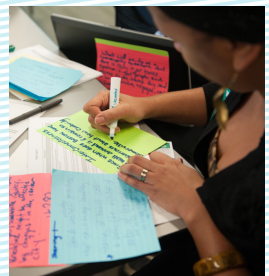
- Interactive website
- Question Truck

Nine Themes



- Access
- Affordability
- Experiential Quality
- Governance
- Health
- Innovation and Technology
- Reliability
- Safety
- Sustainability and Resiliency

February 2015 Question Review Session



Questions that had been organized by theme were reviewed to select "Priority Questions."

Reviewers came from community and interagency partners

Priority Questions



May 2015 Visioning Lab



650 participants provided feedback on the priority questions and corresponding goals.

The Lab also included

- Interactive walls
- Data infographics

Goals



September 2015 Vision Framework

A bold vision statement for the future of transportation in Boston with goals and aspirational targets was released as a draft for public review.



Fall 2015 Idea Campaign



3,700 suggestions for improving transportation were shared.

Ideas collected via

- Share Your Trip with BTS program
- Ideas on the Street pop-up
- Idea Roundtables
- Interactive website

Project and Policy Database



Winter 2016 Idea Review and Scenario Workshop



Ideas organized by mode of travel were reviewed to identify projects and policies most likely to meet goals.

Assisted by community and interagency partners, members of the public, and the charrette design team.

Four Futures



- Go Local
- Go Crosstown
- Go Regional
- Go Tech

June 2016 Select a Future



4,000 voters provided feedback on the projects and policies proposed.

Input collected via

- Online survey
- Paper ballot

Top Projects and Policies



March 2017 Vision Framework and Action Plan

A final Vision and Action Plan with projects and policies to be implemented over the next 15 years was published.





The People's Voice Visioning

Engaging Everyday People in the Visioning Process

People of all ages contributed their transportation visions at the Visioning Lab's Creation Station. The Creation Station invited Visioning Lab participants to draw, make, write, or collage their future of transportation.

Public Engagement in the Visioning Phase

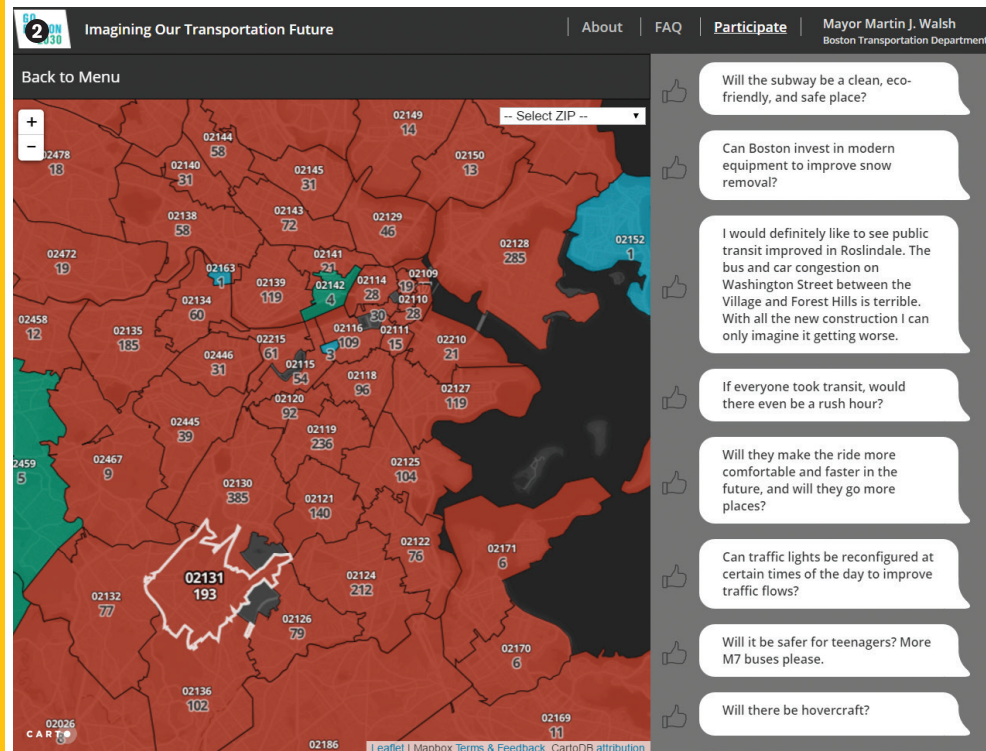
As Go Boston 2030 launched, the City of Boston saw a unique opportunity to think differently about how the public is involved in planning processes. By moving beyond the conventional community meeting model, which can limit imagination and tends to attract the same voices over and over, innovative techniques were used to bring new people into the process in fun and engaging ways. At each phase in the visioning process, the aim was to amplify the voices of people who have not typically been engaged in transportation planning.

The process started by soliciting questions from the public in order to understand their thoughts, ideas, and concerns during an intensive *Question Campaign*.^{*} From an analysis of the questions at a *Question Review Session*, nine organizing themes emerged. This broad categorization was then used to frame the *Visioning Lab*, a city-wide event that convened people to articulate their vision for our transportation future in captivating and creative ways. The draft Vision Framework, with its nine themes and corresponding Goals and Targets, emerged from the culmination of this iterative public feedback loop.

The questions formed the foundation of the entire Go Boston 2030 initiative.

A partnership with the Interaction Institute for Social Change, supported with funding from the Barr Foundation, allowed the initiative to use creative methods to reach the broadest possible audience using a combination of in-person and online engagement strategies.

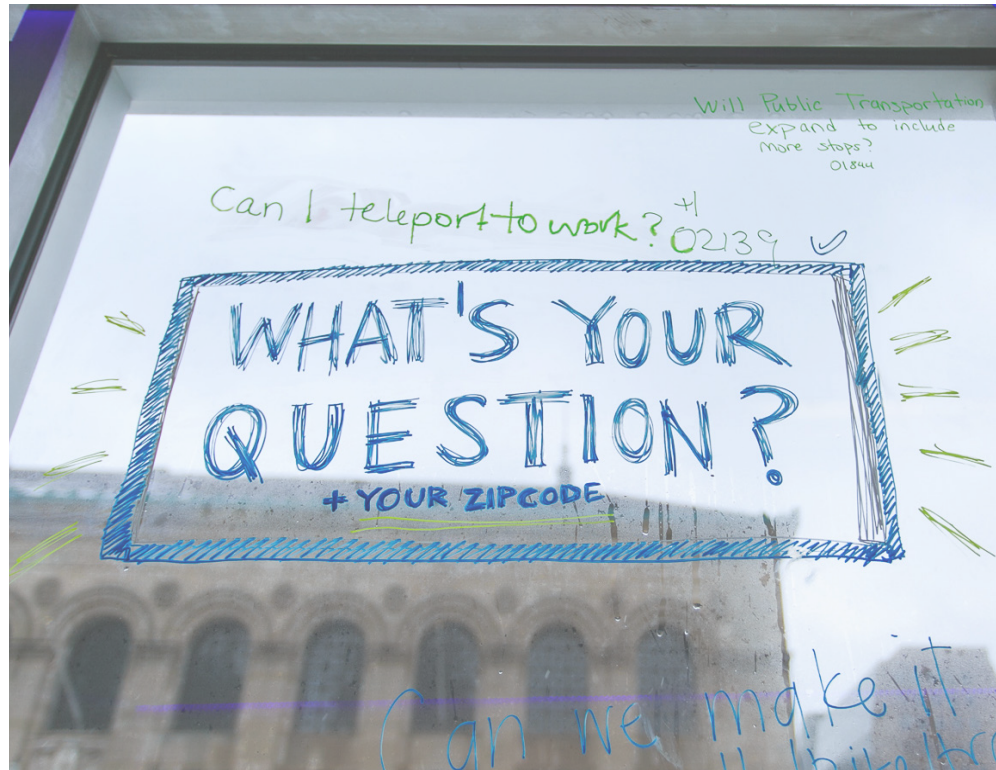
^{*}A tool developed by the Interaction Institute for Social Change for broad public engagement.



- 1 The question campaign was piloted at Circle the City in September 2014.
- 2 An online database of questions allowed people to see what was asked by zip code.
- 3 Walls for each theme at the Visioning Lab invited the public to read and comment on questions and ideas.
- 4 Provocative advertisements invited people to ask questions online or via social media in English, Spanish, and Chinese.

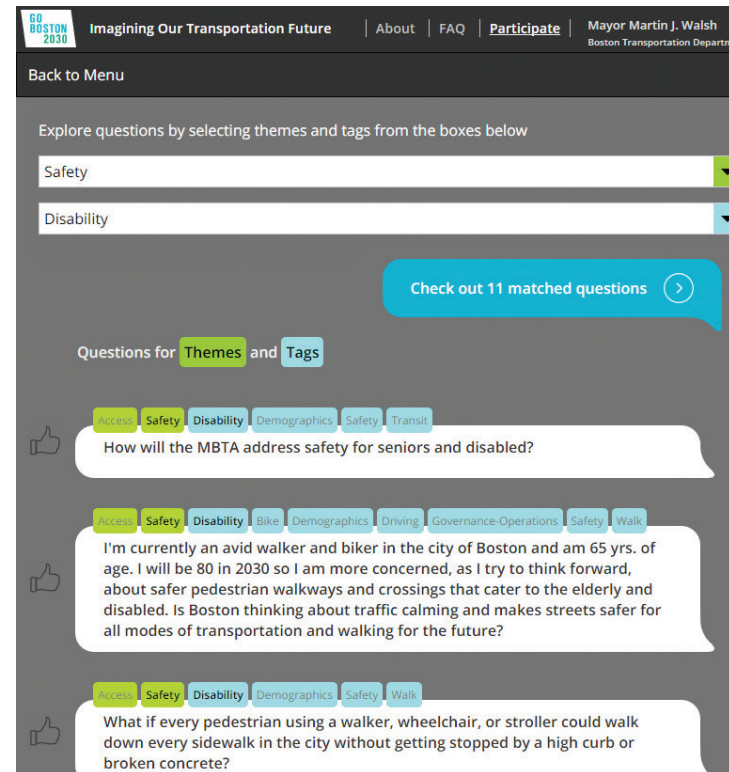
The Question Campaign

Initiating a Broad Conversation about Transportation



People could share questions in person at the Question Truck, online at the official website, or via social media.

GoBoston2030 @GoBoston2030 · Feb 20
 MT @bikesnotbombs #GoBoston2030 questions are IN! Write yours up by midnight tonight! goboston2030.org



Go Boston 2030 wanted to create a way for a diverse range of people to express their ideas, experiences, thoughts, and concerns in order to frame the public conversation about transportation. Using a technique called a **Question Campaign**, people who live in, work in, and visit Boston were asked, “What’s your question about getting around Boston in the future?”

Listening to people’s questions served as a way to understand the breadth of the issues, what people’s diverse experiences are, and what individuals value most. Anyone can have a question, even if they do not see themselves as “experts” on transportation planning. Crafting opportunities for people to donate their questions online and in person across the city resulted in an easy, low-barrier way for thousands of people to participate.

Nearly 5,000 questions were collected through the campaign.

Community events and meetings were ideal places to collect questions from the public. Dozens of local organizations participated by soliciting questions from their members and constituents on paper cards. Among our many partners there were many examples of targeted outreach: Arts Emerson collected questions at intermission during their shows, Bikes Not Bombs collected questions from their youth mechanics, and the Medical Academic and Scientific Community Organization (MASCO) collected questions at hospitals in the Longwood Medical Area.

The goboston2030.org website was integral to the public engagement process. Initially, the site’s design

centered around collecting questions and allowing the public to interact with them. After donating a question and submitting a zip code, web users could read and like other questions, sort questions by tags or themes, and see all of the questions donated in a particular neighborhood.

Social media was also an important part of the public outreach. Twitter, Facebook, and Instagram enabled the City to reach new participants and foster dialogue about transportation issues. @GoBoston2030’s Twitter followers in particular (871 at the time and over 1,900 today) have helped to continue the conversation.

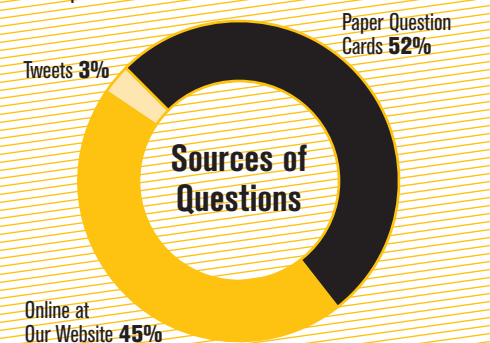
Read all the questions at questions.goboston2030.org/?mode=read



QUICK FACTS

Of the 5,000 questions,

- **52%** came in on paper cards, **45%** were submitted online, and **3%** were tweets and Facebook posts.
- Every neighborhood in Boston contributed. Some zip codes submitted more questions than others. The top five were 02130 (Jamaica Plain), 02128 (East Boston), 02124 (Dorchester), 02119 (Roxbury), and 02131 (Roslindale).
- Only 16% of participants shared their age, but every age group was represented.

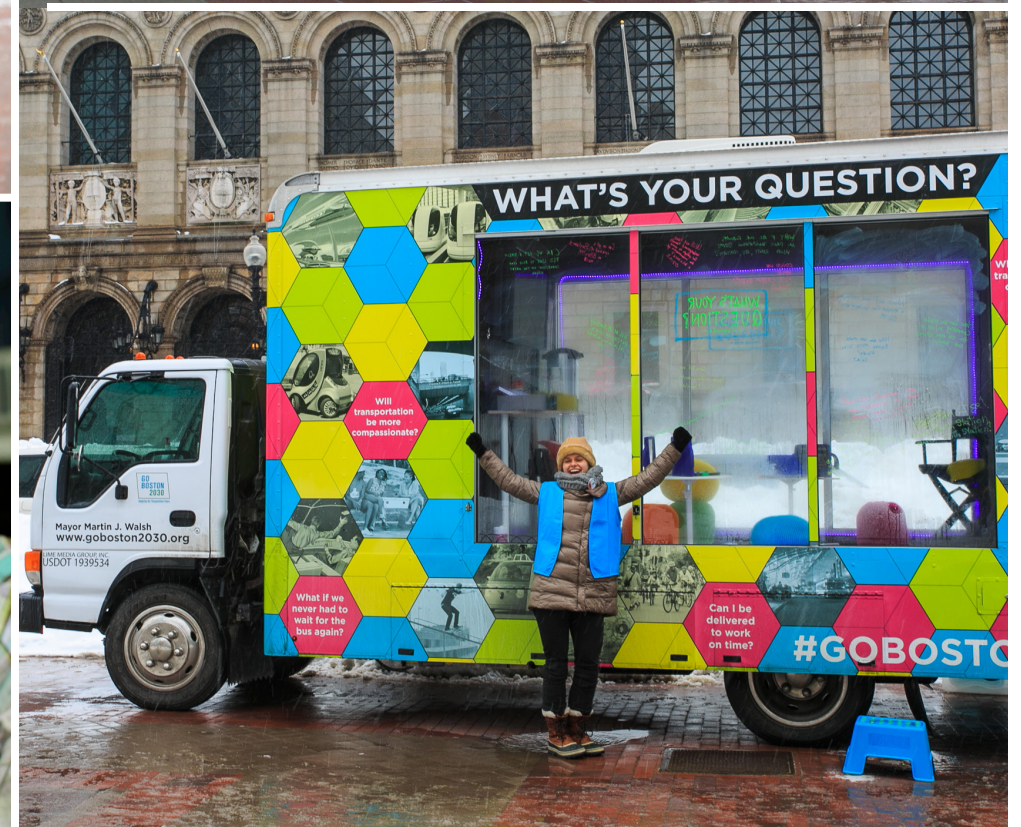
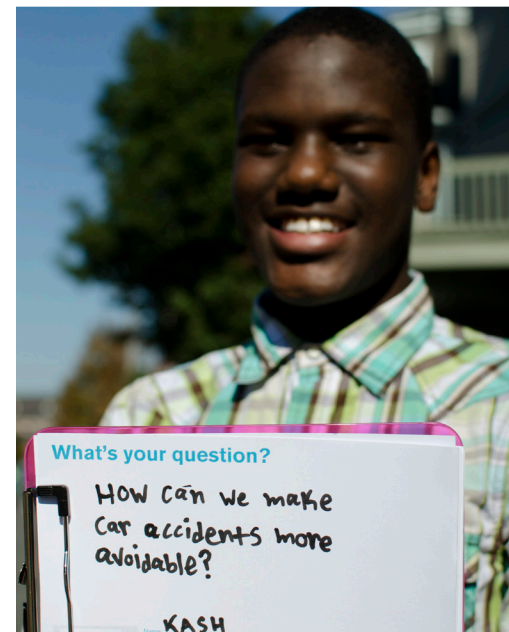
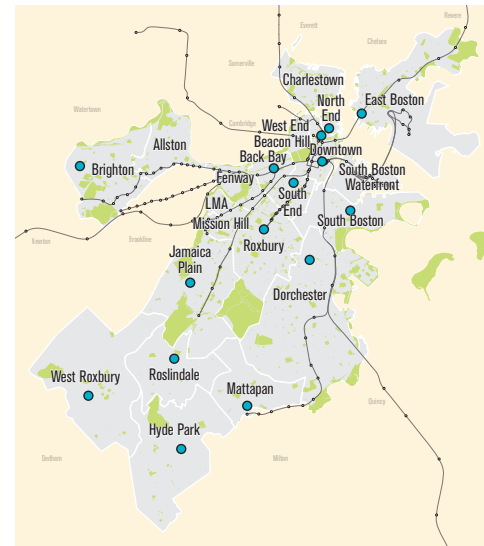


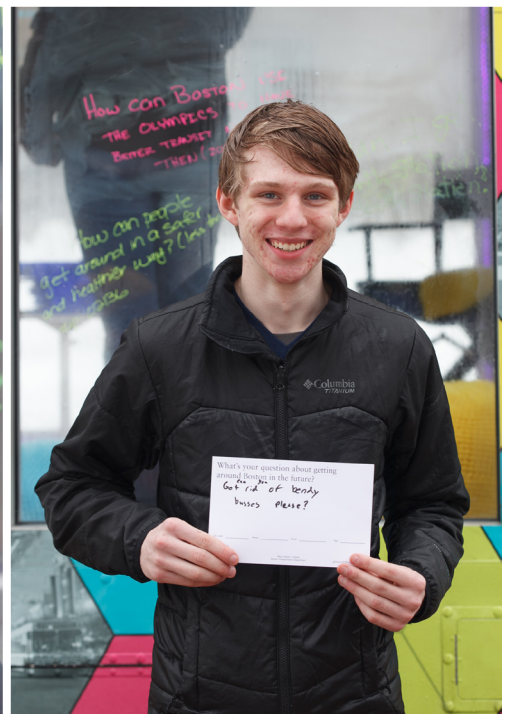
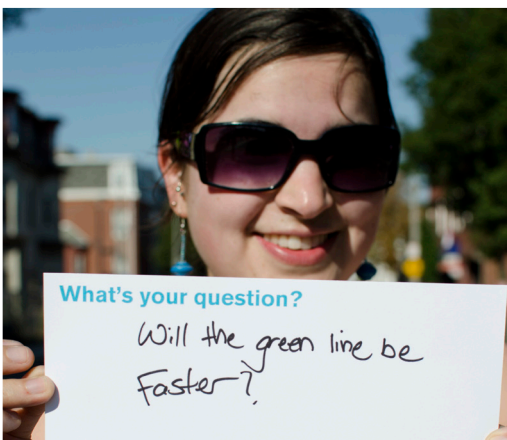
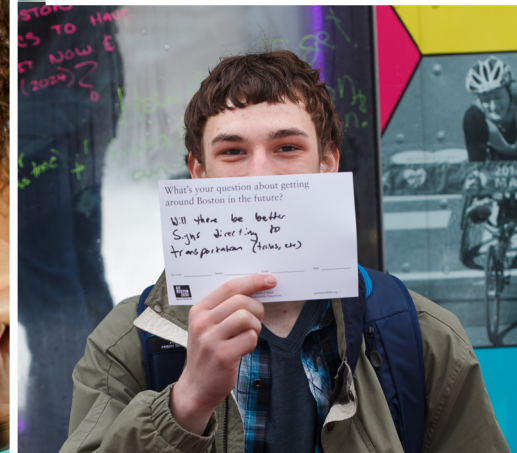
The Question Truck

In late January and early February of 2015, the Question Truck visited 15 neighborhood locations collecting questions in order to meet people where they live, work, and travel. Passersby were invited to share their question and to read other people's questions. From a transportation themed soundtrack to hot chocolate, the festive spirit of the truck attracted people to join the conversation about the kind of future transportation system they wanted. People who stopped to participate could donate a question by writing on a card, the side of the truck, a Plexiglas hexagon, or an iPad.

The truck also provided a gathering place for initial conversations about the existing transportation system and ways to improve it in the near term. With its neon décor and bright lights, it created an inviting space that welcomed participants in from the cold. Its appearance also built buzz and familiarity with the Go Boston 2030 brand, generated press coverage, and provided a destination for people to engage with the process in person.

The Question Truck provided many ways to donate a question at each of the locations shown below.

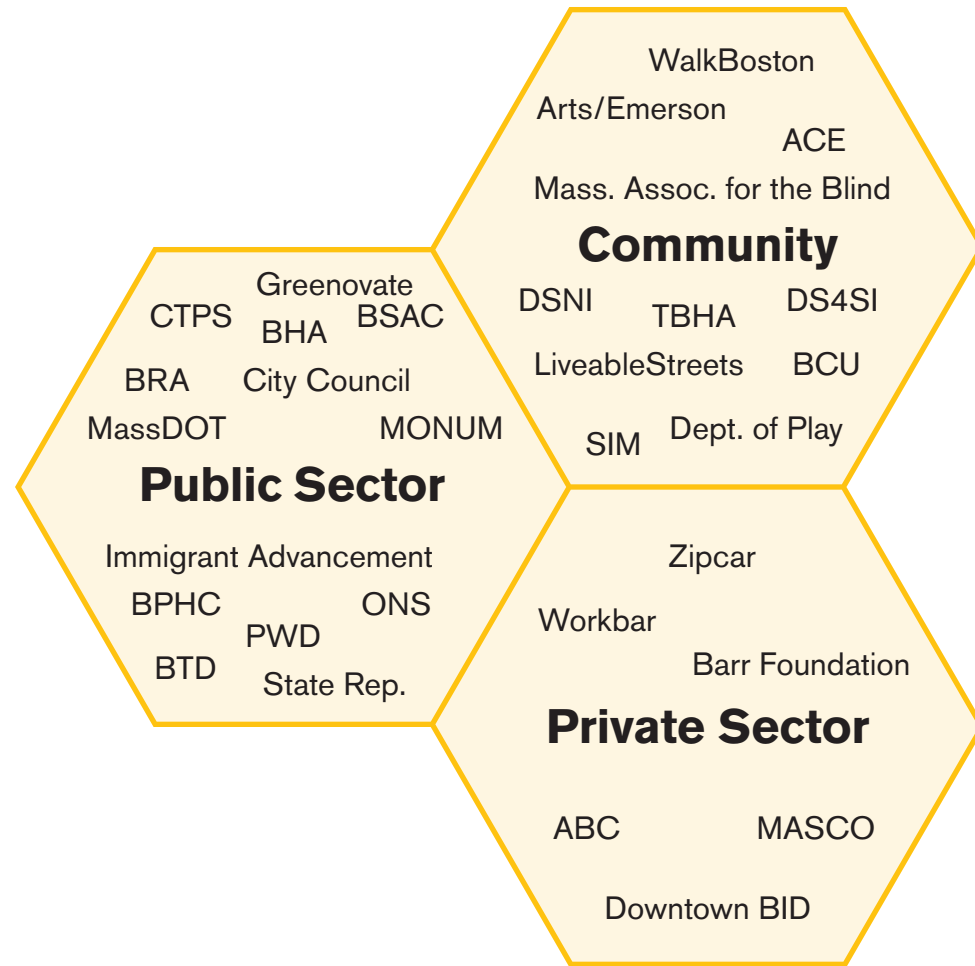




Question Review Session

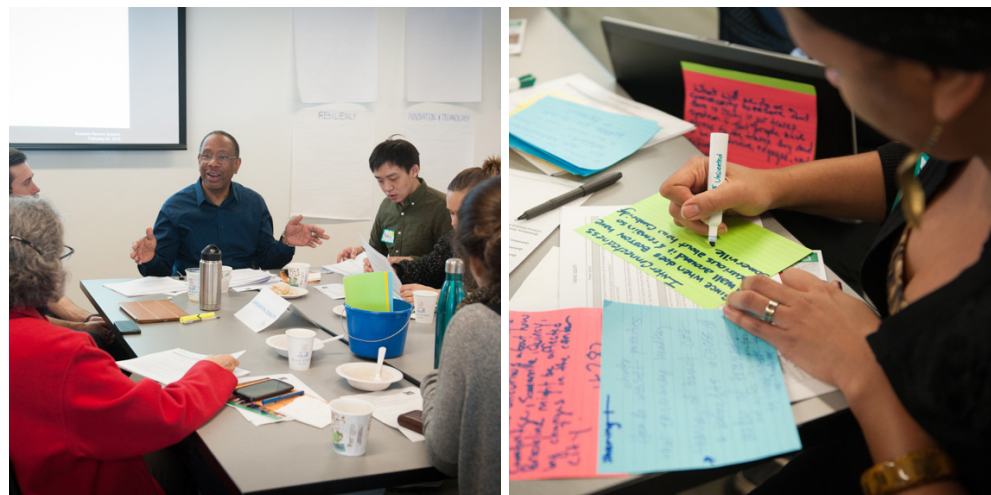
Making Meaning of What the Public Said

After collecting over 5,000 questions from the public, Go Boston 2030 needed to make meaning of what was said. The *Question Review Session*, in late February of 2015, was a half-day convening of City officials and community leaders who reviewed all of the questions and worked together to understand and articulate what the public was saying. This collaboration cultivated a shared responsibility for carrying forth the voice of the people. As the questions were analyzed and sorted in preparation for the Question Review Session, multiple underlying themes emerged. After a consolidation process, nine themes were selected as the best way to organize the questions. At the event, every donated question was carefully reviewed, giving all voices equal weight. Pairs reviewed a set of clustered questions within a particular theme and discussed issues that resonated with them. Then groups of participants identified sets of "priority questions" that best represented what was most recurrent, provocative, and visionary to represent the full array of the public input.



A set of priority questions were identified to represent each of the nine themes.

This process further refined the themes and established the core issues embedded in each of the nine themes: Access, Affordability, Experiential Quality, Governance, Health, Innovation and Technology, Reliability, Safety, and Sustainability and Resiliency. The priority questions were then used to frame discussions at the next public engagement event, the Visioning Lab.



Visioning Lab

Sparking the Public Imagination



The culmination of the visioning process was a two-day event designed to attract and convene people from across the city. The *Visioning Lab*, in May of 2015, was a place for people to share their vision of our transportation future. It was designed to test the resonance of the themes and priority questions that emerged from the Question Campaign and Question Review Session. People were invited to look at all questions on a question wall, comment on some of the key questions, and to articulate how they imagine seeing the meaning of each theme come to life. This input became the basis for developing the goals and informing the targets of this Vision Framework report.

Over 600 people attended the event over two days.

Mayor Martin J. Walsh spoke of the importance of public participation in shaping our transportation future. Posters illustrated key data about how Boston gets around today, which became important context for people's recommendations. An evening discussion tackled the question "What would it mean to use transportation to build civic space?" Music, dancing, and visual arts were incorporated into the event to encourage people to open up to new ideas, to think creatively, to have fun, and to work together in a positive way. By writing on the walls and indicating preferences with hexagons and stickers, the City learned more about the vision and priorities of the participants.

The feedback gathered from the theme walls led directly to the Goals of Go Boston 2030.

In advance of the Visioning Lab, the website also provided a portal for uploading photos of what people hope transportation looks like in 2030. Transportation suggestions and visions for the future—in the form of sketches, renderings, and images from other countries—poured in to encourage Bostonians at the Lab to think differently about how they'll get around in 15 years. A similar opportunity was provided at the Lab's Creation Station, where participants created mixed media visions for the future of transportation in Boston.





Boston Today

Boston by the Numbers

Maps of Boston, modes of travel, and regular routes change each decade in this dynamic city. From narrow winding streets to gridded streetcar neighborhoods, from America's first subway to the nation's first carshare company, and from an elevated expressway to a highway covered by parks, Boston's transportation systems continue to evolve.

This chapter describes the city's transportation systems as they exist today (or at some specified point between 2010 and 2016) through data visualizations. If you live or travel in Boston today, look for yourself in the data. Does it reflect your lived experience? How are other neighborhoods served differently? What will it take to keep the city moving in the future?

- How Boston Travels to Work 36
- Affordable Travel and Access to Jobs 40
- Feeling Safe 42
- Vulnerability to Climate Change 44
- Mass Transit Service 46
- Walking Access 48
- The Growth of Bicycling 50
- Sharing Rides and Vehicles 52
- Car Ownership and Use 54
- Roadway Traffic Flow 56



The data illustrated in these maps and charts is a snapshot of the continuing transformation of our transportation systems. The insight it provides informs the public, the City of Boston, and important local and regional stakeholders on how best to plan for population growth, build for climate resiliency, determine how to regulate ride-hailing start-ups, design and install more and safer bike lanes, anticipate how smart phones and autonomous vehicles will shape transportation in the future, and more.

Today, with a population of approximately 667,000, a daytime population of nearly 1.2 million, and a weekday MBTA ridership of 1.3 million, Boston needs new projects, policies, and other solutions to accommodate even more trips by 2030.

How Boston Travels to Work

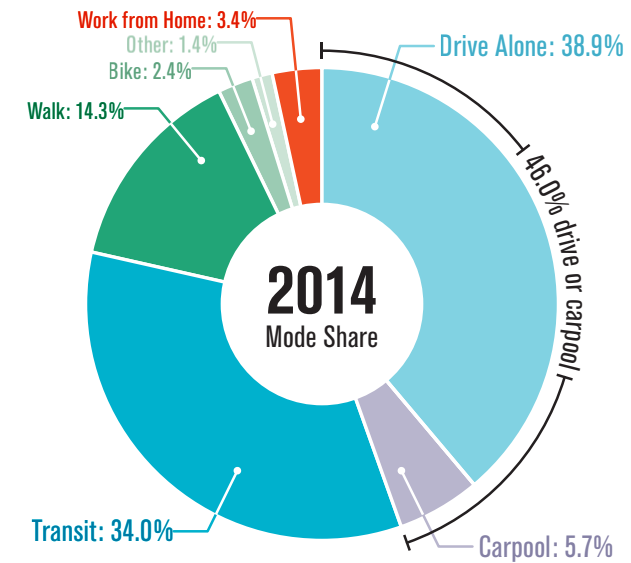
Less than half of Bostonians are taking a car to work

Since 1990, the number of people biking and telecommuting has increased steadily and significantly, entirely off-setting declines in carpooling over the same period. Trips by car now make up less than half of all commute trips by Bostonians. The impact of biking and telecommuting is small numerically, but their recent rate of growth is making a notable impact. Bicycling doubled from 1990 to 2013—then doubled again in 2014—growing from under 1% to over 2% of all work trips. Bikes make up 3% (5,000 trips) of commutes entirely within Boston.

Transit remains an essential and growing mode for commuting by Bostonians, with transit's share of all trips increasing nearly 8% since 1990 to a third of all work trips. Bostonians who work in the city use transit for 36% (60,000) of work trips.

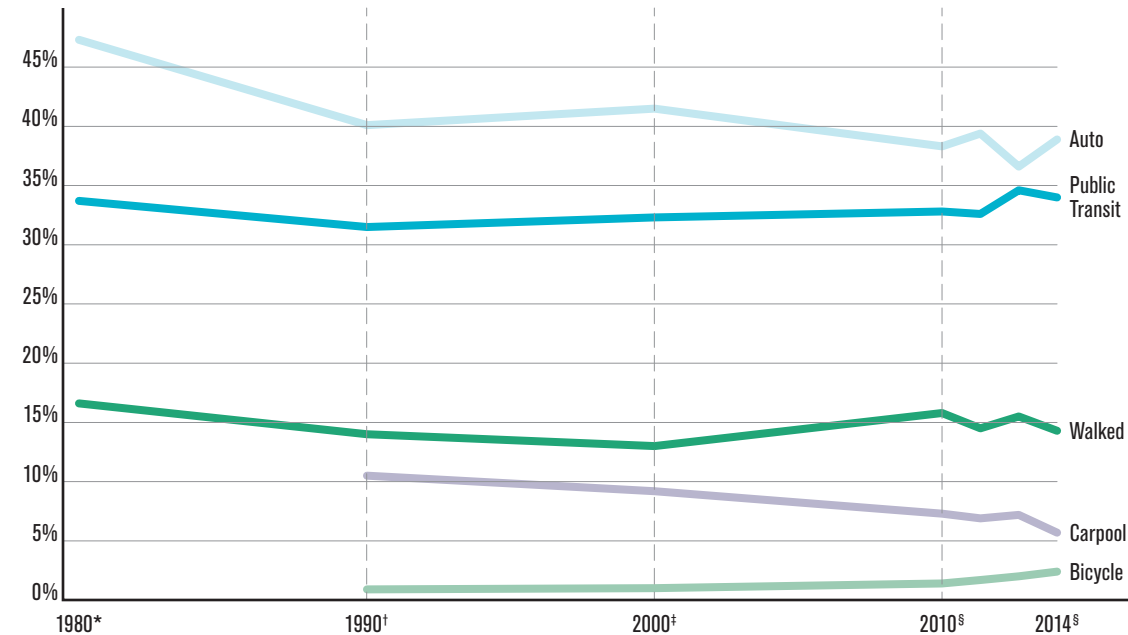
Ultimately, Boston is a walkable city and is regularly considered one of the nation's top three walking cities. While 15% of all work trips are exclusively on foot—nearly doubling to 27% for trips within the city—walking is also an essential component of most transit trips. The walk mode share declined slightly from 1990 to 2000 but has grown steadily since. As Boston's expanding job centers get closer to its neighborhoods, the percentage of commutes on foot is expected to continue to grow.

Bostonians' Commute Trips by Mode, 1990 vs. 2014



Data source: American Community Survey, 2014

Bostonians' Commute Trips by Mode



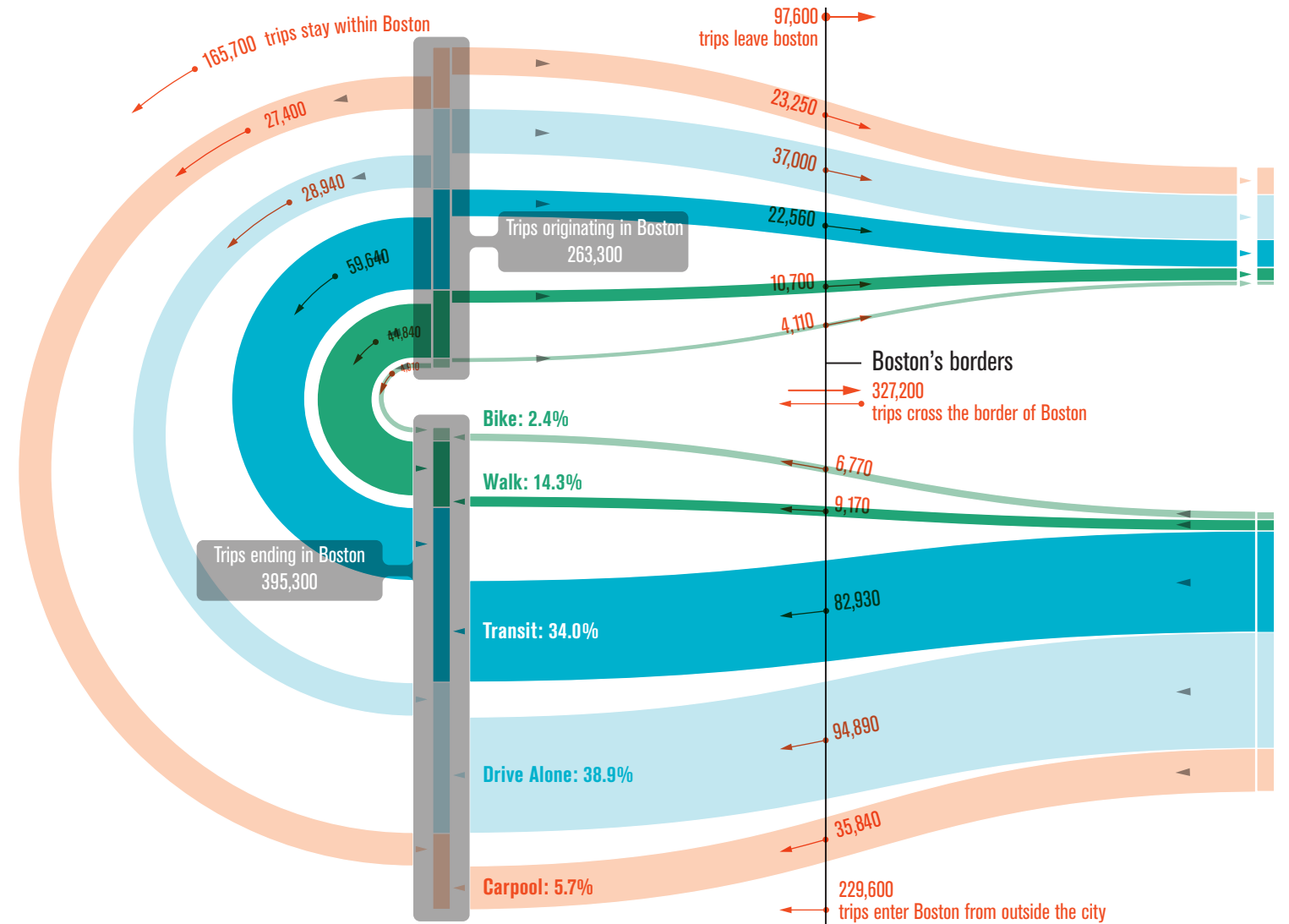
*1980 data from Census as reported by CTPS. No carpool v. single occupancy vehicle or bicycling information available.

†1990 data for drive alone and carpool as reported directly from Census data, other modes from Census via CTPS.

‡2000 data for all modes except Bicycle and Other Means from Census data, other modes from Census via CTPS.

§Data from ACS—may overreport walking/biking as sample taken during the summer months.

Morning In- and Out-flow of All Trips across Boston's Borders by Mode



Data source: Central Transportation Planning Staff, 2010

Morning commutes starting in Boston rely on all modes

During the peak hour of the morning commute, 395,000 people head to destinations in Boston. Of these trips, 229,600 (60%) originate outside of Boston while the remainder start within the city. Of the workers entering Boston, 95,000 drive alone, 83,000 take transit, and 36,000 carpool. It should be noted that those transit trips represent a 36% mode share for trips entering Boston—higher than Bostonian's own transit mode share for commute trips of 33%.

Meanwhile, during that same morning peak commute hour, 263,000 people take a trip that originates in Boston. Of these, 98,000 people head out of the city for work. A majority of these out-flow trips are car trips, with 37,000 (38%) people driving alone and 23,000 (23%) carpooling.

Only 165,700 morning peak hour work trips originate and end in Boston, the commutes of people who live and work in the city. Of these, 59,600 (36%) are riding transit and 44,840 (27%) are walking to work. Combined, more Bostonians are taking transit and walking than using a car.

While commute trips only represent about one-fifth of the trips taken in Boston and many people use a combination of modes to get to work, US Census commute data is shown on these pages because it is the most robust source, the easiest to understand, represents a trip that most people take ten times a week, and shows how travel systems perform when the pressure is at its peak.

How Boston Travels to Work

Commute times vary less significantly across the city

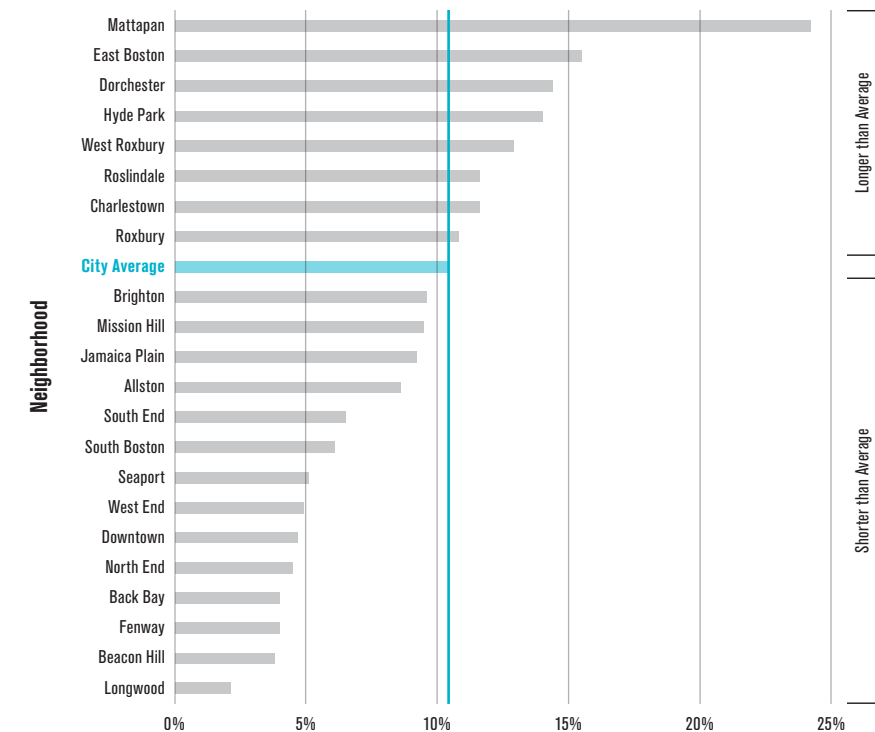
The citywide average commute time of 29 minutes is exceeded only marginally in just eight neighborhoods, with Mattapan clocking in the longest average at 34 minutes. Only four neighborhoods have average commutes of less than 20 minutes. One of these is Downtown, which has an average commute just below 20 minutes, showing that not all jobs are concentrated in the downtown. The shortest commute of just over 15 minutes belongs to those living in the Longwood Medical Area.

The prevailing mode of travel in a neighborhood does not necessarily correlate to commute time. While West Roxbury residents commute mostly by car and less than half of Mattapan commuters drive, their average commute times are both above the city-wide average (32 and 34 minutes respectively). Similarly, although both Allston and Jamaica Plain have commute times close to average (28 and 30 minutes respectively), JP residents drive at twice the rate of Allston's (42% versus 19%) and nearly 30% of Allston commuters walk to work.

Ultimately, the citywide average commute is heavily driven by the city's most populous neighborhoods. Four of the five—Dorchester, Brighton, Jamaica Plain, and South Boston—have driving and transit mode shares and average commute times that are right at the citywide average. (Transit-reliant East Boston is the exception.) Each of these big neighborhoods has different access opportunities, incomes, and racial profiles, indicating that no matter who you are, Bostonians regularly travel less by car and use transit at some of the highest rates in the nation.

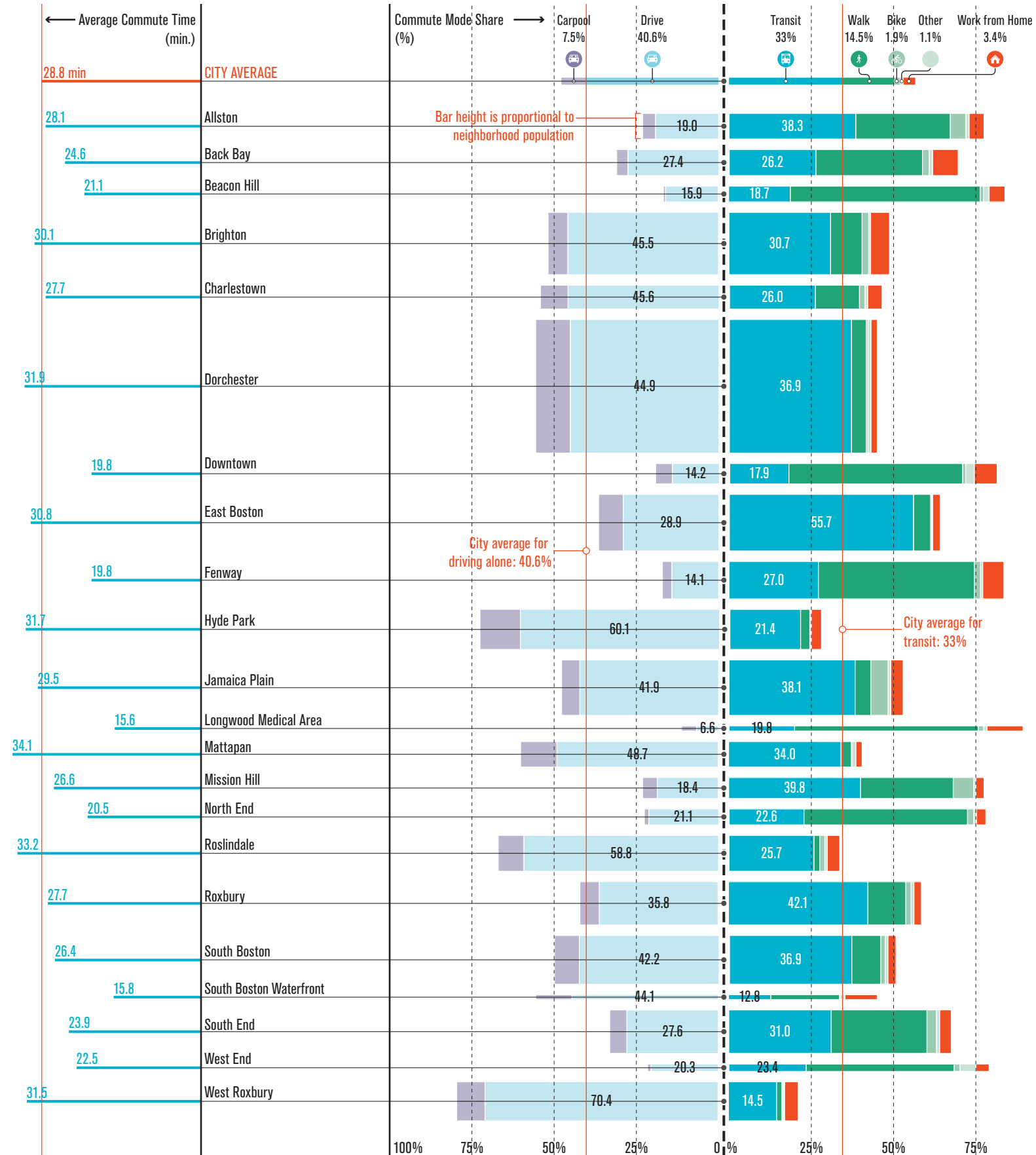
Neighborhoods with a high proportion of low income residents also have a disproportionate number of residents with very long commutes. This is particularly true in Mattapan, as well as East Boston, Dorchester, and Hyde Park.

Percent of Boston Residents with 60+ Minute Commutes



Data source: 2013 ACS 5-year estimates

Average Commute Time and Commute Mode Share by Neighborhood



Choice of mode varies significantly by neighborhood

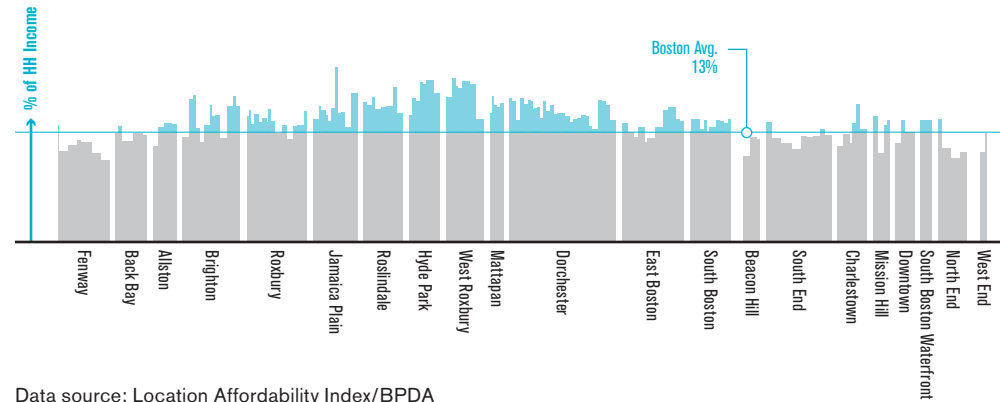
Bostonians walk and take transit to get to work more than they drive, but these choices vary significantly by neighborhood. Some outer neighborhoods such as West Roxbury rely more on driving (over 70% of commuters drive, and 15% take transit). Meanwhile, other outer neighborhoods such as Hyde Park and Mattapan commute on transit at much higher rates (21% and 34% respectively)—even though they have similar rail access as West Roxbury. Boston's highest transit-commuting neighborhood is East Boston, at nearly 56%. The next highest is Roxbury at 42%, followed closely by Mission Hill at 40%. Meanwhile, residents of Beacon Hill, the North End, and Downtown all have a walk to work rate of over 50%. The highest biking rates are found in Allston, Mission Hill, and Jamaica Plain—each exceeding 5%.

Data source: 2013 ACS 5-year estimates

Affordable Travel and Access to Jobs

Average incomes, housing costs, and transportation costs vary dramatically across Boston. Some of the most expensive housing in the city is located within walking distance of the highest paying job centers. With the exception of those living in subsidized affordable housing, most low income Bostonians move to areas where housing costs are lower, but they are then burdened by much higher transportation costs. New job centers are emerging, but they are not as well-served by the existing transit network as the historic financial and government centers downtown.

Transportation Cost as a % of Household Income, by Census Tracts and Neighborhoods



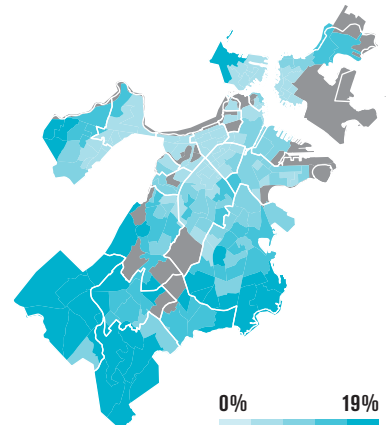
Data source: Location Affordability Index/BPDA

Remote neighborhoods without good transit access experience higher transportation costs

Though Boston's land values vary by neighborhood, transportation costs consistently increase for people living further from the downtown and from T stations. Parts of Brighton, Dorchester, East Boston, and Hyde Park that have lower housing costs become more expensive to live in because of their higher transportation costs, which are largely due to a greater reliance on driving and the cost of owning and operating a vehicle. Parts of Allston, Dorchester, Charlestown, East Boston, and Jamaica Plain have higher transportation costs than some more remote parts of Hyde

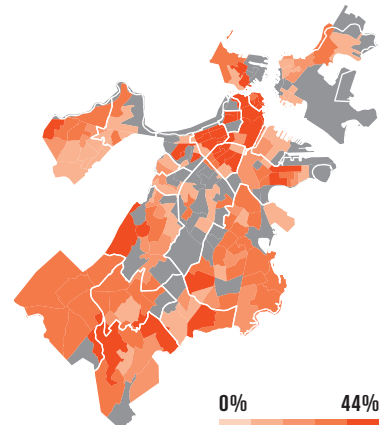
Park, Mattapan, and Roslindale that benefit from better transit connections. Some of the lowest cost neighborhoods in Boston include the Longwood Medical Area, Mission Hill, and Roxbury, where both housing and transportation costs are lowest. Meanwhile, the downtown neighborhoods with the very lowest transportation costs have some of the highest housing costs in Boston. Overall, transportation costs exceed the Boston average, relative to housing cost, in the entirety of Dorchester, Hyde Park, Jamaica Plain, Mattapan, Roslindale, South Boston, and West Roxbury.

Transportation cost burden



Data source: Location Affordability Index, BRA.

Housing cost burden



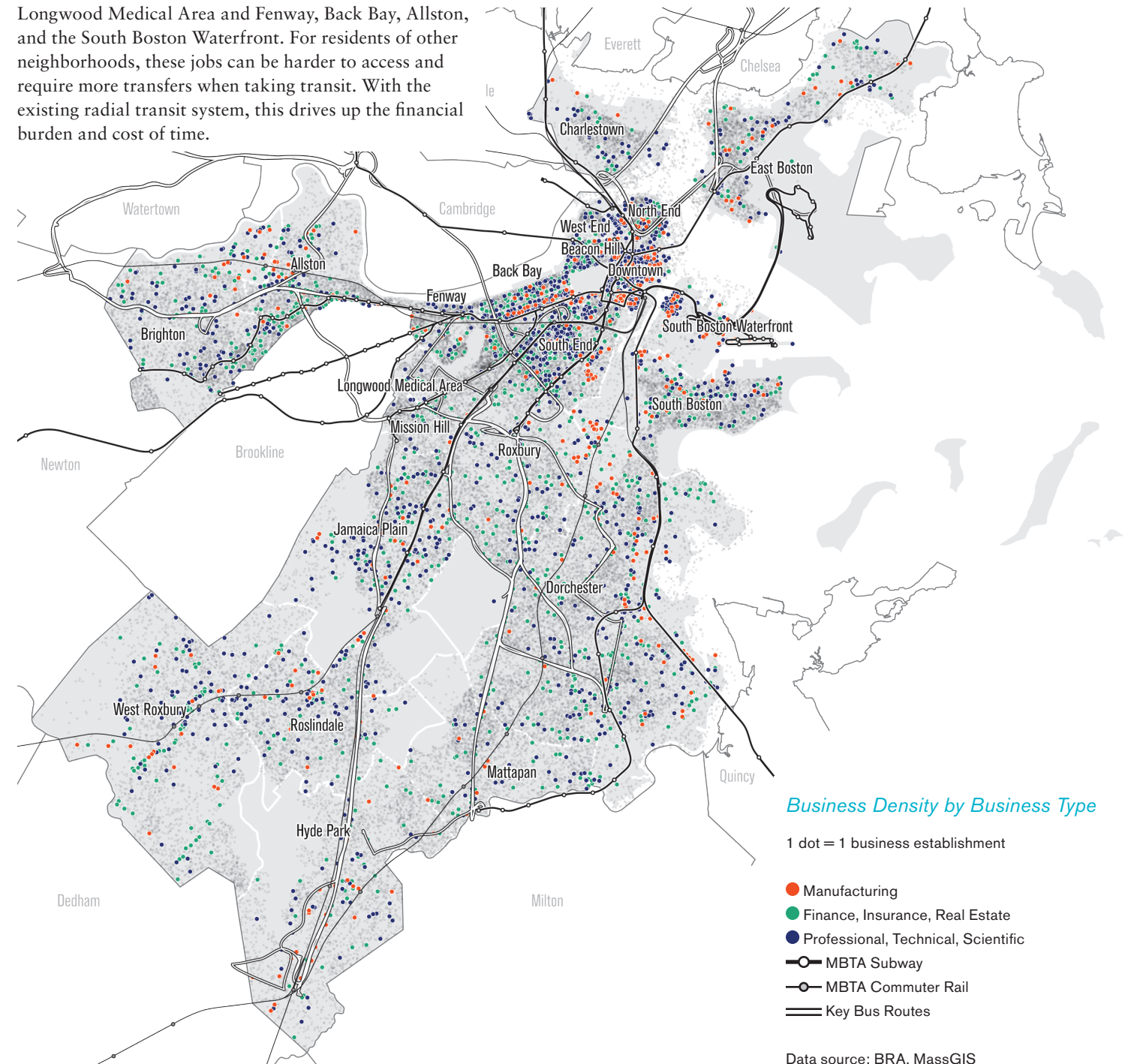
Median household incomes vary from **\$26,000 in Roxbury to \$95,000 in the South Boston Waterfront.**³

Average transportation cost burdens vary from 7% of household income in Beacon Hill to **16% of household income in West Roxbury.**

Average annual housing costs vary from **22% of household income in the West End to 36% of household income in the Back Bay.**⁴

Boston's jobs have grown beyond downtown, but transit has not

Job centers have expanded beyond downtown and into more neighborhoods, providing new opportunities in the Longwood Medical Area and Fenway, Back Bay, Allston, and the South Boston Waterfront. For residents of other neighborhoods, these jobs can be harder to access and require more transfers when taking transit. With the existing radial transit system, this drives up the financial burden and cost of time.



Business Density by Business Type

- 1 dot = 1 business establishment
- Manufacturing
- Finance, Insurance, Real Estate
- Professional, Technical, Scientific
- MBTA Subway
- MBTA Commuter Rail
- Key Bus Routes

Data source: BRA, MassGIS

Feeling Safe

The perceived safety of a trip heavily influences whether someone chooses to take transit, walk, or bike, as well as whether and where to drive. Although the vast majority of crashes in Boston involve an automobile, the rate of injury or fatality is low because drivers and passengers are surrounded by safety devices and the vehicle's frame. Unfortunately, a significant number of crashes also involve people walking and biking who have no such protection.

Most crashes are found in areas with wider roads, more cars, and higher speeds, though there are notable exceptions

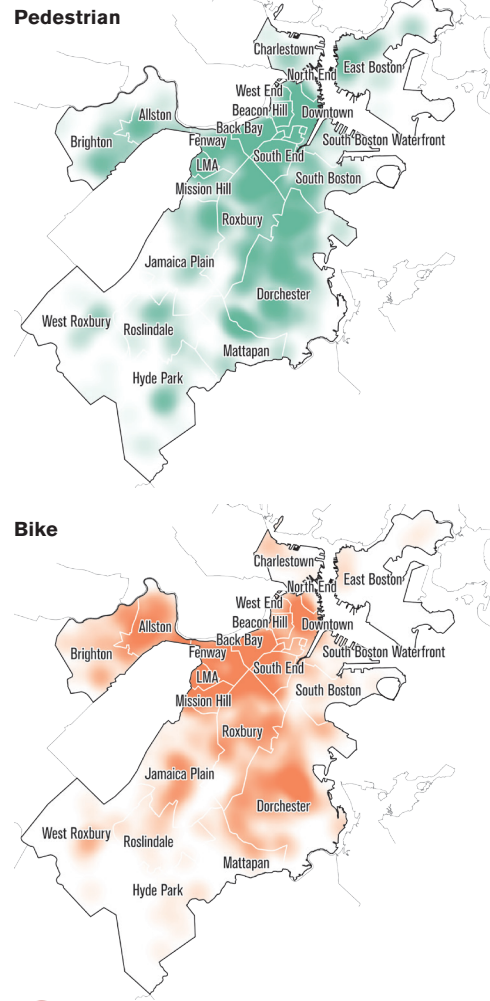
Three-fourths of all walking crashes occur while crossing the road, so walking safety is often directly proportional to street width and traffic volume, and the severity of the crash is directly proportional to vehicle speed. Bicycling safety is particularly influenced by speed; while most bike crashes are concentrated in neighborhoods closer to downtown, sections of Dorchester—which have lower rates of bicycle ridership but higher vehicle speeds—also have a high rate of crashes.

Eight to nine times as many pedestrians and cyclists die on arterial roads than on local roads. Yet crash hot spots do not always follow predictable rules and vary depending on the mode. Concentrations of walking and bicycling crashes exist in slow-speed neighborhood centers, such as Morton Street and Cleveland Circle,

where other factors such as complicated intersection geometry lead to confusion. Meanwhile, people walking have fewer incidents than people biking near the BU Bridge, but they have many more incidents in the South End.

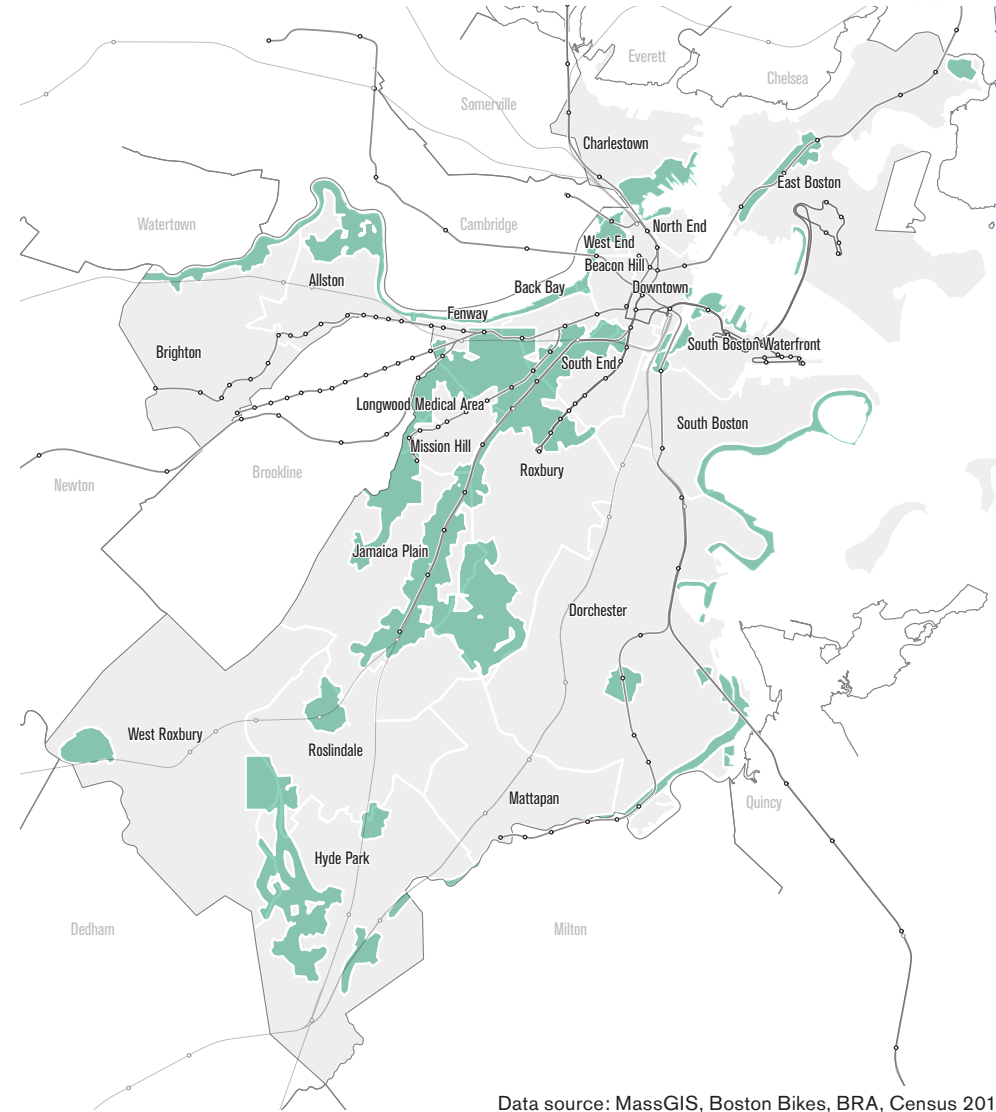
More crash details and patterns can be explored at the City of Boston's new Vision Zero website: www.visionzeroboston.org

Incidence of Roadway Crashes by Mode



Data source: Boston Emergency Medical Services, Boston Police Department, MassDOT

Areas within a five-minute Walk of a Protected Biking Facility or Shared Use Path

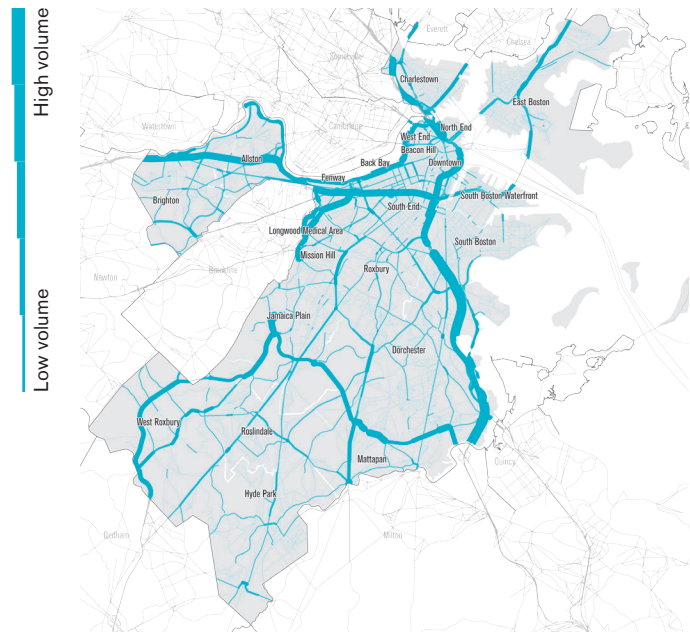


Data source: MassGIS, Boston Bikes, BRA, Census 2010

While bicycles are allowed on most roads, the majority of people who might choose to ride would prefer a lane or path separated from moving vehicles. Boston's excellent off-street path network provides this access in many places, but the continued expansion of on-street protected lanes is needed to provide safer cycling access to all neighborhoods. Today, a protected bike facility or lane is within a 5-minute walk of only 20% of Bostonians.

According to a U.S. Bicycling Participation Benchmarking Report, "54% of adults in the U.S. perceive bicycling as a convenient way to get from one place to another and 53% would like to ride more often. However, 52% worry about being hit by a car and 46% say they would be more likely to ride a bicycle if motor vehicles and bicycles were physically separated."

Roadway Traffic Volume

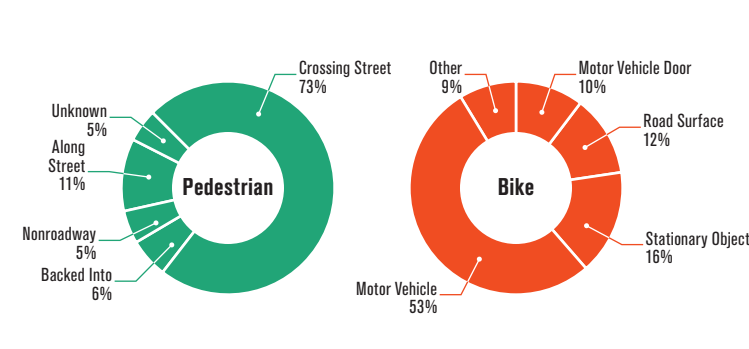


Data source: Central Transportation Planning Staff

Bicycling safety continues to improve

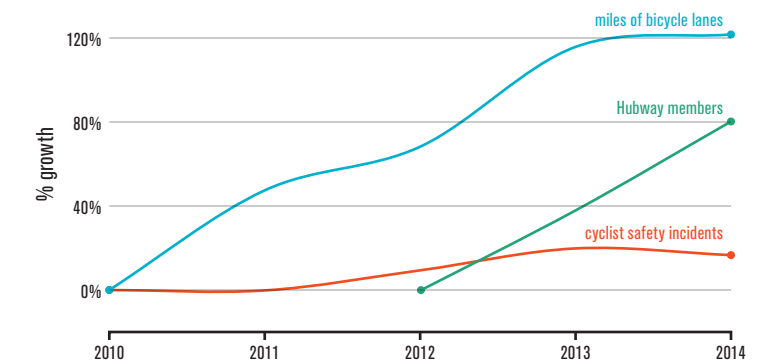
Boston's expanding cycling network is providing more separation from moving cars—bicycle crashes only involve moving vehicles about half the time, with solo crashes making up most of the rest. With drivers becoming increasingly aware of cyclists, the number of bike crashes has grown minimally, while the number of riders has grown over 200% in the last ten years.

Bicycle and Pedestrian Safety Incidents 2010 – 2014



Data source: Boston EMS

Bicycle Incidents Relative to Bicycle Improvements



Vulnerability to Climate Change

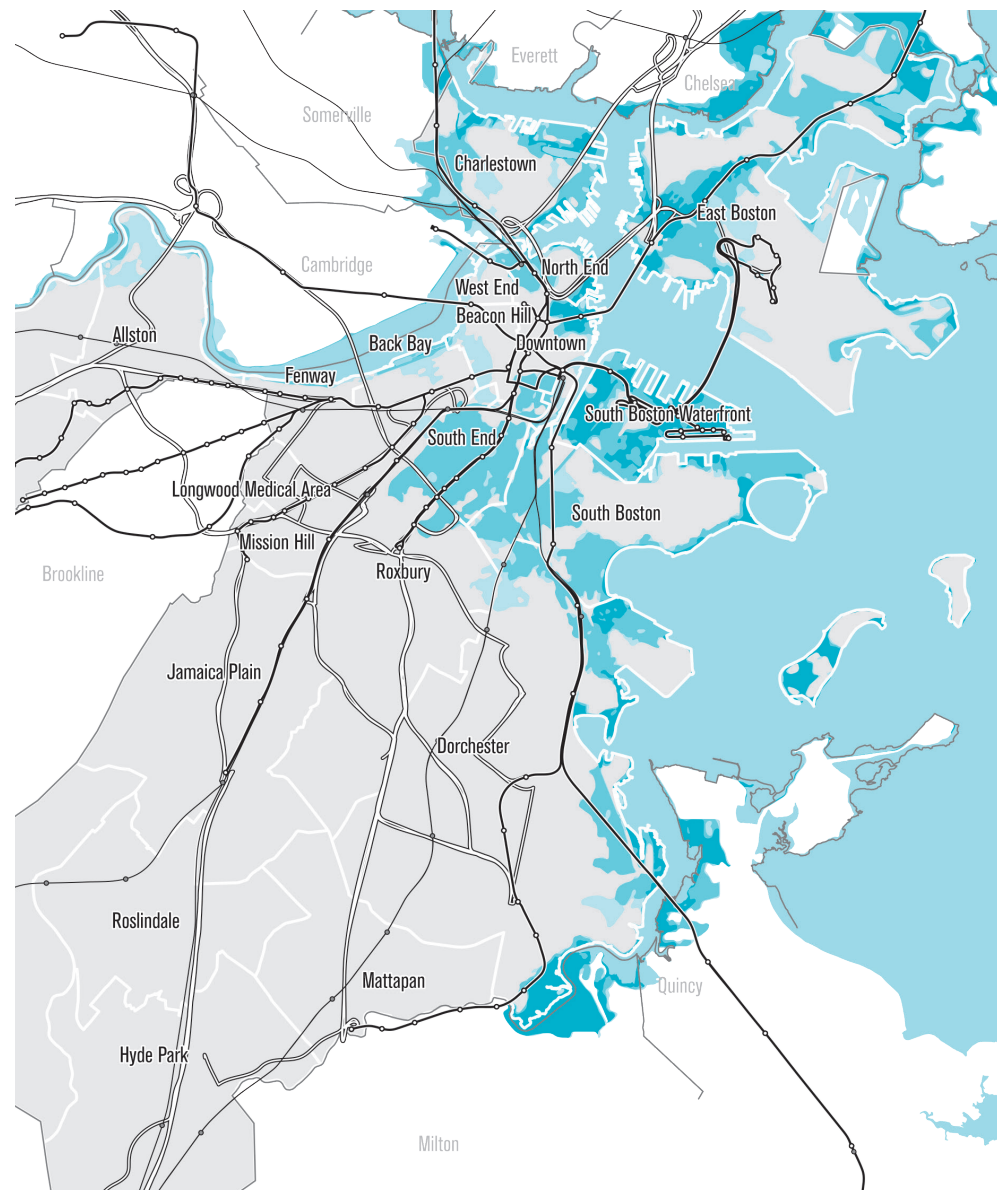
A large percentage of Boston's roads, tunnels, trains, and stations are vulnerable to climate change. A major storm surge can now inundate the infrastructure for multiple modes of travel, causing temporary closures and extended periods of repair; costly reconstruction and the changing climate will continually raise the probability of this occurring. Climate change is also increasing the frequency of extreme heat, heavy rains, and bigger snow storms, hampering Bostonians' ability to get around—from uncomfortable walking to overheating cars and railroad tracks; from urban street flooding to frozen or obstructed bus stops and curb ramps.

Boston is vulnerable to storm surge today

Today, if a storm surge of five feet was to hit during high tide, approximately 132 miles of roadway would be vulnerable to flooding, affecting drivers, bicyclists, walkers, and transit riders. By the 2070s, the sea level could rise three feet or more, so a similar storm surge at high tide could flood 432 miles of roadway. As much as 30% of Boston's land area would flood in this scenario, including half of the downtown.

Similarly, large segments of the T are threatened by the combination of storm surge and sea level rise. Every T line would be impacted, with the Blue Line and Red Line experiencing the most severe impacts. Even if individual stations are protected, accessing them could be a problem for many Bostonians.

Flood map, 36 inches of sea level rise (2070s or later)



1% Annual Chance Flood
10% Annual Chance Flood
Average Monthly High Tide

Data source: Boston Harbor Association, 2010, via City of Boston DoIT, MassGIS, Climate Ready Boston 2013.

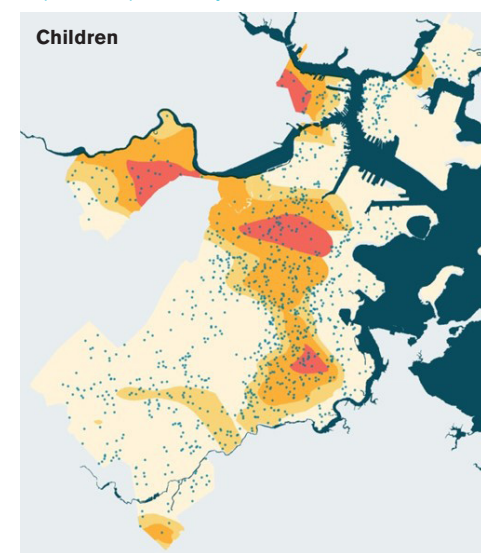
Extreme heat and cold can cripple transportation services

Four consecutive blizzards in the winter of 2015 brought the city's transportation systems to a halt due to a combination of heavy snow and extreme cold. When the T had to be shut down, driving became necessary for many, yet it was extremely dangerous for days. Pedestrians were forced to walk in the street for weeks to avoid ice and snow on sidewalks, and many bicyclists had to use vehicle travel lanes. Question Campaign responders regularly asked how Boston would deal with blizzards like these in the future.

Extremely hot days can also be a problem as they cause rail lines to expand and buckle, cars and buses to overheat, and walking and biking to be too uncomfortable to endure. By 2030, the average number of summer days with temperatures over 90° could go from 11 to 43, or about half of the entire three-month summer travel season.

Daytime Heat Vulnerability

Populations particularly vulnerable to heat

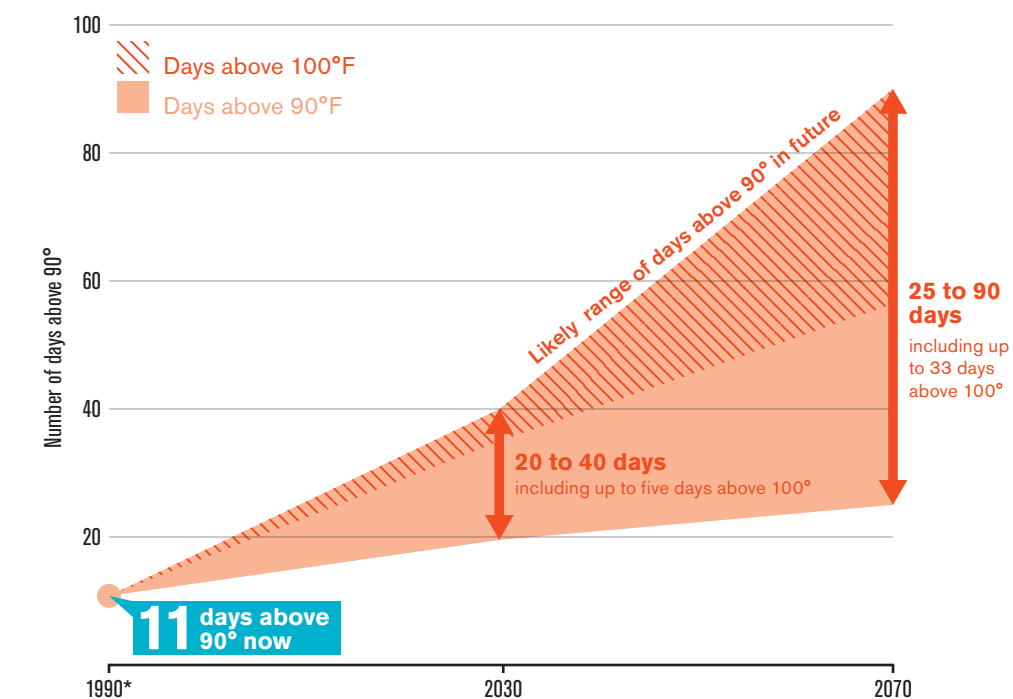


Elevated Heat Risk: Heat Islands

Elevated heat risk based on land surface temp 1.25 degrees above mean summer temperature

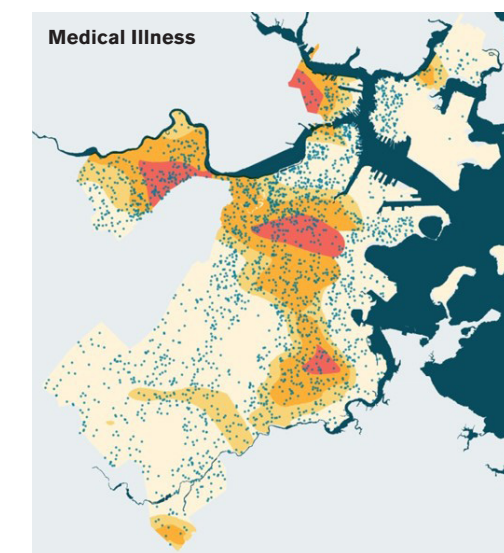
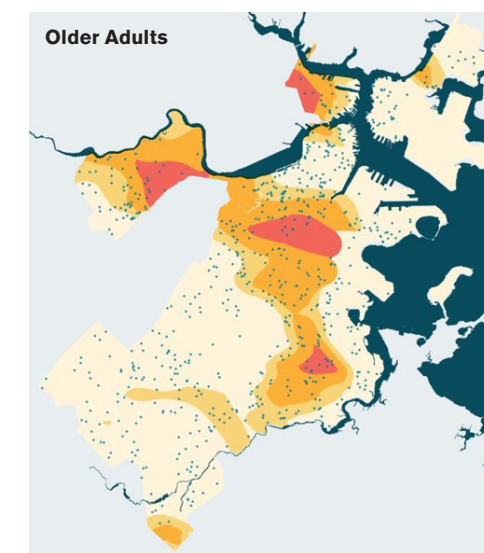
Heat Risk Hot Very Hot
• 180 people, dots randomly distributed within each census tract

The Number of Very Hot Days Will Increase



* Baseline represents historical average from 1971-2000
Upper values from high emissions scenario. Lower values from low emissions scenario.

Data source: Rossi et al. 2015



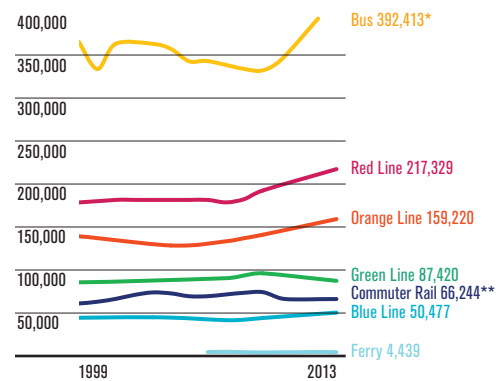
Maps and Data courtesy Climate Ready Boston

Mass Transit Service

Boston's train and bus networks provide an affordable and convenient way to get around, and ridership has steadily increased since 1990, with more dramatic increases in the last 10 years. Train lines serve many of Boston's densest neighborhoods, but some of the city's densest residential areas within parts of Charlestown, Dorchester, and South Boston are a long walk from the nearest train station.

Ridership on buses and most rapid transit lines is going up

While daily ridership on all of Boston's transit services has grown, MBTA bus ridership has grown dramatically in the last ten years, and both the Red and Orange T lines have seen significant growth as well. By 2013, there were over one million daily riders on the T.

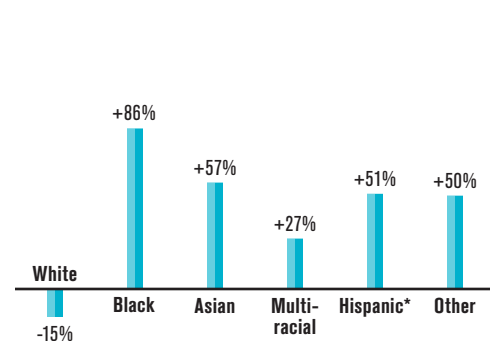


Data source: MBTA

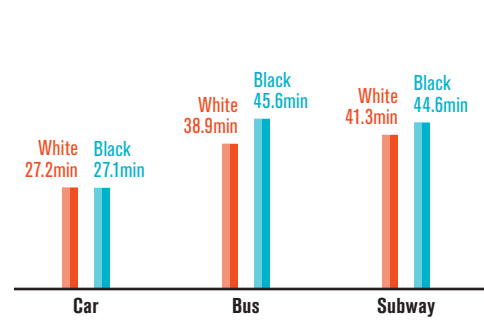
Non-white families use transit more often relative to their populations and experience longer commutes

Communities living near rail stations are overwhelmingly white, and communities of color are served mostly by buses, including dense parts of Dorchester, Mattapan, and Roxbury. As a result, non-white families in Boston are much more reliant on buses and experience noticeably longer average bus commutes (46 versus 39 minutes for whites). The Key Bus Route program has improved service on the 15 routes with the highest ridership that serve many areas away without rail service, though these routes are still not as reliable or fast as taking the train.

How different races/ethnicities are under- or over-represented among transit use



Mean travel times by race and travel mode

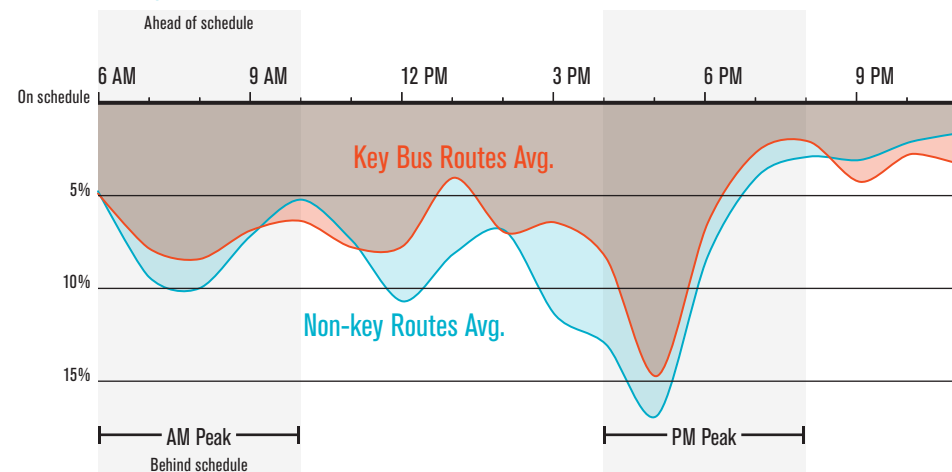


Data source: American Community Survey, 2008-2012, Public Use Microdata

The MBTA's key bus routes program attempts to make buses with the highest ridership run faster

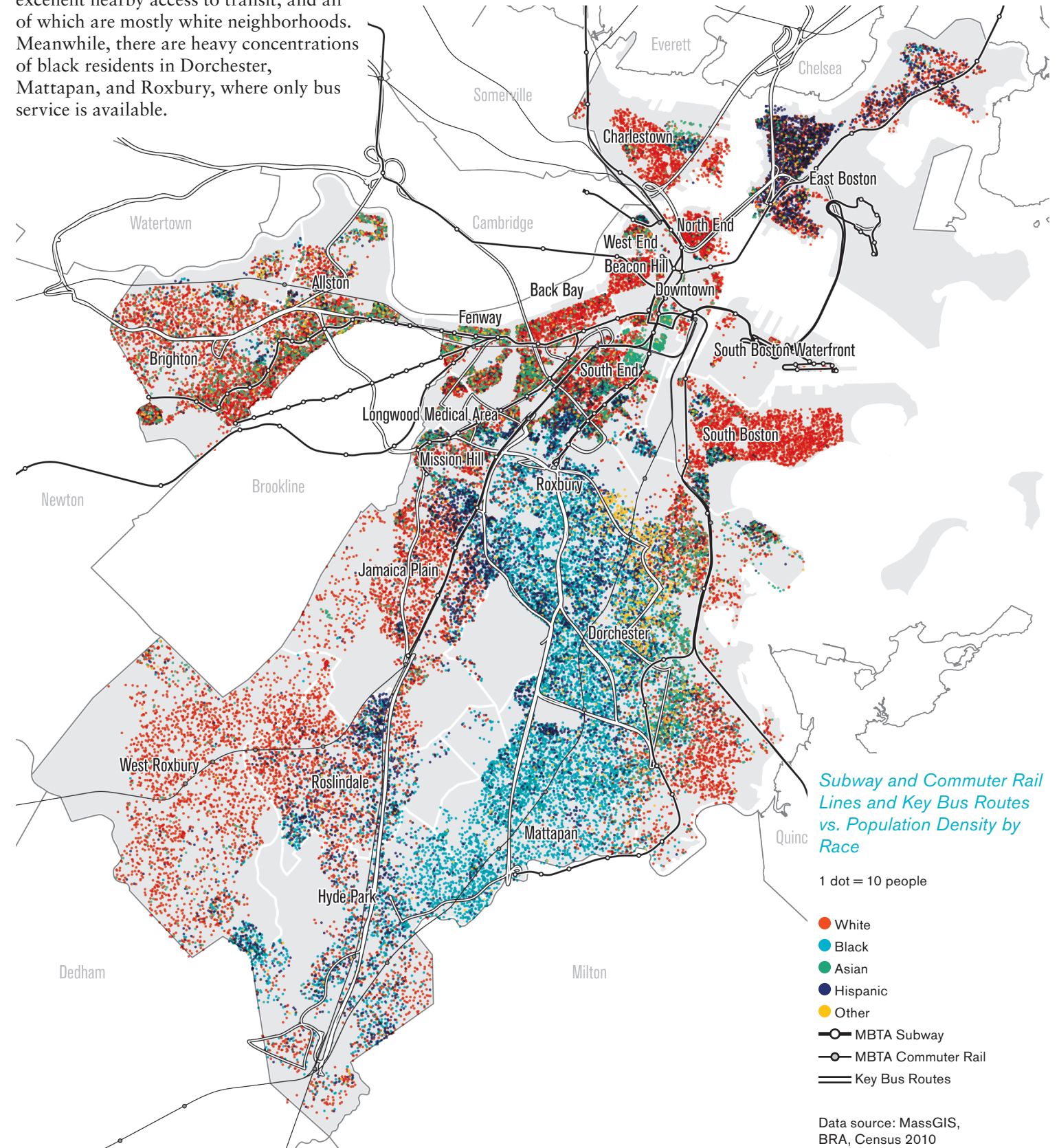
With a focus on reliability, the MBTA collaborated with the City to improve service on the 1, 15, 22, 23, 28, 32, 39, 57, 66, and 111 bus routes. With consolidated stops, more frequent service, and better signal timing, these routes are behind schedule less frequently.

Average % Delay in Bus Schedule



Boston's transit system serves many of the densest neighborhoods, but not equitably

Boston's densest neighborhoods are in the Back Bay, Beacon Hill, Fenway, and the West End—all of which have excellent nearby access to transit, and all of which are mostly white neighborhoods. Meanwhile, there are heavy concentrations of black residents in Dorchester, Mattapan, and Roxbury, where only bus service is available.



Data source: MassGIS, BRA, Census 2010

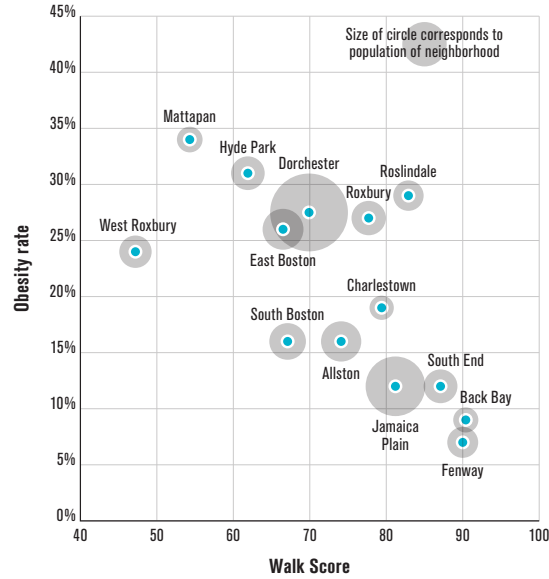
Walking Access

With a historic street grid, short blocks, and parks throughout the city, Boston is consistently ranked highly for its walk-friendliness, yet most of the places identified by Walk Score as a “walker’s paradise” are concentrated near downtown where there are a variety of destinations. Boston’s most remote neighborhoods have fewer walking destinations and residents cannot rely on walking as their primary way to get around. While it may be the slowest mode, walking has personal health benefits including improved fitness and mental health.

More walkable neighborhoods often have lower obesity rates

Although many factors contribute to obesity, Boston neighborhoods with higher Walk Scores tend to have lower rates of obesity.

Relationship Between Neighborhood Walk Score and Obesity



According to Walk Score, Boston is the nation’s third most walkable city.

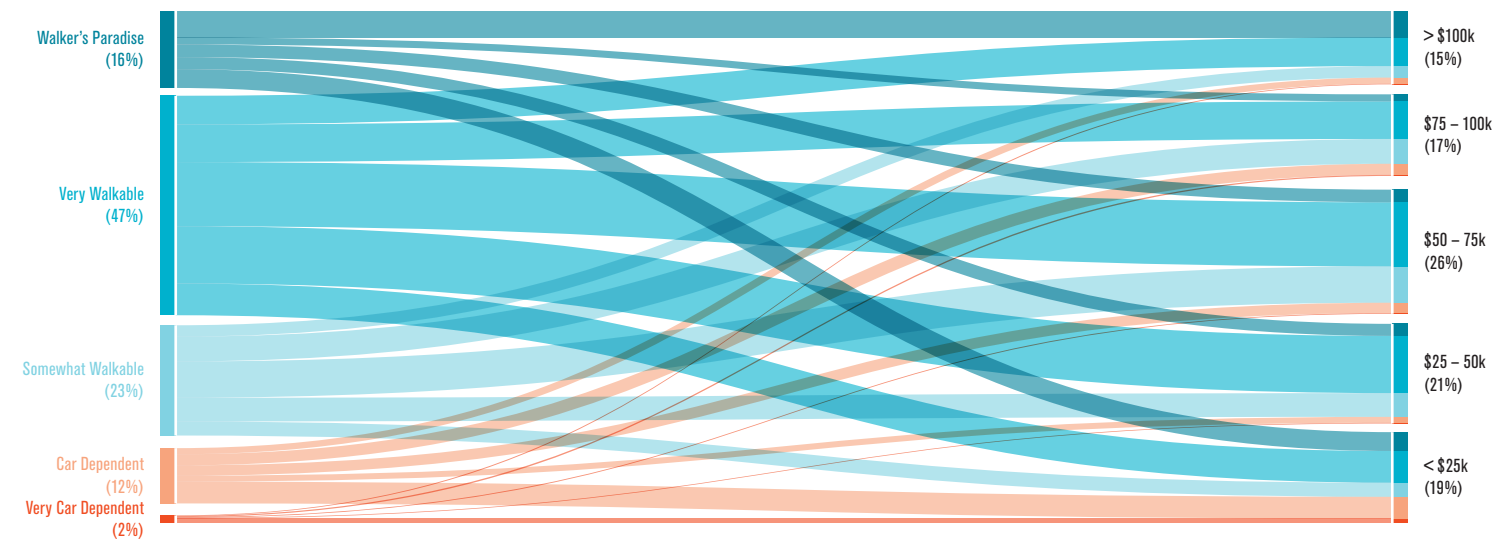
Rank	City	Walk Score
1	New York, NY	88.9
2	San Francisco, CA	85.7
3	Boston, MA	80.1
4	Philadelphia, PA	78.3
5	Miami, FL	78.2
6	Chicago, IL	77.5
7	Washington, D.C.	77.0
8	Seattle, WA	72.9
9	Oakland, CA	71.5
10	Long Beach, CA	69.0

Data sources: Walk Score, 2016 and Boston Public Health Commission

Fewer than one in seven Bostonians live in car dependent places

Although more than 30% of Bostonians in the lowest income bracket live in car dependent places, less than 10% of households making more than \$100,000 a year live where they have to rely on their cars. Over a third of those in this highest income bracket live in a “walker’s paradise,” while under 20% in the lowest income bracket have this opportunity. While only 2% of Bostonians live where it is “very car dependent,” over half of these residents are in the lowest income bracket.

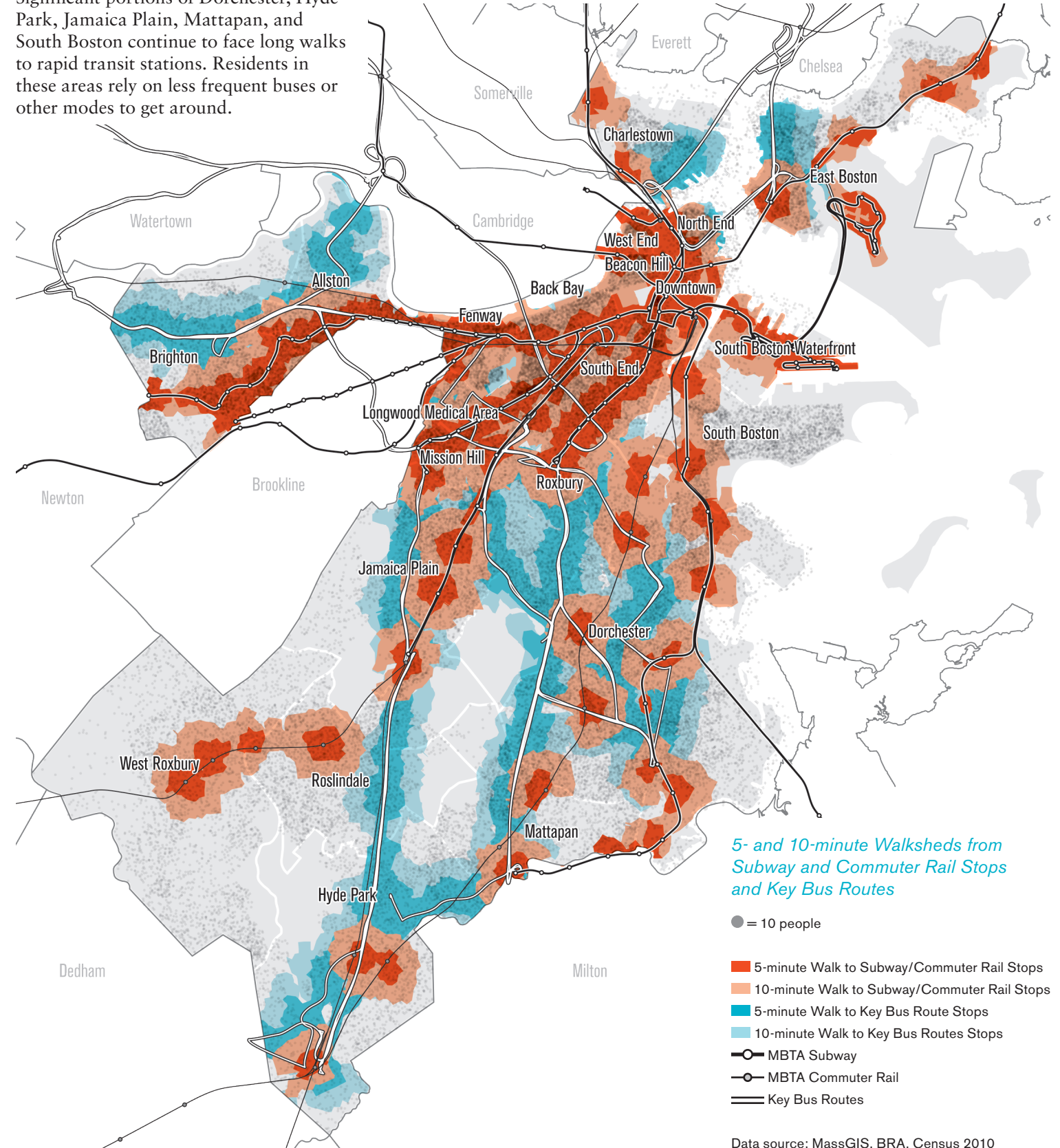
% of Boston households living in:



Data sources: Walk Score and 2013 ACS 5-year estimates

A dense transit network is easily accessed by foot in only some parts of the city

Much of Boston is within a ten-minute walk of a subway line, key bus route, or commuter rail station. Significant portions of Dorchester, Hyde Park, Jamaica Plain, Mattapan, and South Boston continue to face long walks to rapid transit stations. Residents in these areas rely on less frequent buses or other modes to get around.



5- and 10-minute Walksheds from Subway and Commuter Rail Stops and Key Bus Routes

- = 10 people
- Dark Red: 5-minute Walk to Subway/Commuter Rail Stops
- Light Red: 10-minute Walk to Subway/Commuter Rail Stops
- Dark Blue: 5-minute Walk to Key Bus Route Stops
- Light Blue: 10-minute Walk to Key Bus Routes Stops
- Black Circle: MBTA Subway
- Black Square: MBTA Commuter Rail
- Black Line: Key Bus Routes

Data source: MassGIS, BRA, Census 2010

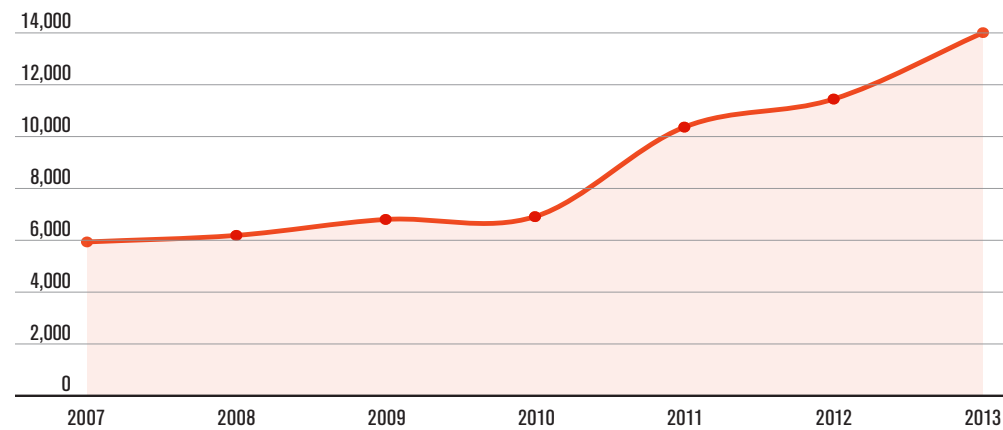
The Growth of Bicycling

Bicycling rates and popularity have grown dramatically in Boston in the last ten years with the installation of bike infrastructure, the mobilization of community programs, and the launch and expansion of shared Hubway bikes. Bicycling has become a regular way to commute in the city, exceeding 2% of the commute mode share in 2014.

Biking in Boston has grown steadily over time

Annual counts on several corridors show that bicycling has increased nearly 300% in nine years. The American Community Survey shows that the share of Boston commuters using bicycles rose from 0.90% in 2005 to 1.4% in 2010 to 2.4% in 2014.

Bicycle Traffic Count, 2007 - 2013



Data source: Annual Boston Bikes counts at 16 intersections over peak hours (7 AM - 9 AM and 4 PM - 6 PM)

Boston's on-road bicycle infrastructure has expanded significantly since 2007

Since 2008, the city has undergone a significant expansion of bicycle infrastructure. A total of 125 Hubway stations have been deployed so far, and over 100 miles of bike lanes have been installed. These new lane miles added to the city's extensive legacy of off-road multiuse paths, including the Southwest Corridor and the Paul Dudley White Path along the Charles River.

Other programs that encourage and support safe riding for people of all ages include the Women's Cycling Initiative, distribution of free bike lights and reflective safety bands, and the annual Hub on Wheels ride.

Learn more about these programs at www.boston.gov/departments/boston-bikes

2015 Highlights

Premiered **1st "Prescribe-A-Bike" program** in the country

Established landmark **Women's Cycling Initiative**

Bikeshare program saw a **30% increase** in ridership

#1 subsidized bikeshare program in the country

Continued to run our nationally recognized and award-winning **Community Bike Programs**

1,132 free bicycles distributed to low-income residents in 2014 (Roll it Forward)

700 free bicycle lights delivered

By the Numbers

6 Protected bike lane miles built since 2008

105 Bike lane miles built since 2008

126 Hubway stations installed since 2008

600 Subsidized Hubway members as of August 2016

1,900 New bike racks installed since 2008

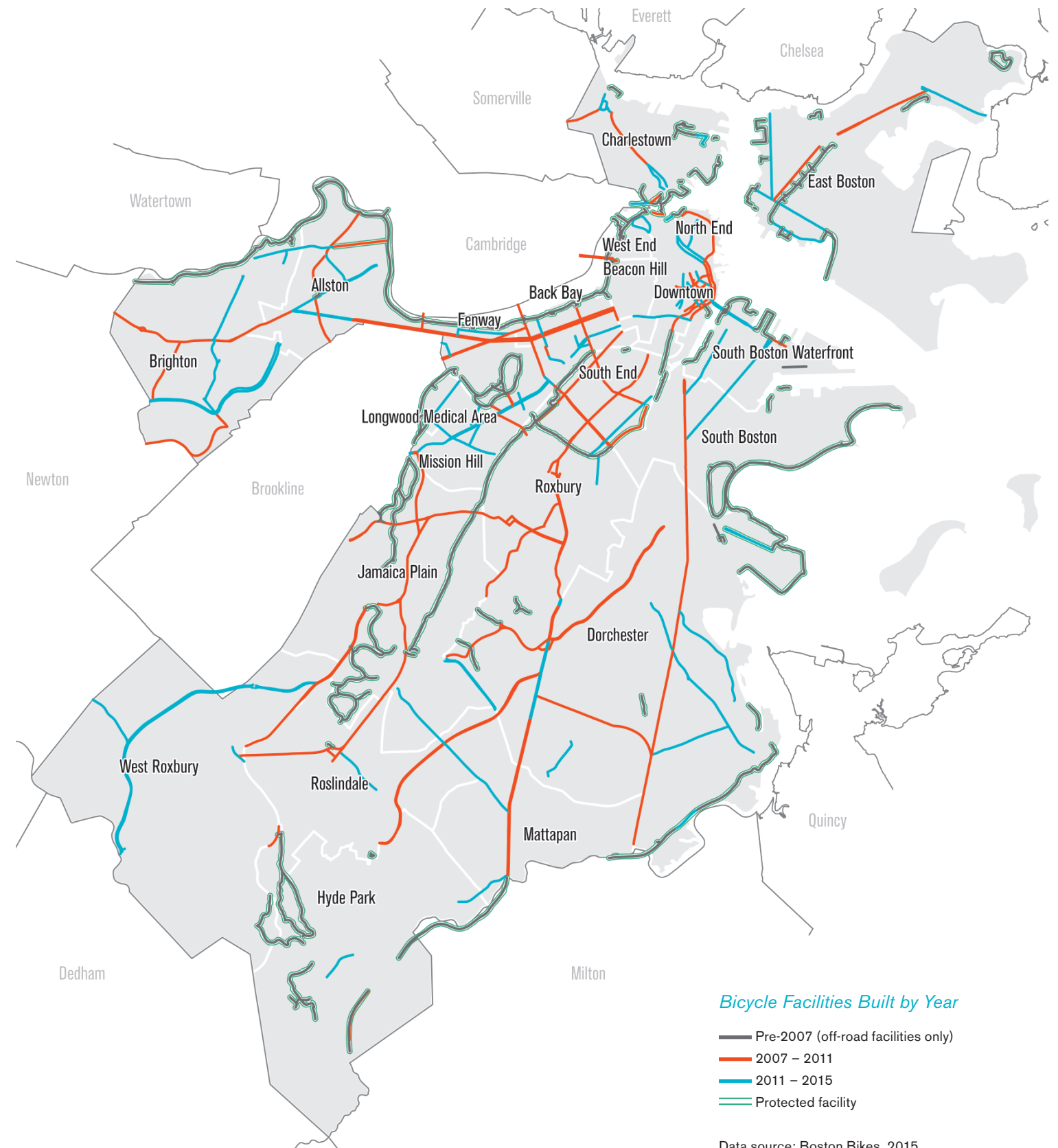
4,825 Roll It Forward bikes distributed since 2008*

14,000 Active Hubway members as of August 2016

35,000 Youth instructed in cycling and safety since 2008†

5,000,000+ Hubway trips since 2008

* 540 in 2015 and 550 in 2016
† 6,202 in 2015



Bicycle Facilities Built by Year

— Pre-2007 (off-road facilities only)
— 2007 - 2011
— 2011 - 2015
— Protected facility

Data source: Boston Bikes, 2015

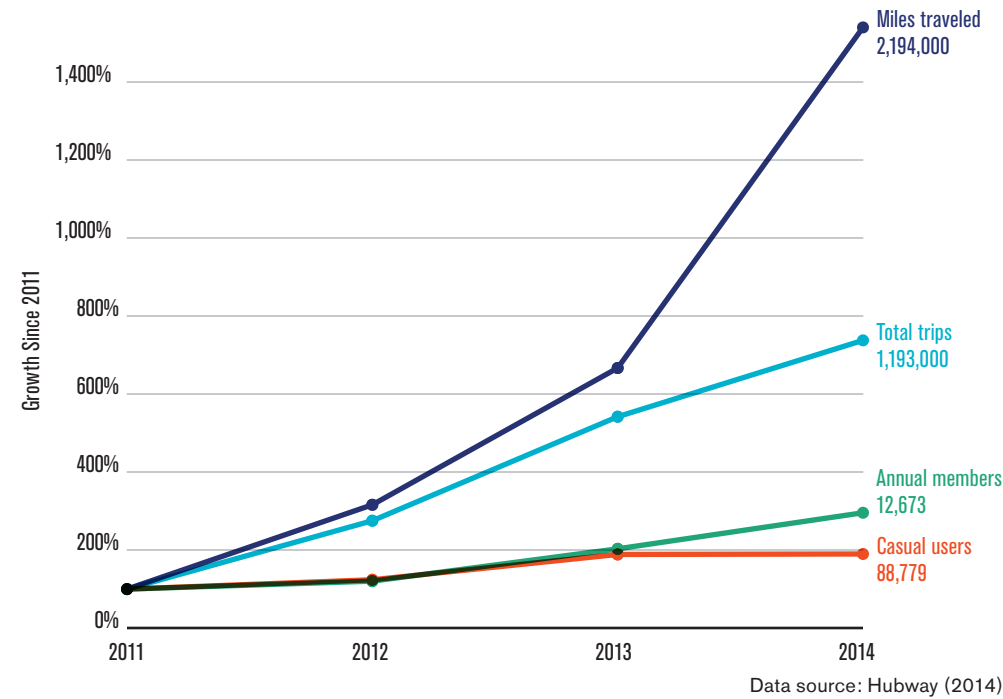
Sharing Rides and Vehicles

Where traditional transit has left gaps, shared transportation has begun to fill them. The growth of services such as Lyft and Uber and show that people are less interested in driving and parking their own cars and simply want to request a ride to get to where they want to go. Zipcar, Hubway, on-demand buses, and other shared transportation services can reduce reliance on privately-owned vehicles as part of a larger system of options. However, their costs and limited availability in certain neighborhoods excludes some low-income residents today.

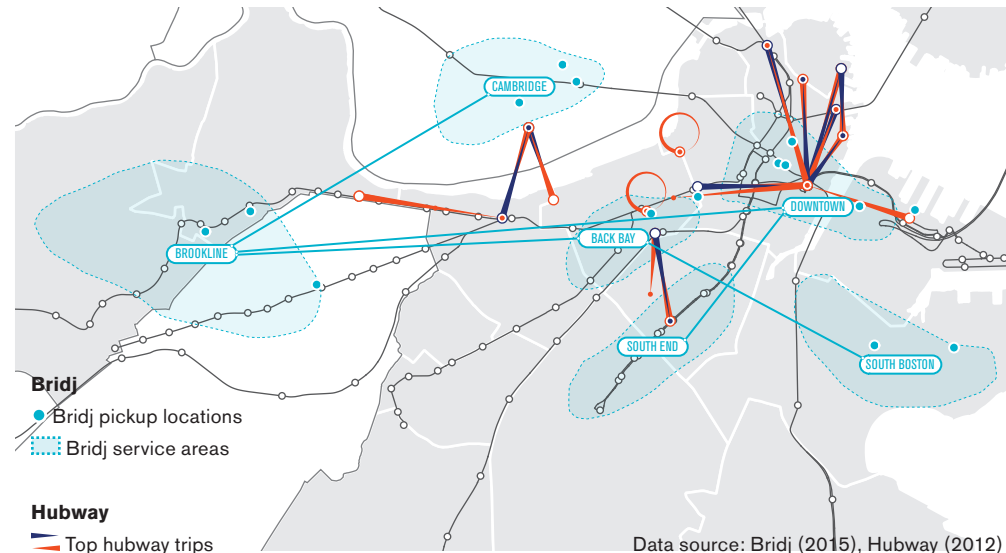
Hubway has expanded its reach, number of riders, and annual mileage

With the growth of the Hubway system across additional Boston neighborhoods and into Cambridge, Brookline, and Somerville, its use has grown dramatically. Membership doubled between 2011 and 2014, increasing the total number of annual trips to 1.2 million and the total annual miles traveled to 2.2 million.

Growth of Hubway Usage, 2011-2014



Top Hubway Trip Origin/Destinations and Bridj Service Area/Pickup Locations



Bridj and Hubway are particularly useful for trips not served by an existing train line

Hubway's most popular trips show riders connecting between destinations not served by transit, such as between South Station and North Station, along the harbor waterfront, and across the Mass Ave and BU Bridges between Cambridge and the Back Bay or Kenmore Square. Meanwhile, Bridj now offers shared shuttles providing direct service links to and from areas such as Allston and Kendall, eastern South Boston and Downtown, and Brighton and the Seaport that would otherwise require people to transfer between transit lines on their commute.

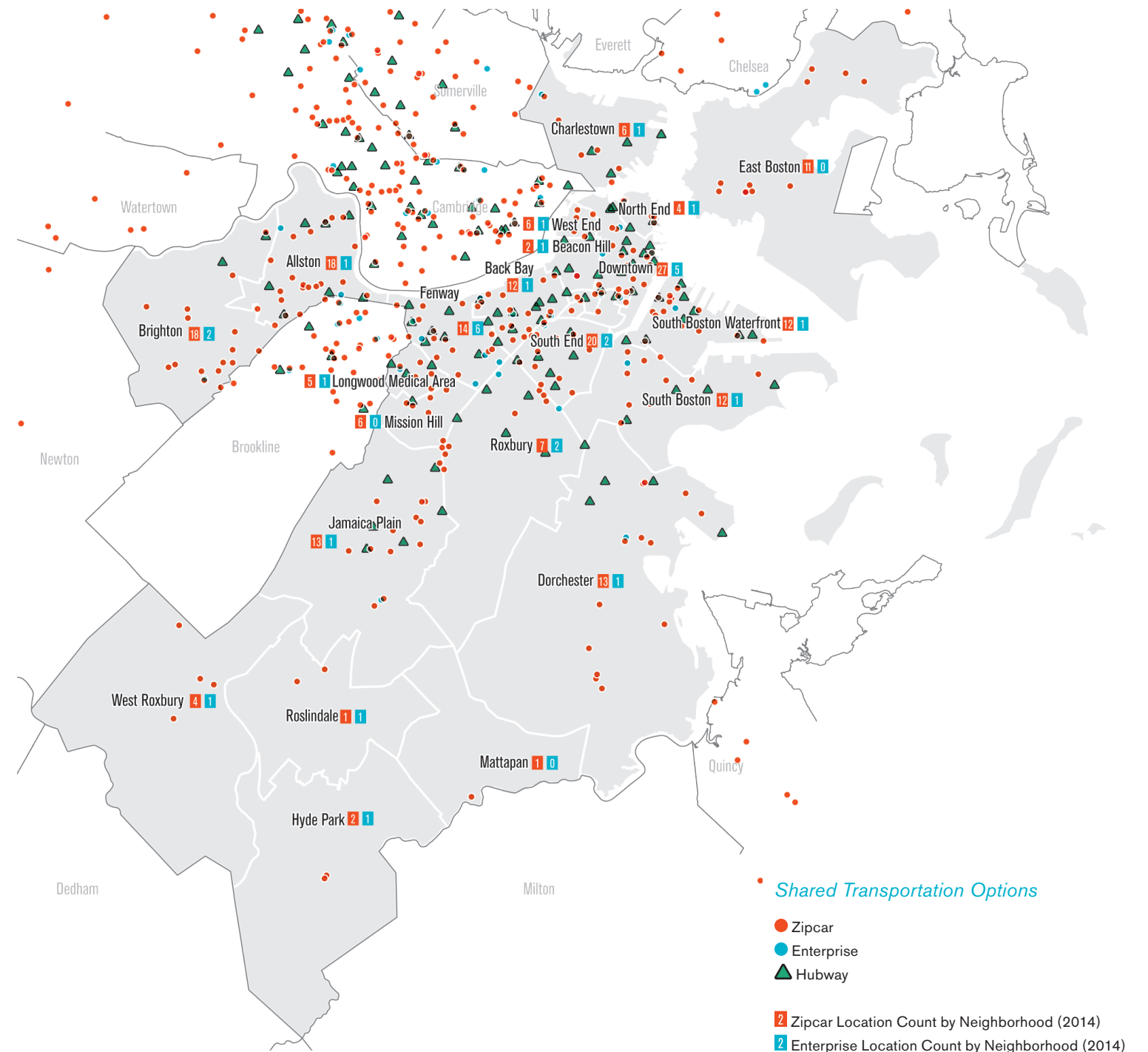
Shared transportation is expanding unevenly across Boston's residential neighborhoods

Carshare and bikeshare locations are often found in denser neighborhoods; however, areas like the South End, Allston, and Brighton have more carshare locations compared to equally dense areas of Dorchester, Mattapan, and Roxbury. The South Boston

Waterfront has relatively few residents, but has several shared transportation options in response to the employment and entertainment districts.

Though shared transportation can be an alternative to transit, bikeshare networks

cannot expand beyond a reasonable distance from existing stations, and carshare companies have found that most of their users need to live or work near transit in order to access vehicles and to support their other car-less trips.



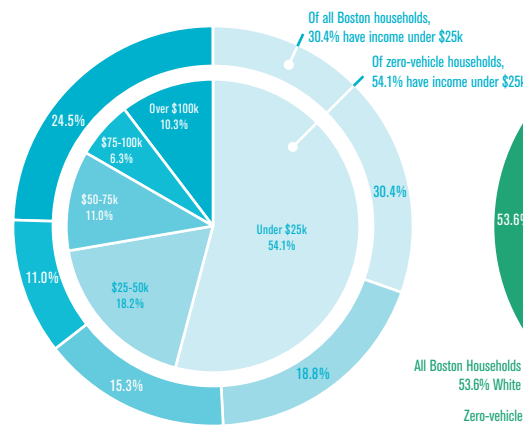
Car Ownership and Use

Households living farther away from regular transit drive more, and even some residents who live near transit (particularly key bus routes) continue to rely on their cars. The decision to drive is often a reflection of transit service not being reliable enough to meet residents' needs. Reliance on driving for trips is more costly over time and significantly less sustainable than other means of travel. Over the last few years, total miles traveled per person has dropped significantly in Boston while rates of vehicle ownership have increased at lower rates than they had previously.

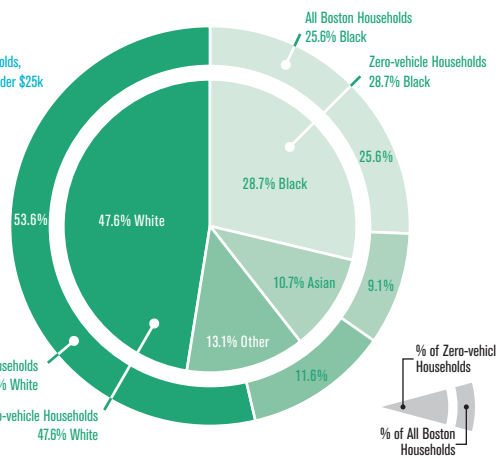
Zero-vehicle households are disproportionately poor and non-white

Many households in Boston already own one car, but white Bostonians are more likely to live in a household with one or more vehicles than those of other races. Among households with no vehicles, more than half have annual incomes less than \$25,000. Only 7% of zero-vehicle households make over \$100,000.

Comparing Zero-Vehicle Households to Overall City of Boston by Household Income



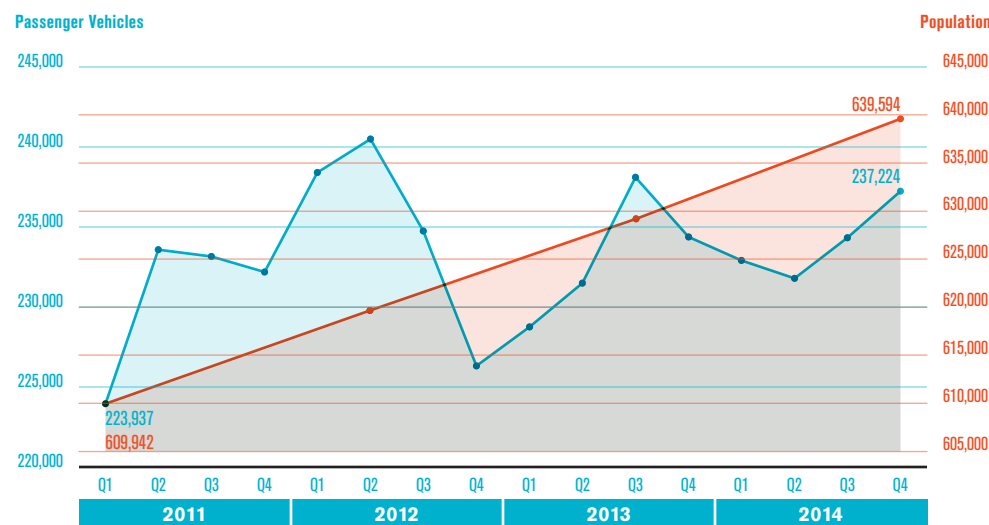
Comparing Zero-Vehicle Households to Overall City of Boston by Race



Source: Public Use Microdata Sample / American Community Survey (2012)

Registered Boston Cars and Boston Population

Year	Quarter	Passenger Vehicles	Population (ACS 5-year estimates)
2011	Q1	223,937	609,942
	Q2	233,564	
	Q3	233,145	
	Q4	232,187	
2012	Q1	238,393	619,662
	Q2	240,479	
	Q3	234,753	
	Q4	226,301	
2013	Q1	228,738	629,182
	Q2	231,484	
	Q3	238,097	
	Q4	234,357	
2014	Q1	232,893	639,594
	Q2	231,781	
	Q3	234,312	
	Q4	237,224	

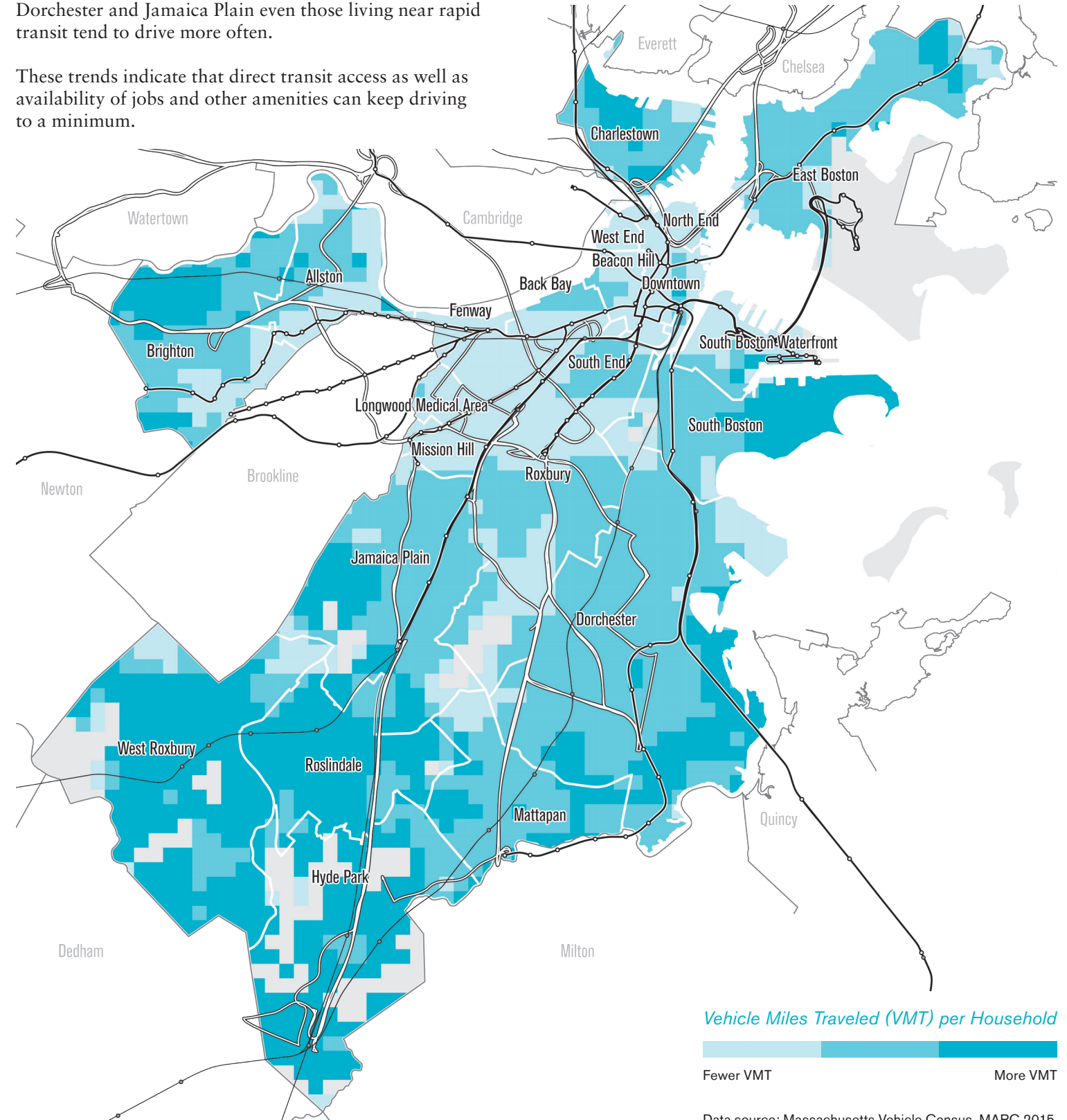


Source: Massachusetts Vehicle Census, 2009 – 2014, via Barr Foundation and MAPC

Low mileage vehicle households are concentrated around transit

People who live in Downtown, Fenway, and Allston drive the least and this pattern generally follows areas around rapid transit lines. Residents living farther from the core and from transit stops tend to use their cars more. In Allston and Brighton, people who live near the Green Line do not drive as much the people living farther from transit; however, in Dorchester and Jamaica Plain even those living near rapid transit tend to drive more often.

These trends indicate that direct transit access as well as availability of jobs and other amenities can keep driving to a minimum.



Vehicle Miles Traveled (VMT) per Household

Fewer VMT More VMT

Data source: Massachusetts Vehicle Census, MAPC 2015

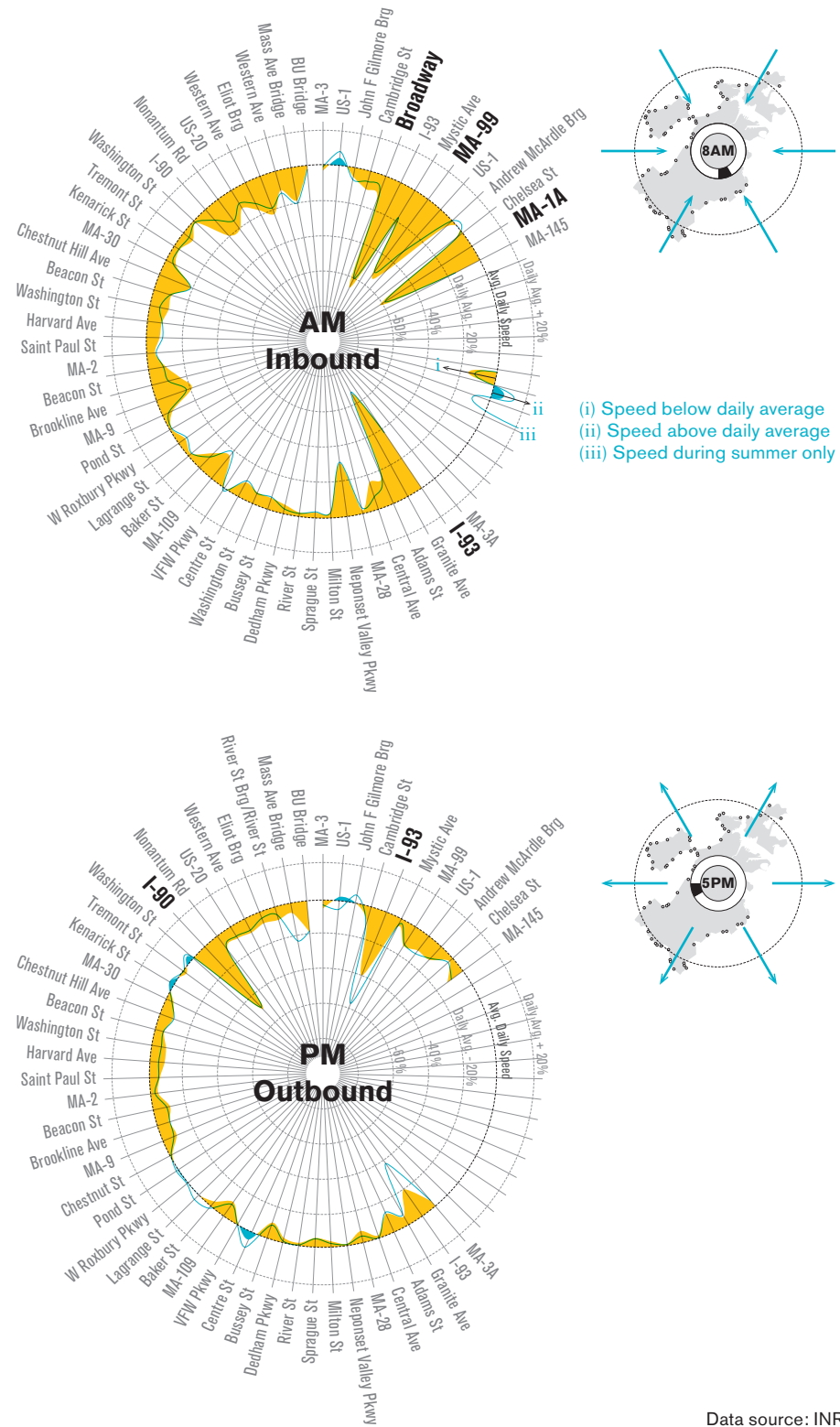
Roadway Traffic Flow

While the amount of driving per Bostonian has declined, peak hour congestion continues to cause delays. This is most noticeable on major State and Federal highways where regional vehicular traffic is concentrated. Some major highways lose 40 – 60% of their average speed during rush hour. Some key arterials connecting neighborhoods outside of downtown are also congested to lesser degrees, but most local streets have noticeably less congestion, largely due to Boston's driving rates.

Traffic slows by 15% on average during peak periods

On highways such as I-93 and Route 1, traffic speeds slow by as much as 60% during the morning commute. Despite modest declines in the proportion of driving trips among all trips since 2005, congestion has remained a persistent challenge since the number of total trips has increased.

Peak vs. Average Roadway Travel Speed at Select Road Crossings into Boston



Data source: INRIX

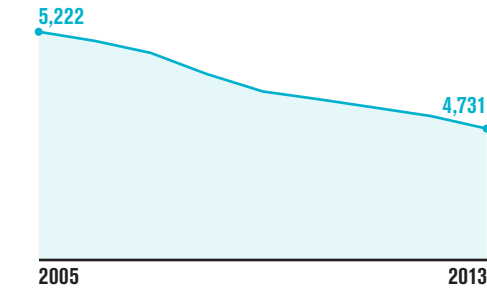


Individual rates of driving have dropped 10% in Boston

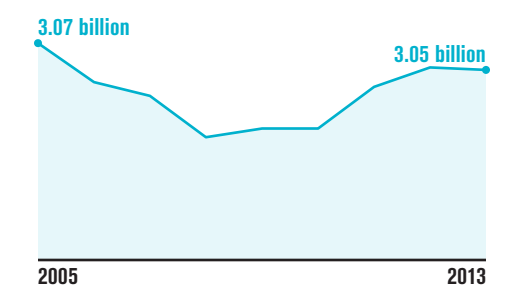
Per capita mileage has declined dramatically among Bostonians in the last decade. However, overall population growth in Greater Boston has led to a net increase in the total miles driven in the region.

Vehicle Miles Traveled (VMT), 2005 – 2013

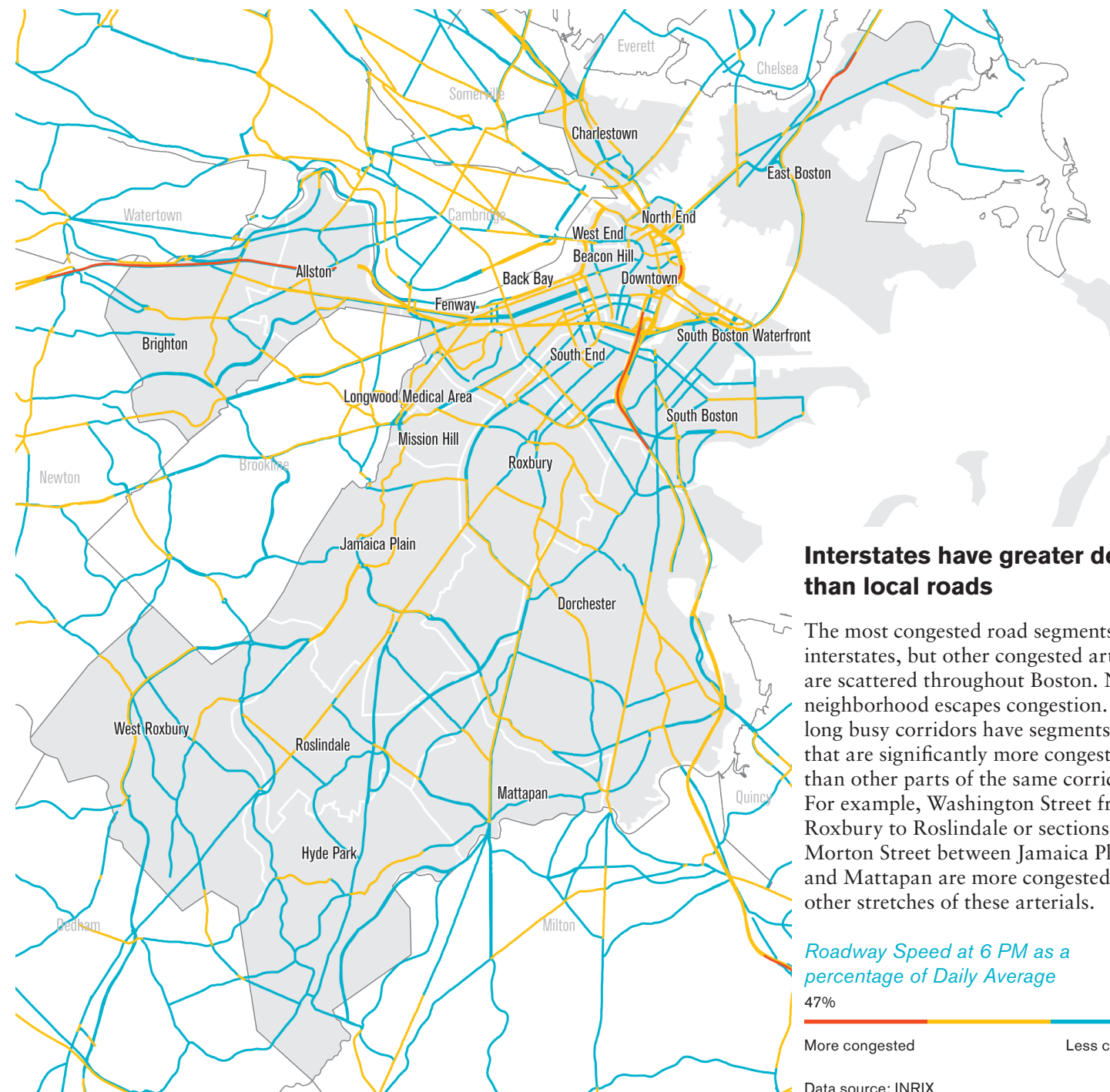
Boston per capita VMT



Total Greater Boston VMT



Data source: Boston Climate Action Plan



Interstates have greater delays than local roads

The most congested road segments are interstates, but other congested arterials are scattered throughout Boston. No neighborhood escapes congestion. Even long busy corridors have segments that are significantly more congested than other parts of the same corridor. For example, Washington Street from Roxbury to Roslindale or sections of Morton Street between Jamaica Plain and Mattapan are more congested than other stretches of these arterials.

Roadway Speed at 6 PM as a percentage of Daily Average



Data source: INRIX

Goals and Targets



Goals and Targets

The 5,000 questions submitted by Bostonians in the winter of 2015 serve as the foundation for the Go Boston 2030 goals and targets. When the City and multiple partners sat down at a Question Review Session and reviewed each and every submitted question, nine themes emerged as a framework for understanding what people seemed to be requesting. Overwhelmingly, they wanted access all neighborhoods by all modes of travel, assurance that they would be safe while traveling, and confidence that the transportation systems would be reliable.

Priority questions from each theme were shared at the Visioning Lab to collect public input. This feedback was used to develop a vision, goals, and aspirational targets for each theme. Together, these serve as the framework for the upcoming Action Plan, which will describe specific projects and policies that the Boston Transportation Department will work on with partner agencies and the public.

- Expanding Access 60
- Improving Safety 62
- Ensuring Reliability 64
- Focusing on Experiential Quality 66
- Leveraging Innovation and Technology 68
- Securing Affordability 70
- Building for Resiliency 72
- Advancing Transparent Governance 74
- Guaranteeing Health 76



How We Get to Work Today and Aspire to in 2030

Mode for Bostonian Commutes

	Today*	2030 Aspirational Goal
Public Transit	34%	↑ Up by a third
Walk	14%	↑ Up by almost a half
Bike	2%	↑ Increases fourfold
Carpool	6%	↓ Declines marginally
Drive Alone	39%	↓ Down by half
Other/Work from Home	5%	↑ Slight increase in Work from Home

Mode for Commutes into Boston from the MAPC Region†

	Today*	2030 Aspirational Goal
Public Transit	40% (10% Commuter Rail)	Up by a third
Walk	2%	Doubles
Bike	1%	Increases fourfold
Carpool	8%	Increase by half
Drive Alone	50%	Down by half
Other/Work from Home	1%	Slight increase in other modes (taxi, motorcycle, etc.)

* 2014 ACS 1-year estimates
 † 2010 ACS 5-year estimates, via CTPP

The following pages summarize the themes that emerged at the Question Review Session and were refined at the Visioning Lab. Each page contains:

A Vision for what Boston could look and feel like if we designed transportation around the ideas in the theme.

Goals that outline a desired future for Boston's transportation policies and infrastructure, based on the vision statements of Boston's residents. Collectively they provide a broad roadmap for the City and Bostonians to take collective action.

Aspirational Targets that indicate the desired results that the residents of Boston want the projects and policies to strive to achieve. Each target is "aspirational," but measurable, in order to chart an aggressive course of action for the City of Boston and its regional partners.

Questions You Asked that came out of the Question Campaign and were shared at the Visioning Lab along with other samples of public feedback on each theme.

Expanding Access

Make Boston's neighborhoods interconnected for all modes of travel

Vision

“Seamless,” “convenient,” and “easy to navigate” should be new ways to describe traveling in Boston. Residents and visitors alike will have multiple travel options to any destination, regardless of their age, income, race, or personal ability. Quality jobs, educational opportunities, healthy food, and cultural facilities will be accessible from every community. Getting between neighborhoods or connecting to the surrounding region will be easy to do without having to travel downtown.

Goals

Provide many travel choices close to every home

Every resident will have a variety of transportation options within a short, walkable distance of their home and workplace. Transit stops, Hubway stations, and carshare amenities will be available in every neighborhood and connected seamlessly to facilitate trip making. A resident of Codman Square who prefers not to drive will be able to walk around the corner to access regular bus and rail service, bikeshare stations, and affordable ride-hailing options.

Make cross-town connections between neighborhoods for transit riders, cyclists, and drivers

Boston's transportation networks will no longer be focused solely on funneling traffic and people into downtown but will provide high-quality circumferential connections as well. Direct routes and hubs for transfers will provide cross-town options by foot, bike, transit, and car that connect Brighton and Dudley Square, Roslindale and South Boston, or Fenway and Savin Hill. An expanded ferry system will link communities encircling the Harbor.

Design streets and transit to be accessible for everyone, whether age 8 or 80

Boston's streets will become user-friendly for people who have not historically been at the center of roadway design. Travelers of all backgrounds will have easy access to all parts of the city at all times, especially populations that face personal mobility challenges, including parents with small children, older adults, young people, and people who are differently-abled. Roadway and station improvements, maintenance decisions, and snow clearance will demonstrate a commitment to being walk-friendly, transit-supporting, and bike-welcoming.

Connect low-income communities to job-rich districts

Recognizing that many neighborhoods outside of downtown contain important job clusters but lack robust transit access, areas such as Longwood, Logan Airport, and the South Boston Waterfront will be prioritized for improved transportation options that specifically connect to low-income communities. Residents who have been disconnected from opportunities will benefit from expanded hours of train and bus service and transportation subsidies in order to start new jobs and access educational choices.

Aspirational Targets

Every home in Boston will be within a 10 minute walk of a rail station or key bus route stop, Hubway station, and carshare.

— from 42% of households to 100%

Transportation infrastructure will be completely ADA compliant at all points of access.

By supporting the development of mixed-use neighborhoods and improved pedestrian facilities, the number of households classified as “car dependent” will be cut in half.

— from 14% of households classified as “car dependent” by Walk Score in 2015 to 7%

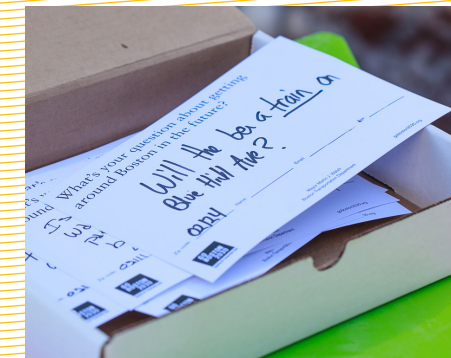
ADA Ramps

The City of Boston is significantly ahead of schedule in bringing all of the city's pedestrian ramps into ADA/MAAB compliance. As of the end of the 2016 construction season, nearly 50% of the city's approximately 23,000 ramps were compliant. Approximately 950 ramps are reconstructed each year, putting the City on track to achieve full compliance by 2028, 10 years ahead of schedule.

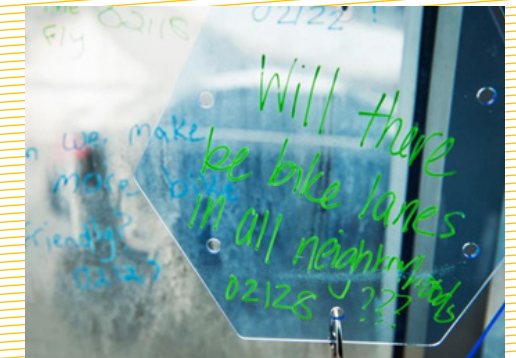


Questions Bostonians Asked

- How can we make sure all of Boston is T accessible?
- How can Boston be 100% bike friendly by 2030?
- How can we better use Boston's waterways for travel?
- Parking is an issue in Boston—how can we manage spots better?
- How can we have a more responsive or flexible transit system such as pop-up bus service, car share, and off-board fare collection?
- What if we could better connect our neighborhoods by train without going downtown?
- How can differently-abled people, elders, and the parents of young children more easily move through Boston?

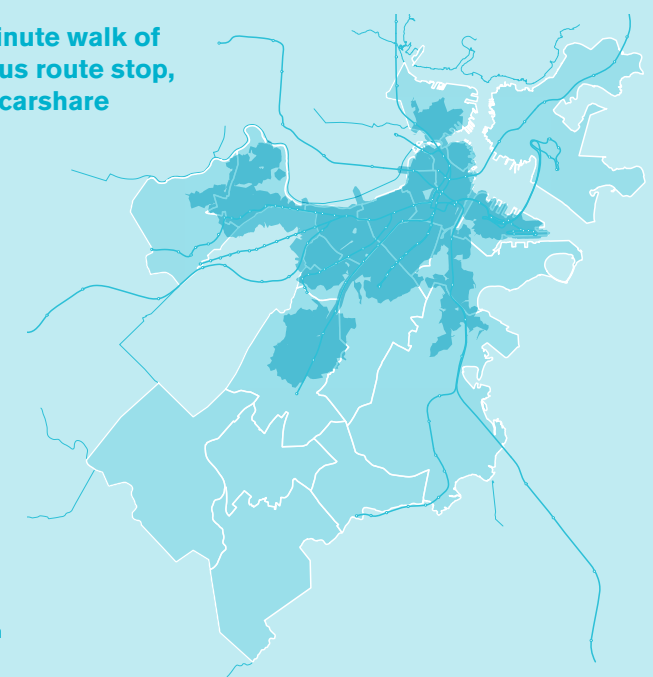


“Will there be a train on Blue Hill Ave?”
—Collected from 02124 in January of 2015



“Will there be bike lanes in all neighborhoods?”
—Collected from 02128 in February of 2015

Homes within a 10 minute walk of a rail station or key bus route stop, Hubway station, and carshare



Data source: Existing data from MBTA, Hubway 2014, Zipcar 2014, and Enterprise 2014

Improving Safety

Substantially reduce collisions on every street through education, enforcement, and designs that reallocate street space to prioritize moving people safely rather than faster

Vision

Imagine traveling in a safer Boston where roads are smooth and well-marked, sidewalks and curb ramps are consistent and clear of obstructions, biking is hazard-free, and buses and trains do not break down or malfunction. Everyone will be able to choose to drive, walk, bike, or ride safely in any Boston neighborhood because our systems will be designed to be shared by many modes while our enforcers, operators, and educators promote patience and respect.

Goals

Prioritize safety improvements in areas where fatal and injury related crashes have been concentrated

Improve safety by slowing drivers with visual and physical cues, and create residential streets that are safe and inviting for walking and bicycling. By tackling unsafe speeds, redesigning roadways, and reducing distracted and impaired driving, we can create a culture of empathy and hold ourselves accountable for reducing traffic fatalities along high crash corridors such as Massachusetts Avenue and citywide.

Reallocate street space to prioritize moving people safely rather than faster

Traditionally Boston's compact road network has been designed to move people in cars faster. Boston will prioritize travel space to be equitably shared by every person who rides transit, drives, walks, and bikes, by focusing on moving people instead of "level of service." Crossing a wide boulevard like Melnea Cass, riding on a bicycle-busy street like Commonwealth Ave in Allston, or accessing buses at hubs like Kenmore Square will be safer as streets are redesigned. Neighborhood residential streets will be designed to support slow family-friendly speeds and a sense of community.

Implement designs that make streets safer for people who walk and bike

People walking in Boston will feel safer and be protected from traffic through improved designs including wider sidewalks, especially where cars move at higher

speeds. Smarter signals will make crossing streets easier, particularly across Boston's wider boulevards, such as Huntington Ave. Protected lanes and intersections will improve safety for people on bikes and create a low-stress network that connects riders to paths and parks like the Southwest Corridor and the Emerald Necklace.

Ensure quality maintenance of transit facilities, sidewalks, and roadway surfaces

From the Mattapan trolley to the sidewalks of East Boston, every neighborhood's travel systems will be in good working order, clean, and safely lit. The MBTA will be safer with better-maintained equipment, shelters, and stations. Well-cared-for biking networks will encourage greater use by more riders over more seasons. Damaged roadways and sidewalks will be repaved and repaired quickly and responsively. Collectively, all travelers will feel safer moving through shared spaces, waiting for their bus, and driving home.

Provide people-focused service

Every person who designs, enforces, and maintains Boston's transportation networks will be focused on moving people safely and with respect, including when Bostonians come together at Fenway Park, ride a busy Route 39 bus, or rush home along Columbus Avenue or Morton Street. Transit operators will be considerate of riders and people using other modes of travel. Signage and staff will help travelers navigate downtown streets, understand which bus to take, and find new ways to travel in their neighborhoods.

Aspirational Targets

Eliminate traffic fatalities and severe injuries in Boston.

— from an average of 18 per year to zero traffic related deaths

Reduce the number of pedestrian and bicycle related collisions by 30%.

— from 1,279 total collisions reported by EMS for 2014 to 895 or fewer

All households will be within a 5-minute walk of a protected bicycle facility or shared use path.

— from 20% to 100%

Questions Bostonians Asked

How can we eliminate harassment on public transit?

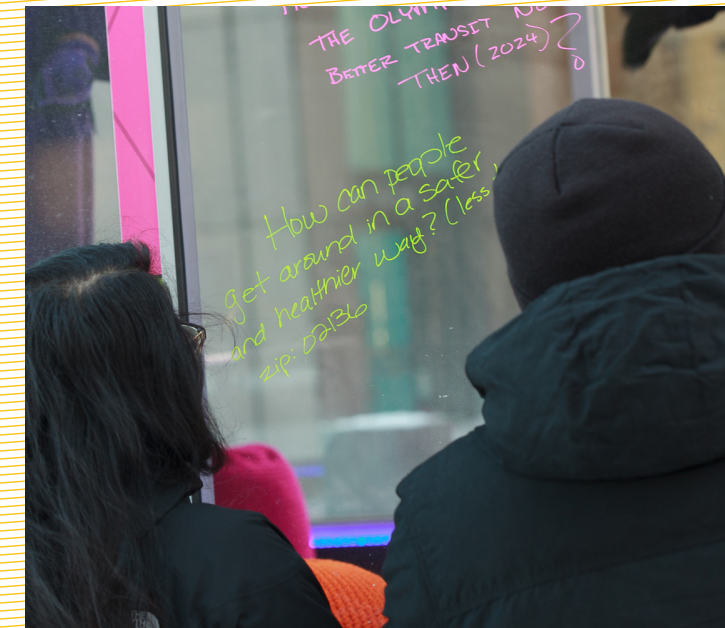
How can we make it safe to walk 24/7 in every neighborhood?

How might pedestrians, bikers, and drivers share the road more safely?

How can we safely bike with our children anywhere in Boston?

How can transit police be better trained in customer service and cultural competency?

How can people get around in a safer and healthier way?



"How can people get around in a safer and healthier way? (less toxic)"
—Collected from 02136 in January of 2015

Mission Accomplished

In 2015, one of the targets was "Lower default speed limit to 25 mph" from the existing default of 30 mph. In August of 2016, after Mayor Martin J Walsh joined other elected official in a supporting this policy, new state legislation opened the door for Boston to make this a legal change. With approval from City Council, the new default speed limit went into effect on January 9, 2017 in Boston.

Learn more at: www.boston.gov/news/boston-pursuing-25-mph-speed-limit

Boston EMS Activity

In 2014 there were 724 confirmed cyclist incidents documented by Boston EMS.

Vision Zero Boston is working to address locations where severe and fatal crashes occur.

Learn more at: www.visionzeroboston.org

Higher vehicle speeds increase the risk of a pedestrian fatality or severe injury.



18% likelihood of fatality or severe injury
50% likelihood of fatality or severe injury
77% likelihood of fatality or severe injury

Source: "Impact Speed and a Pedestrian's Risk of Severe Injury or Death", Brian Tefft, AAA Foundation for Traffic Safety, 2011.

Ensuring Reliability

Prioritize making travel predictable on Boston's transit and roadway networks

Vision

What if Boston was admired for an interconnected system of trains and buses that ran on schedule—around the clock all year long—and was known for traffic that flowed smoothly regardless of congestion or the weather? In 2030, every Bostonian will have real-time information at their fingertips about service changes and traffic. A dense system of interconnected walking, biking, transit, and driving networks will ensure redundancy and reliability citywide.

Goals

Have consistently on-time, all-weather rail and bus service

Boston's transit networks are hampered by age and fleet complexity. The City will work with the MBTA to ensure that buses arrive on time consistently in every Boston neighborhood and in all weather conditions. Bus routes will have a level of service that provides their riders with first class service and predictable travel times. Transfers at key transit hubs such as Andrews and Ashmont stations will be smooth and efficient. Sources of recurring delays will be addressed with improvements to signals and fare payment systems.

Provide reliable real-time information to plan all trips or make in-route adjustments

No Bostonian will be left wondering when a bus will show up or how long it will take to reach their destination. Using electronic signs, in-vehicle displays, and robust mobile data apps, Bostonians will know just when to step into the cold to catch the bus and when there's traffic ahead. Way-finding signs and directions will be provided for a mix of modes so that each traveler can select the best way to get around each day depending on price, congestion, weather, or carbon footprint.

Develop new travel options to reduce delays

Strategies and services to that reduce wait and travel times will be deployed to complement Boston's existing transit services including exclusive bus lanes; smaller, more nimble shuttles; and shared rides. Integrating innovative fare collection, dispatching, and dynamic routing will also reduce bus delays. Broadening the reach of Hubway and accommodating bikes on trains during rush hour will enable more people to incorporate cycling into their commute and overcome gaps in the network.

Ensure predictable driving commute times

People who drive on Boston's streets will experience consistent traffic flows on their commutes to work or home. Drive times will be predictable leaving job-rich areas like the financial district during the evening peak, returning home along a major north-south artery such as Dorchester Avenue, or arriving on time for your doctor's appointment at Mass General. Regional travelers will remain on major arterials like I-93 because it will be faster than searching for short-cuts through residential neighborhoods.

Aspirational Targets

Bostonians' average commute to work time will decrease by 10%.

— from 28.8 minutes to 25.9

Wait and travel times for MBTA customers will be as fast as scheduled times (or faster) 90% of the time.

Maintain consistent average travel times for vehicle traffic along major arterials during peak hours every day.

All train stations will have bus service and/or shuttle service, carshare, and bikeshare stations.

— from only five in the system to 100%

Real time arrival information will be displayed at all rail stations and key route bus stops.

— from 86% of heavy rail/rapid transit stations and two bus stops to 100%

Questions Bostonians Asked

What if buses didn't have to sit in traffic and make me worry about being late?

What will it take for Boston to be a city that is admired for its innovative solutions to its transportation problems?

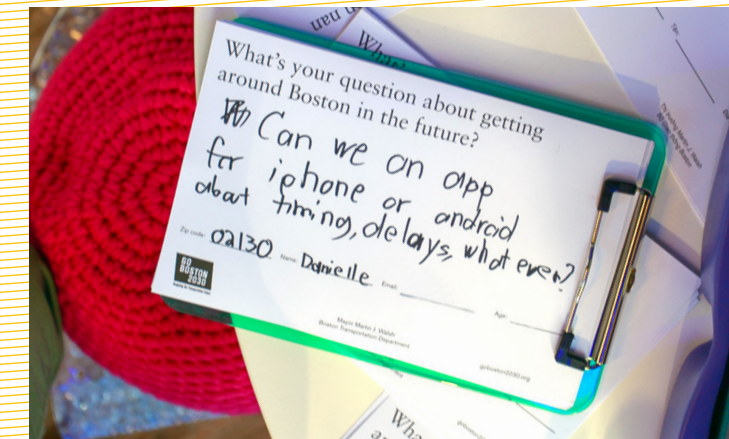
What can be done about congestion so people can get where they need to be faster?

What if taking transit to work was always faster than driving?

What can we do differently so the MBTA is reliable in all kinds of weather?

What if our trains and buses got me to work or school on time?

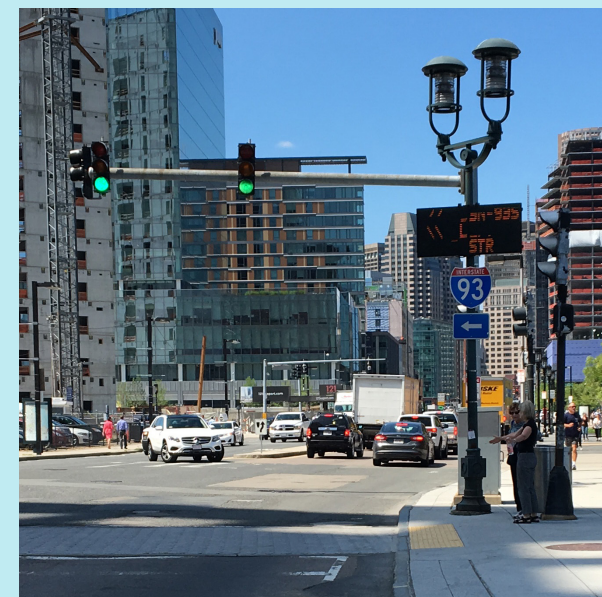
Can we [get] an app for iPhone or android about timing, delays, whatever?



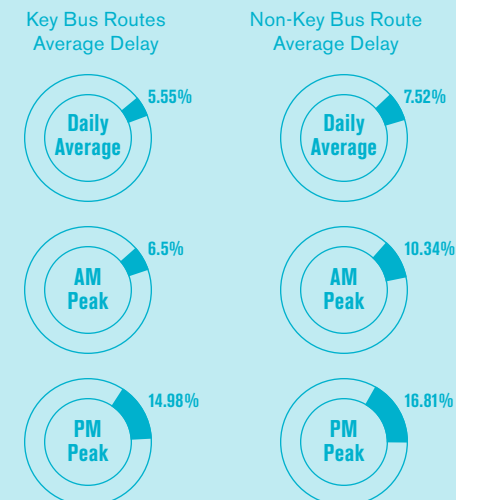
"Can we [get] an app for iPhone or android about timing, delays, whatever?"
—Collected from 02130 in January of 2015

Time to Destination Signs

BTD is making it easier for drivers to exit the fast-growing South Boston Waterfront. Signs using real-time traffic data from area roads will help direct drivers to the quickest route, which often isn't the shortest route to the highway.



How Much Is a Bus off Schedule?



Source: MBTA Running Time Analysis, Fall 2014

Focusing on Experiential Quality

Develop public spaces on streets and at transit stations that are welcoming, clean, and fun

Vision

Every trip will be enjoyable, with continuously inviting, comfortable, and clean public spaces and well-maintained facilities. All Bostonians, regardless of their background or ability, will be respected and accommodated by the transportation system and other travelers in every neighborhood and on all modes of travel. Bus rides will be smooth, quiet, and clean. Sidewalks and plazas will be enhanced with art and activity.

Goals

Be welcoming and respectful of all travelers

Everyone, regardless of their age, size, race, or ability, should feel welcomed on streets, sidewalks, and transit and have a quality travel experience. Wait times for buses at busy stations like Ruggles will be reasonable and boarding a bus will be comfortable. Crowded corridors such as Centre Street will have room to walk unobstructed and be safe for children crossing the street. Train stations will be accessible for people with wheelchairs and strollers. Service by public employees will be culturally competent, and multilingual information will be visible throughout the system. New bicycle riders will have plenty of protected places to ride. People who walk, bike, and drive will courteously follow the rules and share the road with a smile.

Make travel entertaining, culturally vibrant, and fun

Waiting for a bus or train or walking to a neighborhood destination will not feel boring or like wasted time. Riding a train or bus will be relaxing and stimulating. Amenities throughout Main Streets districts and at plazas near stations as dissimilar as Maverick and Readville will reflect their history and support the present community of the surrounding area with vibrant public art, gathering spaces, and activities. Networks of interesting routes for walking and biking will make visits, errands, and commutes enjoyable. The City will support community-driven efforts to implement placemaking strategies.

Maintain a clean and comfortable public realm

Boston's sidewalks, transit station areas, and public spaces will create a sense of place and be comfortable venues to socialize in every neighborhood. Residents from Brighton to Mattapan will take pride in their regularly-cleaned and well-kept transportation facilities featuring good lighting, places to sit, and trees for shade. Streets, bus stops, and bike lanes will be regularly cleared of dirt, debris, and snow to keep them safe and user-friendly.

Trouble Finding a Seat on the T?

During the morning rush, nearly all subway seats have been filled before trains even get to Boston, forcing Bostonians to stand. Off-peak, seats are easy to find.

Train Capacity vs. Boarding by Line

Orange Line		
AM Peak, Peak Load Station	Northbound from Back Bay	Southbound from Haymarket
Peak Passengers Leaving Station	6,507	7,312
Trains per Hour	11	12
Red Line		
PM Peak, Peak Load Station	Northbound from State	Southbound from NE Medical Center
Peak Passengers Leaving Station	6,424	5,573
Trains per Hour	12	12
AM Peak, Peak Load Station	Northbound from Broadway	Southbound from Central
Peak Passengers Leaving Station	10,216	8,931
Trains per Hour	14	14
PM Peak, Peak Load Station	Northbound from Kendall	Southbound from South Station
Peak Passengers Leaving Station	8,321	8,545
Trains per Hour	15	16

Data source: MBTA 2012

Aspirational Targets

There will be room on every train and bus for anyone waiting to board during peak times.

All street and transit infrastructure will be kept in a state of good repair.

All transportation infrastructure will be clean and clear of trash within 24 hours.

All T stations and Mobility Hubs will have public art or gathering spaces.

— from 16% of Commuter Rail and Rapid Transit stations with public art to 100%

Questions Bostonians Asked

When will the T be clean, efficient, comfortable, and even interesting?

Will there ever be a day when Boston's sidewalks are plowed BEFORE the roads?

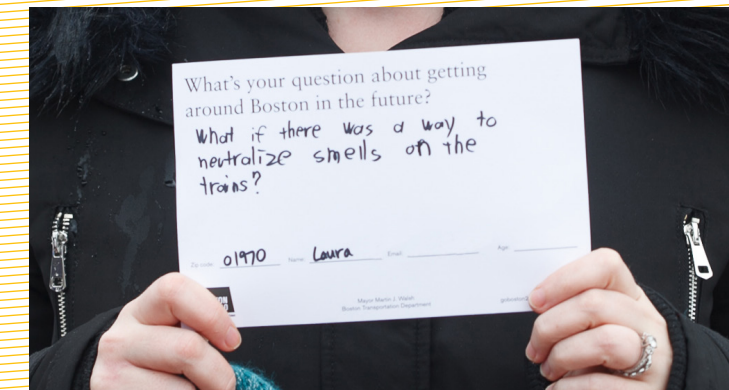
What if people came to Boston just to ride the T?

What if moving through the city made us healthier, happier, and more connected? What would that look like?

How can we replace friction among cars, bikes, and pedestrians with harmony?

How can the way children and youth move through Boston be more supportive to them and their families?

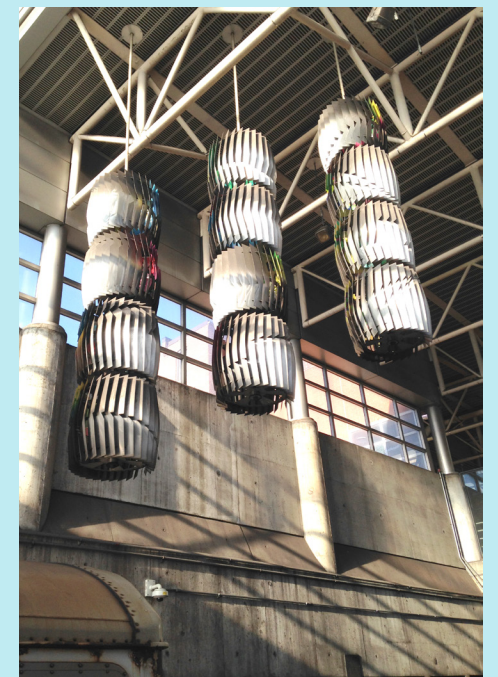
What if there was a way to neutralize smells on the trains?



"What if there was a way to neutralize smells on the trains?" — Collected from 01970 in January of 2015

Public Art and Transportation

Boston's transportation system is enhanced by public art across the city. From rotating murals at Dewey Square to sculptures in stations along the Orange Line to murals outside Red Line stations, art enriches the ways we get around.



Leveraging Innovation and Technology

Lead the nation in supporting new mobility technology and innovations in shared transportation that reach all Bostonians

Vision

Imagine technologies that enable people in all neighborhoods to move more intelligently and efficiently. The creativity of Bostonians and local start-ups will drive improvements in mobility choice and user experience. New ways to travel will allow us to untether our reliance on fossil fuels. Boston will pursue unique demonstration projects to jump-start the adoption of new vehicles and strategies for moving people and goods.

Goals

Flexibility to accommodate disruptive mobility technologies

The arrival and adoption of new technology—such as autonomous cars, electric tricycles, and self-driving buses—is imminent. Boston will accommodate these and other emerging vehicle types by creating infrastructure networks that can be easily repurposed. Car and curbside lanes on major corridors like Columbia Road or in dense areas such as the Theater District will offer parking at some times and bus or bike lanes at others and serve as designated pick-up and drop-off locations for passengers and parcels. Traffic signals will adapt automatically, relying on sensors and algorithms to optimize the movement of people. New buses will be compatible with older fleet vehicles while leveraging emerging technology.

Innovation in on-demand services and real-time information for all

Travel apps and ride-hailing services have proliferated nation-wide. Boston will create the next generation of innovations that make travel easier, better coordinated, and more enjoyable while reducing cost, language, and other obstacles. Passengers at a hub like Dudley Station will accurately know their trip time and available travel options to places around the corner in Mission Hill or as far away as Washington, D.C. A single card or device will serve as a comprehensive platform to pay for all types of travel.

Smart energy grids connecting Boston's infrastructure

Plug-in and solar-powered infrastructure is installed every day citywide. Boston will interconnect these amenities into a smart, regenerating grid that efficiently allocates energy where and when it is needed. Solar panels on bus shelters along Key Bus Routes will feed charging stations for electric cars while clean fuel buses will recharge at major terminals such as Kenmore and Sullivan Squares with connections to wind and solar energy farms along the Mass Turnpike or at maintenance yards.

Crowdsourcing local talent and university expertise

The Boston area has one of the most educated workforces and strongest academic clusters in the world. Public agencies will continue to harness local talent and establish partnerships with universities, industry start-ups, and early-adopters to allow for experimentation in transportation. Collaborations will focus on creating an environment conducive to prototype testing and demonstration projects. Resources will be steered toward car and transit vehicle technology and the collection, sharing, and use of data.

Aspirational Targets

Every traffic signal will automatically adapt to bus, car, and bike demands.

— from 0% to 100%

The number of vehicles in the Boston region providing shared transportation such as carshare, bikeshare, ferries, and pop-up buses will double.

— from approximately 2,500 Hubway bikes, Zipcar vehicles, and Enterprise CarShare vehicles today to 5,000

The occupancy status of every metered on-street parking space in Boston will be available in real time.

— from none to 100%

The proportion of registered clean fuel vehicles will increase fivefold.

— from 0.1% of vehicles registered in Boston as electric and 2% as hybrid electric to a combined total of 10%

Pilot five demonstration projects every year that leverage new technology for mobility.

Questions Bostonians Asked

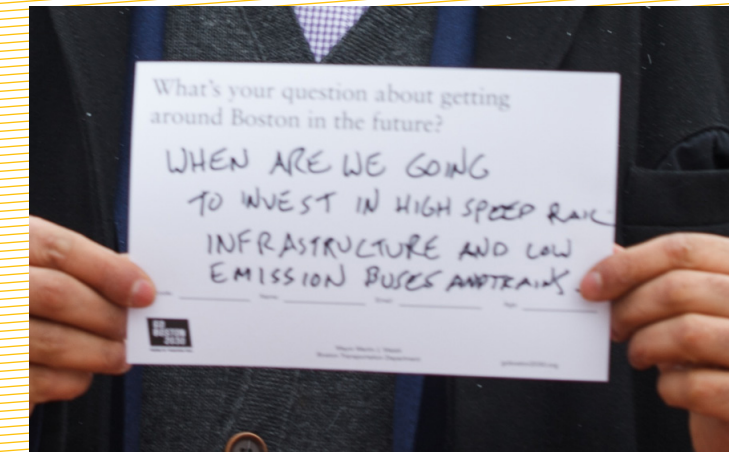
How can we use new technologies to move people faster, smarter, and more efficiently?

How can real time transit data help me?

How can commuting create energy, not just use it?

What if more parking spaces became park spaces?

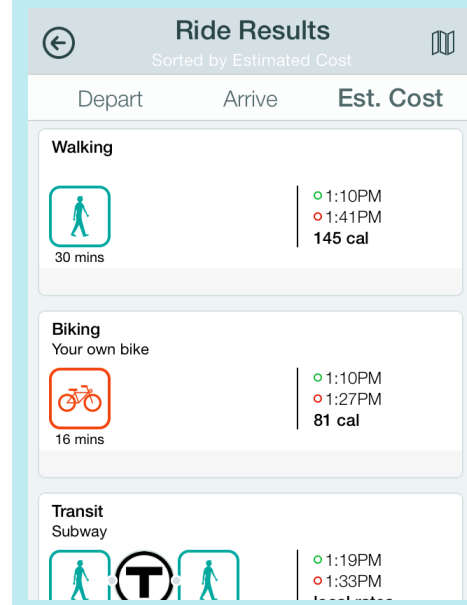
When are we going to invest in high speed rail infrastructure and low emission buses and trains?



"When are we going to invest in high speed rail infrastructure and low emission buses and trains?"
—Collected in January of 2015

New Apps for Trip Planning

Most people use their smart phones to find routes after they have selected their preferred mode. RideScout changes how people think about their trips by allowing users to decide whether time or cost matters more and compares trip options by looking at calories burned and dollars spent.



Preparing for Autonomous Vehicles with New Partnerships

Boston, along with Gothenburg, Sweden, and Singapore, was selected by the World Economic Forum (WEF) to work with the Boston Consulting Group on a study of the Future of Urban and Autonomous Mobility, which is considering the business models, use cases, and possible necessary regulation of autonomous vehicles. BTM has also been supporting the work of T4Mass's Innovative Mobility Roundtable that has brought to the discussion a wide range of practitioners, public leaders, consultants, and community advocates to consider the implications of change.

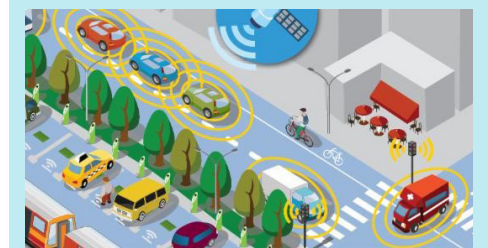


Illustration by Cindi Anderson, courtesy of Argonne National Laboratory's TransForum

Securing Affordability

Restructure transportation costs to address income disparities

Vision

Picture a Boston where every neighborhood has affordable housing and quality transportation choices. Vulnerable groups including young people and seniors will be able to afford to use bikeshare, ride the bus, or take a train. State and city agencies will invest in and expand the transit network so that affordable options exist while service quality is maintained. Transportation improvements will not cause rents to rise and displace residents, because good connections will be everywhere.

Goals

Protect affordable housing when improving transportation

Upgrades to the transportation system should not make housing more expensive for residents with fixed or limited income. Places like South Boston should preserve affordability even as transit and bike networks through the neighborhood improve. Enhanced transit along the Fairmont Line or other corridors will be accompanied by a mix of housing options for all incomes. With all Bostonians living within a short walk of transit stations, carshare spots, and biking routes, more residents can avoid the high costs of owning a vehicle.

Make transportation affordable to those most in need

Transit in Boston will be affordable to all, including youth, students, people with disabilities, elders, and people on fixed incomes or with minimum wage jobs. Innovative ways to fund and subsidize transportation for historically underserved populations—such as Boston Bikes' subsidized Hubway memberships and the expanded Youth Pass "S-card"—will reduce the cost of transportation so that the expense of getting around is no longer a barrier to finding work, getting to school, or improving quality of life.

Invest dollars fairly to distribute costs evenly and reduce long-term debt

Funding strategies will ensure that capital investments made today will not create legacy debts to be paid-off by future generations the way that the Big Dig did. Project financing that leverages Boston's booming economy will pay for maintenance and service improvements, thereby reducing the strain on T riders and taxpayers. Any increase in the cost of transit must correspond to improved levels of service.

Average Transportation Costs as % of Income for a Median Income Family by Neighborhood

South Boston Waterfront	6.6%
Beacon Hill	8.0%
Fenway	9.4%
North End	10.6%
East Boston	10.7%
West End	10.8%
South End	11.5%
Back Bay	11.7%
South Boston	11.7%
Downtown	12.0%
Allston	12.2%
Charlestown	12.2%
Jamaica Plain	12.3%
Mission Hill	12.3%
Roxbury	12.4%
Mattapan	12.5%
Longwood Medical Area	12.6%
City of Boston (average)	13.0%
Brighton	13.7%
Dorchester	14.3%
Roslindale	15.1%
Hyde Park	16.4%
West Roxbury	16.5%

Source: Location Affordability Index

Aspirational Targets

Reduce the transportation cost burden for very low income individuals to the citywide average for a median household.

— in 2015, from 33% of income spent on transportation to 13%.

The cost of subsidized transit passes will remain constant relative to inflation.

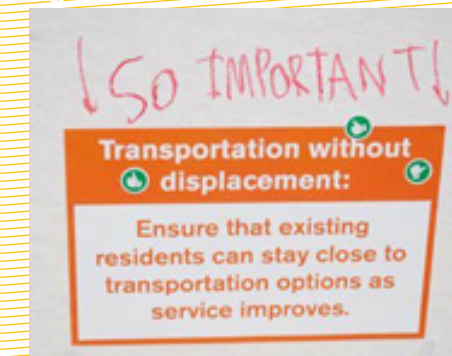
— based on \$1.05 per subway ride for seniors and students in 2015.

Double the number of jobs reachable within a 30-minute transit commute.

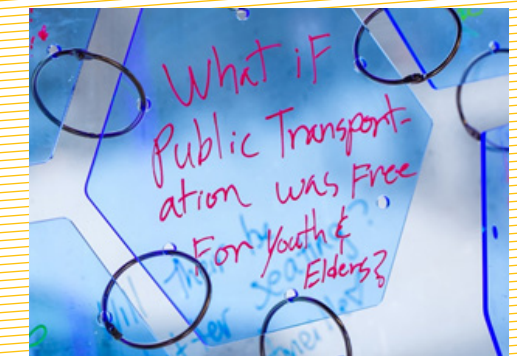
— from 27% to 60%.

Questions Bostonians Asked

- When will the youth of Boston get free rides to school and back?
- I am a student. I have disabilities. I am an elder. I lived on a fixed income. I have a minimum wage job. In 2030, will I be able to afford to commute to a job or school in Boston?
- How do we fund upgrades without burdening fare payers?
- How do we better maintain our transportation equipment?
- How can Boston engage its citizens as owners, not merely users, of our public transit?
- How will the City guarantee protection from displacement for people who live near new and improved transit projects?
- What if public transportation was free for youth and elders?

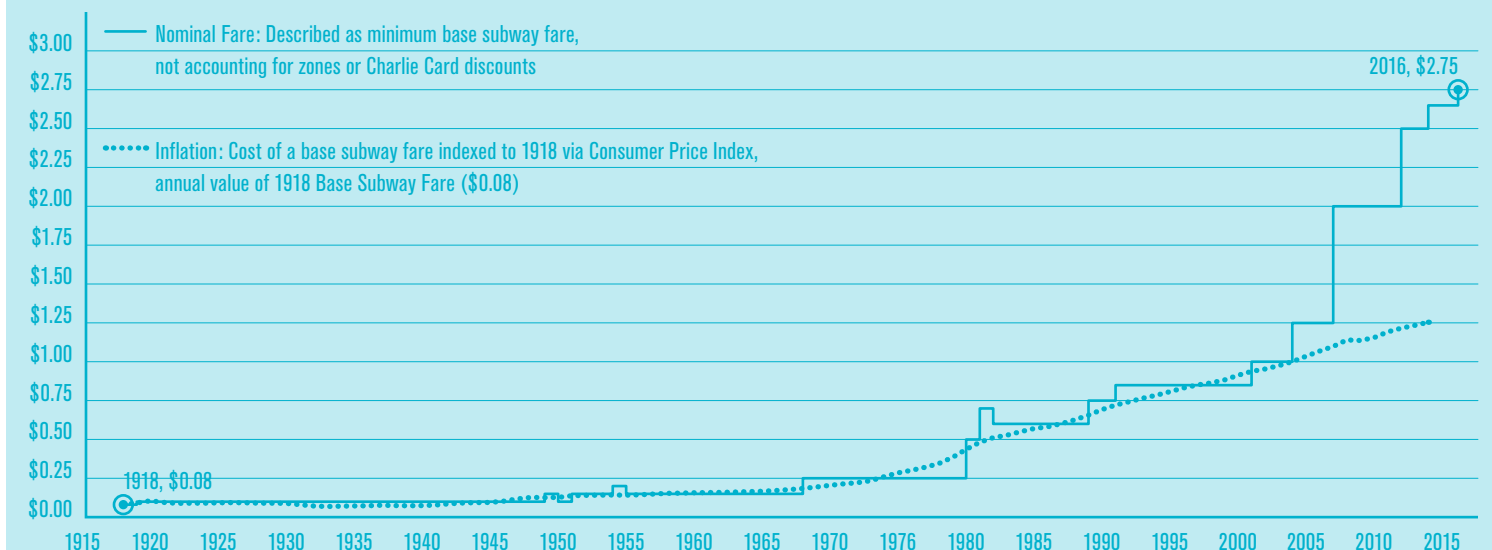


"Ensure that existing residents can stay close to transportation options as service improves."



"What if public transportation was free for youth and elders?"
—Collected in February of 2015

Rising cost of taking the T MBTA Subway Fare History 1918 – 2016



Building for Resiliency

Prepare for sea level rise along Boston's coastline and reduce greenhouse gas emissions

Vision

Imagine traveling without needing to rely on your personal car because Boston is committed to reducing greenhouse gas emissions by investing in transit improvements and new multiuse path networks. Clean fuel shared vehicles will be readily available if you choose to drive. Infrastructure will be designed to be resilient to increasing occurrences of coastal flooding, extreme weather, and high-demand public events.

Goals

Reduce emissions through dramatic mode shifts and adaption of clean fuel vehicles

Transportation emissions contribute significantly to pollution in Boston today. People who drive alone will shift to using vastly improved transit and bicycle networks or switch to cleaner vehicles. This will improve air quality in neighborhoods along the Southeast Expressway and at congested intersections such as like Sullivan Square. While vehicle fuel-economy standards will be improved through regulation, clean-fuel vehicles will be supported by the installation of charging infrastructure and alternative fuel supplies.

Build for resilience to adverse weather and events

Events that change normal traffic patterns—ranging from Winter Storm Nemo to Red Sox victory parades—will not restrict the flow and movement of people and goods in the city. Drainage systems and green infrastructure will efficiently handle stormwater, plows will clear bicycle and vehicle lanes, and the MBTA will flex to meet weather challenges. If the city is shut down by extreme emergencies, the transportation system will bounce back quickly.

Take steps to protect infrastructure from rising tides and flooding

With nearly 47 miles of coastline along the harbor, Boston's transportation infrastructure is vulnerable to sea level rise and extreme precipitation. Roadways, bridges, paths, and tunnels will be constructed and retrofitted to withstand more frequent and more extensive coastal and inland flooding. This may range from raising roadway surfaces to redesigning subway entrances. Boston will leverage the harbor and connect waterfront assets in places like East Boston and South Boston with expanded ferry service.

Carbon emissions have started coming down

Since 2005, on-road vehicles in Boston have reduced their greenhouse gas emissions by 8%. This is primarily due to the increased efficiency of vehicles. Like households and businesses across Boston, the City is greening its fleet of cars, trucks, and buses.

- Cars (EVs and hybrids): 99
- Trucks (biodiesel and hybrids): 58
- Buses (propane and new, more efficient school buses): 216

Aspirational Targets

Reduce greenhouse gas emissions from transportation by 50% of 2005 levels by 2030.

— from 1.67 million metric tons to 1.25

Regional vehicle miles traveled will reduce by 5.5% below 2005 levels by 2020.

— from 3.1 billion in 2013 to 2.9 billion in 2020

All transportation systems will be able to continue operating or have sufficient alternatives during a flood or snow event.

Adopt a municipal vehicle fleet that has no carbon emissions.

— currently the vehicle fleet is about 25% emissions-free

Questions Bostonians Asked

In 2030, how will our transportation system handle 70,000 more people?

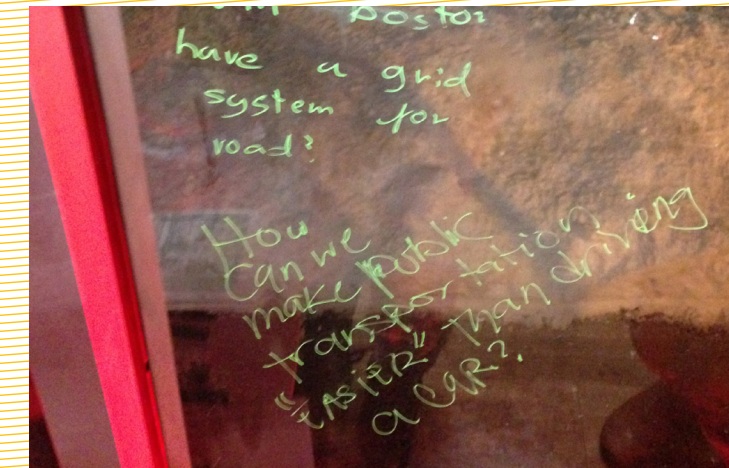
How can we prepare our transportation system for global warming?

What are ways we can incentivize people not to own cars?

How do we help families who rely on cars?

What if our transportation cleaned the air? What would that look like?

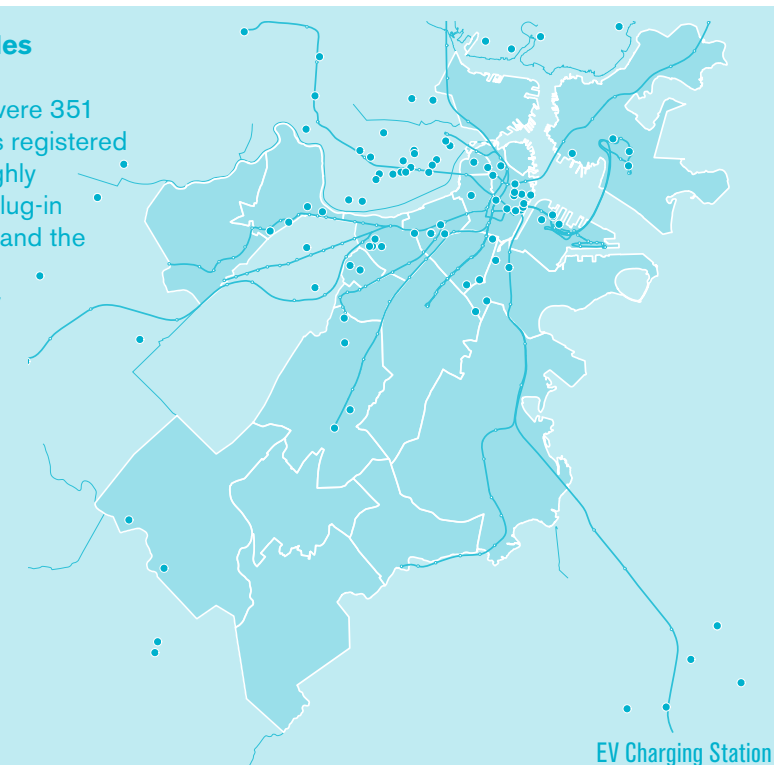
How can we make public transportation "easier" than driving a car?



"How can we make public transportation 'easier' than driving a car?"
—Collected in February of 2015

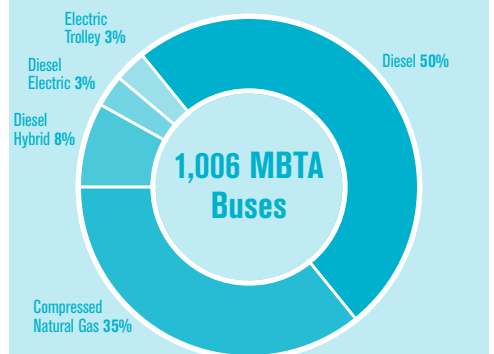
Electric Vehicles

In 2015, there were 351 electric vehicles registered in Boston. Roughly two-thirds are plug-in hybrid (PHEV), and the remaining one-third are battery electric (BEV).



A Cleaner Bus Fleet

The current MBTA bus fleet contains:



Advancing Transparent Governance

Include neighborhood residents as key decision makers in transportation design and funding

Vision

Community aspirations will drive strategic government investments. Our leaders will embrace Boston as the hub of a region designed around public transportation and walkable neighborhoods that can move people effectively without relying on driving. When public officials select transportation projects and funding priorities, they will consider the mobility, housing, and employment needs of historically marginalized groups including youth, seniors, low-income residents, and people of color.

Goals

Prioritize the movement of people over cars

Boston will continue to redesign itself as a transit-first city. Public agency planning and funding will focus on improvements for trains and buses, recognizing that these are more effective ways to move large numbers of people than single occupancy vehicles. Priority will be given to transit on major corridors such as Commonwealth Avenue, Blue Hill Avenue, and Washington Street. Civic leaders will promote a culture of respect in all neighborhoods that embrace those who travel without a car.

Strengthen partnerships with surrounding cities and with regional and state agencies

As the Hub of a thriving region, Boston serves as a catalyst and leader for regional coordination. Boston agencies will work beyond the city's borders to champion regional solutions that benefit cities such as Quincy and Somerville, agencies such as MassDOT and Massport, and Boston itself. Projects that help non-residents travel into and through the city without driving will be supported in order to reduce or mitigate congestion.

Make transit improvements without displacement

Boston will proactively invest in transit in traditionally underserved neighborhoods. Improvements to rail and bus service will balance the desire to provide high quality public transit access while mitigating the negative effects of gentrification to areas such as Hyde Park, Roxbury, and Roslindale. Transportation investments will focus on stabilizing neighborhoods and proactively avoid disrupting effective communities.

Embrace broad resident participation and transparency in decision making

Community ideas will serve as the backbone of transportation decisions. The City will use creative, inclusive, and transparent engagement strategies to gather input from diverse stakeholders for projects ranging from street reconstruction to regional rail solutions. Culturally sensitive and linguistically appropriate methods will ensure that government hears all voices, not just the loudest, from Brighton to Chinatown and East Boston to Mattapan.

Aspirational Targets

A larger share of capital improvement dollars will be assigned to underserved communities to achieve equitable distribution of investment in transportation infrastructure.

The participants in transportation planning processes will be representative of the demographic make-up of neighborhoods affected by the project.

All transportation infrastructure for City or developer managed projects will adhere to the Complete Streets Guidelines.

Address all citizen requests for signal, road, and sidewalk maintenance and repairs.

Questions Bostonians Asked

What will it take to shift the balance from cars to other modes of transport?

How can Boston enforce traffic laws to make our streets safe for all users?

How do we better engage youth in our transportation planning?

What would it take to prioritize people over cars?

How can we make economic equity and social and racial justice a priority in our transportation plan?

How can Boston and the MBTA creatively engage with me in their planning?

Since when does Boston have a wall around it? How can we plan more as a region?

What can Boston do to elevate transportation funding as a statewide issue?



Newbury Street Closure Pilot

In response to community and merchant requests to make the shopping and dining experiences of Newbury Street more accessible to a broader array of Bostonians, the City piloted the full closure of Newbury Street to cars on a Saturday in August, opening it exclusively to those walking or biking.



Making Every Street Complete

The City of Boston has developed and now uses a cutting-edge set of guidelines so that as streets are built and rebuilt all of them will be multimodal, green, and smart. For every type of street in the city, there is now a menu of design options for balancing the needs of people who walk and bike with the needs of people who drive or take the bus while making them active and attractive places for people.



Learn more at: bostoncompletestreets.org

Guaranteeing Health

Promote active and healthy lifestyles by connecting and providing access to green corridors

Vision

Could Boston's neighborhoods have transportation options that easily connect to all essential services while promoting better health and well-being? Living a more active lifestyle that easily integrates walking, running, and cycling into residents' daily routines will be facilitated by "complete streets" that accommodate active transportation and by a network of green corridors that connect families to parks. Bostonians will enjoy excellent air quality, lower asthma rates, and fewer sedentary ailments.

Goals

Target emission reduction in areas with high asthma rates

New efforts to reduce traffic congestion and idling, retrofit vehicles with pollution control equipment, and promote nonpolluting travel will make Boston's air cleaner. Neighborhoods like Roxbury, with higher asthma rates and other respiratory ailments, will be targeted to reduce harmful emissions from transportation sources so that no community has inequitable health outcomes or higher costs of medical care. Substantial reductions in emissions will contribute to improved health for all residents.

Improve access to local and centralized healthcare facilities

Transportation will provide efficient ways to access emergency, recurrent, and preventative medical care, helping to bolster the health of all Bostonians. Remote parts of neighborhoods like West Roxbury and Charlestown will have reliable links both to local community health centers and to specialized hubs like the Longwood Medical Area and Mass General Hospital. Senior and disabled residents will have reliable ways to access the care they need on a regular basis. Healthier patients will be able to effectively access health services without relying on their private vehicle.

Connect neighborhood residents to green corridors for walking, jogging, and bicycling

Boston will embrace active transportation, recognizing that well connected places to walk, jog, skate, or bike safely can improve the health of residents in every neighborhood. New facilities in once-disconnected neighborhoods—such as the protected bike lane on Commercial Street in the North End or the new extension of the East Boston Greenway to Constitution Beach—will be built citywide to promote walking and cycling. By improving access to open space and waterfronts, residents can also benefit from improved mental health, community cohesion, and lower healthcare costs.

More Bikeable Cities Are Healthier Cities

Since 2007, Boston has installed 90 miles of on-street bike facilities and more than doubled the cycling rates of Bostonians. This increase in ridership also comes from many of Boston Bikes' other accomplishments: launching bikeshare and installing over 100 Hubway stations, giving away more than 4,000 bikes through "Roll It Forward", installing bike racks across the city, and teaching more than 23,000 students how to ride with the "Youth Cycling Program."

Aspirational Targets

All health centers in Boston will be within a 5-minute walk of a bus stop, shuttle, train station, and protected bicycle facility or shared use path.

— from 7 out of 63 within a 5-minute walk, to 100%

Rates of emergency department visits due to asthma among Black and Latinos across all ages will be reduced by 10%.

— from 30.6 per 10,000 people in 2007 to 27.5 per 10,000 people in 2030

Questions Bostonians Asked

- How can transport options make residents healthier?
- How can we make it easier to get to our hospitals and health centers?
- How can we reduce kids' exposure to air pollution?
- Where would you create more pedestrian zones?
- How can our plan ensure all Bostonians can be productive, engaged, and active?

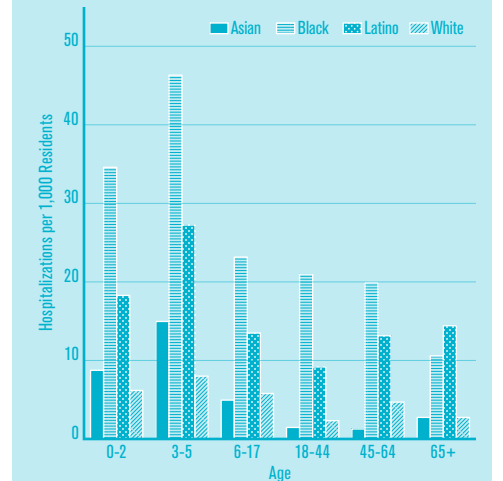


Green Links

Improving access to parks and connecting paths for people who walk, run, bike, and roll is the primary goal of Boston's Green Links Initiative. Learn more about this exciting work at boston.gov/transportation/boston-green-links.



Asthma Emergency Department Visits by Age and Race/Ethnicity, 2012



Data source: Acute Hospital Case Mix Databases, Massachusetts Center for Health Information and Analysis

The People's Voice Action Planning

Involving People in Shaping the Action Plan



Public Engagement in the Action Plan Phase

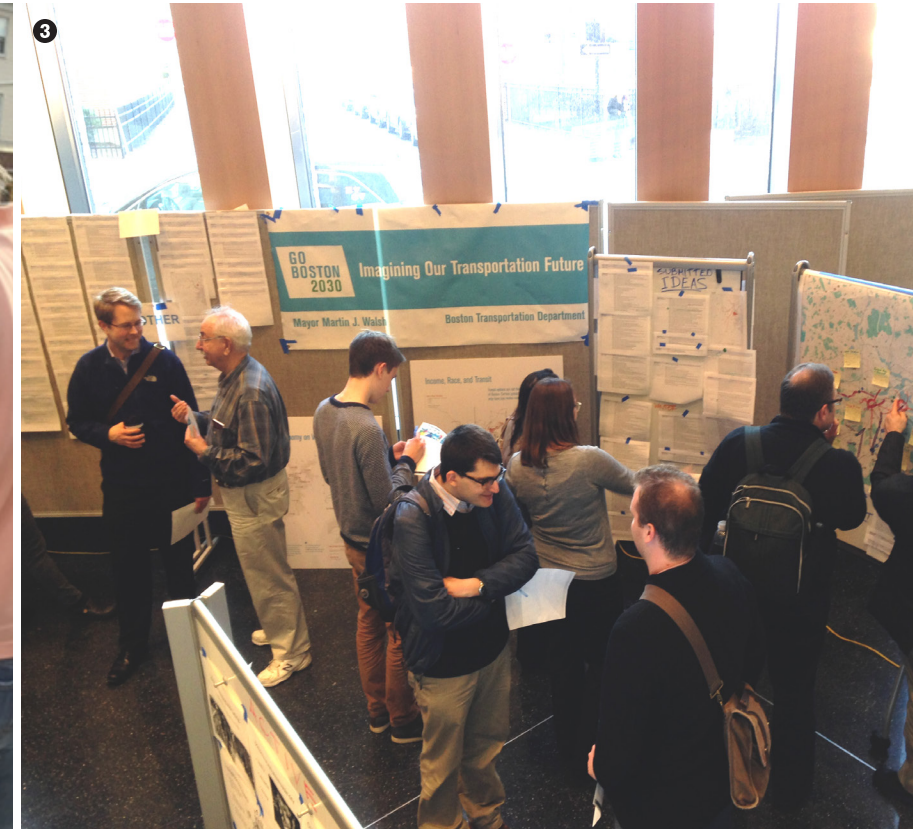
After releasing a draft of the Visioning Framework, Go Boston 2030 returned to the neighborhoods in September and October of 2015 to gather ideas for projects and policies. The City built on the lessons of the Visioning phase to collect people's ideas in four distinct ways. First, real stories about how people get around in 2015 were told through *Share Your Trip with BTD*. Individuals could then share their project or policy ideas for building and shaping their transportation future through *Ideas on the Street*, a bike-trailer pop-up and an online platform conducted in the fall. Finally, residents from neighborhoods across the city were invited to convene at three *Idea Roundtables* in November to discuss their transportation challenges and propose ideas to address them.

The projects and policies in the Action Plan began as public suggestions.

The collected project and policy ideas were analyzed at an *Idea Review Session* where community and agency partners highlighted ideas they thought would have the best chance of meeting Go Boston 2030's Goals. That was followed by a three-day *Scenario Workshop* that invited stakeholders to discuss their most pressing transportation needs and how they could leverage the ideas to overcome these challenges over the coming 15 years. A team of national experts linked the project ideas to create travel networks and develop future scenarios. An evening *Open House* also allowed the public to provide feedback on the emerging networks part way through the workshop.

Finally, an online survey tool and corresponding paper ballot allowed the public to *Select a Future* and a corresponding set of projects or policies. Nearly 50 projects and policies were sorted into maps of four possible transportation futures. Participants could also select the way that they would like to see roadway space allocated on major arterials in the future. As with each phase of public feedback, reaching every neighborhood and providing both digital and analog tools for participation was paramount: the online survey was distributed broadly through partners, and the paper survey was available at public facilities and on the City Hall to Go Truck.

The survey results prioritized the projects and policies for the Action Plan.



- 1 The Idea Roundtables created a platform for inter-neighborhood dialogue.
- 2 Go Boston 2030 partnered with the City Hall to Go Truck to share the Select a Future ballots in neighborhoods.
- 3 Community members dropped by the Scenario Workshop Open House to provide feedback on the networks of suggested projects that emerged over the three days.
- 4 The Ideas on the Street pop-up allowed people to read other project ideas before donating their own.

The Ideas Campaign

Collecting Recommendations to Realize the People's Vision



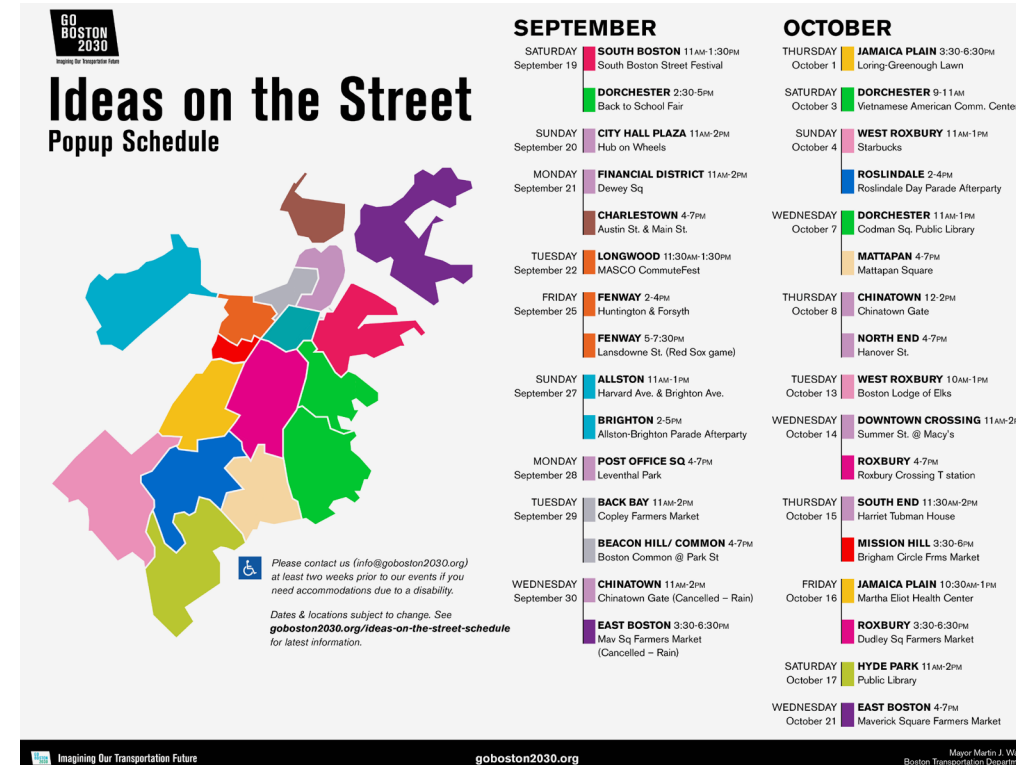
With the three pillars of equity, climate responsiveness, and economic opportunity clearly established, and the primary targets for improving access, safety, and reliability firmly set, Go Boston 2030 went back to the public to collect project and policy ideas to improve transportation systems across the city. Ideas could be shared as concepts or mapped on specific intersections and corridors.

Some people proposed ideas with the same kind of open-endedness as the questions while other people took the time to describe major policy changes in great detail. Once again, the team designed experiences with low barriers to entry, including a pop-up bike trailer that collected ideas in every neighborhood and a mobile-friendly web tool that collected ideas online. Both systems were designed to solicit proposals from people who might not typically attend public meetings or who might have previously been left out of the planning process.

To capture the complexity of this phase and the diversity of ideas required to improve the city for a wide spectrum of users, several methods of idea collection were implemented. “Share Your Trip with BTB” profiled 10 volunteers who each had unique needs and experiences, as well as their own solutions-oriented approach for improving travel over the next 15 years. The blog posts of these stories illustrated the diversity and complexity of how people travel to reach their destinations and were also used to create an initial buzz. The Idea Roundtables brought people together across neighborhood boundaries to also broaden the range of ideas. In addition to hearing the different perspectives of each participant’s experiences, each group at every table also addressed several common travel issues that hypothetical personas must overcome every day.

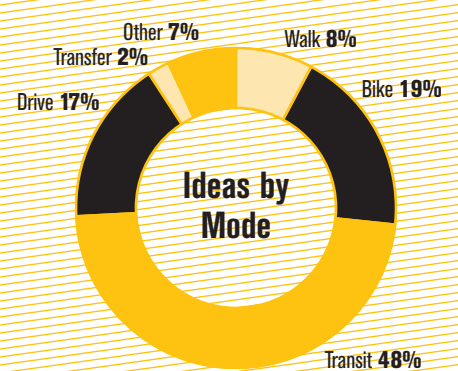
Approximately 3,700 project and policy ideas were collected through the campaign.

An Ideas on the Street bicycle-trailer pop-up visited 31 neighborhood locations to collect project ideas on maps and hexagons. Having multi-lingual street team members and printed materials enabled the trailer to collect ideas from an even broader cross-section of the population. Whether people were waiting in line for a food truck, visiting a farmers market, or making their way home, the trailer provided an opportunity to discuss existing transportation issues and ideas for improving conditions for walking, cycling, transit riding, and driving. Some people detailed creative methods for fixing existing infrastructure, while others offered ideas for bringing a completely new system of transportation



QUICK FACTS

- 54% of ideas were collected on paper at pop-ups, 36% were submitted online, and 10% came from Idea Roundtables.
- Every neighborhood in Boston contributed. Some zip codes submitted more ideas than others. The top five were 02130 (Jamaica Plain), 02124 (Dorchester), 02135 (Brighton), 02127 (South Boston), and 02136 (Hyde Park).



to Boston based on their experiences traveling in other cities.

A parallel online platform also introduced the main ideas from the Vision Framework and asked participants to suggest transportation projects and policies. In addition to describing projects and policies—like new apps to pay for transfers from bus to rail—users could map their ideas—such as drawing their own subway line expansion. Though it can be challenging to draw lines on a map on a smart phone, Go Boston 2030 invested in a web tool with this unique functionality. An online database also allows people to read all of the ideas collected from all of the outreach activities and to sort them by type of idea and mode of travel.

Read all the submitted ideas at goboston2030.org/ideas-database



Share Your Trip With BTB

Putting a Real Face on Transportation Challenges



Rather than only talking generally about people struggling to get to work from rapidly growing residential areas to major employment districts outside of downtown, accessibility issues on the Green Line, or about concerns about crowded sidewalks, Go Boston 2030 selected 10 residents from more than 100 volunteer applicants to tell their stories of getting around the city. Each volunteer was paired with a BTB staff member from engineering, operations, or planning who shadowed a regular trip. As the two traveled together, the residents shared their observations and suggestions with planners and officials, including Boston's Chief of Streets, Chris Osgood, and Transportation Commissioner Gina Fiandaca.

Through the process, BTB was able to experience firsthand the challenges that new parents, people with disabilities, commuters with multiple transfers, and many others face every day as they travel through Boston. Some trips challenged beliefs about how people select bus routes or pair Hubway usage with daycare drop off. On other trips, officials were validated to hear travelers express appreciation for ongoing work, including the installation of tactile warning strips at cross-walks, wider ramps on the Southwest Corridor, and an improved intersection at Uphams Corner. Riding buses, bikes, and trains, the participants' proposals ranged from enforcing double parking in bike lanes to a more robust ferry system connecting additional docks around Boston Harbor.

Ten trips captured a diversity of transportation modes and challenges.

Each journey was also shared with everyone following the Go Boston 2030 process on social media and on the website with blog posts, images, and videos that captured the trips.

You can read the full stories at goboston2030.org/category/trip-stories, and you will find their narratives reinforcing concepts in the Action Plan.



Idea Roundtables

A Transportation Dialogue with Strangers



Unlike some traditional public meetings with long presentations, pre-formed solutions, or advocacy from a united group of neighbors, the Idea Roundtables challenged small groups of people from different neighborhoods and communities to work together and generate recommended projects and policies. By sitting people with others of different backgrounds and experiences, they heard about transportation issues that they had never encountered before. Even discussing how group members had ridden buses, walked, biked, or tried to find parking before each roundtable changed perceptions about ordinary travel experiences.

Talking to people from other neighborhoods helped change perceptions about the kinds of projects needed.

The interactive conversations were supported by three inputs: personas, which described the mobility needs of imagined residents; concrete travel data from the Vision Framework; and a set of challenges that needed to be tackled. Participants discussed a variety of solutions, such as accessing jobs and education, increasing climate change resiliency, and improving the

ease of transfers between travel modes. With this framing, groups developed recommendations that pointed to a transportation future designed to work for everyone.

The Idea Roundtables were held in Roxbury, Chinatown, and Roslindale on two weeknights and a Saturday afternoon. Materials were available in English, Spanish, and Chinese, and childcare was provided to all, with the goal of supporting broader participation. As with previous events, arts were a key component. Youth performers were involved in setting the stage, and available supplies allowed people to sketch and make ideas come to life.



Idea Review and Scenario Workshop

Prioritizing Projects and Policies



With a database of 3,700 policy and project ideas, Go Boston 2030 reconvened community leaders and City officials for an Idea Review Session. Similar to the Question Review Session, this gathering asked participants to review all of the collected ideas to understand the kinds of infrastructure and process changes that the public was requesting.

Each idea was carefully considered relative to the Vision Statement, Goals, and Targets. Individuals selected project and policy ideas that they expected to make the greatest impact, while ensuring they were improving equity, economic opportunity, and climate responsiveness. Then groups at each table discussed and selected ideas that they saw as game changers.

With this shortened list of project and policies, Go Boston 2030 organized a three-day Scenario Workshop and invited professional multi modal

experts from across the country to work on networks of project ideas and to create possible future scenarios. They considered missing links and effective implementation methods of high-priority projects. The experts also discussed policy changes that would be critical for adopting best practices and meeting targets.

During the workshop, the team also convened nine focused conversations with Boston area stakeholders in specific fields. Transportation officials from neighboring municipalities came to discuss regional gaps along with MAPC and MassDOT. Climate scientists and representatives from the Environment department weighed in on climate change impacts. Other specialized conversations with commercial, institutional, and neighborhood partners focused on social justice, accessing jobs and education, land use planning, legislative opportunities, and innovative

technologies. Leaders and staff from city agencies met to discuss implementation realities.

Four future scenarios were developed.

Members of the community were invited to stop by the workshop at any phase of the process, and several individuals stayed through multiple sessions. On Tuesday night, an Open Studio, specially designed to collect public input, gathered feedback from people who visited to further shape the possible future scenarios. As the ideas emerged under the headings of “reaching more,” “protecting,” “interconnecting,” and “sharing better,” members of the Mayor’s Advisory Committee provided additional comments on the selection and organization of the ideas.



Select a Future

Go Local, Crosstown, Regional, or Tech

With this extensive feedback and analysis, Go Boston 2030 determined that a set of 19 projects and policies had come up so repeatedly in every phase of outreach that the City and State needed to commit to implementing them as “Early Action” projects, which were shared with the public. In addition, another 48 projects and policies were strong candidates for meeting the goals and targets. These candidates were shared with the public as four possible futures using the headings: go local, go crosstown, go regional, and go tech. This narrowed list appeared on paper ballots and an online survey that asked people to select one future and up to three projects and policies from each future. They were also asked to weigh in on options for prioritizing users on major streets, indicating their preference for exclusive bus lanes, bike lanes, both, or to preserve road space for drivers on multi-lane thoroughfares.

The online survey was shared in email blasts, via community partners, and on social media. Over 20,000 Twitter impressions in the first week led to widespread web-based participation. Paper ballots were shared at all Boston Public Libraries and Boston Center for Youth and Families community centers. The Go Boston 2030 team also accompanied the City Hall to Go Truck to neighborhood stops to reach residents who might not hear about the process online and to provide a low barrier to participation.



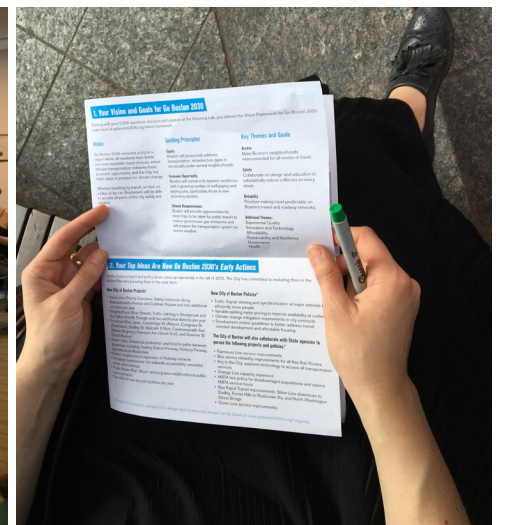
More than 4,000 people participated in selecting projects and policies.

While the survey and ballot were circulating, Go Boston 2030 organized an opinion leader conversation to talk about how complete streets, equity, connectivity, and emerging technology would affect each of the four futures. Mike Lydon, who focuses on Tactical Urbanism, discussed local possibilities; Rep. Russell Holmes of the Sixth Suffolk District talked about the imperative need for crosstown transit; Kate Fichter, the Assistant Secretary for Policy

Coordination at MassDOT, shared regional considerations for the plan; and Jascha Franklin-Hodge, Boston’s Chief Information Officer, spoke about the promise of tech. The 150 people in attendance also got to ask questions, share their thoughts, and fill out ballots.

The public feedback prioritized the projects and policies in the Action Plan.

The results of the survey can be found in appendix p216



Choose 1

Go Local

You wanted roads in your neighborhood to feel safe and friendly, buses to come more often, protected bike lanes and paths to connect you to where you need to go, and to never feel like you need a car for short trips.

Go Crosstown

You wanted to travel across the city without having to go into the hub of downtown just to travel out again and to have new pockets of jobs and housing well supported by transit connections outside the downtown.

Go Regional

You wanted the city's borders to feel porous and seamless, the outer neighborhoods and surrounding communities to feel connected to the downtown, and effective transit to extend across the region.

Go Tech

You wanted the road uses to vary by time of day, payment for different modes to be seamlessly integrated, and traffic signals to prioritize people walking and taking transit.

Select 3 for each future

Projects + Policies	Access	Safety	Reliability	Pick year 3
1 Ruggles to LMA improved bus corridor	•	•	•	<input type="checkbox"/>
2 Oak Square to Comm Ave improved bus corridor	•	•	•	<input type="checkbox"/>
3 Orange Line extension to Roslindale Square	•	•	•	<input type="checkbox"/>
4 Green Line extension to Hyde Square	•	•	•	<input type="checkbox"/>
5 Dorchester Ave Complete Street (South Boston)	•	•	•	<input type="checkbox"/>
6 Washington Street Complete Street (JFK/Rox)	•	•	•	<input type="checkbox"/>
7 Beacon Yards Complete Streets network	•	•	•	<input type="checkbox"/>
8 Pedestrian and bike-friendly Main Streets	•	•	•	<input type="checkbox"/>
9 Flood-Proof JFK/UMass station	•	•	•	<input type="checkbox"/>
10 Flood-Proof Suffolk Downs station	•	•	•	<input type="checkbox"/>
11 New Red Line station at Neponset	•	•	•	<input type="checkbox"/>
12 Pedestrian-first traffic signals (Policy)	•	•	•	<input type="checkbox"/>
13 Parking meter benefit district (Policy)	•	•	•	<input type="checkbox"/>
14 Mattapan to LMA streetcar/bus rapid transit	•	•	•	<input type="checkbox"/>
15 South Boston to Dorchester/Wideter urban rail	•	•	•	<input type="checkbox"/>
16 Dudley Square to Mattapan streetcar/bus rapid transit	•	•	•	<input type="checkbox"/>
17 Massachusetts Ave bus rapid transit	•	•	•	<input type="checkbox"/>
18 Expanded local ferry network	•	•	•	<input type="checkbox"/>
19 Silver line tunnel connecting Washington St to South Station	•	•	•	<input type="checkbox"/>
20 Columbia Road greenway	•	•	•	<input type="checkbox"/>
21 Gallivan Blvd walk and bike path	•	•	•	<input type="checkbox"/>
22 North Allston walk and bike path	•	•	•	<input type="checkbox"/>
23 Enhanced Dudley Square transit center	•	•	•	<input type="checkbox"/>
24 Wideter Circle bus and train station	•	•	•	<input type="checkbox"/>
25 LMA transit center	•	•	•	<input type="checkbox"/>
26 Restructure all bus routes (Policy)	•	•	•	<input type="checkbox"/>
27 Designated buses for bicycles in tunnels (Policy)	•	•	•	<input type="checkbox"/>
28 I-90 Newton urban rail	•	•	•	<input type="checkbox"/>
29 LMA to Kendall/North Point bus rapid transit	•	•	•	<input type="checkbox"/>
30 North Station to South Boston Waterfront BRT	•	•	•	<input type="checkbox"/>
31 Forest Hills to Dedham bus rapid transit	•	•	•	<input type="checkbox"/>
32 Expanded regional commuter ferry network	•	•	•	<input type="checkbox"/>
33 Blue Hills bike and pedestrian path	•	•	•	<input type="checkbox"/>
34 Charles River South Bank bridge	•	•	•	<input type="checkbox"/>
35 Allston (West) Station regional transit hub	•	•	•	<input type="checkbox"/>
36 Sullivan Square regional hub enhancement	•	•	•	<input type="checkbox"/>
37 Readville Yards station	•	•	•	<input type="checkbox"/>
38 Resilient Morrissey Blvd	•	•	•	<input type="checkbox"/>
39 Expanded electric vehicle infrastructure (Policy)	•	•	•	<input type="checkbox"/>
40 Mitigation fund to support green transportation (Policy)	•	•	•	<input type="checkbox"/>
41 Mobility Hubs (Hubway, car share, bus)	•	•	•	<input type="checkbox"/>
42 Smart Signal Districts: South Boston Waterfront, Suffolk Triangle, and Dudley Square	•	•	•	<input type="checkbox"/>
43 Smart Signal Corridors: Essex and Kneeland	•	•	•	<input type="checkbox"/>
44 Streets, Dorchester Ave, Blue Hill Ave, Morton St, Melnea Cass & Columbus Ave, Massachusetts Ave	•	•	•	<input type="checkbox"/>
45 Smart high-occupancy-vehicle lanes on interstates	•	•	•	<input type="checkbox"/>
46 Autonomous vehicles strategy (Policy)	•	•	•	<input type="checkbox"/>
47 Flexible lanes repurposed by time of day (Policy)	•	•	•	<input type="checkbox"/>
48 Consolidated smart shuttle system (Policy)	•	•	•	<input type="checkbox"/>
49 Facilitate and regulate shared ride technologies (Policy)	•	•	•	<input type="checkbox"/>

Boston In 2030

Understanding Needs



Boston in 2030

Boston's ongoing transformation will continue over the next 15 years. A strengthening economy, an increase in population, the effects of climate change, and changes in technology will all place new and greater demands on the city's transportation systems to reach more places, adapt to new pressures, and keep users safe. Measuring broad trends and understanding their impact on the capacity of today's infrastructure and mobility choices to provide economic opportunity, equitable access, and climate resiliency in the future is necessary to help identify what projects and policies may be needed over the next several decades.

This chapter is a two-part needs assessment. First, it projects the expected changes over the next 15 years in population, jobs, travel patterns, and transportation-related emissions for Boston's neighborhoods based on a standard transportation model. Second, it assesses the current performance of our existing transportation systems relative to the aspirational targets identified in the Go Boston 2030 Vision Framework in order to establish a clear baseline. In both sections, the needs assessment and analysis point to the types of strategies and actions needed to address the identified gaps and shortfalls.

- Accommodating a Growing Population 100
- Getting More People to Work 102
- Changing Travel Patterns and Modes 106
- Regional Travel into Boston 112
- More Mileage with Lower Emissions 114
- Expanding Access 117
- Ensuring Reliability 118
- Improving Safety 120
- Securing Affordability 122
- Advancing Transparent Government 123
- Building for Resiliency 124

By 2030, the number of daily trips starting in Boston on buses and trains will increase by a third, from approximately 500,000 to 675,000, straining a transit system that is at capacity today.

By 2030, the number of daily trips from the region into Boston will increase by 6%, to a total of approximately one million. Without new transit connecting Boston to the region 70% of these trips will be in congestion-creating private vehicles.

There are an average of over 20 fatalities and 200 serious injuries on Boston's streets every year. To eliminate these by 2030 every new transportation project will need to adopt safety as its primary design criteria.

Today very low income families in sections of Roxbury, Dorchester and Mattapan bear a transportation cost burden of 33% of their incomes compared to 13% citywide. This disparity will persist without proactive transit investments in these neighborhoods.

By 2030 Boston is expected to gain more than 50,000 jobs, many of them in fast-growing areas such as the Seaport and the LMA. Without expanded high-capacity transit access to these districts, Boston's technology, life-sciences and financial sectors will be impacted.

The current citywide bicycling mode-share of 2% will remain flat without new stress-free bike infrastructure to catch up with neighborhoods such as Jamaica Plain, Fenway, and Allston that already have shares above 6%.

As early as the 2050's, 7% of Boston's land area will be exposed to more frequent 24-hour rain events and 10-year floods, impacting unprotected transit service and major thoroughfares.

Even though GHG emissions in Boston are expected to decrease by 25%, vehicle miles traveled in Boston will increase by 5% by 2030 due to growth in population and jobs.

Projecting Transportation Needs for Boston

Projecting Boston's Growth

The *Boston Today* chapter identified gaps in Boston's existing transportation systems that contribute to inequities, lost economic opportunity, and a lack of preparation for the impacts of climate change. If there were no policy changes or new projects, many of these gaps would pose even greater challenges in the future; though a small number of gaps would improve as population, jobs, and travel preferences shift over time. To understand how these gaps might change, the Boston Transportation Department (BTD) commissioned the state agency responsible for transportation modeling, the Central Transportation Planning Staff (CTPS), to develop a regional travel model of potential travel flows for the year 2030. The CTPS regional model projected where in Boston and the surrounding

region people will likely live and work, where the number of residents and workers will increase or decrease, and the estimated number of people moving by car, transit, bike, and on foot between each of Boston's neighborhoods and throughout the larger region. This regional travel model assumes that policies remain unchanged and assumes the completion of a limited number of projects that are already budgeted, such as new higher-capacity Orange Line railcars or the completion of the Green Line extension to Medford. The *Go Boston 2030 Action Plan* recommends additional policies and projects to fill the remaining gaps, beginning on p127.

Meeting Go Boston's 2030 Aspirational Targets

The *Goals and Targets* chapter established 35 aspirational targets to

improve transportation in an equitable, economically supportive, and climate resilient manner. The targets are derived from the public's goals of improving the access, safety, and reliability of Boston's transportation system along with experiential quality, the use of technology, affordability, resiliency, governance, and health. Every target can be tracked over time, providing a "scorecard" by which to measure progress towards the goals of the Vision Framework. Since they are aspirational, the targets provide an objective that may not be achieved by 2030; however, they still provide a clear guide for future planning and programming and ensure that implementing the policies and projects in the Action Plan will work to realize the Vision, from the smallest signal timing decisions to large-scale transit investments.



Accommodating a Growing Population

Population Projections

By 2030, the population of Boston is projected to grow by approximately 15 – 17%, to a city with 710,000 to 724,000 residents. More than a third of this population growth is anticipated in the Seaport, the South End, Downtown, East Boston, and Dorchester. The combined growth in these neighborhoods will be approximately 37,000 people—roughly the same as the total population of East Boston in 2017.

The Seaport's population will nearly triple, many new residents will move into Downtown, and new residents settling in traditional neighborhoods will move into areas closer to the core, such as Dorchester, East Boston, and Roxbury. With the notable exception of Brighton, the neighborhoods further from Downtown will experience relatively modest growth.

Where Actions Are Needed

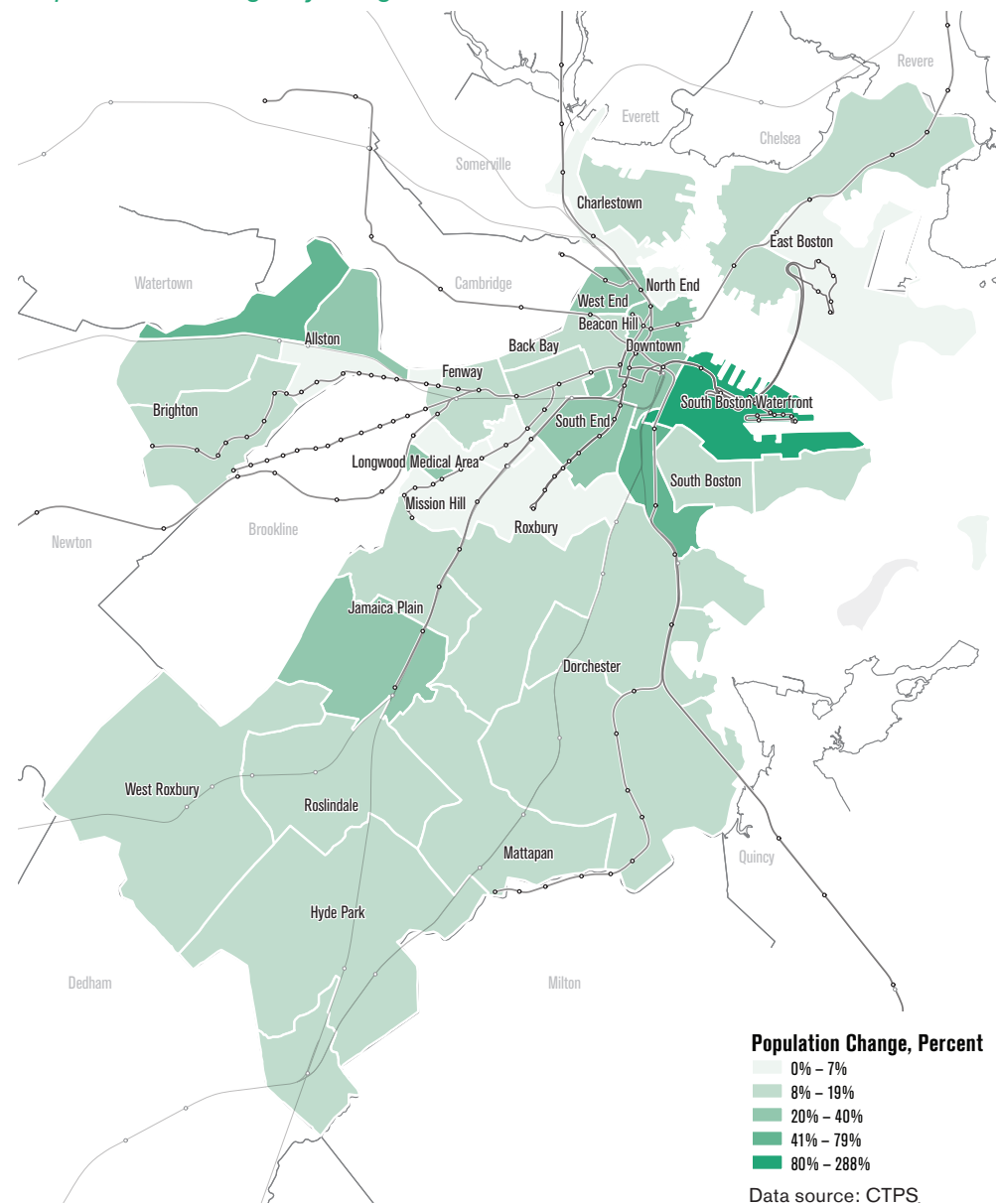
Dorchester is projected to have over 10,000 additional residents in 2030 and residents already experience commute times above the city average today. The

Though the Fairmount Line runs through the geographic center [of Dorchester], its infrequent service and poor pedestrian access currently limit its utility.

service and poor pedestrian access currently limit its utility. Bicycle routes are limited and mostly link to local

Red Line and the Fairmount Line traverse the neighborhood, but stations are only within easy walking distance for a fraction of the residents. Though the Fairmount Line runs through the neighborhood's geographic center, its infrequent

Population Change by Neighborhood 2012 – 2030



destinations. Service improvements to existing rail lines complemented by additional crosstown bus connections are needed to move residents within the neighborhood and to growing job centers such as the LMA and the Seaport. Investments in safer cycling facilities

are needed to improve conditions for families making trips to Main Street Districts and to support commutes from and across the area.

Brighton residents rely heavily on the Green Line, with frequent stops for

Arina's Trip



Arina lives in East Boston. Each morning she walks to the Blue Line at Airport Station, rides in to State, walks to North Station, and takes a MASCO shuttle to the Longwood Medical Area. She chooses to walk to North Station as she does not trust the Orange Line connection to be consistent. As part of her job, she helps people find alternatives to driving to the LMA, so she is very aware of the need for improved transportation options to the medical district.

passenger pick up and traffic lights, and on a limited number of hilly bike routes. Largely separated from the rest of Boston by Brookline, the current residents and the 8,000 new projected residents need better bus service, particularly from Oak Square, and improvements to the Green Line that make a trip from Cleveland Circle to downtown faster. A protected bike corridor through the neighborhood and better local connections to existing bike routes are also needed.

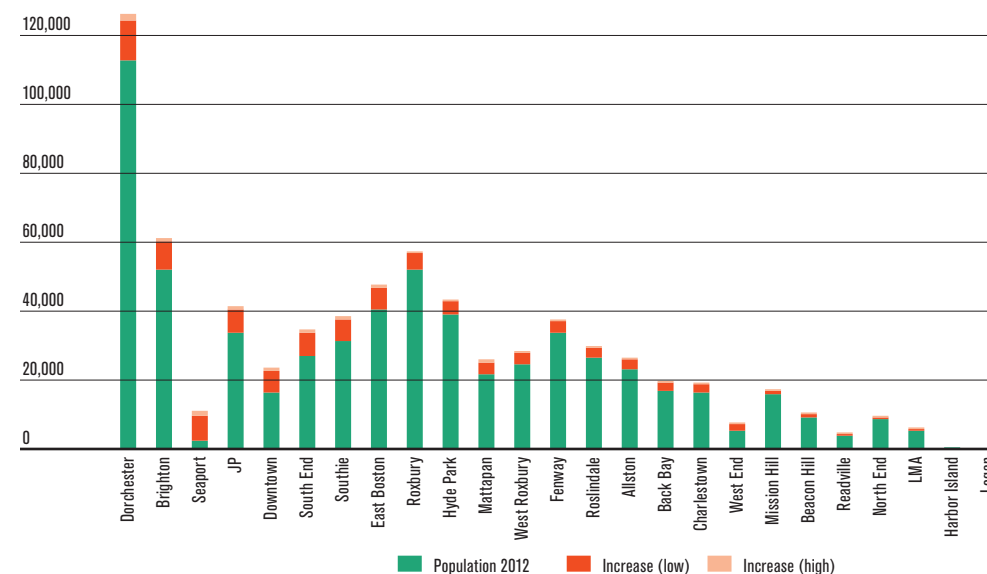
The rapid rate of population growth in the Seaport requires new and improved connections to other neighborhoods and the broader region for all modes. The *South Boston Waterfront Sustainable Transportation Plan* projected substantial roadway congestion if multimodal improvements are not made and recommended a number of specific strategies. To support walking, cycling, and transit riding at high rates among the growing residential population, the neighborhood needs an improved public realm with a particular focus on gateway

intersections to the district, bicycle accommodations with connections through Southie and over the Fort Point Channel bridges, and new transit service that includes local circulator service and ferry connections across the Harbor.

While new and existing residents of Downtown and the South End are close to growing jobs centers in the LMA and the Seaport, the relatively short trip can be difficult for cyclists due to the lack of a continuous protected bike route and a handful of complex intersections that are unfriendly to people walking and biking. Though residents are close to transit, those who commute to areas like the Seaport or the LMA often have a long walk at one end of the trip or a transfer, often to a bus. Better cycling connections into and out of these neighborhoods, improved pedestrian connections around freeway access points, and more frequent transit service to reduce wait times at transfer points are needed.

East Boston also has longer than average commute times. The Blue Line provides good connections to Downtown, but reaching the LMA, the Seaport, and Kendall Square requires one or more transfers. Bikes are not allowed on the Blue Line during peak commuting periods and there are no bridges to jobs or destinations elsewhere in Boston. Finally, even drivers are challenged by peak hour congestion in the Ted Williams Tunnel and on Route 1. To support population growth in East Boston, last mile connections to the Blue Line need to be improved, a way to support commuter cycling is needed, and transit links that reduce the total number of transfers are critical.

Population Growth by Neighborhood



Getting More People to Work

Jobs Projections

By 2030, Boston is projected to gain almost 50,000 jobs—13,000 of which will be in the Seaport. Roughly nine million new square feet of commercial development is anticipated in the Seaport by 2030, in addition to the redevelopment of existing commercial space, new housing construction, and expansion of convention and hotel space. The Metropolitan Area Planning Council (MAPC) also projects that the Longwood Medical Area (LMA) will add almost four million square feet of commercial development.¹ In both areas, there are also speculative projects in the early phases of the planning process that could accommodate thousands of additional jobs.

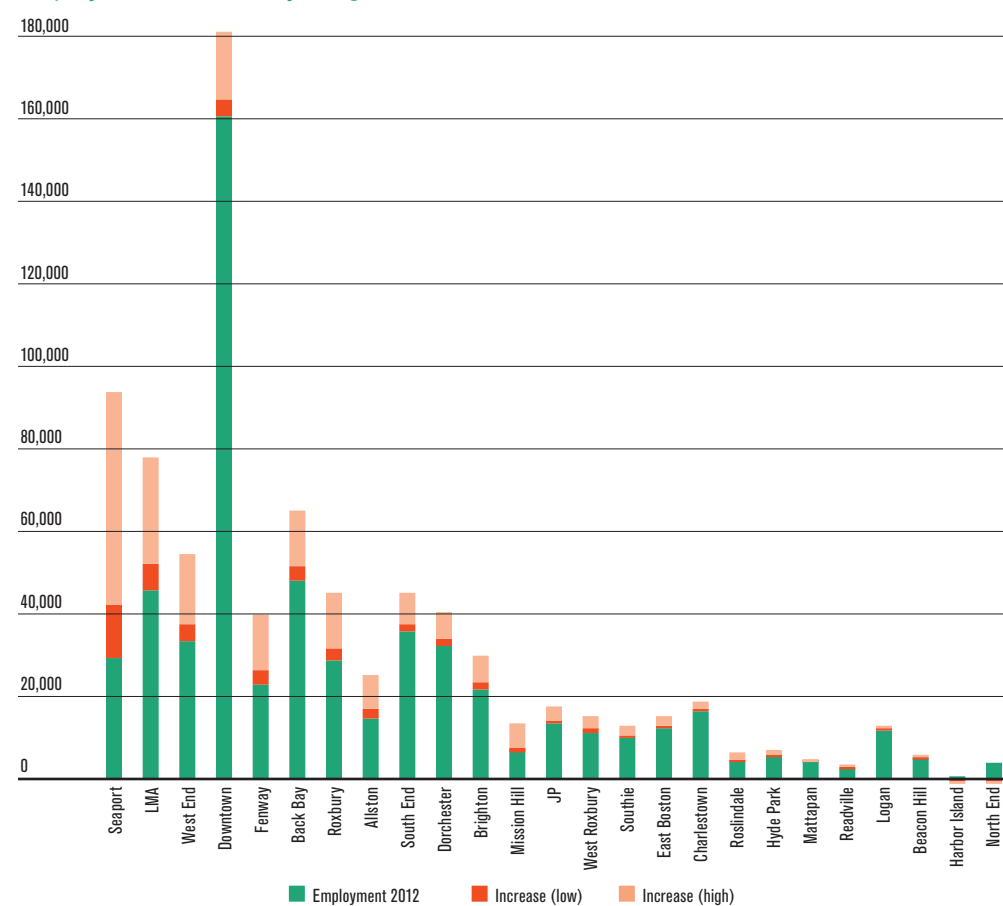
... transportation infrastructure should be prepared to accommodate a high concentration of workers in [the Seaport and LMA] that are already attracting a large workforce today.

Beyond these job centers and the downtown, new commercial growth areas have been identified by Imagine Boston 2030 in the Widett/Newmarket area, Beacon Yards, Suffolk Downs, Sullivan Square, and Readville.

Where Actions Are Needed

While the Longwood Medical Area and the Seaport continue to grow as significant employment hubs, they are not well aligned with the historic radial transit pattern which is concentrated and interlocking in the Downtown, a job center that is well-served. Although

Employment Increase by Neighborhood



Data source: CTPS and Imagine Boston

the Orange Line and multiple branches of the Green Line serve the edges of the LMA, only buses and shuttles serve its core. The relatively new Silver Line runs through the center of the Seaport, but is often at capacity and connects only to the Red Line. To support continued job growth at such high density, new and improved direct transit and bicycling connections from densely populated neighborhoods are needed, particularly from Dorchester, Mattapan, and Hyde Park. To be most effective and improve transfers where needed, routes should connect hubs like Dudley Square, Uphams Corner, Cleary Square, and

Widett Circle to get into the Seaport or LMA. (See box on p105)

Allston has significant projected job growth relative to its current employment base at Harvard University, and based on the expected commercial development in Beacon Yards and Allston Landing. Both new areas are relatively isolated today due to the barriers formed by the Charles River, the rail yards, and the Mass Pike. To connect these areas to the surrounding neighborhood fabric, new north-south streets are needed along with high-quality bicycle and pedestrian accommodations linking to

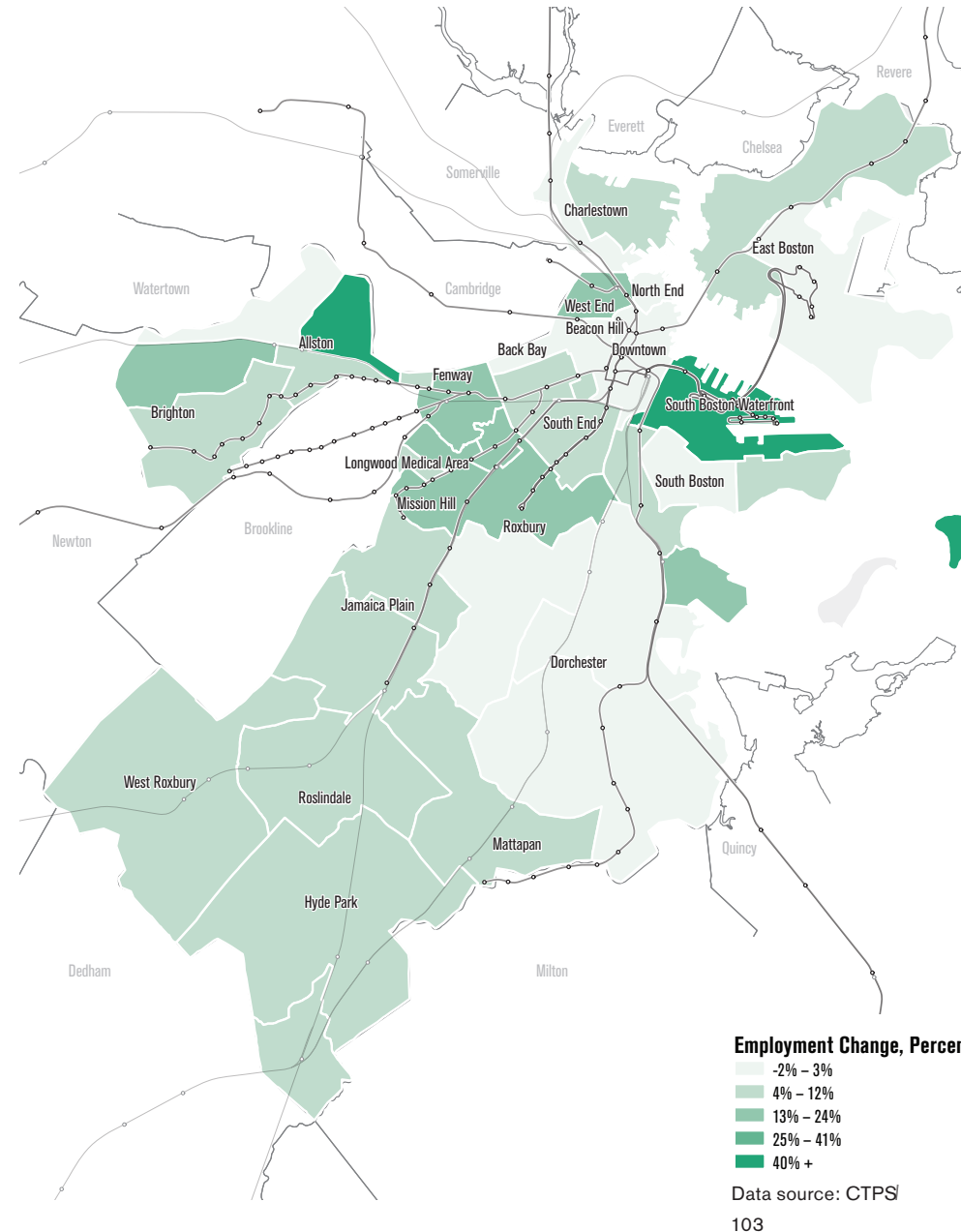
Commonwealth Avenue/North Beacon Street and Cambridge. In addition to new train stations for commuter rail service, more frequent rail service and improved radial bus connections are also needed.

The West End and the area around Bulfinch Triangle are well-served by North Station and the Charles River bike path, but these connections only

benefit northern commuters. To support the projected job growth in the West End, connections from the south are needed including transit connections from South Station, the Blue Line, and Silver Line. A cycle track is under construction on Causeway Street, but protected bike connections to and through downtown are needed to improve cycling access from most Boston neighborhoods.

Much of the remaining projected job growth will occur in the existing commercial neighborhoods that lie within a triangle between North Station, South Station, and the Fenway—areas well-served by the historic subway system. The only other notable job growth area is at Columbia Point near UMass-Boston, where cross-town transit connections and safe bicycle access from Dorchester and Roxbury need improvement. Some degree of job growth is also projected in several growth areas selected by Imagine Boston 2030 as concentrations of future development. These include Readville, Widett Circle, and Suffolk Downs, where additional transit service and an extension of the protected bicycle network will be needed to accommodate sustained growth past 2030.

Employment Growth by Neighborhood, 2012 – 2030



Employment Change, Percent

- 2% - 3%
- 4% - 12%
- 13% - 24%
- 25% - 41%
- 40% +

Data source: CTPS

Matt's Trip



Matt lives in the North End. Matt has the kind of trip that wasn't possible 15 years ago, or even five—he walks down the Greenway with his son "Chewie" to take him to daycare and then grabs a Hubway bike to finish his commute to Black Falcon Pier—no matter the weather.

Matt questions whether street signs can be moved from the sidewalk to allow people in wheelchairs, with strollers and/or with groceries to walk on narrow North End streets. For his commute into the Seaport, he would like to see protected bicycle facilities to help him get to work safely.

¹ This land use model falls short of new growth projected by other organizations; however, it should be noted that projected land use often includes many speculative projects and some are likely to be delayed past 2030. Also, net change is calculated after accounting for demolition or conversion of existing floor area. Therefore, the total new growth is likely to be larger than the net change, especially in districts with large amounts of industrial or obsolete buildings.

The CTPS Regional Model

Projections of future population growth can be influenced by a wide variety of factors beyond the control of the City, from simple decisions by local property owners to the unpredictable effects of global policy changes. Developers, institutions, municipal government, the State, banks, universities, and the Federal government all project different numbers for how Boston might change over the next 15 years. The Boston region is fortunate to have a single agency, the Metropolitan Area Planning Commission (MAPC), which works to reconcile these disparate voices and project growth in a balanced manner. For Go Boston 2030, MAPC's projected growth for 2030 was used given the regional nature of Boston travel; however, future growth may exceed or be less than these projections.*

Anticipating Growth

Go Boston 2030 land use model, net change in nonresidential square footage, 2010 – 2030

	Other Possible Growth Projections
Seaport	8,820,000
Longwood Medical Area (LMA)	3,770,000
All Boston (including areas above)	32,862,686

* MAPC noted that its model falls short of the new growth projected in the Seaport and the LMA; however, projected land use often includes many speculative projects, and some are likely to be delayed past 2030. Also, net change was calculated after accounting for demolition or conversion of existing floor area. Therefore, the total new growth is likely to be larger than the net change, especially in districts with large amounts of industrial or obsolete buildings that will be removed.

² South Boston Waterfront Sustainable Transportation Plan, 2015. Retrieved from www.massdot.state.ma.us/Portals/17/docs/Studies/SBostonWaterfrontFullReport_jan2015.pdf

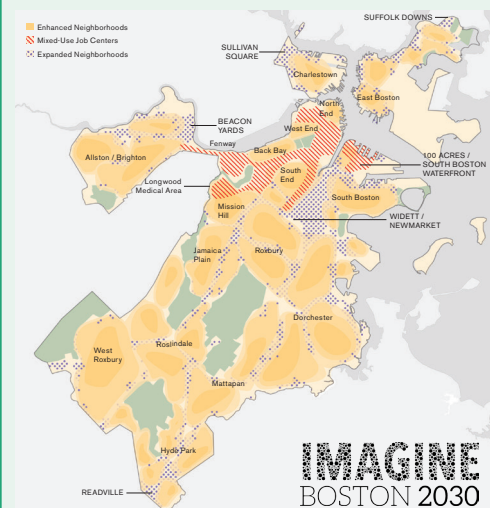
³ MASCO, Annual Report FY2015, Retrieved from www.masco.org/system/files/downloads/masco/masco_annualrpt_fy2015_final.pdf

Targeted Mixed-Use Growth Areas

Imagine Boston 2030 outlined three types of growth for different areas of the city.

Existing Neighborhoods → Enhance Neighborhoods

In predominantly residential neighborhoods, improvements to the public realm and context-sensitive new construction will be focused on neighborhood vitality, local services, and housing affordability. Investments should enhance the quality of life in the community, increase access to opportunity, and affirm a distinct sense of neighborhood identity.



Commercial Core → Encourage Mixed-Use Cores

In industrial, institutional, and commercial centers where walking and transit use are already supported and dense, high rise buildings fit into the fabric, growth will continue to densify. Mixed-use buildings and districts will foster a mix of job and housing growth while providing sufficient amenities to support residents, workers, and visitors.

These areas are constrained today and will require significant transit investments to serve the concentrated mixed-use developments that are underway and planned:

- Beacon Yards is near but not connected to one of the most congested bus corridors in Boston and to the B Green Line.
- The South Boston Waterfront relies mostly on the Silver Line, which is nearing capacity.
- The Newmarket/Widett area is primarily served by local buses with infrequent commuter rail service.

These areas are served by transit today, but they lack adequate connections for people traveling on foot and by bike:

- Sullivan Square is served by the Orange Line and 12 bus lines but it is difficult and unpleasant to walk to or from Charlestown.
- Suffolk Downs is served by the Blue Line, but like the rest of East Boston, people cannot walk or bike to the rest of the city without a circuitous trip on unfriendly bridges.
- Readville has regular commuter rail service, but does not have protected biking connections to most other neighborhoods.

⁴ Adapted from Imagine Boston 2030 Expanding Opportunity DRAFT p.24

Planning in the Seaport

The **South Boston Waterfront Transportation Plan** projected growth, identified capacity constraints, and provided a detailed needs assessment for the area. The principal objectives of the recommendations included in the plan included:

- Improve regional access—improve connectivity to the regional highway system that could reduce travel delays and the number of vehicles that are diverted from the regional highway system to the local street network
- Expand community connections—improve the connectivity between the waterfront and adjacent communities such as the traditional South Boston neighborhood and the South End
- Enhance internal waterfront mobility—improve the connectivity between key destinations within the Seaport district
- Improve public realm—make improvements to the physical environment that are visible and accessible to the public throughout the district
- Implement supportive management strategies and policies—improve the strategy and policy decisions that affect transportation infrastructure within the district
- Maintain a state of good repair—ensure that all capital assets are fully functioning and are rehabilitated or replaced before the end of their design life

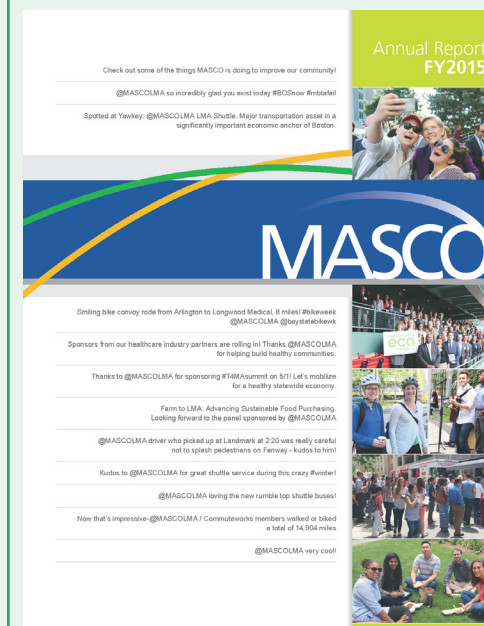


Specific recommendations included transit, street, pedestrian, and bicycle strategies. Go Boston 2030 incorporates key findings and projects from the plan, focusing on those that best meet the goals and targets outlined in the Vision.

Planning in the Longwood Medical and Academic Area

MASCO, a non-profit supported by Longwood Medical and Academic Area (LMA) institutions, pursues programs that promote a sense of community among its members for the benefit of those who live, work, study, or receive care in the area.

MASCO estimates that over 46,000 people from throughout the state work in the district and generate over \$134 million in income tax revenue each year. In its 2015 annual report, MASCO highlights how the area is in the process of growing significantly by 2030 and identifies transportation challenges that will need to be addressed in order to sustain growth beyond the capacity of the robust existing shuttle service. They recommend particular transit investments including the use of a federal grant to expand Ruggles Station and the development of a transit hub within the district. MASCO is also addressing issues such as winter weather conditions, truck deliveries, and the need to maintain a safe walking, bicycling, and driving environment. Go Boston 2030 has incorporated key transportation strategies identified by LMA institutions and include them in its project and policy recommendations.



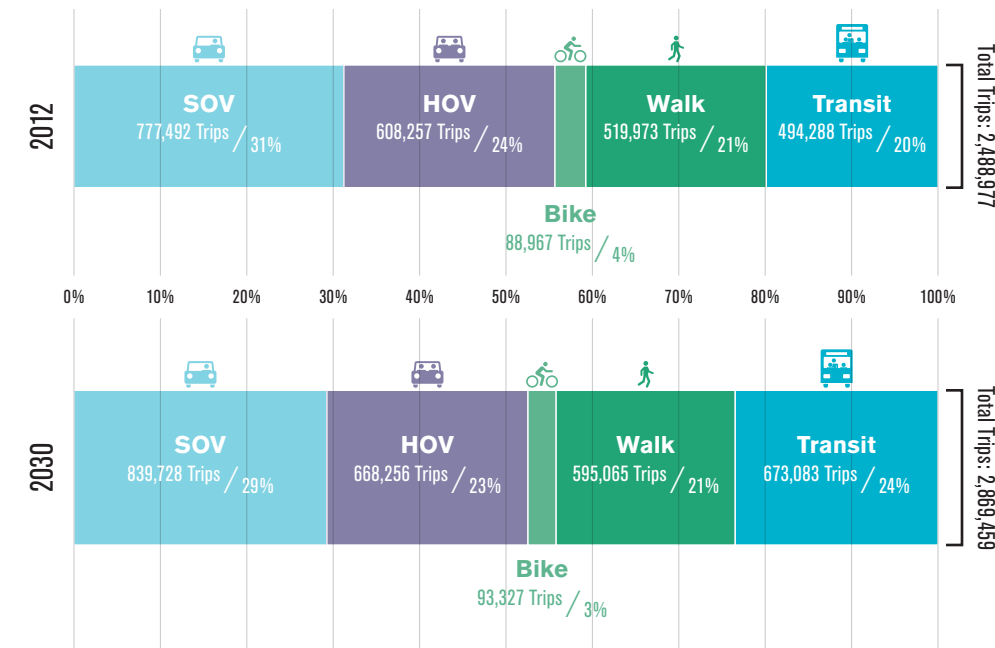
Changing Travel Patterns and Modes

Boston's transportation systems need to be prepared for the increased number of residents, workers, and trips projected for 2030. Drawing on data from travel surveys, land use projections, socioeconomic trends, and calculations of travel times and delays, the regional travel model estimated how people might choose to travel between home and work, school, errands, and other destinations in the future.

For 2030, the regional travel model projected that the number of daily trips originating in Boston each weekday will increase 15% from about 2.5 million to almost 2.9 million, with about half of these trips ending in places outside of the city. According to the projections, nearly a quarter of all daily trips will be on transit. If the ratio of commute trips to daily trips remains constant into 2030, 41% of all Bostonians will commute on transit, 37% will drive alone, and only 2% will ride a bicycle—all well below the targets for 2030. Go Boston 2030's projects and policies must shift nearly 400,000 trips per day from single occupancy vehicles to another mode in order to achieve the targets laid out in the Vision Framework for 2030.

Overall, daily trips originating in each neighborhood are projected to increase, and many of those new trips are forecasted to be on transit. The absolute number of trips on bicycles is expected to increase in most neighborhoods outside of Boston's inner core, such as Roxbury, Jamaica Plain, and Hyde Park. The model shows almost all neighborhoods producing an increase in overall trips in private vehicles, with the exception of the North End, Downtown, and Back Bay.

Daily Trips Originating in Boston



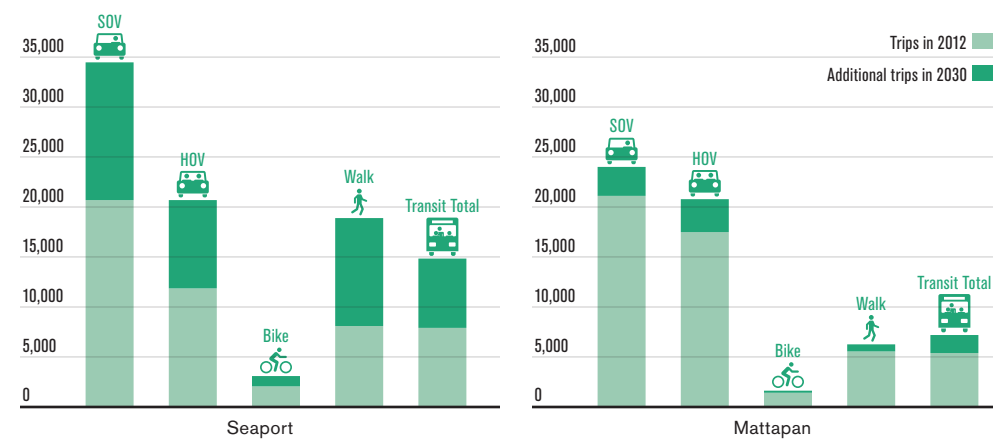
According to the CTPS regional model, the share of trips in private vehicles will decrease slightly from 56% to 53%, but the absolute number of people traveling in private vehicles will increase by 2030 unless the City can significantly change travel patterns.

Data source: CTPS

Growth in Total Number of Trips for Each Mode by Neighborhood

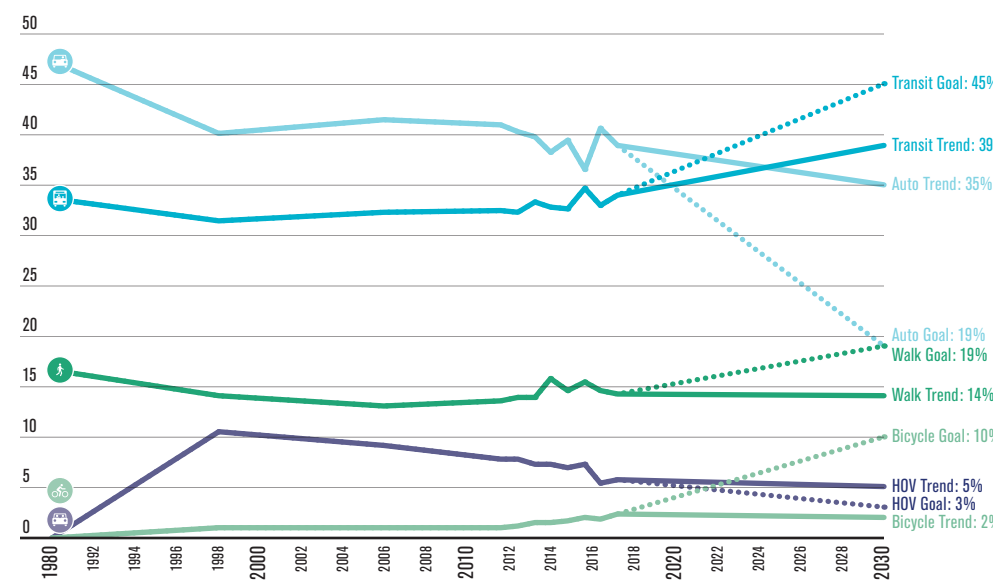
	SOV	HOV	Bike	Walk	Transit	Total Person Trips
Allston	7%	8%	8%	17%	45%	17%
Back Bay	-2%	1%	-3%	5%	32%	10%
Beacon Hill	1%	0%	-7%	14%	28%	13%
Brighton	8%	11%	13%	15%	38%	15%
Charlestown	4%	7%	5%	8%	30%	12%
Dorchester	7%	11%	6%	11%	37%	13%
Downtown	-3%	0%	-4%	14%	26%	10%
East Boston	6%	9%	-3%	33%	24%	14%
Fenway	9%	6%	6%	7%	43%	15%
Hyde Park/Readville	10%	16%	11%	4%	22%	12%
Jamaica Plain	9%	11%	10%	11%	36%	14%
LMA	9%	7%	11%	7%	38%	14%
Mattapan	14%	19%	15%	13%	33%	17%
Mission Hill	14%	12%	14%	16%	43%	21%
North End	-1%	-2%	-8%	18%	24%	10%
Roslindale	8%	12%	5%	-4%	35%	11%
Roxbury	13%	14%	10%	19%	46%	20%
Seaport	67%	74%	50%	133%	88%	82%
Southie	9%	9%	5%	20%	48%	18%
South End	6%	6%	3%	19%	44%	18%
West End	6%	6%	6%	22%	42%	19%
West Roxbury	5%	9%	1%	-4%	31%	7%
Boston Average	8%	10%	5%	14%	36%	15%

Change in Daily Trips, 2012 – 2030



The number of daily trips originating in the Seaport is projected to increase significantly. Without infrastructure improvements, modeling shows that many of these new trips will be in private vehicles; however, the projected demand for walking and transit is also significant. The City will need to work to shift more of the vehicular demand to these modes, as well as bicycling. In contrast, overall trips in Mattapan are projected to increase only slightly, but most of the increase will be trips in private vehicles.

Bostonian Commute Mode Share Trends and Goals (percent)



If commute trips change proportionally to daily trips in 2030, Boston will not reach its commute mode share goals without new policies and projects. Commutes in single occupancy vehicles and by carpool are projected to decline slightly but are not anticipated to meet the target of decreasing by half. In the meantime, transit trips are projected to increase slightly but not by the target increase of one third. Bicycling trips as a share of commute trips may even decline rather than increasing by the target magnitude of 400%.

Change in Daily Mode Share by Neighborhood

	SOV	HOV	Bike	Walk	Transit
Allston	-3%	-2%	0%	0%	4%
Back Bay	-2%	-2%	0%	-1%	6%
Beacon Hill	-2%	-2%	-1%	0%	5%
Brighton	-2%	-1%	0%	0%	3%
Charlestown	-2%	-1%	0%	-1%	4%
Dorchester	-2%	-1%	0%	0%	3%
Downtown	-3%	-2%	0%	1%	4%
East Boston	-2%	-1%	-1%	3%	2%
Fenway	-1%	-1%	0%	-3%	5%
Hyde Park/Readville	-1%	1%	0%	-1%	1%
Jamaica Plain	-2%	-1%	0%	0%	3%
LMA	-1%	-1%	0%	-2%	4%
Mattapan	-1%	0%	0%	0%	1%
Mission Hill	-1%	-2%	0%	-1%	4%
North End	-2%	-2%	-1%	2%	3%
Roslindale	-1%	0%	0%	-2%	2%
Roxbury	-2%	-1%	0%	0%	4%
Seaport	-3%	-1%	-1%	5%	1%
Southie	-2%	-2%	0%	0%	4%
South End	-2%	-2%	-1%	0%	5%
West End	-3%	-2%	0%	0%	6%
West Roxbury	-1%	1%	0%	-1%	1%
Boston Average	-2%	-1%	0%	0%	4%

Overall, all neighborhoods are projected to have a decrease in their daily vehicle mode share, with almost all seeing an increase in the share of trips on transit. The share of people walking in the Seaport daily is expected to grow significantly.

Changing Travel Patterns and Modes

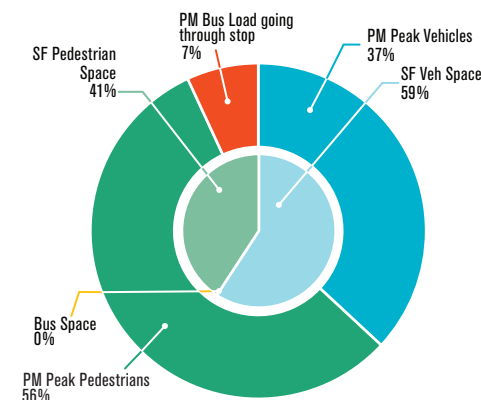
Walking

Projections

The regional travel model projected that walking trips beginning in Boston will increase by 14% to become 21% of all daily trips by Bostonians. The Go Boston 2030 aspirational target set the goal of increasing the proportion of commute trips made entirely on foot by nearly 50%.

Walking is an essential mode of travel in Boston for many trips, and the model shows that almost 90% of transit trips in Boston will be taken by people who walk to a transit stop. Moreover, even people who drive to destinations become pedestrians once they have parked their car, so an emphasis on improving walking conditions across the city benefits everyone.

Water Street at Congress/Pearl PM Peak Volumes and Dedicated Street Space Today



Bicycling

Projections

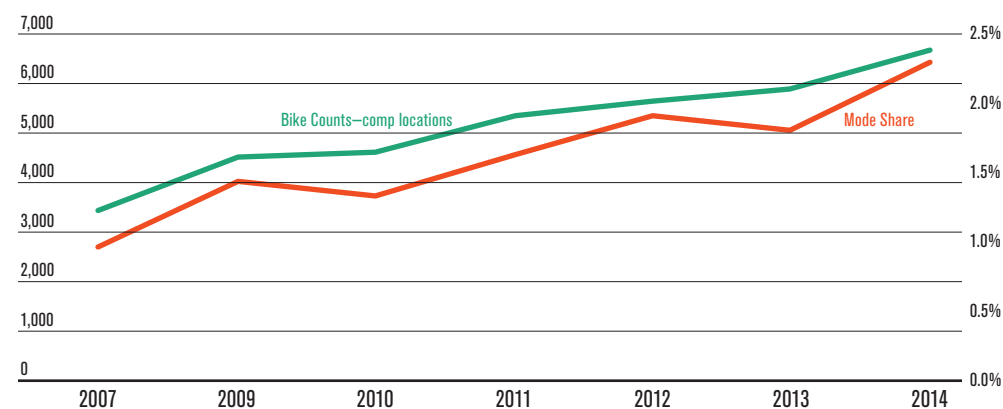
Bicycling is projected to grow to just under 3% of all trips originating in Boston according to the regional travel model. If projected growth aligns with the rates today, this means that only 2% of commute trips will be by bicycle in 2030. This is minimal compared to the Go Boston 2030 target, which set the goal of a fourfold increase in bicycling to 8% of all commute trips. The increase in bicycling over the past few years—particularly in neighborhoods such as Jamaica Plain, which already has a mode share of 6%—does suggest that it is reasonable to expect a steeper rate of growth than what was projected by the model.

Where Actions Are Needed

Although Boston has basic walking infrastructure such as sidewalks, crosswalks, and pedestrian signals in every neighborhood, additional improvements need to be made. This is particularly true for access to Boston's Main Streets districts. The continued prioritization of improved safety for walking is a major focus of Boston's Vision Zero initiative and of the Green Links initiative that connects neighborhoods to the city's greenways and parks. The City needs to ensure that pedestrians are safe walking on sidewalks and crossing streets, particularly during and after snow events, at rush hour, and in places where vehicle traffic dominates the speed and design of intersections and roadways.

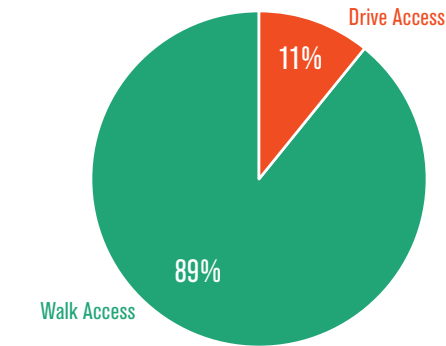
Road space is not always allocated proportionately amongst road users. In many places in Boston, pedestrians outnumber vehicles, as is evident at Water and Pearl Streets downtown, but capacity is still oriented towards vehicles.
Data source: Congress Square PNF 2014 Counts, 2012 MBTA Load Profiles

Boston Bicycle Counts vs. Mode Share



Each year, Boston Bikes' volunteers count people on bikes at locations throughout the City. The counts are increasing at a similar rate to Boston's mode share, showing that more and more people are choosing to travel by bicycle each year.
Data source: 2007 – 2009 ACS 3-year estimates, Census 2010, 2011 – 2014 ACS 1-year estimate. Boston Bikes.

2030 Access to Transit Trips by Mode



In 2030, almost 90% of all transit trips will be accessed by people on foot.
Data source: CTPS

Where Actions Are Needed

Boston can attract more bicycling trips by creating a citywide network where people of all ages feel safe and secure on bicycles. While Boston's off-street bike path network is extensive compared to most cities, it has critical gaps that need to be resolved by protected on-street links. For example, the Southwest Corridor connects portions of Jamaica Plain, Mission Hill, and Roxbury to the Back Bay, but it lacks connections further into Downtown. This protected path needs extensions south to the Neponset River and north to the West End. The paths along the Charles River are a great resource for the Back Bay and Beacon Hill, but connections to Allston, Brighton, and Downtown are indirect. Significant portions of Dorchester and Mattapan do not have protected bike lanes to connect residents to adjoining neighborhoods or to facilitate commutes into Downtown. These neighborhoods need protected bike routes that link the Emerald Necklace through Dorchester to Boston Harbor, make it easier to access rail stations along the Fairmount Line, and connect to jobs in the LMA and Seaport. Finally, bike improvements are needed along streets with significant bicycle and vehicle traffic such as Massachusetts Avenue.

Significant portions of Dorchester and Mattapan do not have protected bike lanes to connect residents to adjoining neighborhoods or to facilitate commutes into Downtown.

The continued expansion of the bikeshare network into Boston's neighborhoods and additional education and enforcement around safe driving and riding are needed to comprehensively support the growth of cycling.

Shared Transportation

Projections

Shared rides in a variety of forms are a rapidly growing option for getting around—new ride-hailing services, pop-up shuttles, and carpool services are emerging to leverage technology and offer expanded choices for commuting and other trips. While the regional travel model accounted for some trips by ride-hailing services, such as traditional taxis or smartphone app “hailed” rides, it lacks metrics for making a strong prediction about how these services, or fully autonomous vehicles, will impact Boston and the surrounding region. The best data from national sources suggests a range of adoption rates for these new travel options, so the regional travel model assumed that the growth of these services would increase the average number of people riding in each vehicle and therefore could contribute to easing congestion.

Where Actions Are Needed

To help alleviate congestion impacts in the Seaport and other job centers, policies that incentivize more shared travel are needed to increase the average occupancy of every car. For example, as the number of automobile trips to the Seaport is projected to grow, the model suggests that a significant portion of the trips could have two or more people per car. Today, carshare and ride-hailing services are mostly concentrated near Downtown where shorter and more frequent trips are made, but in order to increase vehicle occupancy and alleviate congestion across the city, these services need to reach out further to Boston's neighborhoods where work trips originate. Ride-hailing and carshare need to serve neighborhoods equitably to expand driving alternatives to more neighborhoods. Pop-up shuttles and carpools need to connect with pockets of workers in places such as Dorchester, Hyde Park, Mattapan, Roslindale, and West Roxbury who lack direct transit connections to workplaces outside of downtown in order to fill gaps in areas where larger transit solutions are still evolving. As autonomous shared services emerge, City policies need to incentivize higher vehicle occupancy rates so they do not worsen congestion thereby passing on the savings to residents in a manner that serves all of Boston's neighborhoods equitably.

Regional Travel into Boston

Boston is the economic engine of the region and is interconnected with the surrounding communities. The city's economic success depends on ensuring transportation access for its residents and for the people making nearly one million work and non-work trips that cross municipal boundaries into Boston over the course of every weekday.

Regional Projections

By 2030, the number of daily trips into Boston from the region is projected to increase by 6%, to a total of

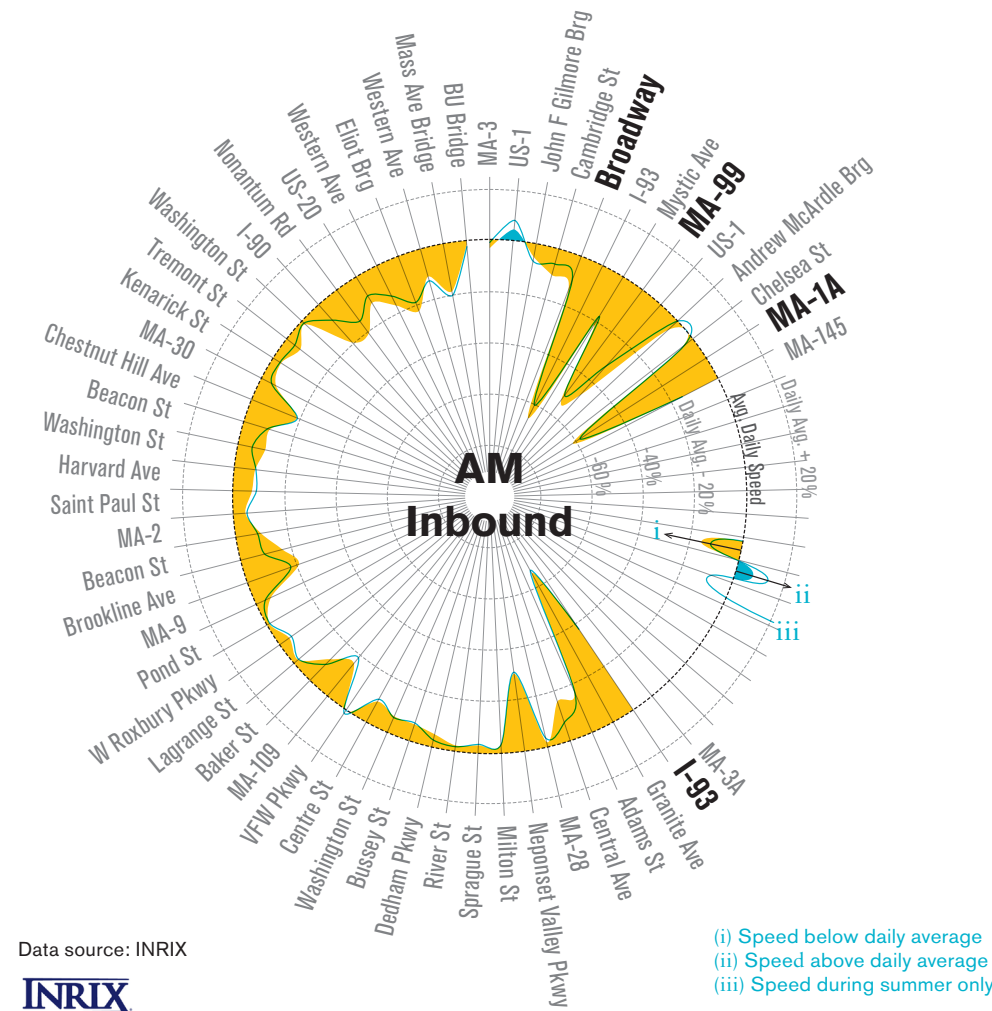
By 2030, the number of daily trips into Boston from the region is projected to increase by 6%, to a total of approximately one million.

Over 75% of daily regional trips are projected to originate beyond the neighboring communities of Cambridge, Somerville, and Brookline, making it unlikely that people will travel on foot and potentially challenging to travel by bike. Nearly 70% of daily regional trips are forecasted to be people in private vehicles, while only about 20% will be on transit, compared with 50% and 25%, respectively, for Bostonians. The regional travel model projected that almost half of these vehicle trips will be shared—whether because commuters use carpools, on-demand ride-hailing companies, and other private services, or because other drivers travel with family members or friends while visiting and doing errands.

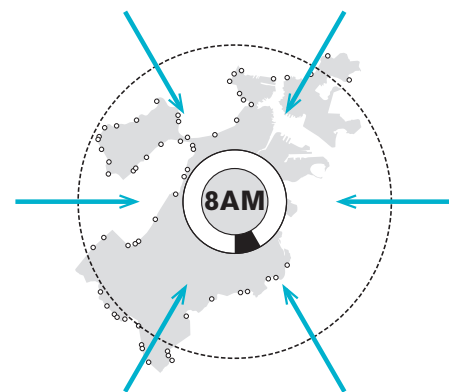
Where Actions Are Needed to Support Regional Travel

In order to combat vehicle congestion and reduce vehicle miles traveled, more regional trips into Boston need to be

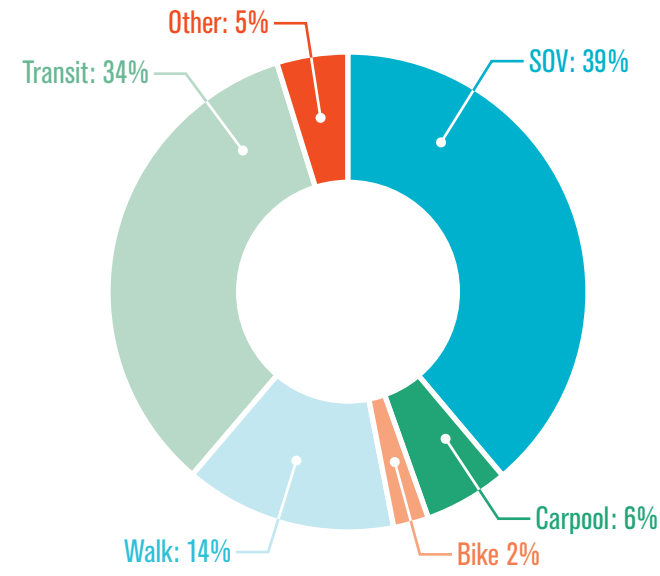
Peak vs. Average Roadway Travel Speed at Select Road Crossings into Boston



made on transit, by bicycle, or by foot. Already, today's peak-hour commutes on regional roads like I-93, I-90, and Route 2 move slowly, and adding more single occupant vehicle trips will only exacerbate the existing congestion. Promoting higher vehicle occupancy rates with more high-occupancy vehicle lanes or shared transportation can help increase effective highway capacity.



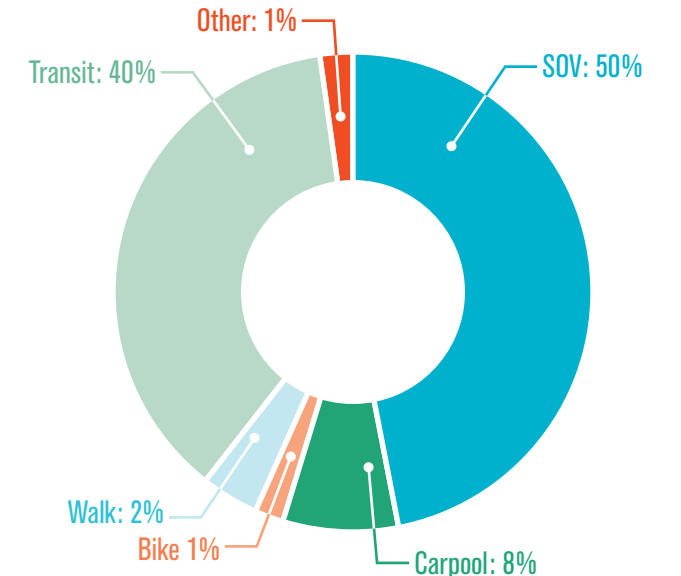
Commutes that Begin in Boston



Data source: 2014 ACS 1-year estimate

New and improved connections from the region into Boston are needed, particularly for access to the LMA, the Seaport, Allston, and Dudley Square. Long protected bike routes for commuters, as well as transit services, need to be improved to these areas. "Last mile connections" that link transit stations within and outside of Boston to homes and jobs are needed to support walking, bicycling, ride-hailing, or carshare as alternatives to driving and parking at transit stations. All of these alternatives to private vehicles must be convenient enough to encourage transit and bike riding. Last mile connections can be particularly important for non-

Commutes into Boston



Data source: 2010 ACS 5-year estimates, via CTPP

commute trips so that travelers know that it will be convenient to reach their destinations outside of peak hours. There are many projects in other municipalities that do not directly connect to Boston and can nonetheless reduce driving trips. Encouraging bicycling connections within bordering cities will help regional travelers embrace this mode for more of their local trips and support long distance commuting into Boston by providing connected and protected routes. Transit improvements beyond Boston are needed to support feeder routes that connect to existing radial lines to Boston. Transit service

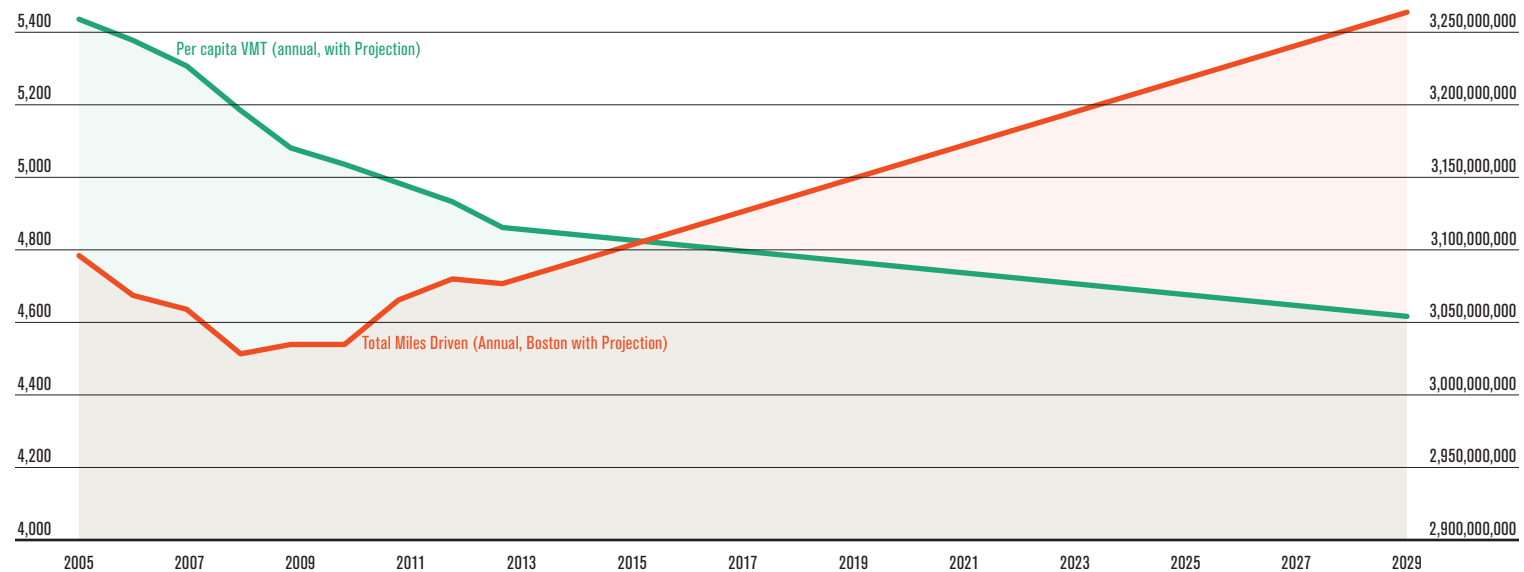
outside the core of the system should be frequent enough off-peak to serve non-work trips and take advantage of existing capacity. Shared transportation improvements and the advent of autonomous vehicles can provide more options for regional travelers where housing density is lower and there is little or no transit service. Supporting a regional approach to strategic transportation investments can enable more trips without a private vehicle. Regional coordination efforts, such as the Lower Mystic Working Group, will be integral to advancing these projects.

More Mileage with Lower Emissions

Boston is vulnerable to climate change impacts that are likely to damage transportation infrastructure and impact travel with coastal flooding, extreme heat, and severe storms later in this century. Studies have determined that if Superstorm Sandy had arrived in Boston during high tide, much of the Seaport, parts of downtown, and segments of the Red Line—approximately 7% of all land area—would have flooded.⁶ Significant reductions in greenhouse gas (GHG) emissions are necessary to reduce the pace of climate change and limit the rate of sea level rise.

In Boston, transportation accounts for over a quarter of the GHG emissions.⁷

VMT Over Time



⁶ Massport, Preparing for the Rising Tide (2013). Boston, MA: Ellen Douglas, Paul Kirshen, Viven Li, Chris Watson, Julie Wormser.

⁷ City of Boston, Greenovate Boston: 2014 Climate Action Plan Update (2014). Boston, MA

Data source: CTPS

To model these emissions, the regional travel model considered a wide range of contributing factors that are likely to evolve over the next 15 years—the use of electric and hybrid cars, improved gas mileage on new cars and trucks with internal combustion engines, and more efficient aircraft engines.

Emissions Projections

According to the regional travel model, the primary GHG emissions in Boston—carbon dioxide (CO₂)—are projected to decrease by 32% by 2030, even as the distance traveled and number of trips increases. Much of this anticipated decline in emissions can be attributed to federally-mandated fuel efficiency standards. CO₂ emissions at Logan Airport in 2030 are projected to be half of what they are today. East Boston, the North End, Back Bay, Jamaica Plain, and Roslindale are also projected to have slightly above average reductions in CO₂ emissions. While these reductions maintain Boston’s long-term progress

towards meeting the City’s internal GHG reduction targets, municipalities outside of Boston will see an average decline of less than 25%—well below projections for what is needed to slow the pace of global warming.

Vehicle Miles Traveled Projections

Even though the percentage of all trips that will be taken by car is projected to decline... the total number of miles traveled on Boston’s roads will increase 5% by 2030...

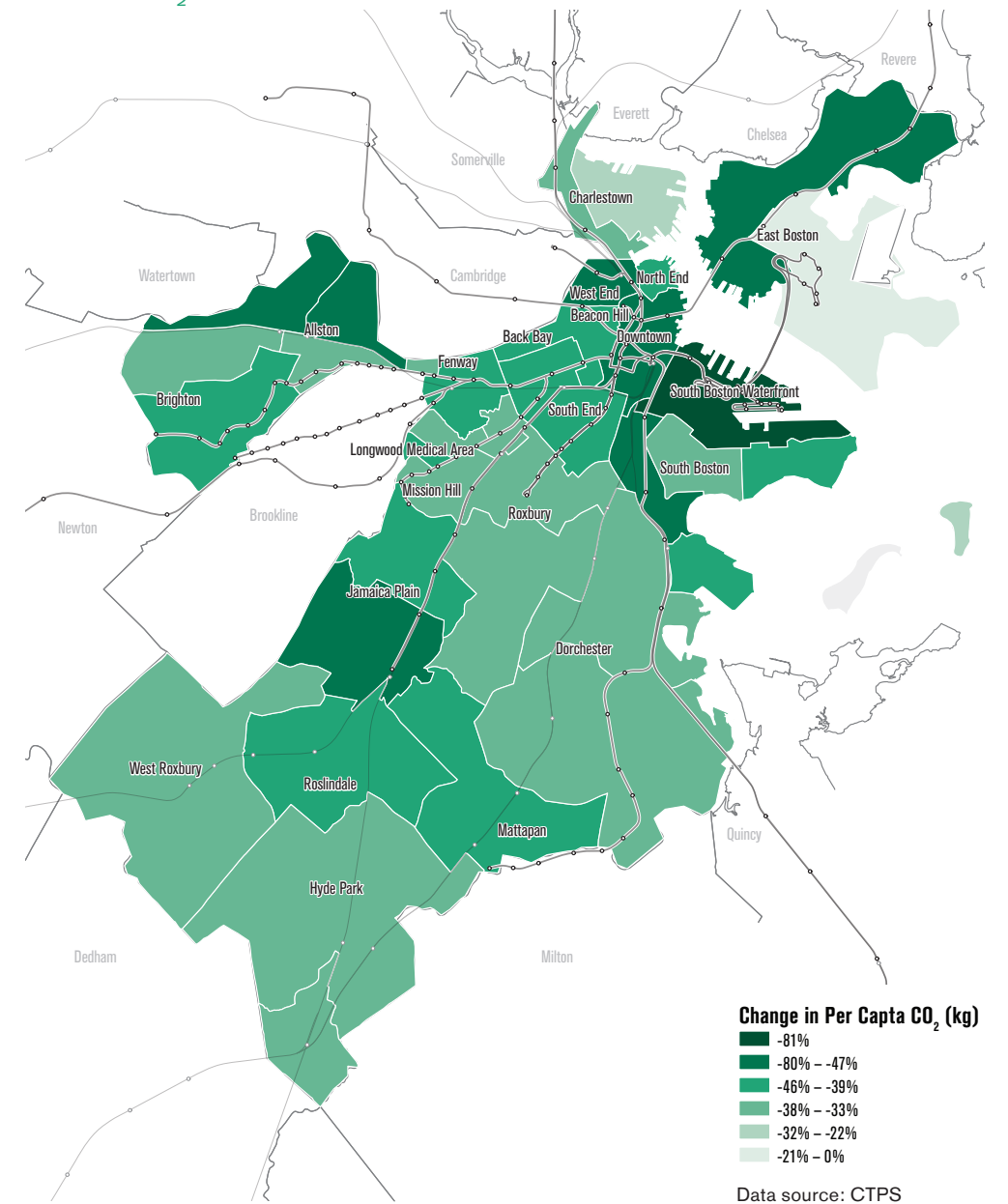
Even though the percentage of all trips that will be taken by car is projected to decline and the average number of miles each person will drive is projected to decrease by 9.4%, data from the regional travel model still showed that the total number of miles traveled on Boston’s roads will increase 5% by 2030 due to overall population and employment growth. This projection

exceeds the Go Boston 2030 target of reducing the total number of vehicle miles traveled (VMT) to a level that is 5.5% below 2005 levels. In particular, VMT to and through the Seaport, Dorchester, Downtown, Charlestown, Allston, Brighton, and West Roxbury is projected to increase, though slight decreases are projected elsewhere. VMT is an issue distinct from GHG emissions because it represents a likely increase in congestion and negative health impacts due to poor air quality. Where VMT increases point to more congestion, this can lengthen travel times and create longer commuting delays on roads like I-93 where speeds decrease sharply at peak times as a result of excessive vehicle demand (see speeds chart on p112).

Where Actions Are Needed

The Go Boston 2030 aspirational targets include the goal of reducing GHG emissions by 25%. While the regional travel model shows that the City can meet this target, the lack of change in the surrounding region offsets Boston’s gains and illustrates the challenge of addressing climate change on a global scale. Boston needs to work beyond its borders to reduce emissions and VMT. The easiest place to start is by supporting low-emission and shared alternatives for regional travel into Boston to reduce the projected proportion of people traveling into Boston in private vehicles. Relying only on mileage improvements and electric vehicle technologies will not compensate for regional population growth if private and single-occupancy vehicles continue to be the primary choice for many travelers. Boston can proactively work with surrounding communities to enhance regional transit connections through improved bus and rail service as well as new stations connecting to Boston’s growing job areas

Boston CO₂ Reduction: 32%, 2012 – 2030



Data source: CTPS

in the Seaport and the LMA. Emerging districts like Widett/Newmarket, Beacon Yards, and Sullivan Square also need transit access that works for regional travelers. Regional cyclists need connections to and between multiuse

paths and bicycle corridors that cross through multiple cities and towns such as the Claire Saltonstall and Minuteman Bikeways.

Meeting Go Boston 2030's Aspirational Targets

The Go Boston 2030 Vision Framework established 35 aspirational targets as benchmarks for improving transportation in Boston in equitable, economically supportive, and climate resilient ways. Each target is associated with one of the nine themes of the Vision Framework and their associated goals. With ongoing community feedback throughout the Go Boston 2030 process and parallel planning efforts, some themes resonated the most with the public: Expanding Access, Ensuring Reliability, Improving Safety, Securing Affordability, Building for Resiliency, and Advancing Transparent Governance.

Go Boston 2030 identified measures for each target so that all of them can be tracked over time, providing a “scorecard” to gauge progress. The aspirational nature of these targets means that not all will be met by 2030, but making progress toward each of them provides a clear direction for future transportation planning and programming as policies are established and projects are funded.

Several targets that represent the most important themes and can be analyzed geospatially to identify clearly defined gaps in Boston’s existing transportation systems were identified as top targets. They have been used to conduct a needs assessment and identify the types of projects and policies that would be most effective in filling the gaps. These priorities can pinpoint needed interventions at multiple scales, from the smallest signal timing decisions to large-scale transit investments.



Expanding Access

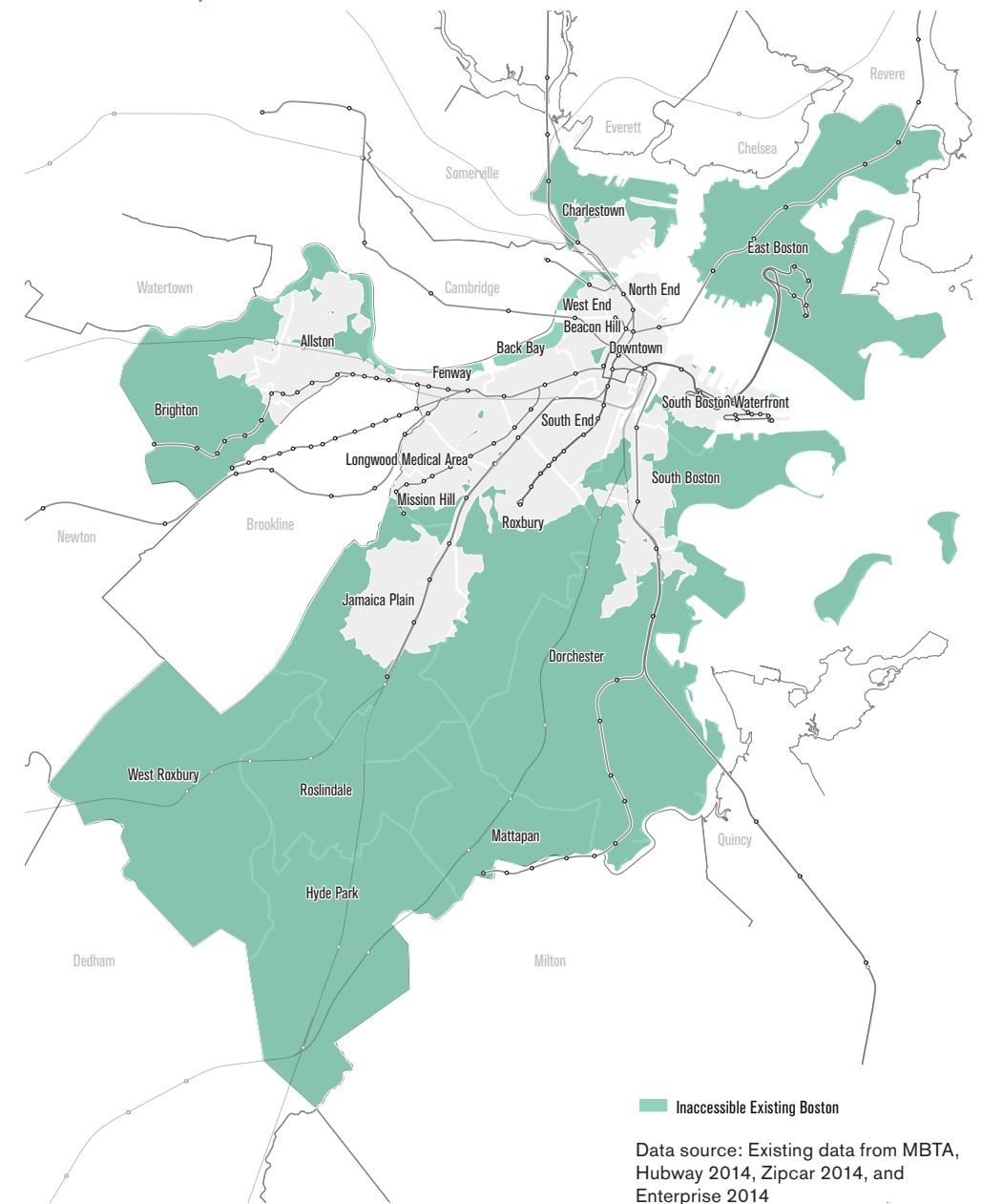
Every home in Boston will be within a 10 minute walk of a rail station or key bus route stop, Hubway station, *and* carshare.

Expanded choices for ways to travel from all neighborhoods are measured by this metric. Bostonians and those traveling within Boston should be able to choose from a range of options depending on their needs at any time of day or year. As of 2014, only 41% of Boston households had access to rapid transit, Hubway, and carshare within a 10-minute walk. These households are concentrated closest to downtown, with some pockets of good access extending into Roxbury, northern Dorchester, and parts of Jamaica Plain. Unfortunately, the majority of Boston’s residents lacked access to at least one of these three alternatives to driving a private vehicle.

Where Actions Are Needed

Most of Brighton and Dorchester, as well as all of South Boston, Hyde Park, Mattapan, Roslindale, and West Roxbury need improved access to rapid transit, bikeshare, and shared vehicles over the next 15 years to meet this target. Even if this target is met by infrastructure, these areas must have good walk access including quality sidewalks and crosswalks in order to make it convenient to access train stations, key bus route stops, and carshare spots. The bikeshare stations need to be linked to protected and connected bike facilities in order to provide access that feels safe for all who want to bike. Co-locating transportation options would allow residents to make travel decisions for each trip based on cost and convenience.

Limited Transportation Choices



As of 2015, only 41% of Boston's households were within a 10 minute walk of a rail station or key bus route, a Hubway station, and carshare.

Ensuring Reliability

Bostonians' average commute to work time will decrease by 10%

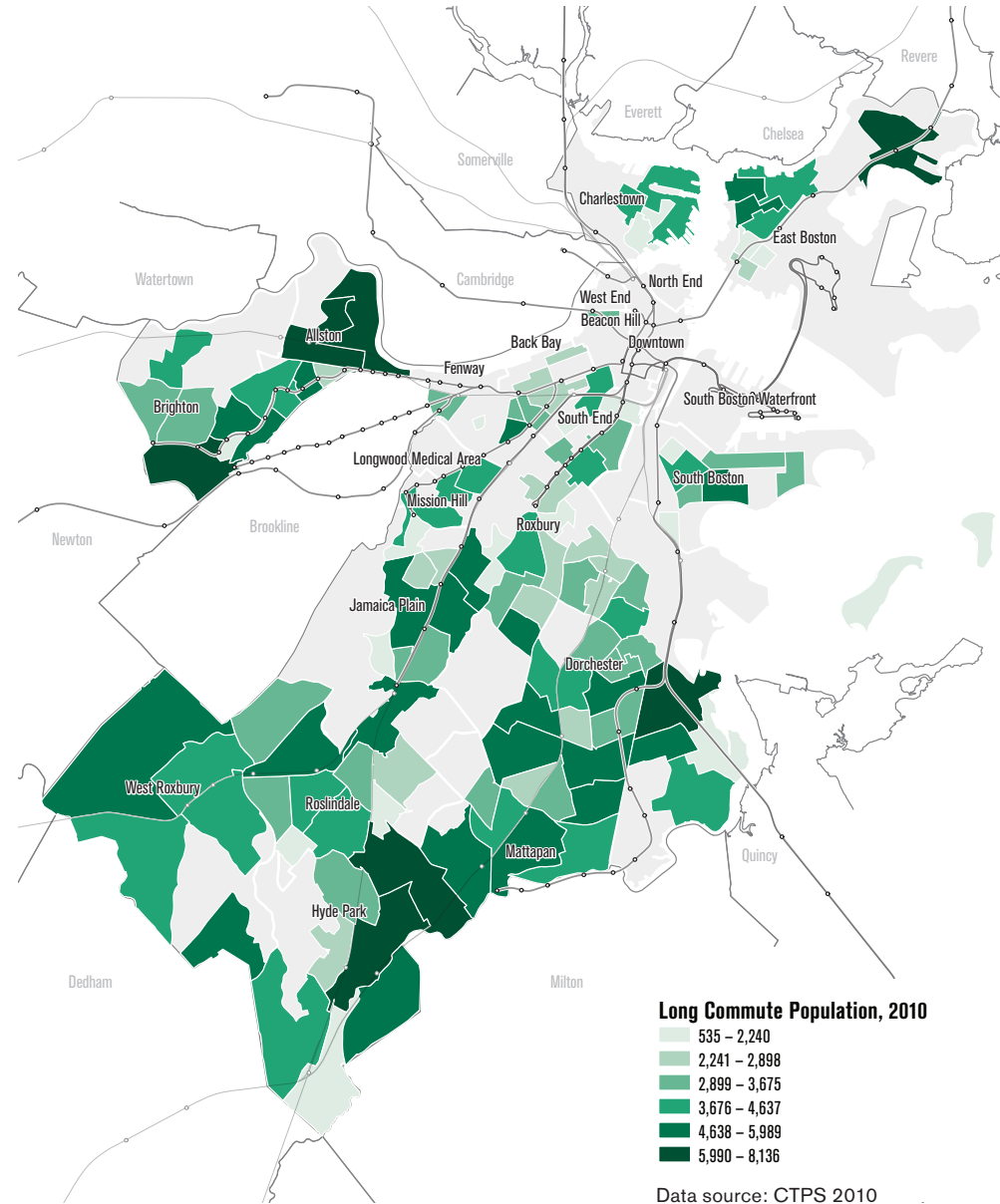
Commuter time is a complex function with many factors—a personal decision weighing time, cost, and experiential qualities. The Go Boston 2030 Share Your Trip with BTD process demonstrated how some people choose to walk across downtown mid-commute to avoid lengthy subway transfers while others spend extra time walking across three legs of an intersection to feel safe while crossing. For some people a long commute is primarily due to vehicle congestion, whether they drive or take the bus, and there are no faster or more reliable alternatives. For others, a longer commute is valuable personal time—a chance to walk or a chance to work on the train, even if an alternative is faster.

Where Actions Are Needed

Inefficient infrastructure and long transfers that lead to commutes that are longer than the current citywide average need to be improved in underserved neighborhoods such as Mattapan, portions of Dorchester, Roslindale, and West Roxbury. Strategies are needed to increase the speed and frequency of transit-reliant commute trips by creating priority bus service separate from congested travel lanes on major corridors and by providing more efficient transfers. Timely transfers are particularly important at key hubs like Forest Hills and Dudley Square where many bus routes come together but wait times vary.

In addition to the time cost of long commutes, this metric has implications for the financial cost of transportation. Roslindale, Dorchester, and Brighton are among the neighborhoods that spend a disproportionate amount of time commuting and their residents also spend a disproportionate share of household income on transportation costs. Despite the fact that these neighborhoods are

Longer than Average Commutes



Today, 72% of Bostonians live in a neighborhood with a longer than average commute.

closer to Boston's job centers than West Roxbury and Hyde Park, these neighborhoods lack direct rapid transit options and have fewer alternatives to personal vehicles. Improved transit

options in each of these neighborhoods are needed along with local connections that can reduce total transportation costs for their residents.

Ensuring Reliability

MBTA customers will experience waits and travel times that are longer than what is scheduled only 10% of the time

Reliability is important to all travelers, though a lack of reliability is particularly stressful for transit users. Today, the average on time performance for buses is 68% and for subway lines it is 87%.⁸ The map below provides an overview of on time performance by bus route.

The MBTA is in the process of overhauling its internal and external reporting and data analysis to improve their performance and share their results more clearly with customers. Tracking this target will be made easier by that process, and reframing the data around

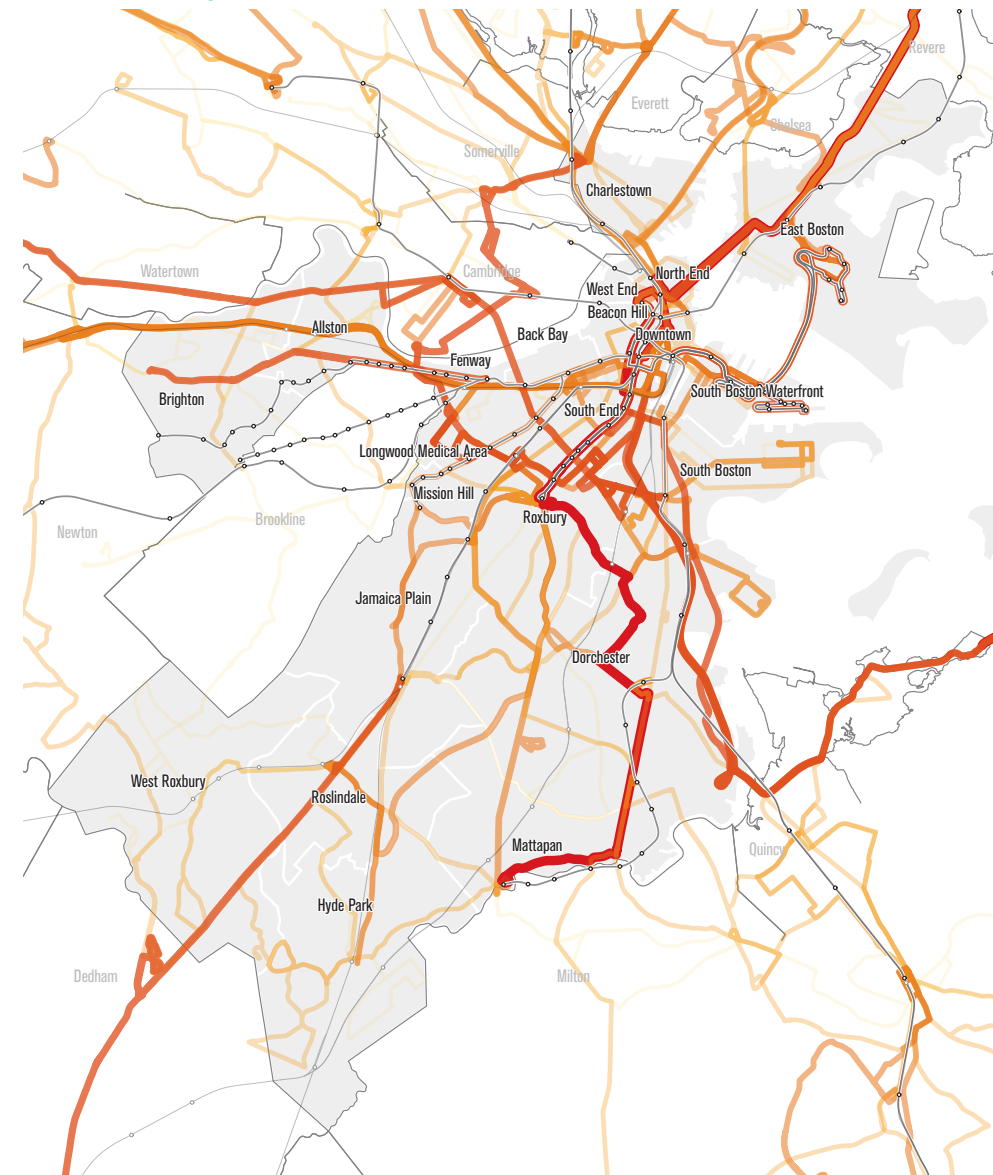
rider experience instead of vehicle location will also shift the focus towards users.

Where Actions Are Needed

Crosstown bus routes near the city center are particularly vulnerable to on time performance issues with delays affecting access to jobs in the Longwood Medical Area, the Seaport, and Kendall Square. Dense development areas like these foster innovation and intra-sector collaboration, and they require transit service that can efficiently move large groups of people in the same vehicle. Reliability improvements along cross-town bus routes and their nearby rail lines will be needed to accommodate job growth in more areas.

Routes across Brighton and Allston, through Dorchester, and on Washington Street leading to Roslindale are also infrequently on time. Residents in these neighborhoods face sluggish and unreliable bus service and have limited rail alternatives. To meet not only reliability targets but also to achieve equity goals, these bus routes need improvements that separate them from traffic congestion, collect riders more efficiently, and ensure that they consistently arrive at regular intervals.

Bus Routes by On Time Performance



⁸ All bus and subway data is from March 1 - December 14, 2016. The bus data tracks how often buses arrive on schedule to key bus stops. Subway data tracks how often passengers waited longer than expected for a train. For more information, see massdot.app.box.com/v/dashboard-data-dictionary

Improving Safety

Eliminate traffic fatalities and severe injuries in Boston

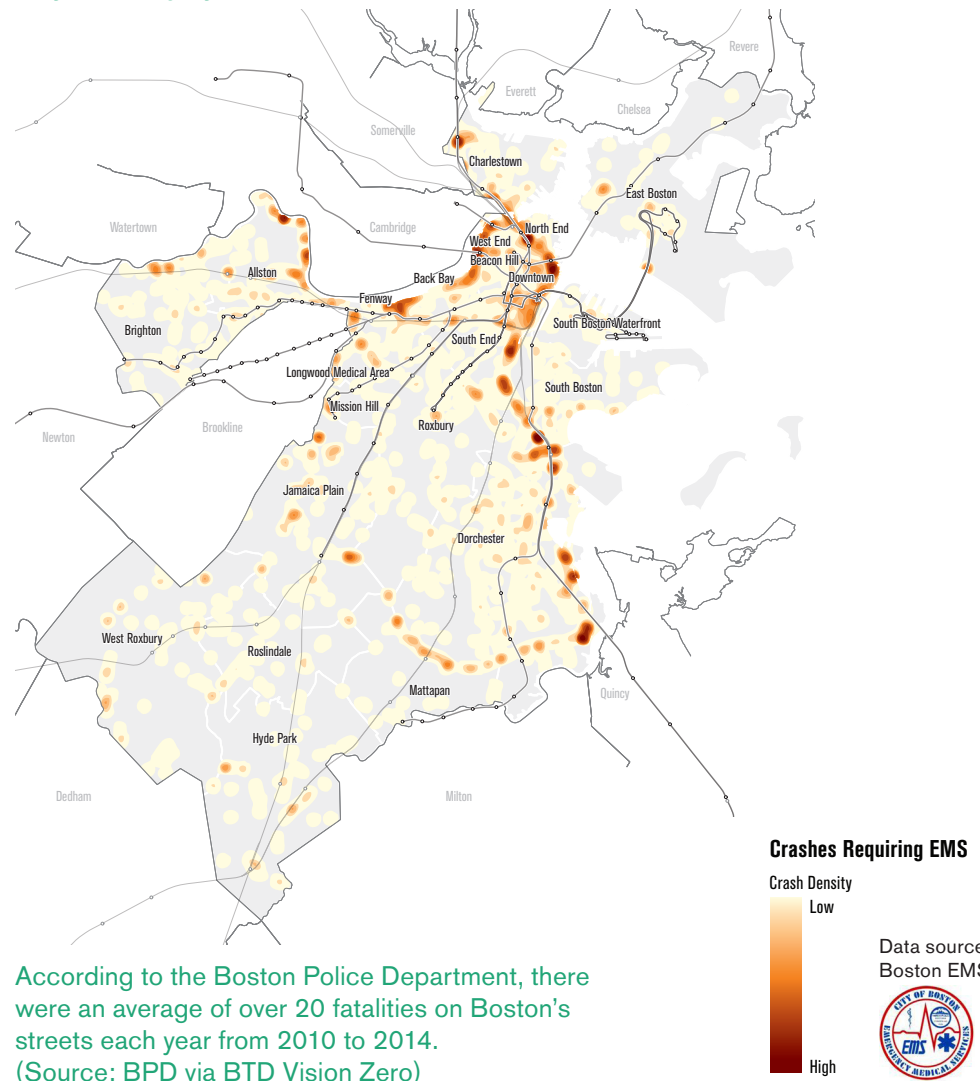
Boston's Vision Zero initiative is our commitment to focus the city's resources on proven strategies to eliminate fatal and serious traffic crashes in the city by 2030. While Boston has a relatively good record on traffic safety compared to many other cities, we see more than 20 fatalities and 200 serious injuries on our streets every year.

BTD, EMS, and BPD collaborate in tracking data from serious crashes and identifying crash "hot spots" or trends. The locations of injury crashes are shared on the Vision Zero website. The map to the right offers a look at citywide injury-related crashes from mid-2014 through late 2016. The Vision Zero Task Force also looks beyond crashes to understand where people feel unsafe on streets and sidewalks. Projects should improve safety and the feeling of comfort for people walking, bicycling, taking transit, and driving on Boston's streets—helping the City meet its mode share and greenhouse gas reduction goals.

Where Actions Are Needed

Every new transportation project in Boston needs to be built with safety in mind. The City will focus resources to improve locations where the highest crash rates occur. Many crashes occur in the busiest parts of Downtown and the Back Bay and on major arterials that run throughout the City, such as Massachusetts Avenue, Blue Hill Avenue, and Columbia Road. Other concentrations of crashes occur around complicated intersections, such as Melnea Cass Boulevard at Massachusetts Avenue, as well as large roundabouts like Sullivan Square. New projects focused on safe design need to prioritize corridors with dense clusters of crashes that have caused fatalities and injuries.

Citywide Injury-Related Crashes for all Modes, Mid-2014 – Late 2016



According to the Boston Police Department, there were an average of over 20 fatalities on Boston's streets each year from 2010 to 2014. (Source: BPD via BTD Vision Zero)

More focused projects are also needed to proactively address locations with a higher numbers of vulnerable people—older adults, children, people walking, people using transit, and people bicycling. These projects need to improve the safety and comfort of streets near elderly housing, schools, parks, and bus stops. Busy commercial areas—including Main Streets districts—need special attention since they have the highest density of people on foot, even

in neighborhoods where most people drive. In addition, education needs to accompany improvements on streets and help create a new culture of safety.

... projects are also needed to proactively address locations with a higher numbers of vulnerable people—older adults, children, people walking, people using transit, and people bicycling.

Improving Safety

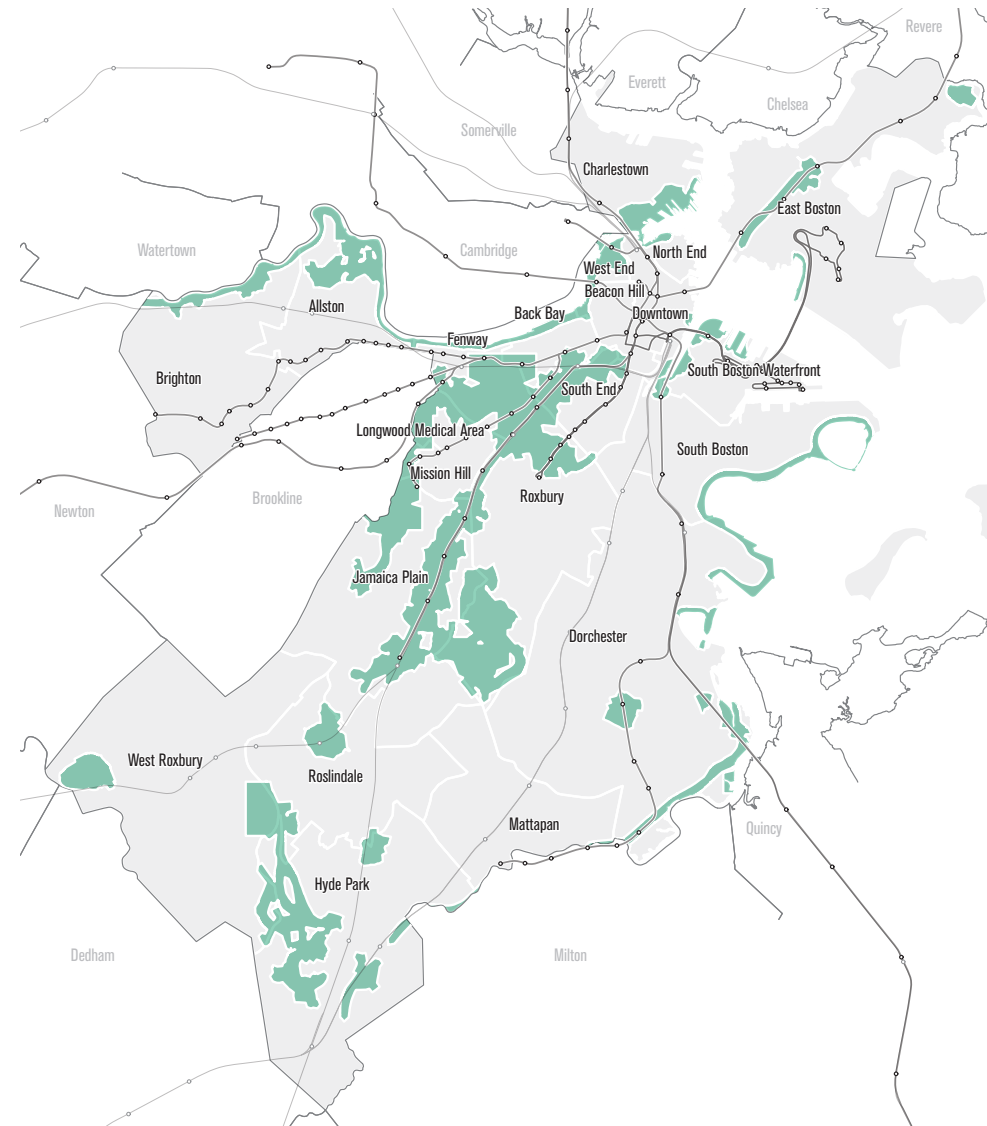
All households will be within a five-minute walk of a protected bicycle facility or shared use path

At every phase of the public engagement process, people emphasized the need for protected bicycle facilities that are comfortable for children and grandparents to ride. Ongoing academic research and engineering practice demonstrate the transformative potential of a network of protected bicycling

infrastructure to improve safety and expand the number of people who use bicycles as a way to travel or for fun. More bicycling helps Boston meet its targets for mode share and greenhouse gas reduction and supports improved public health.

Achieving this target requires improving existing bike routes and constructing new routes, with the aim of equitable access across the city's neighborhoods. A connected network of protected bike lanes, off-street paths, and low-stress local routes will better serve residents who currently bike and those that are interested in biking in the future.

Access to Bicycling Infrastructure, 2015



Today, only 20% of Boston Household are within a 5-minute walk of a protected bicycle facility or shared use path.

Where Actions Are Needed to

Boston has miles of off-street paths, including the Southwest Corridor and the Neponset River Greenway, but most Bostonians do not live near these facilities or other comfortable on-street routes. Additionally, these routes do not often connect to each other. A larger, connected network will allow more people to access Boston's abundant open spaces, waterfront areas, and its current and emerging job areas.

Expansion of protected bike facilities across much of the city is important, with a particular need to provide connections to job centers and open space. Priority improvements include connecting the Southwest Corridor to Downtown, linking the Seaport to South Boston and Downtown, and making bicycle access to the LMA more comfortable. Additionally, new links need to be created for people in Boston's southern neighborhoods. The City and state agencies need to collaborate on creating an equitable, connected system.

Areas within a five min walk of protected bike lane

Data source: Bicycle information adapted from Boston Bikes, August 2015

Securing Affordability

Reduce the transportation cost burden for very low income individuals to the citywide average for a median household

Transportation and housing are usually the two greatest costs for any household. In Boston, the average “transportation cost burden”—the percentage of household income that goes towards transportation costs—is 13%. For very low income households however, transportation costs represent an average of 33% of their household budget. This metric provides a way for Boston to track its investments relative to the benefits that new infrastructure and policies provide to low-income neighborhoods.

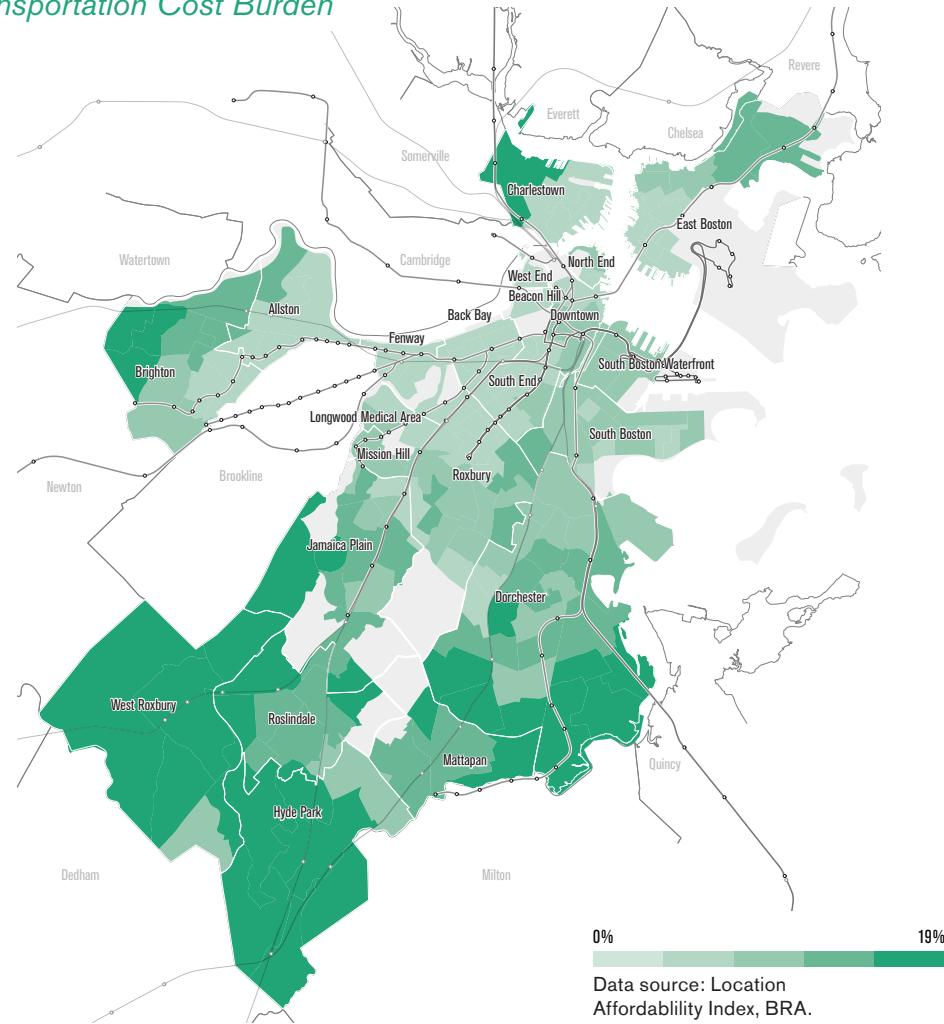
Where Actions Are Needed

To improve equity in Boston, transportation investments and programs need to target low-income populations. The neighborhoods and census tracts where large numbers of households live below the median income tend to be located beyond the reach of the MBTA’s subway

system. These residents are concentrated near the geographic center of the city along bus corridors in Roxbury and Dorchester, extending south to Mattapan and around the edges of Charlestown and East Boston. East Boston stands out as an exception—a neighborhood with good subway service and a significant low-income population.

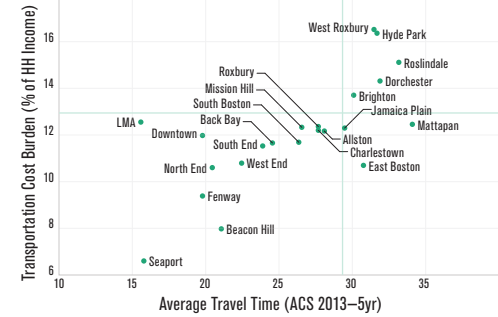
To reduce the transportation cost burden where it is most severe, new transit and

Transportation Cost Burden



cycling infrastructure and significant improvements to existing bus and rail services are needed. Additionally, citywide policies that provide transit fare subsidies or discounts are further needed to mitigate the transportation costs for the households with the highest burden.

Transportation Cost Burden (Percent of HH Income)



Land use planning decisions can also play a role. For example, Imagine Boston 2030’s efforts to expand mixed-use centers beyond Boston’s traditional downtown core with new job and commercial areas can provide opportunities for employment, childcare, shopping, and other essential services closer to homes.

Advancing Transparent Government

A larger share of capital improvement dollars will be assigned to underserved communities to achieve equitable distribution of investment in transportation infrastructure

Boston’s transportation system today reflects many decades of uneven investment across neighborhoods and communities. Piecemeal decisions about what and where to build or rebuild infrastructure are influenced by cost, complexity, and political will. The culmination of these decisions has left many Bostonians without adequate transportation options for generations. This metric seeks to ensure that, rather than simply spreading transportation

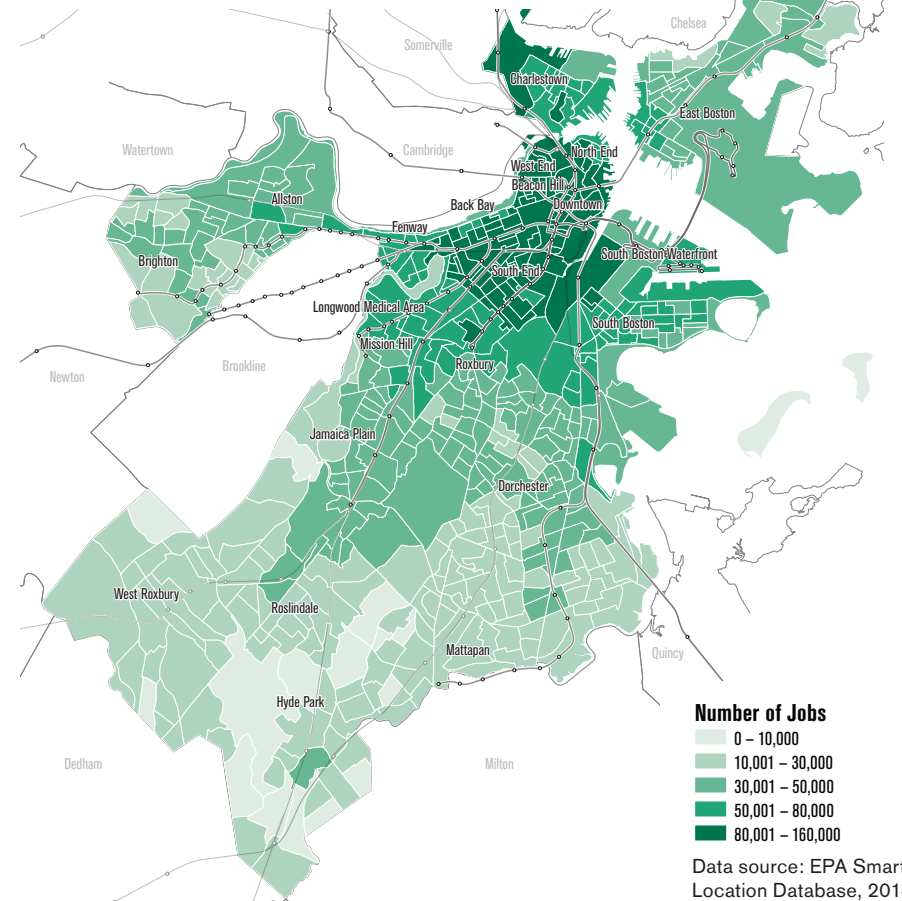
spending evenly across the city in the years to come, transportation improvements are focused on increasing equity by directing investments and services towards those populations that have been chronically underserved.

Where Actions Are Needed

Infrastructure improvements are needed in areas that currently have aging infrastructure, poor transit access, and unsafe conditions. Large portions of

Dorchester, Mattapan, and Hyde Park have no access to either protected bicycling facilities or high-quality transit. Many parts of these neighborhoods have poorly marked crosswalks, outdated traffic signals, and missing sidewalks. Other areas outside downtown with high rates of walking, such as Roxbury and South Boston, have not seen the same level of investment in wider sidewalks, shorter crosswalks, and public plaza spaces as the Back Bay. In order for many of Boston’s existing Main Streets districts and planned mixed-use areas to succeed, a more equitable distribution of transportation investments is necessary.

Jobs Within a 45 Minute Transit Commute



In some instances, transportation investments will be located outside of or adjacent to an underserved neighborhood to improve its connectivity with jobs, amenities, and other communities. For example, Silver Line improvements through the South End and in Downtown are needed to expedite service to and from Roxbury, and other improved bus corridors would similarly serve other neighborhoods. In other cases, investments will be made in policies and programs that expand the affordability and choice of mobility options for an underserved neighborhood. For example, improved transit fare policies and payment tools are needed to provide greater access to transit, ride-hailing, and bikeshare for low-income residents. The City will also need to define clear standards for underserved areas and track which neighborhoods have the greatest need as development and investment reshape the demographics of an evolving Boston.

Building for Resiliency

Reduce greenhouse gas emissions from transportation by 50% of 2005 levels by 2030

About a third of Boston's greenhouse gas emissions today are generated by transportation sources.⁹ Emissions from cars, trucks, buses, and trains account for over five million kilograms of CO₂ emitted annually within the city. Changes in fuel efficiency and continued improvements in vehicle engine technology are projected to greatly reduce the transportation emissions produced within Boston and would enable the City to meet its GHG emissions reduction targets before 2030. Despite these local gains, the surrounding region is projected to offset these gains with a continued reliance on driving.

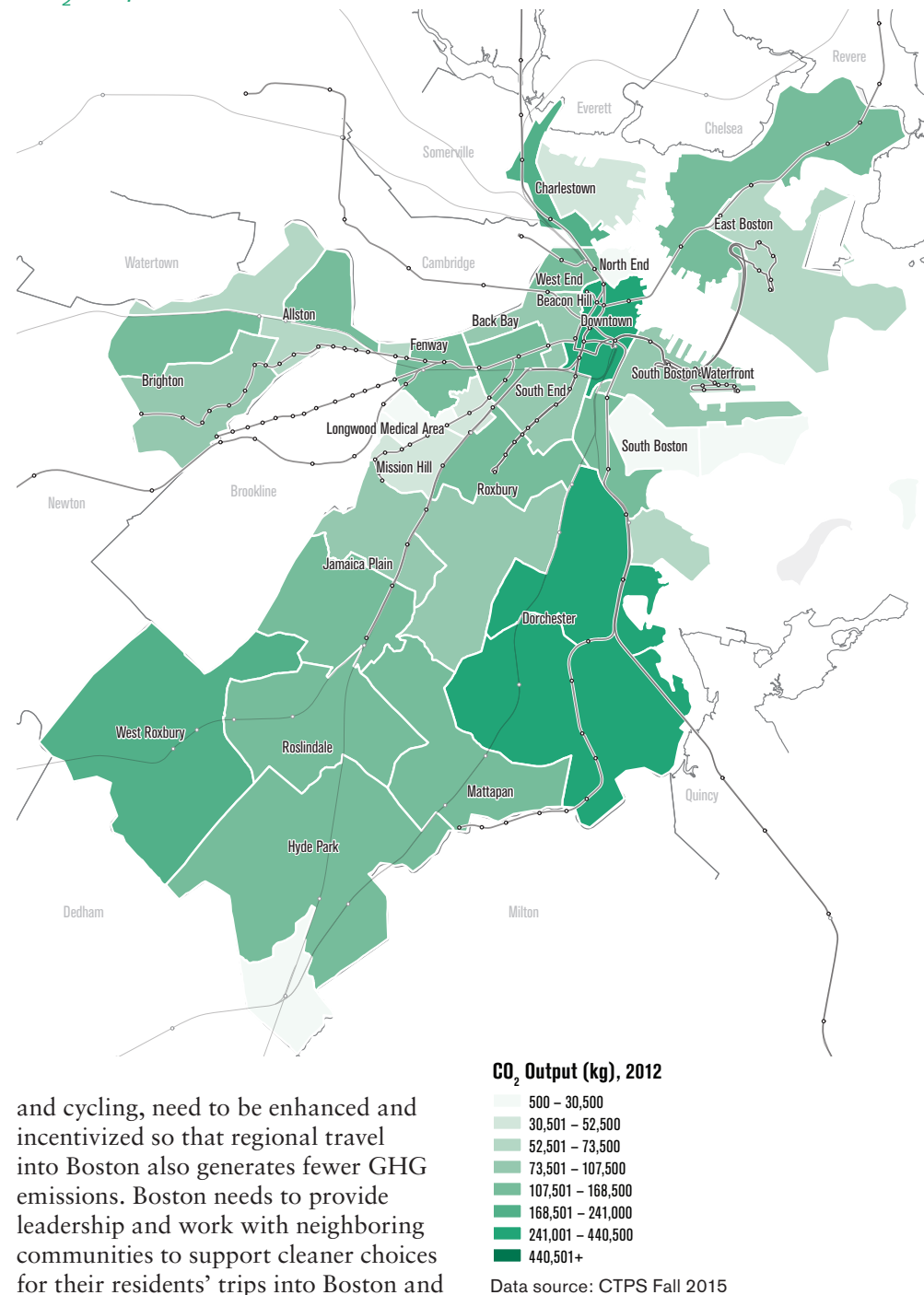
Where Actions Are Needed

To offset the effects of a growing population and achieve the historically low emissions rates needed to curb climate change, shifting people to more efficient or zero-emission modes will be imperative. Although the map shown here indicates the current level of emissions for each area of the city, GHG emissions rates need to decline citywide. Bicycling and walking are zero-emission transportation options, and support for each walk and bike trip is needed.

Electric vehicles also have the potential to reduce total GHG emissions, but expanding their use is not a comprehensive solution since they are recharged using a mix of clean and fossil-fuel-based energy and because they do not reduce driving. Nonetheless, the development of electric vehicles or other alternative fuel technologies for buses and other transit vehicles will make these options even more energy efficient and clean.

Connections into Boston with lower emissions alternatives, like transit

CO₂ Output, 2012



and cycling, need to be enhanced and incentivized so that regional travel into Boston also generates fewer GHG emissions. Boston needs to provide leadership and work with neighboring communities to support cleaner choices for their residents' trips into Boston and around the region.

⁹ Greenovate Boston, 2014 Climate Action Plan Chart Explorer: plan.greenovateboston.org/measuring-progress/chart-explorer/

Building for Resiliency

All transportation systems will be able to operate or have sufficient alternatives during a flood or snow event

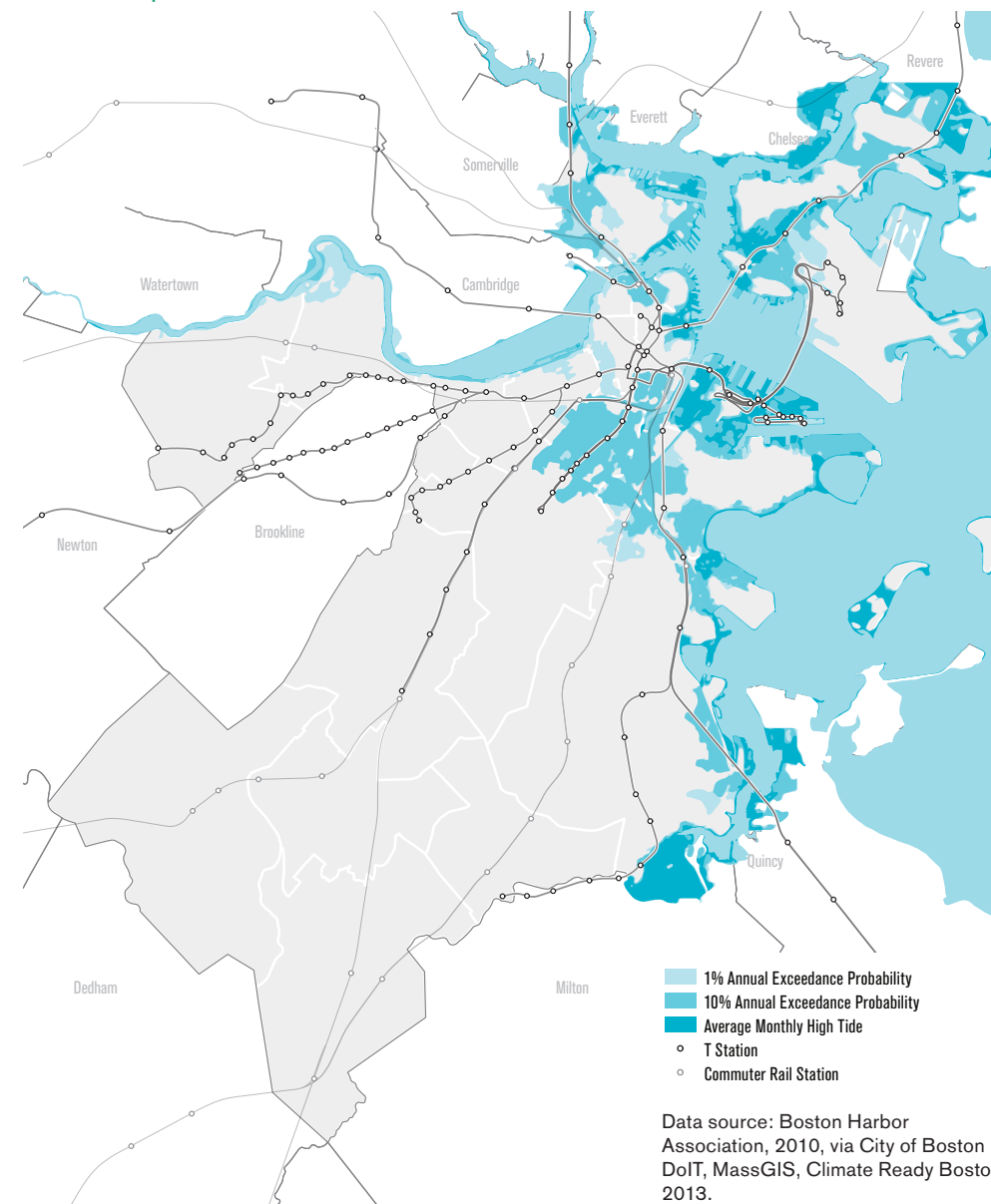
Large storms and very high tides already impact Boston by flooding certain areas of the City, particularly in areas that were constructed on filled land constructed by previous generations. As climate change continues to affect the planet, the frequency and severity

of flooding is projected to continually increase. Boston is leading the country in its examination of the impact of climate change and sea level rise on its shores. The City has led sophisticated modeling exercises to determine the most likely climate scenarios and the transportation

infrastructure that is most likely to be affected. A parallel process by MassDOT is analyzing projected flooding impacts on the Central Artery and harbor tunnels.

The planning process for *Climate Ready Boston* identified the pieces of the street and transit networks that are most in jeopardy of flooding due to rising tides and storm events. The results of this report and other studies will be used to integrate climate aware planning into the design of new and ongoing projects to ensure that they can withstand higher tides and more stormwater.

Flood Map, 36 Inches of Sea Level Rise (2070s or Later)



Where Actions Are Needed

Many stations and track segments on the Blue Line and Silver Line are at risk of flooding in the most likely projections of climate change scenarios. These stations, along with Sullivan Square, JFK/UMass, a proposed Widett/Newmarket stop, and several commuter rail lines, will need to be flood-protected, especially if they are to serve the growing residential and employee populations that are anticipated. Retrofitted stations are needed for heavily used transit lines where passengers on either end of a flooded section would be cut off from the system. This is particularly true for the Blue Line in East Boston, which serves as a lifeline to the city for a transit-dependent population that includes a significant population of low-income residents.

Interstate highways that run through Boston also face significant flood risks, as do arterial links such as Morrissey Boulevard, Tremont Street, and Rutherford Avenue. These roadways need to be retrofitted to include green infrastructure and stormwater accommodations where possible and flood-proofing where necessary.

Projects and Policies



Like Free
ing
sign up for your
Boloco
and
free burrito's
the Birthday Burrito
sometimes we add to
Just for the heck
of it

Projects and Policies

The Go Boston 2030 Action Plan is the product of input from thousands of Bostonians over the course of a two-year process including a Question Campaign, a Visioning Lab, Ideas Workshops, and Futures Survey. The following policies and projects outline the actions the City and its partners must take in order to address the concerns that were heard, the visions for mobility that evolved, and the specific ideas that came from citywide workshops and voting. Along with detailed data analysis, ideas from community members—often only a line on a map, notes on paper, a few sentences online, or a rough concept of what could be achieved—have been evaluated against the City’s guiding principles of equity, economic opportunity, and climate responsiveness; analyzed according to metrics linked to the aspirational targets of Go Boston 2030; and evolved into the final policies and projects on the following pages. In the People’s Voice II on p83, you can read about how these policies and projects emerged and evolved out of the 3,700 ideas collected.

Local Projects and Policies

- Climate Adaptation Requirements 138
- Development-Financed Funds for Multimodal Transportation 139
- Pedestrian-First Traffic Signals 140
- Public Realm Plan 141
- Performance-based Meter Pricing 142
- Expanded Demand Management Program and TDM Office 143
- Walk- and Bike-Friendly Main Streets 144
- Neighborhood Mobility microHUBs 146
- Vision Zero: Priority Corridors and Safe Crossings 148
- Vision Zero: Neighborhood Slow Streets 150
- Flexible Lanes Repurposed by Time of Day 151
- Better Bike Corridors 152
- Bikeshare Network Expansion 154
- Forest Hills to Roslindale Square Rapid Bus 156
- Urban Rail Extension to Roslindale Square 157
- Dorchester Ave Complete Street (South Boston) 158
- Washington St/Columbus Ave Complete Street (JP/Roxbury) 159
- Neighborhood Complete Street Corridors 160
- Fairmount Greenway Neighborways 161
- Green Line Extension to Hyde Square 162
- Smart Signal Districts 163

Crosstown Projects and Policies

- Bus Service Reliability Improvements 166
- Restructure All Bus Routes 167
- Green Line Improvements 168
- Consolidated Smart Shuttle System 169
- Green Links Network 170
- Columbia Road Greenway 172
- Commonwealth Avenue Beyond Packards Corner 173

- SW Corridor Extension to Back Bay and MGH 174
- Summer Street Protected Bike Lane 175
- LMA to JFK Rapid Bus via Dudley and Uphams 176
- Smart Signal Corridors 177
- Fairmount Indigo Line Service Improvements 178
- Fairmount Indigo Line Urban Rail 179
- Mattapan to LMA Rapid Bus 180
- Improved Silver Line: Dudley to Downtown 181
- Oak Square to Comm Ave Rapid Bus 182
- Seaport to Dorchester/Widett Urban Rail 183
- Silver Line Termini at Downtown Crossing and South Station 184
- Longwood Transit Hub 185
- Inner Harbor Ferry Expansion 186
- Dudley Square Transit Hub 187

Regional Projects and Policies

- Key to the City 190
- Fair MBTA Fare Policy and Extended Service Hours 191
- Autonomous Vehicle Policy 192
- Boston Metro Transit District 193
- Orange Line and Red Line Service Improvements 194
- North Station to South Boston Waterfront Rapid Bus 195
- Sullivan Square Enhanced Transit Hub 196
- Climate Protection for Vulnerable MBTA Stations 197
- Morrissey Blvd Resilient Complete Street 198
- Multiuse Path Extension to the Blue Hills 199
- Massachusetts Avenue Rapid Bus 200
- I-90 Newton Urban Rail 201
- West Station Transit Hub 202
- West Station Rapid Bus to LMA, Kendall, and Harvard Square 203
- Smart High-Occupancy-Vehicle Lanes on Interstates 204
- South Station Expansion 205

Selecting Projects and Policies for the Action Plan

Go Boston 2030 coupled extensive and iterative public engagement with detailed data analysis and projections to develop the final list of policies and projects published in this Action Plan. Of the 58 projects and policies featured on the following pages, all of them came from the database of 3,700 ideas that were collected from the public. Some emerged as explicit recommendations from the public while others were developed as a more specific solution to an issue addressed in the public's suggestions. Policies and projects were selected through a combination of

- identification as early action projects
- a public voting process, and
- a detailed needs assessment.

Each policy and project described in this plan will require a more in depth planning process at the local level to hear from community and city-wide stakeholders and to collaborate appropriately with state agencies and other municipalities prior to implementation.

Early Actions

Early Actions were selected in two batches. Some were identified in the original *Vision Framework* as critical projects and policies that had come up repeatedly through the Question Campaign and already had momentum within City Hall. Others were identified during the Scenario Workshop as projects and policies that had traction and could be implemented in the next five years. The City committed to these projects and policies prior to releasing the public survey.

New City of Boston Projects

- Vision Zero: Priority Corridors and Safe Crossings
- Vision Zero: Neighborhood Slow Streets
- Better bike corridors
- Green Links Network
- Bikeshare network expansion
- Increased maintenance for sidewalk accessibility, smoother roads, and markings
- Public Realm Plan
- [Protected bike lanes] Commonwealth Avenue beyond Packards Corner
- Summer Street protected bike lane

New City of Boston Policies

- Traffic signal retiming and synchronization at major arterials
- Performance-based Meter Pricing
- Climate adaptation requirements
- Development review guidelines to better address transit oriented development and affordable housing
- Autonomous Vehicle Policy

The City of Boston will also collaborate with State agencies to work on the following projects and policies

- Fairmount Indigo Line service improvements
- Bus service reliability improvements
- Key to the City
- Orange Line and Red Line service improvements
- Fair MBTA fare policy and extended service hours
- Improved Silver Line - Dudley to Downtown
- Forest Hills to Roslindale Square Rapid Bus
- Green Line improvements

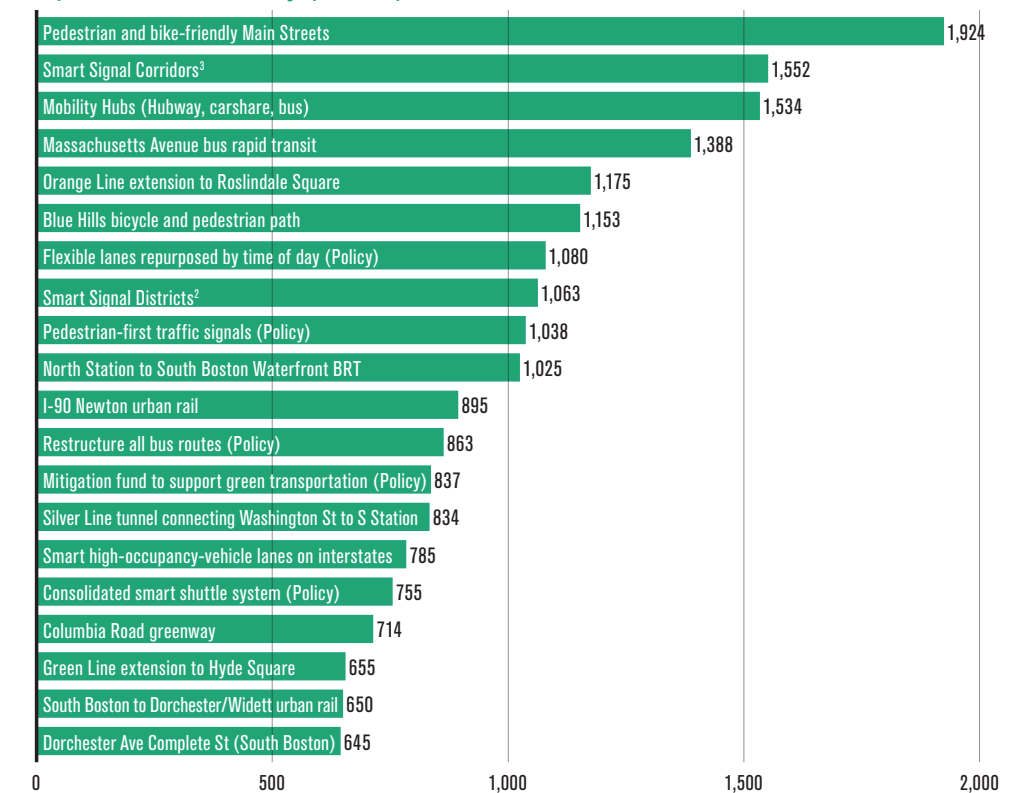
Selecting Projects and Policies

Online and Paper Futures Survey

Roughly 20 projects and policies rose to the top in the public's selections on an online survey¹ and paper ballot that presented 48 ideas as part of four possible futures—Go Local, Go Crosstown, Go Regional, and Go Tech. These futures included ideas from the database of roughly 3,700 public suggestions received through the Ideas Campaign. These ideas were refined at the Idea Review Session and then organized at the Scenario Workshop.

The results of the public survey were tabulated by zip-code in order to weight the results from the 4,000 participants so that there was proportional representation for each neighborhood based on its population. The list of top 20 projects and policies for Boston residents, based on weighted neighborhood results, was nearly the same as the top projects and policies for all survey participants, even though nearly a third of respondents live outside the city.

Top 20 for all survey participants

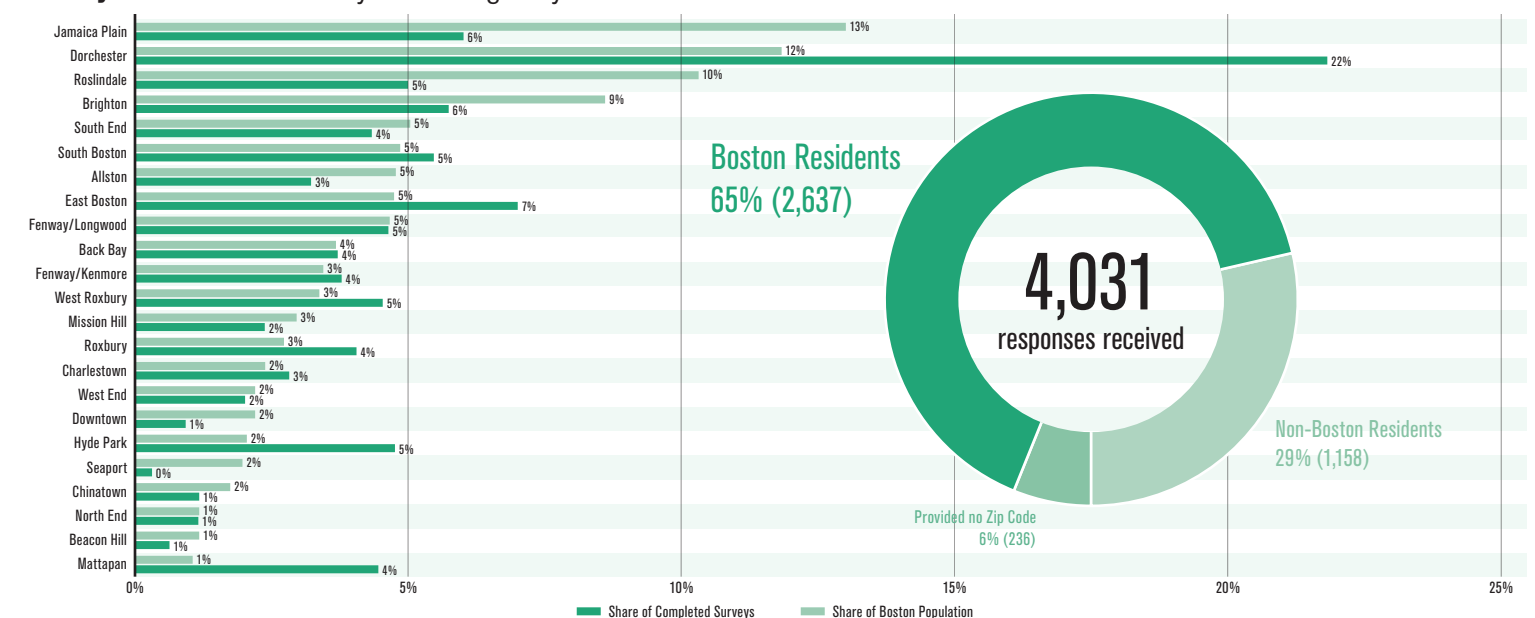


¹ You can view the survey online at fluidsurveys.com/s/goboston2030/

² South Boston Waterfront, Bulfinch Triangle, and Dudley Square

³ Essex and Kneeland Streets, Dorchester Ave, Blue Hill Ave, Morton Street, Melnea Cass and Columbus Ave, and Massachusetts Ave

Survey Overview Active May 24th through July 3rd



Selecting Projects and Policies

Needs Assessment

Projects and policies were also identified based on a detailed needs assessment that studied which ideas were needed to meet the Go Boston 2030 targets and support projected growth. The Vision Framework identified a list of measurable and aspirational targets across nine themes. These targets must be met in order to meet the future needs of a growing population and increased economic activity, to improve equity, and to increase the sustainability and resilience of the city's mobility systems. Using modeled travel projections from the region's Central Transportation Planning Staff (CTPS) and GIS (mapping) analysis, projects and policies were pulled from the idea database to improve Go Boston 2030's performance against those targets that could be forecasted geospatially. The scoring tools developed were applied to the projects and policies that had already been selected, and the evaluation identified the following additions to the final list:

- Expanded Demand Management Program and TDM Office
- Neighborhood Complete Street Corridors
- Fairmount Greenway Neighborways
- SW Corridor Extension to Back Bay and MGH
- Longwood Transit Hub
- Fairmount Indigo Line Urban Rail
- LMA to JFK rapid bus via Dudley and Uphams
- Oak Square to Comm Ave Improved Bus Corridor
- Inner Harbor Ferry Expansion
- Dudley Square Transit Hub
- Boston Metro Transit District
- Sullivan Square Enhanced Transit Hub
- Morrissey Boulevard Resilient Complete Street
- Climate Protection for Vulnerable MBTA Stations
- West Station Transit Hub
- West Station Rapid Bus to LMA, Kendall, and Harvard Square
- South Station Expansion

Together these policies and projects represent a commitment by the City to implement and advocate for a set of actions and infrastructure projects that came from the public who engaged by sharing their 3,700 recommendations, visiting the scenario workshop open house, and participating online or on paper in the futures survey.

Project and Policy Pages

This chapter outlines the specific details of policies and projects with information that will be used to continue programs, start design work, or begin a community process. Collectively, these pages describe what the City hopes to implement or advocate for over the coming 15 years and beyond.

On each page, you will find the name of the project or policy, a brief caption about it, a description of what it will look or feel like when fully realized, and the impacts it will have on future mobility. The pages also include information about implementation, including approximate costs, potential funding sources, the responsible agency or agencies, and a projected timeframe. Maps, renderings, and images provide a geographic and visual sense of where and what the project will be. Best practices from across the country demonstrate how similar ideas have been implemented nationwide with web links for additional information. Speech bubbles in yellow share quotes from the Idea Campaign that came from the public and informed the selection and description of the project or policy.

Finally, this list of projects and policies reflects a thorough data analysis that scored ideas based on their likely progress towards meeting nine of the aspirational targets individually and comprehensively. Scores from 0 – 3 (shown as 0:○, 1:◐, 2:◑, 3:●) indicate the impact of each idea in achieving each metric. Using mapping tools, Go Boston 2030 studied and scored the following:

Access 1

To what extent will the project or policy increase the number of homes within a 10-minute walk of a rail or key bus route, Hubway station, and carshare?

Access 2

To what extent is this project or policy likely to decrease commute times for residents living in areas with above-average commute times?

Safety 1

How much is a project or policy likely to reduce the number of fatal and severe-injury crashes?

Safety 2

To what extent will the project or policy increase the number of households within a five-minute walk of a protected bicycle facility or shared use path?

Reliability

How much is a project or policy likely to reduce wait and travel times for MBTA customers?

Affordability

To what extent will the project or policy reduce the transportation cost burden for very low income individuals?

Sustainability/Resiliency 1

To what extent will the project or policy improve resiliency or provide an alternative transportation option during a flood or snow event?

Sustainability/Resiliency 2

How much is a project or policy likely to reduce greenhouse gas emissions from transportation?

Governance

Does this project or policy assign capital improvement dollars to underserved communities to improve the equitable distribution of investment?

City of Boston Ongoing Policies and Projects

In addition to the Early Action Projects identified in the Go Boston 2030 Action Plan, additional projects and policies, managed by the City of Boston, are currently underway.

Policies

Boston Complete Streets Guidelines
Revised policies under review

Revisions and additions to the guidelines, originally published in 2013, with a focus on public realm features
www.bostoncompletestreets.org

Future of Parking in Boston
Policies under review

Parking polices that build on national best practices with a focus on expanding community access, reducing demand, and increasing opportunity for shared services
www.abettercity.org/docs-new/Future_of_Parking_in_Boston.pdf

DriveBoston
In progress

Parking spaces in municipal lots and on city streets reserved for carshare vehicles
www.boston.gov/transportation/drive-boston

Complete Streets

Beacon Street (Back Bay)
In design

Current designs include features to reduce speeding and improve safety for people who are walking, biking, and driving as well as a potential separated bike lane.
www.visionzeroboston.org/beaconst

Dudley Street (Roxbury)
In design

Current design includes wider sidewalks, improved access to the bus station, and a separated bicycle lane
www.boston.gov/departments/transportation/dudley-square-design-project

Harrison Avenue (South End)
In design

Current design includes wider sidewalks and a protected bicycle lane between East Berkley and Herald Streets

Melnea Cass Boulevard (Roxbury)
In design

Neighborhood friendly corridor with wider sidewalks, shorter crossings, traffic-flow improvements, and off-street bicycle lanes
www.cityofboston.gov/transportation/melnea

Mt. Vernon Street (Columbia Point, Dorchester)
In design

Preliminary designs explore the need for improved safety, wider sidewalks, and protected bicycle lanes.
www.bostonredevelopmentauthority.org/planning/planning-initiatives/mt-vernon-street-design

Rutherford Avenue and Sullivan Square (Charlestown)
In design

Redesign of existing conceptual designs to accommodate new development related to traffic and including an off-road bike and pedestrian path
www.cityofboston.gov/transportation/rutherford and www.boston.gov/departments/transportation/rutherford-avenue-sullivan-square-design-project

Boylston Street (Fenway)
In design and construction

Completed project will include wider sidewalks with street trees and other greenscape elements as well as a separated bicycle lane
www.bostoncompletestreets.org/projects/boylston-street-fenway/

Commonwealth Avenue Phase 2 (Allston/Brighton)
In construction

Final design includes fully-accessible Green Line stations, separated bike lanes, protected intersections, transit priority, and a safer design for all users
www.boston.gov/departments/transportation/commonwealth-ave-phase-2a

Quincy Street (Dorchester)
In construction

Final design will improve pedestrian travel and accessibility, traffic flow, and streetscape elements between Blue Hill Avenue and Columbia Road
www.keepbostonmoving.org/portfolio/quincy-street/

Major Bridges

North Washington Street Bridge
In design

New bridge will have wider sidewalks, gathering places, innovative accent lighting, protected bicycle facilities, and an exclusive bus lane.
www.keepbostonmoving.org/portfolio/north-washington-street-bridge

Northern Avenue Bridge
In design

Ongoing design process began with a design competition to envision a new bridge that addressed mobility, preservation, and sense of place.
www.northernavebridge.org

Main Streets Districts/ Neighborhood “Squares”

Hyde Square (Jamaica Plain)
Construction beginning in 2017

Final design includes enhanced public square with sidewalk expansion and public art.
www.boston.gov/news/artist-cristina-parre%C3%B1o-alonso-selected-public-art-project-hyde-square

Audubon Circle (Fenway)
In construction

Completed project will increase safety for pedestrians, bicyclists, and drivers and have four small rain gardens in each corner.
www.boston.gov/departments/transportation/fenway-longwood-kenmore-design-projects
www.auduboncircle.org/projects/2015/8/11/audubon-circle-redesign-update

Central Square (East Boston)
In construction

Completed project will feature wider sidewalks, narrowed streets, and an expanded park.
www.keepbostonmoving.org/portfolio/central-square

North Square (North End)
In design

Current design enhances the public square with site improvements including a shared street.
www.keepbostonmoving.org/portfolio/north-square

Multiuse Paths

Fenway-Roxbury Connector
In design

The proposed off-road path extends the Southwest Corridor to the Emerald Necklace via Ruggles Station.
www.app01.cityofboston.gov/GreenLinks

Fenway-Yawkey Multiuse Path
In design

The proposed off-road path connects the Yawkey commuter rail station with the Fenway Green Line station and extends the Emerald Necklace.
www.boston.gov/transportation/boston-green-links

South Bay Harbor Trail (Roxbury, South End, and South Boston)
In design and construction

The trail connects residents to jobs, public transportation, and cultural institutions. Its route crosses over bridges and under highways, including public and private parcels.
www.boston.gov/departments/transportation/south-bay-harbor-trail-project

Connect Historic Boston (North End, Charlestown, Bulfinch Triangle, and Beacon Hill)
In construction

Completed project will feature pedestrian paths and protected bike lanes on Commercial Street, Causeway Street, Staniford Street, and Constitution Road in addition to shared streets on Union and Joy.
www.cityofboston.gov/publicworks/connecthistoricboston

Local Projects and Policies

“Safe and friendly” were consistently words that residents shared when describing the streets they wanted to live on, to walk and bike along, or to wait for a bus on, and these projects and policies set out to realize that vision. By enhancing local access, the realization of these Go Boston 2030 projects will mean that most residents will not need to use a car for the majority of their short trips. Buses will arrive reliably as they are prioritized on certain narrow corridors. Protected bike lanes will better connect confident but concerned cyclists who want the opportunity to pedal to their destinations. Travel safety, particularly for people walking, will dictate design decisions and determine the priority for funding and implementation.

Policies

- Climate Adaptation Requirements
- Development-Financed Funds for Multimodal Transportation
- Pedestrian-First Traffic Signals
- Public Realm Plan
- Performance-based Meter Pricing
- Expanded Demand Management Program and TDM Office
- Flexible Lanes Repurposed by Time of Day

Early Action Projects

0 to 5 years

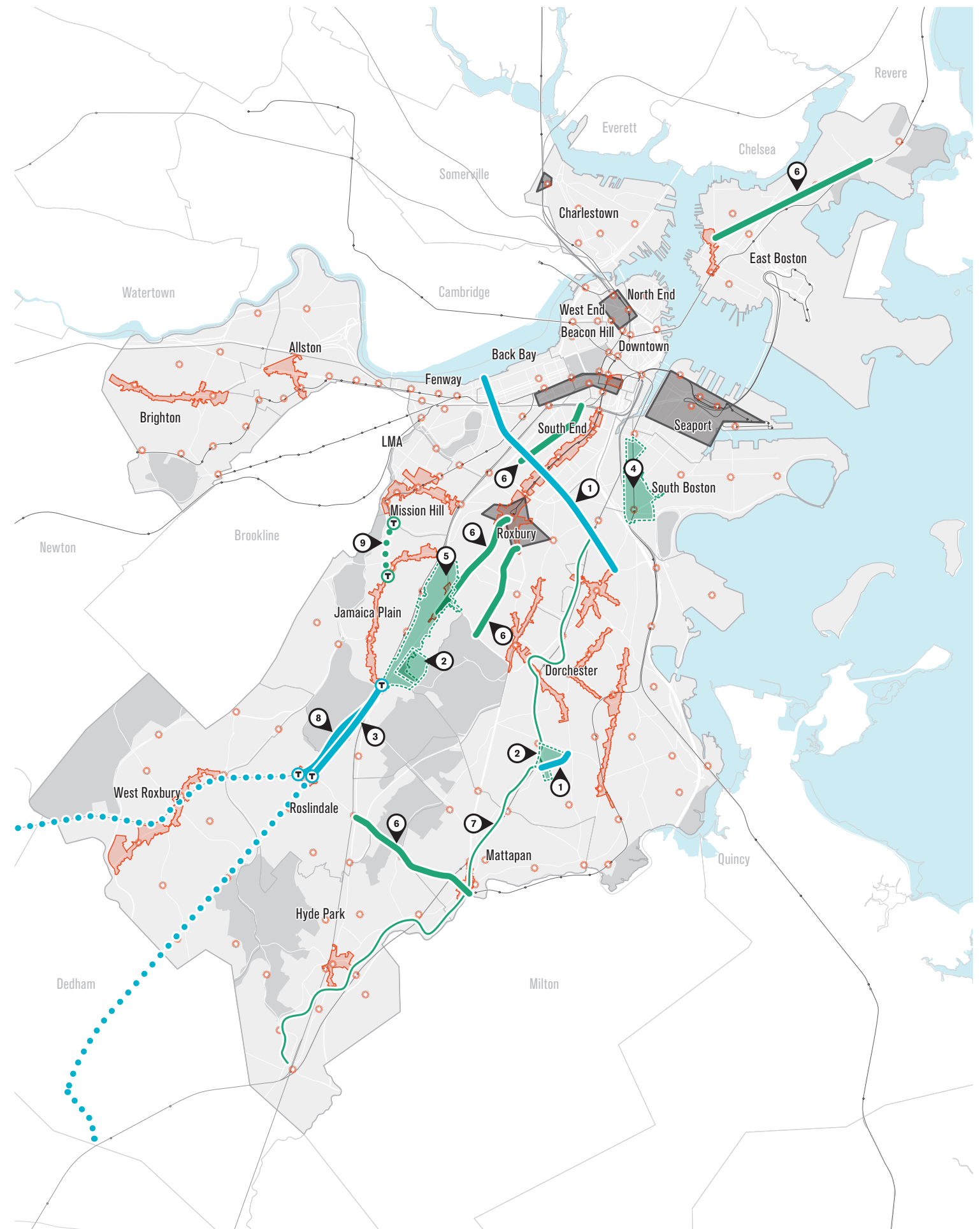
- Walk- and Bike-Friendly Main Streets *
- Neighborhood Mobility microHUBs*
- ① Vision Zero: Priority Corridors and Safe Crossings*
- ② Vision Zero: Neighborhood Slow Streets
- Better Bike Corridors (p152)
- Bikeshare Network Expansion (locations TBD)
- ③ Forest Hills to Roslindale Square Rapid Bus
- ④ Dorchester Ave Complete Street (South Boston)
- ⑤ Washington St/Columbus Ave Complete Street (JP/Roxbury)
- ⑥ Neighborhood Complete Street Corridors
- ⑦ Fairmount Greenway Neighborways
- Smart Signal Districts*

Longer Term Projects

5 to 15+ years

- ⑧ Urban Rail Extension to Roslindale Square
- ⑨ Green Line Extension to Hyde Square

* Top policy or project



Local

Climate Adaptation Requirements

City transportation contracts will require analysis of climate impacts

Policy Description

Future designs for Boston streets will include a two-part evaluation and analysis that looks at how climate change will affect the street based on its geography and other design characteristics, as well as how the design of the street could influence the effects of climate change on the surrounding neighborhood. A demonstrated understanding of how stormwater, heat, and coastal flooding could affect a roadway under future climatic conditions and of how the roadway could contribute to reducing the effects of climate change on the surrounding neighborhood will generate appropriate site-specific responses ranging from innovative design to regrading to bioswales to new pavement materials.

Benefits and Issues Addressed

Current climate projections indicate that more roadways will become increasingly susceptible to flooding, particularly during extreme high tides and storm events. A range of innovative design solutions are needed, particularly for streets in East Boston and South Boston. In collaboration with the Environment Department and the Boston Water and Sewer Commission (BWSC), BTM will ensure that new roads are prepared to meet the unique demands of a changing planet.

Implementation

In collaboration with the Environment Department and BWSC, BTM and PWD will ensure that new infrastructure contracts will require a climate related evaluation including the potential impact of flooding and costs to mitigate.

Time Frame: Five years



The King Tide in October 2016 demonstrated the impacts of future sea level rise.

Best Practices

DCR's Morrissey Boulevard Redesign project in Boston will address its regular flooding due to tides and extreme weather. www.mass.gov/eea/agencies/dcr/conservation/planning-and-resource-protection/projects/morrissey-boulevard-redesign-for-reconstruction.html

Grand Rapids, MI, has adopted "Vital Streets and Sidewalk Spending Guidelines," mandating the use of green infrastructure when upgrading road and stormwater infrastructure. A measure for a new tax to fund the implementation of these guidelines, which require the use of green infrastructure during street upgrades was supported by 66% of voters. kresge.org/sites/default/files/library/climate-adaptation-the-state-of-practice-in-us-communities-full-report.pdf

Public Input

"Increase funding for adaptation, including new tax revenue. Improve infrastructure to be resilient."

—Chinatown roundtable

Local

Development-Financed Funds for Multimodal Transportation

Incentivize more non-auto travel and infrastructure as part of new land developments

Policy Description

Development projects in Boston with more than 50,000 square feet of floor area are currently required to file a Transportation Access Plan Agreement (TAPA) with BTM. Initiating a mitigation fund from large developers that would be pooled to comprehensively improve sustainable transportation choices in a neighborhood, district, or corridor could support more substantive investments in employer-based demand management programs, transit related improvements, protected bike facilities, walkability improvements, etc., than any single developer can provide independently. A shared funding pool also helps remove the association of a single development with traffic impacts that have been created over time by many developments, fostering a shared investment in needed multimodal solutions.



Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#13 in public voting

Benefits and Issues Addressed

The TAPA is also a requirement of the Boston Planning and Development Agency's (BPDA) Article 80 zoning review process. TAPAs require developers to provide transportation demand management measures, traffic mitigation measures, and funding for improving transit and bicycle access. However, even as each TAPA is executed separately, funds can be pooled to make more systemic changes. Currently Harrison Avenue in the South End and Boylston Street in the Fenway are being designed and constructed with pooled funds from new development along the corridors. Funds can also be used to fill gaps in operations and provide maintenance funding for green infrastructure, plazas, and other features often found in TAPAs.

Implementation

Who's responsible: BTM in collaboration with the BPDA and the Environment Department
Time Frame: Ongoing

Best Practices

Cambridge, MA, regularly requires a proportional contribution from new large developments towards transportation programs as mitigation for potential impacts. Contributions have funded city staff, the EZ Ride Shuttle, traffic calming, and more.

Left: Developers reconstructed an entrance to the Downtown Crossing T station while building the plaza and driveway at Millennium Tower

Public Input

"Allowing developers to buy out of parking requirements will improve housing projects for all, and funds raised can build central parking garages and other infrastructure improvements."
—02139

"Instead of parking minimums, allow developers to instead pay into green-transit funds. Money from these funds could be used to enhance the walkability of a neighborhood, add a bikeshare station, install protected cycling infrastructure, help pay for additional bus service, etc."
—02135

Local

Pedestrian-First Traffic Signals

Make walk-signals intuitive and give people walking a head start

Policy Description

Every trip begins and ends with at least a short walk. Our traffic signals and intersection designs will recognize the importance of supporting people on foot by shortening wait times at crossings and making signals adapt in real time to pedestrian behavior and flows. Automatic pedestrian phases—not requiring people to push a button—will be standard, as will countdown timers with audible indications for those with hearing impairment. Leading Pedestrian Intervals (LPIs) will allow people to start crossing the street and be seen before cars are permitted to move or turn with a green light, reducing incidents of right-turning vehicles hitting or startling walkers. Walk signals will be shown on every intersection leg at any phase when there are not conflicts with oncoming cars. A “Don’t Walk” will only be shown when the traffic is about to be released, allowing more time for more people to cross safely.

Benefits and Issues Addressed

Boston’s walk-friendliness is often measured by walking distances and intersection frequency, but not all of our traffic signals provide convenient wait times, intuitive signal patterns, or minimum crossing distances. Many Bostonians regularly ignore signals if they show a “walk” too infrequently, which sometimes leads to conflicts. By reprioritizing people on foot at each intersection and making “walk” signals the norm, the City can promote walking for longer trips, create stronger perceptions of safety, reduce collisions, and create an environment where the temptation to cross the street “incorrectly” is dramatically reduced. Increased walk times can benefit older adults and people with disabilities the most.

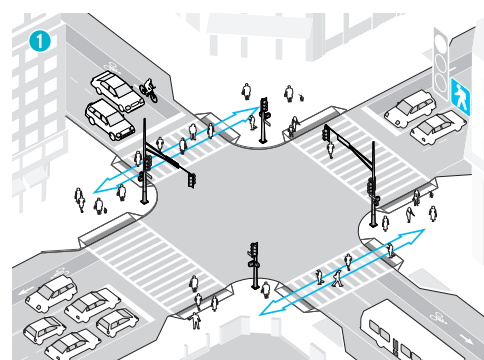
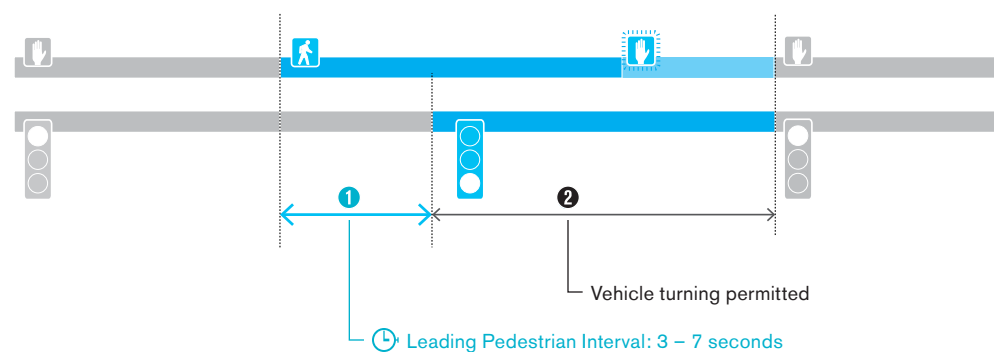
Implementation

Who’s responsible: BTD is developing new traffic signal policies to build on existing work such as installing LPIs
Time Frame: Ongoing

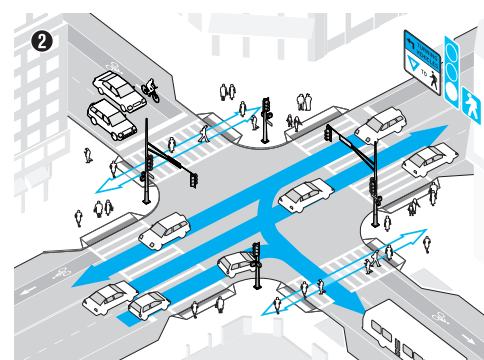
Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

#9 in public voting



Leading Pedestrian Interval
 Image source: *Boston Complete Streets*



Vehicle turning permitted

Best Practices

Since 2010, Washington, D.C., has installed over 160 leading pedestrian intervals (LPIs) at intersections. Anecdotally, DDOT found that these were more effective when used in concert with No Turn On Red restrictions for vehicles.
www.pedbikeinfo.org/pdf/Webinar_PSAP_120215.pdf

A study in State College, PA, found that LPI reduced pedestrian-vehicles crashes by almost 60%.
nacto.org/docs/usdg/safety_effectiveness_of_lpi_fayishb.pdf

Oakland, CA, is in the process of enacting a new signal policy that will prioritize pedestrians based on signal location and pedestrian counts. The policy is aimed at eliminating the need for pedestrians to cross using a push button and instead provides a pedestrian phase as a default.
www.gjel.com/blog/oaklands-new-pedestrian-signal-policy-a-half-step-forward.html

Public Input

“Maximize people (especially kids!) crossing on foot, not automobiles, at intersections.”
 —Roslindale roundtable

“Pedestrian safety and convenience should be #1 in Boston. ... make all pedestrian signals automatic all the time, as many big cities across the US and the world typically do. If people know they will always get a walk signal, they are more likely to wait for one, improving safety for everyone.”
 —02143

Local

Public Realm Plan

Short- and long-term neighborhood public space projects

Policy Description

There are many potential improvements to the streets, sidewalks, and plazas across the City that will make them more welcoming to pedestrians, engaging for visitors, and inviting for people needing somewhere to wait. BTD, in conjunction with other City departments, hopes to activate and improve areas across the city with placemaking, public art, green infrastructure, and wayfinding. Building upon successful initiatives like those in Hyde Square in Jamaica Plain or at the Tontine Crescent in downtown Boston, pilot tests for plazas and streetscape improvements will happen annually. Guidelines for community members to follow for installing parklets, painting street murals, and prototyping with other tactical interventions citywide will also be forthcoming.



A pop-up plaza on Franklin Street between Arch and Hawley Streets served as a public realm demonstration project in August of 2016.

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

Identified on the ballot as an Early Action commitment

Benefits and Issues Addressed

At least 56% of City-owned land is streets and sidewalks, and while getting around is the primary use for this space, there is increased awareness that the City also needs to leverage our infrastructure in order to create a sense of place and bring communities together. Ensuring that sidewalks and plazas are accessible to people of all abilities and feel inclusive to all users will address issues of equity in all neighborhoods. Planting trees and installing street gardens and permeable pavers that catch rain and nutrients makes streets more inviting while mitigating against greenhouse gas emissions and preparing for extreme rain events.

Implementation

Approximate Cost: Determined by project, approximately \$500,000 for design and construction per year
Potential Funding Sources: City capital plan and developer funding
Who’s Responsible: BTD with Public Works, BPDA, and Boston Arts Commission
Time Frame: Ongoing

Best Practices

Boston’s *Complete Streets Guidelines* provide guidance to ensure that Boston’s streets are designed as great public spaces for all users.
bostoncompletestreets.org/about/

The City of Toronto is developing a Parks and Public Realm plan to prioritize placemaking in the planning process.
www1.toronto.ca/wps/portal/contentonly?vgnextoid=43b25f06ea6bb410VgnVCM10000071d60f89RCR&vgnextchannel=222101f2e9745410VgnVCM10000071d60f89RCRD

San Francisco’s City Design Group has developed a series of neighborhood-specific public realm plans that focus on “putting people and the quality of place foremost.”
sf-planning.org/urban-design-city-design-group

Public Input

“Make it incredibly easy to make ‘slow streets,’ ‘Play streets,’ and ‘block party streets.’”
 —02108

“Beauty = important in city”
 —Roslindale roundtable

Local

Performance-based Meter Pricing

Set differentiated parking rates based on demand to improve availability at curbside

Policy Description

At the more than 8,000 metered parking spaces in the city, new technology is allowing BTM to set variable meter prices. A pilot program has begun in Back Bay and will begin in April 2017 in the Seaport. At peak times in busy commercial districts, higher parking prices encourage faster turnover and compete with nearby garage rates. Parking meters can continue to operate later into the evening or earlier in the morning and be installed in more neighborhoods at a lower price point that regulates parking without discouraging potential customers. The new ParkBoston app also allows drivers to add time to a meter that is about to expire and extend beyond the regular maximum time-limit.



Benefits and Issues Addressed

Repeated studies show that roughly 30% of traffic in commercial areas is generated by people looking for parking and that pricing parking at the right levels can ensure that there is the right amount of availability on a block. With properly priced parking, drivers can find a spot more easily, which reduces congestion and the additional traffic and safety problems associated with circling and double parking. Variable meter pricing allows for higher rates in neighborhoods where garage parking prices are high and there are numerous transit alternatives. It also allows for low-priced meters to be installed elsewhere in the city. Where new or higher meter prices are implemented, parking benefit districts can be created so that the increase in parking fees is used to fund other transportation improvements in the surrounding area.

Implementation

Who's Responsible: BTM and MONUM
Potential Funding Sources: BTM operating budget
Time Frame: Ongoing

Best Practices

Seattle has implemented performance-based meter pricing. This system takes a data-driven approach to meter pricing and changes prices to reach a goal of a one to two space availability on block faces throughout the city. SDOT monitors blockfaces annually, and will put blocks that have too much or not enough availability on a "watch list" for a year before adjusting the rates.
www.seattle.gov/transportation/parking/docs/2016AnnualReport.pdf

SFPark is a classic example of a more dynamic implementation of meter pricing. The City uses sensors to adjust prices to meet demand throughout the day. Currently, rates change no more than once a month, so the system is predictable to parkers. Overall, a two-year pilot found that on average drivers were paying less to park when the prices varied based on demand.
sfpark.org/wp-content/uploads/2014/06/SFPark_Eval_Summary_2014.pdf

More info about our ParkBoston app at park.boston.gov

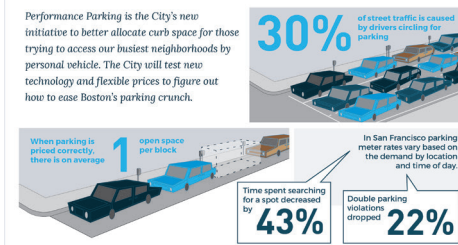
Policy Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment

PERFORMANCE PARKING

Circle Less, Park Easier



PERFORMANCE PARKING PILOT

The City will test new pricing mechanisms in two different neighborhoods over the next year. Lessons from this experiment will be used to better price parking throughout the City.

- Less circling, more parking
- More reliable travel experience
- Safer streets and sidewalks
- Higher ridership of public transit, subway and car services
- Increased foot traffic for businesses

THE BACK BAY

- Increased Meter Pricing
- \$3.75 an hour for all meters
- Increased enforcement of:
 - double-parked cars
 - meter time limit violations
 - illegally parked vehicles

THE SEAPORT

- Flexible Meter Pricing
- \$1.50 an hour to start
- 50 cent rate increase on blocks with 90% or more occupancy
- 50 cent rate decrease on blocks with 70% or less occupancy

Public Input

"Raise the rates charged at parking meters: They do not match what the garages charge." -91360

"No free parking in December: For years the mayor has allowed free parking at meters in Boston in December. This is supposedly to help businesses. Instead it hurts business. Meter fees encourage parking space turnover and promote sales. End this 'tradition' now." -02110

"Our neighborhood business district is failing to reach its economic potential because employees park all day on streets in spaces that need to turn over for customers. The city should enforce parking time limits or install parking meter kiosks to force turnover and incentivize more locals to walk instead of drive." -Roslindale roundtable

Local

Expanded Demand Management Program and TDM Office

Enhance Boston's capacity to introduce programs that reduce driving

Policy Description

The City will expand upon best practices already in place through BTM's Transportation Access Plan Agreement (TAPA) review process to mandate that all new employers, developers, institutions, and transportation operators participate in or create new programs and incentives to help meet Go Boston 2030's mode shift and other targets. Working in collaboration with existing Transportation Management Associations (TMAs), the City will enforce existing commitments and annual monitoring requirements and promote solutions such as carshare fleets, guaranteed emergency rides home, on-site bikeshare, private mobility hubs, bicycle "pedal and park" park and rides, integrated multimodal mobile trip planners, universal transit access passes, and other essential employee and resident benefit programs that encourage people to travel without a private car.



A Better City TMA provides information about multimodal commute options to employees in downtown and Allston. Among their many programs, they offer guided bike tours to show bike commuters safe route options. Photo credit: A Better City TMA



Policy Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This policy recommendation came out of the Needs Assessment

Benefits and Issues Addressed

The provision of new transportation supply will be insufficient without new policies that require reductions in the demand for driving. Today, many employees of Boston businesses have their parking subsidized, which disincentivizes transit, walking, and biking. Commuters often have little information available about nearby alternatives and default to driving. With the right financial incentives and simple promotion of alternative travel options, many Boston businesses and residential complexes have already demonstrated dramatic mode shift. Such successes need to be publicized and built upon by mandating the creation of equitably-funded travel programs for all workers and residents and avoiding the perk of "free parking."

Implementation

Approximate Cost: \$200,000 per year operating costs for the new office
Potential Funding Sources: APCC fees and TMA support
Who's Responsible: BTM and Environment Department
Time Frame: Establish City TDM office within five years

Best Practices

In 1998, Cambridge, MA, passed the Parking and Transportation Demand Management Ordinance, which requires any new development that adds parking to implement TDM measures and annual monitoring. The City created a new position, PTDM Planning Officer, which manages the program. The program has been credited for reducing driving by 10% and increasing transit use 13%.

Public Input

"Ways to shift modes and funding: Make driving private cars in Boston prohibitively expensive. Use \$ to subsidize cheap, frequent buses, vans, and ferries to provide flexible public transit for all neighborhoods. Subsidize free taxis in extreme weather." -02140

"Paradigm shift reducing burden on transportation system. More work from home opportunities. More flexible policies who needs people there 9 - 5." -Roslindale roundtable

Local

Walk- and Bike-Friendly Main Streets

Improvements to neighborhood commercial districts for people traveling on foot and by bike

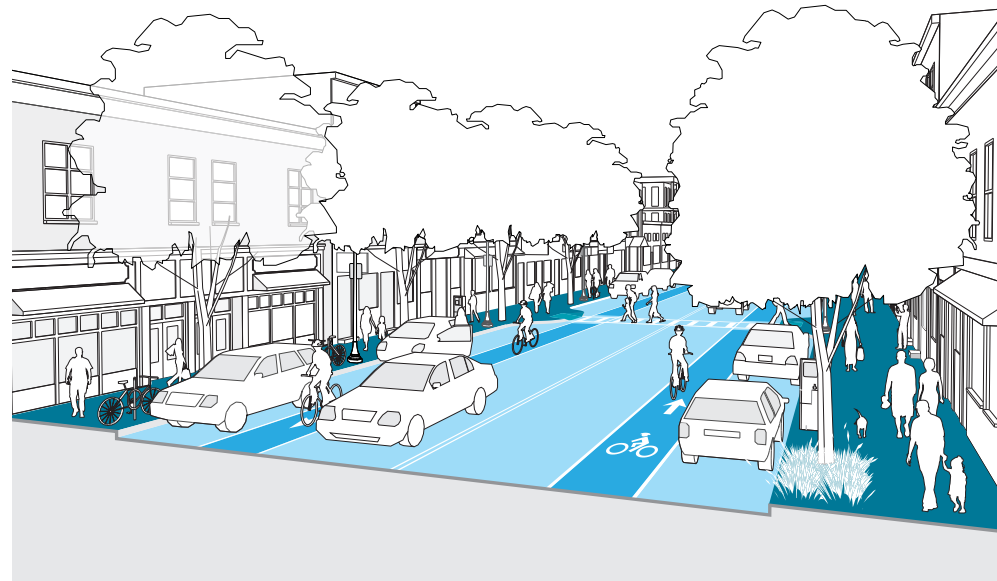
Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#1 in public voting

Project Description

Walking- and bicycling-friendly Main Streets districts would focus on street and sidewalk investments that incentivize walking and biking to and through every local business district in the city. Signalized crossings would prioritize walking with responsive push-buttons or automatic pedestrian cycles, longer walk times that start before turning cars, and shorter crossing distances. Additions such as lighting, benches, and trees would also support people who chose to travel on foot, and all improvements would be made accessible to anyone of any physical ability. Bike-friendly features would include priority for better bike corridors as well as additional bike parking, bikeshare stations, and safer intersection designs. Way-finding signage, parklets, and simplified processes for closing streets to traffic on a temporary basis would also support people choosing to walk, bike, and take transit to our Main Streets.



Vision for a Neighborhood Main Street with small businesses from Boston's Complete Streets Guidelines

Benefits and Issues Addressed

Many of Boston's 21 official Main Streets districts cannot accommodate enough parking for their patrons to arrive solely by car, but the roadways through them are nonetheless often designed to maximize vehicular flow rather than focusing on moving walkers and bicyclists along and across streets to easily and safely shop, dine, and build community on either side of the street. Since many Main Streets are centered around uniquely shaped intersections that can be hard to navigate on foot, improvements like those underway in East Boston's Central Square and JP's Hyde Square could serve as a model for improving walkability—along with co-benefits like green infrastructure and expanded plaza space. People getting off of buses or trains, arriving by bike, or walking from the surrounding residential area will support small businesses with increased foot-traffic and activated sidewalks.

Implementation

Planning Level Costs: \$25 million over five years for design and construction

Funding Sources: City capital plan and developer funding

Who's Responsible: BTD and Public Works with Boston Main Streets

Time Frame: Ongoing, with an estimated two to three districts per year

Best Practices

In 2004, Cambridge, MA, completed construction of Lafayette Square at the edge of Central Square. By reclaiming pavement at a triangular intersection and realigning streets at safer right-angles, a new plaza lined with shops was created, crosswalks shortened, conflicts reduced, and a barrier at the edge of Central Square became a new walk and bike friendly gateway.

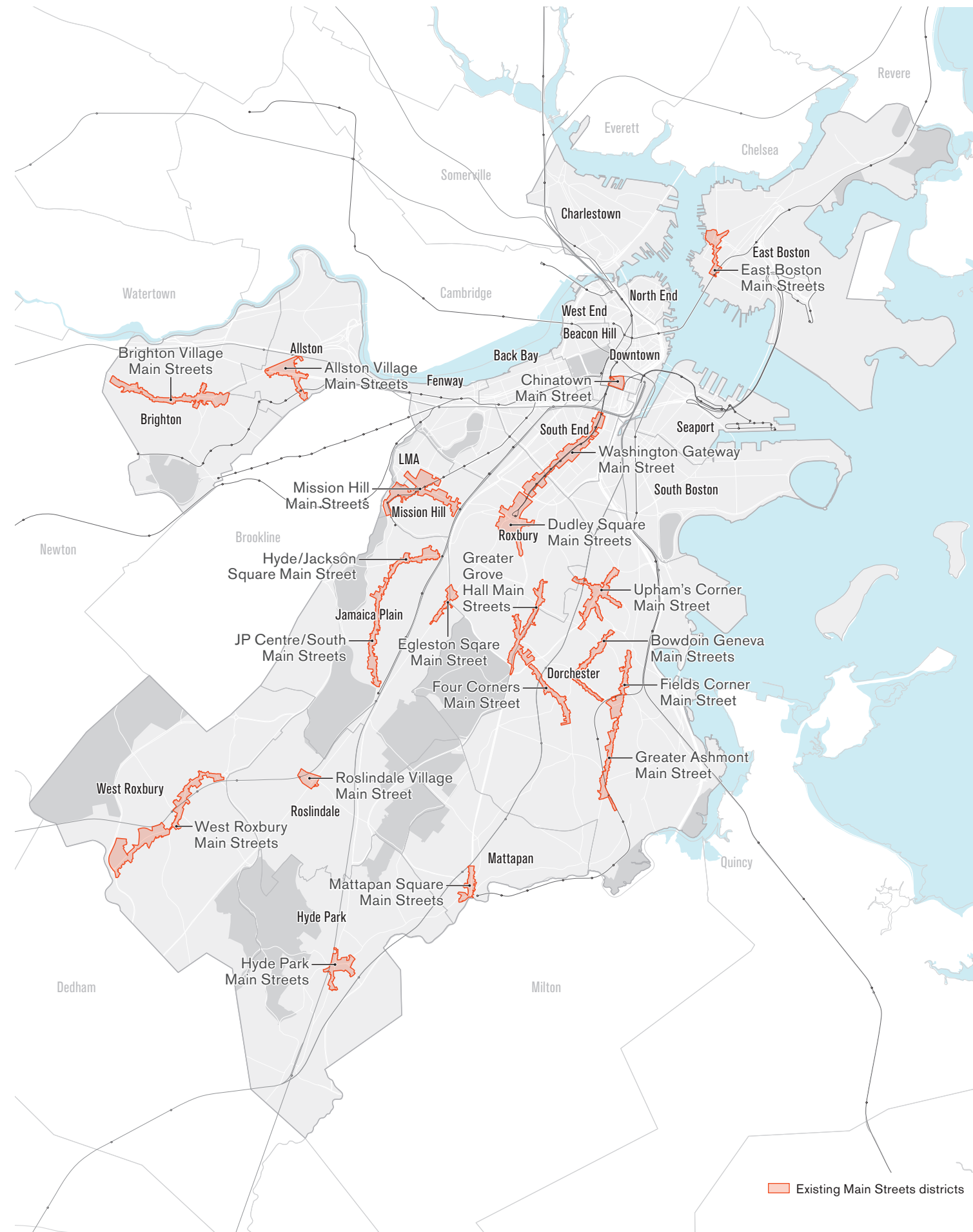
Public Input

"Make walking fun and desirable – create street culture. Ex. businesses give rewards/discounts for walking/biking."

—Roslindale roundtable

"Add more defined bike lanes on main streets."

—02120



Local

Neighborhood Mobility microHUBs

Multiple prominent neighborhood access points to shared transit resources

Project Description

Centered around T-stations, bus network nodes, and local destinations such as community centers and small-business districts, Mobility microHUBs are designed to provide and identify a range of connected travel choices. Using clearly-branded kiosks or nodes with real-time interactive information displays about transit schedules and shared vehicle availability, people can connect quickly between bus and train service, a Hubway station, secure bike parking, carshare vehicles, ride-hailing pick-up spots, and electric vehicle charging stations at every microHUB. Coupled with free Wi-Fi and intuitive wayfinding, these nodes become reliable ways to start, continue, or complete a multimodal journey. Placemaking strategies including plazas or parklets, sidewalk amenities, information signs, shelters, and works of art at each of these hubs will make them places that are worth stopping in when you have the time or if you have to wait.

Benefits and Issues Addressed

People often make their transportation choices based on their confidence that the trip will be reliable. Even in choice-rich Boston, this often means residents opt to use a car or make a one-seat train ride. Trips requiring transfers or changing modes can be more uncertain, so people often drive when other options are available. Mobility microHUBs increase people's confidence in multimodal trips by co-locating multiple travel modes and combining wayfinding and real-time information, supporting regular users who are making daily decisions about which is the best combination of modes to take today and allowing someone visiting for the first time to navigate their trip through the city with ease. Placemaking at each microHUB will create pleasant spaces such that people are comfortable waiting for the next leg of their trip.

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#3 in public voting



Recent pilot of real-time information kiosk in Faneuil Hall and new wayfinding throughout Boston helps people get to where they need to go.

Best Practices

San Diego, California

Planned mobility hubs include carshare parking, bikeshare, informational kiosks, transit stops, and EV charging all in a location surrounded by cycling infrastructure, transit-oriented development, mixed use development, and extensive pedestrian facilities. Hubs are placed along light rail and high volume bus routes and designed to be implemented over a 35 year period at a cost of roughly \$13 million each.

www.sdfoward.com/fwdAsp/mobilityHubStrategy.aspx

In Los Angeles, the city has framed co-located multimodal transportation services as "Mobility Hubs." A kit of parts, including transit access, bicycle amenities, pedestrian connections, and waiting areas can be assembled to provide a mobility hub. Mobility hubs typically link to a transit center or access point. The City recently received \$8.4 million in JARC (Job Access Reverse Commute) federal funding to pursue 13 new hubs citywide.

www.urbandesignla.com/resources/docs/MobilityHubsReadersGuide/hl/MobilityHubsPamphlet.pdf

Implementation

Approximate Cost: \$500,000 for design and construction

Potential Funding Sources: City capital plan and MBTA funding (FTA provides limited funds for bikeshare installation related to transit)

Who's Responsible: BTS and MBTA

Time Frame: Ongoing over 10 years in coordination with bikeshare and DriveBoston expansion

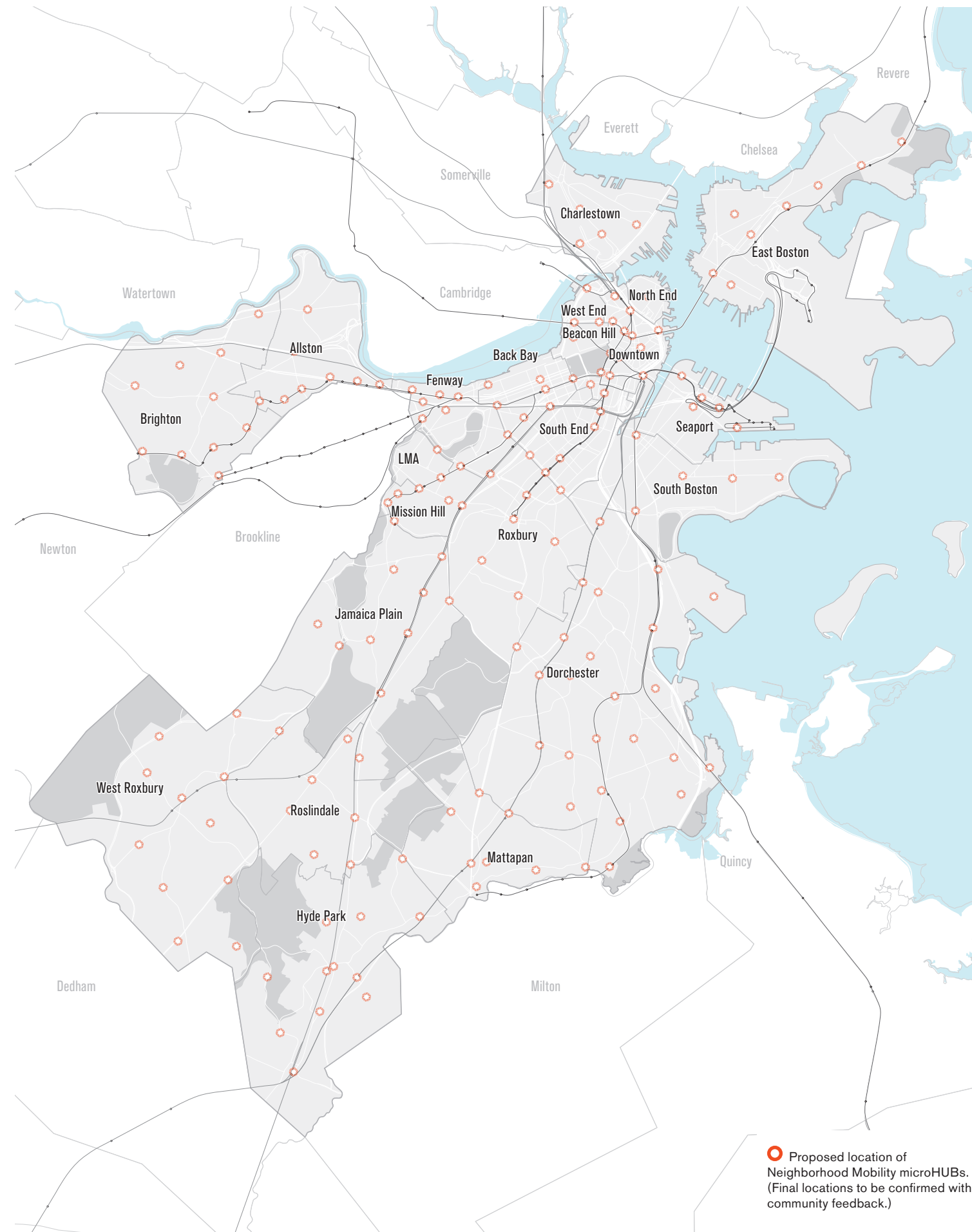
Public Input

"MBTA stations that are major transportation hubs (DTX, Park St) should have better design and wayfinding."

—Chinatown roundtable

"We felt one of the root causes was around inequality in regard to racism. One of our ideas was that currently our transit hubs were in downtown Boston, what if they were rerouted to higher density and lower economic opportunity to increase the flow of business."

—Chinatown roundtable



○ Proposed location of Neighborhood Mobility microHUBs. (Final locations to be confirmed with community feedback.)

Local

Vision Zero: Priority Corridors and Safe Crossings

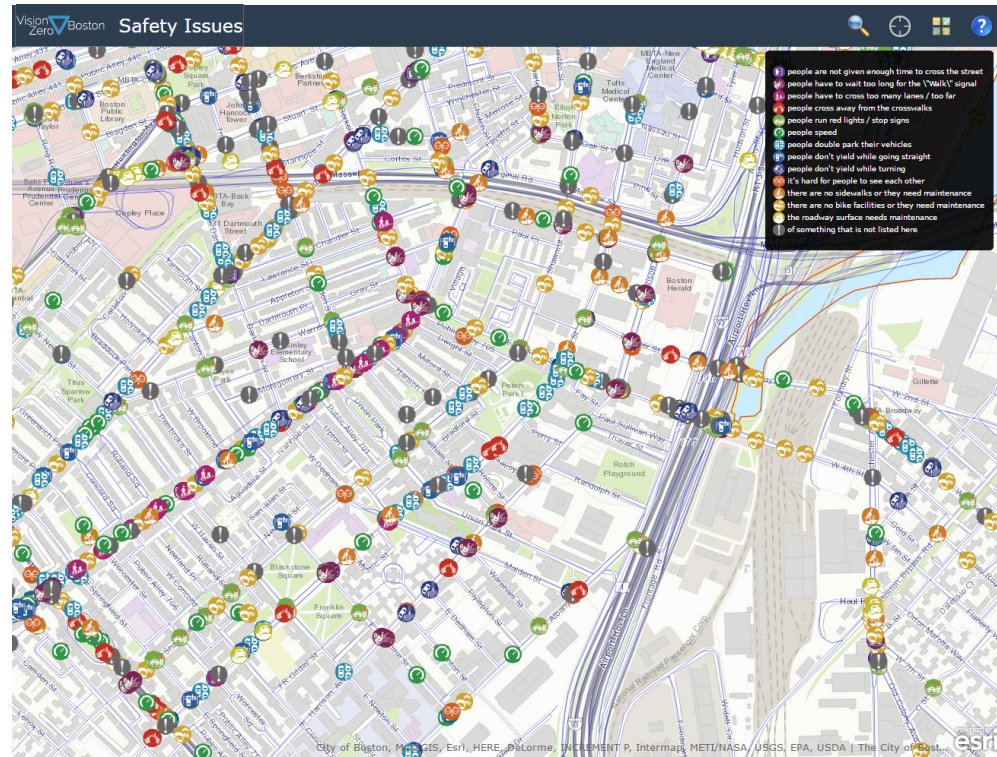
Safety measures along Massachusetts Avenue and Codman Square; two additional corridors every year and multiple independent intersection improvements

- Project Score**
- Access 1
 - Safety 1
 - Reliability
 - Sustainability/Resiliency 1
 - Sustainability/Resiliency 2
 - Governance
 - Access 2
 - Safety 2
 - Affordability

Identified on the ballot as an Early Action commitment

Project Description

Roadway design that prioritizes vulnerable road users on corridors with historic safety concerns will work to reduce traffic fatalities and severe injuries across Boston. The toolkit for improving safety at intersections may include shortening crossing distances, “daylighting” intersections to make pedestrians more visible, restricting turn movements on red, giving people more time to cross on walk signals, and allowing pedestrians to start across the street and be clearly seen before turning cars have a green light. Along the streets there will be a combination of protected bike lanes, speed radar signs, fresh pavement markings, and more commercial and short-term parking to prevent double-parked vehicles from stopping in dangerous places.



Vision Zero has benefited from thousands of crowd-sourced comments recorded on the Safety Concerns map

Benefits and Issues Addressed

Based on historic crash data, recent traffic fatalities and severe injuries, and crowd-sourced interactive safety maps, Massachusetts Avenue and Codman Square were identified as the first two priority corridors for Vision Zero—the City’s initiative to eliminate traffic fatalities by 2030. The Vision Zero Task Force, representing multiple city agencies and advocacy groups, does site visits following each fatal incident and will continue to identify new corridors for improvements on an annual basis. By designing streets with pedestrian and cyclist safety at the forefront of the process, statistical and perceived safety will continue to improve across the city.

Implementation

Approximate Cost: \$3.1 million a year for design and construction for Vision Zero corridors and safe crossings and Neighborhood Slow Streets
Potential Funding Sources: City capital plan
Who's Responsible: BTS and Public Works
Time Frame: Ongoing with corridors and intersections selected based on crash data, and observations from public input on Vision Zero’s Safety Concerns map

Best Practices

Portland, OR, identified the top 30 crash streets and top 30 crash intersections as part of the city’s High Crash Corridor Program. They found that more than half of deadly crashes occur on just 8% of the city’s streets. As part of their citywide Vision Zero program, the City is focusing resources on these roadways to ensure priority is given in these locations. The City also installed fixed speed-safety cameras along these corridors.

www.portlandoregon.gov/transportation/68873

Public Input

“Do-able in the short term: Make Mass Ave a ‘Complete Street’—safe for cyclists, pedestrians, and cars.”

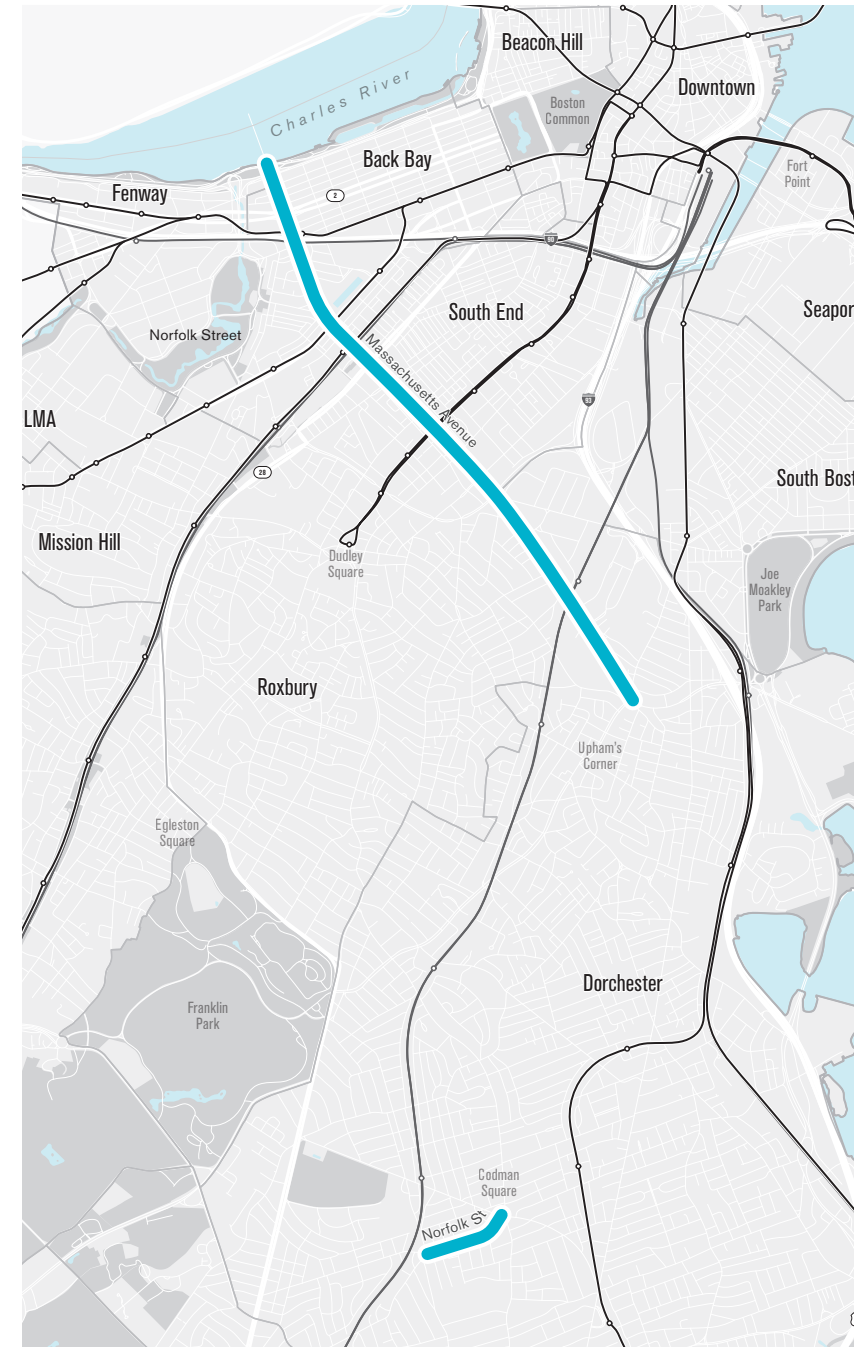
—02115

“Codman Square Safety Plan for Pedestrians and Cars: A roundabout to replace the traffic-lighted intersection [at Washington and Talbot], with pedestrian crosswalks moved away from the intersection and marked by flashing lights, speed bumps, or other safety markings. This will enhance the safety of pedestrians and cars, and add an opportunity to beautify Codman Square.”

—02124



Vision Zero safety improvements on Massachusetts Avenue created better protected bike lanes. Photo credit: Toole Design Group



New corridors and intersections will be prioritized in 2017 and additional projects will be added annually.



Crossing in Codman Square before and after Vision Zero intervention. Photo credit: Brendan Kearney/WalkBoston

More info at www.visionzeroboston.org/

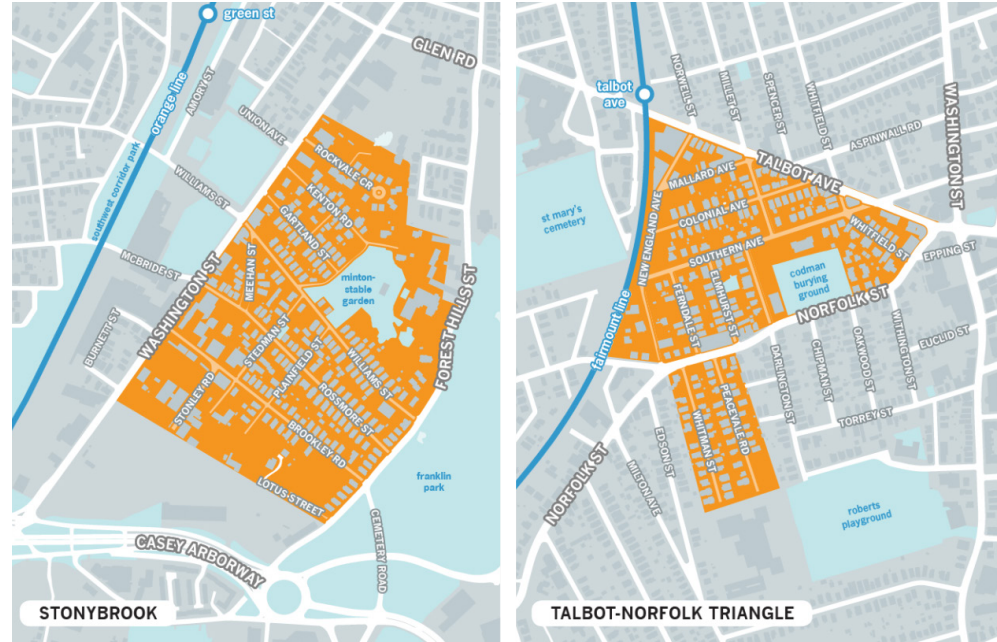
Local

Vision Zero: Neighborhood Slow Streets

Traffic calming on residential streets

Project Description

Through the Neighborhood Slow Streets program, residents can apply for traffic calming on a cluster of residential streets within their neighborhood. Selected districts will work with the City to implement a variety of designs to slow traffic across 10-12 blocks, including speed humps, curb extensions, small traffic circles, and wiggles in the roadway (called chicanes). When entering a Slow Streets area, signage and pavement markings will indicate to drivers that their behavior should change.



New Slow Street zones will be selected on an annual basis. Applications are available online at www.boston.gov/transportation/neighborhood-slow-streets

Benefits and Issues Addressed

Residents across the city report a growing perception that their residential streets are too heavily trafficked and that drivers are going too fast, making their streets feel uncomfortable to cross or walk along. Such behavior is most common where residential streets are too wide or when they are particularly appealing to people trying to avoid major routes. Traffic calming is especially desirable where higher numbers of children or older adults are present, such as near schools and parks. Through this program, neighbors come together to develop strategies for improving the safety of their streets with specific design improvements that naturally slow cars down.

Implementation

Approximate Cost: \$3.1 million a year for design and construction for Vision Zero corridors and safe crossings and Neighborhood Slow Streets
Potential Funding Sources: City capital plan
Who's responsible: BTM and Public Works
Time Frame: Ongoing, with new districts selected annually based on a community application process and data analysis

More info at www.visionzeroboston.org/nss

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 2

Identified on the ballot as an Early Action commitment

Local

Flexible Lanes Repurposed by Time of Day

Dynamic curb regulations that can adapt for greater transit or biking capacity when needed or convert to expanded sidewalk space off-peak

Policy Description

Roadways have different demands depending on the time of day and day of the week. Responding flexibly to their real use can allow for a single lane to efficiently serve different uses during peak and off-peak hours. Flexible lanes can become exclusive bus or bike lanes for part of the day or they can change direction for additional capacity depending on the primary direction of travel. Flexible lanes might provide space for evening or weekend expansion of sidewalk space with temporary cafes or parklets, or they can accommodate expanded loading zones during the week to discourage double-parking. With advances in technology, particularly the use of smartphone navigation and autonomous vehicles, more adaptive lane uses will be possible, and the flexibility to adjust for large scale events or detours will also be possible. Boston is already working with Streetparkd, to create the underlying electronic database of all curb regulations citywide. This databased, called BPARC (Boston Parking Atlas and Rules Census), will ultimately link to user apps and technologies that make it easier to find car parking, shared rides, bicycle parking, and more.



Seattle allows only buses and bicycles to travel on certain streets during peak times.

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 2

#7 in public voting

Benefits and Issues Addressed

Currently, lane assignments and directions are fixed, and these lanes can be filled to capacity or be completely under-utilized, depending on the time of day. With flexible lanes, and improved technology to communicate and enforce their use, parking lanes in business districts can accommodate food trucks and parklets at lunch; peak hour travel lanes can become walking and bicycling spaces on weekends along Boston's parkways or downtown streets and waterfront boulevards; farmers markets can regularly flow-out on the street; or center travel lanes could switch their direction of travel to better move neighborhood commuters to their jobs. More parking can be provided overnight for residents and return to travel lanes during the day.

Implementation

Approximate Cost: Costs would be accommodated in BTM operating budget
Potential Funding Sources: BTM operating budget
Who's responsible: BTM
Time Frame: Ongoing

Best Practices

In San Francisco, a collaboration between Lyft and the non-profit Livable City is piloting a program that works within ride-hailing apps to encourage pickups at safe locations. Moreover, these locations are separate from other modes. The user simply sees the new location on their app when they request a ride. livablecity.org/Curb-The-Cluster/

In Seattle, WA, the City has implemented lanes that accommodate transit during peak hours of the day, as recommended in the NACTO design guide. The City has nicknamed these "BAT lanes" (Business Access and Transit) and they are currently pursuing additional corridors. nacto.org/publication/transit-street-design-guide/transit-lanes-transituways/transit-lanes/peak-bus-lane/
www.seattle.gov/transportation/aurora_rapidride_BAT.htm

Public Input

"Open up new routes for high traffic areas. Different let out times for workers" -02139

Local

Better Bike Corridors

Rebuild streets with protected and low-stress bicycling facilities

Project Description

New projects will aspire to make bicycling a safe, comfortable, and convenient choice for more of Boston's residents and visitors. Better bike lanes go beyond traditional bike lanes, which are painted on the street between moving and parked cars. The city will pursue more priority routes with bike lanes that are separated from moving vehicles and on neighborhood streets that are retrofitted to slow traffic. Similar approaches are part of *Boston's Complete Streets Guidelines* and Neighborhood Slow Streets efforts. Today, Boston residents can experience protected bike lanes on parts of Western Avenue in Allston; Commercial Street, Staniford Street, and Atlantic Ave in the North End and West End; and parts of Beacon Street and Massachusetts Avenue in the Bay Bay. Future better bike lanes are planned for additional corridors, including:

- Columbia Road Greenway (p172) SW Corridor Extension to Back Bay and MGH (p174) Melnea Cass Blvd, where protected bike lanes will connect the SW Corridor to Boston Medical Center

Benefits and Issues Addressed

Building better bike corridors has increased cycling rates across the nation and in the Boston region. A connected network of more comfortable routes makes bicycling a more realistic option for people who would otherwise choose to drive or rely on transit. Through the Go Boston 2030 process, the call for building better bike corridors (and facilities that provide "low-stress" connections for cyclists) has been heard from across all neighborhoods and from current and potential cyclists alike.



Protected bicycle lane on Staniford Street, Boston

Best Practices

Since 2007, the NYCDOT has installed over 30 miles of protected bicycle lanes throughout the five boroughs of New York City. www.nyc.gov/html/dot/downloads/pdf/2014-11-bicycle-path-data-analysis.pdf

Based on what was spent by NYCDOT on bicycle infrastructure between 2007 and 2014, a study estimated that the city's 2015 outlay of \$8,109,511 resulted in 45.5 miles of new bike lanes. Taking into account the past cost of bike-related injuries and fatalities, they also estimated quality-adjusted life years (QALYs, a common economic metric) for all New Yorkers.

journalistsresource.org/studies/environment/transportation/bike-lanes-cost-effectiveness-public-health

A new study of cities that have expanded bicycle infrastructure with an emphasis on protected bicycle infrastructure shows that this correlates with increased rates of cycling and a decrease in cyclist injuries.

ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2016.303507

In Boston, the expansion of bicycle facilities from 2007-2012 has been shown to correlate with a decrease in cyclist injuries.

ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2016.303454

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment

Implementation

Approximate Cost: \$1 to \$2 million per year for design and construction

Potential Funding Sources: COB capital plan and Boston MPO TIP construction funds

Who's responsible: BTB, Public Works, and MassDOT

Time Frame: Ongoing and over 15 years in conjunction with local community process

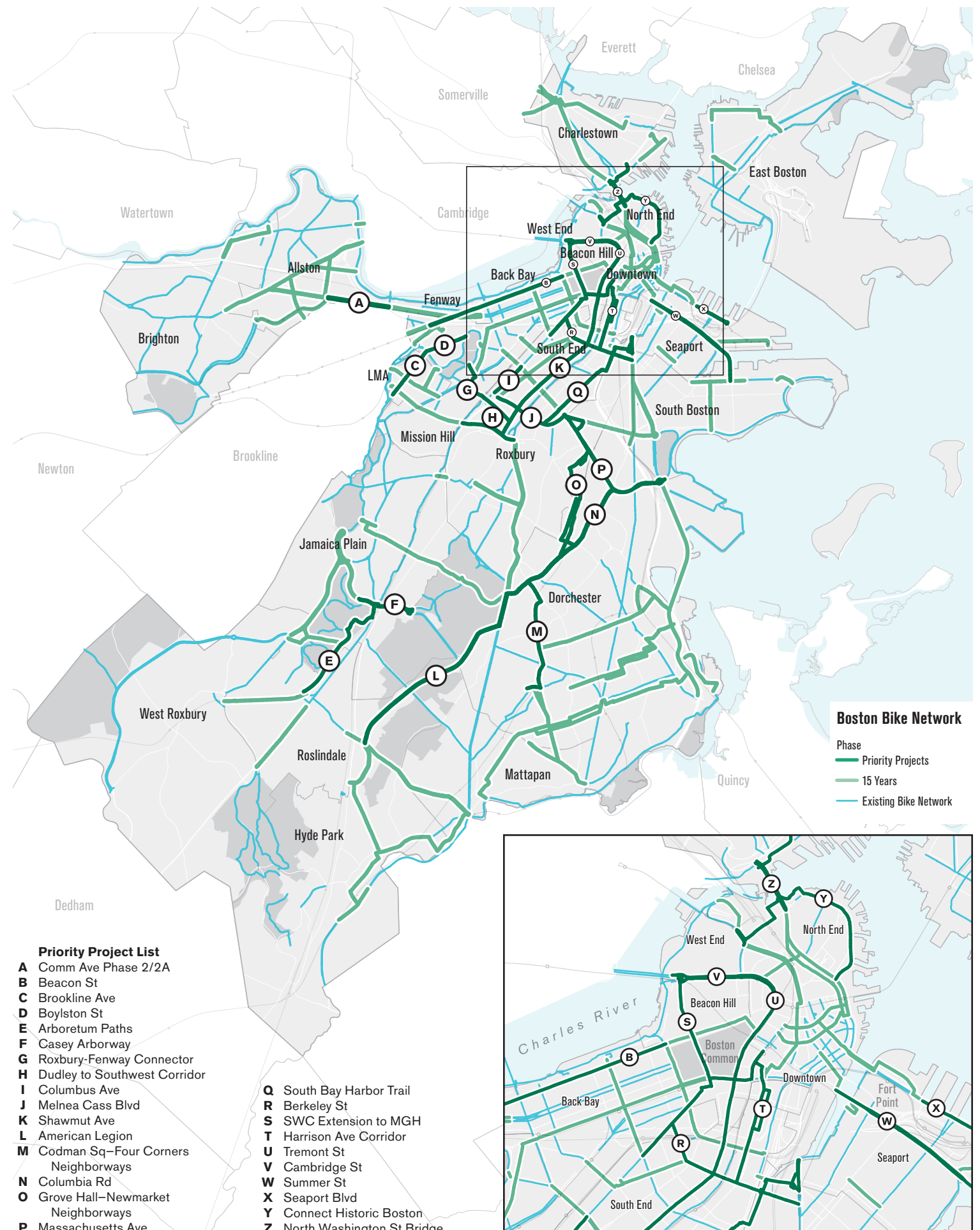
Public Input

"Protected bike lanes in Roxbury!: Install them on Blue Hill Ave, Dudley Street, Washington, Warren, and Malcolm X."

-02125

"Cambridge Street: Particularly outbound, the street is VERY dangerous, yet it is the gateway to City Hall, state government, etc. Please remove the median and install dedicated bike route/path."

-02139



Local

Bikeshare Network Expansion

Increase the number of bikes and stations to reach more Bostonians

Project Description

Bikeshare is a newer type of public transportation, providing a reliable and low-cost option for getting around the city and adjacent region. Launched in 2011, the regional bikeshare system now has more than 1,600 bikes and 180 stations across Boston, Brookline, Cambridge, and Somerville. The system has grown so that docking stations are within a 5- to 10-minute walk of other stations; this allows people to find an alternative bike or dock if a station is full or empty, without significantly adding time to their trips. By the end of 2022, Boston aims to grow its part of the system 137 new stations, for a total of 268 stations in the city. The growth includes additional stations within the busiest areas of the system and broader access in all densely-populated neighborhoods.



Photo credit: Suzanne Kreiter/Boston Globe

Benefits and Issues Addressed

Bikesharing provides area residents, visitors, and workers with additional transportation options and increases connectivity within the existing public transportation network, serving as a key first-mile/last-mile connection to rapid transit, commuter rail stations, and bus stops. Bikeshare helps reduce the number of single-occupant vehicle trips for work and non-work purposes in the region, supporting Boston's mode shift goals. Additionally, the widespread availability of low-cost, public bicycles means residents can choose an active, healthy lifestyle and reduce greenhouse gas emissions. In the future, bikeshare stations will be integrated into Neighborhood Mobility microHubs (p146) that cluster bus stops, carshare, bikeshare, electric vehicle charging, and improved wayfinding across the city.

Implementation

Approximate Cost: \$6.5 million for installation
Funding Sources: Title and other sponsorships, advertising, private foundation and public agency grants, developer funding, user-generated revenues, and COB capital and operating funds
Who's Responsible: BTD
Time Frame: Ongoing

In 2016, 23 new bikeshare stations were installed in Roxbury, northern Dorchester, East Boston, Brighton, and the Seaport. Continued expansion is anticipated.

Project Score

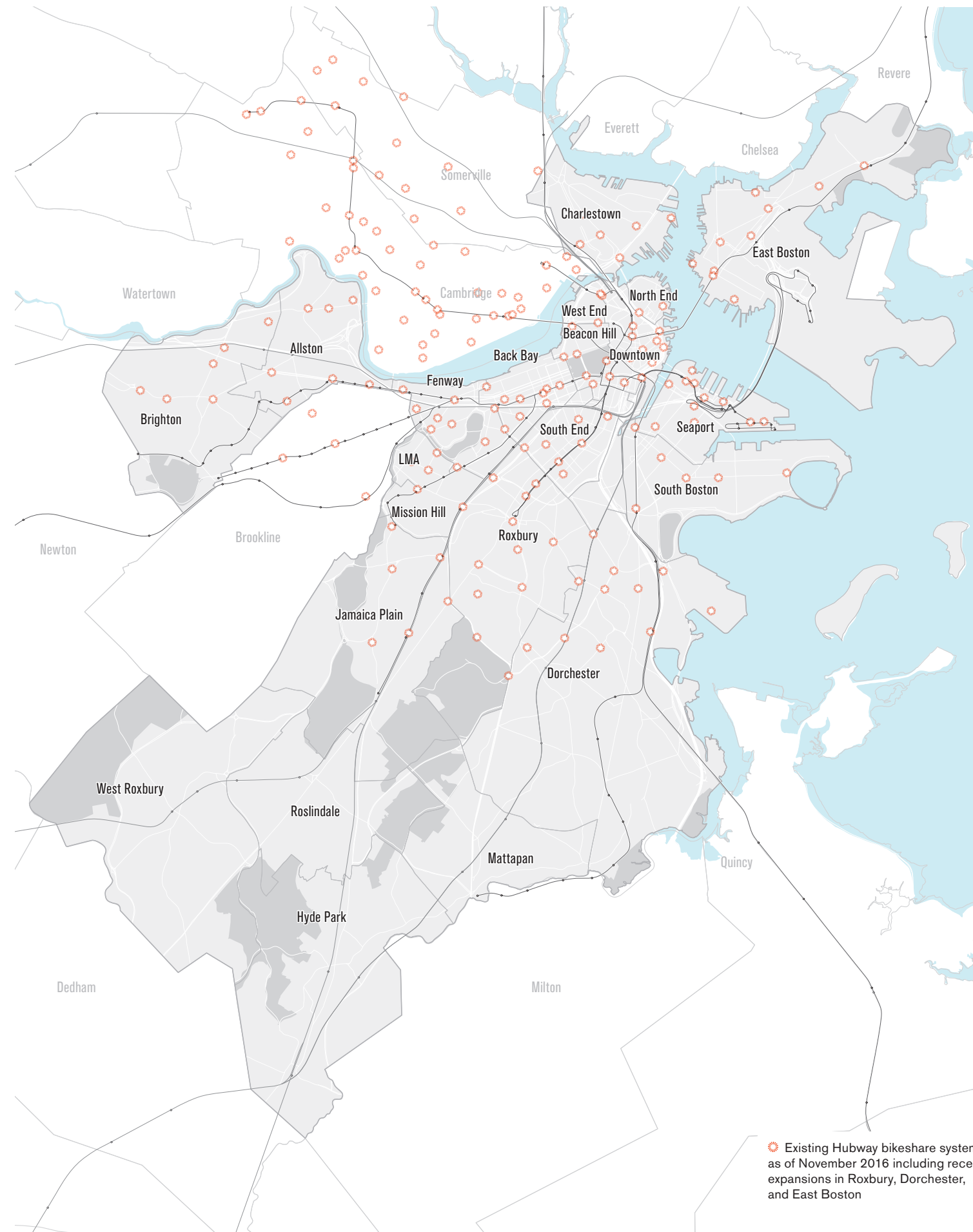
- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

Public Input

"Hubway should be utilized to work as last-mile connections to/from transit stations. As an example, along the Southwest Corridor, some Orange Line stations have Hubway docking stations, but there are few to no stations in the neighborhoods surrounding them. Adding more stations in these areas would allow people who live farther from transit the opportunity to bike to the T."

-02130



● Existing Hubway bikeshare system as of November 2016 including recent expansions in Roxbury, Dorchester, and East Boston

More info at blog.bostonbikes.org/post/143549809449/did-you-hear-hubway-is-expanding-in-roxbury-and and www.thehubway.com/

Local

Forest Hills to Roslindale Square Rapid Bus

Bus priority treatments from Forest Hills to Roslindale Square

Project Description

Using a reserved transit lane on Washington Street and bus signal priority, all existing bus service between Roslindale and Forest Hills would be able to operate clear of traffic congestion, greatly increasing transit speed, capacity, and reliability. The transit lane could be reversible, and flexible curb regulations would preserve vehicle capacity in the peak direction. With these bus service improvements, existing services could serve more riders in Roslindale and in points further south. In the long term, this route could utilize abandoned rail tracks that extend to Hyde Park, potentially bringing rapid bus to even more underserved residents.

Benefits and Issues Addressed

Currently, half of motorized roadway users on Washington Street between Forest Hills T-station and Roslindale Square are bus passengers. This demonstrates an incredible demand for improved transit to Roslindale, a neighborhood currently served only by hourly commuter rail service and numerous buses. This rapid bus service would improve the quality of experience for those connecting to the Orange Line, provide a boost to local businesses, open up new areas for potential development, and provide some measure of congestion relief to that segment of Washington Street.

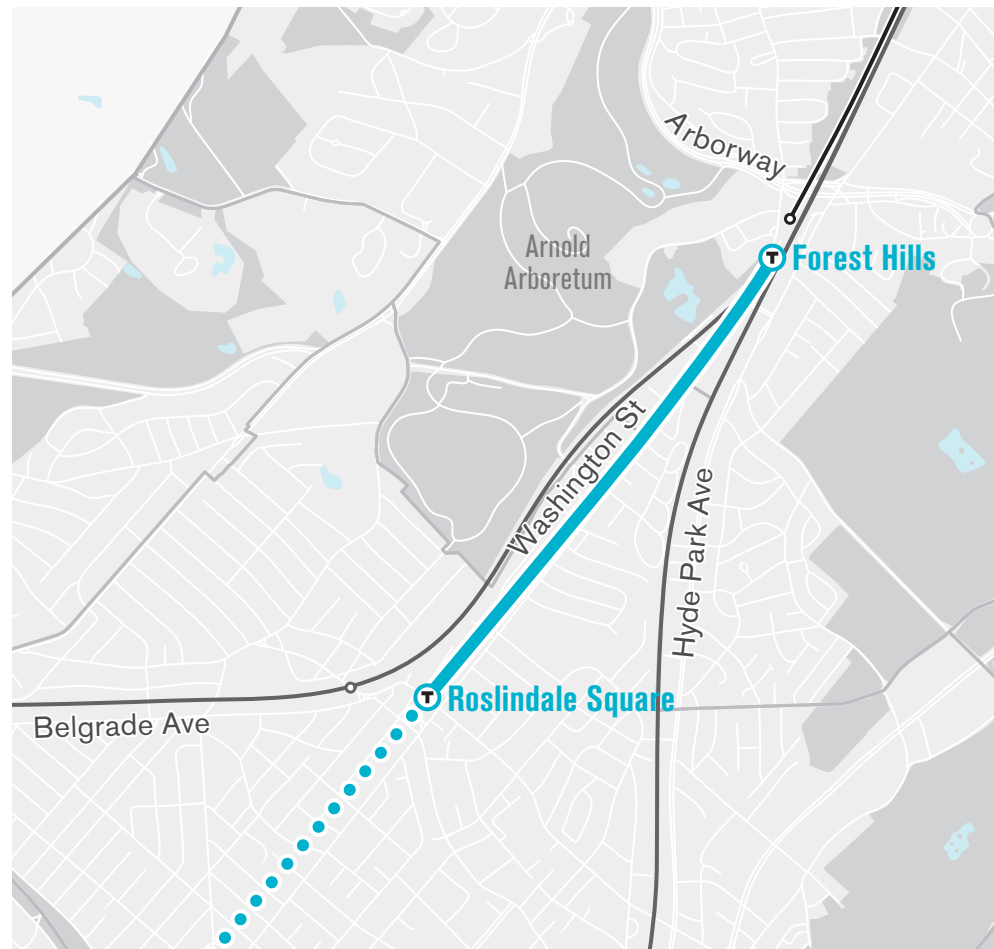
The bus passenger percentage of motorized roadway users on the stretch on Washington St between Forest Hills and Roslindale is as follows:

AM Peak Hour	PM Peak Hour
Northbound: 58.4%	Northbound: 32.4%
Southbound: 46.1%	Southbound: 59.8%

Bus routes currently serving this corridor include: 30, 34, 34E, 35, 36, 37, 40, 50, and 51.

Implementation

Approximate Cost: \$250,000 for design and construction
Potential Funding Sources: City capital budget and MBTA
Who's Responsible: MassDOT/MBTA and BTM
Time Frame: Within five years based on partnership with local community process



Best Practices

In San Francisco, CA, Bus Rapid Transit (BRT) lanes on Haight Street were carved out of a combination of travel lanes and parking lanes to help MUNI buses jump past queues of cars and improve service along these busy routes. With just a few blocks of exclusive lanes, buses are arriving on time more often and shortening the length of their route times. hoodline.com/2015/10/checking-in-with-lower-haight-street-s-muni-only-lane

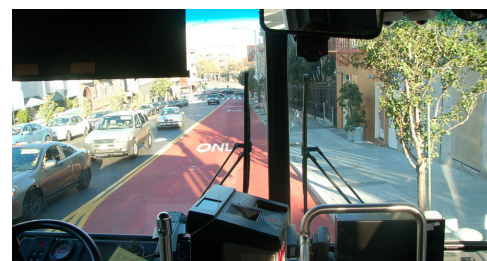


Photo credit: Aaron Bialick

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment

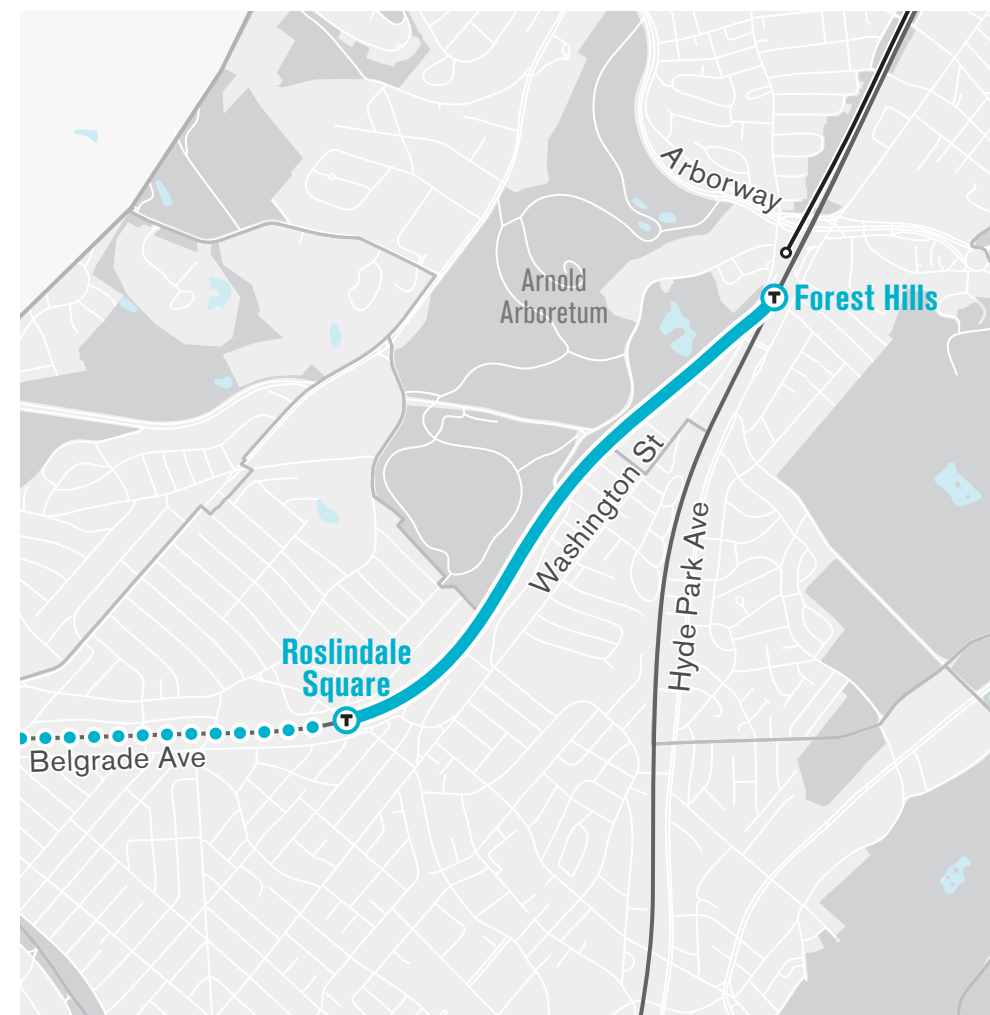
Local

Urban Rail Extension to Roslindale Square

Subway-like service to Roslindale

Project Description

Much like the Red Line extension to Alewife in 1985, the Orange Line could be extended to Roslindale or further. Alternatively, subway-like service could be added to the Needham Line that already runs from Forest Hills T-station. By providing this new service, an entire neighborhood as well as one of Boston's most successful Main Streets district will be connected by train to Forest Hills and beyond, enabling a single-seat subway-like ride where bus-to-train transfers were once needed. A parallel multiuse path will connect Roslindale Square to one of Boston's premiere open spaces, the Arnold Arboretum. Extending the Orange Line would require land acquisition and consolidation followed by major capital investments in new rail lines and a new station at Roslindale Square. Improved and more frequent service is possible to West Roxbury and beyond along this corridor, whether by the Orange Line or subway-like service on the Needham Line.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#5 in public voting

Benefits and Issues Addressed

While a rapid bus on Washington Street to Roslindale will help this congested transit corridor, the Needham Line is a separate right-of-way that represents a significant increase in transit capacity. An Orange Line extension can not only provide more people with a one seat ride, it enables a rapid bus on Washington Street to also do more, especially if extended south to Hyde Park and eventually to Dedham. Subway-like service on the Needham Line will enable that service to also have greater speed and capacity. Including a multiuse trail parallel to the tracks provides people with a healthy, active transportation and recreation route, connecting to the Arboretum and on to the existing Southwest Corridor Path, the Green Links Network (p170), Columbia Road Greenway (p172), and SW Corridor Extension to Back Bay and MGH (p174).

Implementation

Approximate Cost: \$500 million (for Orange Line Extension)
Potential Funding Sources: MBTA
Who's responsible: MassDOT and MBTA
Time Frame: 15+ years in coordination with local public process

Best Practices

The planned Green Line Extension to Union Square and ultimately College Avenue in Medford will follow existing MBTA Commuter Rail tracks for the Lowell and Fitchburg lines.

Los Angeles, CA, is also extending their Gold Line to Montclair/Claremont alongside the existing San Bernadino commuter rail line, increasing the number of tracks to three or more. thesource.metro.net/2016/04/13/potential-ballot-measure-the-gold-line-extension-to-claremont/

Public Input

"The Orange Line should be expanded to go along the Needham Commuter Rail line. ...This would alleviate crowding on Washington St. in Rozzie Square because of all the buses that currently travel through there." -02131

"Roslindale is the only part of Boston proper without proper T coverage. Commuter rail and buses aren't cutting it, especially as more people get priced out of the up and coming JP and move to Rozzie instead. An increasing number of folks will need to commute into Boston from Roslindale, and extending the T there would increase ridership and make a LOT of residents very happy." -02130

Public Input

"Would like to see a bus route from Washington St, Roslindale to Centre St, West Roxbury. We have to go to Roslindale Square to catch another bus to get to Centre St, West Roxbury. At the CVS in Roslindale the cars come out of the parking lot and stop the traffic coming down Washington St, West Roxbury - there is always a jam all day long." -02131

"BRT along Washington Street to reduce congestion." -Roslindale roundtable

Local

Dorchester Ave Complete Street (South Boston)

Make Dot Ave between Broadway and Andrew Square more multimodal

Project Description

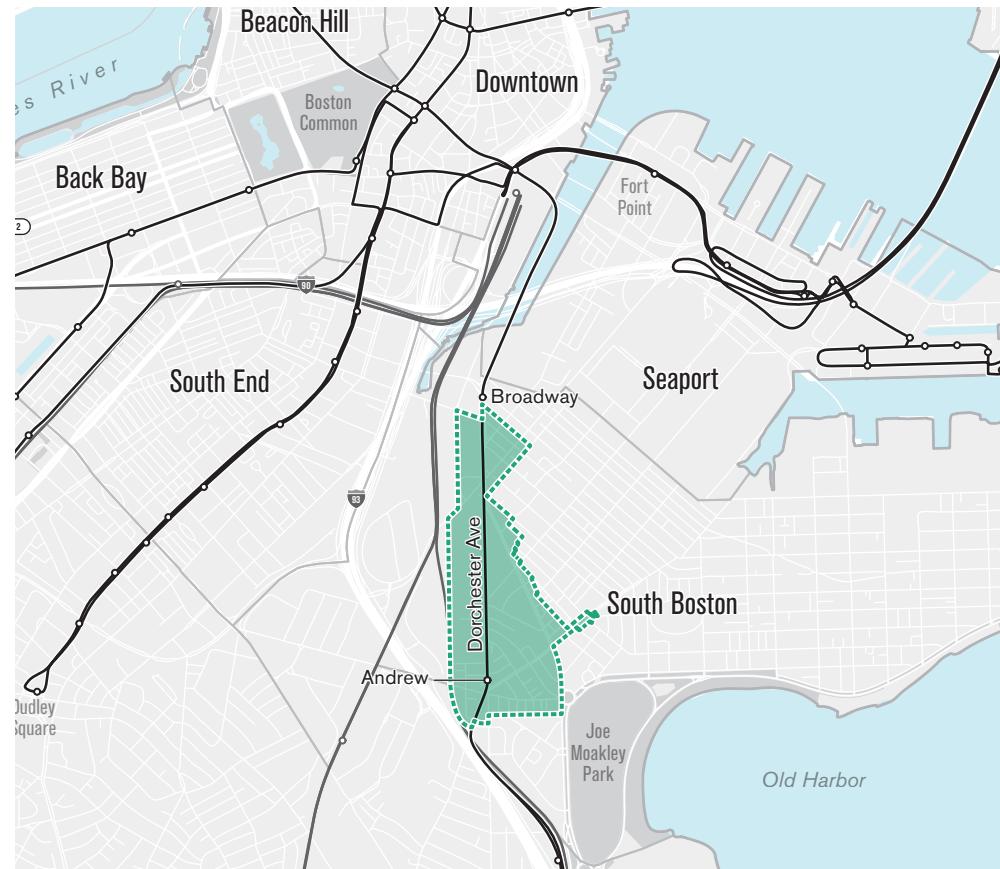
As outlined in the BPDA's PLAN South Boston report, Dorchester Avenue will be redesigned as a street that serves as the retail anchor to the district as well as a key multimodal thoroughfare. Enhanced crosswalks accessible to those of all abilities as well as other safety and public realm improvements, protected or separated bike lanes, and queue jump lanes along with signal priority for buses will support active transportation and retail activity. Old Colony Avenue, Edge Street, and (new) Ellery Street will also be designed for multimodal use appropriate to the transportation needs and scale of the surrounding buildings.



Image credit: BPDA's PLAN, South Boston Dorchester Ave report

Benefits and Issues Addressed

The existing Dot Ave corridor between Broadway and Andrew stations is currently a mix of industrial uses, is unfriendly to walkers and cyclists, and has infrequent bus service. As part of the reimagining of this district and subsequent rezoning, the City expects a surge in mixed-use development with 6,000 to 8,000 new units of housing. To accommodate this growth, new residents need many options for traveling without relying on a car. The corridor will also become a valuable regional conduit for Fairmount Indigo Line connections and for bicycle trips from the Columbia Road Greenway (p172).



Implementation

Planning Level Costs: \$7 million for design and construction
Funding Sources: City capital budget and Boston MPO TIP
Who's Responsible: BTD and Public Works with BPDA
Time Frame: Ongoing design within five years and construction within 15 years

Best Practices

Chicago moved parking onto side streets and redesigned busy Milwaukee Avenue to install protected bicycle lanes. Over 1,000 cyclists per day use the lane.
chicagocompletestreets.org/streets/bikeways/barrier-protected-bike-lanes/

More info at www.bostonplans.org/planning/planning-initiatives/plan-south-boston-dorchester-ave

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#20 in public voting, ongoing planning work by the BPDA

Public Input

PLAN: South Boston Dorchester Avenue heard from residents that they wanted:

"Walkable sidewalks"

"A street for people not cars"

"Safe streets, slower cars, protected bike lanes, good sidewalks"

"More accessible and safer for pedestrians, bicycles"

Local

Washington St/Columbus Ave Complete Street (JP/Roxbury)

Make the corridor between Forest Hills and Jackson Sq more multimodal

Project Description

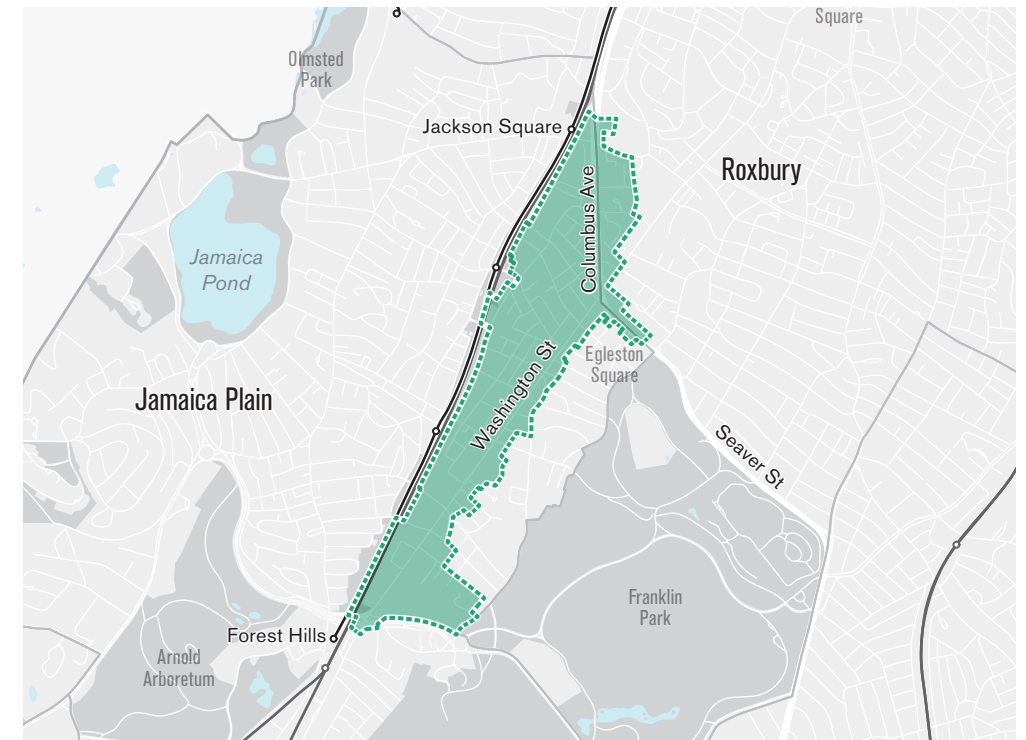
As outlined in the BPDA's PLAN JP/Rox report, Washington Street and Columbus Ave will gradually transition from auto-related businesses to a corridor of mixed-use multi-family buildings to better connect existing walkable clusters of businesses and homes. Pedestrian friendliness will be a key design feature along the corridor, with widened sidewalks and improved crossings. The design of Egleston Square in particular will focus on helping people navigate it safely on foot. Bicycle facilities, bike parking, and improved way-finding will support local trips and help people access the Southwest Corridor. Bus lanes, queue jump lanes, and operational improvements at bus stops will improve Columbus Ave and part of Washington Street for transit.



Image Credit: BPDA's PLAN, JP/ROX report

Benefits and Issues Addressed

Parallel to the Southwest Corridor and the Orange Line, residents around this stretch of Washington Street are already multimodal. Improving safe access to that multimodal corridor will be an important concurrent project to the upgrades on Washington and Columbus. Especially as parking ratios decrease to accommodate more affordable housing in the district, high-quality walking, bike, and transit options for residents will be imperative. Orange Line improvements (p194) and continued bikeshare expansion (p154) will also support people who chose not to drive here.



Implementation

Planning Level Costs: \$12 million for design and construction
Funding Sources: City capital budget and Boston MPO TIP
Who's Responsible: BTD and Public Works with BPDA
Time Frame: Ongoing design within five years and construction within 15 years

Best Practices

In New Orleans, after the City passed a Complete Streets policy in 2011, the City rebuilt Esplanade Avenue. Formerly a four-lane road with a median and parking, the street was one of the City's top crash corridors. The City removed a travel lane and installed painted bicycle lanes, as well as upgrading ramps for improved ADA access. Estimates show that pedestrian and bicycle traffic on the corridor has more than doubled.
smartgrowthamerica.org/after-the-ordinance-implementing-complete-streets-strategies-in-new-orleans/

More info at www.bostonplans.org/planning/planning-initiatives/plan-jp-rox

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#21 in Boston public voting, ongoing planning work by the BPDA

Public Input

PLAN: JP/ROX heard from residents that they wanted:

"Fewer cars is a good long-term goal, but design should accommodate existing needs and be adaptable to future change."

"More trees and activity would make it a better place to walk, especially at night."

"Bike everywhere."

"More pleasant street experience for pedestrians."

Local

Neighborhood Complete Street Corridors

Enhancements to promote safe travel for those walking, on bikes, in buses, and driving cars

Project Description

Implementing Boston's *Complete Streets Guidelines*, the City will install enhancements along several neighborhood connectors that improve travel safety, accommodate people biking, and make walking more comfortable. These include East Boston's longest connector, Bennington Street; Washington Street between Egleston and Dudley Squares; Humboldt Avenue in Roxbury; Cummins Highway connecting Roslindale and Mattapan; and Tremont Street in the South End.

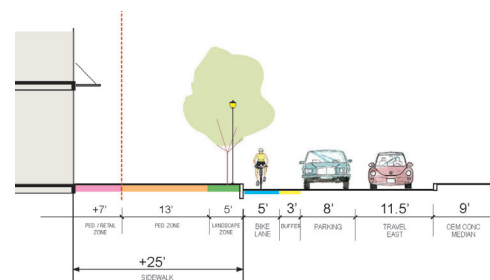
Benefits and Issues Addressed

Each of these connective neighborhood corridors experiences higher crash rates and greater vehicle speeds than most of the residential streets that feed into them, yet residents of these neighborhoods depend on these corridors for daily life. Making each a complete street will improve safety for all travelers and provide much needed bicycle accommodations where none exist. Once improved, these corridors can make it easier for residents to walk and bike to transit, neighborhood services, and their Main Streets districts (p144).

Best Practices

In 2008, NYCDOT released their *Sustainable Streets* plan. The plan laid out several transportation initiatives that would improve streets for all modes of transportation and increase safety for bicyclists and pedestrians. www.nyc.gov/html/dot/downloads/pdf/ss09_update_lowres.pdf

The City of Boston is currently designing Harrison Avenue in the South End with wide sidewalks and protected bike lanes with safer crossings for all.



Implementation

Approximate Cost: \$40 million for design and construction
Potential Funding Sources: City capital plan for design and Boston MPO TIP for construction
Who's Responsible: BTS, Public Works, and MassDOT
Time Frame: Ongoing and over 15 years

Public Input

"Tremont Street 'Slow your Roll' Road Diet: Imagine if Tremont Street in the South End went on a diet. What could that mean for the neighborhood? Decreased average driving speeds, and increased safety for people on foot and on bike? Yep."
 -02118

Local

Fairmount Greenway Neighborways

A nine-mile walking and biking route that parallels the Fairmount Indigo Line

Project Description

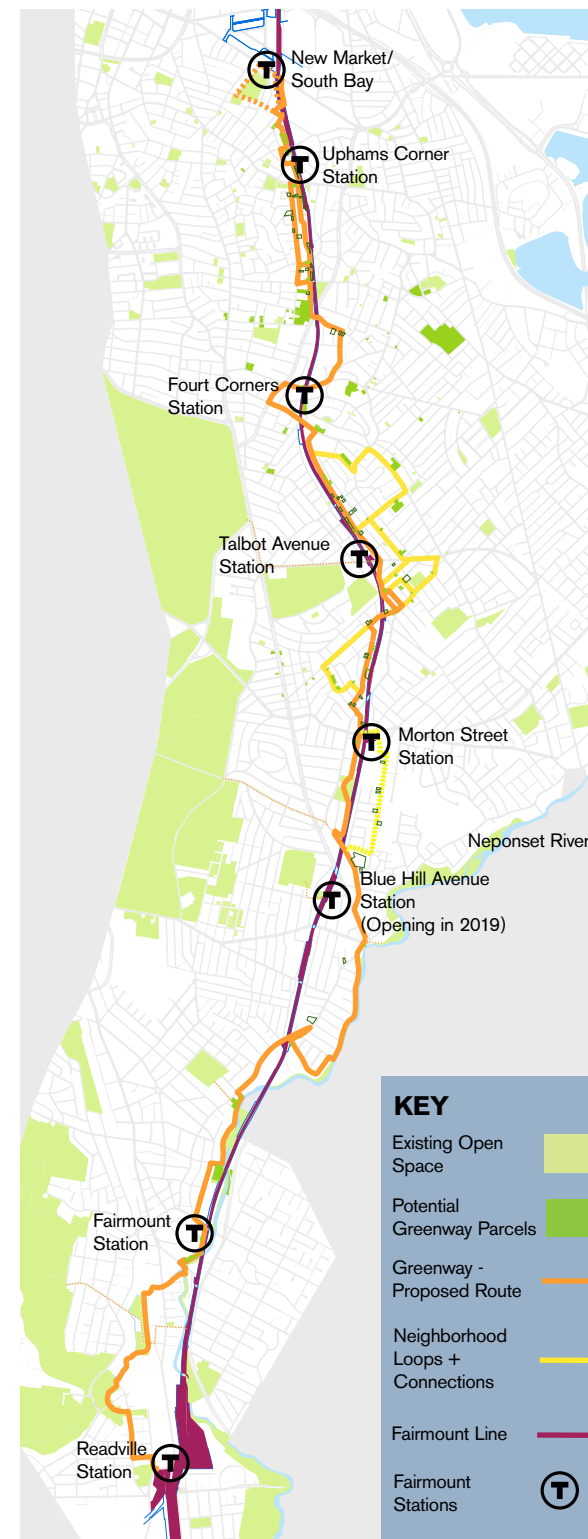
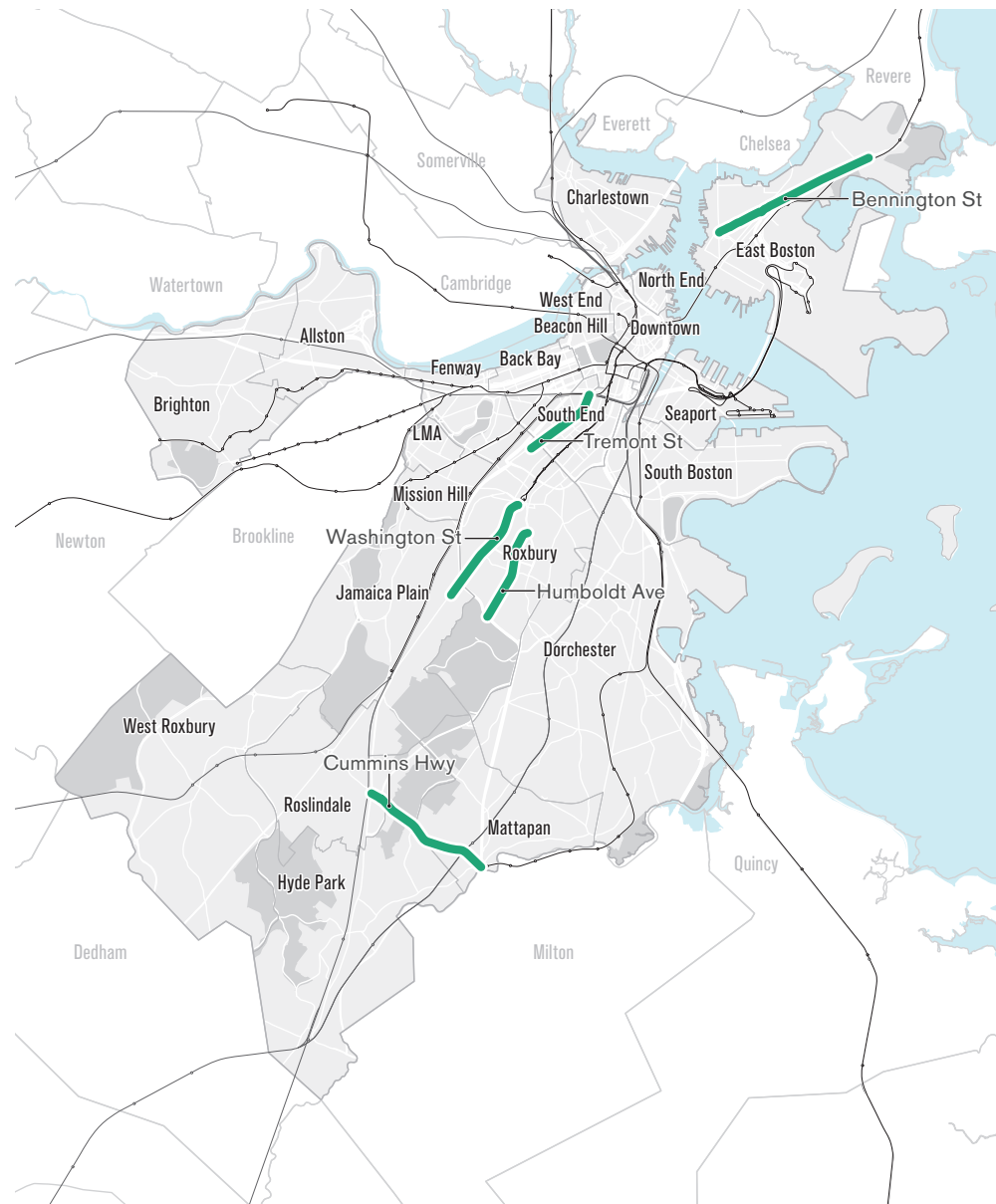
This multi-site urban greenway links the Fairmount stations, open space, and other developing neighborhood amenities with an on-street biking and walking route that loosely follows the Fairmount/Indigo Line. The neighborways would include traffic calming, wider sidewalks, wayfinding signs and markings, improved intersection crossings with busy streets, and green infrastructure enhancements. In addition to the primary north-south route, there would be shorter loops for local trips that safely connect residents, commuters, shoppers, and visitors to transit stations; to new and existing open space, including parks, community gardens, schools; and to neighborhood business districts and historic sites.

More info at fairmountcollaborative.org/what-we-do/create-the-fairmount-greenway/

Project Scores: East Boston – Bennington Street, Roxbury – Egleston to Dudley, Roslindale/Mattapan – Cummins Highway, Roxbury – Humboldt Ave, Tremont Street (South End) Bicycle Facilities

- ○ ○ ○ Access 1
- ● ● ● Access 2
- ● ● ● Safety 1
- ● ● ● Safety 2
- ● ● ● Reliability
- ● ● ● Affordability
- ● ● ● Sustainability/Resiliency 1
- ● ● ● Sustainability/Resiliency 2
- ● ● ● Governance

This project recommendation came out of community feedback and the Needs Assessment.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of community feedback and the Needs Assessment.

Benefits and Issues Addressed

The Fairmount Greenway Task Force (FGTF) has engaged over 700 local community members since 2008 to implement short stretches of the neighborways, create new community gardens, activate vacant sites, enhance urban wilds, and develop a shared vision for a connected network of gardens, parks, and open spaces that enhance the communities in Hyde Park, Mattapan, Roxbury, and Dorchester that were historically underserved by transit and park access. Moving forward, its special designation as a greenway of neighborways will make it the focus of temporary playways, art installations, tactical urbanism strategies, and green infrastructure improvements to the streetscape to create a sense of place, provide community destinations, and green the route.

Implementation

Approximate Cost: To be determined
Potential Funding Sources: City capital plan, DCR for path along Neponset, EPA Region 1, and MassDOT's Complete Streets program
Who's Responsible: BTS and Public Works with MassDOT and DCR
Time Frame: Five years for design and 15 years for construction in coordination with local public process

Best Practices

In Vancouver, BC, the Carrall Street Greenway connected three neighborhoods by altering the existing street layout of two travel lanes and parking/loading lanes to include a recreational path, more street trees, and decorative street lighting. The design includes "flexible amenity space" that can be used for loading, parking, sidewalk cafes, parties, etc. The design preserved the character and history of the neighborhoods it passed through (ex. brick sidewalks in the Gastown neighborhood) with an existing ROW of 66 feet. ourvcr.com/?p=493

Public Input

"Build the Fairmount Greenway: a neighborway to connect communities. The Greenway promotes active living and improves the environment, while connecting neighborhoods. Since 2008 the effort has been led by the Fairmount Greenway Task Force, which includes 10 community organizations working in collaboration with the City of Boston. We are very excited to mark the Greenway route with permanent signage and bikeway pavement markings in the near future. However, there is still more work to be done. Our vision is to create a friendly, safe, and green route."
 -02143

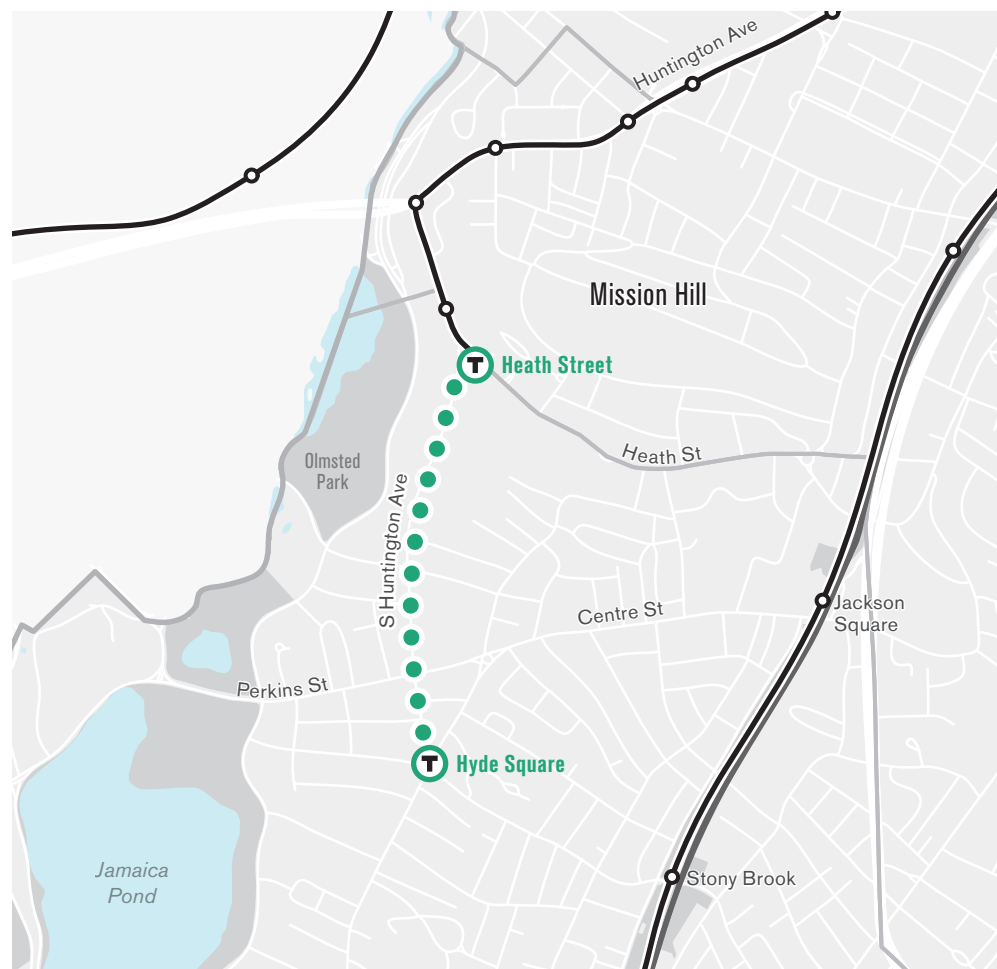
Local

Green Line Extension to Hyde Square

Continue service on the E Line for a mile beyond Heath Street

Project Description

The existing Green Line beyond Brigham Circle would be upgraded and extended beyond Heath Street to Hyde Square, creating an improved transit connection between the Longwood Medical Area and Jamaica Plain. The existing protected rail median on Huntington Avenue would be extended to South Huntington by moving on-street parking to side streets converted to one-way pairs. In-street operations south of Huntington could continue, with the final alignment to serve Hyde Square determined through a separate process.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

#18 in public voting

Benefits and Issues Addressed

Huntington Avenue is a heavily-traveled corridor that greatly interferes with Green Line operations west of Brigham Circle, where a protected transit median has not yet been built. More efficient operations increase transit access to the LMA in both directions, while a southerly extension to Hyde Square connects thousands of residents with rail transit and connects the Centre Street Main Street district in Jamaica Plain to the rest of the city on rail, further helping to reduce reliance on driving in this congested part of the city.

Implementation

Approximate Cost: \$40 million for design and construction
Potential Funding Sources: City capital plan, MBTA, and FTA
Who's responsible: MBTA
Time Frame: 15+ years

Best Practices

In Los Angeles, CA, the most recent Gold Line light rail extension opened in 2016. Ridership is already well above expected levels, with 66% of new riders coming from private vehicle commutes.
metro.net/projects/foothill-extension/
la.curbed.com/2016/4/11/11411796/gold-line-foothill-extension-ridership

Public Input

"Extend the Green Line to Hyde Square." -02120

"The Green Line should be extended 6/8 of a mile to Hyde Square, where there is great residential and commercial activity, and therefore serve the needs of hundreds more residents and bring thousands of people to the commercial and cultural hub of Boston's Latin Quarter. This is more crucial now that the South Huntington Avenue corridor is in the midst of important development, with at least 200 new units along the avenue." -02130

"Green Line to Hyde Square would be a 'game changer'—serve people where they are." -Roslindale roundtable

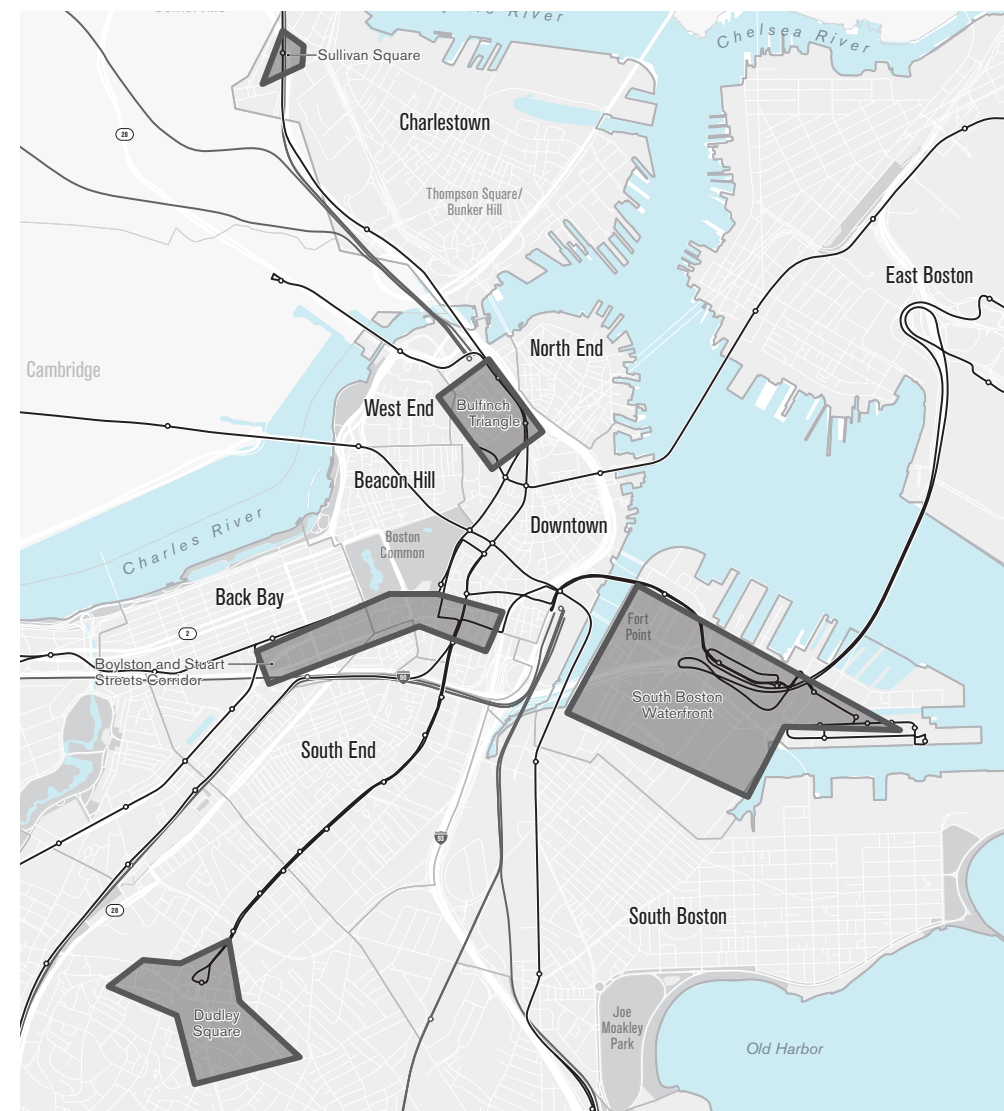
Local

Smart Signal Districts

Traffic lights talk to each other to facilitate movement in congested parts of the city

Project Description

Building upon smart signal corridor approaches (p177), in the South Boston Waterfront, Sullivan Square, the Bulfinch Triangle (just south of North Station), and Dudley Square, traffic signals would communicate with one another as vehicle traffic backs up onto short blocks when drivers wait to turn or as crossing walkers surge from trains or buses unloading nearby. Signals would then adjust their timing to alleviate temporary delays and avoid intermittent conflicts. District-wide, automated responses to traffic, bike, and walk flows would have traffic signals work together as a single network, and adjustments in one section would be sensitive to impacts in another.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

#8 in public voting

Benefits and Issues Addressed

Complicated historic street patterns, accelerated housing development and job growth, and high numbers of buses and shuttles traveling through these districts has led to heightened local congestion. Unlike corridors where the primary direction of travel is clear, these districts have more complicated circulation issues to address. By leveraging new technology that responds to demand, BTM signals will impactfully improve flows and reduce congestion. For example, Silver Line buses would be given additional green time on Washington Street if cross streets were detected to have lighter than usual traffic; vehicles could be diverted to an alternative route if access to an on-ramp in South Boston was jammed; or people walking would be given more crossing time on Canal Street and Causeway Streets when there is a concert at the Boston Garden. Today, BTM is working to change driver behavior with variable message boards and in-car apps, telling drivers that seemingly longer routes are actually faster. In the future, the signals will pass this information along to autonomous vehicles automatically.

Implementation

Approximate Cost: \$25 million over five years for smart corridors and districts as well as other signal upgrades
Potential Funding Sources: City capital plan and developer funding
Who's Responsible: BTM
Time Frame: Ongoing

Best Practices

In Pittsburgh, PA, a startup found that smart traffic signals could reduce vehicle travel times by 25%. Importantly, this study also tracked a 40% reduction in idling, which is directly tied to an emissions decrease.
spectrum.ieee.org/cars-that-think/robotics/artificial-intelligence/pittsburgh-smart-traffic-signals-will-make-driving-less-boring

Transport for London has shown progress in cutting delays by using a program that makes traffic signals more efficient and adaptive to traffic flows.
www.traffictechnologytoday.com/news.php?NewsID=37610

Public Input

"Traffic light retiming: Hire a transportation planning agency to do a full city-wide review of all our traffic lights to see how retiming them can give better traffic flow." -02135

"Adaptive signal technology that automatically adjusts for real time conditions within 5 years." -02136

Crosstown Projects and Policies

Travel across the neighborhoods of Boston has been challenging, particularly for non-drivers. The Go Boston 2030 crosstown policies and projects relieve the transportation systems of the need to go downtown for transit transfers and safe bike facilities. New pockets of growth proposed by Imagine Boston 2030 and other planning initiatives will be well-served by these new connections. New job centers in medical areas such as Longwood and MGH, the South Boston Waterfront, Beacon Yards (Allston), and Allston Landing will be easier to access by high quality bus and train corridors, technology-leveraging shuttles, safe bike routes, and effectively signalized streets.

Policies

- Bus Service Reliability Improvements*
- Restructure All Bus Routes*
- Green Line Improvements
- Consolidated Smart Shuttle System

Early Action Projects

0 to 5 years

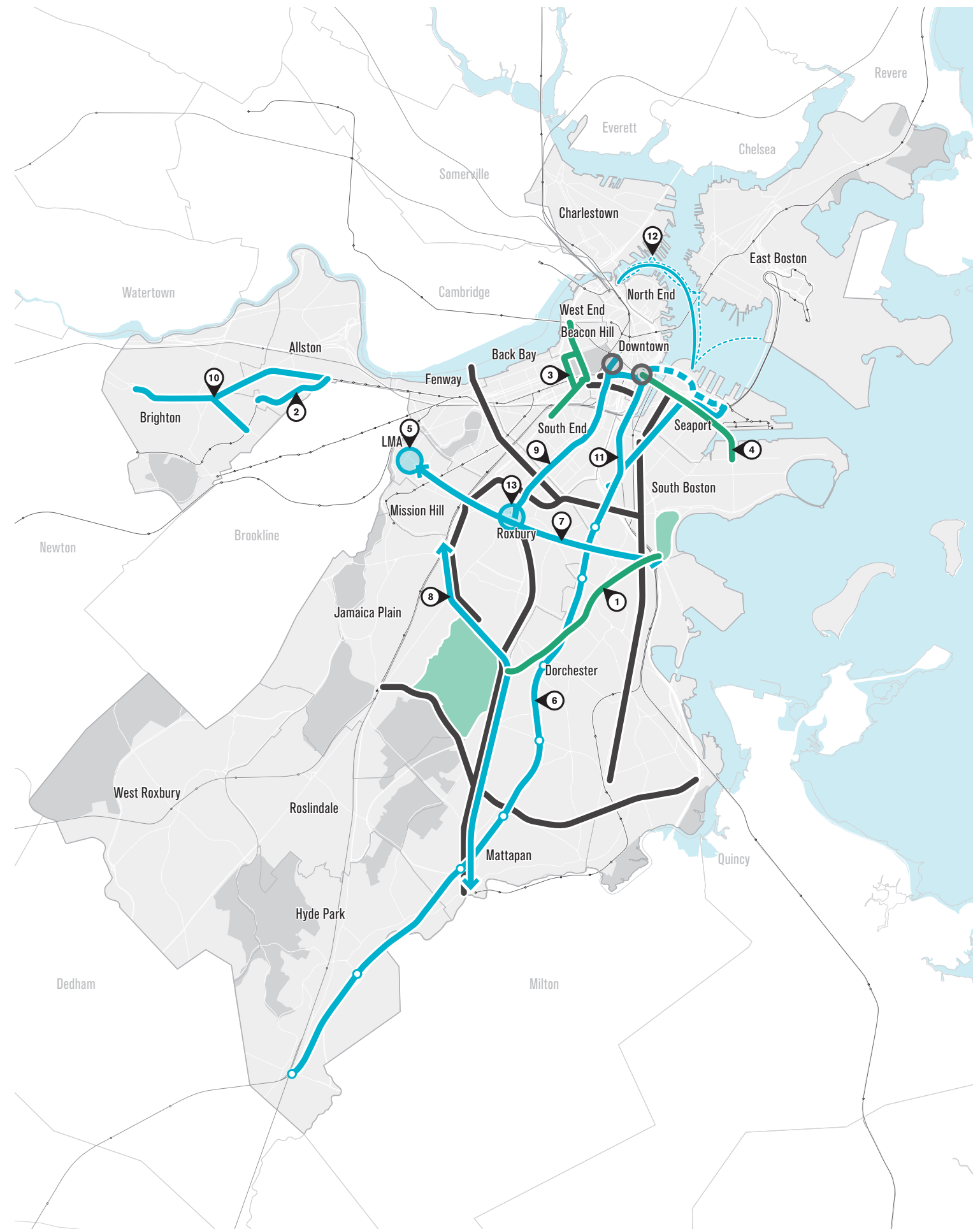
- Green Links Network (Refer to Boston Greenlinks map on p171)
- ① Columbia Road Greenway*
- ② Commonwealth Avenue beyond Packards Corner
- ③ SW Corridor Extension to Back Bay and MGH
- ④ Summer Street Protected Bike Lane
- Silver Line Termini at Downtown Crossing and South Station
- Smart Signal Corridors*

Longer Term Projects

5 to 15+ years

- ⑤ Longwood Transit Hub
- ⑥ Fairmount Indigo Line Service Improvements*
- Fairmount Indigo Line Urban Rail*
- ⑦ LMA to JFK Rapid Bus via Dudley and Uphams
- ⑧ Mattapan to LMA Rapid Bus*
- ⑨ Improved Silver Line: Dudley to Downtown
- ⑩ Oak Square to Comm Ave Improved Bus Corridor
- ⑪ Seaport to Dorchester/Widett Urban Rail
- ⑫ Inner Harbor Expansion
- ⑬ Dudley Square Transit Hub

* Top policy or project



Crosstown

Bus Service Reliability Improvements

Ensure that each of the 30 bus routes with the highest ridership operate more effectively

Policy Description

In 2013 and 2014, the 15 bus routes in the MBTA system with the highest ridership were the focus of a project to consolidate stops and develop a schedule with more frequent service, "with buses arriving every 10 minutes or better during weekday peak periods, every 15 minutes or better during weekday midday, and every 20 minutes or better during off-peak periods." Now, these bus routes, along with the next 15 busiest, will be the focus of further improvements including exclusive bus lanes where there is a segment of particularly high ridership and a high frequency of buses, off-board payment or another system that allows for all-door boarding, signal priority when buses run behind schedule, and better bus stops.

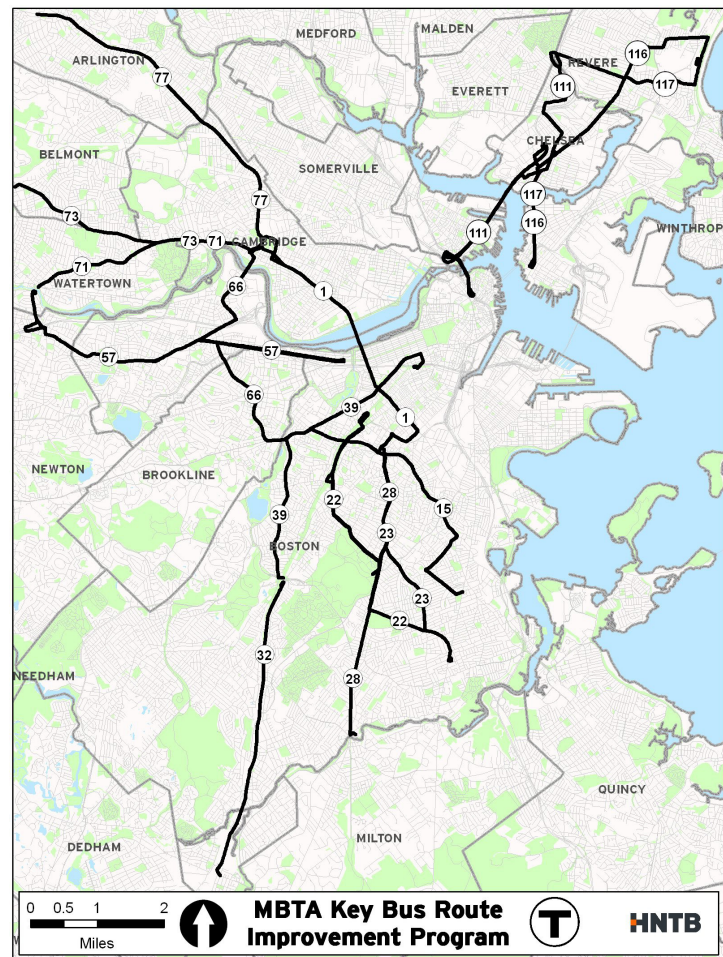
Benefits and Issues Addressed

While buses have to stop regularly on a route to serve passengers effectively, they should remain an efficient and reliable way to travel through the city. Improving the boarding process and helping buses advance past other vehicular congestion will mitigate the two most common types of existing delays that plague essential MBTA routes now serving neighborhoods with little or no subway service. Though all buses should provide excellent customer service, be safe and comfortable, and meet the needs of people with disabilities, improvements to 30 routes with the highest ridership will make a significant impact on transit reliability and use.

Implementation

Approximate Cost: TBD
Potential Funding Sources: MassDOT/MBTA for construction with City capital plan for street design
Who's responsible: MassDOT/MBTA and BTM
Time Frame: Ongoing

Construction and improvements for Key Bus Routes was completed in 2014, with the exception of minor adjustments, using a \$10 million grant from the American Recovery and Reinvestment Act. (MBTA, April 2015)



These 15 routes are part of the existing Key Bus Route program.

Best Practices

Select Bus Service is a system of key bus routes in NYC that have been (or will be) improved using more frequent service, fewer stops, off-board fare payment, real time arrival signs, signal priority, and bus lanes. web.mta.info/mta/planning/sbs/



Image Source: www.nyc.gov/html/brt/html/routes/34th-street.shtml

Public Input

"Keep up bus service during the day so that it's a reliable way to run errands or get to meetings between peak times."

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

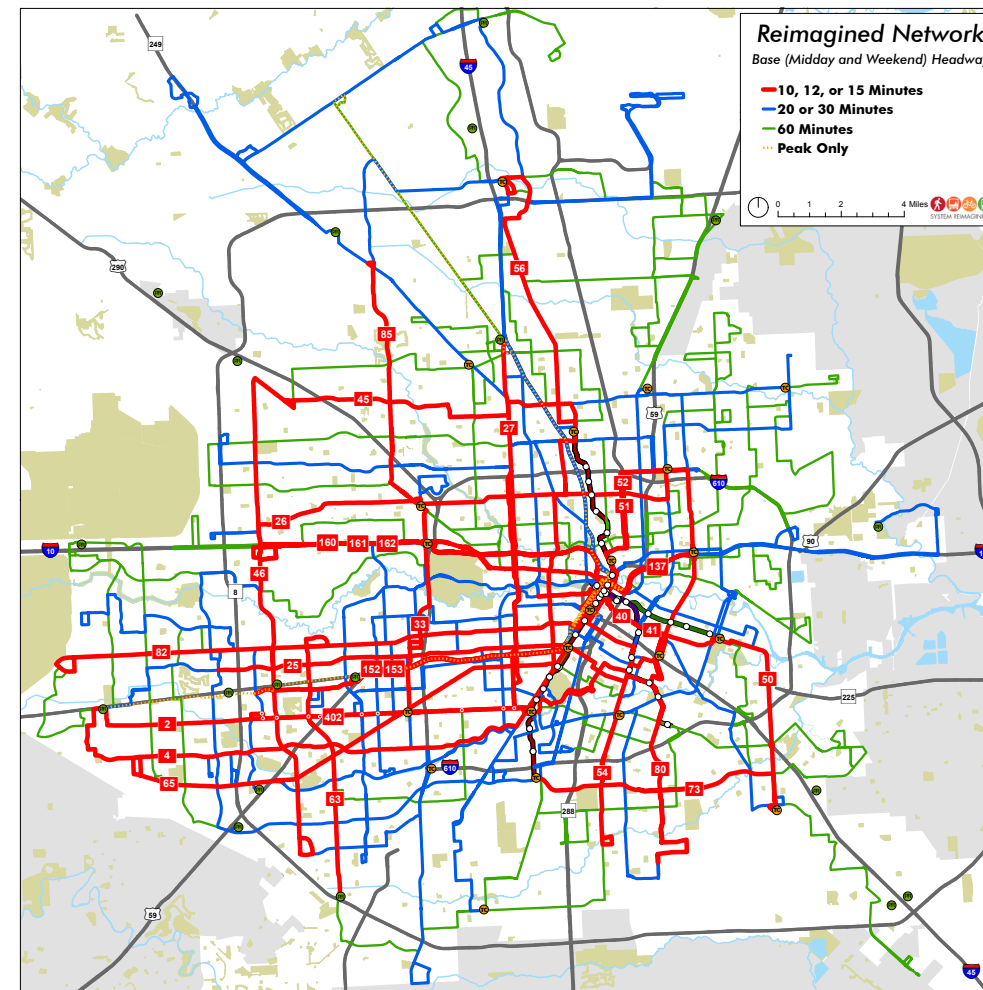
Crosstown

Restructure All Bus Routes

Conduct a public process and study to identify areas needing new or improved bus connections

Project Description

Beginning with Focus40, the MBTA is taking a fresh multi-year look at its operations and routes and the possibility of expanded service. In collaboration with the MBTA, the City of Boston would work with the community to develop a new network of bus routes that better-match Bostonians' travel needs, provide the most frequent service where there is the highest demand and ensure ADA compliance. The MBTA will also consider a set of routes that would best serve the city overnight to provide 24-hour access to jobs, as laid out by the MBTA in its Fair Fare policy and Extended Service Hours policy.



Houston's Metro redesign is organized around a core of high frequency bus routes.

Houston Metro, *System Reimagining Plan Materials*. Retrieved from ridemetro.org/MetroPDFs/AboutMETRO/CurrentProjects/pdfs/Reimagining/Flip-Through-Maps.pdf

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#12 in public voting

Benefits and Issues Addressed

Today's bus network largely resembles the paths of the historic streetcars it replaced, even though the population density of homes and workplaces has evolved significantly. While buses serve many destinations well, others areas have poor or indirect service, forcing many residents to rely on their car to travel. By restructuring service and considering new routes and extensions, the MBTA could serve many more people much more efficiently. Combined with other projects that will expand the Key Bus Routes system (p166), add new vital cross-town routes (p167), and include transit signal priority on key corridors (p177), Boston stands to greatly improve bus transit at little cost.

Implementation

Planning Level Costs: TBD
Potential Funding Sources: MBTA
Who's Responsible: MBTA with local municipalities
Time Frame: Initiate changes within five years

Best Practices

Pittsburgh, PA, restructured their bus system in 2012 resulting in faster and more reliable service for over 80% of riders, even though the system had to cut buses due to diminished funding.

The recent restructuring of the Houston, TX, bus system has been matched by a notable uptick in transit riders and far fewer complaints. Houston implemented this plan nearly overnight and more than tripled the numbers of riders who had access to high-frequency routes. Of particular note, the high-frequency routes are consistent on weekdays and weekends, thereby serving those with non-traditional work schedules.

www.ridemetro.org/pages/Reimagining.aspx
usa.streetsblog.org/2016/01/04/ridership-on-the-upswing-after-houstons-bus-network-redesign

Public Input

"Restructure MBTA to include riders' voice and vote." -02125

"More bus routes. More stops. Clear price rates. More buses of the same number." -02125

"Greater variety of bus routes: Small bus for short routes, medium bus for long routes through neighborhoods, large bus for crosstown routes. Same with commuter rail - use DMU's to reduce headways." -02131

Crosstown

Green Line Improvements

Technology improvements to increase speed and reliability

Policy Description

A combination of several technology improvements will increase Green Line speed, reliability, and travel times. To improve safety in the most congested section between Kenmore and Government Center, a safety system will increase spacing, which will be compensated by going to three-car trains from today's two-car trains to preserve or increase capacity. On surface sections of the B, C, and E branches, signal priority technologies will ensure that trains no longer need to wait at cross streets; station improvements will make each stop fully-accessible to anyone of any ability while allowing off-board payment and all-door boarding to reduce station delays; and continued stop consolidation will further reduce the number of delays on all three lines, thereby helping to make peak-hour signal progression work better.

Benefits and Issues Addressed

The Green Line is an essential and heavily-used transit service for most of Allston, Brighton, Fenway, and the LMA, but delays associated with train congestion in the underground tunnels, as well as operating at-grade alongside vehicle traffic in these neighborhoods, add significant travel time—especially during commute hours. Increasing car capacity by 50% while reducing intersection and boarding delays would noticeably reduce travel times and attract more riders, helping to meet Go Boston 2030's goals for transit ridership.

Implementation

Approximate Cost: TBD
Potential Funding Sources: MBTA, FTA/FHWA
Who's Responsible: MBTA with street design changes by BTM
Time Frame: Initiate within five years

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

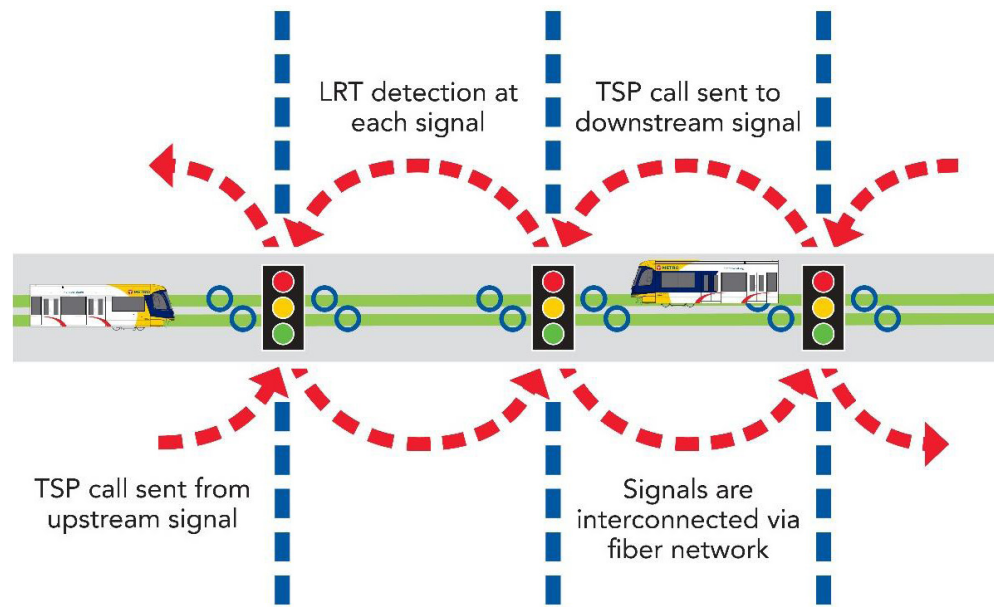


Image source: Federal Transit Administration, www.transit.dot.gov/sites/fta.dot.gov/files/docs/TRB-APTA_Green-Line-Signal-Priority_rev02.pdf

Best Practices

San Francisco's MUNI light-rail system used off-board payment and signal priority at intersections along its new Third Street surface extension, providing subway-like speeds at far less cost to construct than traditional rail. www.sfcta.org/sites/default/files/content/Executive/Meetings/pnp/2008/02feb05/prop%20k%20mta%20lrv%20vetag%20detection.pdf

Charlotte, NC, received a grant to expand capacity on their light rail Blue Line, retrofitting stations to accommodate trains with more cars and provide service at higher frequencies. chameck.org/city/charlotte/cats/planning/pages/blue%20line%20capacity%20expansion.aspx

Public Input

"Give Green Line trolleys and MBTA buses transit signal priority, and remove parking to make room for trolley/bus lanes that cars can't drive in on Huntington Avenue. This will let the trolleys and buses move faster because they won't be stuck in car traffic."

—02130

"Move all above-ground Green Line stops past the stoplights NOT before the lights."

—02446

Crosstown

Consolidated Smart Shuttle System

Eliminate redundant service with responsive vehicle requests

Policy Description

An on-demand shuttle service would provide circulation between major rail stations and large employers in congested commercial districts. This would build upon similar efforts by the Boston Convention and Exhibition Center (BCEC), BTM, and Massport to improve access to the South Boston Waterfront, as well as the current system of MASCO and EZRide shuttles which connect North Station to the LMA and Kendall Square. Rather than running separate shuttles for individual buildings or employers, a consolidated fleet could run at higher frequencies with lower overall cost. A system designed to request vehicles electronically via the web and mobile devices could also allow for an ebb and flow of shuttles that is responsive to demand. While preserving preference for employees, allowing the public to use these shuttles for a nominal fare can better integrate this supplemental service into the existing transit system.



Existing shuttle services stack up while waiting for passengers. Photo credit: Boston Globe

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#16 in public voting

Benefits and Issues Addressed

Today, numerous employer shuttles, designed to serve congested districts, operate redundant and underutilized service with multiple independent buses running from South Station to separate but adjacent buildings in the Seaport. They operate regardless of need, do not offer service to non-employees trying to reach the same location, and can get stuck in traffic. MASCO and EZRide shuttles at North Station are each somewhat consolidated systems but remain independent from each other and other non-participating but nearby employers who would benefit from their services today. A consolidated system could provide more regular service to a wider cross-section of potential users and be eligible for access to exclusive bus lanes and queue jumps on City streets to serve these places and others that the MBTA does not yet connect—such as Harvard's burgeoning Allston campus—expanding transit access while reducing overall delay and congestion.

Implementation

Approximate Cost: \$500,000 for an operations plan
Potential Funding Sources: BCEC, Massport, developers and employers, MASCO, and area universities with support from MBTA and BTM
Who's Responsible: Service providers who would be selected through open RFP process
Time Frame: Within five years

Best Practices

MASCO already operates effective shuttle services for the Longwood Medical Area and can serve as a model for consolidation. Leveraging app-based technology to request needed service can improve efficiency for these shuttles here and across the city. masco.org/lma-shuttles/routes

Public Input

"Consolidate shuttles and buses → create monopoly to focus \$ and reduce inefficiencies."
 —Chinatown roundtable

"Privately owned hospital bus shuttles (LMA for one) should offer space for the public. Hospitals do, after all, benefit tremendously from the financial breaks they get from the city."
 —Roxbury roundtable

Crosstown

Green Links Network

Enhanced pedestrian and bicycle paths between greenways including Yawkey Station to Fenway, Roxbury to Fenway, and Arboretum to Roslindale

- Project Score**
- Access 1 ○ Access 2
 - Safety 1 ○ Safety 2
 - Reliability ● Affordability
 - Sustainability/Resiliency 1
 - Sustainability/Resiliency 2
 - Governance

Identified on the ballot as an Early Action commitment

Project Description

Boston Green Links is a city-wide plan to connect people in every neighborhood to Boston's greenway network by installing new paths, new bike facilities, and safer road crossings. In particular, ongoing projects include the Roxbury to Fenway connector, that will link the Southwest Corridor Park and the Emerald Necklace for local residents and the South Bay Harbor Trail, which will connect Lower Roxbury and the South End to Boston Harbor. The plan has been developed in collaboration with multiple city departments, MassDOT, the state's Department of Conservation and Recreation (DCR), the LandLine and Emerald Network initiatives, and community groups. Individual links will be implemented over time, through grants, partnerships, and City-funded projects.

Benefits and Issues Addressed

Boston Green Links initiative has taken on the challenge of connecting people in every neighborhood to Boston's greenway network and major parks by installing new paths, new bike facilities, and safer road crossings. While 97.4% of residents live within a 10-minute walk of a park, the quality of the walk and the connections to other green spaces varies by community. By improving access to green spaces and opportunities for recreation and active transportation—including walking, running, biking, and skating—the City can reduce health disparities by ensuring that everyone can partake in increased physical activity, improved air quality, and lower levels of chronic disease.

Implementation

Approximate Cost: Determined by project, approximately \$500,000 per year
Potential Funding Sources: City capital budget, DCR, Boston MPO TIP, and private developers and institutions
Who's responsible: BTG, Public Works, Boston Parks, DCR, and private institutions and developers
Time Frame: Ongoing



Renderings of the Roxbury Fenway connector and the Arboretum Gateway Path.

Image sources: NBBJ and WalkUp Rozzie

Best Practices

Since 1992, a coalition in Portland, OR, has been working to build a series of regional greenways. 300 miles of trails have been built to date. These trails are mostly off-street and provide an excellent example of coordinated master planning efforts by diverse communities working to build on a more regional network.
www.oregonmetro.gov/sites/default/files/trails_accomplishments_report_2013.pdf

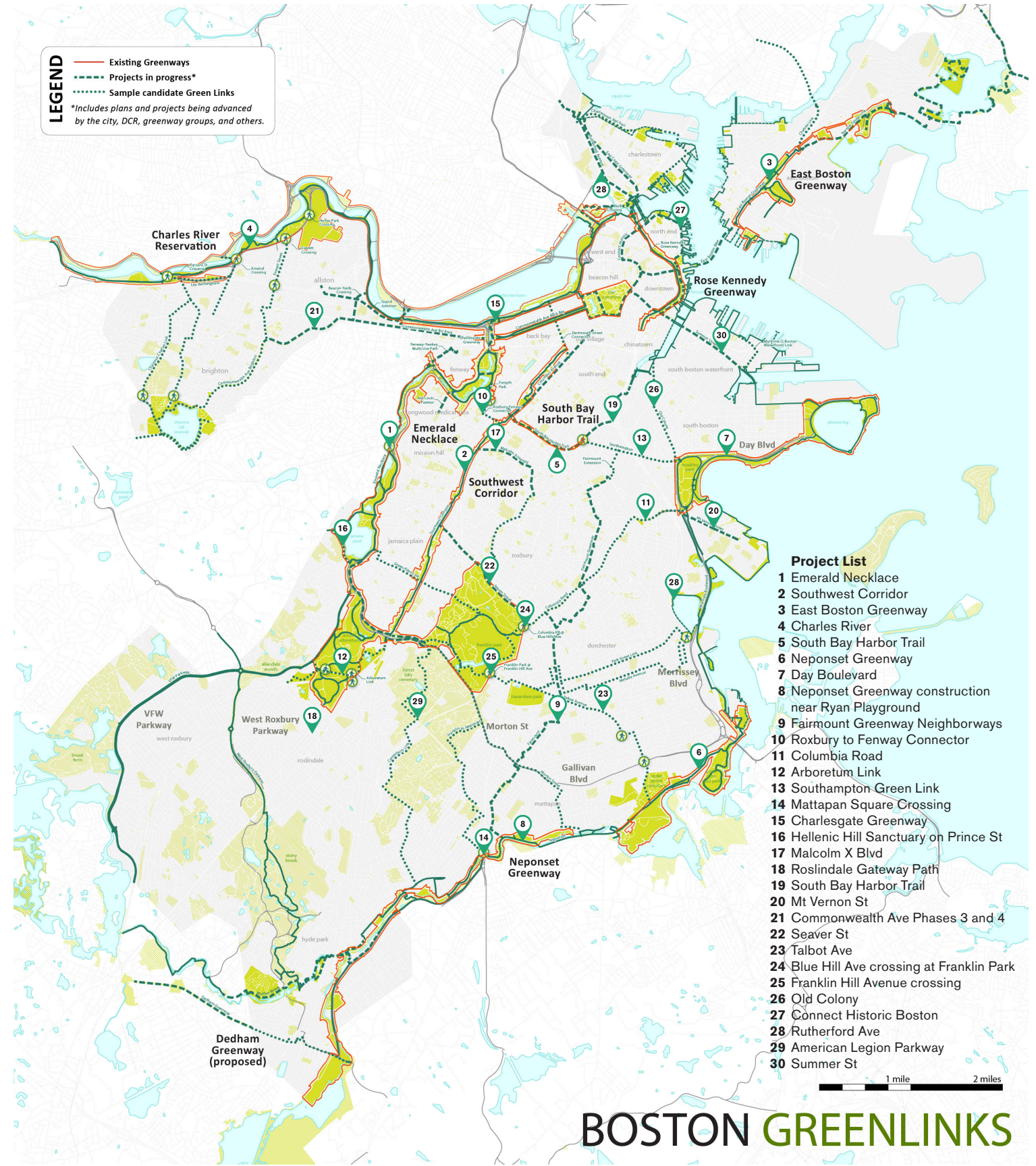
More info at www.boston.gov/transportation/boston-green-links

Public Input

"Green links: Columbia road, rox-fen connection, cycle track on Talbot Ave" -02131

"Advance components of Green Links Vision" -02132

"Connected footpaths between parks, greenspace" -02115



An interactive version of this map with links to specific projects can be found at app01.cityofboston.gov/GreenLinks/

BOSTON GREENLINKS

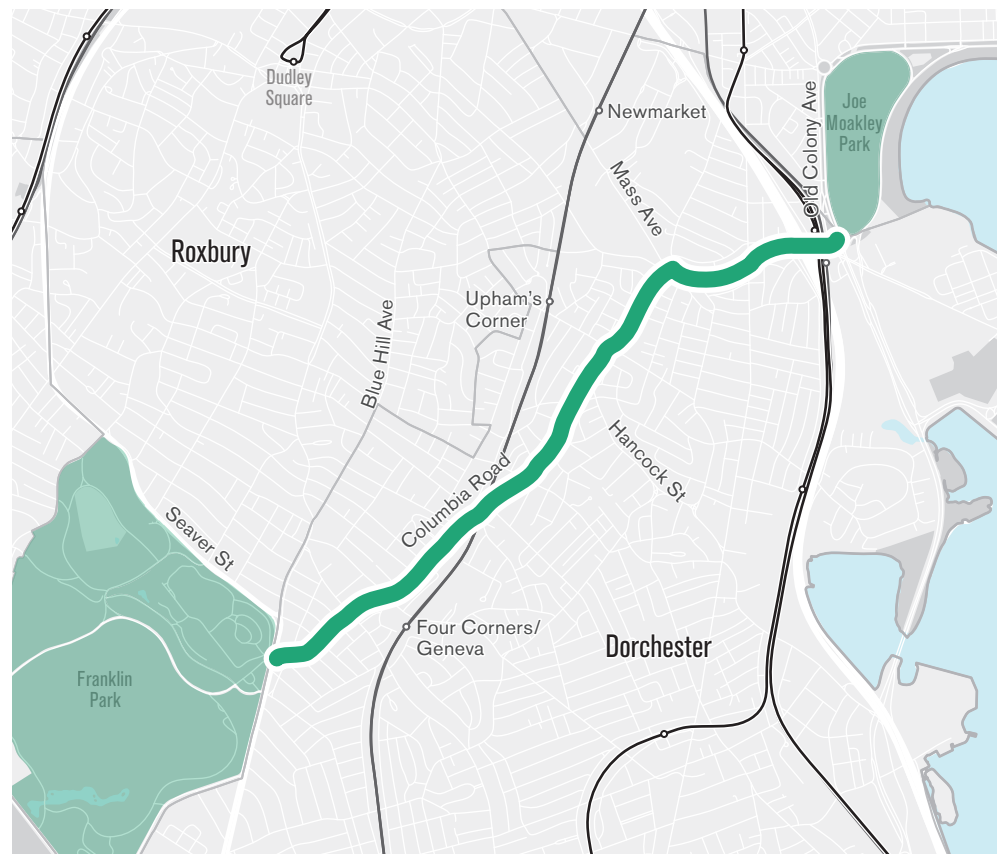
Crosstown

Columbia Road Greenway

Create a neighborhood friendly street connecting to Franklin and Moakley Parks

Project Description

With over 100-feet between building faces, Columbia Road is one of the widest streets in Boston. The proposed greenway would preserve vehicle travel in both directions while consolidating the median, sidewalks, and wider areas into a context-sensitive linear park stretching from Franklin Park to Moakley Park. The allocation of roadway space will be determined in conjunction with local residents and will include improved pedestrian paths and crossings, protected bike paths, and significantly more trees to transform this former boulevard into a vibrant green corridor that is connected to the Blue Hill multiuse path to the south (p199), the Fairmount Greenway (p161), Dorchester Ave. Complete Street (p158), and the Carson Beach bike path, creating a continuous protected bicycling network into Downtown.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 2

#17 in public voting

Benefits and Issues Addressed

The Emerald Necklace connects Boston Common to the Fenway, the Arboretum, and Franklin Park, but it is disconnected from Boston's waterfront and its other Olmsted Parks. Completing this piece of the Emerald Necklace with improved paths for walking and biking will connect residents of Roxbury and Dorchester to Boston Harbor and beyond. It will also provide a corridor designed to improve public health through active transportation opportunities and better air quality. The greenway also provides an essential last-mile connection for thousands of residents to the Fairmount Urban Rail (p179) at Four Corners Station and the Red Line at JFK/UMass Station, as well as becoming the central part of a continuous through connection from Dedham to Downtown, serving Hyde Park, Mattapan, Dorchester, and South Boston.

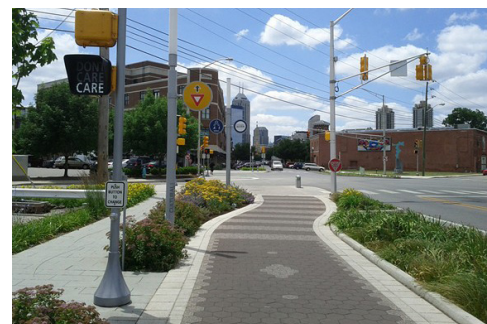


Photo credit: Flickr user Eric Fischer

Implementation

Planning Level Costs: \$17 million for design and construction
Potential Funding Sources: City capital budget, private contributions, Boston MPO TIP
Who's Responsible: BTM, Public Works, and Boston Parks
Time Frame: Within five to 15 years in conjunction with local community process

Public Input

"Columbia Road is a main transportation corridor in North Dorchester with car and bus congestion that inhibits walking and biking, creating an unsafe and unpleasant experience for getting to local schools, businesses and other community amenities. ... [Explore] the idea of a green, safe Columbia Road that restores the historic connection between Franklin Park and the Harbor, and has wide sidewalks, street trees, and a balance between people in cars, buses and on bicycles." -02114

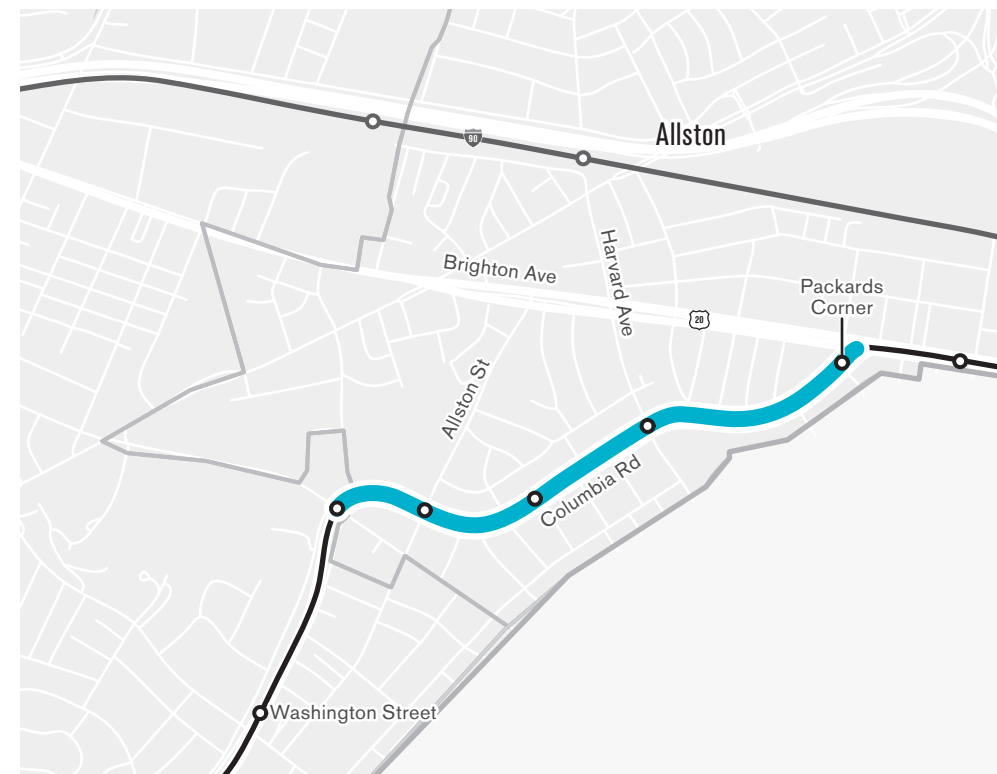
Crosstown

Commonwealth Avenue Beyond Packards Corner

Enhancing multimodal movement and safety in Brighton

Project Description

The Boston Public Works Department is redesigning Commonwealth Avenue between Brighton Avenue (Packards Corner) and Warren/Kelton Streets. The redesigned corridor will feature separated bicycle facilities, improvements to sidewalks and crosswalks, enhanced access to the MBTA Green Line, preservation and enhancement of historic landscape features, and the implementation of innovative sustainable features. The centerpiece of the project will be the redesigned intersection of Commonwealth Avenue and Harvard Avenue, which will feature extensive safety improvements, as well as new outdoor public spaces.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 2

Identified on the ballot as an Early Action commitment

Benefits and Issues Addressed

With its solid five- and six-story apartment blocks, unique carriage roads, landscaped median, and MBTA transit reservation, Commonwealth Avenue in Brighton is both a multimodal transportation corridor and a home for thousands of people. Population along the corridor has grown in recent years, as has transit use and the demand to bike safely, but infrastructure continues to be decades old without many proper train stations or biking features that could carry more people safely without a car. This Public Works project will greatly enhance access in one of Boston's densest neighborhoods.

Best Practices

Implemented as part of two three to five lane conversions, this protected intersection in Salt Lake City, UT, was the second protected intersection for people on bikes in the country. The City created informational materials to show people walking, bicycling, and driving how to use the intersection. www.slcgov.com/200West and altaplanning.com/hwp-content/uploads/Evolution-of-the-Protected-Intersection_ALTA-2015.pdf



Rendering of the current proposal for Comm Ave
 Image credit: HDR care of Public Works Department

Implementation

Planning Level Costs: \$17 million for design and construction
Funding Sources: City capital plan for design and Boston MPO TIP for construction
Who's Responsible: Public Works with BTM and MassDOT
Time Frame: Ongoing design with construction within 5 to 15 years in conjunction with local community process



More info at keepbostonmoving.org/portfolio/commonwealth-avenue-phase-3-and-4/

Public Input

"Bike lanes: Better/safer bike lanes all along Comm Ave and through Allston/Brighton." -02135

"Bike lane on Commonwealth Ave." -02481

Crosstown

SW Corridor Extension to Back Bay and MGH

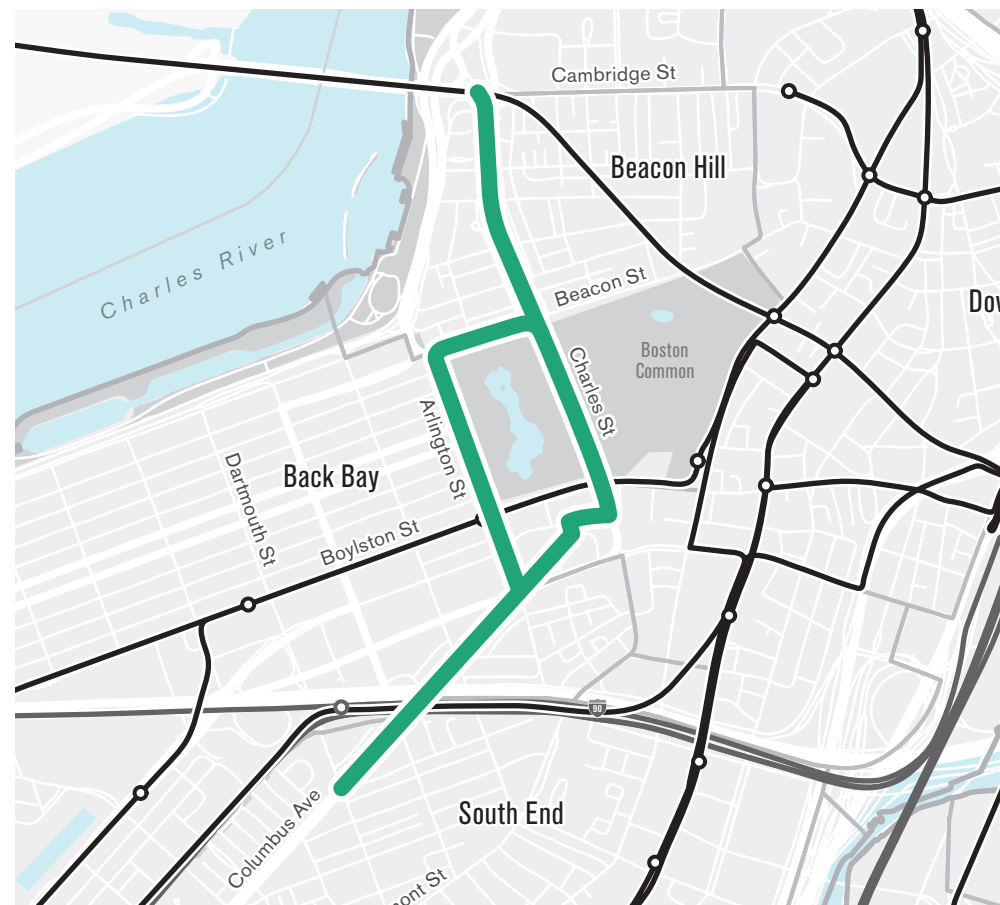
Complete a fully-protected bike connection across the city

Project Description

Building upon the planned reconstruction of Back Bay Station by MassDOT, the Southwest Corridor Park's multiuse path will be connected beyond the Back Bay into Downtown on a route to be selected in conjunction with the local community. One possible route would travel along Columbus Ave, Arlington Street, and Charles Street to Cambridge Street as protected or separated bicycle lanes, utilizing excess lane capacity on each roadway. A connection to the Blackwell Path in the Arboretum will increase access to the corridor from the south. This cross-town downtown bike facility will complete an essential Boston off-street corridor, allowing travelers from Jamaica Plain, Mission Hill, Roxbury, and Roslindale to make a continuous, safe bicycling connection to downtown jobs and destinations, including Mass General Hospital and the West End. Additional southern connections to the proposed Blue Hill Ave Greenway (p199) would allow the corridor to also serve Hyde Park and Mattapan, as well as Dedham and Milton.

Benefits and Issues Addressed

The Southwest Corridor Park is a premier bicycling corridor, but its terminus in the Back Bay limits its utility for accessing the denser core of downtown destinations further north and east. With a seamless off-road bicycling connection, commuters, residents, students, and visitors alike can reliably and safely choose to leave their cars at home and bike to their destinations, thereby helping to reach the mode share targets for cycling among both Bostonians and regional commuters. Boston would have a continuous off-road bicycling connection through half of its neighborhoods, while linking communities from beyond its borders into the downtown.



Best Practices

Washington, D.C., has been a leader in installing protected bicycle lanes on streets with generous ROW for vehicles. The two-way separated bicycle lanes on 15th Street started as a single contraflow lane and was expanded. DDOT recently reported a 40% increase in the number of cyclists on the corridor and approximately 39 trips per day diverted from driving on the corridor. peopleforbikes.org/green-lane-project/pages/washington-dc and nacto.org/lwp-content/uploads/2011/02/15th-Street-NW-Separated-Bike-Lane-Pilot-Project-Interim-Results-and-Next-Steps.pdf

Implementation

Approximate Cost: \$500,000 for short-term and \$10 million for long-term improvements
Potential Funding Sources: City capital budget for short-term and Boston MPO for reconstruction
Who's Responsible: BTM and Public Works
Time Frame: Within five years in conjunction with local community process

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment.

Public Input

"Separated bike path that connects SW corridor to Boston Garden and/or Greenway and/or Harborwalk." -02130

"Protected bike lanes on major downtown streets: Columbus Ave, Stuart St, Kneeland St" -02143

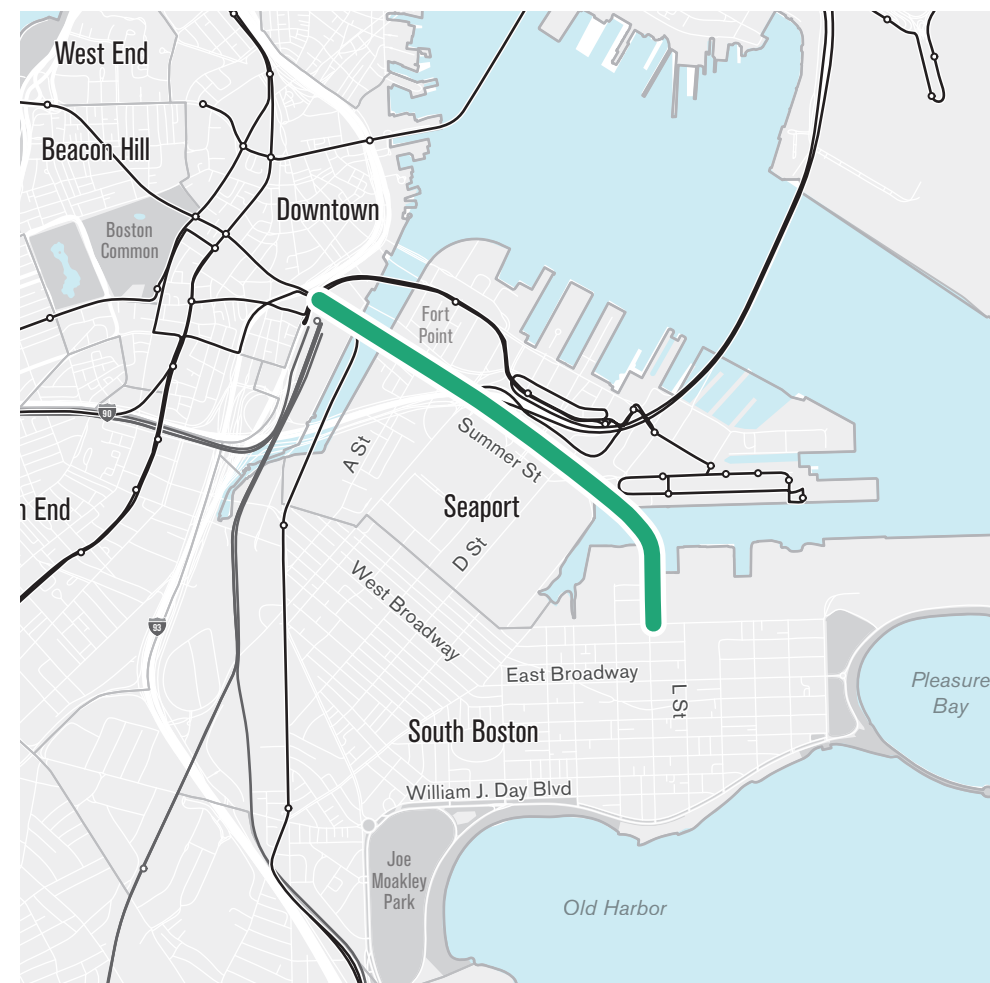
Crosstown

Summer Street Protected Bike Lane

Protected bicycle facilities through the South Boston Waterfront

Project Description

The City of Boston will commence with the reconstruction of Summer Street in the spring of 2018. The reconstruction effort will pursue the highest level of protected bike lanes all the way from South Boston into Downtown. The initial phase of the reconstruction effort will start at Fort Point Channel and continue to West Service Road. The second phase will extend from West Service Road to the Wharf District and the Boston Convention and Exhibition Center (BCEC) and then on to the Reserve Channel. In the long term, protected bike lane facilities will extend along East First Street, providing a continuous protected bicycling network through Dorchester, Hyde Park, and Mattapan by linking with the Harborwalk, a resilient Morrissey Boulevard (p198), the Columbia Road Greenway (p172), and the Neponset Greenway.



More information about this and other projects in the South Boston Waterfront can be found at www.massdot.state.ma.us/Portals/17/docs/Studies/SBostonWaterfrontFullReport_jan2015.pdf

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment

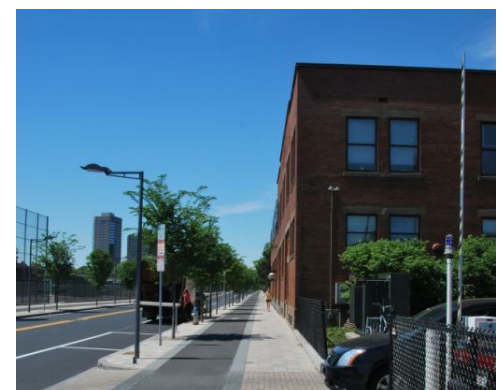
Benefits and Issues Addressed

The protected bike lane will provide a safe riding route for cyclists connecting from South Boston to Downtown through Fort Point, creating a safe and efficient connection between a major transit hub (South Station), the BCEC, Seaport Square, and the Ray Flynn Marine Industrial Park, which can help alleviate congestion in the burgeoning South Boston Waterfront as recommended by the *South Boston Waterfront Sustainable Transportation Plan*. The facility will also serve regional commuters transferring from trains at North Station or coming from Milton and Quincy by linking to the north with the Rose Kennedy Greenway and to the south with Carson Beach, where connections can be made to Morrissey Boulevard or Columbia Road.

Implementation

Planning Level Costs: \$14 million design and construction
Funding Sources: City capital plan for design, Boston MPO TIP, and developer contributions
Who's Responsible: Public Works and BTM with MassDOT, Massport, and BCEC
Time Frame: Within five years

Best Practices



With a raised bike path on each side, Vassar Street is a key bicycle link for those traveling to and through MIT in Cambridge, MA.

Public Input

"L Street/Summer Street... seems like a real untapped opportunity for improving transit and biking between this end of Southie and the rest of Boston. Although recently buffered bike lanes were installed along a portion of it, I think the speeds of drivers are still so high that it's much safer to have a physically separated bike lane here." -02127

Crosstown

LMA to JFK Rapid Bus via Dudley and Uphams

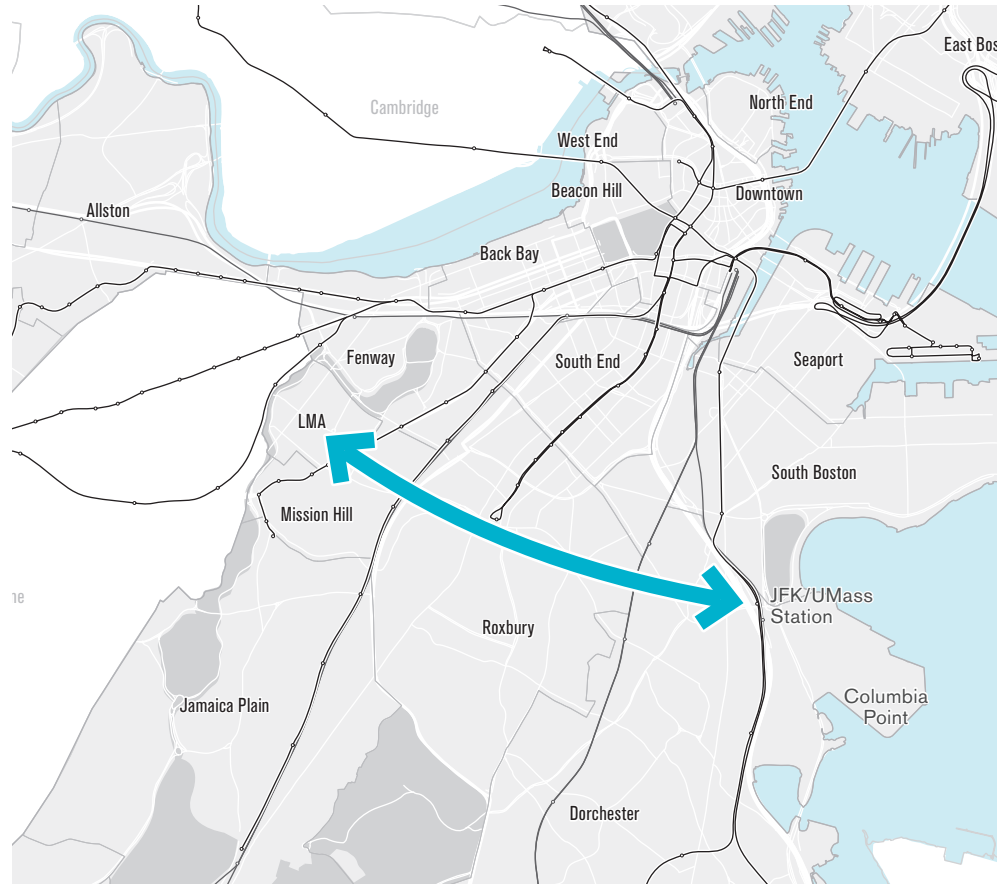
Quality transit connecting the LMA with Roxbury, Dorchester, the Fairmount Indigo Line, and the Red Line

Project Description

A single bus transit line utilizing signal priority and some exclusive lanes or queue-jump lanes will provide an essential crosstown transit connection from the JFK/UMass Red Line Station to Uphams Corner Indigo Line station, Dudley Square Silver Line station, Roxbury Crossing Orange Line station, and into the LMA. Likely following portions of MBTA Route 41 and operating on Columbia Road, Dudley Street, Malcom X Boulevard, Tremont Street, and Huntington Ave or St. Alphonsus Street, higher-frequency crosstown service would give a large residential population direct connections to commercial and employment centers along the line, with many more connected via transfers from the Red, Orange, and Fairmount Indigo Lines. A shorter term key bus route using existing transit equipment is possible between the Red Line stations and the LMA while final alignment planning for the rapid bus is being determined in conjunction with the surrounding neighborhoods of Fenway, Mission Hill, Roxbury and Dorchester in conjunction with employers.

Benefits and Issues Addressed

The need for Bostonians to get to the LMA, Dudley Square, and Columbia Point and UMass is growing and projected to increase in the future, but only select neighborhoods have direct transit access to these places due to the mostly radial nature of MBTA service. A new crosstown connection linking these jobs, commerce, and service centers to the Orange Line, Silver Line, Fairmount Indigo Line, Red Line, and several Main Streets districts in-between is now necessary to convey thousands of existing and future residents and employees. Providing key connections to radial transit lines outside of downtown, this route could greatly reduce travel times to these areas, ease vehicle congestion, and provide access to new jobs. Rapid bus treatments will aid other bus routes, such as the 15 and 41, which experience poor reliability along Dudley Street.



Best Practices

Los Angeles's Metro Rapid system provides an excellent template for a mix of service improvements that increase overall bus speeds. During peak hours, buses arrive every 3 to 10 minutes. Buses are low-floor, which speeds up boarding times, and bus shelters have real-time bus displays. Signal priority allows buses to speed through traffic delays at intersections. Initial ridership increases were as high as 40%. www.metro.net/projects/rapid/



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment.

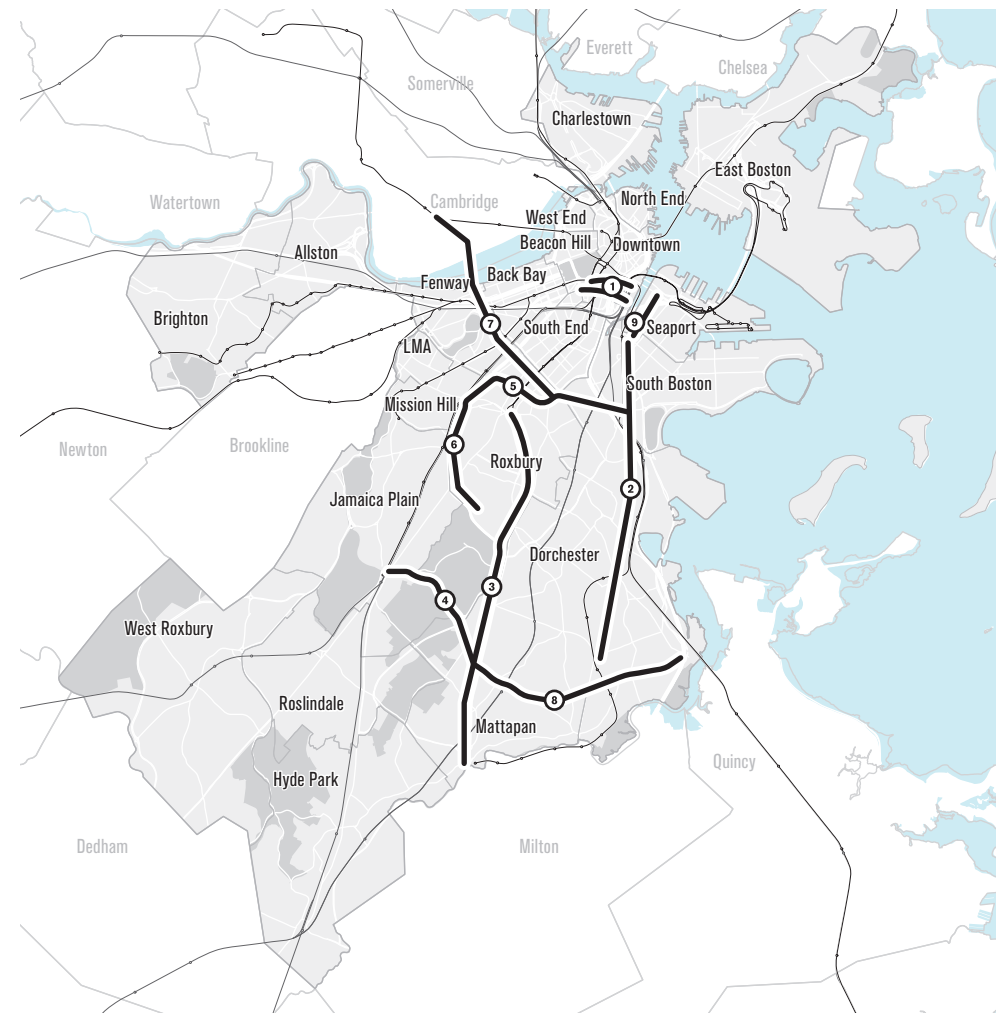
Crosstown

Smart Signal Corridors

Traffic signals that talk to each other

Project Description

Building off of and sometimes connecting to more localized Smart Signals Districts (p163), these Smart Signal Corridors would allow BTM to better manage traffic flow for those walking, biking, riding transit, and driving on some of the City's most congested corridors. Today, staff at the City's Traffic Management Center monitor traffic cameras and manually adjust signal timing to improve driving conditions. Smart signal corridors would go one step farther by automatically adjusting signals in ways that respond better to the primary direction and desired speed of traffic flows. State-of-the-art signals would improve the capacity of the City to give green lights to arriving transit and emergency vehicles, calculate green wave patterns that allow people biking and driving to stop less frequently, communicate with autonomous cars, and give more walk time at crossings when sidewalk crowding is an issue.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#2 in public voting

Benefits and Issues Addressed

New technology that is currently being developed for individual vehicles, including apps like Waze, only allows travelers to react to and avoid delays and congestion, rather than providing systemic solutions to delays. By integrating this data with live traffic cameras, smart signals can coordinate and make travel safer and smoother for all travelers. Smart signal corridors can keep traffic flowing without the pulses of signal delays, enabling bicycle and car speeds to be more compatible, emergency services to increase response times, and transit reliability to improve. These technologies are especially helpful where flows of people cross, reducing conflicts and crashes while making it safer to walk across the city.

Implementation

Approximate Cost: \$25 million over five years for smart corridors and districts, as well as other signal upgrades
Potential Funding Sources: City capital plan and local developers
Who's Responsible: BTM
Time Frame: Ongoing

Best Practices

Bellevue, WA, has implemented an adaptive signal system along Factoria Blvd, a key corridor in the City, heavily used by commuter traffic. time.com/3845445/commuting-times-adaptive-traffic-lights/

Smart Signal Corridors along:

- 1 Essex and Kneeland Streets
- 2 Dorchester Avenue
- 3 Blue Hill Avenue and Warren Street
- 4 Morton Street
- 5 Melnea Cass Boulevard
- 6 Columbus Avenue
- 7 Massachusetts Avenue
- 8 Gallivan Boulevard
- 9 A Street

Public Input

"Reduce pedestrian waiting time on Columbus Ave/Tremont St. Pedestrians have to wait almost 2 minutes to get a green light." -02119

"Magnetic sensor under roads: It would determine the number of cars waiting at a light and adjust the signal accordingly based on traffic flow." -01867

Implementation

Approximate Cost: \$35 million for design and construction with vehicle costs to be determined.
Potential Funding Sources: City capital budget for design, Boston MPO TIP for roadway construction, and MassDOT/MBTA for vehicle costs
Who's Responsible: BTM and PWD with MassDOT/MBTA
Time Frame: Within 5 to 15 years in conjunction with local community process

Public Input

"Connectivity to the Red Line: Bus from Dudley to JFK should also be more frequent." -02139

"South Boston needs to be better connected to the Longwood Medical Area by bus." -02127

Crosstown

Fairmount Indigo Line Service Improvements

Phase One: Increase the frequency and improve the payment systems

Project Description

With three new stations on the Fairmount Indigo Line recently completed—Four Corners/Geneva, Talbot Avenue, and Newmarket—neighborhoods are now being served by trains that previously passed them by. With the Blue Hill Avenue Station scheduled to be completed by 2021, an additional 1,200 households will have access to regular rail service within a 10-minute walk. Now, further efforts are proposed to improve walking and bicycling access to every station and as part of a first phase, provide a more subway-like schedule so that passengers can walk to the station and reliably expect train service in 15 or 20 minutes rather than every 45 to 60 minutes. Though fares are currently equivalent to the subway lines in the city, technology improvements should allow payments to be made with ordinary Charlie Cards so any rider wanting to pay with a monthly fare card or to make a free bus transfer can do so. In the future, integrating Charlie Card tapping or the next generation of payment technology will eliminate this transfer penalty and keep a linked trip affordable for riders. Other improvements are planned with the future conversion to urban rail cars (p179).

Public Input

"You should be able to just use your Charlie Card—whether it is has your monthly pass or is pay-as-you-go. The paper Charlie Ticket and mobile app are helpful, but make it harder to get on to ride the Fairmount Line."

—02143

"Pilot projects to 'test the waters' increase service on the Fairmount Line."

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment



Benefits and Issues Addressed

Providing rail service to Mattapan, Codman Square, Grove Hall, and South Bay makes a significant improvement in transit access to communities of color who have historically been underserved, but the current infrequency of trains and the issues with payment make it hard for residents to rely on this service, particularly if they need a combination of buses and trains to complete their journey. In order to effectively link these residents to more job opportunities, especially those working outside of the usual nine to five, operational changes such as those described above are needed along with the expansion of South Station and the purchase of additional trains. Future advancements—such as those included in the Fairmount Urban Rail project (p179)—will be necessary to truly improve transit access equitably.

Implementation

Approximate Cost: \$35 million in capital improvements and \$4 million per year for operations
Potential Funding Sources: MBTA
Who's responsible: BTB and MBTA
Time Frame: Within 5 to 15 years

Best Practices

In Ontario, Canada, GO Transit moved from hourly headways to half-hourly during off-peak times on its commuter rail network in 2013. Since then ridership has increased by 30%. www.thetransportpolitic.com/2014/07/28/make-the-effort-and-commuter-rail-can-be-as-effective-as-rapid-transit/

Crosstown

Fairmount Indigo Line Urban Rail

Phase Two: Bringing the benefits of subway service to a walkable Fairmount corridor

Typical Modes of Travel for People Accessing Transit

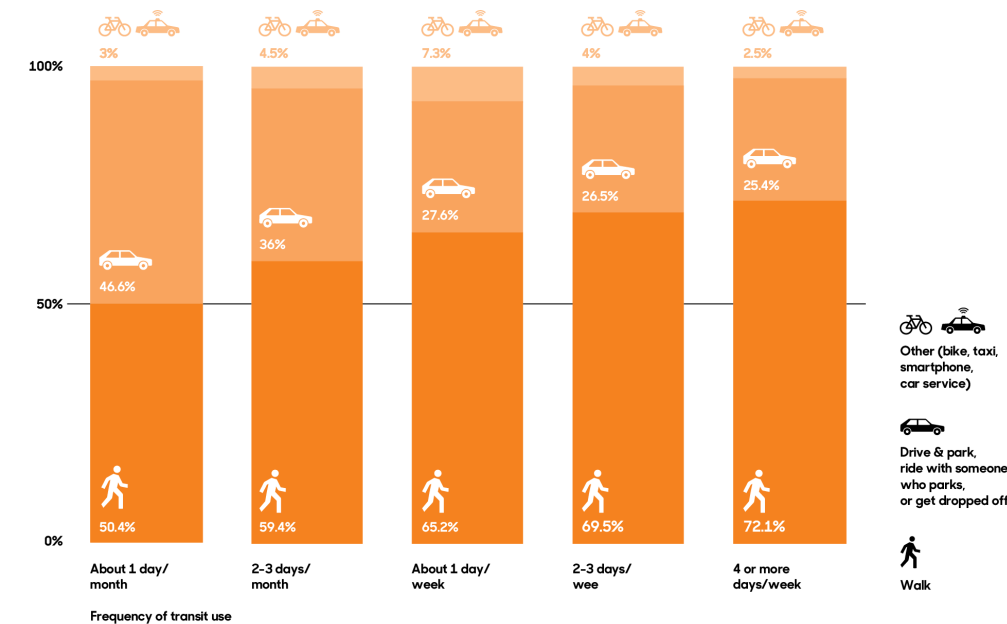


Image source: TransitCenter, Who's On Board 2016: What Today's Riders Teach Us About Transit That Works. Retrieved from transitcenter.org/publications/whos-on-board-2016/

Benefits and Issues Addressed

While ongoing service improvements will help the Fairmount Indigo Line, converting it to a high-speed rail service on the rapid transit map will change the quality of access for a large swath of dense and traditionally underserved neighborhoods of Boston and incentivize a major shift from driving. To make transit more equitable to thousands of Bostonians, the Indigo Line would operate with at least as much frequency and spare capacity as other rapid transit lines, have the same free transfers to other lines and buses, and have real urban stations with easy walk-up access. No longer a commuter rail line, urban rail will interconnect the heart of Boston's neighborhoods and create new direct access to Boston's biggest employment and commerce centers.

Best Practices

A recent report based on a survey of transit riders found that walkability is critical to transit ridership. Up to 80% of riders, particularly those who are doing something other than commuting, walk to access transit. Walking to transit is also correlated with frequency of use. *TransitCenter, Who's On Board 2016: What Today's Riders Teach Us About Transit That Works.* transitcenter.org/publications/whos-on-board-2016/

New York's MTA is working on a design for diesel multiple units (DMUs) which would allow for expanded service on commuter rail tracks. web.mta.info/lirr/about/Procurement/what.htm

Implementation

Approximate Cost: \$400 million
Potential Funding Sources: MassDOT/MBTA, City capital plan, FTA
Who's responsible: MassDOT/MBTA and BTB
Time Frame: 15+ years

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment and feedback from local groups already working to improve service along the corridor.

Project Description

Expanding beyond current service improvements to the Fairmount Line, a new set of urban rail cars would be introduced, operating at higher speeds and 5 to 10 minute frequencies to create Boston's sixth rapid transit line. Working in close partnership with a wide array of neighborhood interests, the line is envisioned to be extended both south to Dedham Corporate Park/Legacy Place along existing tracks and north past South Station into the Seaport and South Boston via the existing Silver Line tunnel and/or Track 61/Seaport Rail (p183) with a new tunnel below the congested South Station tracks to directly link with the Silver Line. Further station area improvements would bring a true urban subway environment and service quality to Dorchester, Mattapan, Hyde Park, and beyond. New transit centers at Readville or Widett Circle would allow riders to connect to the Providence Line commuter rail and inter-city Amtrak service. To make this project successful, a separate operating and financing entity other than the MBTA—such as a municipal transit district (p193)—may be necessary, given the MBTA's already overburdened financial constraints.

Public Input

"Regional Rapid Transit: Boston should take a page or three from Paris or San Francisco's books, and build a regional rapid transit network connecting communities like Hyde Park and Mattapan... Electrify the Fitchburg, Rockport, Worcester, and Fairmount lines out to Route 128 and Salem, upgrading all stations to the standard set by the new Yawkey facility. Run 4-car EMU trainsets at 15 – 30 minute headways off-peak, with 10 – 15 minute rush hour frequencies." —02122

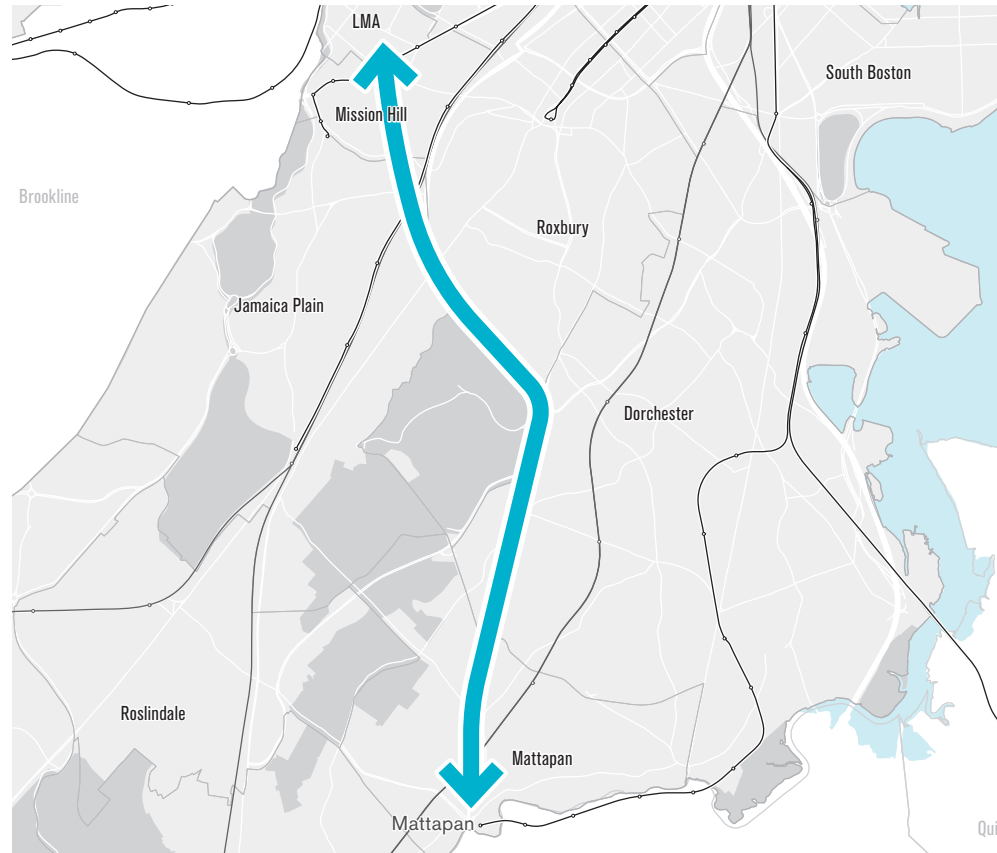
Crosstown

Mattapan to LMA Rapid Bus

Faster transit connections to the medical district from southern Boston

Project Description

A new transit line with high-quality stops, signal priority, all-door boarding, and some exclusive lanes will create direct transit connections for residents of Mattapan and southwest Dorchester to jobs and medical care in Roxbury, Mission Hill, and the Longwood Medical and Academic Area. This involves a rail-like bus service operating where excess roadway width exists today on one of several potential corridors that will be determined in conjunction with the community. Service would be high capacity and high frequency and could interline with the JFK/UMass to LMA rapid bus corridor (p176) and even the West Station to LMA connection (p203), connecting together southern Boston, the LMA, and Beacon Yards. Future upgrades could see tracks and streetcar service initiated as ridership grows.



Implementation

Approximate Cost: \$55 million for design and construction with vehicle costs to be determined
Potential Funding Sources: City capital budget for design, Boston MPO TIP for roadway construction, and MassDOT/MBTA for vehicle costs
Who's Responsible: BTM and PWD with MassDOT/MBTA
Time Frame: Within 5 to 15 years in conjunction with local community process

Best Practices

The Cleveland, OH, Healthline has five min frequency during rush hours, 24/7 service, off-board fare collection, dedicated ROW with higher speed limits, real time information displays, "stations" with fare machines, emergency call boxes, and elevated platforms.
www.riderta.com/healthline/about

Benefits and Issues Addressed

This investment will support economic opportunity along a corridor with heavy bus ridership but unreliable service, while—depending on the alignment—potentially improving other connections that head into Dudley Square and Downtown as well. Crosstown connections from this part of the city are in high demand, as shown by the ridership rates on "diagonal" routes such as the 28, yet these routes have poor reliability. Poorly served riders, plus many more residents of Dorchester and Mattapan who are not near these diagonal routes today, must either drive—adding to the congested traffic on Morton Street—or ride into Downtown then back out to the LMA on the train. Replacing these lengthy, indirect, and unreliable transit commutes with a high-quality single-seat ride will benefit thousands, improve jobs access, and also attract new transit riders.



Public Input

"Transit expansion is critical to the city's continued viability: Our rapid transit needs major expansion of its capacity, both in the downtown core and in many under-served neighborhoods that are among the most transit-dependent sections of the entire metropolitan region (e.g., Washington Street Corridor through Roxbury and continuing through Grove Hall to Mattapan Square). ... indispensable prerequisites to assuring the continued development of Boston by providing the critical infrastructure that can support our growing public transportation system."
 -02119

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#19 in weighted Boston-only public voting

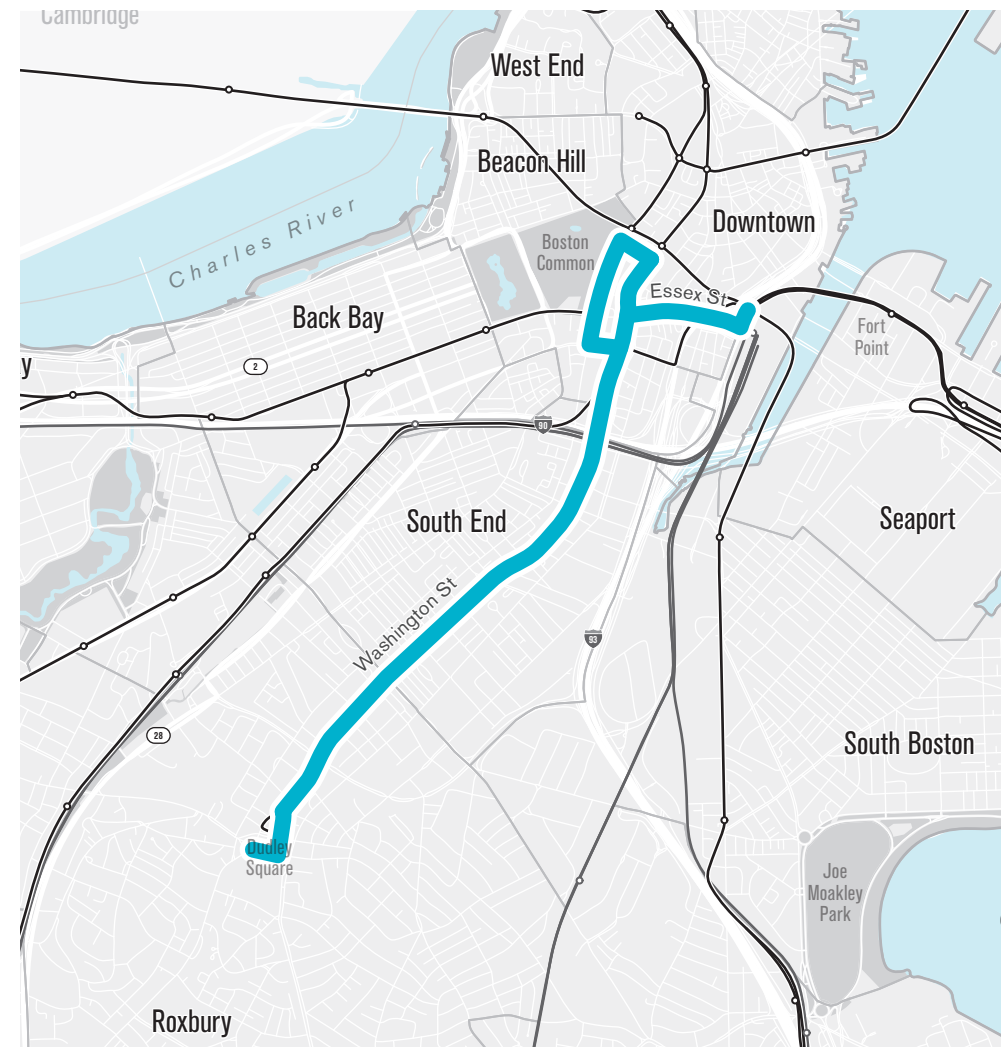
Crosstown

Improved Silver Line: Dudley to Downtown

Better rapid bus service and terminals on the Silver Line from downtown to Dudley

Project Description

Today the Silver Line between Dudley and downtown along Washington Street has protected bus shelters and an exclusive red bus lane. In the next five years, the width of the lane will be increased, physical buffers and stronger enforcement will ensure that it is not used for double parking, an off-board payment system will allow for all-door boarding and prevent long passenger queues from delaying stops, automated signal priority will avoid red-light delays, and raised, accessible platforms will make it safer and easier for passengers of all abilities to board. An improved Dudley Station (p187) will be paired with improved termini at Downtown Crossing and South Station (p184), where new in-street platforms will enable faster transfers to the Orange, Red, and waterfront Silver Lines.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

Identified on the ballot as an Early Action commitment

Benefits and Issues Addressed

The evolution of bus rapid transit (BRT) technologies since the creation of the Silver Line nearly two decades ago allows for the Washington Street line to finally be upgraded to gold-standard BRT and provide streetcar-quality service into the heart of the South End, Roxbury, and Dudley Square. With faster and more frequent service, residents of Roxbury and several neighborhoods whose buses feed into Dudley would have better access to Downtown, to health care at Boston University and Tufts Medical Centers, and to transfers to other rapid transit lines, driving up transit ridership to meet Go Boston 2030's targets. Visitors could travel to Dudley, expanding commercial activity and contributing to the vitality that evolves around transit hubs elsewhere in Boston.

Implementation

Approximate Cost: \$22 million for capital improvements
Potential Funding Sources: MassDOT/MBTA, City capital program, and FTA
Who's responsible: BTM, PWD, and MassDOT/MBTA
Time Frame: Design and initial improvements within five years

Best Practices

The GRTC Pulse is under construction in Richmond, VA. This BRT project will be a mix of bus-only lanes and mixed-traffic with queue jumps. Level boarding will speed the boarding process.
www.ridgrtc.com/brt

Public Input

"Boston already has the Silver Line, but why not create a true BRT that runs from Egleston all the way to Downtown? One with prioritized lanes AND prioritized traffic signals AND limited access boarding? Roxbury needs better transit connections."
 -02130

Crosstown

Oak Square to Comm Ave Rapid Bus

Create a rapid bus system to serve a large underserved neighborhood

Project Description

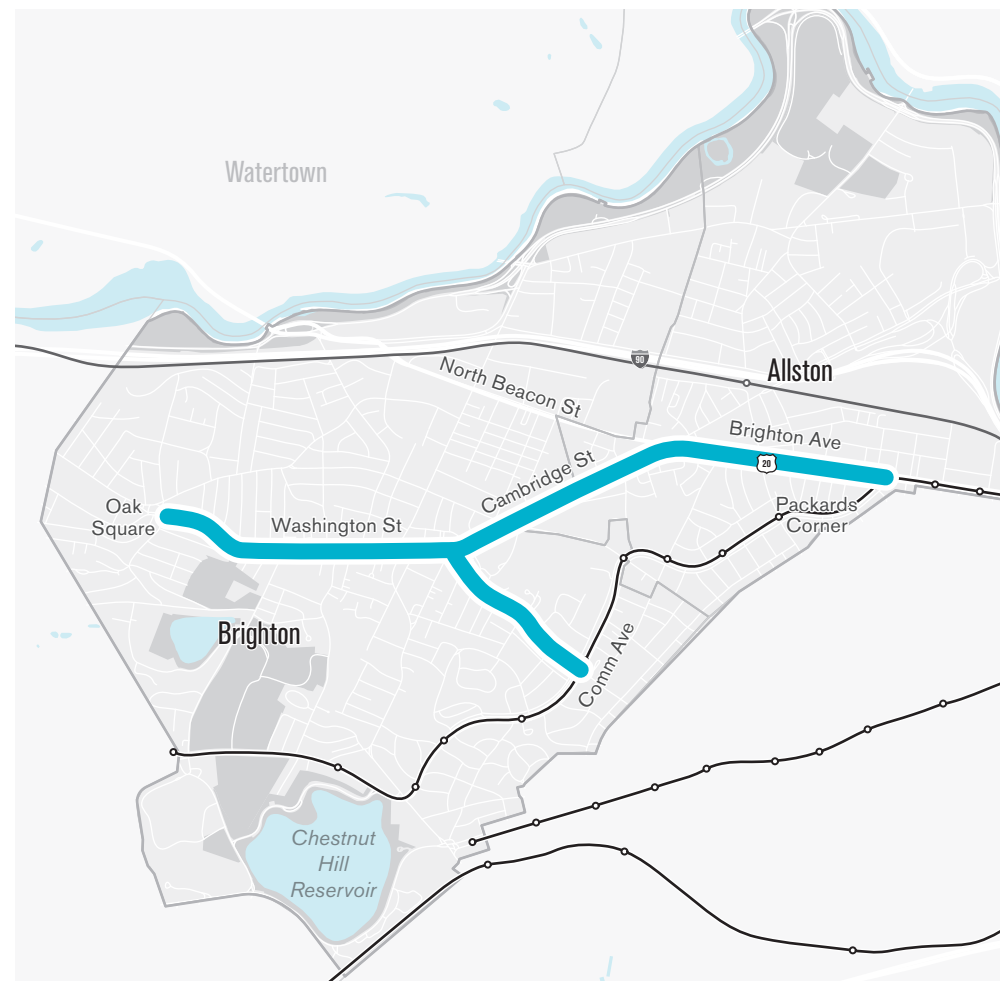
The speed and reliability of existing MBTA bus services connecting Oak Square and most of Brighton to Kenmore Square and the LMA will increase notably with the introduction of rapid bus treatments along Washington and Cambridge Streets. Synchronized signals with transit priority at intersections, curbside queue-jump lanes to bypass traffic, flexible peak-hour bus lanes, off-board payment, and other bus rapid transit (BRT) technology improvements would provide these neighborhoods with greater transit capacity. Stops will include improved amenities and be fully accessible to anyone of any ability.

Benefits and Issues Addressed

The existing bus routes that serve parts of Allston, most of Brighton, and the Oak Square Main Street district are heavily used but offer long running times and low reliability. For example, the section of roadway between Brighton Avenue at Cambridge Street and Brighton Avenue at Harvard Avenue has one of the highest rates of delay in the region.* While many residents are transit dependent and rely on buses to get to work, others add to the congestion on those same streets by driving to work because buses are a slower and less reliable option. Introducing rapid bus treatments on these prime routes will connect many Bostonians with jobs and other destinations more reliably while reducing peak hour congestion in these neighborhoods.

Implementation

Approximate Cost: \$7 million for design and construction
Potential Funding Sources: City capital plan for design and Boston MPO TIP for roadway construction
Who's Responsible: BTS and Public Works with MassDOT
Time Frame: Within 5 to 15 years in conjunction with local community process



Best Practices

As part of New York City's Select Bus Service, dedicated bus lanes and off-board fare collection help the M23 provide high-quality crosstown service along 23rd Street in Manhattan.
web.mta.info/mta/planning/sbs/

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

This project recommendation came out of the Needs Assessment.

* Hart, N. and Belcher, J. (2016). *Prioritization of Dedicated Bus Lanes*. Retrieved from MassDOT: www.massdot.state.ma.us/Portals/49/Docs/BusLane20160513%20.pdf

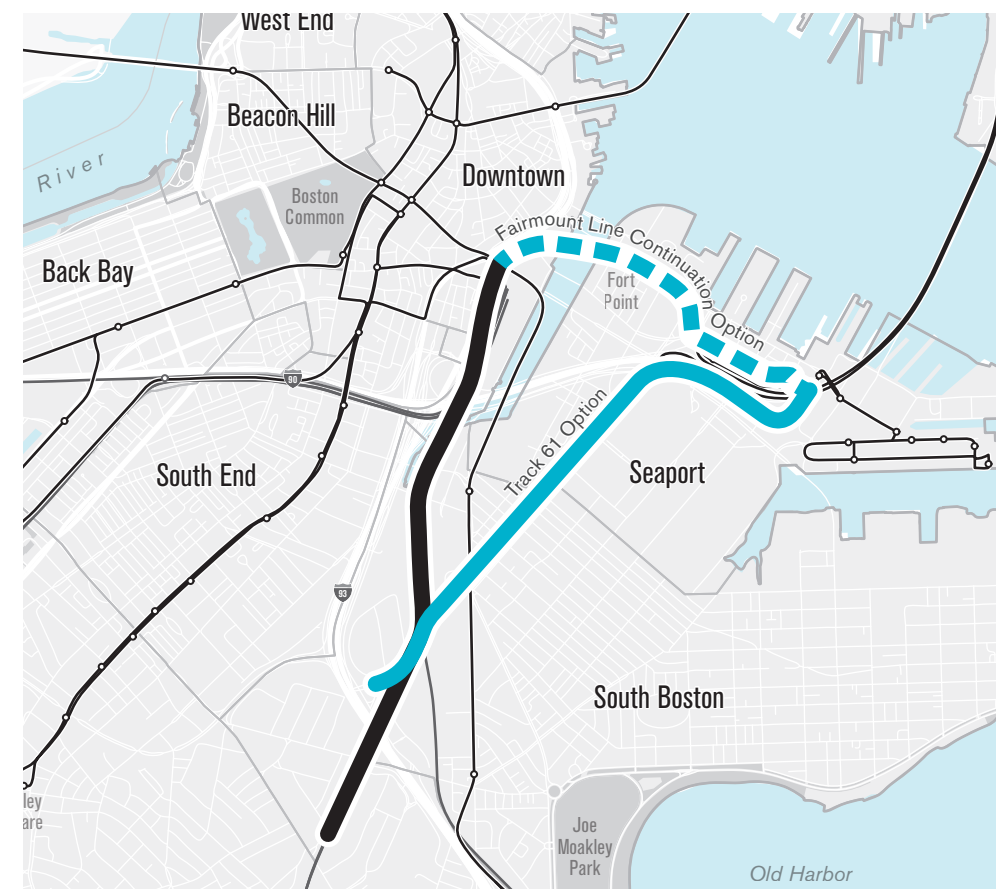
Crosstown

Seaport to Dorchester/Widett Urban Rail

Create new connections from Dorchester at Newmarket using Track 61

Project Description

The South Boston Waterfront contains a rail right-of-way running parallel to the South Boston Bypass Road/Massport Haul Road, which was used in the past for single track freight rail shipments from the rail system at Widett Circle out to the Marine Industrial Park. This line, known as Track 61, does not currently connect to Boston's transit system. To bring essential new transit capacity into this growing district, urban rail running from Fairmount (p179) can use Track 61 for direct access from Dorchester. Alternatively, the Fairmount Line could use a new tunnel connecting to the Silver Line. This service could directly serve the Convention Center, a new station at D Street, and potentially a new Broadway or Dorchester Ave station in South Boston. Integrated into the ground floor of the planned South Boston Waterfront Transportation Center, direct connections between the Silver Line, commuter rail, and consolidated shuttles (p169) would make transit the primary mode of access to the Seaport. The line could also serve a future rail station at Widett Circle with appropriate rail or passenger connections. Concepts and designs would be developed in coordination with the community.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#19 in public voting

Benefits and Issues Addressed

The *South Boston Waterfront Sustainable Transportation Plan*, as well as growth projections done for Go Boston 2030, recognize that more transit capacity will be needed in the burgeoning Seaport. With the Silver Line already at capacity, new rail connections can provide enhanced transit access for single seat rides from South Boston and Dorchester, neighborhoods along the Fairmount Indigo line, and/or the entire South Shore, as well as transfers from other commuter rail lines and Amtrak at a proposed Widett Rail Station. A Seaport rail line—especially with transfers at Widett—would also unburden growing rail congestion at South Station. In the long term, connections could be made to other future “urban rail” services that have been envisioned over the years for other existing commuter rail corridors, greatly enhancing transit access to the South Boston Waterfront

Implementation

Approximate Costs: \$60 million for design and construction
Potential Funding Sources: MassDOT/MBTA and FTA
Who's Responsible: MassDOT/MBTA and BCEC
Time Frame: 15+ years

Best Practices

In Denton County, TX, the Denton County Transportation Authority (DCTA) received an alternative vehicle technology waiver from the FRA in 2012 to operate Stadler rail cars that share tracks with freight trains. The A-train carries an average of 1,900 people daily and provides regional connections to downtown Dallas.
www.metro-magazine.com/rail/news/288591/dcta-puts-stadler-gtws-in-revenue-service

Public Input

- "More direct bus or train routes to the Seaport and south Boston." -02135
- "T rail access to Seaport."
- "Access to the new Seaport District : The Silver Line really doesn't cut it to this new district." -02129

Public Input

- "Traffic lights: Sequence the traffic signals. It gets really congested between Oak Square and Brighton Center. Washington St is a snail's trail." -02135
- "Express bus: Between Oak Square and Cambridge (Kendall Square) there should be an express bus. The #64 meanders too much." -02135
- "Oak Square Brighton is underserved! Express buses need to run more often and should not cost extra! Commuter rail will help, though needs to be frequent!" -02135

Crosstown

Silver Line Termini at Downtown Crossing and South Station

Improve the convenience and quality at key Silver Line transfer points

Project Description

These enhancements create terminus stations for the Washington Street Silver Line that facilitate transfers to the Orange, Red, and waterfront Silver Lines. In Downtown Crossing, the stop would be relocated to Washington Street and served by an enhanced shelter a few steps from the subway entrance while being complimented by new markings, lights, and signs to facilitate transfers by those unfamiliar with the system. At South Station, the stop would be relocated to the left side of Atlantic Avenue with an exclusive lane and new shelter on a boarding median, immediately adjacent to the Red and Silver Line headhouse at One Financial Center to facilitate quick transfers with complimentary signage. These enhanced connections are interim transfer improvements until a full underground connection between the Washington Street and waterfront Silver Lines can be constructed.

Benefits and Issues Addressed

While the Washington Street Silver Line routes connect Dudley Square and residents of Roxbury and beyond to both the Orange and Red Lines at Downtown Crossing, as well as to the Red and waterfront Silver Lines at South Station, transfers require an outdoor walk and crossing streets with no wayfinding guidance. This lack of efficient connections affects access to jobs, especially in the growing South Boston Waterfront. With these improvements, the Washington Street Silver Line is more directly connected to the subway system for workers, residents, and visitors alike.

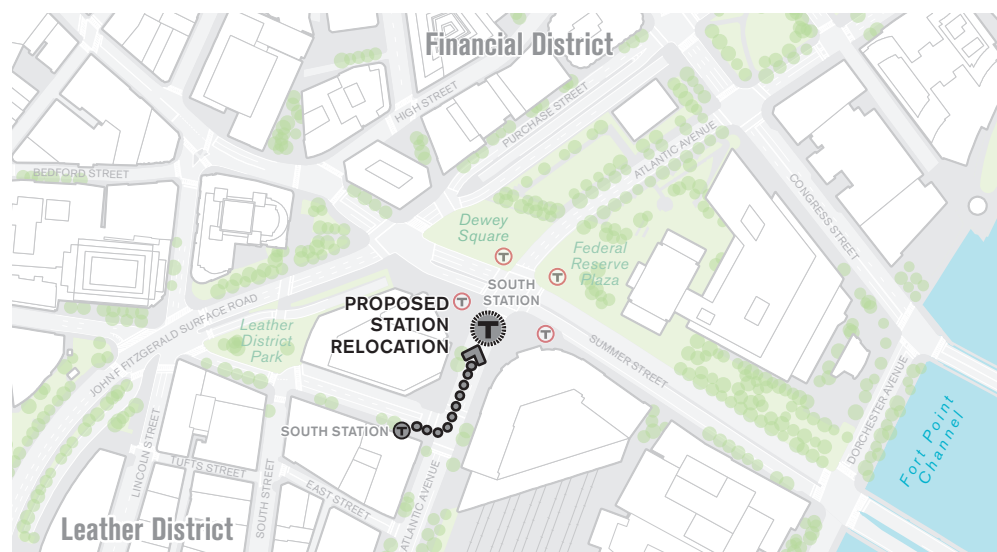
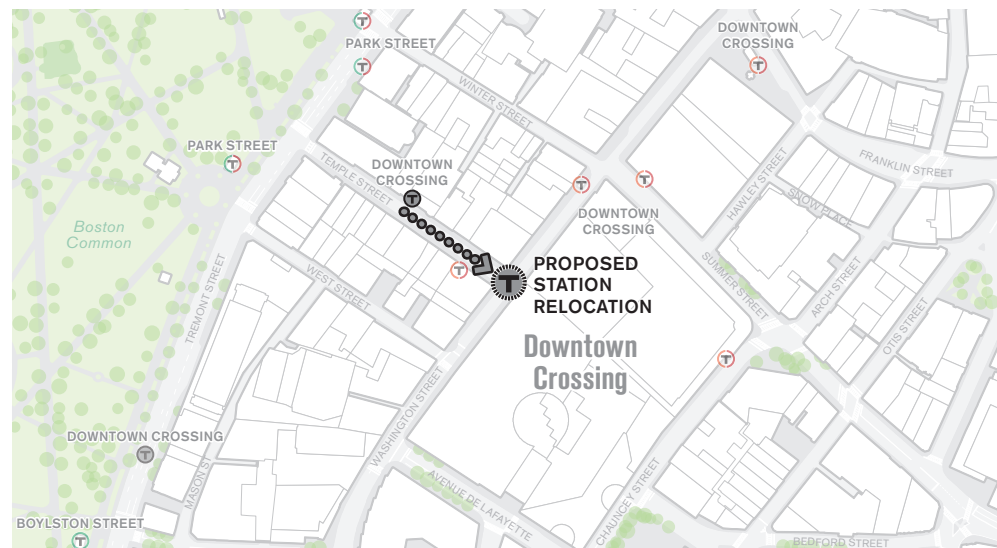
Implementation

Approximate Cost: \$2.5 million for design and construction
Potential Funding Sources: MassDOT/MBTA and developers
Who's Responsible: MassDOT/MBTA and BT
Time Frame: Within five years

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#14 in public voting



Best Practices

Today's MBTA riders going from downtown or East Boston to the Airport Station on the Blue Line transfer from a subway to a bus. Although the service is provided by two different entities, the transfer is well integrated, clearly marked, and does not require an additional fare.

Public Input

- "Connect the two Silver Lines." -02210
- "Silver line expansion/link."
- "Make Silver Line more friendly for people coming from airport with suitcases, etc."

Crosstown

Longwood Transit Hub

A consolidated LMA transit center to improve transit quality and safety

Project Description

In the heart of the LMA within a five-minute walk of most of its institutions, a new transit center is envisioned on Longwood Avenue to serve the majority of MBTA routes that connect Boston residents to the LMA's jobs and services. As proposed by MASCO, the hub will have modern passenger amenities, real-time arrival displays, new off-street loading bays, and amenities for pedestrians and bicyclists. Transit riders will have a safer and more comfortable experience. Future long-term expansion could include new enclosed public spaces and direct underground connections to an enhanced LMA to Kendall crosstown connection (p203). Carshare, bikeshare, and shuttles in the surrounding area will provide additional transportation choices.

Longwood Medical Area Transit Hub Concept

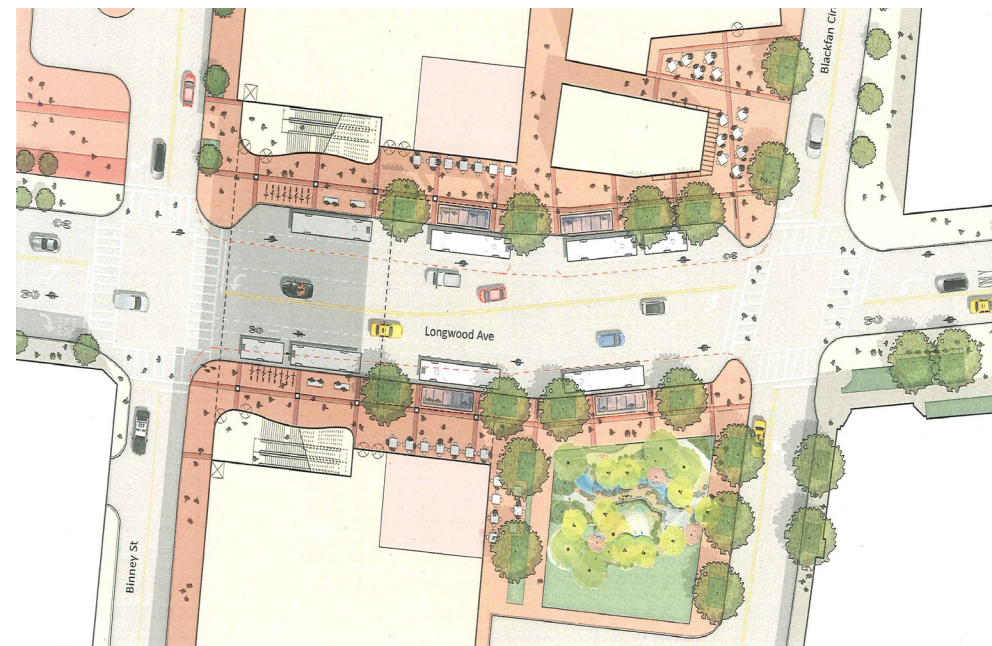
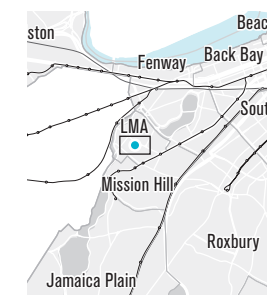


Image Source: MASCO



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

This project recommendation came out of the Needs Assessment and conversations with the Medical Academic and Scientific Community Organization (MASCO).

Benefits and Issues Addressed

The LMA maintains a very high transit share given the institutions' emphasis on employee transit, walk, and bike travel, and despite the high congestion on Longwood Avenue, the district's primary transit spine. Buses have little off-street pick-up space, bus stop amenities are lacking, and congestion makes a one-block ride out of the district often exceed 10 minutes. With new essential transit routes from JFK and Dudley (p176), Mattapan (p180), and West Station/Kendall planned for the LMA (p203), a new transit center will attract new riders to transit. Once established, the hub can become a future major rail station if crosstown rail service is established and would reduce vehicle congestion on Longwood Ave to the benefit of riders, motorists, and emergency services alike.

Implementation

Approximate Cost: \$5 million for design and construction of first phase
Potential Funding Sources: MASCO institutions with BT, Public Works, and MassDOT/MBTA
Who's Responsible: MASCO as lead
Time Frame: Within 10 to 20 years in conjunction with local community process

Best Practices

In Denver, CO, the recently completed RTD bus hub is a 22-gate underground area. A bus departs every 48 seconds from this hub.

www.rtd-denver.com/unionstation-busconcourse.shtml

In Poughkeepsie, NY, a new bus hub opened in 2013. The hub includes bus bays, monitors, and passenger amenities on a small site. In 2014, the design received an engineering award.

cityofpoughkeepsie.com/archives/4463

Public Input

- "Connectivity: Centralized bus/transit hub in Longwood Ave." -02467
- "Push parking for all out to perimeter and increase shuttle access from parking to all of the LMA. Limit access to inner LMA to shuttles, emergency, and commercial vehicles only." -02460

Crosstown

Inner Harbor Ferry Expansion

Lovejoy Wharf to Fan Pier and other new local ferry routes

Project Description

MassDOT, through guidance by the Water Transportation Advisory Council, is partnering with Boston Harbor Now to develop a water transportation feasibility and business plan to look at passenger demand, locations for ferry terminals, and service routes around Boston's Inner Harbor. The Seaport Transportation Management Association and the Boston Convention and Exhibition Center (BCEC) are also partnering to develop a business plan for ferry service between Fan Pier in South Boston and Lovejoy Wharf at North Station to replace or augment land-based shuttle service. Recent and pending additions of water transportation terminals including at Fan Pier, Lovejoy Wharf, and Lewis Mall will offer direct connections between waterfront neighborhoods where direct access is limited or non-existent, including East Boston and North Station to the South Boston Waterfront. Other proposed connections include East Boston to Charlestown.

Benefits and Issues Addressed

Boston's unique coastline geography is advantageous for timely and dependable ferry service. There is considerable potential for water transportation to accommodate development growth and to get residents to new jobs emerging all along Boston Harbor and especially in the Seaport. Indirect transit links and limited road capacity diminish Seaport access, particularly from northern suburbs, Charlestown, and East Boston—places that would all experience quicker commutes with improved ferry service. Scheduled Inner Harbor ferry service could also expand Boston's open space and pedestrian and bike networks. Meanwhile, as detailed by the MBTA's Focus40 process, despite carrying the fewest passengers of any transit mode, the ferry service's share of fare revenue is greater than its share of MBTA operating expenses, making expansion a very cost-effective investment.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

This project recommendation came out of the Needs Assessment and repeated requests from neighborhoods around the harbor to improve connections

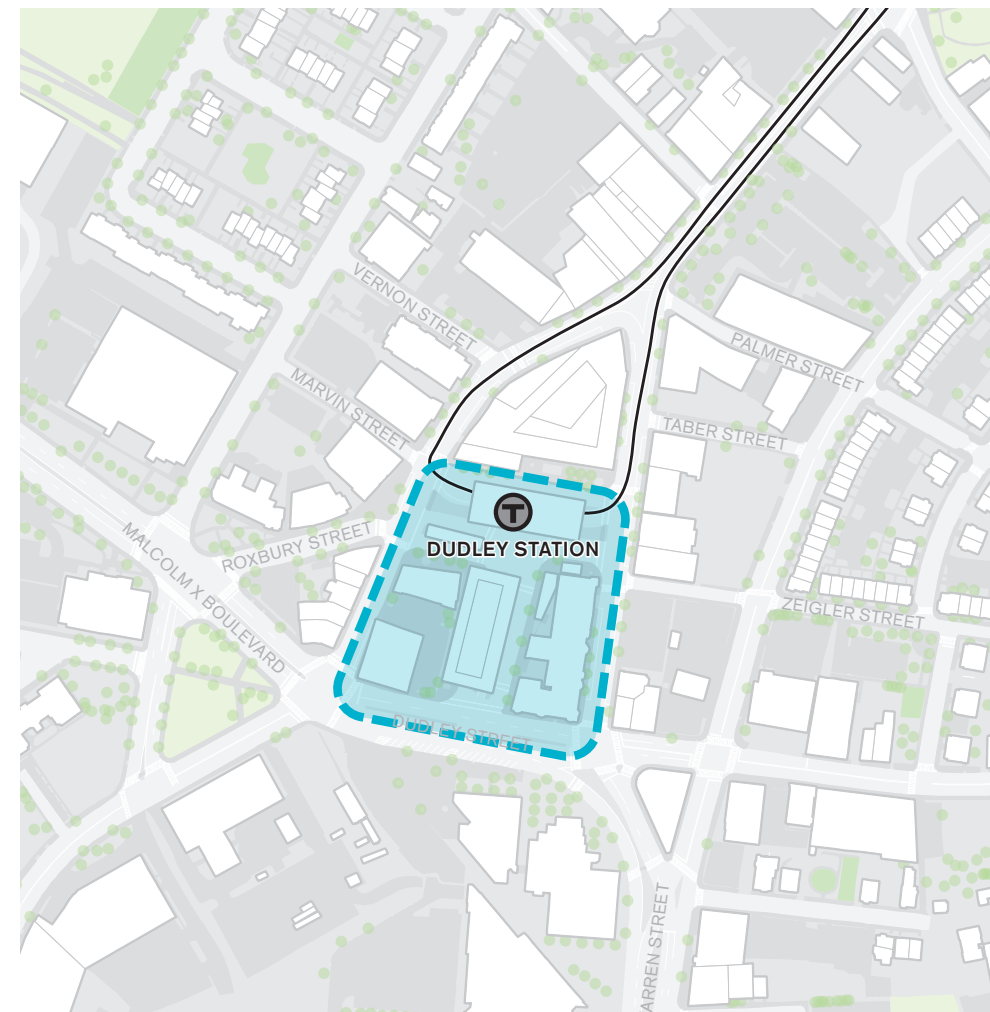
Crosstown

Dudley Square Enhanced Transit Hub

Incorporating improved services into a high-quality indoor station

Project Description

Coupled with the improvement of existing Silver Line service (p181) and the addition of new crosstown service between the LMA and JFK/UMass Station (p176), the existing Dudley Station would be upgraded to become a high-quality indoor facility to enhance the customer experience and minimize delays and aggravation on transfers between bus routes. Improvements would be developed in coordination with the community and riders through the Boston Planning and Development Agency's (BPDA's) ongoing Dudley PLAN process. The new station would likely feature modern passenger amenities, electronic real-time travel information, and new retail spaces in a well-integrated station that more efficiently processes buses and minimizes conflicts with boarding passengers.



Dudley Station currently offers service to the 1, 8, 10, 14, 15, 19, 23, 28, 41, 42, 44, 45, 47, 66, 170, and 171 bus routes in addition to Silver Line 4 and 5.

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

This project recommendation came out of the Needs Assessment and community feedback in parallel planning processes.

Benefits and Issues Addressed

Dudley Station has already evolved beyond its intended capacity with thousands of daily riders waiting for Silver Line and other bus service. Expanded service will further burden riders who wait outside for buses with limited amenities, necessitating an improved transit center. Dudley's future role at the heart of radial and crosstown enhanced transit routes connecting Downtown and the LMA with Dorchester, Mattapan, and Roxbury deserves a high-quality station that handles transfers as well as the workers bound for this growing Roxbury commercial center. Furthermore, improved circulation for buses would have significant transportation and air quality benefits.

Implementation

Approximate Cost: \$15 million for design and construction
Potential Funding Sources: MassDOT/MBTA with developer funding
Who's Responsible: MassDOT/MBTA with City of Boston
Time Frame: Within 5 to 15 years in conjunction with local community process

Best Practices

The Bus Interchange in Christchurch, NZ, brought a bus hub to the heart of the city. With 16 bus gates and an indoor waiting area, the hub makes it easy to transfer between routes and comfortable to wait for the bus.
www.metroinfo.co.nz/info/Pages/CentralStation.aspx

Public Input

"Public Ferries: We should have a public ferry between East Boston and South Boston." -02128

"Connect all the parts of Boston on the waterfront—North End, East Boston, Charlestown, Downtown, Dorchester, South Boston—by boat. The ferries are part of the rapid transit system (like our MBTA) in some places such as Switzerland where a ticket purchased for their trolleys also covers boat fares." -02129

"Water taxis/ferries from North End to Seaport and East Boston." -02113

Implementation

Estimated Cost: \$21 million for new terminals and ferries; \$1 million per year for operations
Potential Funding Sources: Federal grants for capital and infrastructure investments, private development funding through municipal harbor plans and Chapter 91 licensing
Who's Responsible: MassDOT/MBTA, BCEC, and MassPort
Time Frame: 5 to 15 years

Best Practices

In Vancouver, BC, the Granville Island inner harbor ferry system provides high-frequency service between several key destinations not connected by trains.

The extensive ferry system in Seattle, WA, is the third largest in the world. A necessary part of many daily regional commutes, it features high frequencies, high-capacity boats and terminals, and the latest in real-time passenger information.

Regional Projects and Policies

Crossing borders in the densely developed inner core of the Boston metropolitan area, travel should feel seamless for all modes. These porous municipal borders should be inviting to all roadway and rail path users whether they are traveling on local or state owned infrastructure. Effective transit is a core component of effectively supporting mode shift across the region. Corridors that incentivize shared vehicles and long-distance cycling are also important for reducing greenhouse gas emissions. The entire region also needs to collaborate to prepare for the impacts of climate change by building more resilient roads and stations that are ready to weather more hot days, extreme storms, and rising sea levels.

Policies

Key to the City

Fair MBTA Fare Policy and Extended Service Hours

Autonomous Vehicle Policy*

Boston Metro Transit District

Early Action Projects

0 to 5 years

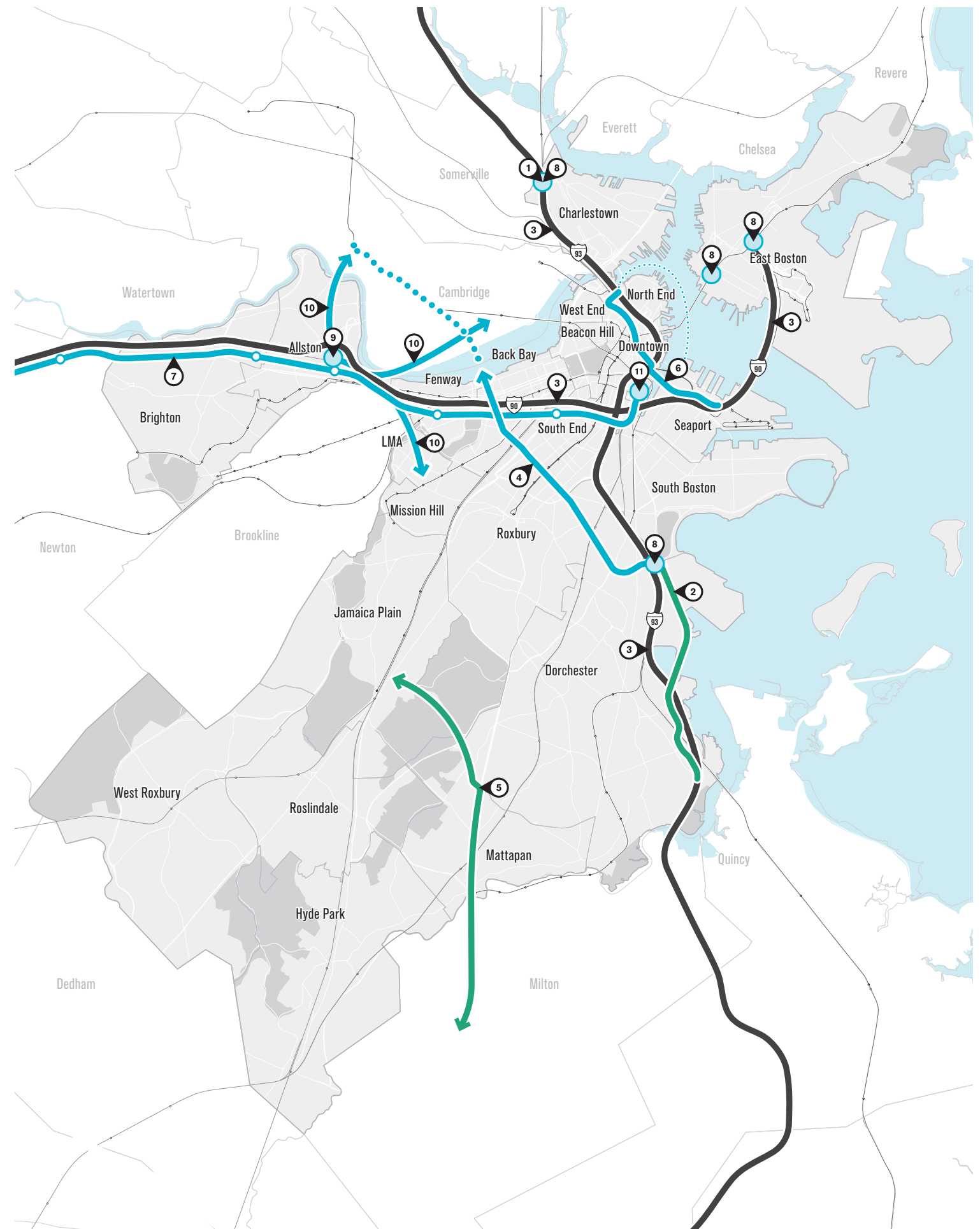
- Orange Line and Red Line Service Improvements
- ① Sullivan Square Enhanced Transit Hub
- ② Morrissey Boulevard Resilient Complete Street
- ③ Smart High-Occupancy-Vehicle Lanes on Interstates

Longer Term Projects

5 to 15+ years

- ④ Massachusetts Avenue Rapid Bus
- ⑤ Multiuse Path Extension to the Blue Hills
- ⑥ North Station to South Boston Waterfront Rapid Bus*
- ⑦ I-90 Newton Urban Rail
- ⑧ Climate Protection for Vulnerable MBTA Stations
- ⑨ West Station Transit Hub
- ⑩ West Station Rapid Bus to LMA, Kendall, and Harvard Square
- ⑪ South Station Expansion

* Top policy or project



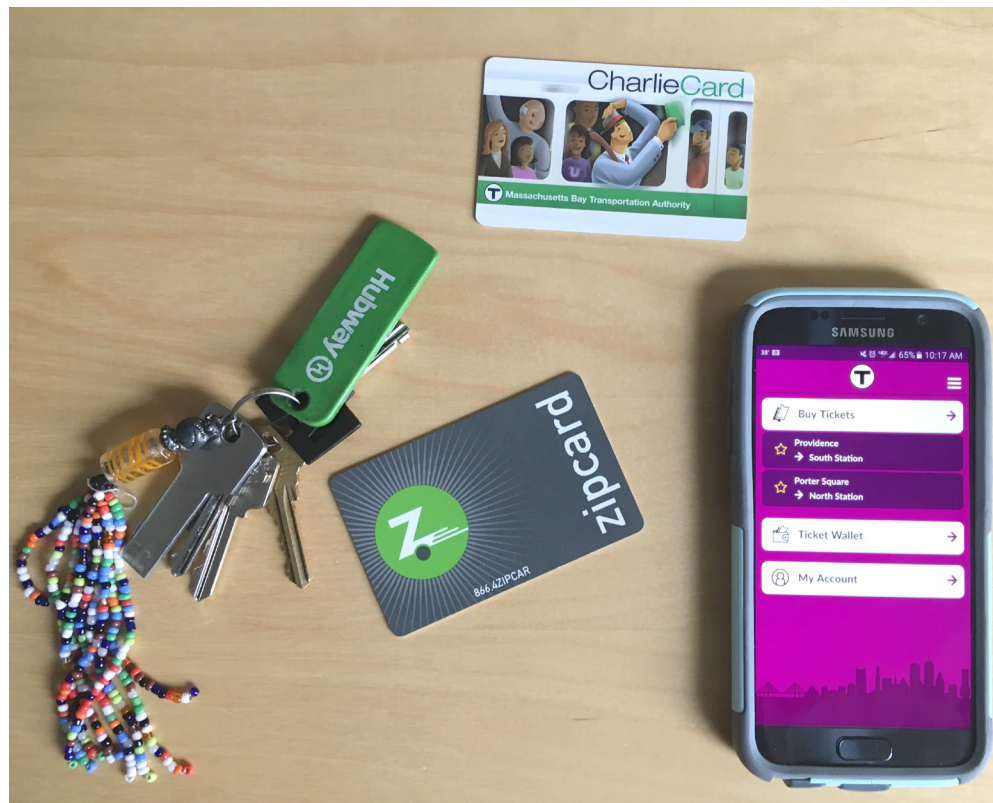
Regional

Key to the City

Payment technology to access all transportation services

Policy Description

Instead of paying for transportation services separately—with a Charlie Card, Commuter Rail ticket, bikeshare membership key, Zipcar membership card, ride-hailing app, quarters or an app for parking meters, and an EZPass to pay tolls in your car—a Key to the City would enable transportation users in Boston to pay for a suite of transportation options through a single platform on either a chip card or with a mobile phone. While technology options are changing rapidly and many important legal agreements need to be worked out, these payment systems would enable easier transfers on multimodal trips and reward people who use a combination of transportation options with lower greenhouse gas emissions. It may also allow for price reductions for people traveling outside of commuter peaks to incentivize travelers who don't contribute to congestion.



Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

Benefits and Issues Addressed

Similar “universal access passes” used in other cities across the country have shown a notable uptick in transit ridership when the barrier of not having the right pass on-hand is removed. A seamless multimodal transaction can eliminate the delays of transferring, increasing speed and convenience. One of the greatest potentials for a single transportation payment platform is that people with limited income or special mobility needs could get credits similar to housing vouchers or food stamps that allow them to select from a menu of services to find the combination that best suits their needs.

Implementation

Approximate Cost: To be determined
Potential Funding Sources: Service providers such as the MBTA, car, ride and bikeshare companies, and BTD for meter parking integration
Who's Responsible: Service providers
Time Frame: Within zero to five years

Best Practices

In Los Angeles, CA, the TAP Card: LA's TAP card allows use of dozens of transit systems throughout Los Angeles County with the same card including the Metro and commuter rail as well as LA's Metro Bikeshare Program.

www.taptogo.net/articles/en_US/Website_content/where-to-ride and bikeshare.metro.net/how-it-works/faq/

Public Input

“Make it easier to pay for the bus. If you just take the bus, it's hard to get and refill a Charlie Card, but without one, it's more expensive to ride.”

Regional

Fair MBTA Fare Policy and Extended Service Hours

Coordination with the State to ensure access to transit for low-income residents, people with disabilities, and employees with off-hour shifts

Policy Description

Public transit is a public good and the City of Boston will continue to advocate for a fare structure that preserves access to high-quality transit for low-income and disabled populations. Working with MassDOT's program to revamp its automated fare collection system (also known as AFC 2.0), the City and State will provide opportunities for more equitable fares and subsidy programs. Discussions with MassDOT are already underway regarding discounts for lower-income riders and re-instating late-night bus service, which could include 24-hour service. The City also will continue to explore ways to extend the hours of the trains and communicate service hours clearly to the public so they can reliably use transit as a late-night and early-morning option. Other early actions might include making free subway and bus transfers to and from the Fairmount Line and increasing the availability of student and youth pass discounts.



In 2015, the MBTA piloted a youth pass program for low-income young people, and in December 2016, the program was officially adopted by the MBTA's Fiscal Management Control Board. Photo credit: Alternatives for Community and Environment

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

Benefits and Issues Addressed

Providing a rapid transit or bus line does not directly correlate with regular access to transit if the service is too costly, infrequent, or unavailable during the time that you need it. Transit can close the opportunity gap in communities with limited access to employment options only when residents can afford to access it and it operates in ways that reflect a full spectrum of shift hours. Overnight service can provide transit to workers in the many sectors with late-night and early-morning shifts, including hospitals, restaurants, bars, and Logan Airport. Passing new transit costs along evenly to all riders is regressive to those with lower incomes, but equitable fare discounts can produce measurable improvements in access and mobility by making transit affordable to over 100,000 Bostonians.

Implementation

Approximate Cost: To be determined
Potential Funding Sources: MBTA and employers along with City of Boston and other municipalities
Who's Responsible: MBTA with City of Boston and other municipalities
Time Frame: Ongoing

Best Practices

In Seattle, WA, the King County fare policy offers discounts up to 50% for most transit rides to low-income residents. For example, the discount threshold is a household income of \$48,600 for a family of four and is usually set as less than double the federal poverty level. kingcounty.gov/elected/executive/constantine/News/release/2016/March/07-orca-lift-anniversary.aspx

Public Input

“Look at all fares and think about if they make sense. It costs a lot to move people at night regardless of mode. How much should late night cost? How much should rush hour service cost? How much should bus cost with a transfer? Question every pricing hierarchy and redevelop it based on what makes sense and implement a system to keep it up to date.”

—Roslindale roudtable

Regional

Autonomous Vehicle Policy

Preparing for self-driving cars

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Launched as a Go Boston 2030 Early Action Project

Policy Description

Boston is working with the Boston Consulting Group and the World Economic Forum on a year-long collaboration focused on creating policy recommendations and supporting on-street testing of autonomous (self-driving) vehicles. There is an initial focus on the testing of new technology, which will lead to the exploration of business models and urban infrastructure that improve safety, access, and sustainability. This policy development process is generating best practices to ensure that vehicles are shared, electric, and can improve mobility options for all residents, not just those who can afford the technology. Attention is also being paid to the potential implications of this technology on our workforce, land use, urban design, and transportation funding.



Autonomous vehicles are already being tested in Boston today. Photo credit: nuTonomy

Benefits and Issues Addressed

Self-driving vehicles are already being tested in cities around the world and are likely to reach the public market as early as 2020. If this new generation of cars carries solo riders, are powered by fossil fuels, and are not designed for multimodal street conditions, then they will fail to achieve their promise of decreasing congestion and improving environmental health. Given that our cars sit unoccupied 95% of the time, a smart autonomous vehicle policy can encourage shared trips and shared rides, greatly boosting the hours a car is used and the amount of people a single car serves while eliminating more than half of the automobile fleet. A single autonomous car can serve a commuter, then pick up someone running to a meeting, followed by another's shopping trip, and so on, completely eliminating the need for multiple cars. This also means that parking is entirely unnecessary in dense areas with lots of trips, allowing Boston to re-envision curb space, parking lots, and garages for sidewalk dining, more bike lanes, new open spaces, expanded affordable housing, and more.

Implementation

Planning Level Cost: Policy work is in-kind
Funding Sources: World Economic Forum, City of Boston, with Boston Planning and Development Agency/Economic Development and Industrial Corporation
Who's Responsible: BTD and the Mayor's Office of New Urban Mechanics
Time Frame: Testing and Initial policies: Spring 2017

Best Practices

In Los Angeles, CA, the LADOT is the first city to specifically address autonomous vehicle policy through the preparation of *Urban Mobility in the Digital Age*. The document ties together existing transportation initiatives and goals with advances in technology to approach the integration of autonomous vehicles into the city's transportation fleet and overall system. la.curbed.com/2016/9/9/12824240/self-driving-cars-plan-los-angeles

More info at www.boston.gov/news/mayor-walsh-announces-autonomous-vehicle-initiative

Public Input

"... be the first city to fully embrace autonomous electric vehicles by investing in their development as an on-demand transit option, lyft-line and uber-pool style, to further lower cost-per-trip for users, and to drastically reduce the need for driver-controlled vehicles in Boston. If you want to really shoot for the moon, by 2030 ensure happy commuters by allowing only 100% autopiloted vehicles into Boston in order to relieve congestion, reduce the need for parking, eliminate traffic fatalities, and to definitively brand Boston as a leading global city."

-02114

Regional

Boston Metro Transit District

Rebalancing transit dollars to jointly fund new services in core communities

Policy Description

Boston will spearhead a new core transit district in collaboration with nearby communities to provide additional transit services that expand the MBTA's capacity within the broader region. Building off of local shuttle successes, the district would focus on non-competing modes that may include shared transportation and technology providers that could extend the range of MBTA transit or alternative modes of travel such as mini-buses, streetcars, or urban rail on routes such as the Fairmount Indigo Line. Boston would complement this with a new transit streets initiative that focuses on speeding up buses and improving the passenger experience on city streets. Broader and creative revenue sources would help fund new services and improvements, and integrated fare payment and information technologies would make the services feel seamlessly integrated with the MBTA.

Policy Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

This policy recommendation came out of the Needs Assessment

Benefits and Issues Addressed

Today, the MBTA is heavily burdened by serving a large region with extensive on-going capital repair and maintenance needs which prevent it from providing many new transit services. Meanwhile, transit demand is at an all-time high and growing, especially in the core service area of Boston and nearby communities. A transit district for this core area would offer new services—potentially some recommended in this action plan—that the MBTA cannot support today while making Boston's low per capita transit expenditure more in line with other large American cities. With a new focus on operating its own transit service, the City would be able to make additional street and signal improvements that enhance transit quality and speed, beyond those made for many existing MBTA routes.

Implementation

Approximate Cost: \$10 million per year for operations
Potential Funding Sources: City of Boston and parking impact fees
Who's Responsible: BTD
Time Frame: 5 to 15 years

Best Practices

In San Francisco, CA, the Municipal Transportation Agency (SFMTA) manages the entire surface transportation network, including taxi regulation. This includes operating Muni Transit, a network of streetcars, buses, and cable cars. To the user, the Clipper Card makes transfer between Muni and other regional services such as BART or Golden Gate Transit seamless. www.sfmta.com

Portland, OR, owns the Portland Streetcar, and operates it in conjunction with the regional transit agency, TriMet, and a non-profit specifically for the Streetcar. The three parties have a "master agreement" governing this relationship. The system includes 16 track miles today and carries more than 15,000 trips daily. portlandoregon.gov/transportation/article/573729

Similarly, the Atlanta, GA, funds the Atlanta Streetcar, while several other transit agencies serve the region. The City has leveraged funding from both federal and regional sources, as well as a Downtown Improvement District. The streetcar serves 12 stops with 15 minute frequencies and has several additional lines planned in the future.



Mayor Walsh worked with his counterparts in the Metro Mayors group on a Climate Mitigation Commitment. Photo credit: MAPC

Public Input

"More integrated forms of transit should be better connected." —Roslindale roundtable

"Sharing economies are not accessible to everyone. More integration with traditional public transit. More innovative transportation." —Roxbury roundtable

"Small-scale, flexible transit." —Roxbury roundtable

Regional

Orange Line and Red Line Service Improvements

Expand capacity with new signals, new vehicles, and more frequent service

Project Description

Beginning in 2019, and to be completed by 2022, the number of Orange Line train cars will increase from 120 to 152 with new larger vehicles, increasing the capacity and reliability of service while improving the customer experience. Combined with signal upgrades and an expanded maintenance facility at Wellington, the Orange Line will be capable of delivering four-minute headways during peak service and increase overall service capacity by 30%. This will reduce crowding and also allow for growth at underutilized sites along the corridor that are strong candidates for transit-oriented development. Meanwhile, new Red Line cars, as well as track and signal improvements along the Braintree branch, will enable trains to operate more smoothly, increasing capacity and reliability on the entire line.



Mock-up of Orange Line cars on order

Benefits and Issues Addressed

Currently, Orange Line trains are at or near capacity with no seating, and often no standing room, when they enter Boston (or at the first stop within the city) during peak hours. Though new residential and commercial areas continue to emerge on this line, significant capacity improvements are needed to accommodate this growth as Boston and the surrounding communities grow denser and to enable Go Boston 2030 to meet its mode-shift goals. Similarly, Red Line improvements are needed to reduce delays and accommodate more transit riders during peak hours.

Implementation

Approximate Cost: \$1.3 billion (\$800 million for new cars; \$500 million for signals)*
Potential Funding Sources: FTA and MassDOT*
Who's Responsible: MBTA and MassDOT
Time Frame: To be completed by 2022

Best Practices

Many transit agencies have plans in place to procure updated cars for their rapid transit systems, including the Chicago Transit Authority, the Bay Area's BART system, and New York's MTA system.

WMATA put its new 7000 series cars into service in 2015 on the Blue Line that runs from Maryland to Virginia through Washington D.C. These cars feature many safety and passenger comfort improvements such as wider aisles, LED screens, and better public address systems.

*Source: www.mbta.com/uploadedfiles/About_the_T/Board_Meetings/Red%20and%20Orange%20Line%20Infrastructure%20Financing%20Update.pdf

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

Identified on the ballot as an Early Action commitment

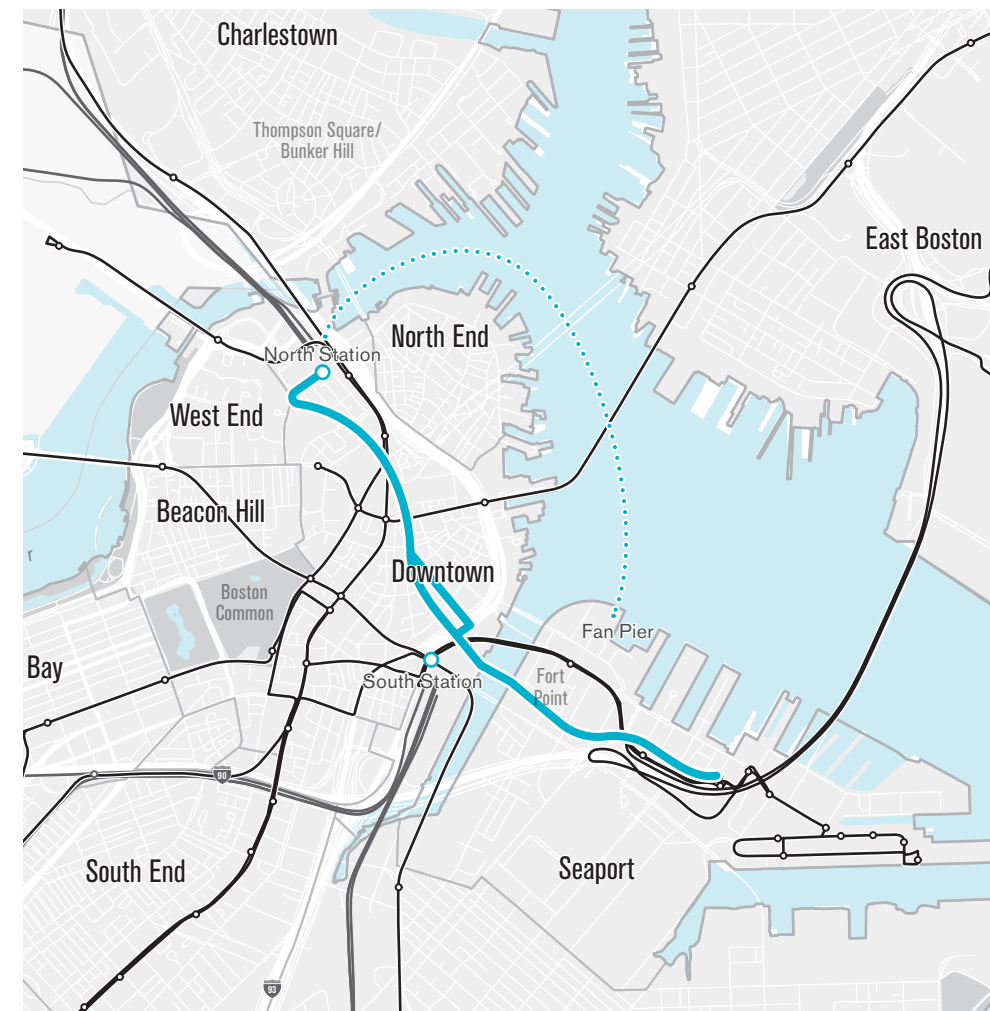
Regional

North Station to South Boston Waterfront Rapid Bus

Direct bus service between northern commuter rail lines and the Seaport in tandem with ferry service

Project Description

For commuters traveling through North Station and heading to the Seaport, transit and shuttle options will be consolidated and expedited by providing bus service in exclusive bus lanes running between Causeway Street and the South Boston Waterfront, as recommended in the *South Boston Waterfront Sustainable Transportation Plan*. For a direct connection from North Station's Lovejoy Wharf to Fan Pier in the Seaport, a new ferry route is proposed (p186). With bus service offering limited stops, all-door boarding, and separation from vehicle congestion, more commuters could opt to take transit to the Seaport. Stops near Post Office Square, Atlantic Avenue, D Street, and South Station, would serve dense areas in ways that would reduce crowding on other transit routes and provide new connections to job hubs.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#10 in public voting

Benefits and Issues Addressed

As both the Waterfront and the area around North Station fill new buildings with residents and employees at an incredible rate, the need for providing effective alternatives to driving between them is increasingly significantly. Meanwhile, North Shore commuters easily reach North Station but have few easy connections to the majority of the Seaport. The recently completed transportation plan for the district has identified the lack of connection with northern commuter rail service as one of the biggest obstacles to the district's continued growth. Today, multiple exclusive employer-run shuttle services are trying to address this gap and have created an inefficient and redundant network. A new, reliable rapid bus corridor will provide a high quality connection, eliminating the need for additional transfers and private shuttles. This provides a strong alternative to driving for future commuters to these growing districts as well as to those going to many of the dense stops between them.

Best Practices

Orlando, FL's Lymmo provides a free link through downtown. Running in its own lane and with signal priority, the Lymmo has three routes with multiple stops. The Lymmo Orange Line runs every five minutes on weekdays and every quarter hour on weekends so that users never have to think about when the next bus will arrive.



Image Source: www.mondoexplorer.com/orlando/images/LYMMO2.jpg

Implementation

Approximate Cost: \$21 million for design and construction
Potential Funding Sources: City capital plan for design and Boston MPO TIP for construction
Who's responsible: BTD and PWD with MassDOT
Time Frame: Within 5 to 15 years in conjunction with local community process

Public Input

"Bus and shuttle exclusive lanes on surface roads connecting South and North Stations with the South Boston Waterfront" -02116

"Transit connection between North Station and South Station via Commercial Street and Atlantic Avenue." -02109

Public Input

"The Orange Line runs at capacity during the peak hours. While the city should continue to encourage further density in the areas around the T, the southern part of the Orange Line is already maxed out. The new apartment complexes and development sites in the works at Forest Hills and near Green St and Stony Brook on Washington will only add further strains to the line."

-02130

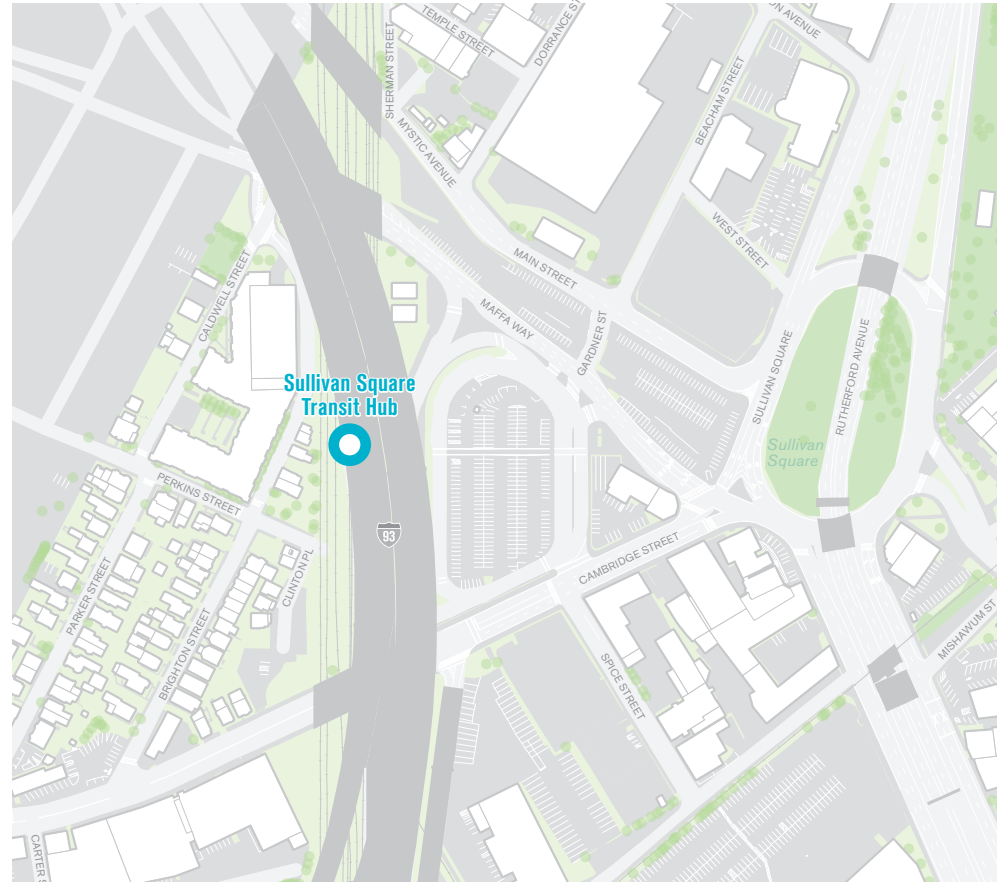
Regional

Sullivan Square Enhanced Transit Hub

Improving the customer experience and connections to the neighborhood

Project Description

Along with new rapid bus service to Everett and new shuttles to the Wynn Casino, Sullivan Station amenities and access will be enhanced. Within the station, improved wayfinding, lighting, and waiting areas will increase rider comfort. Outside, bus berths will be reconfigured onto one level with improved operating efficiencies, and riders will have well-lit shelters, real-time information displays, comfortable benches, and other modern amenities. Rationalized bus and automobile circulation will be accompanied by an improved walking experience to and from the station along and across Broadway, Mystic Avenue, Cambridge Street, and Sullivan Square itself.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of community feedback and the Needs Assessment

Benefits and Issues Addressed

Sullivan Square Station is a major transfer point and a growing destination station, but physical conditions for connecting between trains and buses are outdated and deteriorating, while connections on foot and bike to Charlestown and East Somerville are particularly difficult. Demand is expected to grow as the MBTA is studying the planned incorporation of BRT treatments for heavily-used bus lines serving the station between Everett and downtown Boston, and the new Wynn Casino will be running dedicated shuttles from Sullivan square as well. Conditions for waiting passengers are currently inadequate with riders regularly waiting at unprotected bus berths and rushing to make connections. Bus operations are awkward and conflict with park-and-ride traffic and heavy general traffic on each abutting street. Modern amenities and traffic solutions will greatly increase rider comfort, reduce transfer delays, and reduce bus delays for MBTA vehicles entering and exiting the station.

Implementation

Approximate Cost: To be determined by ongoing Lower Mystic Regional planning process
Potential Funding Sources: MassDOT/MBTA and local developers
Who's Responsible: MassDOT/MBTA
Time Frame: Within 5 to 15 years

Noteworthy

About 10,000 Orange Line boardings and 8,000 local bus boardings occur at Sullivan Square each weekday. Between 2009 and 2012, ridership on all but one local bus route serving Sullivan increased by at least 10%.

Public Input

"Make Sullivan Sq. area safer for bike riders." -02148

"More buses near and around Wellington and Sullivan Stations. Buses are overcrowded. More would be great and even better if they were on time." -02155

"Improved ped safety in area of Sullivan Sq. rotary" -02129

"What can we do to make the Sullivan Square transit and bus facilities far more accessible to the Charlestown and surrounding communities? This includes more frequent service, better access by walking and bikes, a better layout and modernization of the facilities, and transit-oriented development." -02129

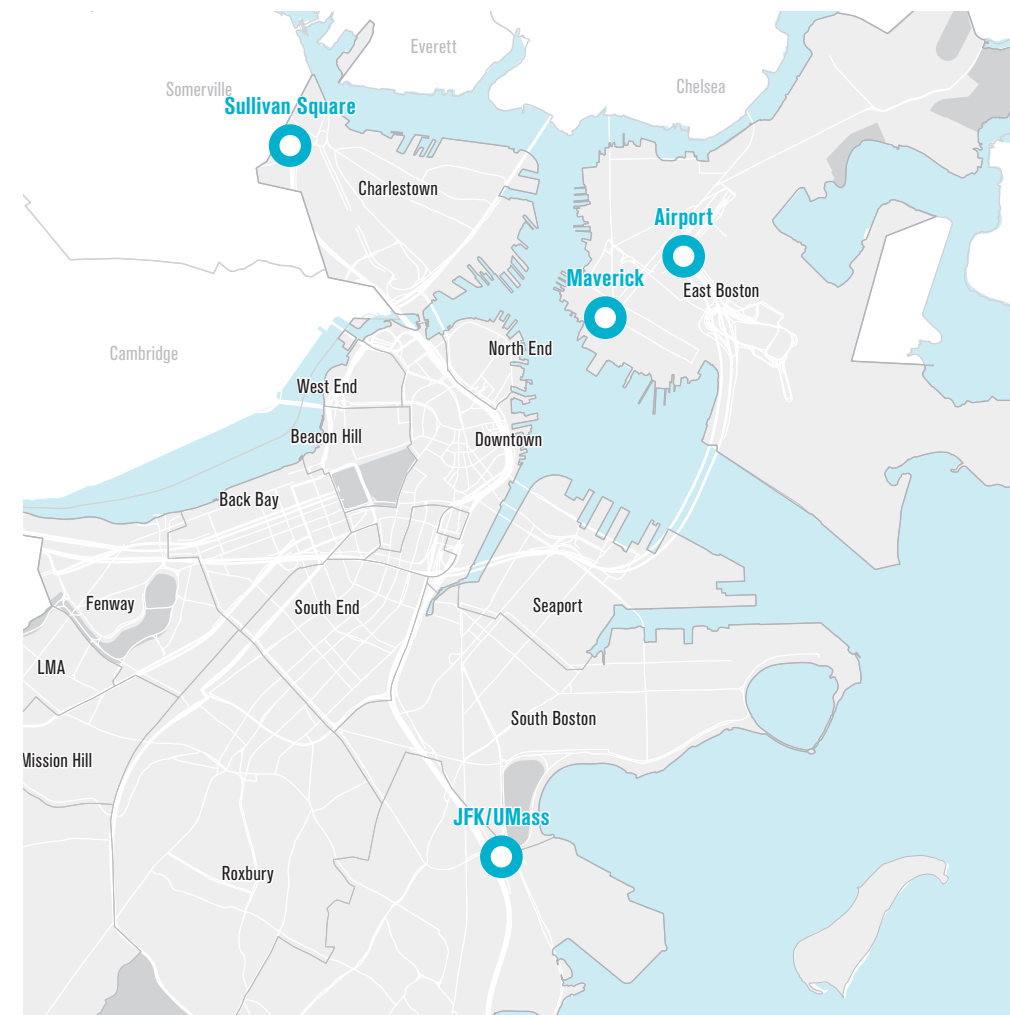
Regional

Climate Protection for Vulnerable MBTA Stations

Ensure that T stations are more resilient

Project Description

Some T stations are already vulnerable to coastal flooding in the case of an extreme weather event, and with climate change, they will become increasingly vulnerable. These stations include JFK/UMass, Sullivan Square, and many Blue Line stations in East Boston. They can be made more resilient during a rain or flood event with on site redesign or barriers or be protected by other adaptations to the surrounding neighborhood, particularly at flood entry points. These adaptations may also contribute to neighborhood protection. Smaller scale protections may be necessary as well, such as conserving ADA access by protecting elevator pits. Protection can be done with permanent design changes or the procurement and installation of temporary structures. The *Climate Ready Boston* report highlights the vulnerability of and the possible adaptive infrastructure for each of these stations as well as for the Silver Line stations in the South Boston Waterfront, which are also vulnerable.



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment as well as analyses for parallel planning processes

Benefits and Issues Addressed

Depending on the type and severity of an extreme weather event, T stations are impacted differently. Blizzards can cripple the entire transit system, but flooding can affect a single station halting one line at a time. This is particularly problematic if flooding a station leads to the inundation of a tunnel or diverts passengers onto buses within a particularly congested corridor, as is the case for the Aquarium and Maverick stations. Diversions can often last far longer than the flooding due to water damage and necessary repairs, making climate readiness essential to maintaining access to jobs and services.

Implementation

Approximate Cost: TBD
Potential Funding Sources: MBTA/MassDOT
Who's Responsible: MBTA/MassDOT
Time Frame: 5 to 15 years

Best Practices

Philadelphia, PA's, Southeastern Pennsylvania Transportation Authority recently completed an FTA-funded pilot vulnerability assessment on its Manayunk-Norristown commuter rail line. The report provides a detailed list of specific adaptation measures for storms, snow, and other climate-related events.
www.septa.org/strategic-plan/reports/ClimateAdaptationReport.pdf

Public Input

"Make MBTA stations climate resilient" -02116

"Improve infrastructure to be resilient. Increase funding for adaptation, including new tax revenue." -Chinatown roundtable

Regional

Morrissey Blvd Resilient Complete Street

An enhanced multimodal corridor guarded against sea level rise

Project Description

A multi-year reconstruction of Morrissey Boulevard will correct frequent street flooding and prepare the corridor for anticipated sea level rise and storm surges. While enhancing stormwater management infrastructure, the reconstruction will add new bicycle and pedestrian paths to enable safe travel without a car along its entire length.

Benefits and Issues Addressed

Recurrent flooding issues can render Morrissey Boulevard impassable during storms, and the frequency of these closures has increased over the years. Each flood damages critical infrastructure and impedes safe commuting. The planned reconstruction will not only ensure that this essential auto commute corridor for Dorchester is passable, it will add a critical regional bicycling connection that enables a continuous ride from Mattapan, through Dorchester and South Boston, into Downtown by connecting the Neponset Greenway (p199) to new bicycling facilities along Dorchester Avenue (p158) or up Summer Street (p175).

Implementation

Approximate Cost: \$17 million for design and construction
Potential Funding Sources: Department of Conservation and Recreation (DCR)
Who's Responsible: DCR
Time Frame: Design ongoing with construction within 5 to 15 years

Best Practices

21st Avenue in the small town of Paso de Robles, CA, is just north of downtown. The street experienced frequent flooding and had no accommodations for people on bikes. In 2014, a redesign of the street provided bicycle amenities as well as green infrastructure designed to manage flooding and runoff. centralcoastlidi.org/project-details.php?id=2

Photo Source: centralcoastlidi.org/project-details.php?id=2



Before

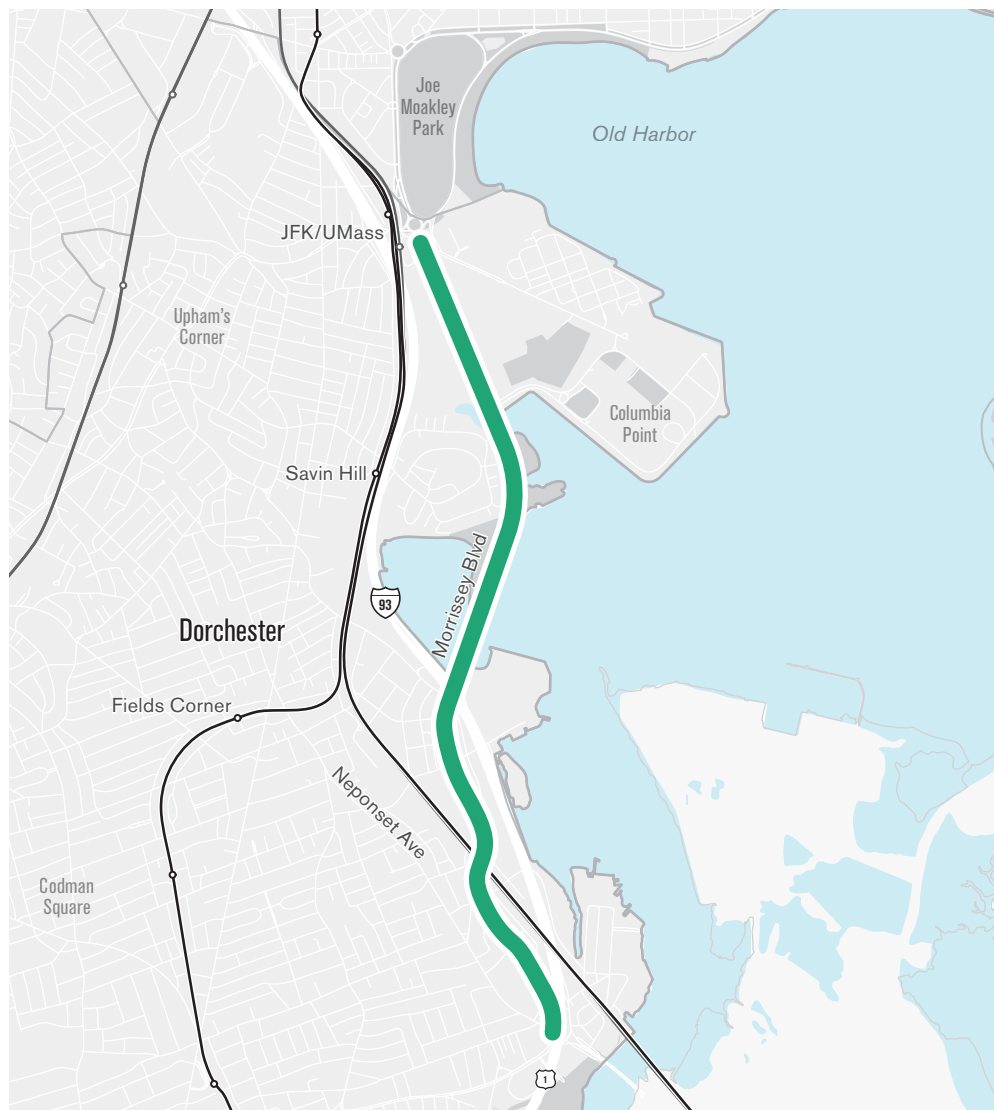


After

Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment as well as analyses for parallel planning processes



Regional

Multiuse Path Extension to the Blue Hills

A protected, multiuse trail extending the Southwest Corridor to the Neponset Greenway

Project Description

Several possible routes are being considered to continue Boston's Southwest Corridor to the south in order to serve more residents and the region. One option is a safe and continuous connection from Forest Hills through Franklin Park to the Neponset River Greenway, Claire Saltonstall Bikeway, and the Blue Hills Reservation. Whether along Blue Hill Avenue or on American Legion and Cummins Highways, a multiuse path for people walking, running, and cycling—buffered from traffic and supplemented by trees and other green infrastructure—would extend a critical green route for the city, enhancing opportunities for recreation and active transportation. Of the routes proposed by the City's GreenLinks plan, in coordination with LivableStreets Alliance's Emerald Network and MAPC's LandLine initiative, one or more will be constructed. Connections will be made to other proposed multiuse paths including Columbia Road (p172) and the Fairmount Greenway Neighborways (p161).



Project Score

- Access 1
- Access 2
- Safety 1
- Safety 2
- Reliability
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#6 in public voting

Benefits and Issues Addressed

A map of existing greenways in Boston shows a clear lack of biking and walking paths in Mattapan, as well as parts of Dorchester, Roslindale, and Hyde Park. Creating a safe connection that allows people on foot and on bike to link up with existing paths on the southern edge of the city, as well as northward along the Southwest Corridor, Columbia Road, or the Fairmount corridor, would support active transportation in neighborhoods where public open space tends to be limited and the major roadways are unfriendly to vulnerable roadway users. Whether for transportation or recreational walks, runs, or rides, a new path is needed here in additional parkland and connections to larger parks and path networks.

Implementation

Approximate Cost: \$6 million for design and construction
Potential Funding Sources: City capital plan and Boston MPO TIP
Who's responsible: BTDC and Public Works
Time Frame: Within 5 to 15 years

Best Practices

New York City has connected many of their parks and greenways using protected bike lanes. The Pelham-Moshulu Parkway Greenway connects several parks and urban areas and is part of the larger East Coast Greenway network. www.nyc.gov/html/dot/html/bicyclists/bikemaps.shtml

Public Input

"Make traffic safer for people, cars, bikes, & pedestrians along Blue Hill Ave near Talbot St." -02366

"Connect Emerald Necklace to Neponset Trail." -02143

More info at www.mass.gov/eea/docs/dcr/news/public-meetings/materials/projects/2016-3-28-morrissey-presentation.pdf

Public Input

"Morrissey Blvd: Reduce road to 1+1 lanes." -02130

"Adjust landscapes along roads that flood [with] green infrastructure." -Roslindale roundtable

Regional

Massachusetts Avenue Rapid Bus

Exclusive bus lane with priority signals and quick bus boarding along Mass Ave

Project Description

A designated lane along Mass Ave would facilitate rapid travel for buses and other high occupancy vehicles including university shuttles and on-demand bus services such as Bridj. In addition to the exclusive lanes, which allow buses to avoid the congestion caused by cars, the stations would include all-door boarding, off-board fare collection, and improved waiting areas, which would support and promote transit ridership in this corridor and reward people who take the bus.

Benefits and Issues Addressed

The Route 1 bus that runs down Massachusetts Avenue from Harvard Square in Cambridge to Dudley Square in Roxbury is among the routes with the highest ridership in Boston. These buses are less than 5% of the vehicles on this corridor, yet they carry up to 23% of the people traveling in motorized vehicles between Beacon and Albany Streets. However, Route 1 buses are regularly stuck in general traffic leading to bus bunching, inconsistent service, and slow overall speeds. Exclusive bus lanes and smart signals that adapt in real-time would help eliminate bunching, improve reliability, and reduce travel times—especially in the Back Bay and South End, improving cross-town connections and transit speed. Delays also occur at stops where long lines of people wait to board and passengers without loaded Charlie Cards slow the process. Off-board payment and all-door boarding can accommodate even the busiest boardings in under 15 seconds, reducing delay significantly. The system could also serve the multiple university and hospital buses operating on Massachusetts Avenue, as well as corporate shuttles, Bridj vans, and other pooling services.

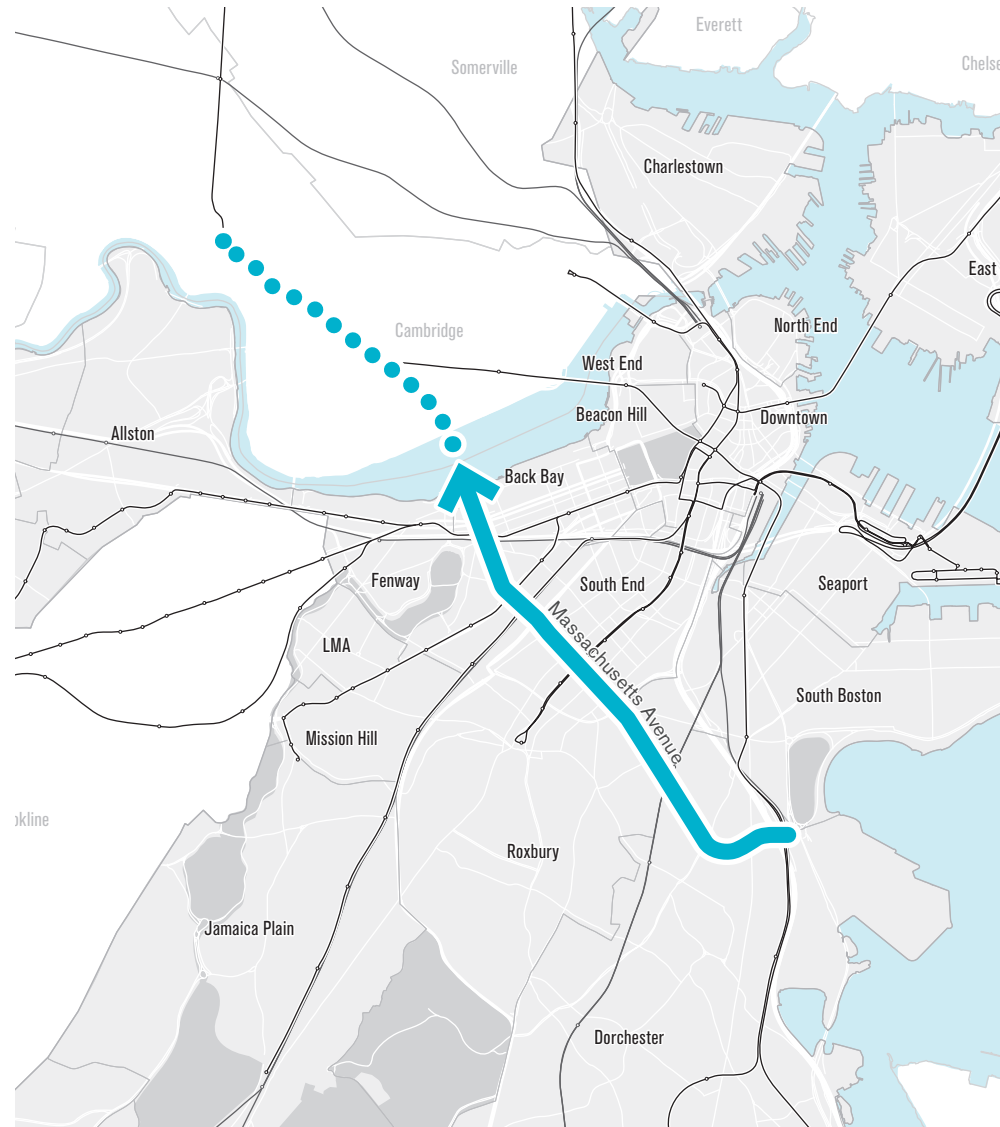
Implementation

Approximate Cost: \$43 million for design and construction with vehicle costs to be determined
Potential Funding Sources: City of Boston and Cambridge for design, Boston MPO TIP for construction
Who's responsible: BTS and Public Works with MassDOT and the City of Cambridge
Time Frame: Within 5 to 15 years in conjunction with local community process

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#4 in public voting



Best Practices

Chicago, IL's, Looplink project reclaimed vehicle travel lanes to offer raised boarding, dedicated bus lanes, and bus tracking monitors coupled with protected bicycle lanes. Multiple routes use these amenities, which now include pre-board fare systems in some places.
www.transitchicago.com/looplink/

Public Input

"Transit Signal Priority for MBTA buses along key corridors:... The Mass Ave corridor, at least, could greatly benefit from this—I often see #1 and #77 bus bunching, and I feel bad for the passengers when this is the case. I often decide to walk along Mass Ave because I usually don't have faith in the bus arrival estimates, but would be more inclined to climb on board if I knew the bus would be able to sail through the traffic signals."
 -02130

Regional

I-90 Newton Urban Rail

Subway-like service paralleling the Mass Pike from Newton to South Station

Project Description

The Worcester/Framingham Line currently provides service structured to accommodate suburban commutes into three Boston stations (Yawkey, Back Bay and South Station) that serve key employment districts. Trains arrive with 20 to 30 minute headways during peak commuting periods and less frequently during the middle of the day. This project would use advanced train scheduling technology to run smaller urban railcars in between the less-frequent commuter rail trains to provide subway-like service between several neighborhoods of Boston and Newton, including new connections at Boston Landing and West Station, in addition to the existing stations. With an expanded South Station, this kind of rapid turnaround becomes more reasonable. Alternately, service could be interlined with the Fairmount Line to connect to Newmarket and beyond.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability

#11 in public voting

Benefits and Issues Addressed

With the recent completion of the Yawkey Commuter Rail station in the Fenway to access jobs in the LMA, the upcoming completion of Boston Landing Station in Allston in a rapidly growing jobs hub, and the planned construction of West Station in the new neighborhood and university areas planned for the I-90 straightening project, the I-90 Urban Rail is intended to supplement Framingham/Worcester Line services between Newton and South Station to support travel needs of some of Boston's future growth areas. An urban rail line with regular service similar to the Red or Orange Line coupled with an affordable fare structure will provide service that employees and residents can rely on. It will also incentivize new transit-oriented development in these districts. The new line will provide a high-quality transit alternative to driving and relieve pressure on the Mass Pike, as well as on city streets surrounding these growing districts.

Best Practices

Both NJTransit's RiverLine and Denton County Transportation Company (Texas) have diesel-multiple units in service. These Stadler cars provide an experience similar to light-rail for the rider, but can operate on heavy rail tracks. One major difference between these and commuter rail cars is that instead of having a separate locomotive, the trains are "self-propelled" by an engine in a passenger vehicle. Although cars can be more expensive up front, their operating cost is lower than traditional commuter rail.

Dallas Area Rapid Transit will open TEXrail in 2018 using similar vehicles.
www.texrail.com/about/overview/

Implementation

Approximate Cost: \$100 million for stations and rail cars; \$5 million annually to operate
Potential Funding Sources: MBTA/MassDOT
Who's responsible: MBTA/MassDOT
Time Frame: 15+ years

Public Input

"Boston should take a page or three from Paris or San Francisco's books, and build a regional rapid transit network connecting communities like Hyde Park, Mattapan, Quincy, Chelsea, Revere, Lynn, Salem, Waltham, and Newton to the downtown and the city core."
 -02122

Regional

West Station Transit Hub

A new rail and bus station serving Brighton and the new Beacon Yards

Project Description

As part of the necessary reconstruction of an aging I-90 viaduct that curves above an abandoned rail yard, MassDOT is designing a new station along the Framingham/Worcester commuter rail line that will include direct connections to local buses, proposed rapid bus connections to the LMA and Cambridge (p202), and urban rail service to Newton (p201). New walking routes into Allston near Boston University and to the evolving Beacon Yards district adjacent to Harvard will also serve the new station. The transit hub will improve connections between Boston and Cambridge and will bring regional travelers to the expanding districts nearby. A study is underway, as are preliminary designs for the future station.

Benefits and Issues Addressed

West Station provides an opportunity for the new jobs center at Beacon Yards to be built transit-ready, with easy and direct rail and bus connections from the west, into Downtown, to the LMA, and over the river to Kendall and Harvard Squares. Serving as a new major gateway into Boston, West Station is a natural hub for multiple cross-town transit routes, helping to open up access at a point that has been squeezed between the interstate corridor and the Charles River. The station also provides a natural transfer point for rail commuters from the west to use local rail and bus services to connect with key destinations such as the LMA and Harvard Square.

Implementation

Approximate Cost: \$85 million for design and construction
Potential Funding Sources: MBTA/MassDOT
Who's Responsible: MBTA/MassDOT
Time Frame: 15+ years

More info at www.bostonmagazine.com/news/blog/2014/09/30/mbta-allston-west-station-project/

Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

This project recommendation came out of the Needs Assessment as well as other planning processes.



Best Practices

Denver, CO's, Union Station opened in place of a rail yard in 2012. The project integrates a bus concourse, Amtrak, commuter rail, and light rail as well as high-quality food amenities and event spaces. The process has spurred almost \$1 billion of investment in the area. unionstationindenver.com/transit/ and www.bizjournals.com/denver/blog/earth_to_power/2014/04/denver-union-station-areadraws-1-billion-in.html?page=all

Public Input

"Bus frequency: More buses in not major parts of town [like] Allston/Brighton." -02134

"... I would like to see more transit options that connect inner suburbs and outer neighborhoods of Boston without involving trips through downtown. I envision a University Line that connects some of the Boston area's great universities to one another." -02143

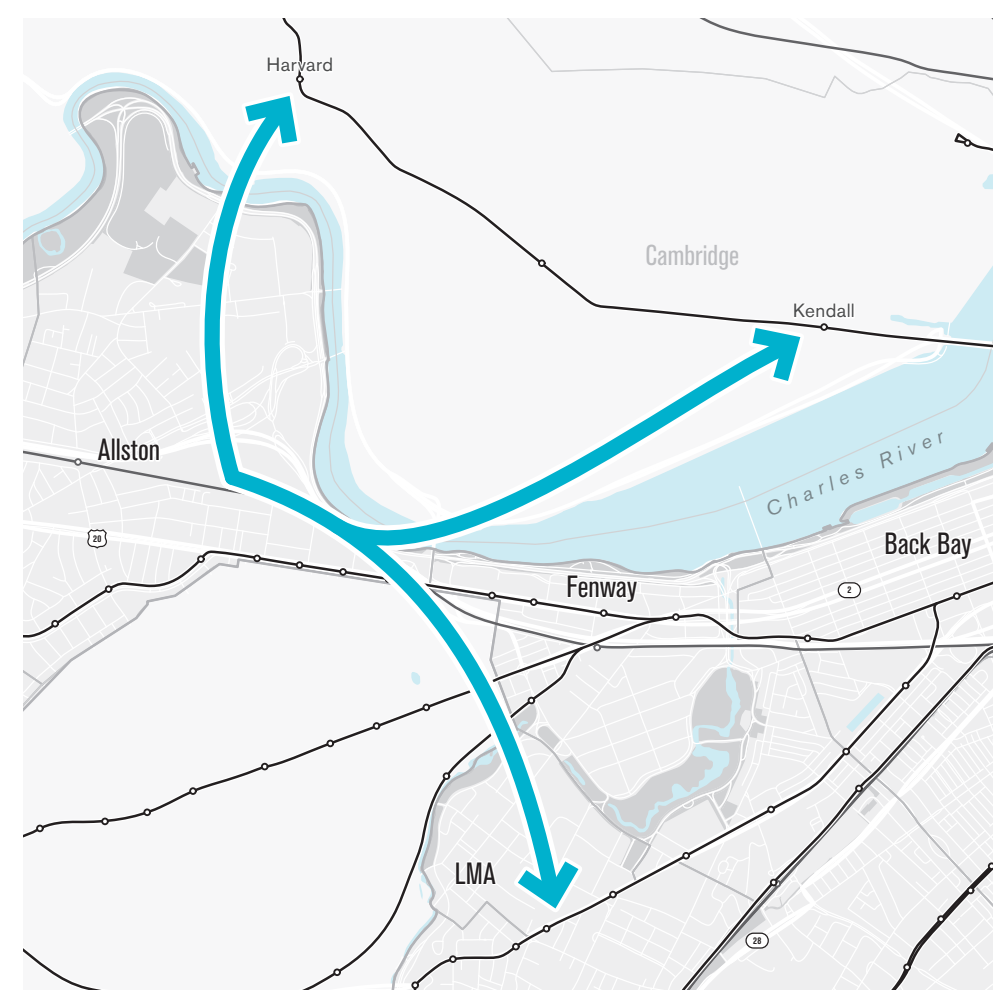
Regional

West Station Rapid Bus to LMA, Kendall, and Harvard Square

Create a new set of rapid bus connections

Project Description

Using existing rail and highway right-of-way, a new set of transit lines would connect via West Station (p202) from the Longwood Medical Area across the Charles River to both Kendall and Harvard Squares and their corresponding universities and Red Line stations. Further connections could potentially continue on to the Orange Line, North Point, or Alewife in the future. While the exact alignment and type of transit vehicles will be decided in conjunction with MassDOT and the community, the service would provide high-frequency limited-stop service between the Green Line near Kenmore Square, the urban rail along I-90 (p201), the MBTA's Route 1 bus on Massachusetts Avenue, and the Red Line. These lines would connect many transit commuters with top regional employment centers without requiring travel into the core of Boston.



Project Score

- Access 1
- Safety 1
- Reliability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance
- Access 2
- Safety 2
- Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2

This project recommendation came out of community feedback and the Needs Assessment.

Benefits and Issues Addressed

Sustained employment growth will continue in the LMA and Kendall Square, as well as around West Station, but these centers are each only served by one rail line, forcing most workers to transfer in downtown, lengthening their commute and disincentivizing their use of transit. With a new high-quality transit connection that interfaces directly with rail lines and brings workers to these centers, transit ridership can grow while commute times drop, helping to boost each of these jobs centers and to attract future development.

Implementation

Approximate Cost: \$133 million for design and construction
Potential Funding Sources: City of Boston and City of Cambridge for design, Boston MPO TIP for roadway construction, MassDOT/MBTA for vehicle costs
Who's Responsible: BTD and Public Works with City of Cambridge and MassDOT/MBTA
Time Frame: Within 5 to 15 years in conjunction with local community process

Best Practices

In Hartford, CT, CTfastrak runs in a dedicated 9.4 mile lane along a former rail right-of-way and an operating Amtrak line. Weekday ridership along this alignment has almost doubled compared to similar service.



ctfastrak.com/files/CTfastrak_Year_One_Report.pdf

Public Input

"I would like to see Bus Rapid Transit service connecting... through Longwood to Boston University and cross into Cambridgeport to serve MIT, Kendall Square, Lechmere, [and] Brick Bottom. The BRT service would operate in dedicated lanes or separated busways where possible. It could be implemented in segments as resources become available." -02109

Regional

Smart High-Occupancy-Vehicle Lanes on Interstates

Incentivize regional transit, car-pooling, and shared-rides by separating them from congested general freeway traffic

Project Description

In coordination with MassDOT, existing and new HOV lanes would be converted to smart lanes that are open only to transit, shared rides, and carpools—restricted to permitted vehicles only through MassDOT's new overhead license-plate reading gantries. This electronic lane technology allows the existing Interstate 93 HOV lane to be extended north to Interstate 95, the gap on I-93 between Morrissey Boulevard and Widett Circle to be filled, and new HOV lanes to be added to I-90 and Route 1. In the future, vehicles equipped with autonomous or driverless technologies that allow closer spacing and automated speed control can greatly increase the capacity of these lanes.

Benefits and Issues Addressed

Significant regional growth is expected by 2030, with increased driving further burdening congested highways if commuters do not shift to other modes. Rather than relying only on existing transit lines to take the burden, every highway can serve as a peak hour transit line by putting many more travelers into a single lane with higher operating speeds at peak than thousands of private cars can do alone today. Making this conversion soon can help incentivize shifts to transit, car-pooling, and shared rides before congestion eventually renders today's lane capacity insufficient.

Implementation

Approximate Cost: \$15 million
Potential Funding Sources: MassDOT
Who's Responsible: MassDOT
Time Frame: five years

Best Practices

On US-36 in Colorado between Boulder and Denver, a public-private partnership provides one lane in each direction for buses and high-occupancy vehicles. Users below the occupancy limit can travel in the lane but must pay extra for this premium service. The price to use the lane varies dynamically throughout the day.



Project Scores: I-93, I-90, I-95

- Access 1 ○●○ Access 2
- Safety 1 ○○ Safety 2
- Reliability ●●○ Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

#15 in public voting



Regional

South Station Expansion

Additional track capacity in order to accommodate more frequent train service

Project Description

MassDOT has been studying the viability and benefits of expanding South Station by adding seven new tracks and four new platforms to the existing 13 tracks and seven platforms. This addition, along with reconfiguring the rail lines, creating additional midday layover capacity, and enlarging and improving the passenger waiting areas (the "headhouse" building), would reduce existing capacity challenges and allow for expanded regional rail service and Amtrak inter-city service in the future.

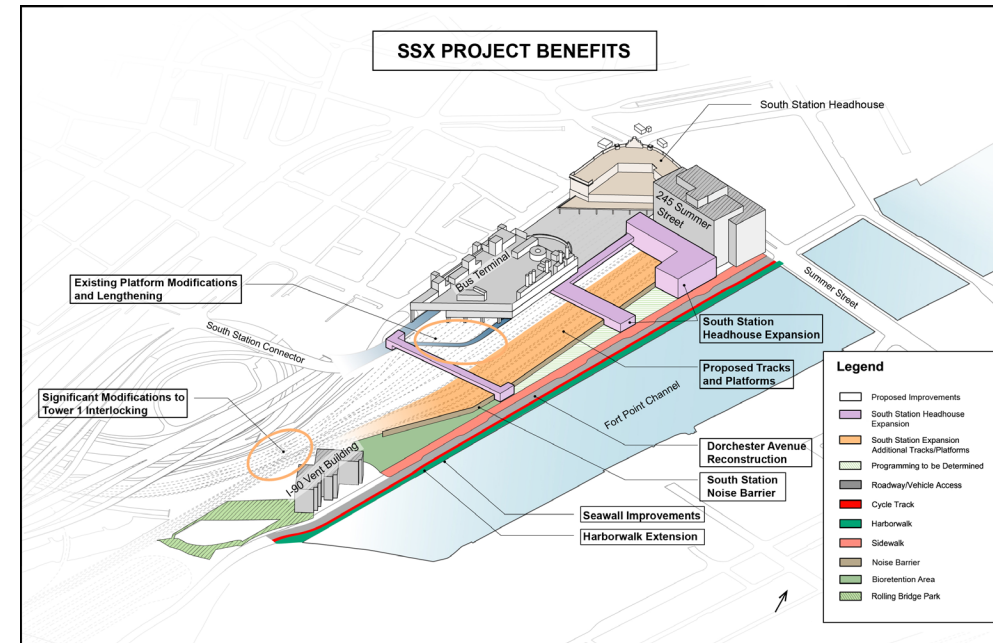


Image source: MassDOT South Station Expansion FEIR

Project Score

- Access 1 ● Access 2
- Safety 1 ○ Safety 2
- Reliability ○ Affordability
- Sustainability/Resiliency 1
- Sustainability/Resiliency 2
- Governance

This project recommendation came out of the Needs Assessment

Benefits and Issues Addressed

In advance of anticipated urban rail service along multiple commuter rail lines, additional platform and track capacity is needed at South Station. This is particularly critical for operating Fairmount/Indigo Line trains with greater frequency. In order to achieve the aspirational mode shift goals for increased transit use, more rail service must be provided during peak commuter hours, along with additional midday and late night service to accommodate people with non-traditional employment hours.

In order to expand, the State must acquire the US Post Office building as well, which can allow a new connection from South Boston and the South End on a reconnected Dorchester Avenue and complete a missing segment of the Harbor Walk. In addition, the City has been working with MassDOT to ensure that the potential for new uses adjacent to the expanded track area are realized, as well as preserving the opportunity for longer term air-rights development over the new track area footprint.

Implementation

Approximate Cost: \$1.6 billion
Potential Funding Sources: Federal Rail Administration (FRA), MassDOT
Who's Responsible: MassDOT, MBTA, Amtrak
Time Frame: four and a half year construction schedule following completion of design, permitting, and securing of funding

Best Practices

Denver, CO's, Union Station integrates and consolidates new RTD FasTracks passenger rail service, existing Amtrak service, and an underground bus terminal in a bright and passenger-friendly space. The station itself was renovated and expanded and now has a hotel on top of it. With FasTracks expanding, estimates put the number of passengers the station will handle at 200,000 per day with full service. South Station currently handles just over 91,000 riders daily, including intracity bus service.

Public Input

"Expand South Station and re-open DoT Ave."
 -021032

Public Input

"Increase distances of HOV lanes."
 -02170

"Will Boston consider extending the HOV lanes North/South [on] route 3 with interstate 93?"
 -02190

Realizing the Plan



Go Boston 2030 Capital Plan Strategy

Starting in 2017, the City of Boston's Streets Capital Plan will be based on the blueprint provided by Go Boston 2030. The projects and policies identified in the plan have the potential to transform how people will travel in Boston for the next fifteen years and beyond. They were selected through an extensive public process involving over 14,000 community comments and ideas, and as such, represent the collective aspirations of how Bostonians want to travel in the future.

To realize this vision the City of Boston will:

- Commit to a five year investment plan in order to jump-start implementation of the policies and projects identified in the Go Boston 2030 Action Plan.
- Leverage City funding to attract State funding through the Boston Region Metropolitan Planning Organization (MPO).
- Seek development mitigation to contribute to building streets and sidewalks to enhance public investment.
- Work with surrounding cities and towns to connect transportation networks cost-effectively.

Overview

The Streets Capital Plan will focus on four strategic categories and propose a balanced, consistent funding approach to those areas over the next five years. Each category is informed by Go Boston 2030's primary themes - expanding access, improving safety, and ensuring reliability. The following outlines the categories and their capital plan programs:

- 1. Vision Zero** – Deliver safety on Boston's streets.
Programs: Priority corridors, safe crossings, walk and bike friendly Main Streets' small-business districts, walkable and accessible sidewalks, and neighborhood traffic calming for residential streets
- 2. Great Streets** – Build multimodal streets to improve access to Boston's neighborhoods.
Programs: Complete Streets corridors, multiuse paths, and corridors with bike facilities
- 3. Smart Streets** – Make travel times and safety for people on Boston's road predictable.
Programs: Smart traffic signals, surface transit, neighborhood mobility microHUBs
- 4. State of Good Repair** – A bedrock of investments to put the City on a sustainable program to maintain bridges, roads, sidewalks, off-street paths, street lighting, and building facilities that are essential to service delivery.

The City of Boston will support its investments with State and Federal sources.

- The City will continue to advocate for State funding. In addition to seeking an increase in Chapter 90 funds to keep its streets and sidewalks in a "state of good repair," the City will focus on preparing "shovel-ready" designs for major roads to leverage State and Federal construction funding.
- Over \$500 million in non-city funds will be required over the next 15-plus years to implement the Complete Streets, Rapid Bus, and Transit Hub projects identified in Go Boston 2030. This level of funding is possible if the current annual rate of State and Federal funding is sustained.
- As noted on the relevant project page, the City acknowledges the \$1.3 billion commitment from the MBTA to buy new equipment to improve Orange and Red Line service. Similar "big-ticket" commitments will need to be made over the next several decades to implement the new Urban Rail regional projects singled out in Go Boston 2030.

Highlights

In the coming five years, the City of Boston will prioritize:

- **Walk- and Bike-Friendly Main Street Districts** under the Vision Zero strategic category with the goal of improving every designated district by 2030.
- **Smart Signal Districts and Corridors** to install adaptive signals. Projects have been started at Sullivan Square in Charlestown, the South Boston Waterfront, and the Blue Hill Avenue/Warren Street corridor.
- A redesigned **Columbia Road** to make it a great street with neighborhood-green space, stress-free walking and bicycling, and multi-modal connections to Franklin Park and Boston Harbor.
- A proposal for seed-funding to work with the MBTA to improve bus service, including the use of exclusive lanes. Proposals include connecting **Mattapan Square to the LMA** and **Forest Hills to Roslindale Square**.
- Reconstruction of the North Washington Street and Northern Avenue Bridges.
- **Protected bike lanes** along a dozen corridors. In addition to Columbia Road, new design proposals include Boylston Street (Fenway), an extension of the Southwest Corridor to connect to Charles Circle and Roslindale, Commonwealth Avenue beyond Packards Corner, Beacon Street, and American Legion Highway.
- A Complete Streets program including designs for the **Washington Street/ Columbus Avenue** and **Dorchester Avenue (South Boston)** corridors to follow up on the BPDA's PLAN initiatives.
- Collaboration with the MBTA for the State to fund improved service on the **Fairmount Indigo Line**.
- Better **bus and ferry connections** between North Station and the South Boston Waterfront.
- Coordination with surrounding communities to advocate for regional projects such as more frequent commuter rail along the **I-90 corridor** and Needham Lines, a new **West Station**, and better connections from surrounding communities to **Sullivan Square**.

1. Vision Zero

Deliver safety on Boston's streets

This is an investment to improve safety for our most vulnerable street users with a focus on roadway corridors, safe crossings, and traffic calming on residential streets and in small-business districts. Highlights include public realm improvement in every Mains Streets district in Boston by 2030.

Capital Plan Programs

Priority Corridors and Safe Crossings

- Safe crossings at multiple locations citywide: Ongoing
- Massachusetts Avenue (Back Bay): Implementation substantially complete
- Codman Square (Dorchester): Implementation substantially complete

The Vision Zero Task Force is identifying new areas for safety improvements

Walk and Bike Friendly Main Streets

- Central Square (East Boston): In construction
- Dudley Street (Roxbury) In design with construction starting in 2018
- Hyde Square (Jamaica Plain): In design with construction starting in 2017
- North Square (North End): In design with construction starting in 2017
- Grove Hall (Dorchester): Design process to begin in 2017
- Philips Square (Chinatown): Design process to begin in 2017 with funding from developers

Additional projects to be determined in coordination with the Boston Main Streets program

Neighborhood Slow Streets

- Stonybrook (Jamaica Plain): In design, construction starting in 2017
- Talbot Norfolk Triangle (Dorchester): In design, construction starting in 2017

Two to three districts a year based on application process

Walkable Streets and ADA Improvements programs

- "Walkable Streets" sidewalk improvements: Ongoing
- ADA pedestrian ramps: Ongoing

Selection of locations based on maintenance needs and Vision Zero priorities

2. Great Streets

Build multimodal streets to improve access to Boston's neighborhoods

This is an investment in the redesign of key corridors by leverage private, State, and Federal funding. The designs will focus primarily on stress-free walking, protected bicycling, and better accommodating public transportation. Highlights include redesigning Melnea Cass Boulevard, new corridors aligned with the BPDA's PLAN initiatives, Columbia Road, and multiuse paths such as between Fenway and Yawkey stations.

Capital Plan Programs

Complete Streets Corridors

Includes improvements for wider sidewalks, protected bicycle lanes, and improved bus service. Note that building off city design efforts, over a \$100 million in total State funding through the Boston MPO is anticipated over the next five years. In addition, developer-financed initiatives such as those for Harrison Avenue and Boylston Street are setting new precedents for public-private partnerships.

- Audubon Circle (Fenway): In construction
- Melneas Cass Boulevard (Roxbury): In design
- Rutherford Avenue/ Sullivan Square (Charlestown): In design
- Summer Street (South Boston): In design
- Commonwealth Avenue Beyond Packards Corner (Allston): In design
- Harrison Avenue (South End): In design
- Boylston Street (Fenway): In design
- Beach Street (Chinatown): In design
- Quincy Street (Dorchester): In design
- Ruggles Street (Roxbury): Design process to begin in 2017
- Columbia Road (Dorchester): Design process to begin in 2017
- Dorchester Ave (South Boston): Design process to begin in 2018
- Washington Street/Columbus Avenue (JP/Roxbury): Design process to begin in 2018

Multi Use Paths and Better Bike Corridors

Include protected bike corridors and multiuse paths as well as additional facilities built through the Complete Streets Corridors and Vision Zero programs.

Note: Over \$20 million in State and Federal funding, available through the Boston MPO and the federal TIGER program, has been and will be applied to these programs.

3. Smart Streets

Make the flow of people predictable on Boston's roadway and on-street- transit networks

This investment will retrofit our existing infrastructure with new signal, camera, and sensor technologies in addition to curb regulation and lane marking adjustments to improve the reliable flow of people using all modes of travel.

Capital Plan Programs

Smart Traffic Signals

Manage traffic flow for people in cars and buses, on foot, and on bicycles with signals that are linked to the Traffic Management Center and to each other. Currently, the State is funding adaptive signals at the South Boston Waterfront, and developers are funding similar projects at Sullivan Square and the Bulfinch Triangle.

- Intersection signal reconstruction: Ongoing
- Corridor retiming: Ongoing
- Accessible pedestrian signals: Ongoing
- Adaptive signal districts in Sullivan Square, the Seaport, and Bulfinch Triangle: Design process to begin in 2018
- Adaptive signal corridors on Warren Street/Blue Hill Avenue (Dorchester, Roxbury): Design process to begin in 2018

Surface Transit including Rapid Bus initiatives

Potentially provide seed funding by the city to support Rapid Bus and surface transit initiatives in order to leverage State funding.

- Green Line improvements on Commonwealth Avenue and Huntington Avenue (Fenway, Mission Hill, Brighton, and Allston): Install in 2017

- Forest Hills to Roslindale Square Bus Service Improvements (Roslindale): Install in 2017
- Silver Line Dudley to Downtown (Roxbury, South End, Chinatown, Downtown): Design process to begin in 2017 based on availability of State funding
- Mattapan Square to LMA Rapid Bus (Mattapan, Dorchester, Roxbury): Design process to begin in 2019 based on availability of State funding
- North Station to South Boston Waterfront Rapid Bus (Downtown): Design process to begin in 2020 based on availability of State funding

Neighborhood Mobility microHUBs

Use City and developer funding to initiate a citywide program that will leverage a State grant proposal to pilot Mobility microHUBs near recent bikeshare station expansion locations in Roxbury, northern Dorchester, and East Boston.

4. State of Good Repair

Managing the City's core infrastructure assets

This is an investment to put the City on a sustainable capital program in order to maintain bridges, roads, sidewalks, off-street paths, street lighting, and building facilities essential to the high-quality delivery of services. Boston's investments are supported by the State's Chapter 90 program as well as extensive funding for bridge reconstruction.

Ongoing City Capital Programs

Bridges

Maintain Boston's bridges so that they are accessible at all times for all modes of travel.

- North Washington Street Bridge (Charlestown): In design, construction starting in 2017.
- Northern Avenue Bridge (Downtown, Seaport): In design
- Bridge Repairs including Cambridge Street, Dana Avenue, Massachusetts Avenue over Commonwealth Avenue and Huntington Avenue, and Alford Street: Ongoing

Roadways

Maintaining roadways in a safe and passable state for people and vehicles including bicycles

- Roadway resurfacing
- Roadway reconstruction

Note that roads are prioritized by pavement condition index ratings and on equity, safety, and sustainability criteria.

Sidewalks, Off-Street Paths, and Retaining Walls

Maintain and reconstruct sidewalks to create a safe and passable environment for people of all abilities.

- Sidewalk reconstruction
- Stairs and footpaths

Street Lighting

Convert electric lights into LED, install solar switches on gas lamps, and perform conduit work.

Supporting the team

Maintain building facilities managed by the Boston Transportation and Public Works departments to deliver everyday services.

Keeping Go Boston 2030 Going

A proposal to establish a Mobility Lab through a partnership between the City of Boston, academia, and local residents

To ensure that the people’s voice continues to be heard, the City will partner with a to-be-selected university to create a new entity that listens to and engages with Bostonians as policies and projects are implemented and that tracks progress towards achieving the Vision and Targets of Go Boston 2030.

Go Boston 2030 can transform travel in Boston only with the support of the broad community that inspired its policies and projects. To ensure that this partnership lasts, the City is committed to creating a permanent entity which ensures our leadership will continue to listen to the people, engage their input, experiment with new ideas, and, most importantly, track progress towards the Vision and its Targets. Without a mechanism to ensure that progress is being made, Go Boston 2030 might sit on a shelf.

To guarantee the City’s commitment to achieving the people’s vision, beginning in 2017, the Boston Transportation Department and the Mayor’s Office of New Urban Mechanics will be launching a new partnership with local universities, business and advocacy organizations, and the people of Boston to create a permanent entity that helps the City to:

- **Engage** residents of Boston in every neighborhood and of all backgrounds and abilities directly in the implementation, evaluation, and success of Go Boston 2030’s policies and projects.
- **Track** Boston’s progress relative to the Vision and Action Plan established by Go Boston 2030 in an entirely transparent and on-going manner to ensure there is accountability for making the community’s vision a reality.
- **Experiment** with new ways to achieve the community’s vision, including conducting research, testing new ideas, and deploying innovative transportation pilots.

Working with its partners, the City hopes to launch this entity before the end of the calendar year. While its final form cannot be known now, precedents from “mobility labs” around the globe include elements like curated online data resource platforms, on-going real-world pilot programs on city streets, and opportunities to convene community members, public agencies, and national thought leaders.

The City is committed to fulfilling the Vision of Go Boston 2030 and implementing the Action Plan, and a new entity that ensures this can happen—with full transparency, with clear accountability, and always in partnership with our diverse community—is exactly what will keep the spirit of the people’s voice alive for 15 years and beyond.

Appendix

The Transportation Futures Survey

The Transportation Futures Survey asked respondents to choose which future the City should focus on for the Go Boston 2030 Action Plan. Beyond choosing a future, respondents also could prioritize projects and policies and identify how City streets should accommodate people driving, walking, and taking transit. Rather than being a statistically rigorous or scientific exercise, the survey was intended to collect important input as well as helping the public think about tradeoffs between different types of investments.

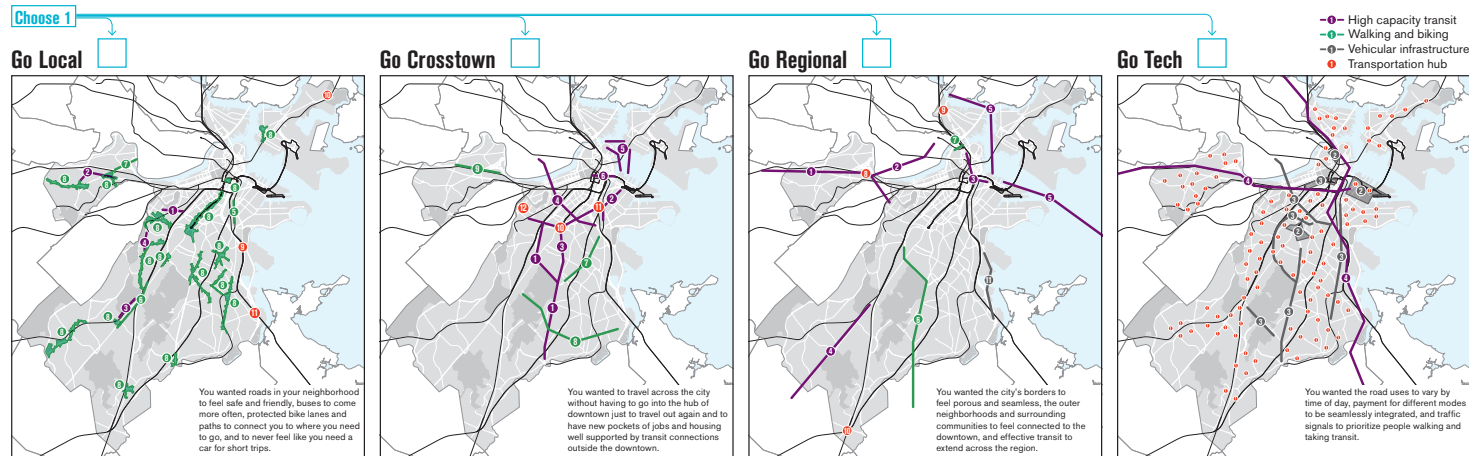
Survey Outreach

- E-blasts to Go Boston 2030's email list
- Announcements in partner newsletters
- City Hall To Go truck events in June
- Distribution of paper surveys and fliers to all public libraries and BCYF community centers
- Opinion leader panel discussion event on June 6

The survey received over 4,000 responses, nearly two-thirds of which identified as Boston residents.

How did the survey work?

The survey had three main questions for respondents to answer. First, respondents could choose one of four futures that they wanted the City to focus on. This included Go Local, Go Crosstown, Go Regional, and Go Tech. Respondents then selected their top three projects and policies from each future. Finally, respondents could select one cross section that represented how to arrange the uses for a major street in Boston.



Select 3 for each future

Projects + Policies	Access	Safety	Reliability	Pick your 3
1 Ruggles to LMA improved bus corridor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Oak Square to Comm Ave improved bus corridor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Orange Line extension to Roslindale Square	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Green Line extension to Hyde Square	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Dorchester Ave Complete Street (South Boston)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Washington Street Complete Street (JP/Rox)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Beacon Yards Complete Streets network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Pedestrian and bike-friendly Main Streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 Flood Proof JFK/UMass station	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 Flood Proof Suffolk Downs station	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 New Red Line station at Neponset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 Pedestrian-first traffic signals (Policy)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 Parking meter benefit district (Policy)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How should we move people on our major streets?

Go Boston 2030 has set ambitious mode-shift goals and recognizes that space is limited on many of our streets. Share how you would arrange the uses for a major street in Boston. **Choose one cross section.**

Let's keep driving: Maintain auto capacity **Choose One**

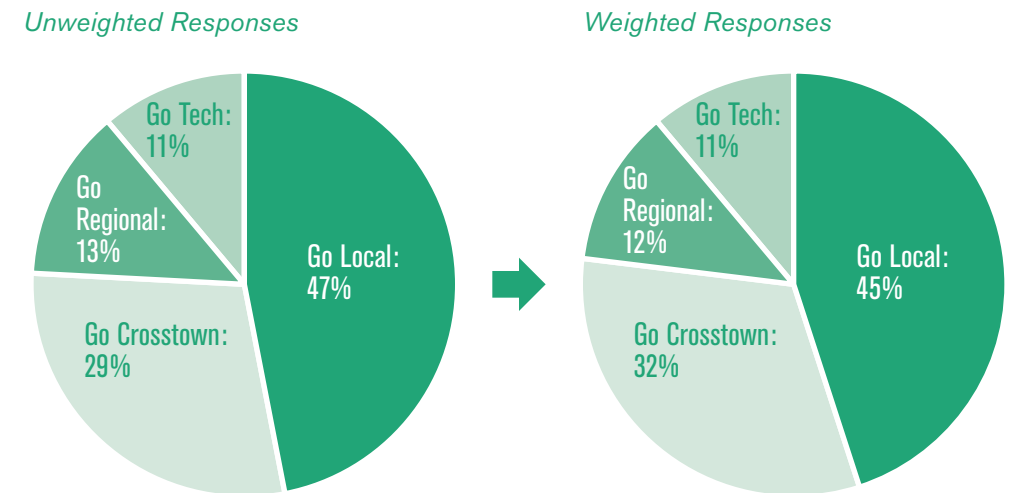
Exclusive T lanes: Remove drive or parking lane

Exclusive protected bike lanes: Remove drive or parking lane

Exclusive T and bike lanes: Remove drive and parking lanes

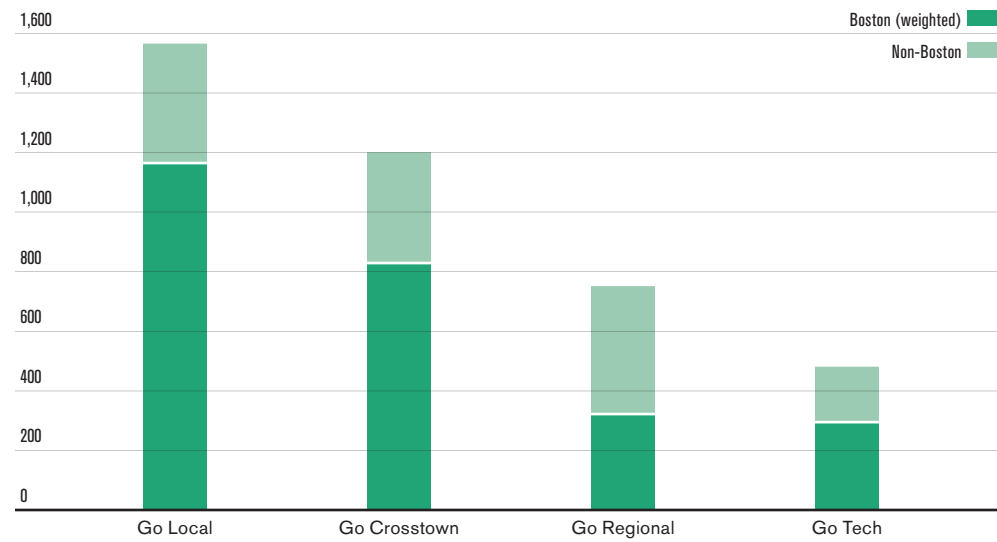
What were the results?

To make sure that Boston's neighborhoods were represented equally in the survey results, the Go Boston 2030 team "weighted" the results by population. Some neighborhoods that were over- or under- represented relative to their share of Boston's population. Weighting accounts for this to represented each neighborhood equally. Finally, the survey analysis combined weighted results from Bostonians with responses from those who live outside of Boston.



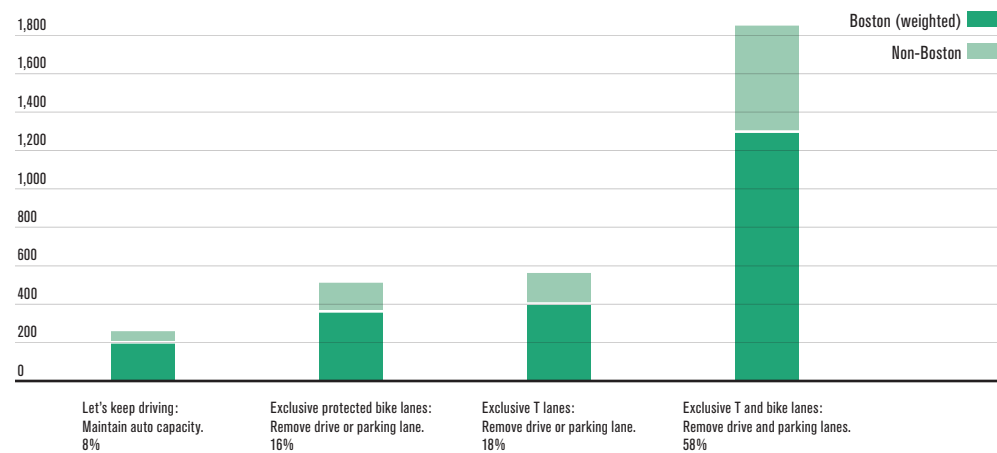
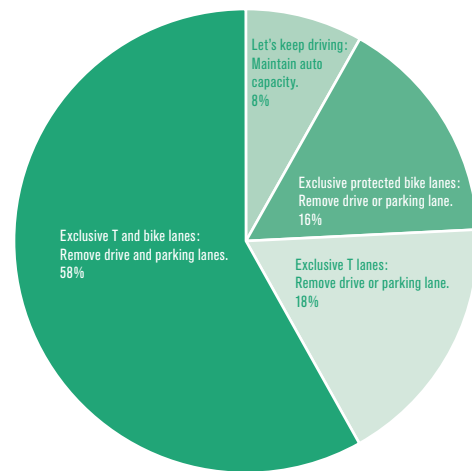
Four Futures

Go Local was the top future selected by all respondents, including both Boston residents and non-residents.



Major Streets

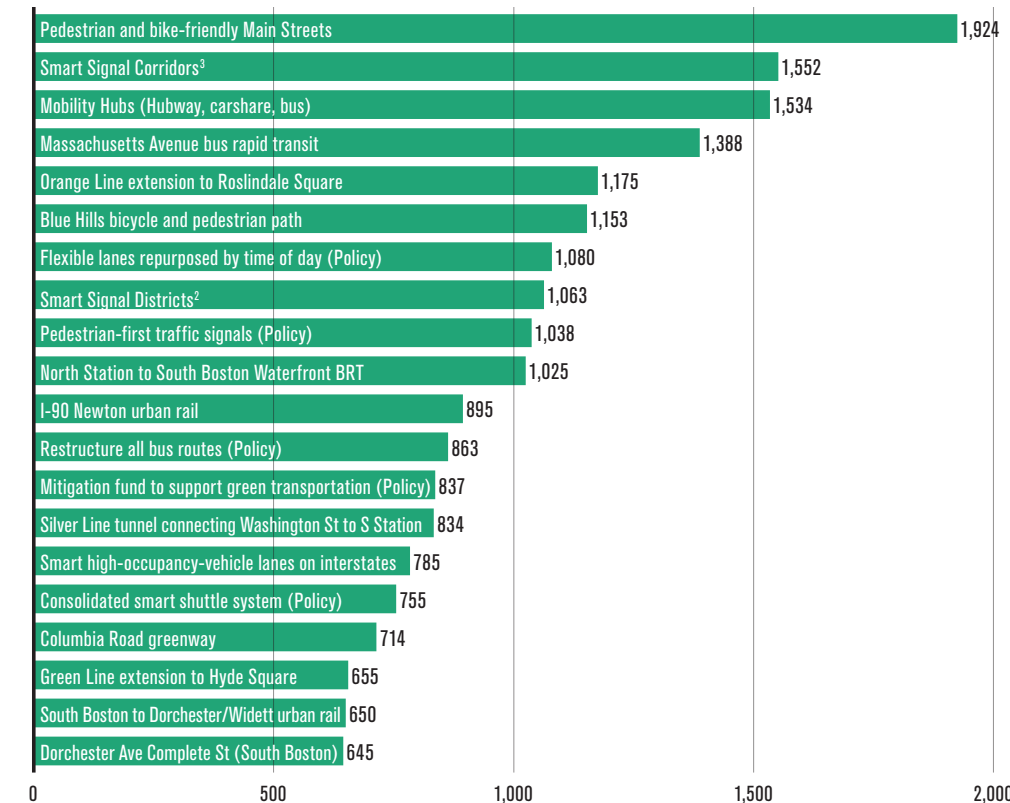
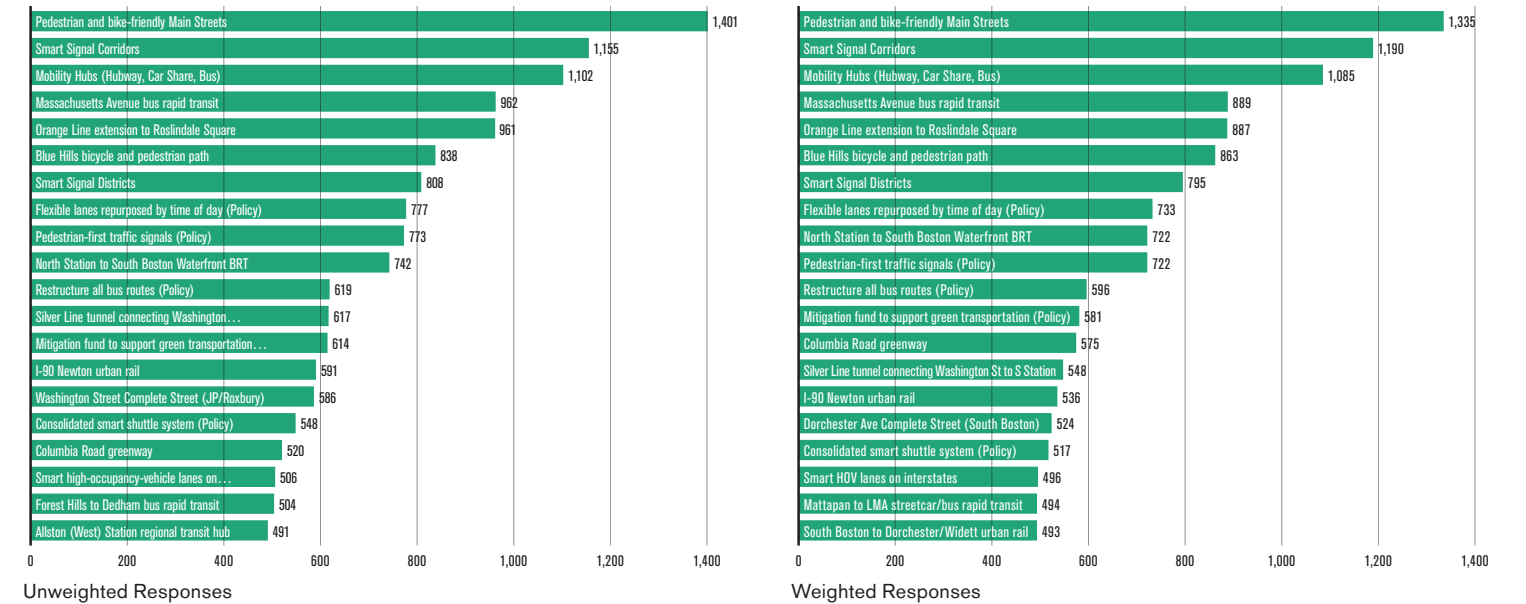
Exclusive T and bike lanes was the highest priority for all respondents, including both Boston residents and non-residents.



Top Projects

Survey respondents overwhelmingly selected Pedestrian and bike-friendly main streets as the number one project. This was true of both the weighted and unweighted results from Bostonians.

All Projects and Policies (Boston Only)



Regional Projects Supported by Go Boston 2030

Beyond the borders of Boston, there are a set of regional projects that are proposed, in the planning phases, or already under construction that will measurably improve the multimodal options that will help to reach the Go Boston 2030 aspirational mode shift targets.

Regional Hubway Expansion

Planned

Continued expansion of Hubway into additional abutting communities that are seeking to expand the use of bicycling, such as Newton

Somerville Community Path Extension

In Design

Would complete the only missing piece of a continuous shared-use path from Concord to Boston between the Minuteman Bikeway and the Cambridge North Point Park paths
pathfriends.org/scp

Cambridge Grand Junction Transit/ Bike Corridor

In Conceptual Design

A cross-town shared-use path connection between Commonwealth Avenue, Kendall Square, and the Somerville Community Path
www.cambridgema.gov/CDD/Projects/Transportation/GrandJunctionPathway

Mass Central Rail Trail / East Coast Greenway from Waltham to Clinton

In Conceptual Design

The creation of a new shared-used path that would extend the Charles River Dudley White Path westward to several dense suburbs as part of an envisioned pan-Mass trail
www.masscentralrailtrail.org/home.html

Route 99 Bus Rapid Transit from Everett to Haymarket

In Conceptual Design

Addition of bus priority and rapid bus treatments along Broadway in Everett and Rutherford Avenue in Boston to improve transit capacity and reliability on one of the region's most heavily-used transit corridors

Bus Rapid Transit on Route 2 from Alewife to Waltham and Lexington

Proposed

Extension of high-quality transit beyond the Alewife Red Line terminus to transit-supportive western suburbs beyond the reach of the subway

Sullivan to Kendall Transit Connection

Proposed

A new direct transit connection between Sullivan Square and East Cambridge to provide improved regional connections to jobs in Kendall Square

Arsenal Street Transit Corridor in Watertown

Proposed

Addition of transit-priority treatments and stop amenities to enhance the quality of transit along the corridor between Alston and Watertown Square to jobs in Kendall Square

Blue Line Extension to Lynn/Urban Rail on the Rockport Line

Proposed

Extension of high-quality transit beyond Revere to dense transit-supportive north shore communities that are only served by bus and commuter rail
www.massdot.state.ma.us/Portals/0/docs/infoCenter/boards_committees/PublicPrivate/BlueLineExtP3ScreeningRpt.pdf

Urban Rail through West Roxbury to Needham

Proposed

Before/in lieu of a future Orange Line extension, the existing Needham Line commuter rail would be converted to higher-frequency subway-like urban rail service

Urban Rail through Melrose to Reading on the Haverhill Line

Proposed

Extension of high-quality transit northward beyond the Orange Line terminus at Oak Grove through transit-supportive communities that are only served by bus and commuter rail

The CTPS Regional Model

A Mathematical Model of Future Travel Demand

Overall, the regional travel model provides a good estimate of general population, jobs, travel, and emissions trends and changes in the Boston region using both existing travel conditions and new planned transportation projects that are in the Boston Metropolitan Planning Organization's regional Long-Range Transportation Plan (LRTP).¹ No mathematical model is a perfect prediction of the future, but the model used for Go Boston 2030 provided a valuable benchmark from which to establish many of the gaps that must be overcome and how the Action Plan might address the Go Boston 2030 aspirational targets—especially targets for increased transit, walking and biking. Some neighborhoods of Boston, such as the LMA or the Seaport, may ultimately grow more rapidly

than this modelling process predicts, while others may grow more slowly; however, Boston and the surrounding region are expected to continue to add residents and jobs as they have continuously over the last several decades.

The Development of this Regional Travel Model Run

Disruptive technologies, development patterns, and population trends can change quickly making forecasting the future of a city a challenge. With an awareness of this, the Boston Planning and Development Agency (BPDA), the Metropolitan Area Planning Council (MAPC), and the Central Transportation Planning Staff (CTPS) collaborated

with the Boston Transportation Department (BTD) to estimate regional travel patterns in 2030. This effort used the latest modeling methods and technology, and it drew from a wide range of Boston-specific data sources, ranging from individual "travel diaries" to the legal permits for buildings that have been approved for construction within the city.

First, the BPDA compiled a list of confirmed local development projects. Then MAPC used this data and other known regional development information to estimate where jobs and residents will be located in 2030. Finally, CTPS used the results of the MAPC process as well as transportation projects already in the planning process to model future travel flows.

Anticipating Growth

Go Boston 2030 land use model, net change in nonresidential square footage, 2010 – 2030

Other Possible Growth Projections

Area	Net Change in Nonresidential Square Footage (2010-2030)	Other Possible Growth Projections
Seaport	8,820,000	The South Boston Waterfront Sustainable Transportation Plan projected a net increase of 12,000,000 non-residential square feet of new buildings by 2035. ²
Longwood Medical Area (LMA)	3,770,000	The Medical and Scientific Community Organization (MASCO) projected that the Longwood Medical Area (LMA) will add 6.9 million square feet. ³
All Boston (including areas above)	32,862,686	

* MAPC noted that its model falls short of the new growth projected in the Seaport and the LMA; however, projected land use often includes many speculative projects, and some are likely to be delayed past 2030. Also, net change was calculated after accounting for demolition or conversion of existing floor area. Therefore, the total new growth is likely to be larger than the net change, especially in districts with large amounts of industrial or obsolete buildings that will be removed.

¹ For more information on LRTP projects, see www.ctps.org/lrtp

² South Boston Waterfront Sustainable Transportation Plan, 2015. Retrieved from www.massdot.state.ma.us/Portals/17/docs/Studies/SBostonWaterfrontFullReport_jan2015.pdf

³ MASCO, Annual Report FY2015, Retrieved from www.masco.org/system/files/downloads/masco/masco_annualrpt_fy2015_final.pdf

Project Scores

Access 1

Number of households within a 10-minute walk of a rail or key bus route, Hubway station, and carshare

Access 2

Total percentage of project (length) that benefits a long-commute area (20 minutes or more).

Safety 1

Percent of total crashes over two years addressed

Safety 2

Number of additional households within a five-minute walk of a protected bicycle facility or shared use path

Reliability

Percentage of total unreliable corridors within the whole city that the project serves

Affordability

Percentage of Very Low Income Households (150% below Poverty Line) that benefit from new projects (within a half mile)

Sustainability/Resiliency 1

Number of floodplains present during major rain/snow events (21 inch) per transit project

Sustainability/Resiliency 2

Reduce greenhouse gas emissions from transportation by 25% (number of potential new non-SOV users)

Governance

A larger share of capital improvement dollars will be assigned to underserved communities to achieve equitable distribution of investment in transportation infrastructure

Acknowledgements

City of Boston Team

Mayor Martin J. Walsh
Joyce Linehan, Chief of Policy
Dan Koh, Chief of Staff
Chris Osgood, Chief of Streets
Gina Fiandaca, Commissioner, Boston Transportation Department

Boston Transportation Department
Boston Environment Department
Boston Main Streets
Boston Public Health Commission
Boston Public Works Department
Boston Planning and Development Agency
Commission on Affairs of the Elderly
Department of Innovation and Technology
Department of Neighborhood Development
Environment, Energy, and Open Space Cabinet
Mayor's Commission for Persons with Disabilities
Mayor's Office of Arts and Culture
Mayor's Office of Economic Development
Mayor's Office of Immigrant Advancement
Mayor's Office of Neighborhood Services
Mayor's Office of New Urban Mechanics
Mayor's Office of Resilience and Racial Equity
Mayor's Youth Council
SPARK Boston

Project Team

Boston Transportation Department
Nelson\Nygaard Consulting Associates
Interaction Institute for Social Change
Dukakis Center for Urban and Regional Policy, Northeastern University
Utile, Inc.

Design Studio for Social Intervention
Department of Play
Sasaki Associates
Firefly Partners

Alta Planning+Design
Nitsch Engineering
Mobycon
Central Transportation Planning Staff at the Boston Region MPO

Additional Contributors

MassDOT
Massachusetts Bay Transportation
Authority (MBTA)
Massport
Metropolitan Area Planning Council

Photographs

All photographs have been taken in Boston except where specified. Photographs uncredited in the text have been provided by Rafael Cumbas Feliciano, Leise Jones, Allana Taranto, Kris Carter, Toole Design Group, Nelson\Nygaard, Vineet Gupta, and Alice Brown.

