boston planning &
development agency

PLAN

South Boston

Dorchester Ave

TRANSPORTATION PLAN

MAY 2021

DRAFT

CITY OF BOSTON
Kim Janey, Mayor

DIRECTOR'S LETTER

(Will be added in final version of the Final Report)

ACKNOWLEDGEMENTS

Boston Planning & Development Agency

Board Members and Leadership

Priscilla Rojas, *Chair*

Carol Downs, *Treasurer*

Michael P. Monahan, *Member*

Brian Miller, *Member*

Dr. Theodore C. Landsmark, *Member*

Brian Golden, *Director*

Lauren Shurtleff, *Director of Planning*

Lead Project Team

Jim Fitzgerald, *Assistant Deputy Director for Transportation and Infrastructure, BPDA*

Joseph Blankenship, *Senior Transportation Planner, BPDA*

Patrick Hoey, *Senior Transportation Planner, BTD*

Mary Knasas, *Senior Planner III, BPDA*

Sam Devine, *Transportation Planner II, BPDA*

Supporting Collaborators

Chris Osgood, *Mayor Janey Chief of Staff (former Chief of Streets)*

Gregory Rooney, *Acting Commissioner, BTD*

Chris Busch, *Assistant Deputy Director for Climate Change & Environmental Planning, BPDA*

Charlotte Ong, *Planner II (former), BPDA*

Grace Ng, *Landscape Architect II, BPDA*

Haley Dillon, *Community Engagement, ONS*

Jill Zick, *Senior Landscape Architect/Public Realm Manager, BPDA*

Mark McGonagle, *Community Affairs Liaison, BPDA*

Matt Martin, *Urban Designer II, BPDA*

Matthew Moran, *Transit Team Director,BTD*

Michael Christopher, *Deputy Director for Development Review/ Government Affairs, BPDA*

Para Jayasinghe, *City Engineer, PWD*

Prataap Patrose, *Senior Advisor for Long-Term Planning, BPDA*

Raul Duverge, *Senior Project Manager, BPDA*

Stefanie Seskin, *Active Transportation Director, BTD*

Stephen Harvey, *Senior Project Manager, BPDA*

Te-Ming Chang, *Urban Design Technology Group Manager, BPDA*

Zachary Wassmouth, *Chief Design Engineer, PWD*

Consultant Team

Theresa Carr, *Nelson\Nygaard*

Matt Smith, *Nelson\Nygaard*

Suzie Birdsell, *Nelson\Nygaard*

Lucy Gibson, *Toole Design Group*

Tim Love, *Utile*

Jessica Robertson, *(former) Utile*

Jessy Yang, *Utile*

Director's Letter ..... *iii*

Acknowledgements ..... *v*

1. EXECUTIVE SUMMARY 2

Introduction *4*

The Process *5*

The Outcome *8*

2. INTRODUCTION 10

1.1 Study Area *14*

1.2 Purpose of this Report *14*

1.3 Relationship to PLAN: Dorchester Avenue *16*

1.4 Plan Framework *18*

1.5 Public and Stakeholder Engagement Overview *20*

3. EXISTING CONDITIONS 22

2.1 Existing Land Use *24*

2.2 Existing Mode Share *26*

2.3 Existing Roadway and Traffic Conditions *27*

2.4 Transit Conditions *40*

2.5 Pedestrian Conditions *48*

2.6 Existing Bicycle Conditions *54*

2.7 Parking *56*

2.8 Resiliency *58*

4. FUTURE CONDITIONS 62

3.1 Methodology 64

3.2 Future Land Use and New Trips 66

3.3 Mode Share 69

3.4 Transit Distribution and Assignment 71

3.5 Traffic Analysis 76

3.6 Active Travel 82

5. RECOMMENDATIONS 84

4.1 Transit Service Recommendations 91

4.2 Street Grid 108

4.3 Andrew Square 112

4.4 Vicinity of Andrew Square 120

4.5 Dorchester Street 122

4.6 Old Colony Avenue 124

4.7 Dorchester Avenue – North End of Study Area 134

4.8 The Complete Picture by Mode: Putting the Pieces Together 136

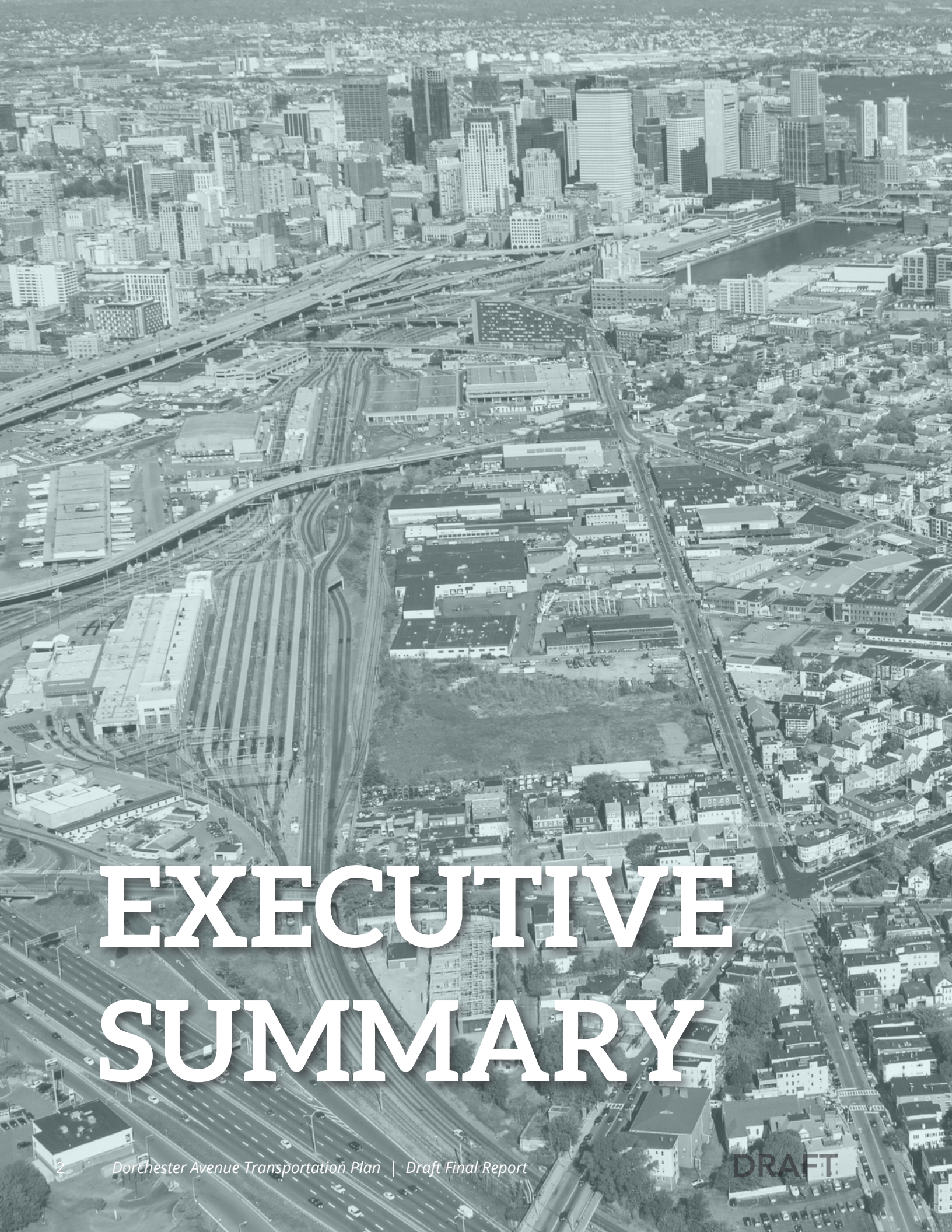
4.9 Parking and Transportation Demand Management (TDM) 145

6. IMPLEMENTATION.....151

5.1 Summary of Recommendations 152

5.2 Phasing of Implementation 164

5.3 Implementation Considerations 165



EXECUTIVE SUMMARY

INTRODUCTION

Dorchester Avenue between the Broadway and Andrew Square Red Line stations in South Boston is on the cusp of transformational change, one envisioned in the Boston Planning & Redevelopment Agency 2017 initiative, **PLAN South Boston: Dorchester Avenue** (2017 PLAN). The **2017 PLAN**, which included a robust public process, provided a framework for growth along the corridor through 2040. Key goals of the plan included:

- A new, urban, mixed-use 21st-Century district for Boston.
- A highly-connected network of new streets, blocks and open spaces to support the area's transformation.
- Significant new ownership and rental housing at many price points to relieve market pressures on South Boston's older housing stock.
- Planning and zoning tools to implement a coordinated, new district consistent with the vision.
- Best practices to encourage job creation and small business growth.

The plan called for 12 to 16 million square feet of development, approximately half of which would be residential and half a mix of office, 21st century industrial, and retail uses. With these new uses will come thousands of residents, workers and visitors that need to travel to, from and within the corridor, one already plagued with traffic congestion and transit services operating at, near or above capacity.

To ensure that the Dorchester Avenue corridor could support this new development, a key recommendation of the plan was completing a comprehensive transportation study of the existing network, and developing a multimodal transportation strategy able to accommodate the future transportation demand generated.

The PLAN South Boston: Dorchester Avenue Transportation Plan, (referred to in this document as the Dorchester Avenue Transportation Plan, or Transportation Plan) is that study.

THE PROCESS

The **Dorchester Avenue Transportation Plan** was initiated in October 2019 as a comprehensive multimodal transportation planning effort by BPDA, developed in concert with the Boston Transportation Department, other City departments, State transportation agencies and organizations, and a multidisciplinary consultant team.

Existing Conditions

The Transportation Plan began with an assessment of existing transportation conditions including active transportation (walking and bicycling), transit (bus and rail), vehicles (cars and freight) and curbside management. Key findings included:

- The Red Line and several bus routes serving the area are operating at or above capacity during peak travel times.
- Key intersections – including Andrew Square and Old Colony Avenue/Dorchester Street – are moderately congested.
- Pedestrian and bicycle safety needs to be addressed at major intersections.
- Bicycle travel is low in the Study Area apart from along the Dorchester Avenue spine. Much of the Study Area has been designated as a high traffic stress condition for bicyclists and there is inadequate infrastructure to support safe and comfortable bicycling.
- Pedestrian/accessibility infrastructure is in poor condition in many areas.
- Portions of the study area are already prone to flooding, and are predicted to experiance more severe flooding in the future due to climate change and the predicted rise in sea level.

Future Conditions

An analysis of future transportation conditions followed. The team first updated the 2040 build-out analysis to reflect changing market demand (e.g. lab is already proposed for the study area), estimated trip generation and distribution from that build-out, and assessed the multimodal network's capacity to accommodate these trips. Key findings from this analysis included:

- The anticipated Red Line Transformation accommodates most of the study area's transit demand.
- Capacity on several bus routes is significantly constrained.
- The new street grid envisioned in the 2017 PLAN redistributes car trips throughout the study area and is essential to mitigating future car congestion.
- Congestion at Andrew Square and Old Colony Avenue and Dorchester Street increases beyond capacity.
- More bicycle investments are needed to accommodate large increase in bicycle travel.

Public Input

At the completion of each phase of work, the public was invited to learn about the process, review findings and provide feedback. Due to the COVID-19 pandemic, meetings were held virtually. Participants were able to ask questions – during the meetings, and during "office hours" – participated in online polls and more.

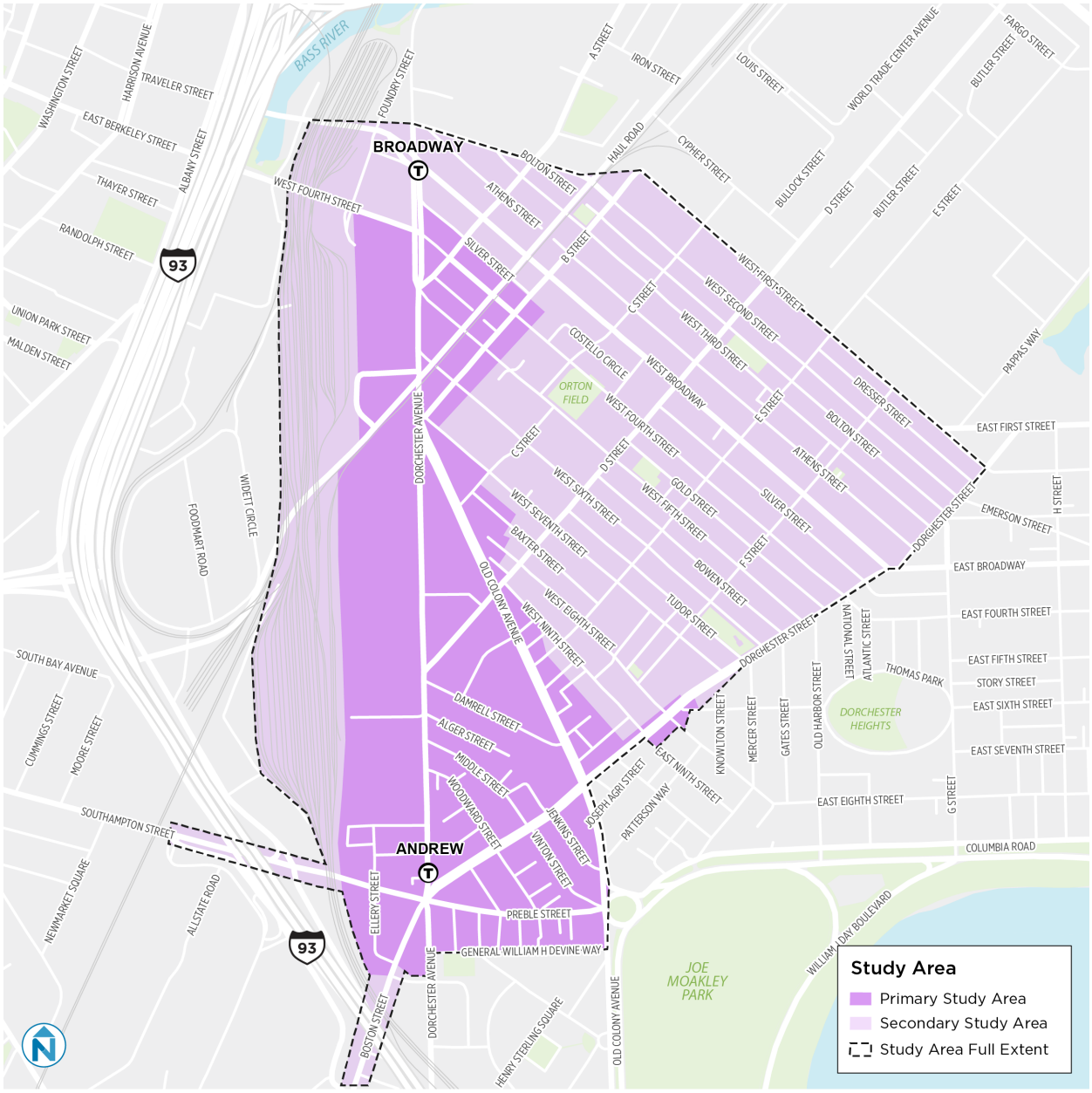


Figure 1. Study Area

THE OUTCOME

Based on findings from the analyses completed and input from City departments, State agencies and organizations, and the public, the Dorchester Avenue Transportation Plan provides a strategy to effectively manage future transportation demand within the study area through targeted improvements to the multimodal network. Key recommendations include:

- Enhancing bus service to and from the study area through increased service frequency during peak travel times, transit priority investments; new and extended bus routes to Dorchester, the Seaport, North Station, Downtown and the Longwood Medical and Academic Area (LMA).
- Intersection redesigns that enhance safety and reduce congestion at Andrew Square, Old Colony Avenue and Dorchester Street, and Old Colony Avenue and Dorchester Avenue.
- A comprehensive active transportation network including separated bike lanes, and multi-use paths connecting in all directions.

A Note About COVID:

The Dorchester Avenue Transportation Plan started in fall of 2019, before the COVID pandemic disrupted travel patterns around the world. As such, our existing conditions analysis covers pre-pandemic conditions. Furthermore, our long-range recommendations assume that economic development continues in the study area and travel patterns come back as well. Any recommendation in this plan marked as immediate- or short-term have been weighted towards pedestrian and cyclist safety, and held COVID disruptions in mind.

1 INTRODUCTION

DRAFT

Many parts of South Boston are in a state of flux, but perhaps none as much as the part of South Boston just north of Andrew Square. This part of the City, traditionally home to light industrial jobs as well as medium-density residential, is in the early stages of transformational change. Located just a mile from Downtown Boston, the Seaport District, and Back Bay, this part of the City is seen as an attractive location for major redevelopment. This redevelopment was envisioned in the City's PLAN: South Boston Dorchester Avenue (referred to in this document as the 2017 PLAN). The 2017 PLAN planned for the envisioned rapid redevelopment towards mixed use and higher-density residential dwellings by putting forth policy guidance in relation to land uses, open space, building height and massing, and the multimodal transportation network.

Many of today's land uses along the corridor are remnants of the area's industrial past, and the existing transportation facilities were designed and built to support these uses, not several million square feet of office, lab, residential, and modern industrial uses. However, much of the same transportation infrastructure built to support the past uses is largely responsible for today's strong market interest, as is its geographic location within the City of Boston. Historical rail corridors and yards in the Study Area now provide subway service, with two MBTA Red Line stations, nearby commuter rail access, and the roadway network which includes multiple high ridership bus routes, and access to I-93. Combined, these transportation facilities provide strong connectivity between the underdeveloped Study Area parcels and major job centers including Downtown and Kendall Square (via the Red Line), the South Boston Seaport, South End, Back Bay, and Longwood Medical and Academic Area; and strong accessibility to employees throughout the Boston region.

The creation of this plan, the Dorchester Avenue Transportation Plan, was a key recommendation in the 2017 PLAN. This plan was initiated to develop a strategy that ensures the transportation network can effectively and efficiently accommodate the future vision for the area and the anticipated demands on the network.

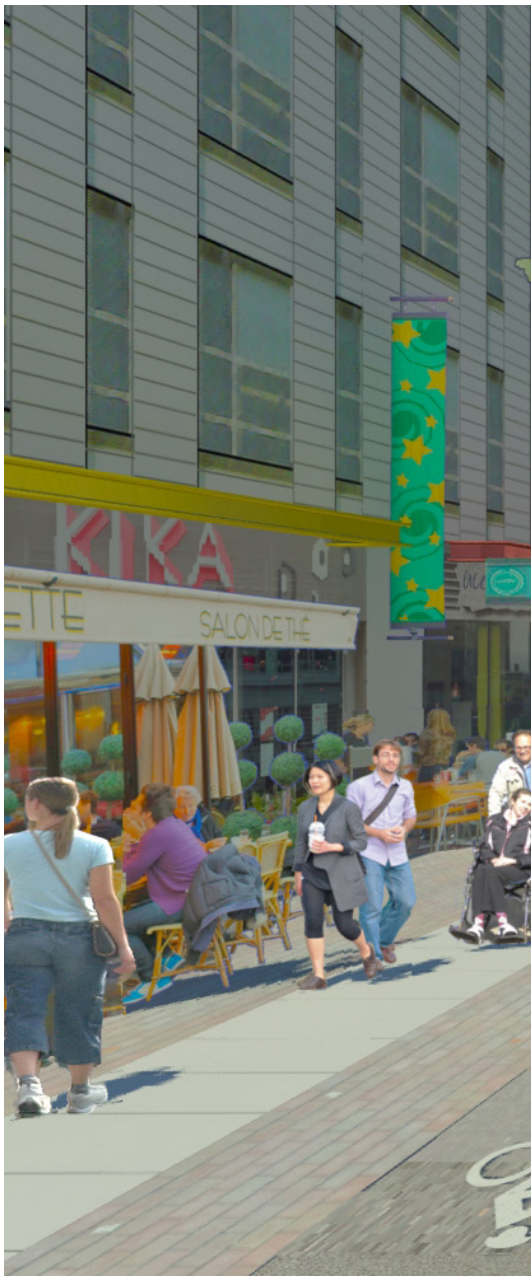


Figure 2. *Conceptual Drawing of Future Dorchester Avenue from 2017 PLAN*

1.1 STUDY AREA

The Dorchester Avenue Transportation Plan includes a Primary and a Secondary Study Area as detailed in Figure 4 and described below:

- The **Primary Study Area (Study Area)** includes the 144 acres (mostly privately owned) in the area roughly bounded by West Fourth and Silver streets to the north (near the Broadway MBTA Red Line station), the rail yards to the west, General William Devine Way to the south, and Old Colony Avenue and B Street to the east.
- The **Secondary Study Area (Secondary Study Area)** extends northward to Traveler and East 2nd Street, west to the Southeast Expressway, and east to West First and Dorchester Street, with the south boundary the same as in the Primary Study Area.

1.2 PURPOSE OF THIS REPORT

The 2017 PLAN anticipates a future mix of land uses totaling 12 to 16 million square feet within the Primary Study Area in the next 20 years (See Figure 4: Study Area). This new development will bring people – thousands of residents, workers, and visitors each day – who will all need to move about the area by foot, bicycle, bus, train, scooter, car, other mobility device, and in many cases, a combination of two or more. The potential impacts from these new users on the existing and future transportation network in the Study Area, and in the surrounding neighborhood were identified as a key challenge by the City and many stakeholders. As such, the purpose of the Dorchester Avenue Transportation Plan is to provide an implementable, multimodal plan to support the neighborhood through efficiently accommodating these new trips. Just as importantly, the Study Area needs to be a place people want to be – to live, to work and to play. This plan must identify transportation improvements and strategies that support a people-centric public realm, offering strong internal circulation and connections to existing roadway networks and improved transit services. However, given the constraints of the existing and future roadway network to accommodate considerably more vehicle traffic, and the City of Boston's goal to shift people away from vehicular travel and become carbon neutral by 2050, the overarching goal of this transportation plan is to provide a multimodal network for people to move to, from, within, and through the Study Area, ideally on foot, bicycle or public transportation, in a manner that is reliable, safe and accessible.

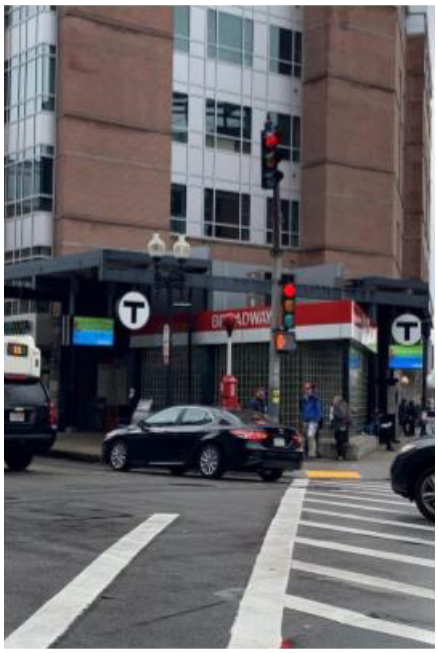


Figure 3. Broadway MBTA Station

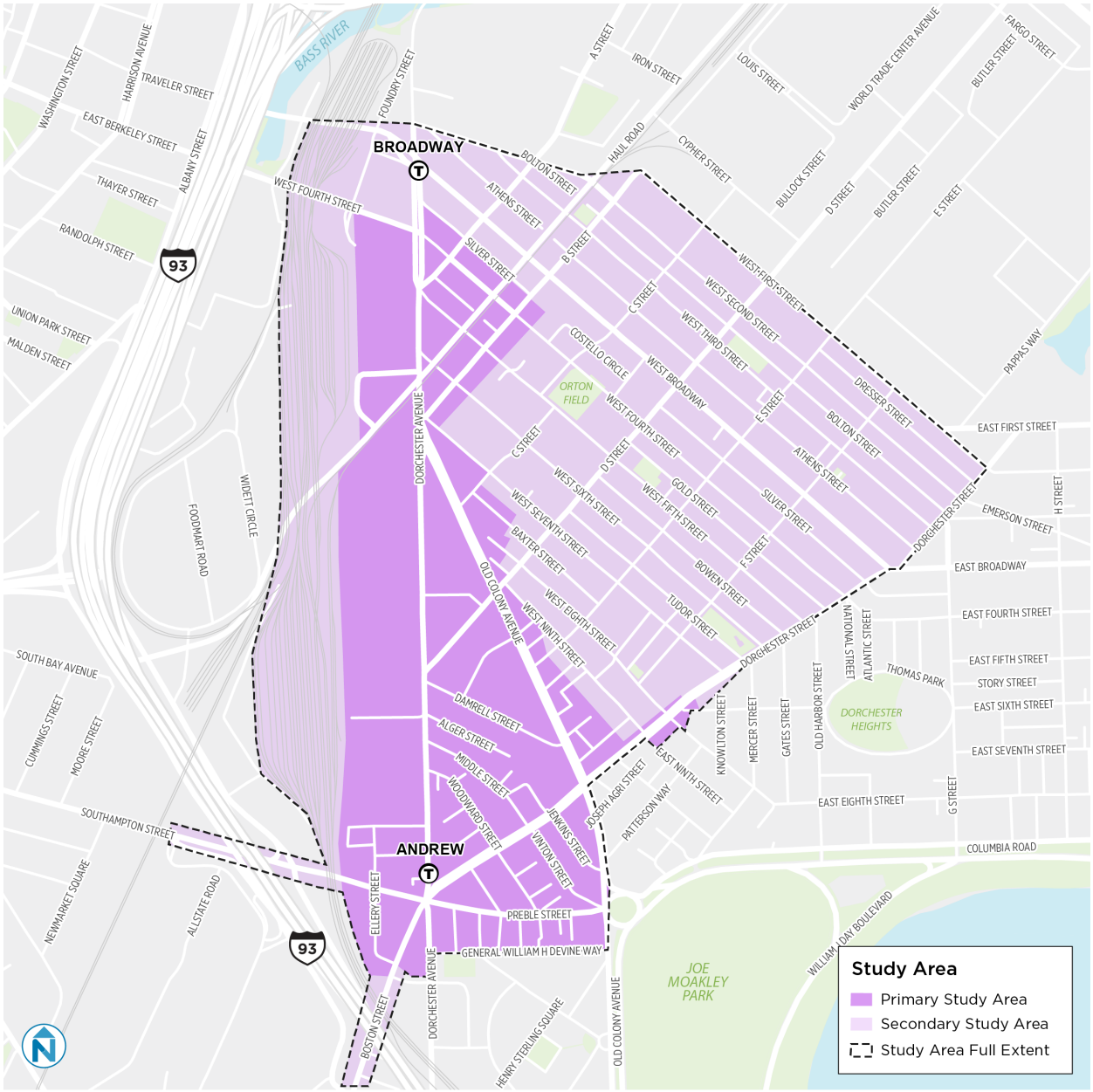


Figure 4. Study Area

1.3 RELATIONSHIP TO PLAN: DORCHESTER AVENUE

The Dorchester Avenue Transportation Plan builds on the land use, mobility and connectivity elements as recommendations in the 2017 PLAN. The 2017 PLAN envisioned a mixed-use neighborhood to the east and west of Dorchester Avenue between the Broadway and Andrew Square MBTA Red Line stations. The 2017 PLAN included four key components:

- Land Use & Open Space
- Housing & Economic Development
- Mobility & Connectivity
- Placemaking & Neighborhood Character

The PLAN provided a vision, principles and strategies to ensure strong neighborhood mobility and connectivity. The plan organized all its transportation recommendations and network improvements by mode, including:

1. Streets
2. Pedestrian
3. Bicycle
4. Transit
5. Vehicular
6. Parking

Among the key recommendations were a new street network connected to the existing network; pedestrian and bicycle connections; and general improvements to transit access and connectivity. Other recommendations included a potential Transportation Management Association (TMA) to coordinate Transportation Demand Management (TDM) services to encourage mode shift from cars to walking, bicycling, transit, and more. The full list of recommendations is provided in the Appendix: Existing Conditions, Figure 1-2.

Given immediate interests in the project area from the development community, the BPDA recognized the need for a more robust and detailed transportation analysis and strategy to confirm that the future multimodal network laid out in the PLAN would be able to meet demand resulting from expected new mixed-use development in a manner that minimizes impacts on the larger South Boston neighborhood.

The Dorchester Avenue Transportation Plan picks up and builds upon where the 2017 PLAN left off, specifically addressing the below questions:

- What has changed between 2016 and today?
- Will the recommended transportation network from the 2017 PLAN accommodate future growth? And if not, what improvements would be needed to accommodate future growth?
- How do we best maintain safety, access, and neighborhood vitality in this environment of change?

1.4 PLAN FRAMEWORK

The following framework outlines the goals, objectives, and evaluation metrics for the Dorchester Avenue Transportation Plan. The project team used the goals and targets of Go Boston 2030 as foundational guidelines while creating this framework, with the understanding that improving non-vehicular transportation infrastructure and service in this Study Area will help Boston reach its Go Boston 2030 Aspirational Goals regarding mode shift[1] as well as citywide emissions reduction as outlined in the Climate Action Plan. Plan: South Boston Dorchester Avenue was also used to ground this framework into the context of the Study Area, especially the Mobility & Connectivity goals and recommendations.

The Dorchester Avenue Transportation Plan Evaluation Framework consists of five overarching goals—based on the themes of Mobility, Safety, Environment, Equity, and Investment—and specific objectives under each of these goals. For each objective, the framework defined metrics that were used to measure the performance of each potential recommendation.

1 Mode Shift reflects the number or percentage of single-occupant automobile trips that have shifted to other modes of transportation.

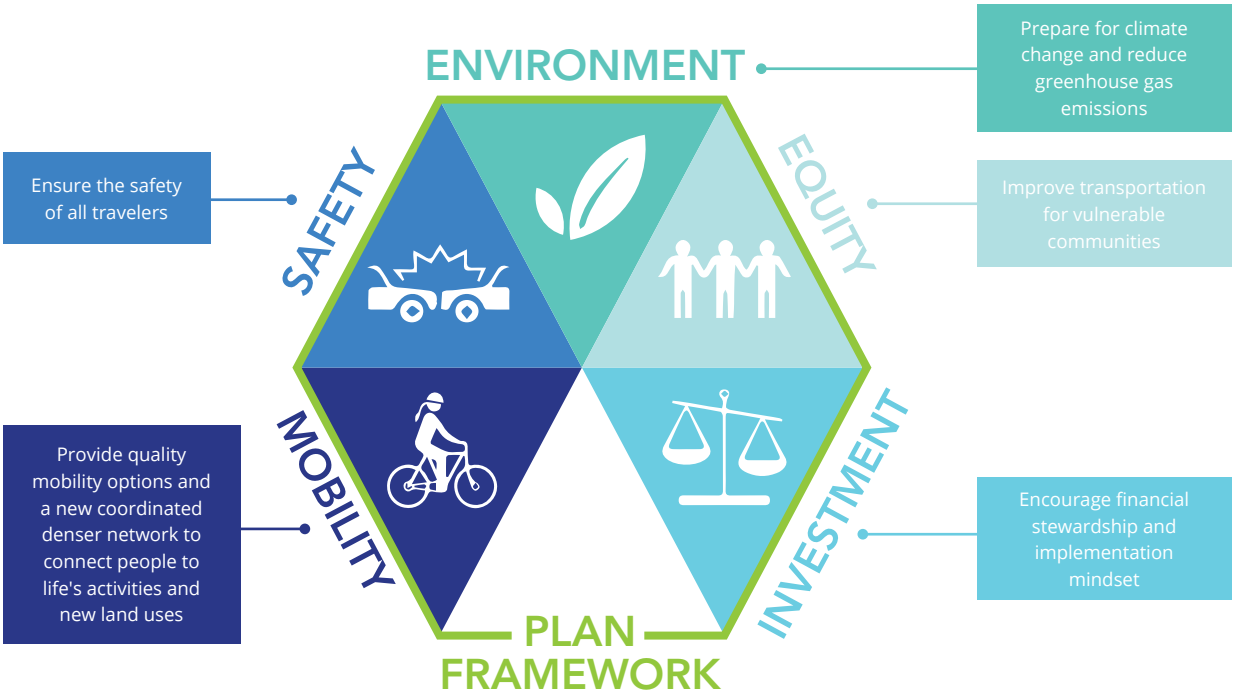


Figure 5. Dorchester Avenue Transportation Plan Framework

Mobility: Provide quality mobility options to connect people to life's activities

- Significantly increase opportunities for walking, biking, and public transportation to achieve Go Boston 2030 Aspirational Goals.
- Better connect Dorchester Avenue to other major residential, employment, and activity centers.
- Provide reliable transportation choices with predictable travel times.

Safety: Ensure the safety of all travelers

- Ensure streets are safe for all users and particularly people who walk or bike.
- Ensure quality maintenance of sidewalks, transit facilities, and roads.

Environment: Prepare for climate change and reduce greenhouse gas emissions

- Protect from increasing flooding and urban heat risks.
- Reduce emissions through mode shift and cleaner vehicles.

Equity: Improve transportation for vulnerable populations

- Design streets and transit to be accessible for all users.
- Prioritize improvements that increase access and provide benefits for those most vulnerable in the community.

Investment: Encourage financial stewardship and implementation mindset

- Provide financially sustainable services.
- Plan projects with the intention of full implementation.

1.5 PUBLIC AND STAKEHOLDER ENGAGEMENT OVERVIEW

Representatives from the Boston Planning & Development Agency, Boston Transportation Department, and Boston Public Works Department met on a regular (bi-weekly) basis throughout the Dorchester Avenue Transportation Plan process to discuss progress and provide guidance to the consultant team. Throughout the process, this group also met with key agency stakeholders at MassDOT, the MBTA, and Massport. Coordination was specifically conducted as it related to the use of data, application of methods, critical findings, and the development of recommendations. There was a specific emphasis on coordination on recommendations that would involve other agencies or require their championing to move forward. The BPDA also met on a regular basis with the development community to discuss findings and recommendations.

The Dorchester Avenue Transportation Plan provided opportunity for public feedback throughout the process. City staff attended neighborhood meetings, met with stakeholders, and sent email updates. The project hosted three community meetings, held online due to the COVID-19 pandemic. Meeting materials – including a recording of the presentation made, and all materials presented – were placed on the project website. Fliers were prepared to announce each meeting and posted on the City and project website (bit.ly/plandotave), distributed via email to the City's distribution list, to community and neighborhood organizations, and to elected officials. Translation was available for all meetings upon request. A notice for each meeting was also placed in the South Boston Today. Details are as follows:

Public Meeting #1: The City presented the same information at two meetings – the evening (6:00 p.m. – 7:30 p.m.) of July 29th and midday (12:00 p.m. – 1:30 p.m.) July 30th. The purpose of this first public meeting was to introduce the public to the transportation planning process underway and to highlight the findings from the existing conditions analysis. There were approximately 80 attendees at the evening session on July 29th and 35 attendees at the midday session on July 30th. Both sessions featured a chat session moderated by City staff, and a formal Q&A session featuring questions asked live and answered by City and consultant staff. There was some overlap in attendance between the two sessions, with several members of the public attending both sessions.

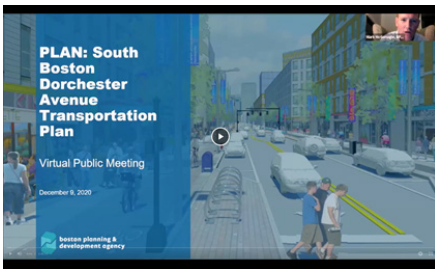


Figure 6. Screenshot from Virtual Public Meeting

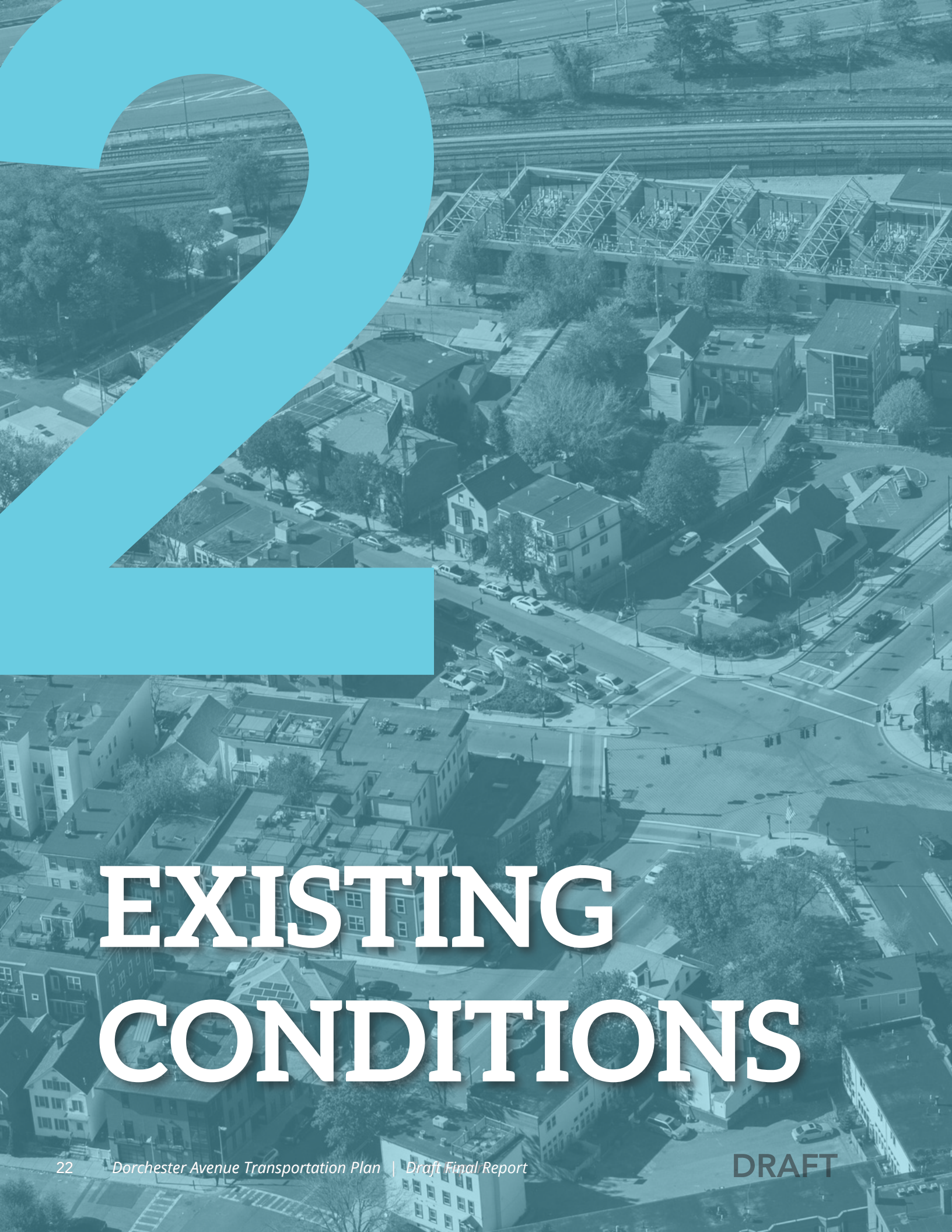
Public Meeting #2: The City hosted the second public meeting for the project on December 9, 2020. The format of the second public meeting was largely consistent with the first – it was held on Zoom and featured a presentation, with regular chat moderated by city staff and a formal Q&A session after the presentation. Unlike the first public meeting only one public meeting was held, but rather "office hours" were offered on the following Tuesday, December 15th, from 12:00 p.m. – 1:30 p.m. so that members of the public could chat informally with members of the project team. Approximately 105 people attended the December 9th session. There the project team presented network analysis and draft recommendations. There was robust support for the recommendations as featured in the online chat and in the Q&A session. The City held open a time period extending through January 8th for public comment on the draft recommendations.

Public Meeting #3: Early May 2021 (description will be added after the meeting has happened)

More information about the project and each of the public meetings, including a recording of the presentation, meeting summaries, and project fliers, can be found on the project website at bit.ly/plandotave.

A Note About COVID:

The Dorchester Avenue Transportation Plan started in fall of 2019, before the COVID pandemic disrupted travel patterns around the world. As such, our existing conditions analysis covers pre-pandemic conditions. Furthermore, our long-range recommendations assume that economic development continues in the study area and travel patterns come back as well. Any recommendation in this plan marked as immediate- or short-term have been weighted towards pedestrian and cyclist safety, and held COVID disruptions in mind.



2 EXISTING CONDITIONS

The following is a summary of the Existing Conditions analysis completed in the first phase of the Dorchester Avenue Transportation Plan. Existing Conditions were analyzed in fall 2019.

2.1 EXISTING LAND USE

The Study Area can largely be divided into two categories of land uses: commercial/industrial and residential (See Figure 7). Most of the land uses east and west of Dorchester Avenue are commercial or industrial in nature. Parcels tend to be larger and include one to two story structures holding a range of uses including but not limited to warehousing, storage facilities, food preparation, fabricators, showrooms, transportation uses, fitness facilities, and creative office spaces.

The northern and southernmost portions of the Study Area surrounding the Andrew and Broadway MBTA Red Line stations tend to be more residential in nature, with new higher density mixed-use residential structures along the major corridors (i.e., Broadway, Dorchester Avenue), and lower density multifamily homes on the side streets. Land uses in the Secondary Study area are primarily lower density multifamily residential, with a mix of uses found along West Broadway.

With the exception of recent higher density development in and around the Broadway MBTA Red Line station, and to a lesser extent Andrew Square, uses proposed in the PLAN are different than those currently in the Study area and include higher density mixed use residential, office, retail, and lab/21st Century Industry.

Changes in land use and density will result in a large increase in daily population and thousands of trips on the existing transportation network.

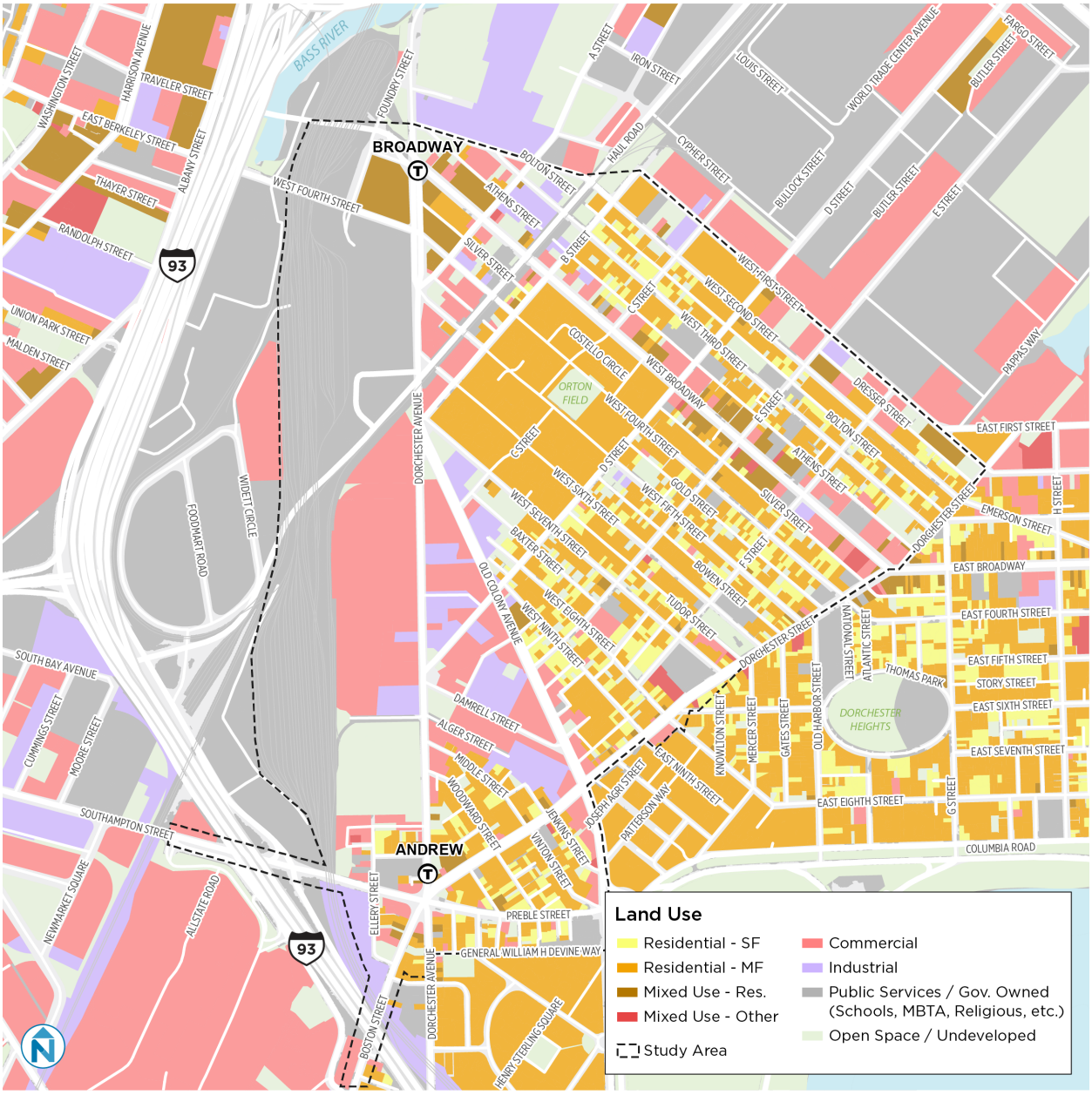


Figure 7. Existing Land Use

2.2 EXISTING MODE SHARE

People traveling to the Study Area do so very differently than those living in the Study Area and traveling outside of it. There are multiple ways, or modes, for people to get to and from the Study Area – by vehicle, by transit (bus or train), by bicycle or on foot. Currently, those living in the Study Area and commuting outside of it predominantly do so by transit (39% of trips) and driving alone (38% of trips). The walk or bicycle rate (15% of trips) is also very high, indicating shorter commute trip lengths.

However, the majority of work trips coming into the Study Area are drive alone (63%) and less than one-fifth (18%) taking place on transit. Although well connected via transit, the lower-density and industrial land-use and job types that exist in the Study Area today lend themselves to auto-oriented travel.

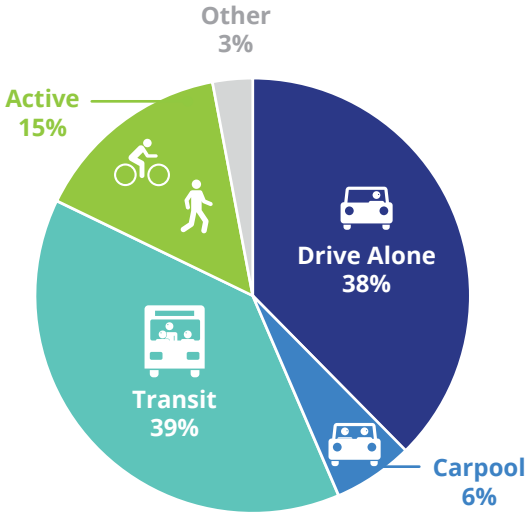


Figure 8. Commute Modeshare FROM Study Area (Residents)

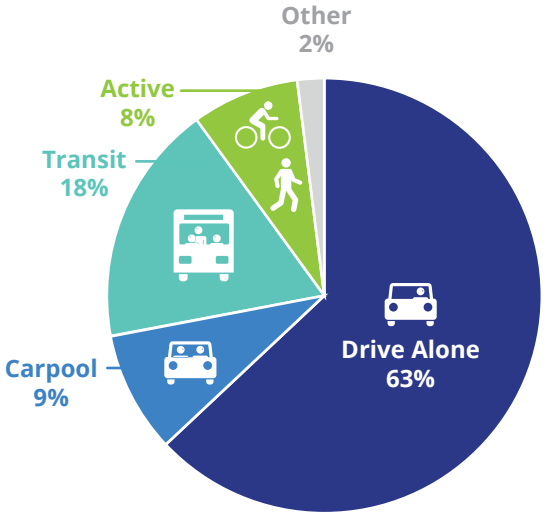


Figure 9. Commute Modeshare TO Study Area (Employees)

2.3 EXISTING ROADWAY AND TRAFFIC CONDITIONS

2.3.1 Major Corridors in Study Area

Several arterials provide access to, from and within the Study Area. These corridors offer different operating conditions depending on the mode. These include:

- **Dorchester Avenue** is the Study Area's central north-south spine with two distinct segments. The northern segment – between Traveler Street and Old Colony Avenue – includes four vehicle travel lanes, inconsistent bike lanes and no on-street parking. The southern segment (south of Old Colony Avenue) is two vehicle travel lanes with bicycle lanes in each direction and on-street parking on both sides of the street. Sidewalks vary in width and condition.
- **Old Colony Avenue** runs along the eastern edge of the Study Area and includes four travel lanes, divided by a flush cobble-stone median. Relatively narrow sidewalks line each side, but no bicycle facilities are present. On-street parking is generally unregulated.
- **Southampton Street** intersects Dorchester Avenue at Andrew Square, running west and provides access to I-93. Sidewalks are present on both sides of Southampton Street. MBTA bus routes 10, 16, and CT3 operate on Southampton Street. There is no on-street parking or bicycle facilities in either direction.
- **Preble Street** runs east from Dorchester Avenue at Andrew Square, and connects to Moakley Park. It has two vehicle travel lanes with on-street parking on both sides of the street. Wide sidewalks on both sides are in mostly good condition. There are no bicycle facilities are provided. MBTA Route 16 bus operates on the street.

- **Dorchester Street** runs east from Dorchester Avenue at Andrew Square and intersects with Old Colony Avenue. A concrete median divides four travel lanes and sidewalks are wide and in good condition. On-street parking is allowed on both sides. There are no bicycle facilities. The MBTA Route 10 operates on the street.
- **D Street** connects Dorchester Avenue to the Seaport, one of only three roads with a direct connection. There is currently a "circuit breaker" where D Street is one-way southbound between Old Colony Avenue and West 9th Street. D Street has two vehicle travel lanes with a bicycle lane in the southbound direction and unregulated parking in the northbound direction.
- **West Broadway and East Broadway** runs from Dorchester Avenue to Dorchester Street, with two vehicle travel lanes and parking on both sides of the street. Wide sidewalks are in good condition. There are no bicycle facilities. The MBTA Routes 9 and 11 operate on West Broadway.
- **South Boston Bypass** was constructed as part of the Central Artery Project as a limited access freight route to provide dedicated truck access between the South Boston Waterfront and I-93. It is currently closed to all non-commercial traffic between I-93 and the West Service Road, and open to general traffic east of the West Service Road.

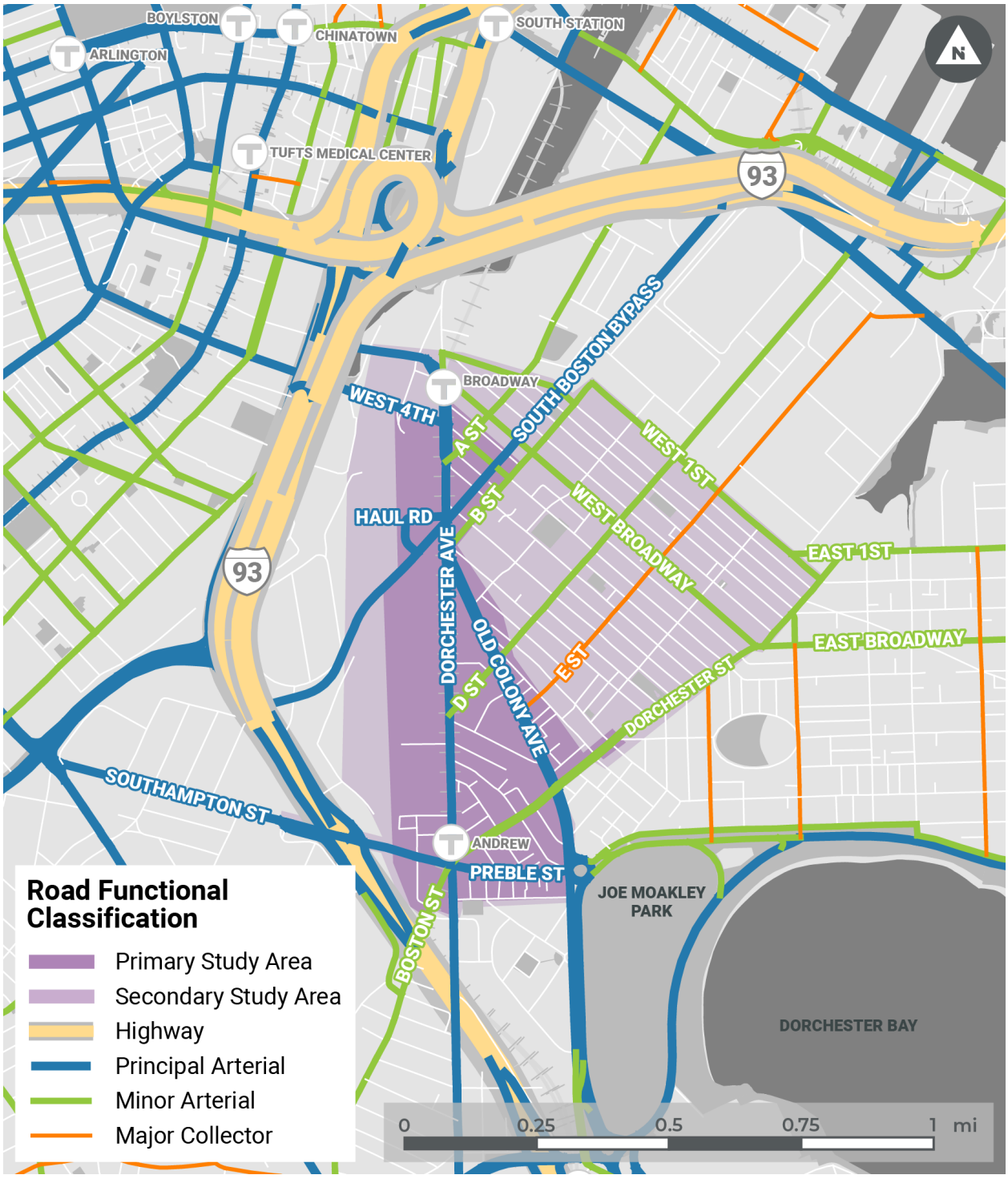


Figure 10. Roadway Functional Classification

2.3.2 Traffic Volumes

Traffic levels are highest along Dorchester Avenue north of Old Colony Avenue. South of Old Colony Avenue, traffic levels on Dorchester Avenue are lower, as much of the through traffic switches to Old Colony Avenue which also has significant traffic levels. There are greater volumes of heavy vehicles, such as tractor trailers and box trucks, on Dorchester Avenue given the more industrial nature of the adjacent land uses. On Dorchester Street and Old Colony Avenue, there is more traffic on the weekdays than on the weekends.

Traffic on other streets within the Study Area is not high, including on streets that feed into Andrew Square. Despite not having as many cars, Andrew Square is very congested due to the complexity of the intersection and the long traffic signal cycles needed since multiple streets converge at the intersection.

Figure 11. Traffic Volumes in the Study Area

ROADWAY	CARS/DAY
Dorchester Avenue - North of Old Colony	43,000
Old Colony Avenue	33,000
Dorchester Avenue – South of Old Colony	10,000
Southampton Street	20,000
Preble Road – Andrew Square	8,000
Dorchester Street – Andrew Square	10,000
Dorchester Street – East of Old Colony	21,000

**Source: Traffic counts conducted by Precision Data Industries , October, 2018.*

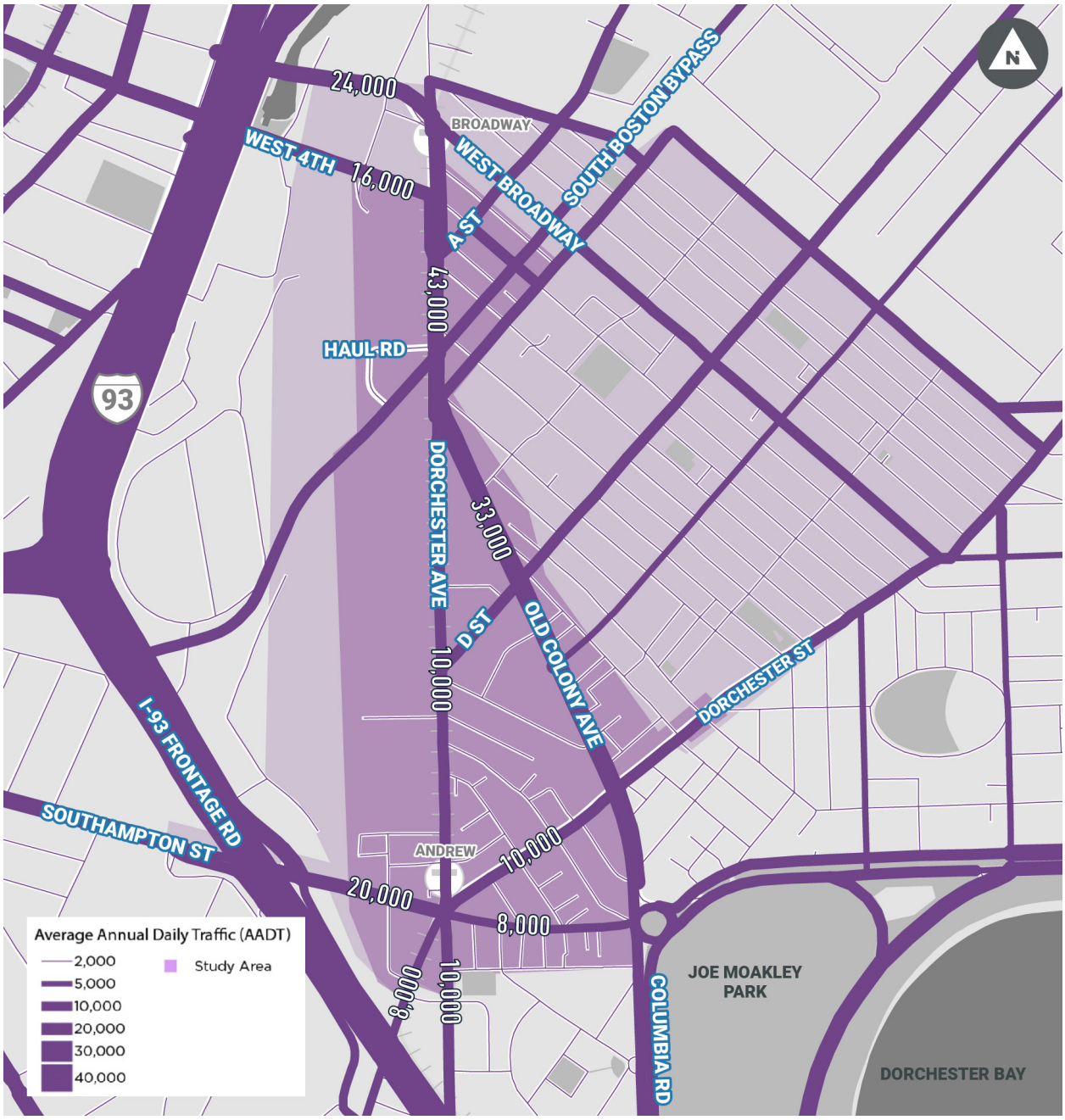


Figure 12. Traffic Volumes

2.3.3 Congestion Levels

Signalized intersections in and proximate to the Study Area were analyzed to understand congestion levels. The amount of delay, capacity and queue analyses were conducted at the study intersections under existing traffic operation control. These analyses included an evaluation of the weekday morning peak hour (7:15 AM to 8:15 AM) and evening peak hour (4:15 PM to 5:15 PM) traffic operations under existing volume conditions.

Intersection Operations

Level of Service (LOS) is a qualitative measure of traffic congestion based on average delay at intersections. LOS A defines free flowing conditions and LOS F represents significant traffic delay. One weakness of using vehicle level of service as a primary measure of traffic operations is that the use of a letter grade scale implies that "A" is the best condition; where in fact it is most efficient and safe to target "D" for peak hour level of service in urban conditions. In general, streets in the City of Boston are flagged for congestion-related concern if they operate at a LOS E or LOS F. Within the Study Area, this includes:

- Andrew Square
- Dorchester Street and Old Colony Avenue
- Dorchester Avenue and West 4th Street

Figure 13. Level of Service Criteria

LEVEL OF SERVICE	AVERAGE STOPPED DELAY (SECONDS/VEHICLE)	
	SIGNALIZED INTERSECTION	UNSIGNALIZED INTERSECTION
A	0.0 – 10.0	0.0 – 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	>80.0	>50.0

**Source: Highway Capacity Manual, 2000. Transportation Research Board.*

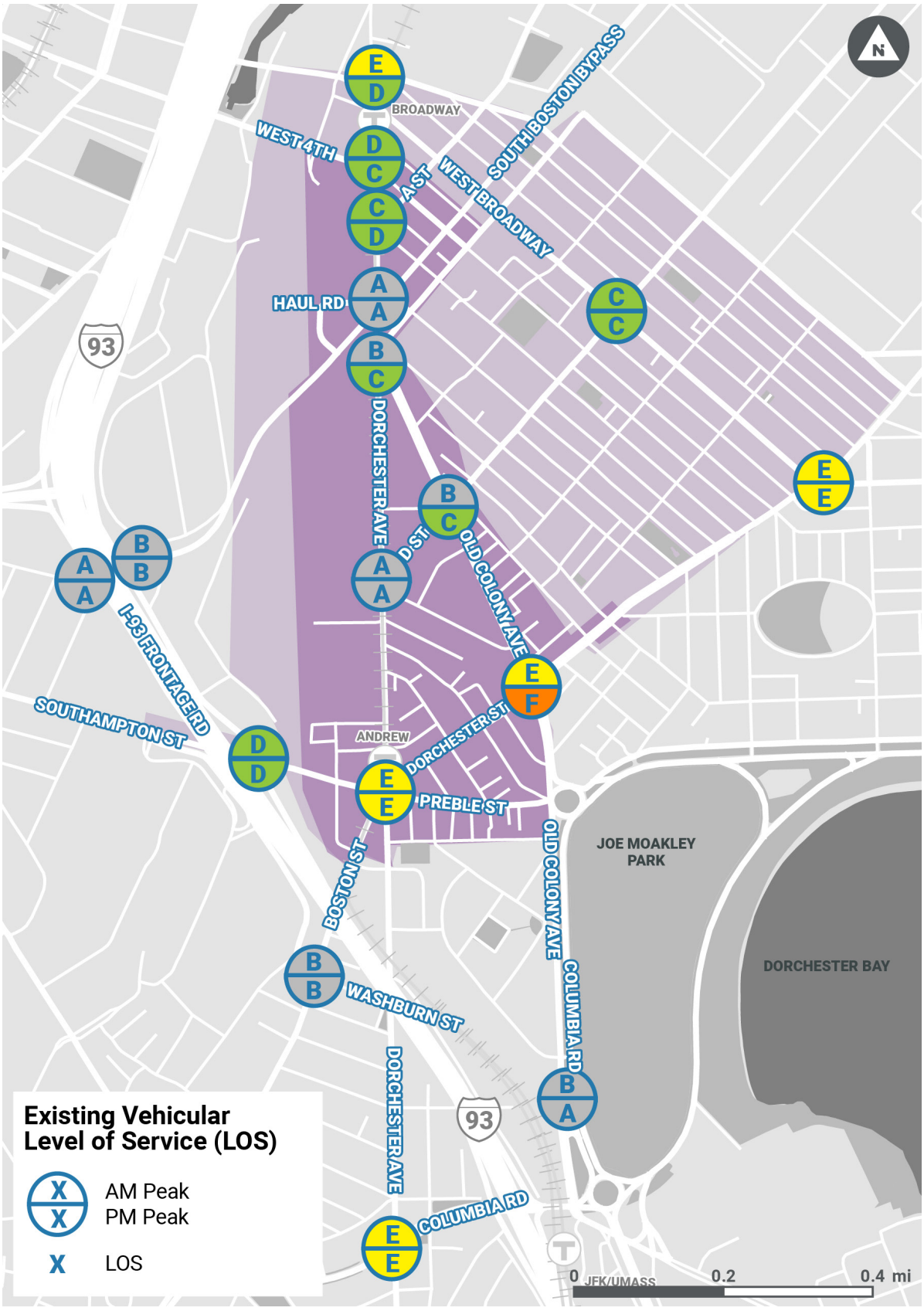


Figure 14. Existing Level of Service

Capacity

Another measure of intersection congestion is its volume to capacity (V/C). Generally, the goal is for an intersection to operate at volumes that are 60% - 80% of its capacity. If a road was built (width, speed) to accommodate 1,000 cars/hour, 60% - 80% would be between 600 and 800 cars/hour. Any more would indicate congestion. Any less would indicate the road had more capacity than was needed. As shown in Figure 15, intersections operating at more than 80% capacity include:

- Dorchester Avenue and West 4th Street (AM and PM peak)
- Old Colony Avenue and Dorchester Street (AM and PM peak)
- Andrew Square (PM peak)

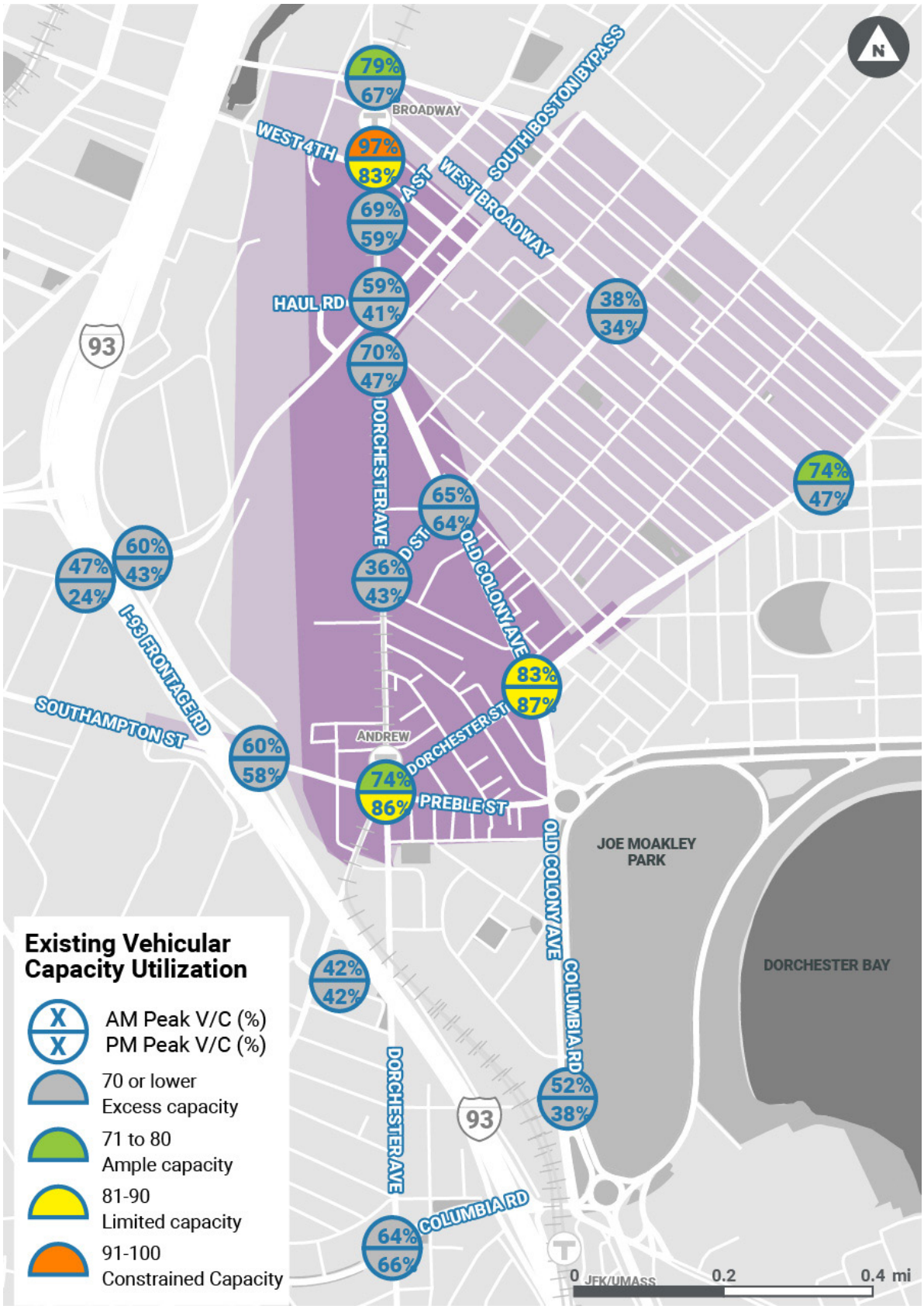


Figure 15. Intersection Capacity

Queue Lengths

Queue Lengths are also an important indicator of traffic operations. Queues of vehicles waiting at traffic signals can affect other signals and can increase delays. As shown in Figure 16 and Figure 17, queue lengths are largely greatest at intersections where capacity exceeds 80% - Dorchester Avenue and West 4th, Old Colony Avenue and Dorchester Street, and Andrew Square.

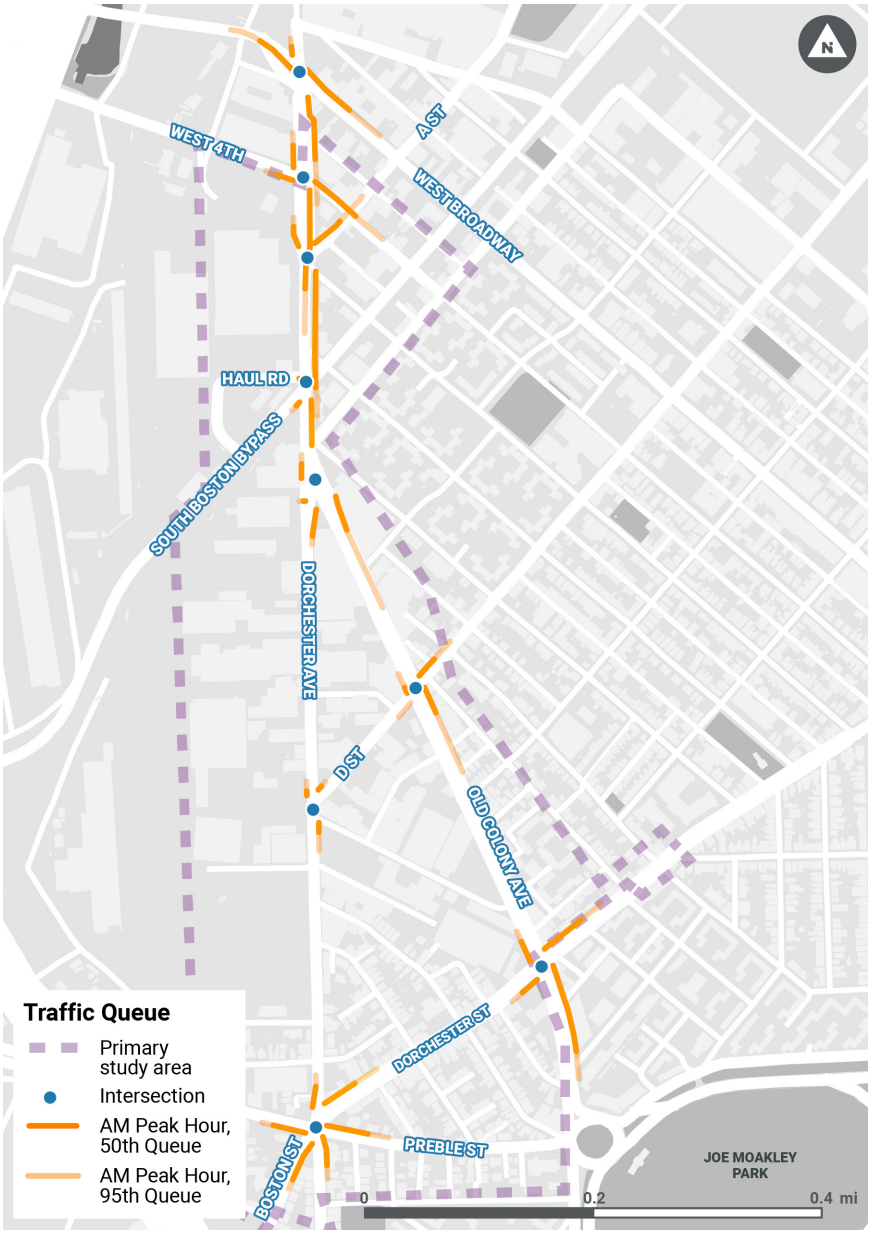


Figure 16. Queue Lengths (AM Peak)

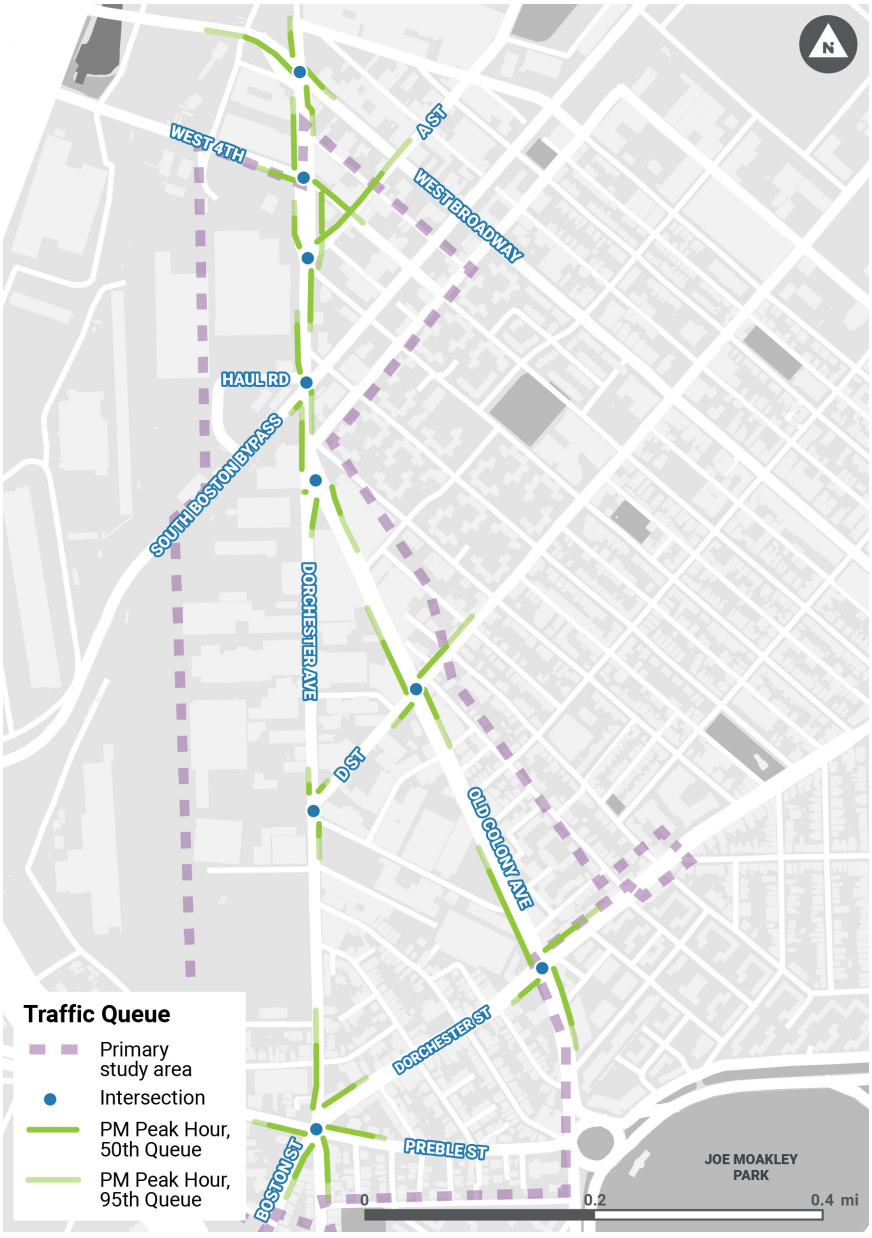


Figure 17. Queue Lengths (PM Peak)

2.3.4 Safety Conditions - Crash Analysis

Between 2015 and 2019, there were 282 crashes that required a public safety response, inside or within 250 feet of the Study Area. About 60 percent of all reported crashes in the Study Area were located at intersections. None of the crashes were fatal. A public safety response typically means the crash resulted in an injury. Of these crashes, 62 involved people walking, 34 involved people riding bicycles, and the remaining 186 involved people in motor vehicles. The source for these data is the City of Boston's Vision Zero database, which focuses on injury crashes. The actual crash numbers are likely higher than what is shown here as property-damage only crashes are generally not reported in these numbers.

While the Dorchester Avenue Transportation Plan was in its recommendations phase, several crashes took place in the Study Area, including a fatal crash involving a pedestrian on Southampton Street at Andrew Square. The planning effort was able to engage with Boston's Vision Zero team directly after the fatal crash and participate in the design of several safety improvements that are expected to be implemented immediately, in 2021, to improve safety in the Andrew Square vicinity (see Chapter 4).

Crash Hot Spots

Crashes of all modes in the Study Area are clustered around major intersections and gateways into the Study Area (Figure 18). In particular, the highest concentration of crashes were located at Andrew Square, Old Colony Avenue and Dorchester Street, and Dorchester Avenue and West 4th Street. For motor vehicles, the crashes clustered around Old Colony and Dorchester Street with 20 crashes occurring between 2015-2019 (Figure 19). Crashes that involved pedestrians were clustered around Andrew Square (Figure 20). 18 accidents that caused an injury to a pedestrian occurred in Andrew Square during the study period. Crashes that involved bicyclists (Figure 21) were in greatest concentration around Pacuska Circle.

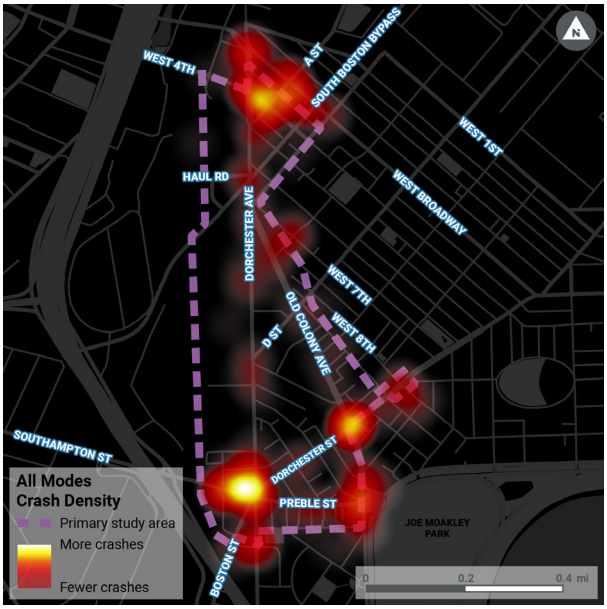


Figure 18. Crash Density All Modes 2015-2019

Source: City of Boston Vision Zero Database

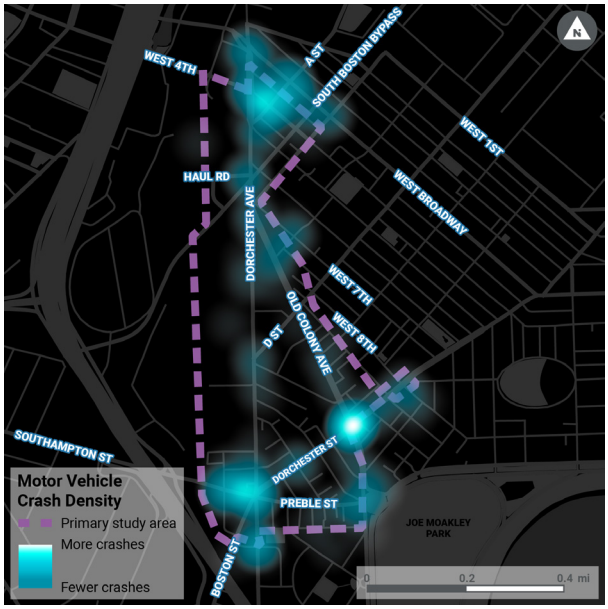


Figure 19. Crash Density (Motor Vehicle) 2015-2019

Source: City of Boston Vision Zero Database

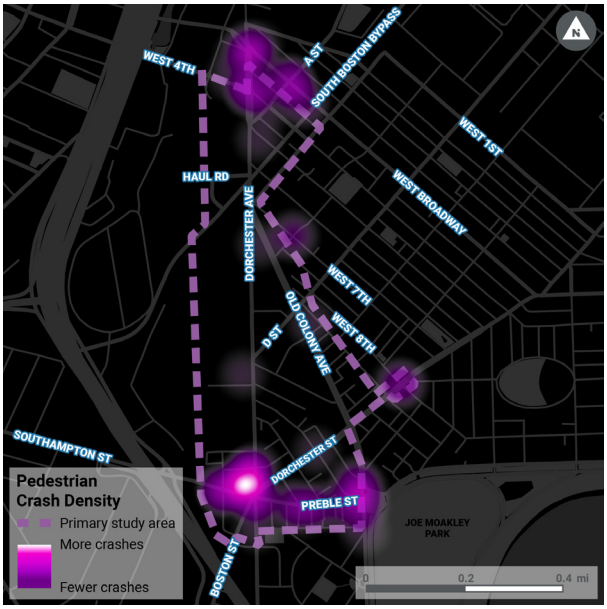


Figure 20. Crash Density (Pedestrian) 2015-2019

Source: City of Boston Vision Zero Database

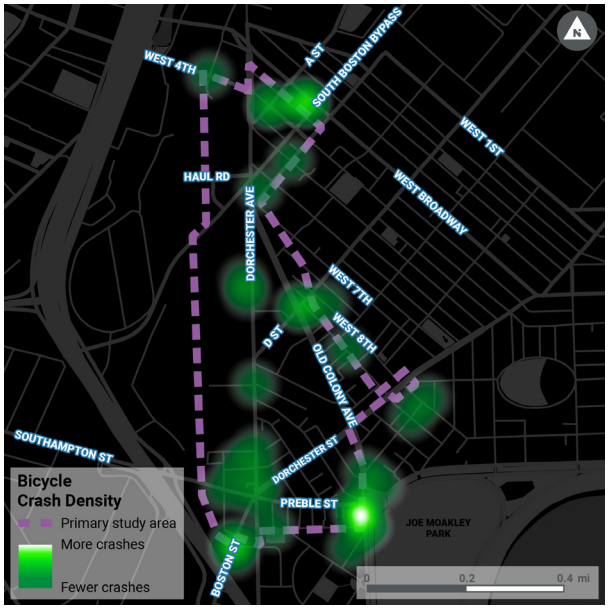


Figure 21. Crash Density (Bicycle) 2015-2019

Source: City of Boston Vision Zero Database

2.4 TRANSIT CONDITIONS

2.4.1 Transit Network

The MBTA's Red Line subway and robust bus network provides direct transit connections to the Study Area.

Transit access includes two MBTA Red Line stations: Broadway Station at the north end of the Study Area and Andrew Station at the south end as well as many bus lines serving the area. Three bus routes connect at Broadway Station: Route 9, Route 11, and Route 47. Six bus routes connect at Andrew Station: Route 10, Route 16, Route 17, Route 18, Route 171, and CT3.

The Study Area is also indirectly served by commuter rail services that connect to South Station and JFK/UMass Station (Greenbush, Middleborough/Lakeville, and Plymouth/Kingston Lines) which can be reached via the Red Line, as well as Newmarket Station (served by the Fairmount Line). Both the South Station and Newmarket Stations are within a 15-20 minute walk from the Study Area.

Approximately 26,000 weekday transit trips either started or ended in the Study Area (as of fall 2019). Eight out of ten transit trips involving the Study Area were on the Red Line. The remaining 20% of transit trips were by bus, of which Route 9 accounts for 8% of total activity; Route 11 accounts for 4%; and the remaining bus lines account for 3% or less of total transit trips.

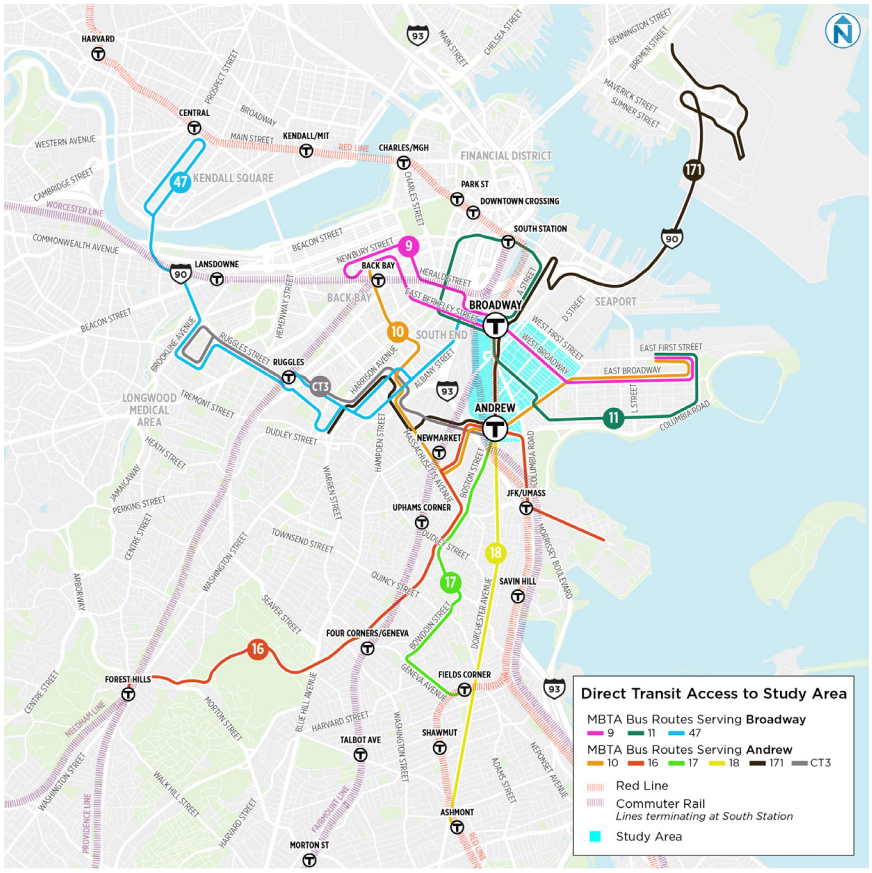


Figure 22. Transit Routes Serving the Study Area

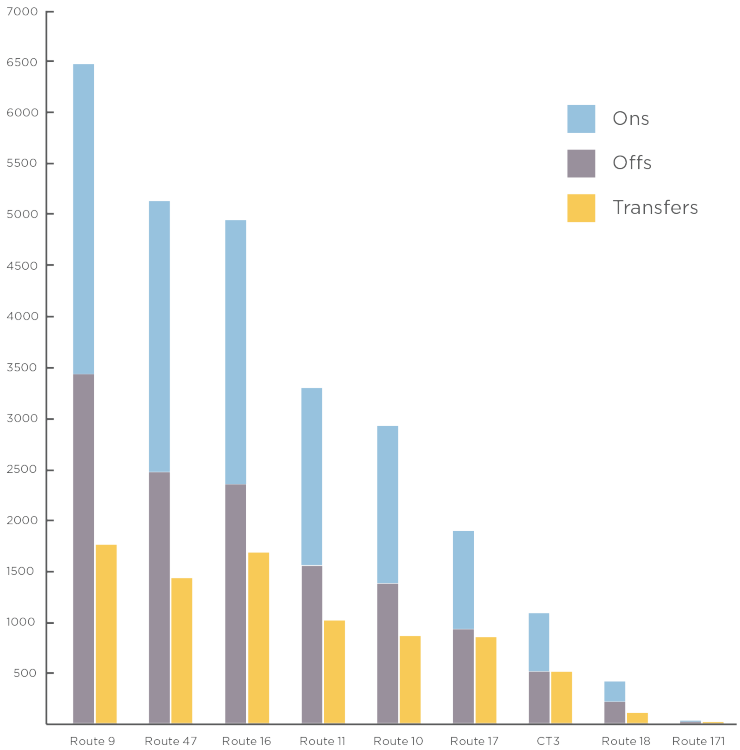


Figure 23. Total Bus Ridership for Bus Routes Serving the Study Area

Direct Access vs Access with a Transfer

The Study Area has direct transit access to Downtown Boston, South Boston, Back Bay, Dorchester, and all areas along the Red Line and the nine connecting bus routes. A large proportion of the rest of the urban core and any area along a commuter rail line connecting at South Station is connected by a single transfer trip to and from the Study Area. As a critical link in the overall MBTA network, the Red Line has direct connections to every other rapid transit line except for the Blue Line and also connects directly to many bus routes. Although not far distance-wise, many areas in the northern core and in the North Shore only have multi-transfer access to the Study Area. This is partially due to commuter rail lines that serve North Station instead of South Station and lack direct access to the Red Line.

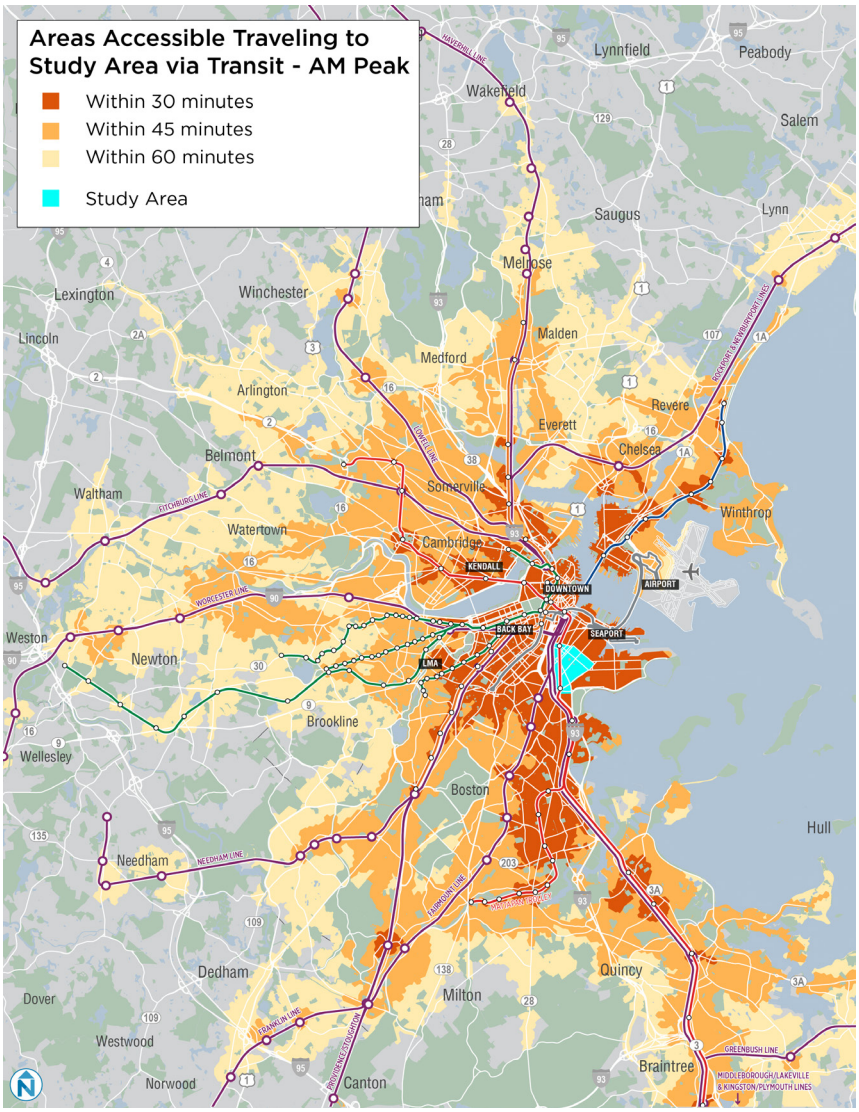
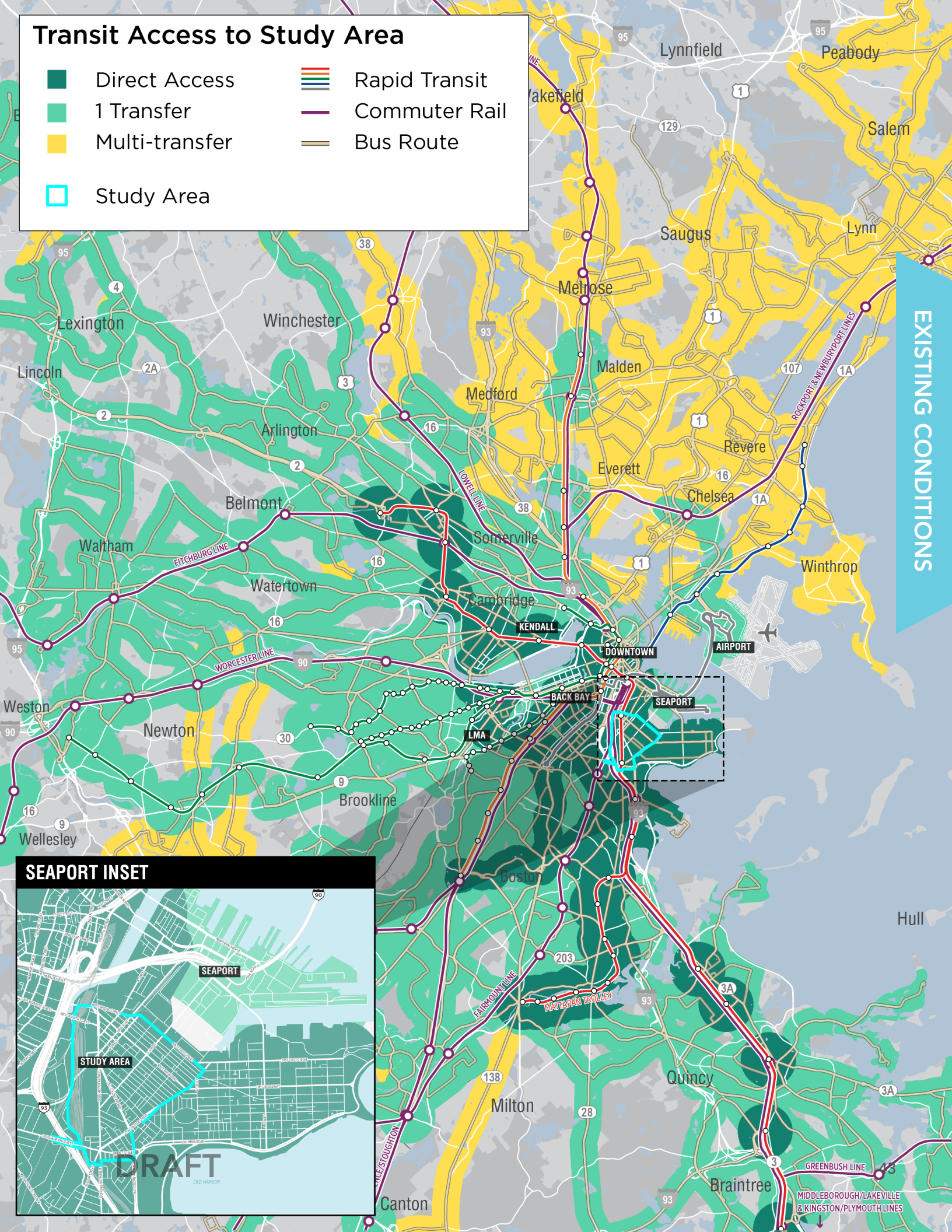


Figure 24. Transit Access within 1 Hour

Figure 25. Transit Access by Transfers


Transit Access to Study Area
Direct Access
1 Transfer
Multi-transfer
Study Area
Rapid Transit
Commuter Rail
Bus Route
EXISTING CONDITIONS
SEAPORT INSET
STUDY AREA
SEAPORT
DRAFT
Lynnfield
Peabody
Salem
Lynn
Saugus
Melrose
Malden
Medford
Revere
Everett
Chelsea
Winthrop
Somerville
Cambridge
KENDALL
DOWNTOWN
AIRPORT
BACK BAY
SEAPORT
LMA
Boston
Hull
Quincy
Milton
Braintree
Canton
Lexington
Winchester
Lincoln
Arlington
Belmont
Waltham
Watertown
Weston
Newton
Brookline
Wellesley
FITCHBURG LINE
WORCESTER LINE
LOWELL LINE
ROCKPORT & NEWBURYPORT LINES
FAIRMOUNT LINE
MATTAPAN TROLLEY
GREENBUSH LINE
MIDDLEBOROUGH/LAKEVILLE & KINGSTON/PLYMOUTH LINES

2.4.2 Transit Origins and Destinations

Transit trips starting and ending in the Study Area follow the same general patterns as one another. Mirrored trip patterns generally indicate lower levels of mixed-use development and a high share of commuter trips. At a neighborhood level, the highest concentration of trips are from neighborhoods along the Red Line including Dorchester, Downtown, and Cambridge. The majority of bus ridership come from adjacent areas in South Boston, the South End and the Longwood Medical and Academic Area.

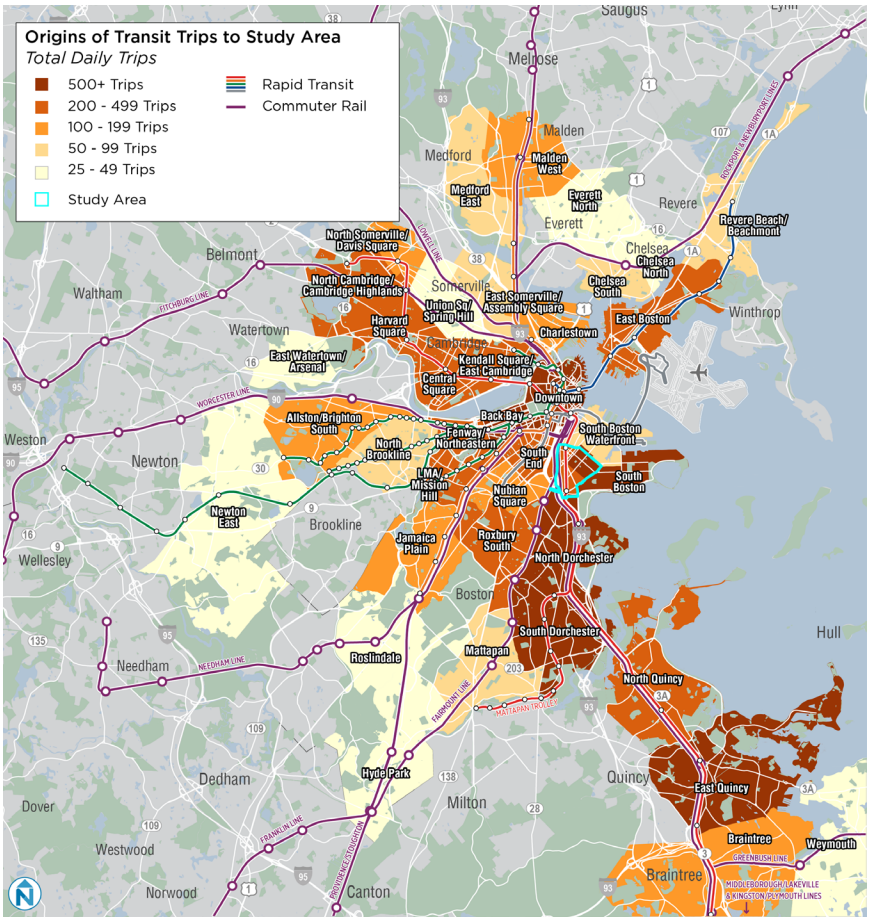
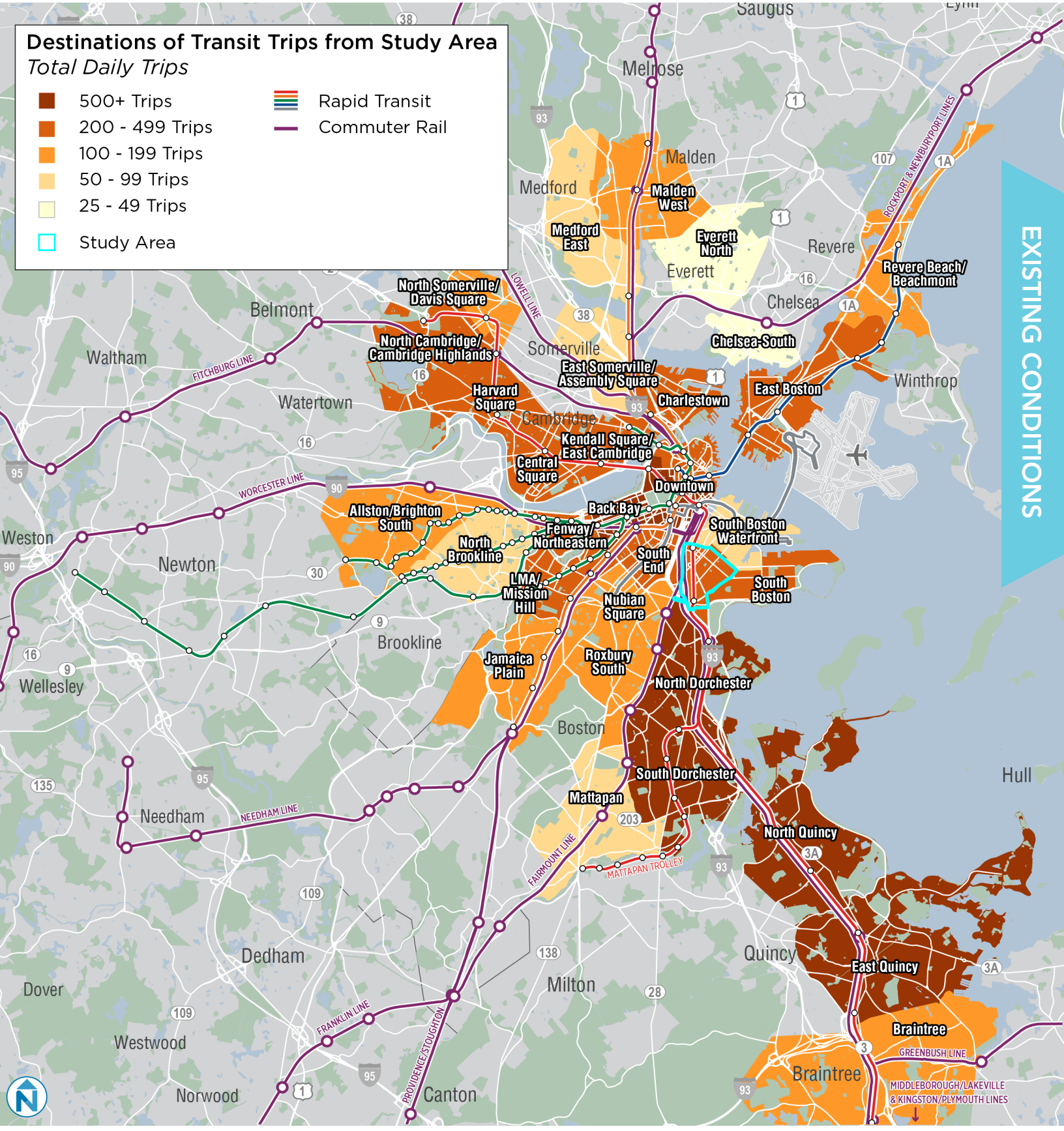


Figure 26. Origins of Transit Trips

Source: Origin-Destination-Transfer (ODX) Model data, Fall 2017.

Figure 27. Destinations of Transit Trips



Source: Origin-Destination-Transfer (ODX) Model data, Fall 2017.

2.4.3 Red Line Ridership

The Red Line is the spine of the MBTA system. In the second quarter of 2019, on an average weekday, it carried 250,000 passenger trips which is more passengers than any other rapid transit line in the MBTA system. By comparison, the Red Line services more than 70 percent of all bus ridership combined. With such high ridership, the Red Line has overcrowding and capacity constraints. The Red Line is most constrained within the Study Area—which occurs during AM peak inbound and PM peak outbound.

The Study Area is not a major destination today, but both Andrew and Broadway are major transfer connections to buses. As a result, many of the current passenger boardings and alightings are attributable to transfers at Broadway or Andrew.

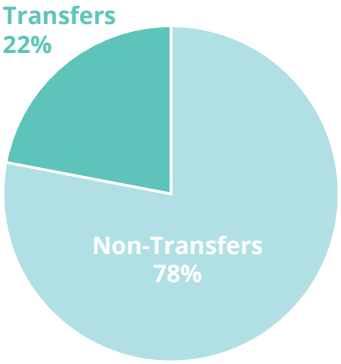


Figure 28. Transfer Activity at Broadway

Transfer Activity

Transfers from bus to subway at Broadway and Andrew are a significant aspect of the transit activity in the Study Area, with 22 percent and 17 percent of daily boardings, respectively. The Study Area serves as a critical point in the transit network for those from the surrounding areas to reach the Red Line. Once riders transfer to the Red Line, most end their trips Downtown – at the South Station, Downtown Crossing, or Park Street stations.

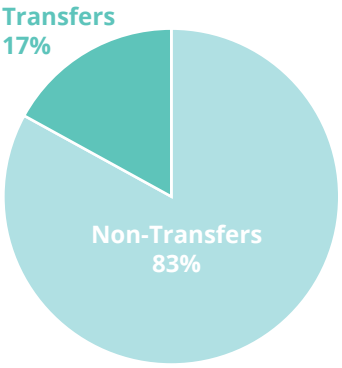


Figure 29. Transfer Activity at Andrew

2.4.4 Bus Ridership

The Study Area is served directly by nine bus routes: three bus routes connect at Broadway Station: Route 9, Route 11, and Route 47; and six bus routes connect at Andrew Station: Route 10, Route 16, Route 17, Route 18, Route 171, and CT3. The routes can be grouped in these categories:

- South Boston with Connection to Downtown: Route 9, Route 10, Route 11
- Crosstown: Route 16, Route 47, CT3
- Other: Route 17, Route 18, Route 171

Of bus ridership activity occurring within the Study Area, Andrew and Broadway stations have by far the most activity. West Broadway, served by Route 9 has steady ridership along the corridor approaching Broadway Station. West Sixth Street and West Seventh Street, served by Route 11, and Dorchester Street served by Route 10 also have moderate bus ridership activity. Although Route 171 runs along Dorches-

ter Avenue, there are no stops along this corridor in the Study Area as this route only serves Andrew Station.

Bus Ridership

Total bus ridership for routes that serve the Study Area vary widely. Route 9 is the highest with nearly 6,500 daily weekday trips. Route 47 and Route 16 both have approximately 5,000 daily weekday trips. Route 11 and Route 10 have between 3,000 and 3,500 daily trips. Route 17 has 2,000, CT3 around 1,000, Route 18 around 500, and Route 171 less than 100.

Transfers account for between 1,500 and 2,000 total boardings and alightings on Route 9, Route 47 and Route 16. Transfers account for nearly half the ridership activity on Route 17 and the CT3.

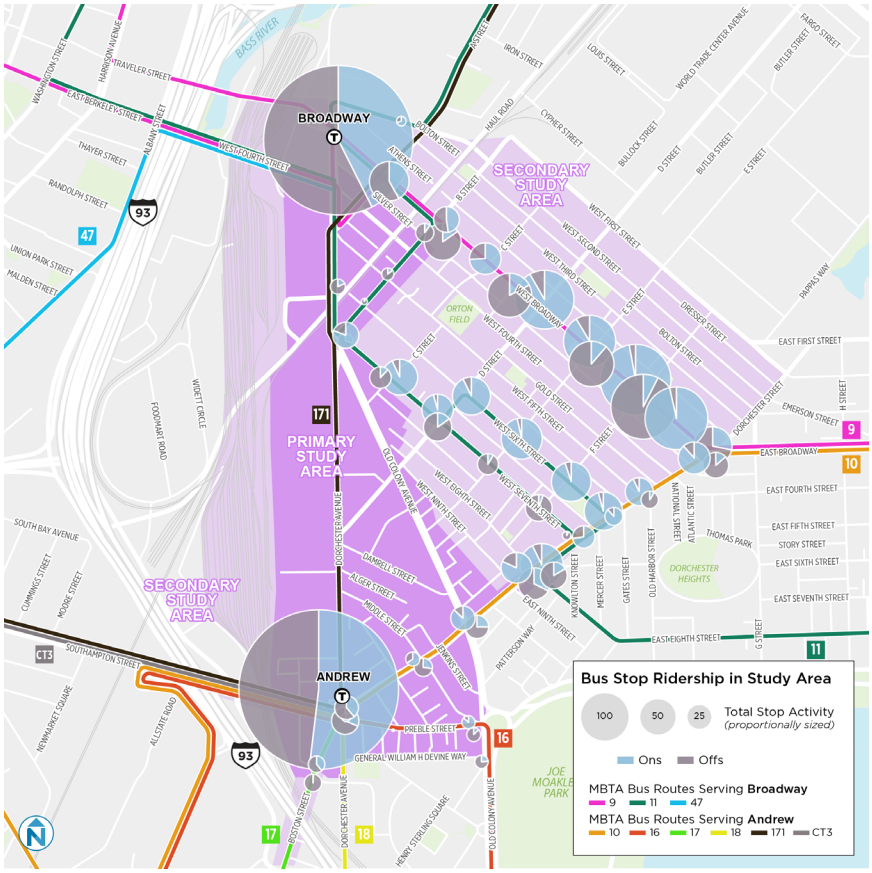


Figure 30. Bus Stop Activity in Study Area

2.5 PEDESTRIAN CONDITIONS

Successful active, mixed-use areas require a highly connected, well maintained pedestrian network. The following sections describe existing conditions and needs on major street corridors in the Study Area as observed and documented by members of the project team in 2020.

Conditions that hinder pedestrian movement in the Study Area include:

- Sidewalk surface conditions vary significantly throughout the Study Area, with many stretches of sidewalk in poor condition
- Numerous locations do not meet Americans with Disabilities Act (ADA) guidelines
- Sidewalk dimensions vary, and are often too narrow along key corridors to support an active urban environment
- Drainage issues and ponding are frequent throughout the Study Area
- Pedestrian crossings can feel unsafe and in some instances do not reflect desire lines
- Long signal phases at key intersections mean pedestrians have to wait a long time for a walk sign, which in turn can lead to poor decision making (e.g., crossing against the signal)

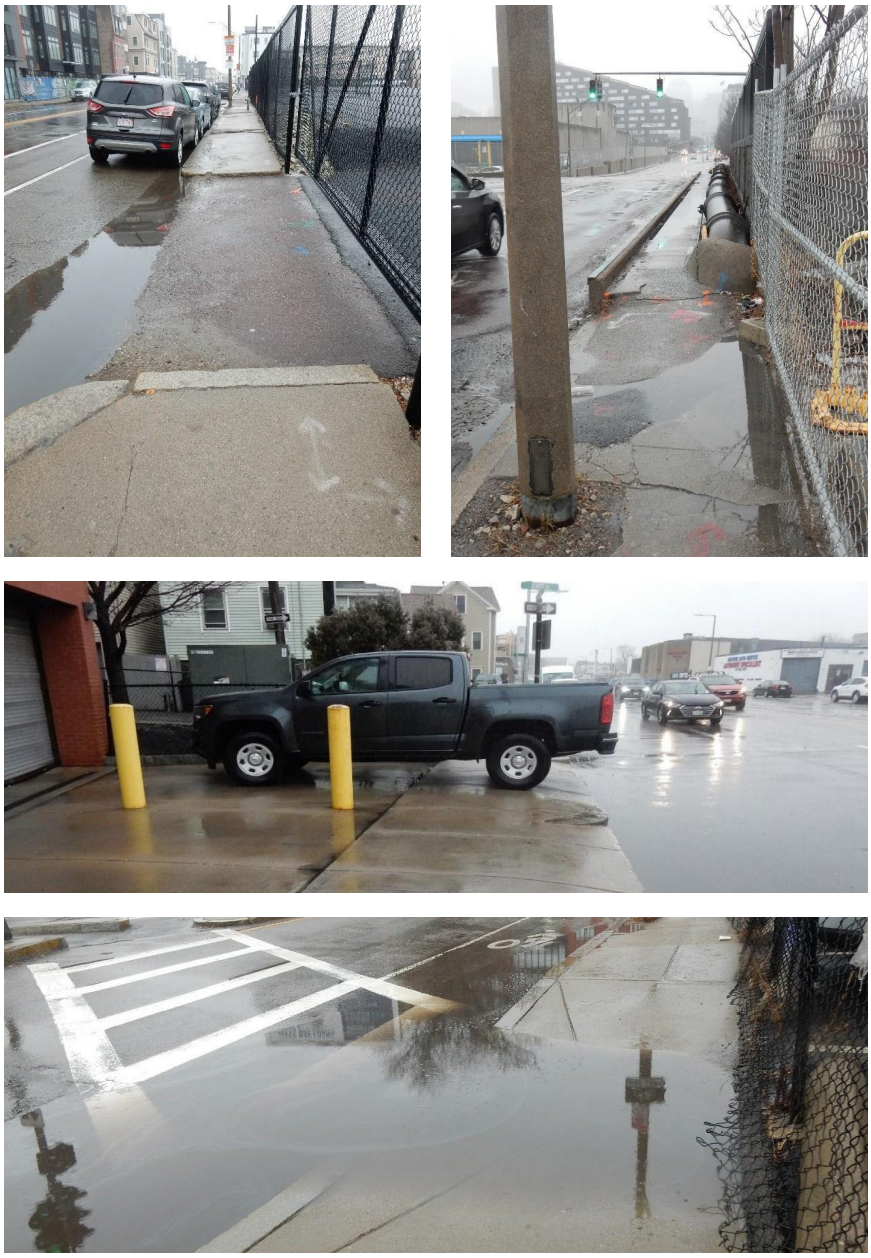


Figure 31. **Pedestrian Conditions in Study Area.**

Top Left: Dorchester Avenue: Frequent curb cuts and poor drainage make for a difficult pedestrian environment.

Top Right: Pedestrian access hindered South Boston Bypass Road bridge due to pooling water and the utility line.

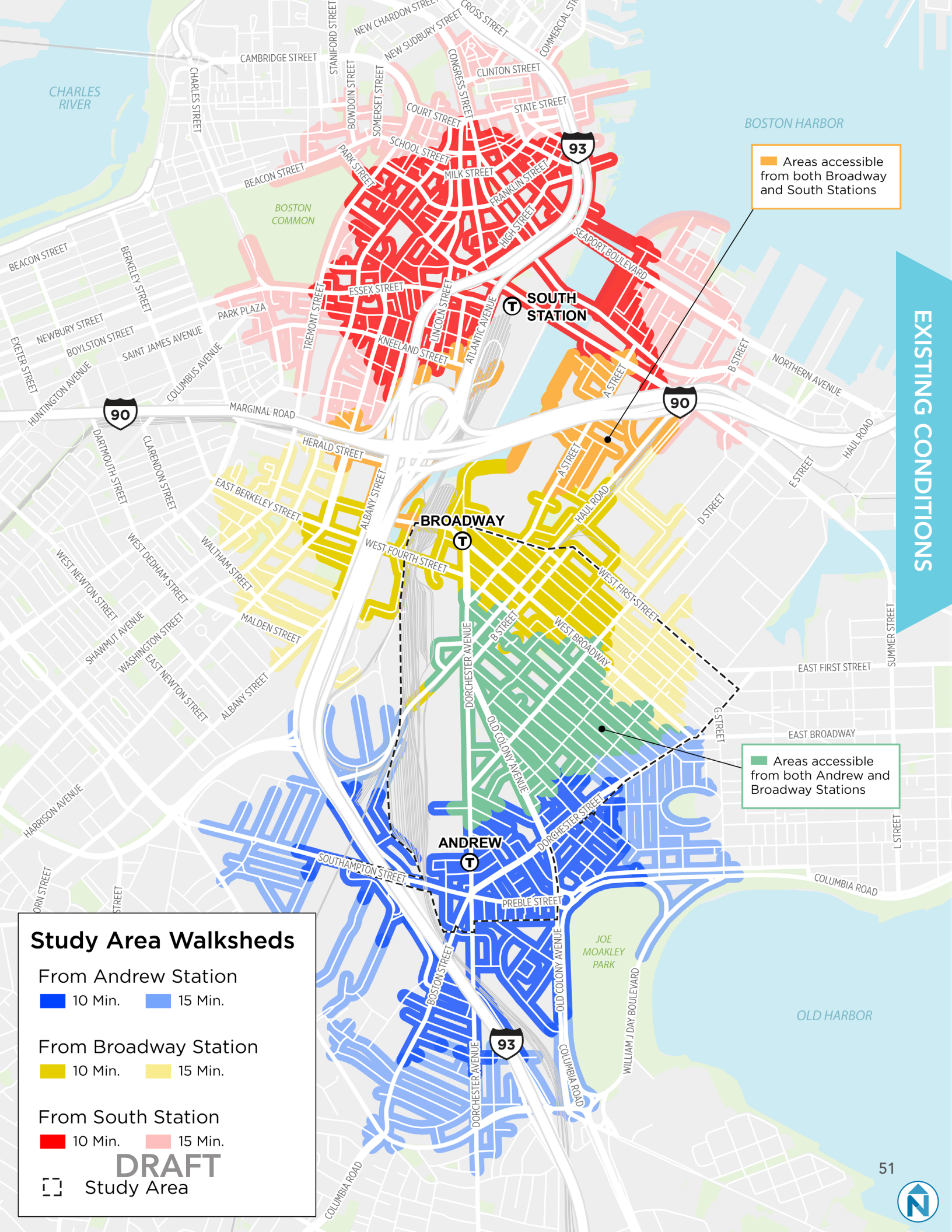
Middle: Car blocking sidewalk on Old Colony Avenue forces pedestrians into busy road.

Bottom: Water pooling at intersections is common throughout the Study Area.

2.5.1 Pedestrian Access to Transit

Most transit riders are willing to walk 10 minutes to a frequent transit station, and many riders walk up to 15 minutes to access rapid transit. Except for the very eastern edge, all points within the Study Area are within a 15-minute walk of Andrew or Broadway stations. Although the Study Area is walkable (by distance), pedestrian conditions are lacking.

Figure 32. Pedestrian Access to Red Line Stations


Areas accessible from both Broadway and South Stations
Areas accessible from both Andrew and Broadway Stations
SOUTH STATION
BROADWAY
ANDREW
CHARLES RIVER
BOSTON HARBOR
BOSTON COMMON
JOE MOAKLEY PARK
OLD HARBOR
CAMBRIDGE STREET
BEACON STREET
COURT STREET
STATE STREET
SCHOOL STREET
MILK STREET
FRANKLIN STREET
HIGH STREET
SEAPORT BOULEVARD
ESSEX STREET
KNEELAND STREET
ATLANTIC AVENUE
NORTHERN AVENUE
MARGINAL ROAD
HERALD STREET
EAST BERKELEY STREET
WEST FOURTH STREET
WEST FIRST STREET
WEST BROADWAY
EAST FIRST STREET
EAST BROADWAY
SOUTHAMPTON STREET
PREBLE STREET
COLUMBIA ROAD
DORCHESTER AVENUE
OLD COLONY AVENUE
BOSTON STREET
WILLIAM J DAY BOULEVARD
HAUL ROAD
A STREET
B STREET
D STREET
E STREET
G STREET
L STREET
SUMMER STREET
ALBANY STREET
DARTMOUTH STREET
CLARENDON STREET
WEST NEWTON STREET
WEST DEDHAM STREET
WALTHAM STREET
MALDEN STREET
SHAWMUT AVENUE
WASHINGTON STREET
EAST NEWTON STREET
HARRISON AVENUE
PARK PLAZA
SAINT JAMES AVENUE
COLUMBUS AVENUE
BOYLSTON STREET
NEWBURY STREET
HUNTINGTON AVENUE
EXETER STREET
BERKELEY STREET
TREMONT STREET
LINCOLN STREET
CHARLES STREET
STANIFORD STREET
BOWDOIN STREET
SOMERSET STREET
CONGRESS STREET
NEW CHARDON STREET
NEW SUDBURY STREET
CROSS STREET
COMMERCIAL STREET
PARK STREET
90
93
Study Area Walksheds
From Andrew Station
10 Min.
15 Min.
From Broadway Station
10 Min.
15 Min.
From South Station
10 Min.
15 Min.
DRAFT
Study Area
EXISTING CONDITIONS

2.5.2 Pedestrian Usage and Delay

Pedestrian activity varies greatly, with areas of higher activity concentrated near the northern and southern limits of the Study Area near the Andrew Square and Broadway MBTA stations. Areas in between see far fewer pedestrian trips.

The Andrew Square transit hub generates the highest number of pedestrian crossings in the Study Area and has the highest number of crashes involving a pedestrian, including a recent death. Pedestrian conditions are hazardous due to the complex geometries that require multiple crossings by many, and due to significant pedestrian delay given the long signal cycles resulting from the six approaches. Higher pedestrian delays are typically associated with pedestrians being more likely to take risks and crossing against a signal, or away from a marked crosswalk. Field observations at Andrew Square indicated many people crossing away from the signalized intersection crosswalk, which is consistent with these concerns.

Figure 33. Pedestrian Crossing Counts

Figure 34. Pedestrian Delay

2.6 EXISTING BICYCLE CONDITIONS

Bicycle facilities are provided sporadically within the Study Area. There are dedicated bike lanes in both directions along portions of Dorchester Avenue, A Street, and D Street (southwest direction only, shared markings northeast). No other dedicated bicycle facilities are provided throughout the Study Area.

Overall, bicyclists experience high levels of stress on the major corridors in the Study Area. Level of Traffic Stress (LOTS) is an analysis that measures the traffic stress that bicyclists experience on the road. The scoring ranges from 1, the least stressful, to 4, the most stressful. A LOTS 2 is comfortable for most cyclists. The results of the level of traffic stress analysis shows that the major corridors – Dorchester Avenue, Dorchester Street, Old Colony Avenue, as well as key connectors B Street, D Street, and West Fourth Street – are all very high-stress streets.

Where bicycle lanes are present, they are not heavily used. For example, even though Dorchester Avenue provides a direct link to Downtown Boston, bicycle usage is moderate, likely due to an incomplete lane network, poor pavement quality, drainage issues (e.g., water pooling in lane), and heavy truck traffic, all of which make it uncomfortable for most bicyclists. Public input from bicyclists also noted that the Old Colony/Dorchester Avenue intersection is uncomfortable to ride through, as existing bicycle facilities to not extend through the intersection.

Figure 35. Existing Bicycle Infrastructure

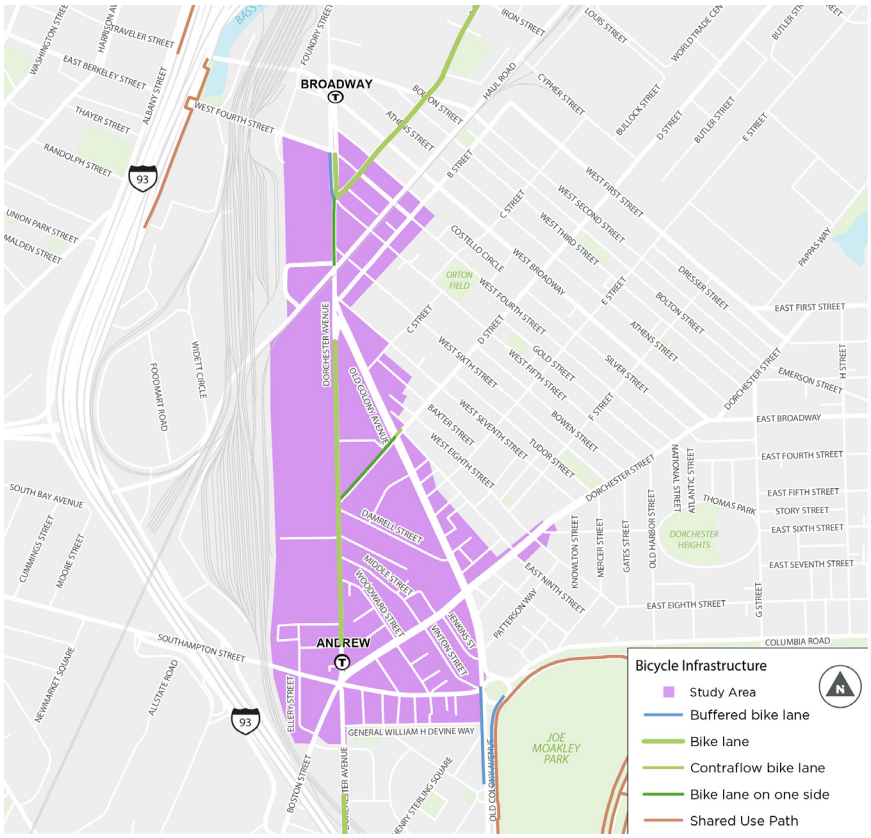


Figure 36. Existing Level of Traffic Stress

2.7 PARKING

Parking is often a highly contentious issue when new development is proposed, especially in dense neighborhoods like South Boston where off-street parking supply is limited and competition for on-street spaces is high. As such, this plan must incorporate a comprehensive parking management strategy to address the many competing concerns and will include on-street regulations, parking policies, and zoning requirements.

2.7.1 Off-Street Parking

Off-street parking in South Boston is regulated through the South Boston Parking Freeze. The Parking Freeze allows for a maximum of 30,389 off-street parking spaces in the larger South Boston neighborhood and applies primarily to off-street parking spaces supporting commercial and industrial uses. Residential parking spaces are largely excluded from the count (up to 1 space per unit).

As of Fall 2020, less than 1,600 unassigned spaces were available in the parking freeze "bank." There are also 1,856 spaces allocated to Study Area parcels currently. Should parcels be redeveloped and propose parking, these spaces return to the bank, and developers must submit an application to construct parking.

Changes to the parking freeze regulations are currently under review; however, any changes are not likely or intended to increase the total number of spaces allowed under the freeze.

2.7.2 Curbside/On-Street Parking Regulations

On-street parking regulations vary throughout the Study Area. This makes for a potentially confusing parking environment, and one ripe for misuse. There are at least nine major curbside conditions and/or regulations within the Study Area including large areas of unregulated parking along Dorchester and Old Colony avenues. Other regulations include time-limited parking, resident permit parking and restricted areas for loading.

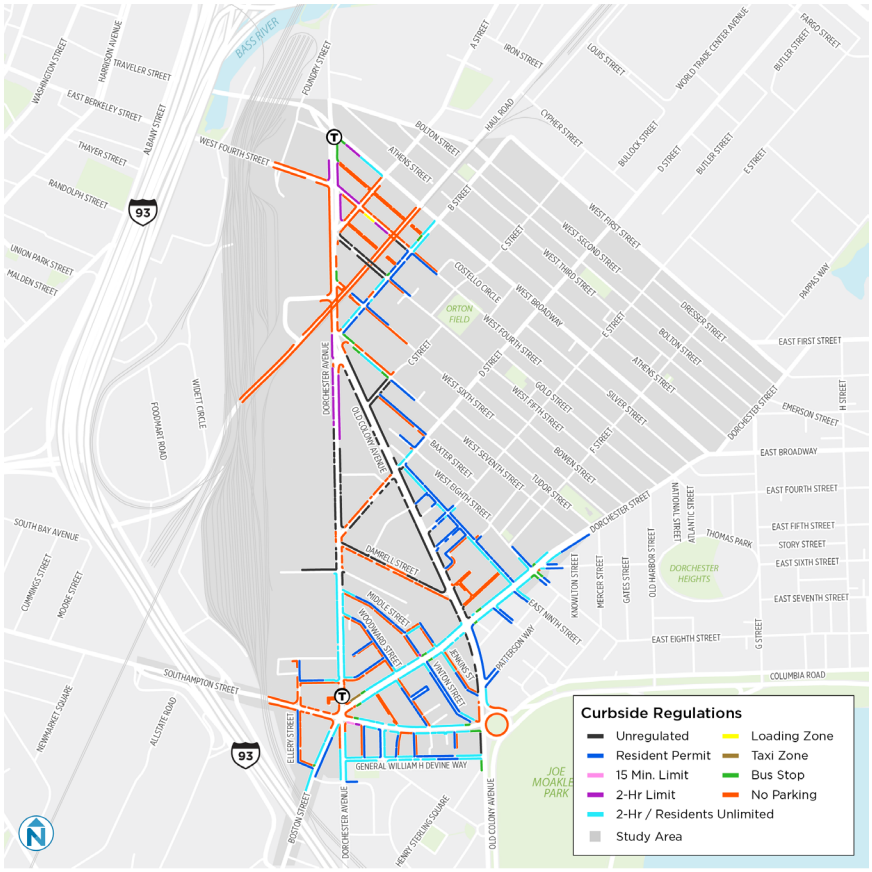


Figure 37. Curbside Regulations

2.8 RESILIENCY

The Study Area is vulnerable to both flooding and heat island effect, which are both exacerbated by the current lack of significant tree cover and prevalence of impervious surfaces. New public ways and public realm design need to both mitigate these climate change impacts, and also adapt to expected future conditions.

2.8.2 Current and Future Flood Plain

While the Study Area is minimally impacted by the current flood plain, the projected 2070 flood extent covers the majority of the Study Area (based on a 1% annual flood risk with 40 inches of sea level rise).

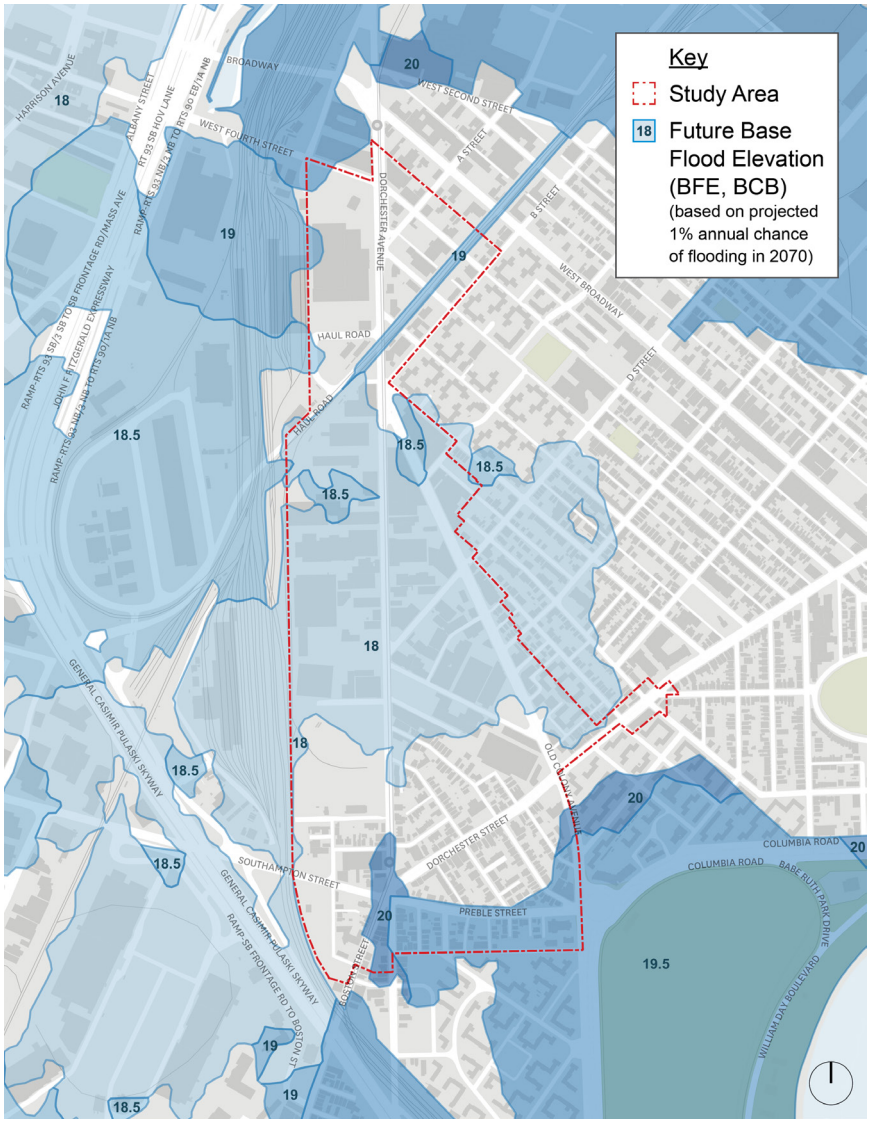


Figure 38. Future Projected Base Flood Elevation

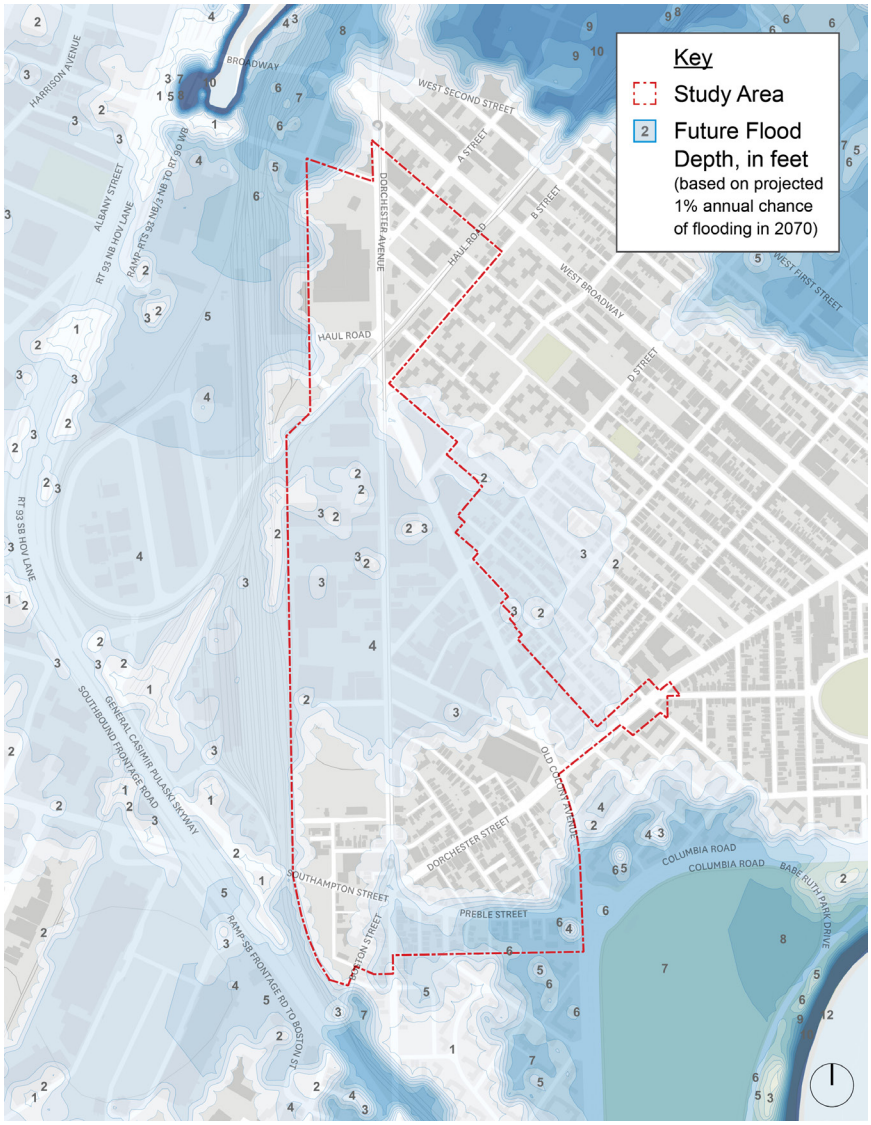
Source: Boston Harbor Flood Risk Model.

Around the center of the Study Area the Base Flood Elevation (BFE) is 18 feet (with a few concentrated areas of 18.5 feet) and the Future Flood Depth is generally 2 to 4 feet. However, around the southern portion of the site, from the intersection of Southampton and Dorchester Streets towards Moakley Park, the the BFE increases to 19.5 and 20 feet, and the flood depth increases first to 5 feet and then to 6 feet.

Given that a significant portion of the Study Area is projected to flood by up to 4 feet, with a few areas projected to have even deeper floodwaters, it is critical for new public ways and public realm designs to be responsive to the Sea Level Rise Design Flood Elevations developed by the City of Boston.

Figure 39. Future Projected Flood Depths

Source: 2013-2014 Sandy LIDAR tiles from MassGIS and Boston Harbor Flood Risk Model.



2.8.1 Stormwater Flooding

Portions of the Study Area are also vulnerable to stormwater flooding, conditions that will worsen with predicted extreme precipitation events. The map below highlights approximate stormwater flooding extents from a 10-year, 24-hour rainfall event under various climate conditions, combining future sea level rise and extreme precipitation (5.6-inch, 5.8-inch, and 6-inch rainfall). The large coverage of impervious surfaces in the study area contributes to greater flooding events.

Due to its low elevation (as evidenced in the previous floodplain maps), existing flooding events in the middle of the study area, at intersection of Dorchester Avenue, D Street, and Damrell Street, are forecasted to worsen in the future. Additional stormwater flooding occurs along the sunken South Boston Bypass Road and several surrounding streets.

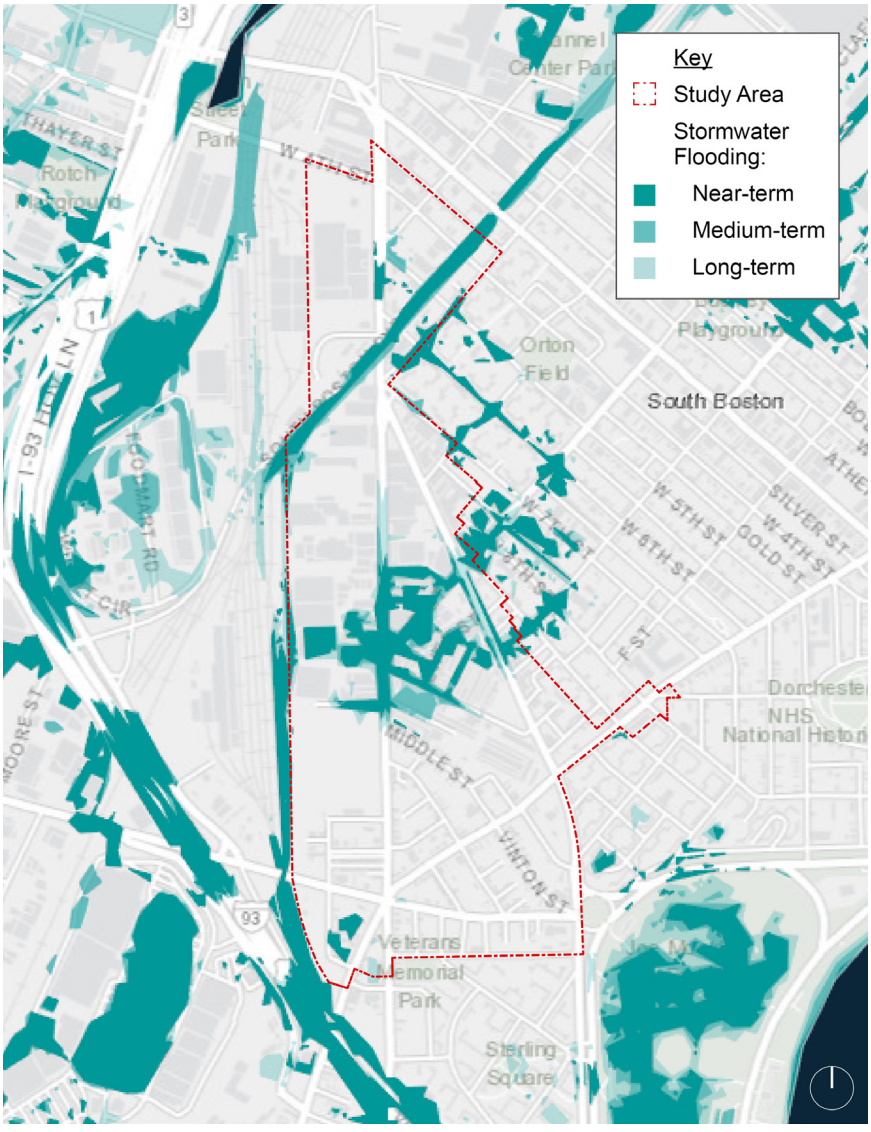


Figure 40. Stormwater Flooding

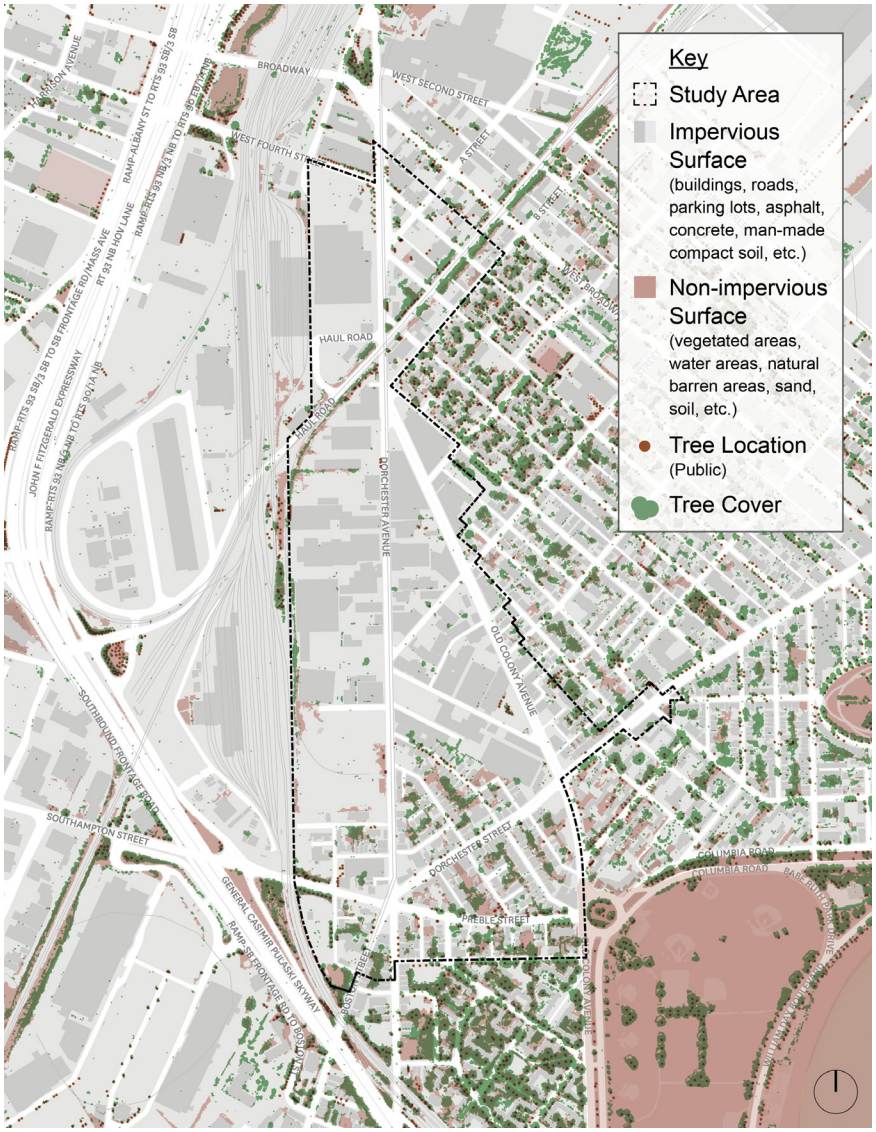
Source: Boston Water and Sewer Commission Wastewater Facilities Study.

2.8.3 Impervious Surface, Tree Cover, and Urban Heat Island Effect

As most of the Study Area west of Old Colony Avenue is currently industrial in use, impervious surfaces cover the vast majority of this area with little room for vegetation and tree cover. These impervious surface types include buildings, roads, parking lots, concrete surfaces, man-made compacted soils, and other surfaces. In part due to the impervious surfaces and poor tree cover, a majority of the Study Area experiences high to very high daytime land surface temperatures. These elevated temperatures trigger spikes in summer energy use to cool urban buildings enough to keep people safe and comfortable. This can add an extra 5-10% in energy use during peak energy use periods, which stresses the power delivery system and increases greenhouse gas emissions.

Figure 41. Combined Tree Cover and Impervious Surfaces

Source: MassGIS (Bureau of Geographic Information), gis.cityofboston.gov (2011) and Google Earth Aerial Imagery (2019).



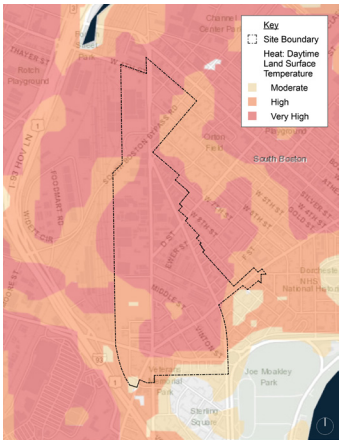


Figure 42. Heat Island Effect

This urban heat island hotspots map represents areas of the city with elevated land surface temperature (LST, as measured from July to August, 2015) averaging at least 1.25 degrees above the mean daily temperature using satellite imagery during the daytime and nighttime.

Source: Metropolitan Area Planning Council and the Trust for Public Land, using Landsat Land Surface Temperature derived with the LandSat TRS tools toolbox.

3 FUTURE CONDITIONS

3.1 METHODOLOGY

The future conditions analysis identifies transportation improvements that will be needed to support the demand anticipated from the expected development in the Study Area in the future build year of 2040.

The methodology for the future conditions analysis was comprised of addressing the four questions below:

1. **How many trips are generated from future land uses?** The mix of land uses determines the total number of trips likely to result from new development. Essentially, each land use type produces different numbers and types of daily trips based on the land use's purpose and function (e.g., live, work and play trips).
2. **What mode are people using to take these trips?** People have different options for different types of trips depending on the types (or modes) of travel available, the distance of the trip and the time of day. The next step of the analysis organized the percentage of the total daily trips made by car, by transit, by bicycle, or on foot.
3. **Where are the trips beginning and ending (Origin and Destination)?** Every trip has a beginning and an end. The analysis next estimated how many trips begin north, south, east, west or within the Study Area and end in the Study Area; and conversely the percentage of trips beginning in the Study Area and ending north, south, east, west or within the Study Area.
4. **How are these trips assigned to the network?** Once the first three questions were answered, the analysis assigned trips to specific roadways and transit routes.

The results from the analysis above then highlight where demand outstrips capacity on the study area's transportation network, and lay the foundation for the recommendations.

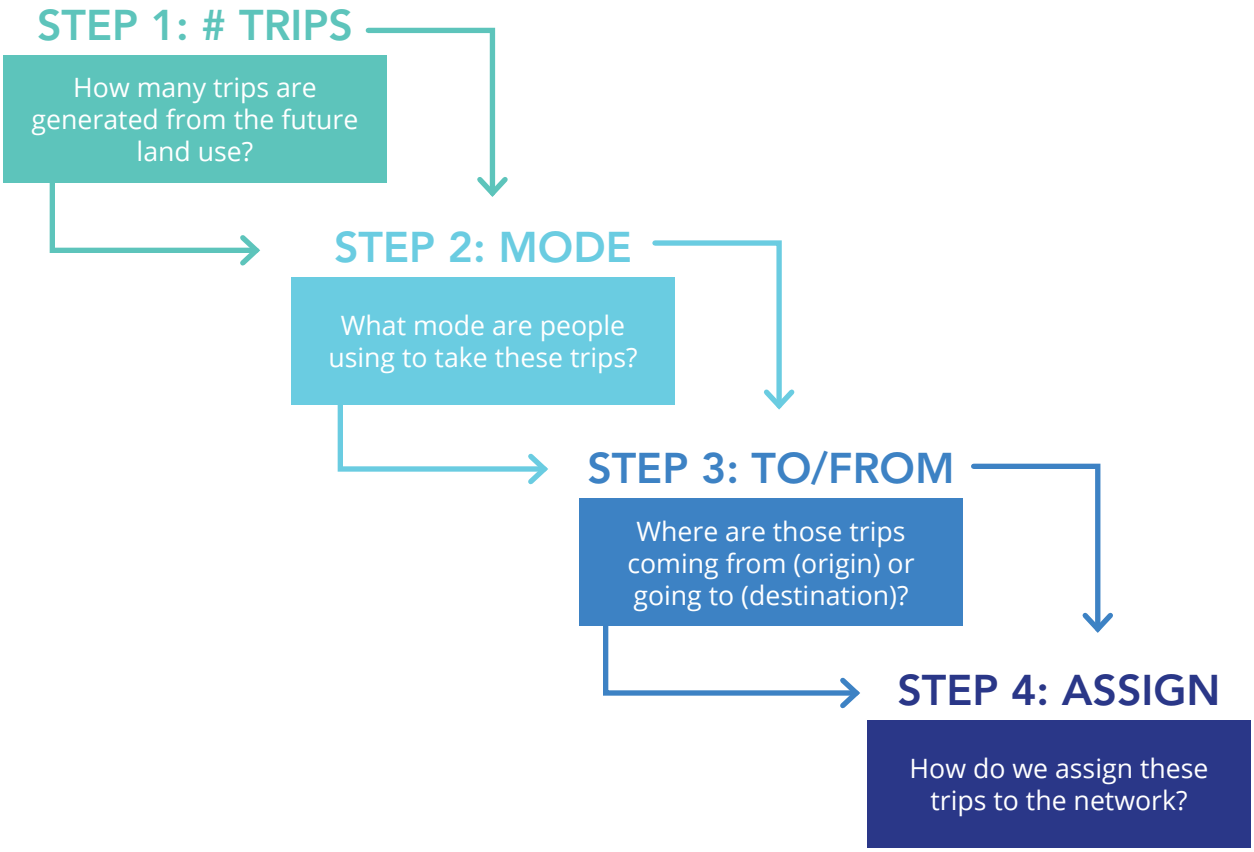


Figure 43. Analysis Methods: 4 Steps

3.2 FUTURE LAND USE AND NEW TRIPS

Future conditions are influenced by future land use. The effort therefore began with a more detailed buildout projection than what was completed for the 2017 PLAN, and then estimated the trips that will be generated.

3.2.1 Future Land Uses – Full Buildout

Based on the land uses identified in the 2017 PLAN and the proposed future street network, a maximum buildout for each block was calculated based on parcel/block land area and the recommended building height maximums, massings and setbacks.

Land uses were assigned to each parcel based on the 2017 PLAN with adjustments based on current market interests including higher levels of commercial uses including lab buildings, which have already been proposed by development teams and are currently under consideration by the City and community.

Based on the future build analysis, the Study Area is projected to accommodate up to 12.4 MSF of development by 2040. Half of the build out is anticipated to be residential, and the remaining half is commercial uses split between office, 21st Century Industry/Lab, and retail.

Figure 44. 2040 Future Build

TYPES OF USES	PROPOSED NEW GROSS SQ. FT. (GSF)	PERCENT	EXISTING GSF	NET INCREASE GSF
Residential	5,807,927	47%	354,200	5,453,727
Office	2,458,997	20%	252,314	2,206,683
21st Century Industry / Lab	3,634,378	29%	1,029,265	2,605,113
Retail	529,376	4%	49,790	479,586
Total	12,430,678	100%	1,685,569	10,745,109

Use Zone 1A & 1B:
Mixed Use + 21st Century Industrial

Use Zone 2:
Residential + 1st Floor Retail

Use Zone 3:
Residential + select 1st Floor Retail

Use Zone 4:
Residential, existing H1-50

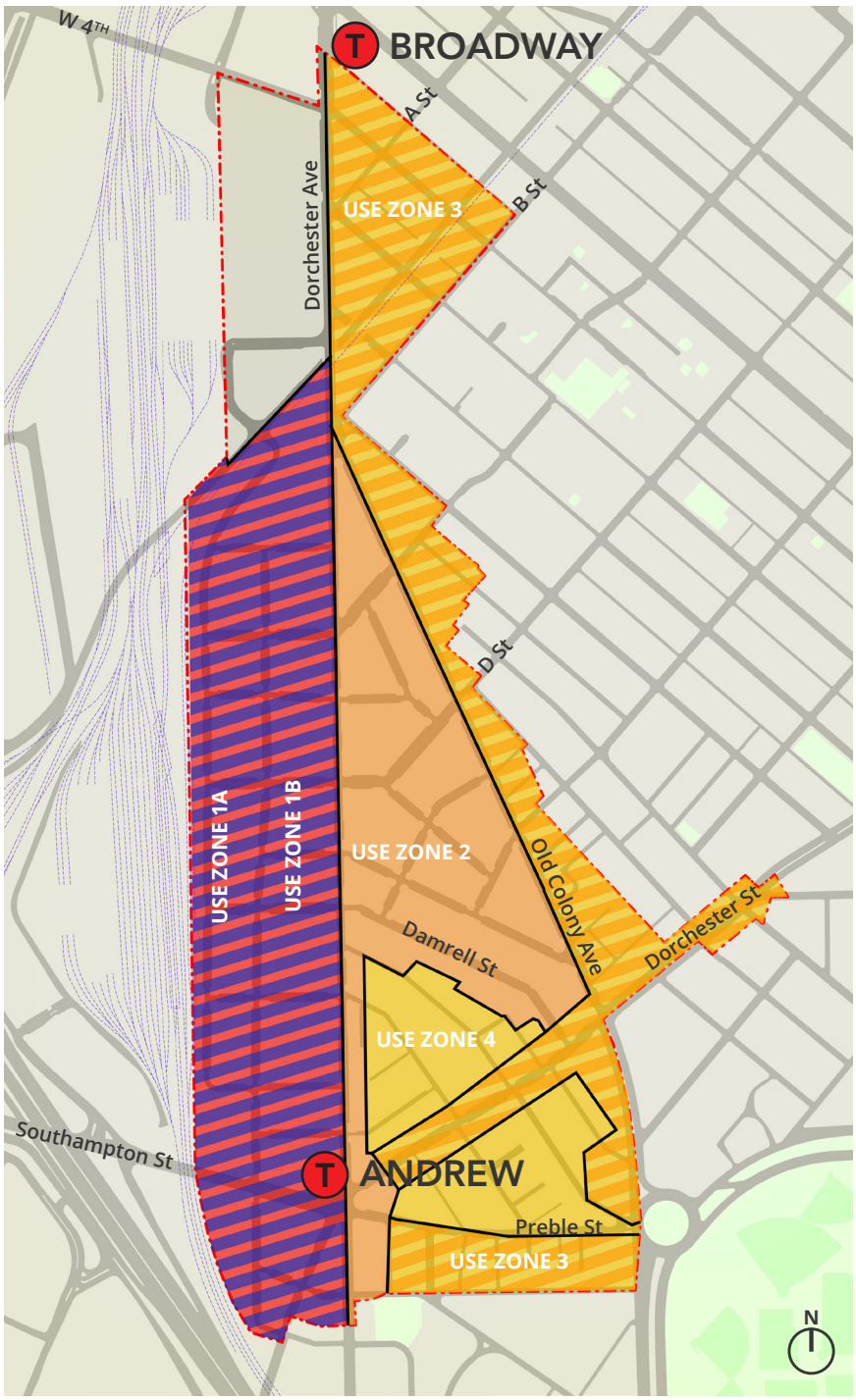


Figure 45. 2017 PLAN Land Use Vision

This land use zone diagram from the 2017 PLAN delineates zones in a manner that is responsive to the Study Area context, and encourages uses that are reflective of the community vision for a more compact, sustainable 21st century mixed-use district with a diverse mix of uses that facilitates a truly integrated live-work-play lifestyle.

3.2.2 Trips Generated from Full Buildout

Based on the 2040 full build out condition, total trips were estimated using the Institute of Traffic Engineers (ITE) Trip Generation Manual (ITE Manual), which estimates the total number of trips generated for different land uses by time of day including the morning and evening peak. For long-range planning efforts, where specific tenants (i.e. land uses) are not yet known, general categories that capture a range of uses within a land use category are used to match the proposed development. For this project, this included retail, general office, high rise residential and research and development (R&D).

With the added resources and land use diversity expected in the Study Area in the future, the better residents and employees will be served – living, working, eating lunch, doing grocery shopping – within the study area. To reflect this, an internal capture rate (defined as trips remaining within the study area) was applied using a Transportation Research Board (TRB) methodology, which converts vehicle trips to person-trips and determines internal capture rates. The result is the total number of person trips likely to result from the mix of land uses.

As shown in Figure 46, the future land use build out is estimated to generate a total of 9,200 person-trips during the morning peak hour, and 13,000 person-trips in the evening peak hour.

Figure 46. Total Future Trips (rounded to the nearest hundred trips)

	AM	PM
ITE Vehicle Trips (future land uses)	6,800	8,800
ITE Person-Trips	9,200	13,000
Internal Capture %	23%	29%
Internal Capture Person-Trips	2,100	3,800
Total Trips to/from Outside Study Area	7,100	9,200

In addition to the above, the study used an additional background traffic growth rate of 0.1% for each year out to 2040 which was added to reflect development and through traffic growth occurring outside the study area.

3.3 MODE SHARE

The next step in the future conditions analysis was to determine mode share – what percentage of trips would be made by driving, transit, walking, and bicycling.

Fundamentally, the mode share within the Study Area is expected to change from what exists currently, due to the changes in land use. The percentage of people traveling by car is expected to decrease, while those using transit or active transportation (e.g., walking and biking), is expected to increase. The following two sources were used to determine the mode share for future conditions:

1. **GoBoston 2030** – The City's transportation vision and plan put forth a mode share, including a higher percentage (than currently made) of transit, bike and pedestrian trips, and fewer auto trips. While aspirational, this shift is also needed to support future growth in the city and the thousands of anticipated trips that will result.
2. **Peer Neighborhoods** – Mode shares for Kendall Square and the Fenway/LMA were assessed using available CTPP (Census Transportation Planning Products) datasets. These areas were identified based on their rapid growth over the last decade, diverse mix of uses (lab, office, residential, retail), and access to MBTA rail and bus service.

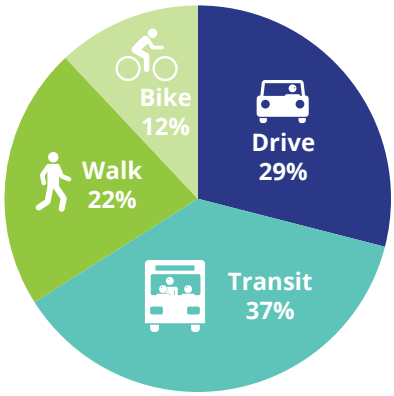


Figure 47. Future Mode Split

The mode share analysis considered Go Boston 2030 mode splits, peer neighborhoods with similar land uses, the Study Area location, proposed street grid, parking constraints, planned Red Line improvements, and future bicycle connections. The resultant mode split is shown as Figure 47 and assumes that:

- 37% of trips are taken by transit
- 29% of trips are taken by auto
- 22% of trips are taken by walking
- 12% of trips are bicycling

The mode split was further refined to reflect travel behavior characteristics of trips that either begin in the Study Area or end in the study area, and by time of day (namely the AM and PM peak).

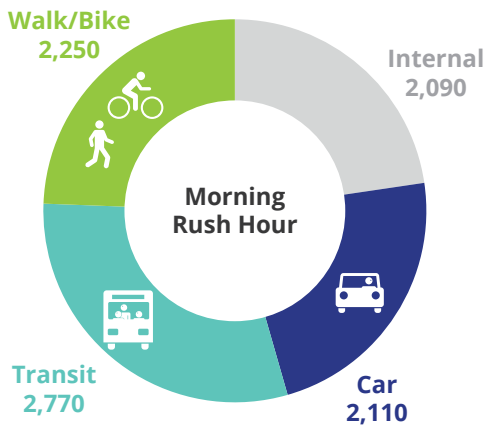
The mode splits were applied to the total person trips to calculate the number that would be auto, transit, bicycle, or walking trips. Finally, for auto trips, were adjusted to accommodate for carpooling.

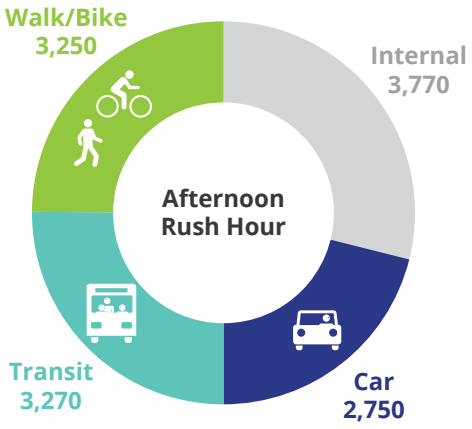
Figure 48. Total Forecasted Future Trips by Mode (rounded to the nearest 100)

	AM	PM
Total Vehicle Trips (excluding internal capture)	7,100	9,300
Auto Person-Trips	2,100	2,800
New Auto Trips*	1,600	2,000
Transit Person-Trips	2,800	3,300
Internal Capture Person-Trips	2,200	3,200

Growth rates were applied to all trips, regardless of mode, and then were assigned to a specific mode based on the mode split shown in Figure 47.

**Based on average vehicle occupancy of 1.31 for AM peak and 1.41 for PM peak.*





3.4 TRANSIT DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is understanding the number of trips that occur between different zones. Once transit trips are distributed by transit zone and distance, those trips are assigned to specific transit routes depending on access, direction and time of day. It is noted that existing transit routes and service is assumed for future conditions analysis with the following additions:

- Red Line Transformation
- Orange Line Transformation
- Green Line Transformation
- Green Line Extension to College Avenue
- Electrification of the Providence commuter rail line
- Electrification of the Fairmount commuter rail line
- Silver Line Chinatown/Downtown Bus Lanes (extension of bus lane on Washington Street to Downtown Crossing)
- Downtown Bus Corridor (North Station to South Station/Seaport)
- Massachusetts Avenue Rapid Bus Corridor (to JFK/UMass)
- Warren Avenue Bus Priority
- Summer Street Bus Priority
- Construction of West Station

3.4.1 Transit Distribution

The distribution of transit trips within the network consists of several steps, described below.

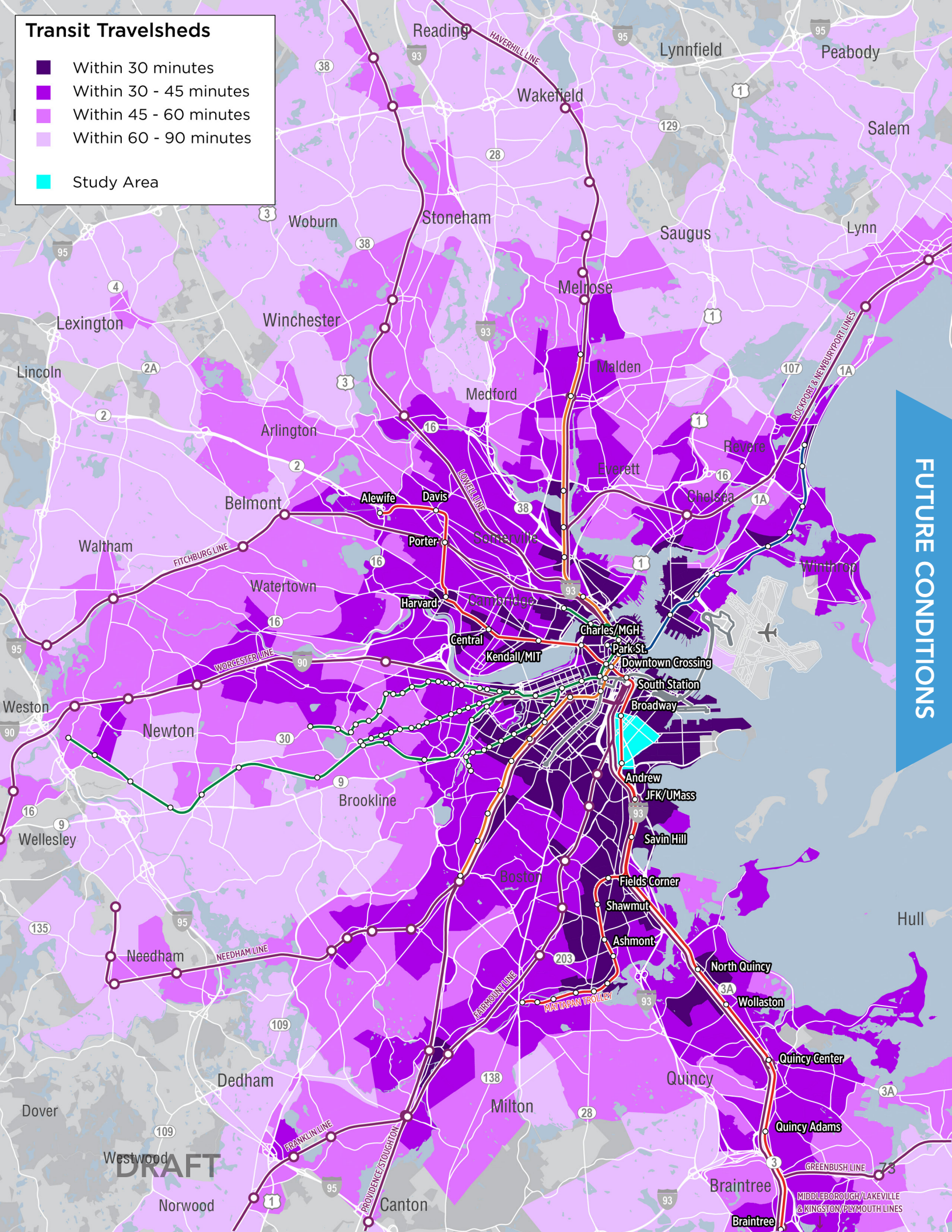
1. **Assess transit travel patterns of employees working in job types likely to be located in the Study Area** based on future land uses (i.e. % of likely commuters traveling between 1-30 minutes, % traveling between 31-44 minutes, etc.). This was done by determining the regional proportions of commute trips by NAICS code[2] forecasted within the study area.
2. **Assess transit patterns of employees working in peer areas** similar to the mode share analysis the transit trip distribution compared distribution of trips in this Study Area to other areas with similar land use patterns (e.g., LMA/Fenway, Kendall) in relation to the duration of transit trip.
3. **Divide region around Study Area into transit zones** This was done based on City of Boston zones, and within each zone categorized by transit travel time and weight based current travel patterns.
4. **Assign the total number of transit trips** based on the above to each zone and then to the transit routes currently serving these zones.

Figure 49 highlights where trips in the Study Area are assumed to be coming from and going to.

Figure 49. Transit Travelsheds (Commuter Times)

- 31% of transit trips are anticipated to be within a 30-minute duration.
- 25% of transit trips are anticipated to be within a 30-45 minute duration.
- 16% of transit trips are anticipated to be within a 45-60 minute duration.
- 30% of transit trips are anticipated to be within a 60-90 minute duration.
- 8% of transit trips are anticipated to be longer than 90 minutes in duration.

2 A NAICS code is a category or classification within the North American Industry Classification System (NAICS), which is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.


Transit Travelsheds
Within 30 minutes
Within 30 - 45 minutes
Within 45 - 60 minutes
Within 60 - 90 minutes
Study Area
FUTURE CONDITIONS
DRAFT
Reading
Lynnfield
Peabody
Wakefield
Salem
Woburn
Stoneham
Saugus
Lynn
Melrose
Lexington
Winchester
Malden
Lincoln
Medford
Arlington
Revere
Everett
Belmont
Chelsea
Alewife
Davis
Porter
Somerville
Waltham
Watertown
Harvard
Cambridge
Charles/MGH
Central
Kendall/MIT
Park St.
Downtown Crossing
South Station
Broadway
Weston
Newton
Andrew
JFK/UMass
Brookline
Savin Hill
Wellesley
Boston
Fields Corner
Shawmut
Hull
Ashmont
Needham
North Quincy
Wollaston
Quincy Center
Dedham
Quincy
Milton
Quincy Adams
Dover
Westwood
Braintree
Norwood
Canton
Braintree
HAVERHILL LINE
LOWELL LINE
FITCHBURG LINE
WORCESTER LINE
NEEDHAM LINE
FAIRMOUNT LINE
MATTAPAN TROLLEY
FRANKLIN LINE
PROVIDENCE/STOUGHTON
ROCKPORT & NEWBURYPORT LINES
GREENBUSH LINE
MIDDLEBOROUGH/LAKEVILLE & KINGSTON/PLYMOUTH LINES

3.4.2 Transit Assignment

Once transit trips are distributed by transit zone and distance, those trips are assigned to specific transit routes depending on access, direction and time of day. For this analysis, transit investments under construction or where funding is already secured, were assumed to be completed including improvements to subways.

3.4.3 Future Transit Capacity

Over 80 percent of future transit trips in the Study Area are expected to begin or end along the Red Line or existing bus routes that serve the Study Area, with 20% on other subway and bus routes. To inform future recommendations for transit improvements, these routes were assessed to determine if they have sufficient capacity to absorb these trips, specifically for the Red Line and the bus routes serving the Study Area.

Red Line

The Red Line in 2019 was operating at or above capacity along segments serving the Study Area, with the highest loads of anywhere along the route occurring between Broadway and South Station during the AM Peak. The Red Line is currently scheduled to come every 4.5 minutes during peak periods, however the average running time is every six minutes, which is a major source of crowding on the Red Line. Significant investments are underway as part of the Red Line Transformation to support current ridership as well as the projected 25% increase in ridership along the sections serving the Study Area. The Red Line Transformation will include updated signal systems, new and more train cars, and other improvements that will improve reliability and increase total capacity by 50%. This will accommodate over 21,000 riders/hour during the future peak. Based on future capacity, the Red Line will be able to absorb the additional trips estimated in both the AM and PM peaks, estimated at 14,700 riders/hour and 13,500 riders/hour respectively, even in cases of delay.

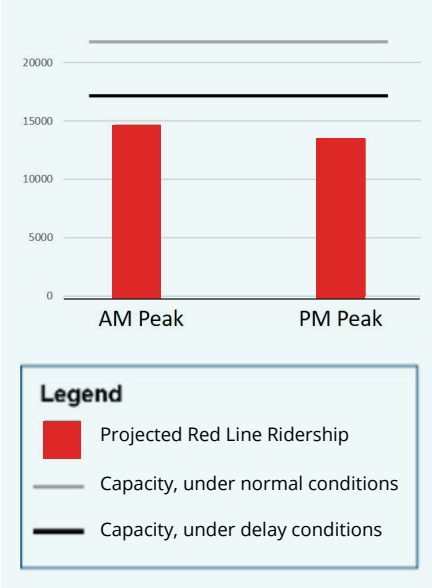


Figure 50. Red Line Demand

Bus Transit

Based on the analysis, and similar to the existing conditions findings, future transit demand on the bus network is greater than capacity in both the AM and PM peak direction (inbound and outbound, respectively). Although some routes have available capacity, there are significant crowding concerns on Route 9, 11 (particularly in the PM peak) and minor crowding on 16 and 47 MBTA bus routes. As such, recommendations should focus on improving bus connections to meet future demand.

Figure 52. Future Bus Ridership and Capacity - Morning Inbound

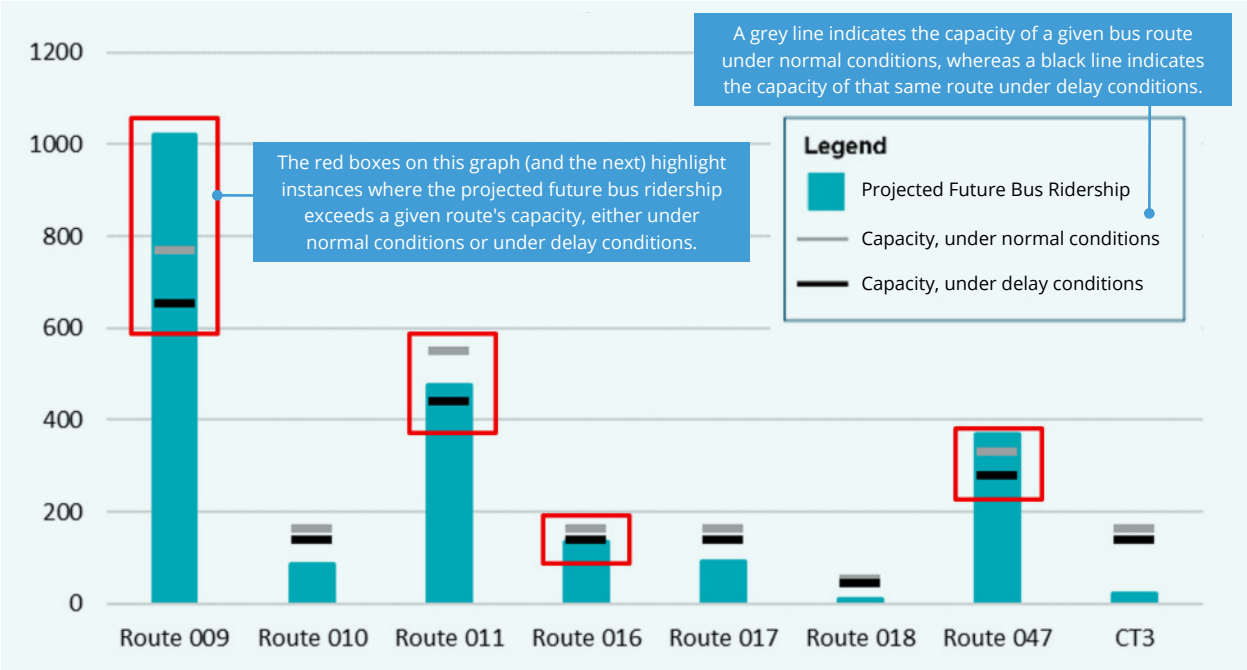
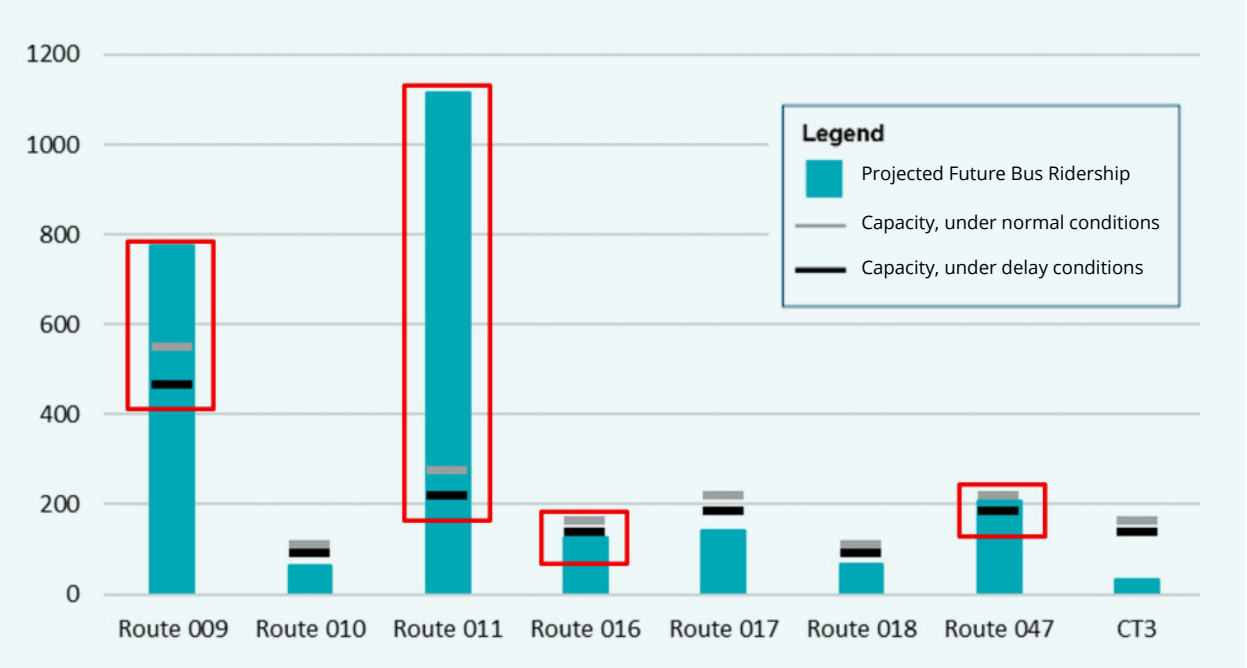


Figure 51. Future Bus Ridership and Capacity - Afternoon Outbound



A few notes on method for and interpretation of these graphs:

(1) The future growth in bus ridership is based on ridership projections for the Dorchester Avenue development and the general population and job increase in the Boston area through 2040.
(2) The capacity under "normal conditions" indicates the ridership capacity of a given bus route when it is running on schedule. However, due to congestion, dropped trips, and other factors, MBTA bus routes sometimes run with delays, which decreases capacity. The capacity under "delay conditions" was calculated using a 20% delay based on an average amount of delay for these buses (not each one in particular) based on Better Bus. For instance, while Route 11 and 16 in the morning, and Route 16 and Route 47 in the afternoon would have enough capacity while running on time, under delay conditions they cannot absorb the additional ridership.

3.5 TRAFFIC ANALYSIS

3.5.1 Traffic Distribution

To project future traffic, the future traffic conditions analysis reviewed trip distribution from BTD, Traffic Impact Studies conducted for recent projects in the Seaport and South Boston, as well as from the South Boston Seaport Strategic Transit Plan (See link: bit.ly/SeaportTransit). Based on these, vehicle trips were assigned to the network consistently with other recently completed and parallel efforts.

3.5.2 Traffic Assignment

Several assumptions were included in the future traffic assignment to ensure that the roadway network reflected the future condition. The traffic model assumes that the 2017 PLAN street network is in place and that South Boston Bypass Road is open to all traffic and connected to the stret grid.

Connection to the South Boston Bypass Road

An important feature of the future street network is a connection between the Service Road, along the west side of the study area, and the South Boston Bypass Road (SBBR). While the SBBR was initially constructed to serve commercial freight traffic as part of the Central Artery project, it has been chronically underutilized, in an area where the railroad limits the street network connectivity. The SBBR corridor has been open to general traffic since 2018 as part of a pilot project led by MassDOT. This pilot project has recently been extended indefinitely, as it was concluded that the use of the SBBR by general traffic was beneficial and not resulting in negative impacts for commercial traffic.[3] The SBBR provides additional capacity and circulation options between South Boston, the Seaport and I-93.

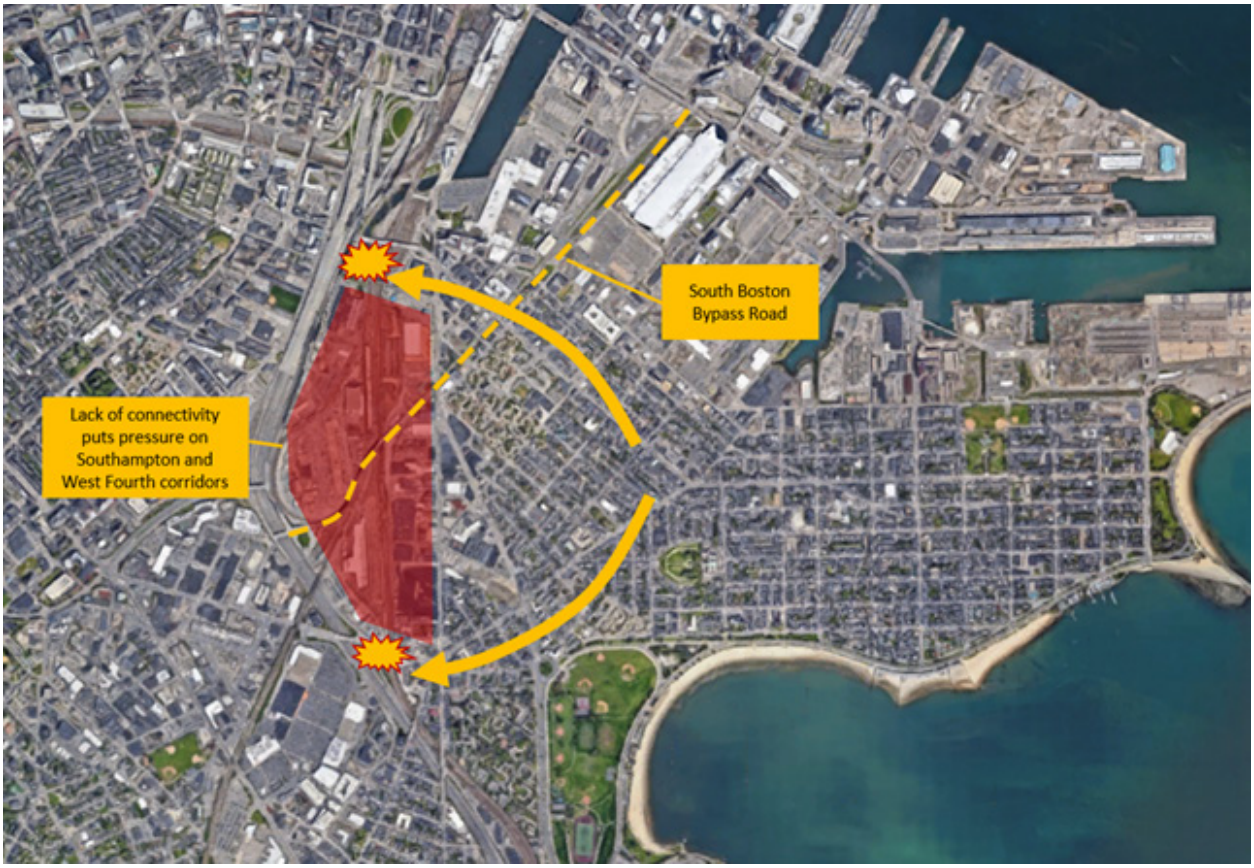
The traffic analysis conducted for the Plan used data collected during the SBBR pilot, and through discussions between BPDA and BTD assumed that the corridor remains open to general purpose traffic in the future condition. The connection between the study area and the SBBR was a priority in the original PLAN process, as it is an underutilized resource in a part of the City that has limited connectivity to I-93.

3 source: https://www.mass.gov/service-details/about-the-bypass-road-and-logan-route-1a-express-lane-pilot-project, n.d.

Figure 53. Auto Traffic Trip Distribution

	AM		PM	
	ENTER	EXIT	ENTER	EXIT
Boston Street	6%	6%	6%	6%
South Boston Bypass Road	10%	8%	10%	11%
Old Colony Ave	14%	15%	15%	14%
D&E Streets	4%	3%	5%	6%
Dorchester Ave	3%	4%	4%	4%
Dorchester Street	4%	3%	4%	5%
I-93 North	31%	39%	35%	28%
I-93 South	5%	7%	6%	5%
Southampton	13%	10%	10%	11%
Traveler	4%	3%	3%	3%
West Fourth	5%	3%	3%	5%

Figure 54. Circulation and Connectivity Limitations



2017 PLAN street network

The traffic distribution and assignment model assumes that the 2017 PLAN street network is in place, including:

- Proposed grid west of Dorchester Avenue is built (Ellery Street, Edge Road, and cross streets)
- Ellery Street two-way from Boston Street through the Study Area
- Realigned D Street to simplify access and improve block pattern

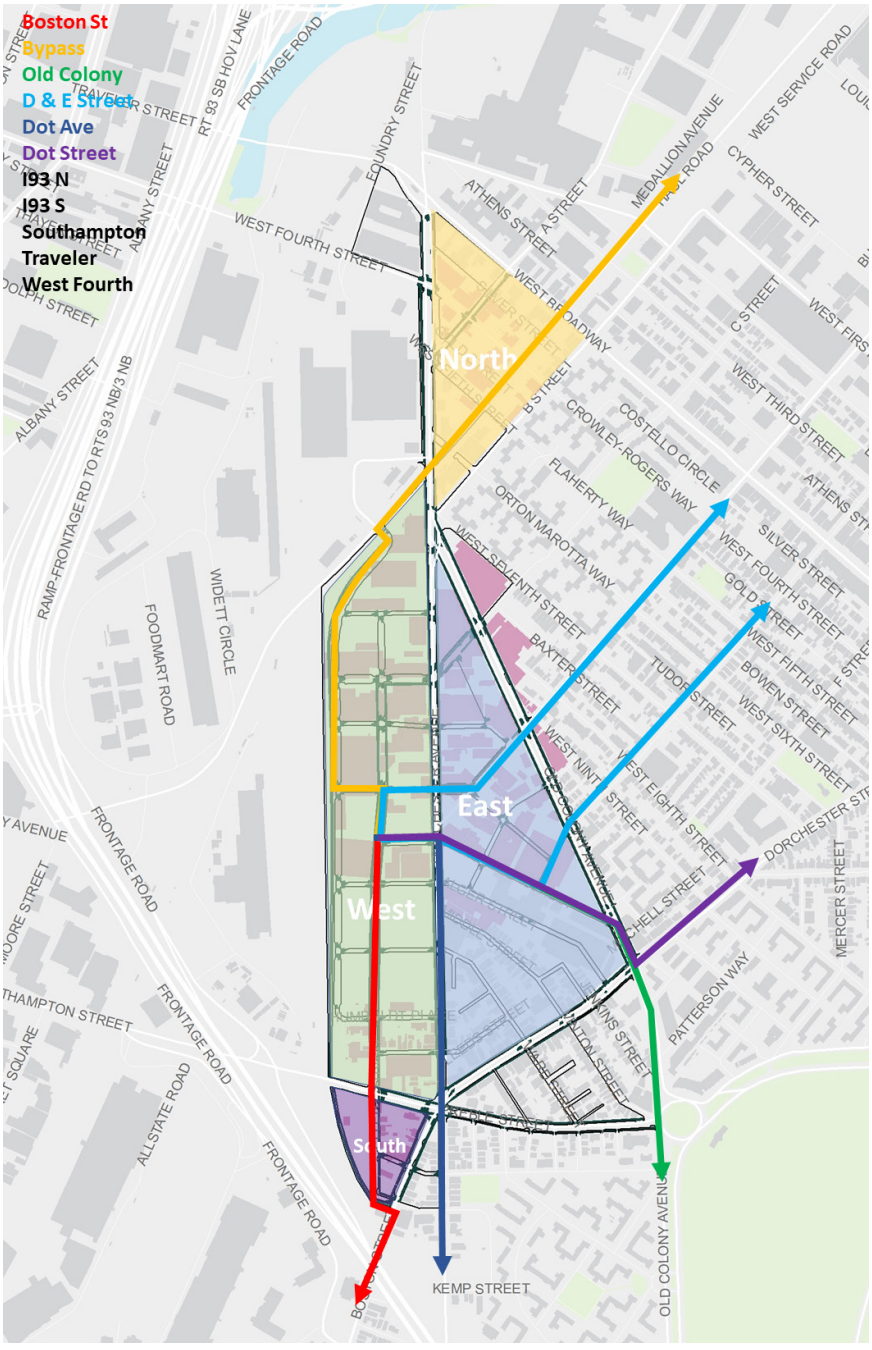
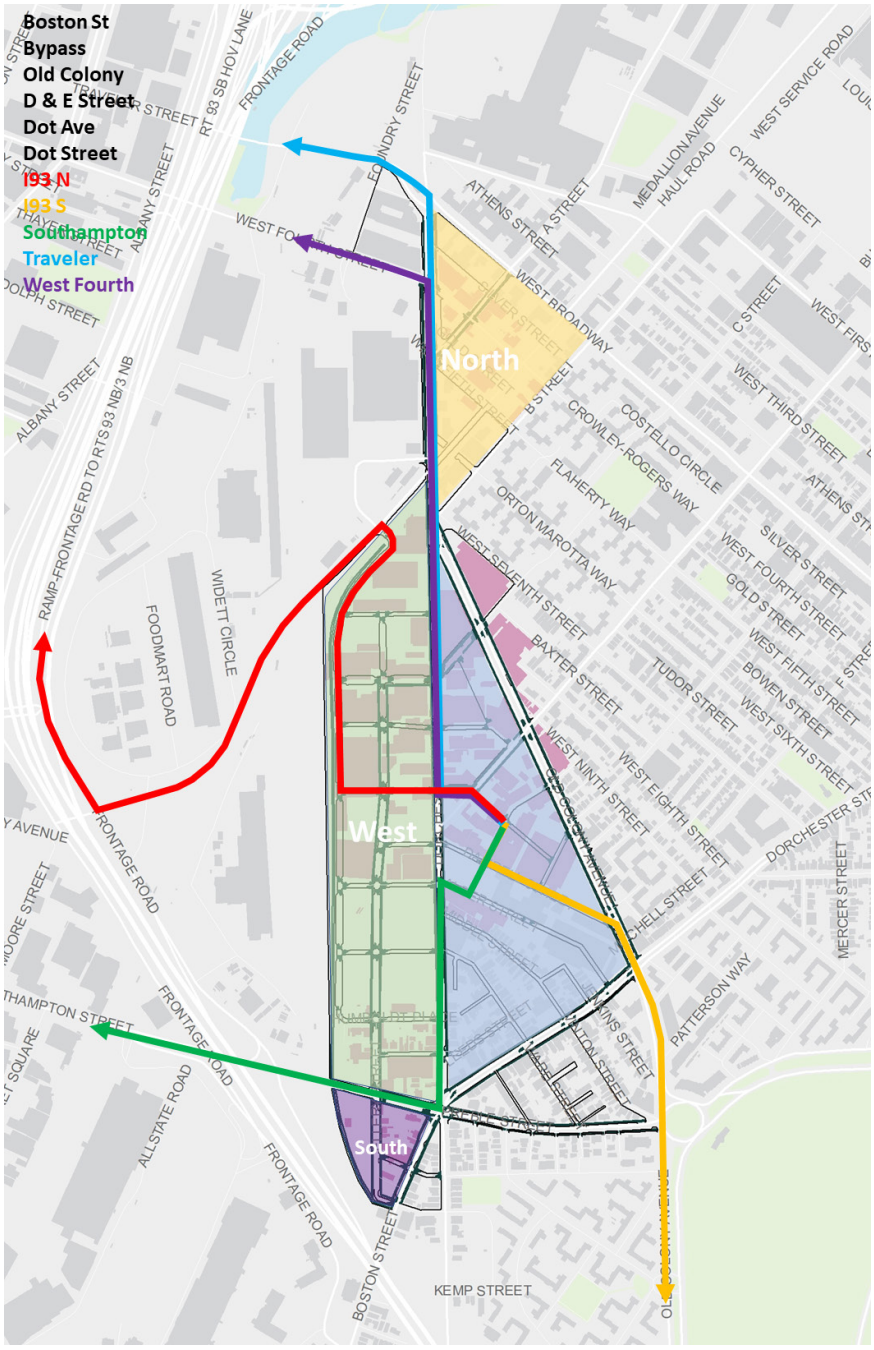


Figure 55. Traffic Distribution Example 1

As shown in Figure 55 and Figure 56, the future street network provides many access routes in and out of the Study Area that allow traffic to be distributed more effectively. This is important in understanding the expected future volume of traffic on roads. For example, the addition of Ellery Street allows much of the new traffic generated by the future land uses to access I-93 without using Dorchester Avenue, alleviating pressure on Andrew Square by using the new South Boston Bypass connection.

Figure 56. Traffic Distribution Example 2



3.5.3 Future Vehicular Operations

Future vehicular operations were evaluated in terms of LOS and capacity utilization (V/C). Together these measures provide an indication of how the future streets and intersections will operate for vehicles.

Based on the SYNCHRO traffic modeling with the 2017 PLAN roadway network, the future conditions can largely accommodate future demand by allowing many vehicle trips to avoid the most congested intersections currently in the study area. As shown in Figure 57, all but four intersections in the future condition operation effectively.

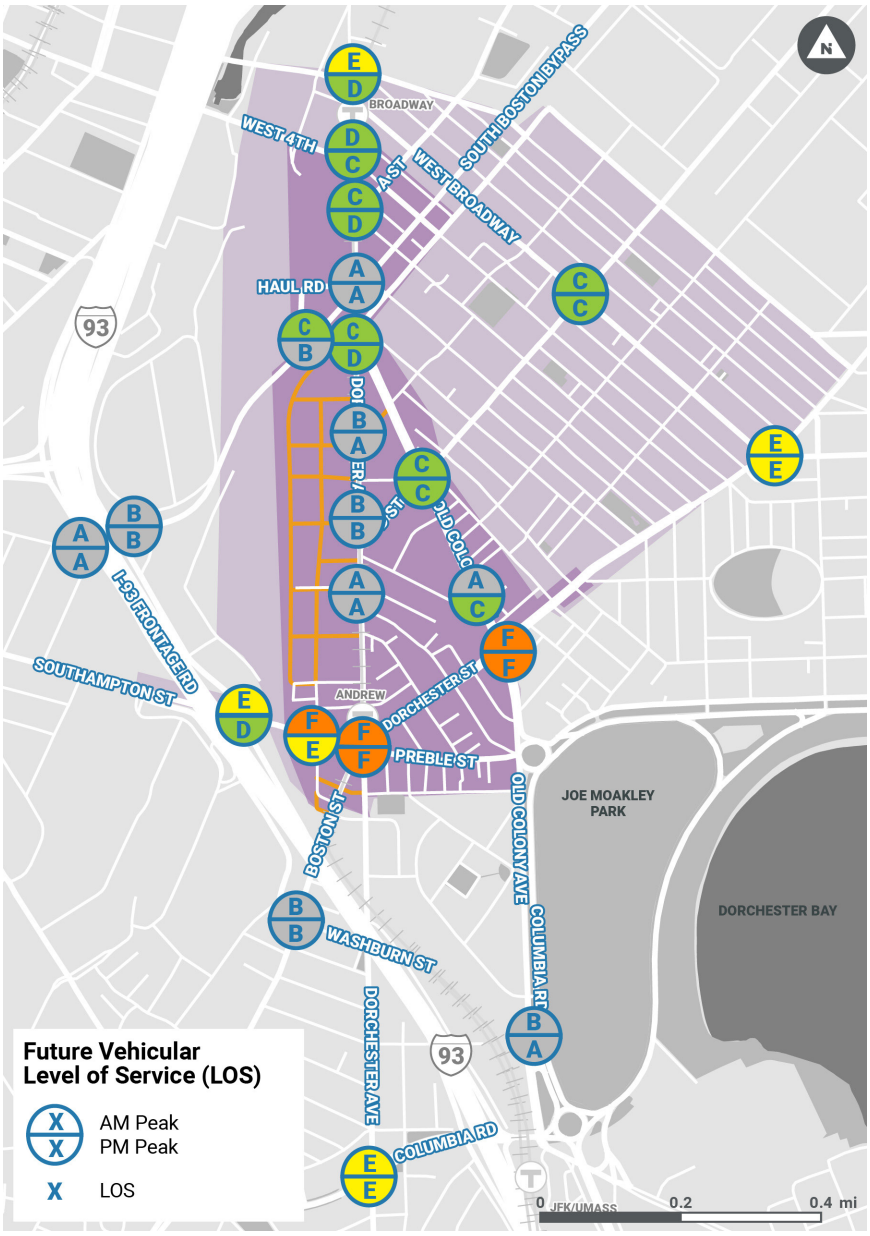


Figure 57. Future Level of Service (LOS)

As in the Existing Conditions analysis, intersections with the most critical congestion issues continue to exceed capacity in the future condition. These include:

- Andrew Square
- Old Colony Avenue and Dorchester Street
- Southampton and I-93 Ramp

Importance of the 2017 PLAN Street Network

The new street grid recommended in the 2017 PLAN is critical to the long-term success and functioning of the larger roadway network based on trips generated from anticipated new development. For example, as shown in Figure 58, based on the traffic modeling performed for this study, without the network in place, congestion in Andrew Square would be significantly worse. It is imperative that the future network – especially Ellery Street and the Edge Road – are fully built.

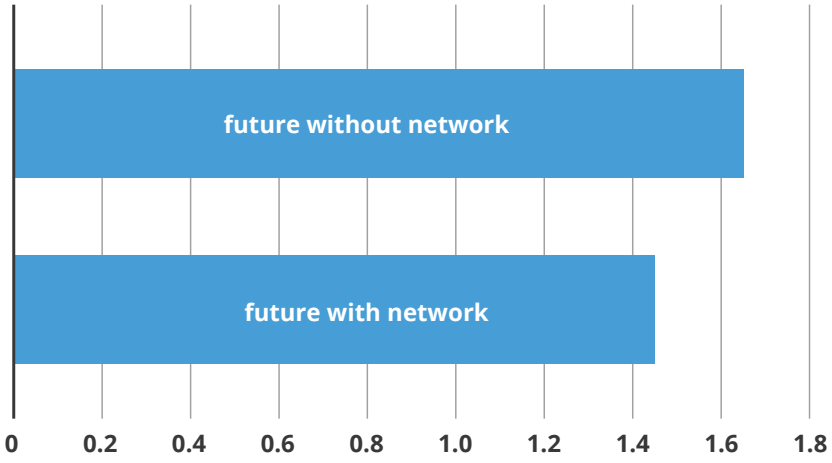


Figure 58. Volume/Capacity Ratio at Andrew Square With and Without the Future Street Grid. Lower Volume/Capacity Ratio means less congestion.

3.6 ACTIVE TRAVEL

Several thousand new bicycle and walking trips are projected in the future condition. The existing bicycle and pedestrian networks have numerous gaps, deficiencies and safety issues, which will need to be addressed in order to accommodate the anticipated future demand.

3.6.1 Walking

More than half of the trips to and from the Study Area are expected to be made on foot, considering both the walking trips and transit trips (which end as a walking trip). In order to serve this future demand and address safety concerns, a safe and comfortable pedestrian network is needed. The major pedestrian network gaps that are identified in Chapter 2 need to be addressed. Without design improvements, the potential conflicts will continue to pose a hazard to an increasing number of pedestrians. Safe crossings are needed in numerous locations, and many signalized intersections have long delays for pedestrians, leading people to cross before they get a walk signal. More effective traffic signal timing and phasing changes are needed for the growing number of pedestrians, such as shorter signal cycle lengths and leading pedestrian intervals.

The future street network should be designed and constructed with the high number of pedestrians in mind. The PLAN South Boston: Dorchester Avenue street grid is intended to provide the pedestrian backbone, with walkable block sizes that allow easy and direct access for pedestrians, and frequent crossings of Dorchester Avenue. Implementing this street grid as the development projects are designed and constructed is imperative to providing the pedestrian environment needed. The street network will also disperse vehicular traffic to alleviate potential conflicts at intersections. The street network both within and surrounding the Study Area should consist of streets with one lane of vehicular travel in each direction. This will reduce traffic speeds and crossing exposure.

3.6.2 Bicycling

Given the limited bicycle network currently in place, it is critical to create a comprehensive low stress bicycle network that is comfortable for riders with all levels of experience. In addition to new low-stress bicycle facilities, intersections that present the greatest conflicts should be redesigned to better protect bicyclists. This includes Dorchester Avenue and Old Colony Avenue, Andrew Square, and Old Colony Avenue and Dorchester Street.

New or improved facilities are needed in all directions to better connect Study Area residents and workers to residential and job concentrations within a comfortable bicycling distance. Go Boston 2030 defines a future bicycle network that will provide more low stress bike access to and from the study area.

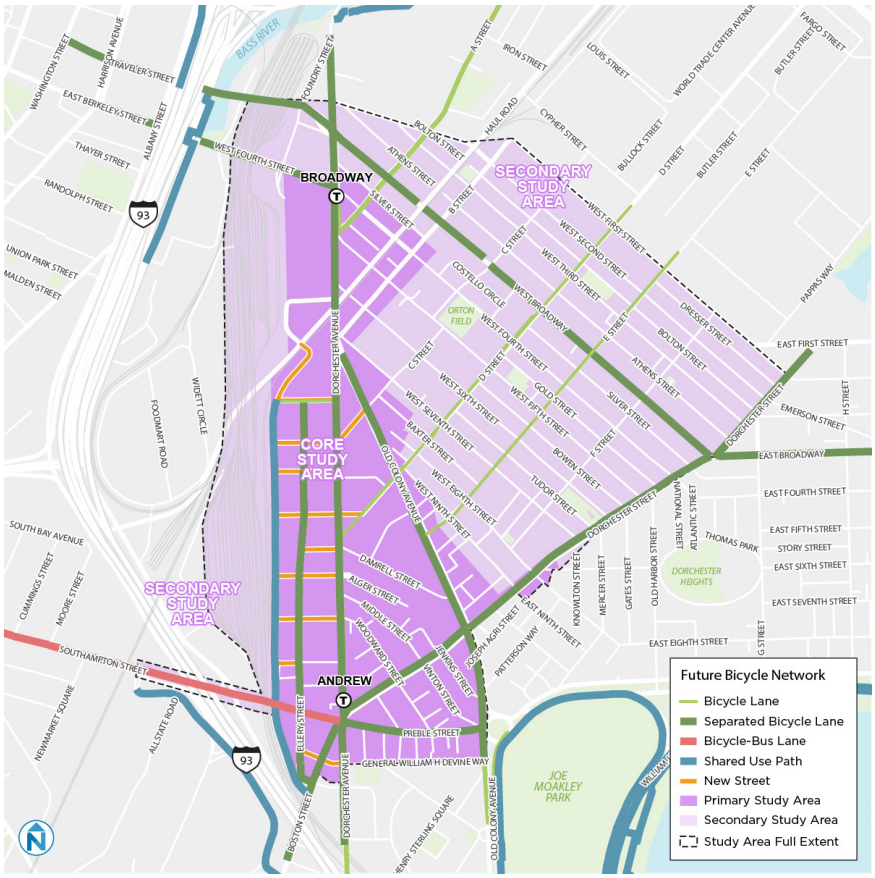


Figure 59. Future Bicycle Network

4

RECOMMENDAT

TIONS

DRAFT

The Study Area has a high level of activity and limited existing roadway space. The vision for the study is guided by Go Boston 2030 where there is an aspirational mode split of 37 percent transit, 22 percent walking, and 12 percent biking/other. As guided by the community through the planning process the emphasis is on recommendations that create a safe and friendly environment for pedestrians, bicyclists, and transit riders.

The recommendations for the Dorchester Avenue Transportation Plan feature a combination of infrastructure investments (which will require construction) and operational investments (which could just change how traffic flows or buses provide service through the area) as well as broader policies and programs that would benefit current and future residents, employees and visitors to the Study Area, and surrounding South Boston neighborhoods.

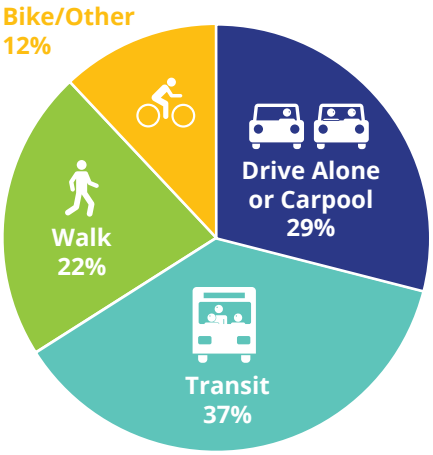


Figure 61. Go Boston 2030 Aspirational Mode Split

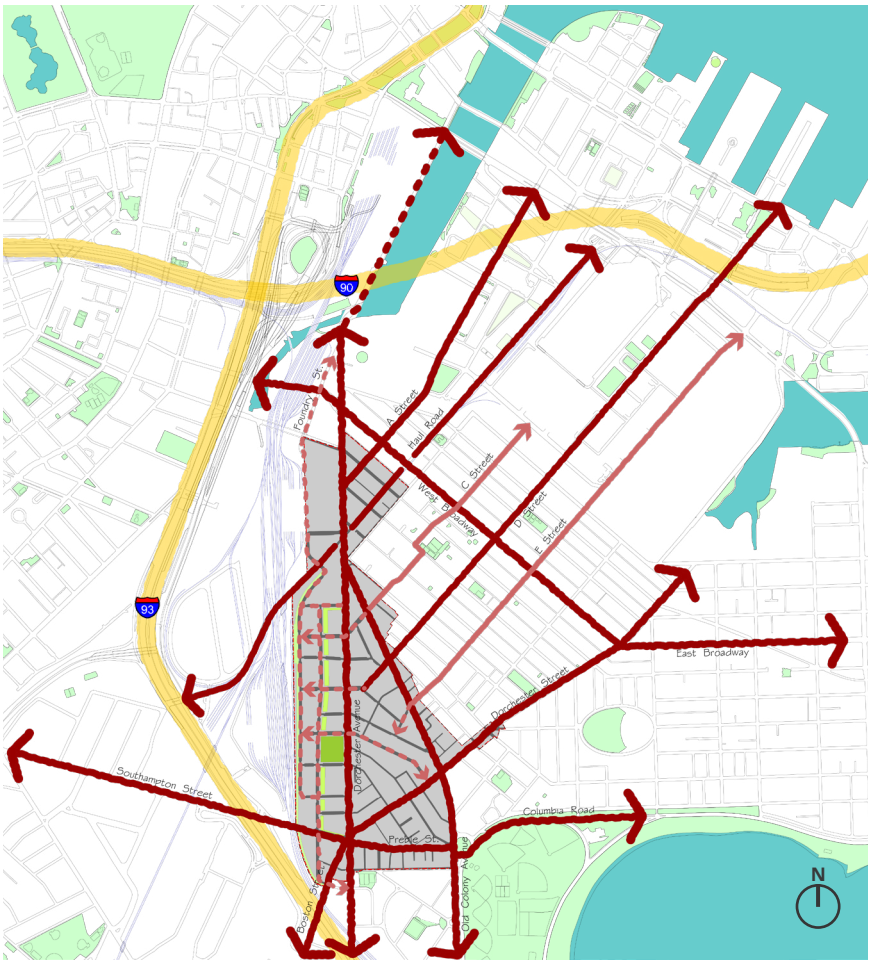


Figure 60. 2017 PLAN Mobility Vision

Major and secondary connections diagram showing desired new connections in a dashed red line

The evaluation metrics used to identify recommendations are as follows:

Mobility: Provide quality mobility options to connect people to life's activities

Significantly increase opportunities for walking, biking, and public transportation to achieve Go Boston 2030 Aspirational Goals.

Evaluation Metrics:

- Evaluate counts for pedestrians and cyclists, transit ridership, and traffic volumes. [Comparison between existing and projected mode split]
- To what degree will this project increase pedestrian, bike, or transit usage; or decrease car usage? [1 to 5 scale]
- Does this scenario meet Go Boston 2030 Aspirational Goals for mode split? [Yes or no]

Better connect the Study Area to other major residential, employment, and activity centers.

Evaluation Metrics:

- Evaluate the number of residents and jobs within a 45-minute commute to/from the Study Area via transit. [Comparison between existing and projected transit reach]
- To what degree will this project improve connections between the Study Area and downtown, the Seaport District, and the Boston Medical Center? [1 to 5 scale]
- To what degree will this project build upon a regional bike network for Boston? [1 to 5 scale]

Provide reliable transportation choices with predictable travel times.

Evaluation Metrics:

- To what degree will this project reduce transit delays at stops or stations and on route? [1 to 5 scale]
- To what degree will this project reduce delays at intersections? [1 to 5 scale]

Safety: Ensure the safety of all travelers

Ensure streets are safe for people who walk or bike.

Evaluation Metrics:

- To what degree will this project address known high crash locations? [1 to 5 scale]
- Does this project provide a high comfort environment for biking? [Yes or no]

Ensure quality maintenance of sidewalks, transit facilities, and roads.

Evaluation Metric:

- To what degree will this scenario consider maintenance of infrastructure? [1 to 5 scale]

Environment: Prepare for climate change and reduce greenhouse gas emissions

Protect from increasing flooding and urban heat risks.

Evaluation Metrics:

- To what degree will this project build resiliency against sea level rise? [1 to 5 scale]
- Evaluate the percent of impervious surface and tree coverage. [Compare between existing and projected land use and tree canopy]

Reduce emissions through mode shifts and cleaner vehicles.

Evaluation Metrics:

- To what degree will this project decrease car usage? [1 to 5 scale]
- To what degree will this project reduce emissions from vehicles of all types? [1 to 5 scale]

Equity: Improve transportation for vulnerable communities

Design streets and transit to be accessible for all users.

Evaluation Metric:

- To what degree will this project be accessible to populations that face personal mobility challenges, including parents and small children, older adults, and people who are differently-abled? [1 to 5 scale]

Prioritize improvements that boost the mobility of vulnerable populations.

Evaluation Metrics:

- Evaluate the population of low-income workers and people of color within 10-minute walk of frequent transit. [Compare between existing and projected walkshed populations]
- Evaluate the population of low-income workers and people of color within 10-minute walk of bikeshare. [Compare between existing and projected walkshed populations]
- To what degree will this project improve transportation reliability for low-income and working-class populations and for communities of color? [1 to 5 scale]

Investment: Encourage financial stewardship and implementation mindset

Provide financially sustainable services.

Evaluation Metrics:

- How much will the project cost to build? [Capital cost]
- How much will the project cost to operate and maintain? [O&M cost]

Plan projects with the intention of full implementation.

Evaluation Metrics:

- To what degree will there be political challenges?
- To what degree will there be physical or infrastructural challenges?

Recommendations were drafted by the consultant team and discussed with BPDA, BTD and BPW staff in relation to how they addressed project goals. Recommendations were refined with guidance from this group, the community, and other project stakeholders. Due to the multimodal nature of most recommendations, this chapter is to the extent possible organized by geography, as follows:

- Transit
- Street Grid
- Andrew Square
- Vicinity of Andrew Square
- Dorchester Street
- Old Colony Avenue
- North End of Study Area
- Parking and Transportation Demand Management

The exception to the above is two-fold: first, transit recommendations are separated out and included at the beginning of the chapter; and second, parking policies are included at the end of the chapter. In addition, the full vision for the pedestrian, bicycle, and roadway networks for the entire Study Area are included at the end of the chapter.

The timeframe for recommendations is two-fold. The first timeframe is short-term. These recommendations included improvements needed right away ("immediate term"), or are needed when near term development is finished with construction (within the next five years). The second timeframe is long-term (also referred to as by year 2040). These recommendations might be more complicated and expensive to construct and are needed as the area is nearing full buildout.

General characteristics of the two timeframes are as follows:

SHORT-TERM RECOMMENDATIONS	LONG-TERM RECOMMENDATIONS
• Could be implemented within a 1-5 year timeframe • Implementation is within the control of one of either BPDA, BTD, PWD or the MBTA • Low cost and fit within current rights-of-way and budgets • Benefits safety • Does not require disruption or movement of overhead utilities or signal poles • Would not disrupt current or accepted long-term planning efforts. • Could be implemented by developers (subset of recommendations only - doesn't require extensive curb work)	• Could be implemented within a 5-20 year timeframe • Implementation likely requires significant coordination with City, State, and Federal agencies, including MEPA and NEPA review. • Medium to high cost with complex funding structures and requirements • May require changes to accepted long-term planning efforts

4.1 TRANSIT SERVICE RECOMMENDATIONS

Of note for the entire transit service section is that the MBTA and MassDOT are currently undergoing an effort to redesign the entire bus network titled MBTA Bus Network Redesign. This means that major changes could be made to the entire MBTA bus network in the coming years. The City has coordinated with MassDOT and the MBTA throughout the Dorchester Avenue Transportation Plan and the recommendations outlined in this section will be considered as part of the larger Bus Network Redesign effort. As a result of the larger Bus Network Redesign effort, some of the recommendations in this section could be implemented whereas others may become obsolete as service patterns shift.

Public transit access to and from the Study Area is critical to realize the 2040 Study Area buildout as envisioned in the 2017 PLAN. Better east-west connectivity is needed to create a "grid-like" transit network. As noted in the future conditions, this new development will result in thousands of new trips to, from and within the Study Area, a significant percentage of which will need to be accommodated by transit given the limited capacity of the existing and future roadway network to absorb a significant portion of these trips.

The Red Line Transformation is anticipated to be able to absorb much of the future transit demand. Remaining transit deficiencies in the Study Area revolve around the bus system, including crowding concerns on Routes 9, 11, 16 and 47. Therefore the recommendations below focus on investments in the bus network, and in particular on the connectivity to the major employment districts that can be accessed easily by rail or without multiple transfers. All transit recommendations will require coordination between the City of Boston, MassDOT and the MBTA to ensure initiatives and projects align with ongoing and future transit planning and priorities. For example, the ongoing MassDOT/MBTA Bus Network Redesign project includes several high priority transit corridors in the Study Area, many of which were important in our analysis. As such, our recommendations are based on needs and opportunities to consider as part of the Bus Network Redesign.

RED LINE TRANSFORMATION

Red Line Transformation Investments are Expected to Absorb Most New Transit Demand

As described in the Future Conditions Analysis, the Red Line Transformation investment is critical to the success of the Study Area. These investments – including new rail cars, advanced signal systems and more – will greatly increase total capacity along the Red Line to, from and through the Study Area – and based on the future transit conditions assessment, will absorb most of the future transit demand. As such, recommendations in this plan assume the Red Line Transformation is implemented.

Figure 62. *Red Line Transformation*

As described in the Future Conditions Analysis, the Red Line Transformation investment is critical to the success of the Study Area. These investments – including new rail cars, advanced signal systems and more – will greatly increase total capacity along the Red Line to, from and through the Study Area – and based on the future transit conditions assessment, will absorb most of the future transit demand. As such, recommendations in this plan assume the Red Line Transformation is implemented.

Short-Term

4.1.1 Pilot transit priority improvements on high ridership bus routes that provide service to and from the Study Area.

Transit priority can be piloted by using paint, traffic cones, public outreach campaigns, and variable message signs to convert a general-purpose travel lane or parking lane to bus priority. During the pilot, measurements can be taken to understand ridership, effectiveness, any issues or concerns that arise, and the long-term potential for more permanent bus priority treatments. Within the Study Area routes which should be considered for transit priority pilot interventions include:

- **Route 11:** Introduce transit priority along E Berkeley Street and W 4th Street. Consolidate bus stops along Dorchester Street between Andrew Square and Broadway.
- **Route 9:** Provide bus priority around Broadway Station (benefits other routes as well).
- **Route 10:** Provide bus priority along Southampton Street (benefits other routes as well), and consider routing through Andrew Square without circulating through the Andrew Square Station Busway.
- **Route 47:** Provide bus priority along all or segments of the route (e.g. Albany Street) between Broadway Station and Longwood Medical and Academic Area (LMA)

4.1.2 Increase Service Frequency on Existing Bus Routes

Service frequency is associated with high quality and high ridership demand transit service. Frequent service where riders do not need to check a timetable lends confidence that wait times are minimized and transit will be available when it is needed. High quality bus service can be as effective as rail service, and when combined with improved connections to this frequent service it can make short-term improvements to transit accessibility to the Study Area. Additional benefits from increased bus frequency could include reduced overcrowding to provide greater rider comfort.

Two routes have been identified for service frequency improvements:

a. **Route 7** operates with high frequency during the peak – with buses scheduled to operate every 2 or 3 minutes – and with 20-minute headways during the midday, early mornings, and evenings; 40-minute headways on Saturdays; and no service on Sundays. Even with very frequent service in the peaks, Route 7 is generally standing room only during AM peak and suffers with reliability issues and dropped trips. Although Route 7 does not operate in the direct study area it provides an important service within the Seaport area which has been identified as a major and important connection. Combined with the recommendations outlined in Section 4.1.4 improved service frequency on Route 7 create a better and more convenient service for residents of the study area. The introduction of the Summer Street bus-only lane should improve service. When possible, introducing service on Sundays and improving off-peak frequency, along with an improvement in connections between the Study Area and the Route 7, will increase access and connections between the Study Area and the region as a whole.

b. **Route 11** operates with high frequency during the peak – with buses operating every 6 to 10 minutes – and with 25-minute headways during the midday and early mornings, and with 50-minute headways on evenings; approximately 20-minute headways on Saturdays; and 40-minute headways on Sundays. Due to overcrowding during the peak, peak frequency could be increased. Altering Route 11 to be bi-directional instead of a loop and introducing transit priority can increase the attractiveness and reliability of the route. When possible, improving off-peak and weekend frequency, at least between Broadway T station and the Financial District, will increase access and connections between the Study Area and the region as a whole.

Figure 63. *Bus Priority Improvements in Roslindale*

4.1.3 Complete design and construct new headhouses at the Broadway and Andrew Square Red Line stations to enhance access to and from the subway.

The MBTA has projects already underway to design and construct new headhouses - locations where riders enter the station from the sidewalk - at the Broadway and Andrew Red Line stations. These investments will improve safety and connectivity for pedestrians at these two locations by alleviating the need for many riders to cross Dorchester Avenue, Southampton Avenue and Dorchester Street at Andrew Square, as well as alleviating the need for some riders to cross Dorchester Avenue at Broadway, both busy intersections with a history of crashes involving pedestrians.

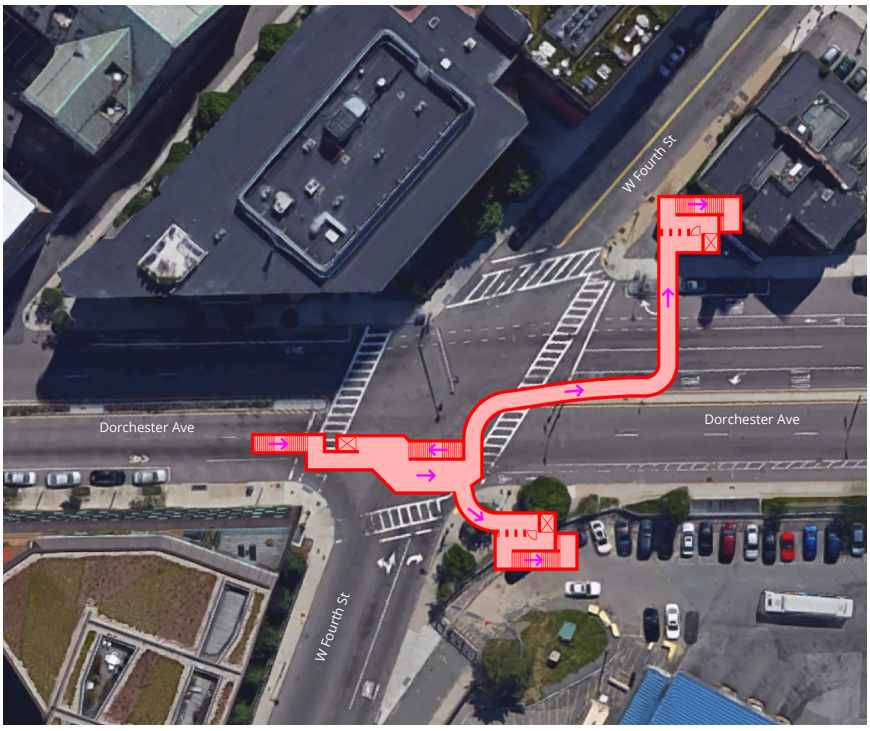
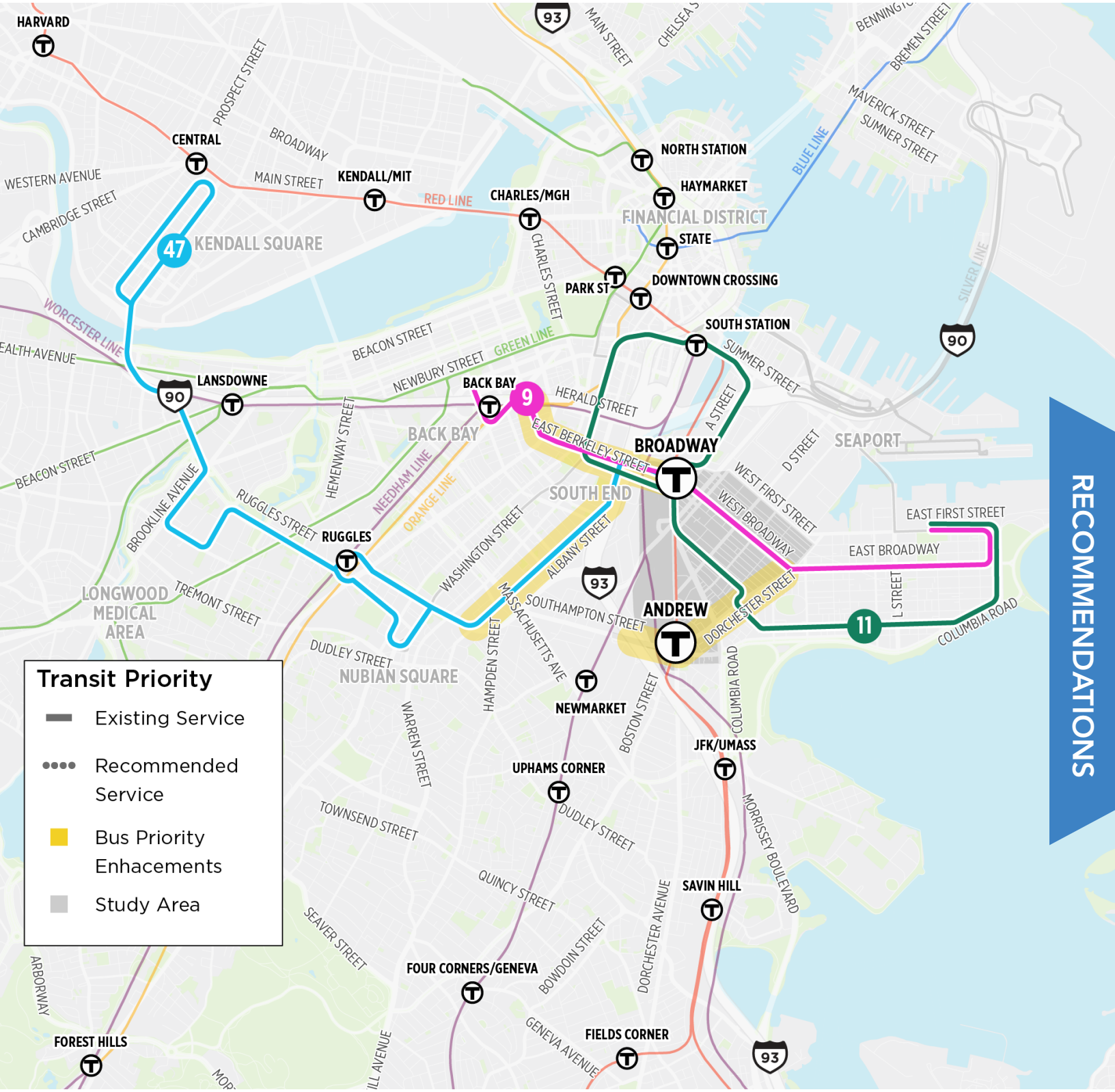


Figure 64. *Broadway Headhouse Concept Design*

Figure 65. Short-Term Transit Improvements Summary



4.1.4 Improve access to the Study Area through direct connections to the Seaport and beyond.

The transformation of the Seaport into a major job center over the last decade, combined with future job and residential growth in the Study Area will require improved connections between the two. With only three direct connections between the two areas, transit improvements need to enhance convenience, travel times and comfort. The following are recommended:

c. Create a bi-directional connection between the Study Area and the Seaport along A Street.

Extending the Route 93 to Broadway Station via A Street would provide a bidirectional connection in this corridor between the Study Area and South Station through the Seaport. A bidirectional route would be more efficient and convenient than the existing circular routing of the Route 11 which operates in the southbound direction only and as mentioned above is recommended to operate in both directions via the South End. Additional benefits of extending the Route 93 are described below.

d. Provide bus service and bus priority improvements along D Street.

D Street provides the most direct connection between the southern portion of the Study Area and the Seaport however it has no transit service. Providing bus service along D Street would provide a direct, efficient, bidirectional connection between Andrew Square and the Seaport. Additional effort is needed to identify what specific transit priority treatments would best be suited along this corridor – this effort would need to be a collaboration between the City, MBTA and the community. This recommendation is consistent with the South Boston Seaport Strategic Transit Plan.

Three potential options – two route extensions and one new route – could use the new D Street bus priority corridor to better connect Dorchester by providing a one-seat ride to and through the Study Area to the Seaport. They include:

- **Route 16** – Extending the bus route from Andrew Square along D Street to the Seaport would provide a one-seat ride to and from Forest Hills, a trip that currently requires one or more transfers.
- **Route 17** – Extending the bus route from Andrew Square along D Street to the Seaport would provide a one seat ride to and from Fields Corner, a trip that currently requires one or more transfers.
- **New Route from Uphams Corner** - Establishing this new route would provide a one-seat ride from central Dorchester to the Study Area and Seaport, and provide a direct connection to the Fairmont Line, eliminating the need for passengers to travel inbound to South Station, and then outbound on the Silver or Red lines to the Study Area or Seaport, respectively.

4.1.5 Improve connections to the North - North Station, Blue Line and Charlestown Connections.

Transit access to the Study Area from communities north of Boston can be arduous and time consuming compared to those arriving from the south and west, and require at least a 3-seat ride requiring multiple transfers. The below strategies would reduce the number of transfers and travel times to the Study Area to greatly improve access.

a. Create a rapid bus connecting North Station to the Study Area.

A rapid bus route connecting North Station to South Station and then through the Seaport to the Study Area would provide a 2-seat ride requiring only one transfer at North Station to and from the commuter rail.

The same rapid bus route should connect to the Blue Line at State Street, greatly improving access to the Study Area (and Seaport) from East Boston, Revere, and commuters parking and connecting to the transit network at Wonderland.

b. Extend Route 93 to the Study Area via A Street to the Broadway Red Line Station.

This would provide a one-seat ride to/from Charlestown and provide additional transit service along A Street as mentioned above. This route extension would also provide connectivity through downtown and the Orange and Green Lines at Haymarket and State Stations.

Figure 66. Recommended Transit Access Improvement to the Seaport

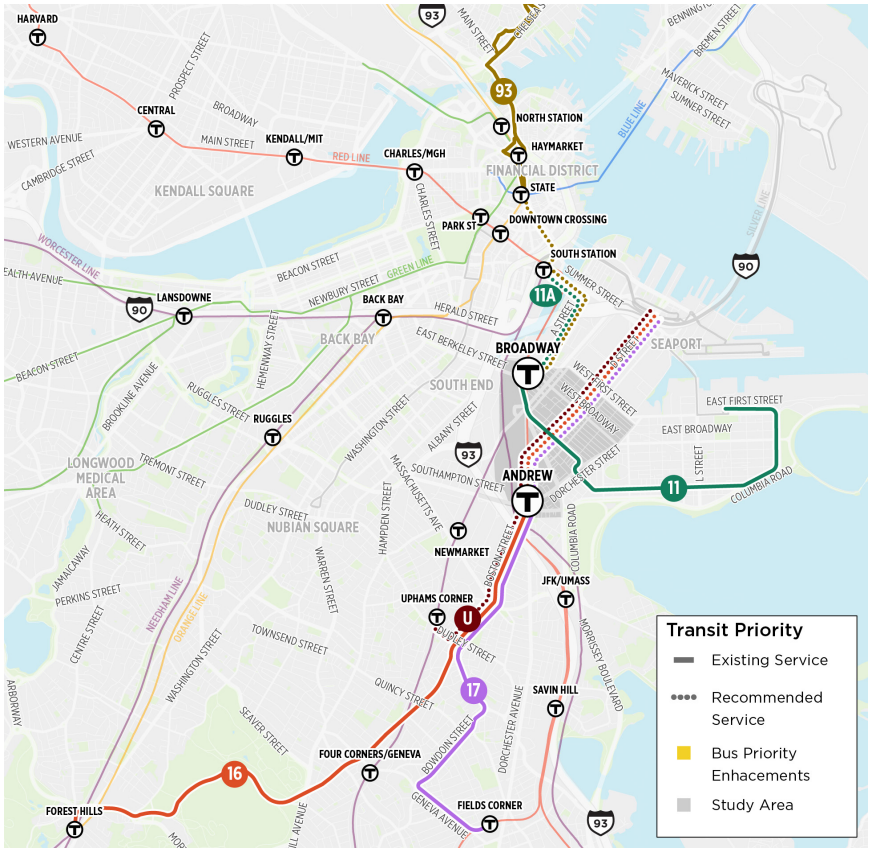
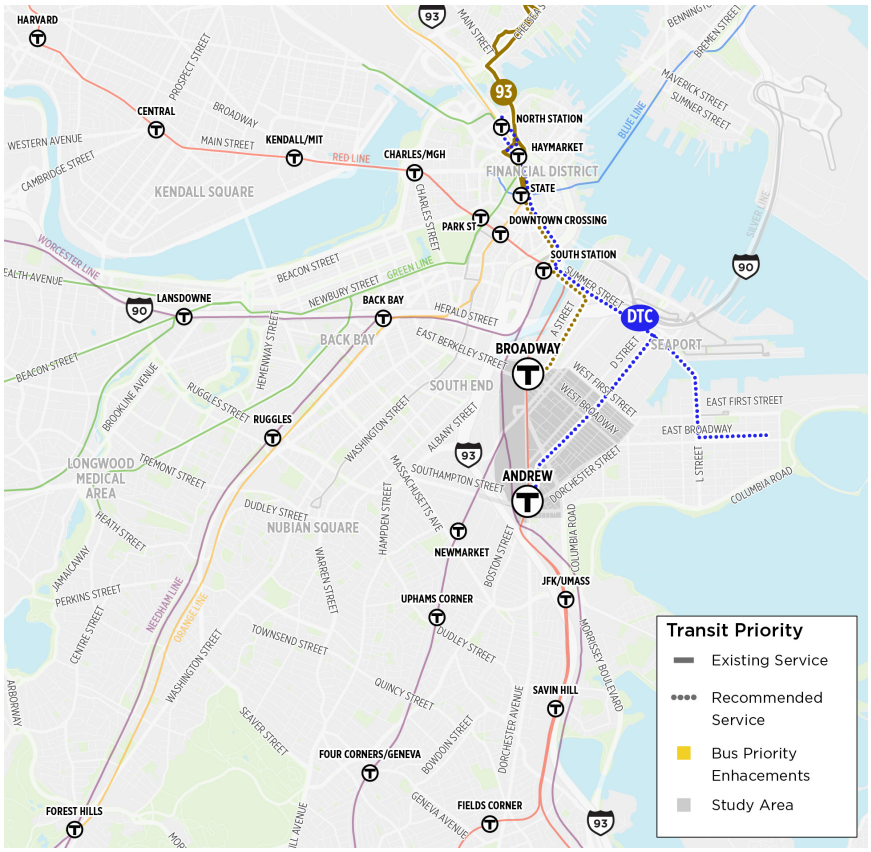


Figure 67. Recommended North Station, Blue Line and Charlestown Connections



4.1.6. Improve access to other major job and activity centers in Boston.

Thousands of residential units are anticipated to be developed by 2040. While some of those who reside in these units will work at jobs within the Study Area, many will not. Providing better connections to job and activity centers throughout Boston will enable new residents to use transit.

a. Improve connections to South End, Chinatown and Tufts Medical Center.

Rerouting the Route 11 to provide a bidirectional service to the South End and Washington Street would provide improved connectivity to and from the South End, Chinatown and Tufts Medical Center.

b. Increased Access to Back Bay.

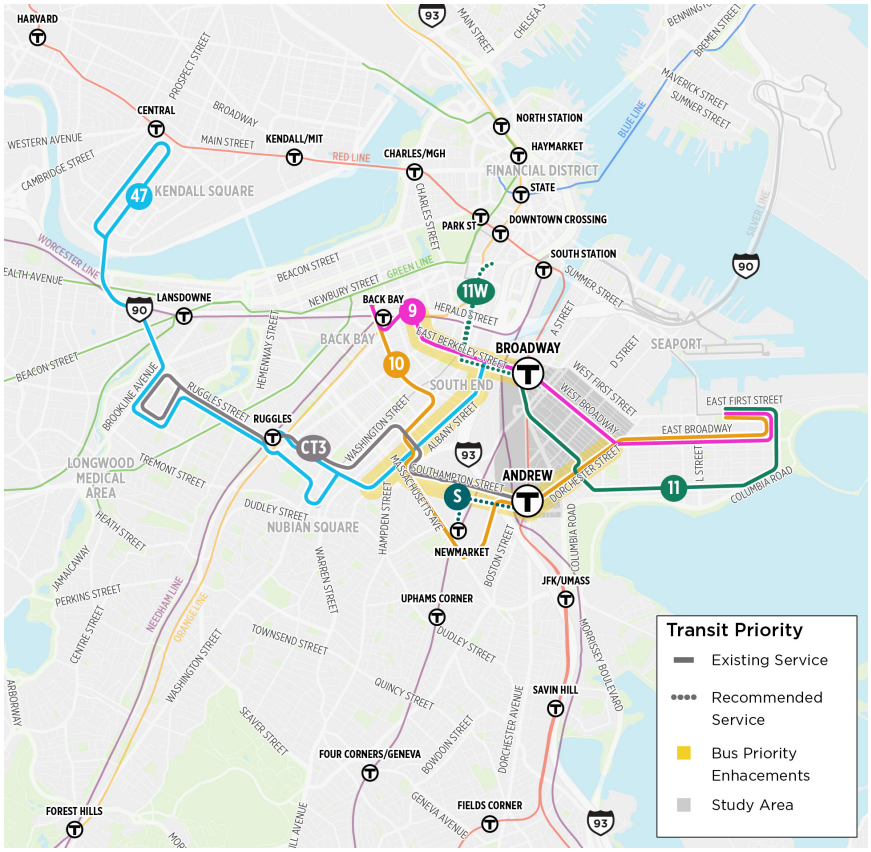
Bus priority improvements along East Berkeley – priority lanes, signal prioritization and other enhancements – would enhance Route 9 service to improve access to the Back Bay.

c. Improve connections to Newmarket, BU Medical Campus, Nubian Square, and Longwood Medical and Academic Area (LMA).

Improvements to routes that service the Broadway and Andrew Station stop would improve connectivity to job centers west of the Study Area – all of which lack efficient rail connectivity currently.

- **Newmarket-South Bay-Andrew Square Shuttle** - A shuttle between Andrew Square and Newmarket along Southampton would provide new residents (and Red Line riders) a direct connection between the Study Area to many jobs in South Bay and Newmarket to the west of I-93. Private shuttles that connect Andrew Station and Newmarket Station to South Bay could also potentially utilize these bus priority improvements, and additional service on this route could be explored with the private operator.

Figure 68. Recommended Access Improvements to Major Job and Activity Centers



- **Dorchester Street** - Over the long-term, additional transit enhancements could be introduced along Dorchester Street that would improve the reliability of transit service. These would need to occur at a time when the center median of Dorchester Street is removed but transit queue jumps and signal priority could provide benefit at the approaches to Old Colony Avenue and Andrew Square.

  Bus priority improvements on Dorchester Street and Southampton Street would improve Route 10 service to Newmarket and Back Bay, and for the CT3 Route which connects to Nubian Square and the LMA.

- From Broadway, the **Route 47** improvements, also discussed above, would include bus priority along Albany Street, improving connectivity to Nubian Square, The Fenway and Cambridge.

4.1.7 Improve access to the Study Area and Seaport from Dorchester and Roxbury.

Enhancing access to Dorchester and Roxbury is accomplished through initiatives highlighted in previous recommendations. This includes:

a. **Route 47** Albany Street bus enhancements improve access between the Study Area and Nubian Square.

b. **Route 16, Route 17 extensions and/or new Uphams Corner Route** along D Street improve connectivity between Dorchester, the Study Area and the Seaport.

c. **Newmarket-South Bay-Andrew Square Shuttle** increases access to the Study Area for Fairmont Line riders.

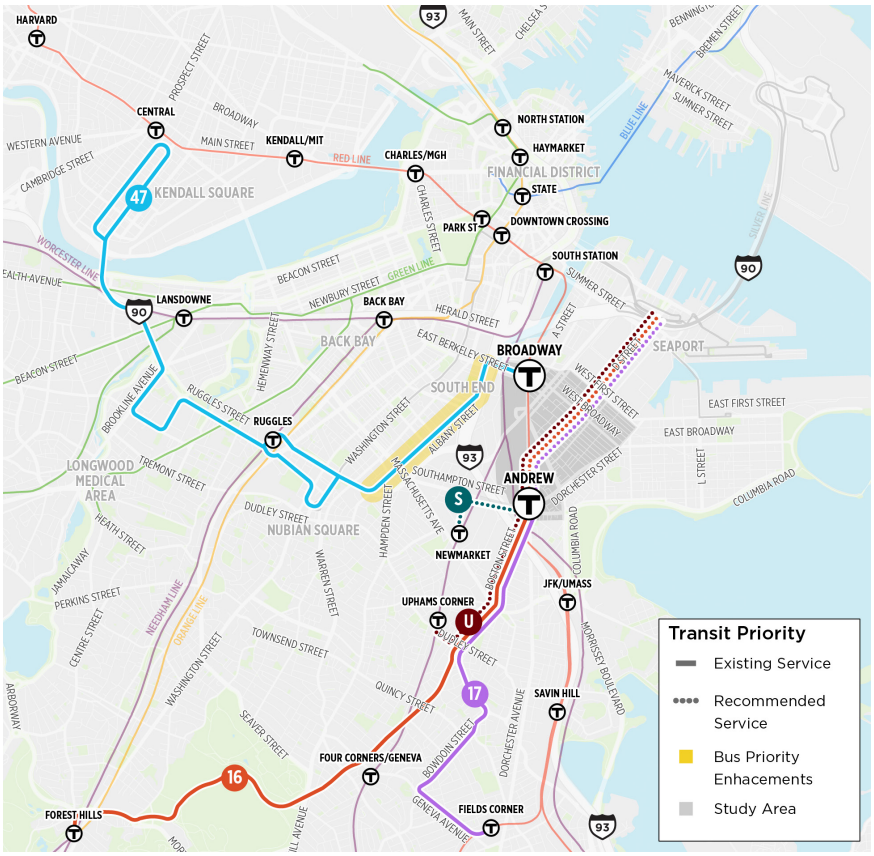


Figure 69. Recommended Bus Improvements from Dorchester and Roxbury

4.1.8 Retain land adjacent to Track 61 to the east of Dorchester Ave, for a potential future rail station.

As development continues in the Study Area, BPDA will retain space for a future transit station for Track 61 accessed from Dorchester Avenue. Similar to Boston Landing commuter rail station the station could use an efficient 600' station length, with connections up to Dorchester Avenue near B Street.

The area adjacent to Track 61 in the vicinity of Dorchester Avenue could serve a future rail facility connecting between the Fairmount Line or the Old Colony Lines and the Seaport District, or future Bus Rapid Transit using the South Boston Bypass Road. These are long term alternatives for transit service in the Track 61 corridor – in the near term the recommendation is to retain access rights at this location as development occurs.

4.1.9 Encourage bus transit ridership by providing greater comfort and convenience by investing in supportive infrastructure and amenities at bus stops.

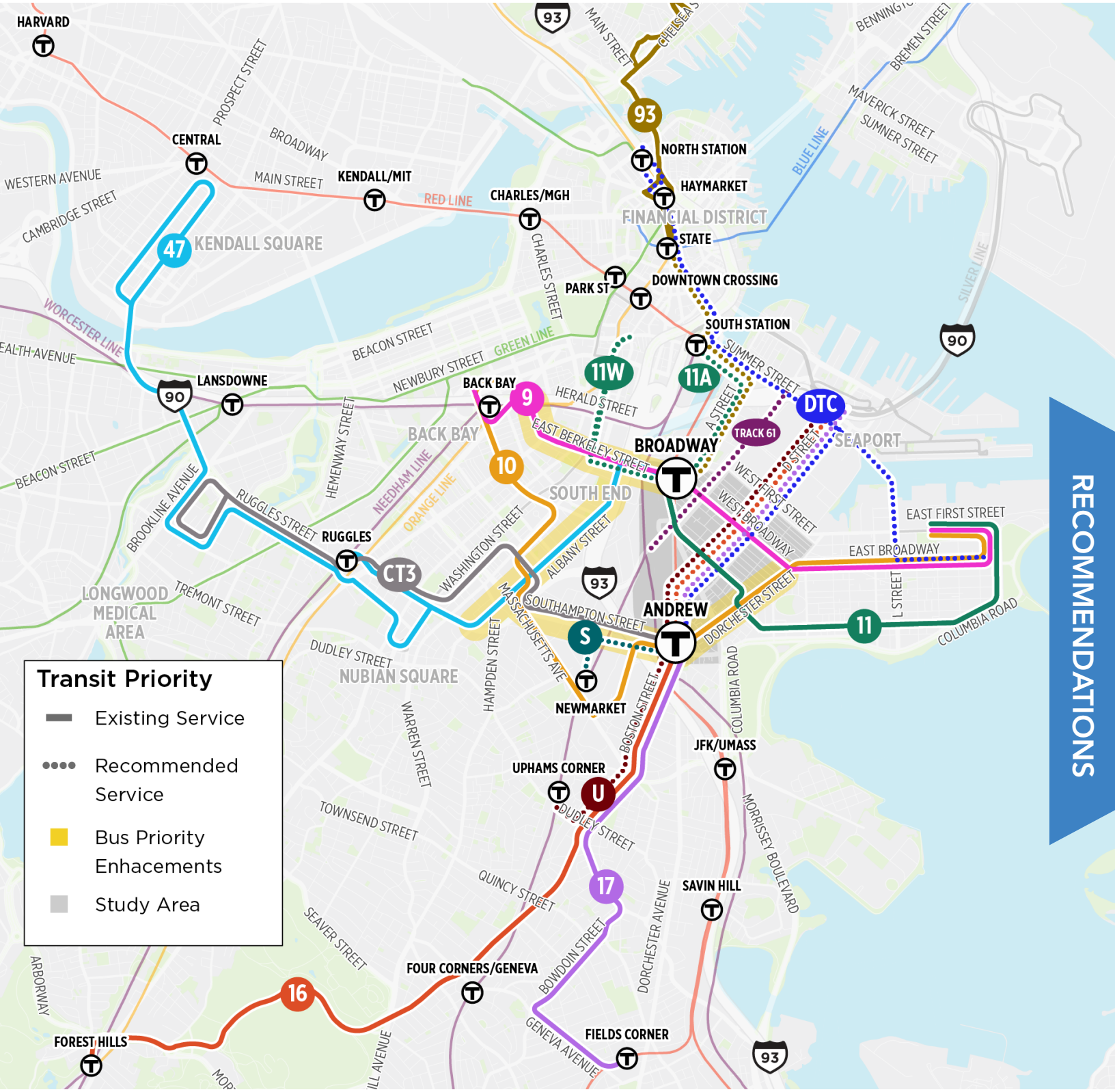
Providing an experience that is comfortable, convenient and efficient can help to attract and retain transit riders when other options (e.g. personal vehicle) are available. BPDA and BTD will invest in bus stop improvements – working in partnership with the MBTA.

a. **Ensure sidewalks are well maintained, free of tripping hazards and lighted.**
b. **Provide shelter and seating at all bus stops to provide protection from weather year-round.**
c. **Co-locate bike parking and/or BlueBikes stations at high ridership bus stops within the Study Area to enhance multi-modal connectivity.**
d. **Provide real-time rider information and rider amenities as high ridership bus stops to enhance rider convenience and comfort.**
e. **At major bus stops/stations (e.g. Andrew Square and Broadway) and key local bus stops with multimodal infrastructure connectivity, design and construct GoHubs!.**

4.1.10 Encourage transit ridership though Transportation Demand Management (TDM) Point System including subsidized transit passes.

See TDM recommendations section for more information.

Figure 70. Long-Term Transit Improvements Summary



4.2 STREET GRID

A key recommendation of the 2017 PLAN was a new multimodal street grid to provide access to redevelopment opportunities west of Dorchester Avenue.This street grid includes a parallel route alternative to Dorchester Avenue, and improved east-west connectivity to distribute traffic throughout the larger 2017 PLAN area.

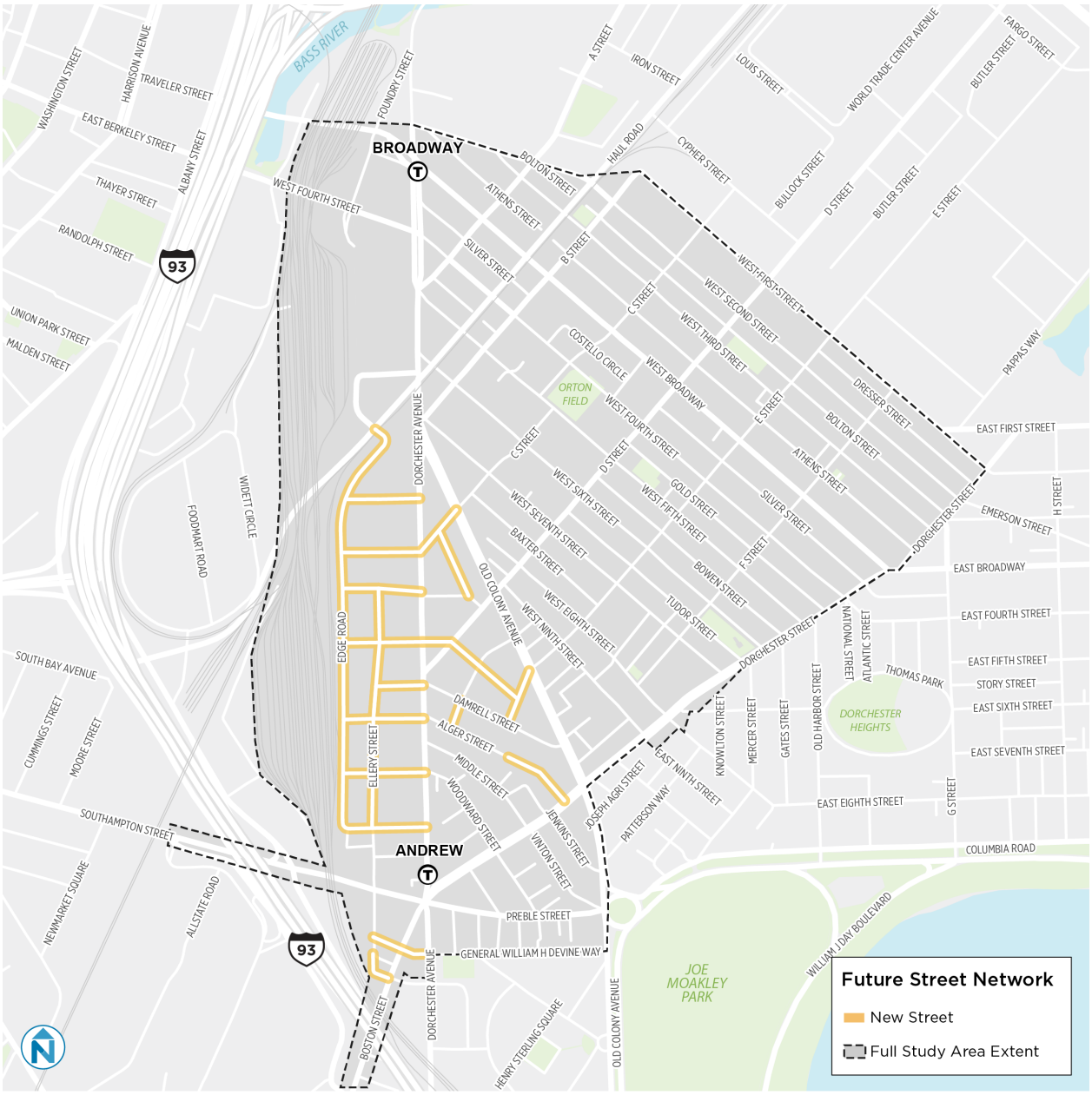


Figure 71. 2017 PLAN Street Grid

4.2.1 Ensure that the street grid developed as part of the 2017 PLAN is implemented.

As shown in Figure 71, the street grid envisioned in the 2017 PLAN not only provides access to new development opportunities, but it also distributes vehicle traffic throughout the Study Area. Ensuring the grid is implemented is essential to accommodate future conditions traffic.

a. Ensure Ellery Street as envisioned is built out parallel to Dorchester Avenue

A continuous Ellery Street provides an alternative north-south route, and with a connection across Southampton Street, cars can avoid Andrew Square, alleviating pressure on the complex intersection. Ellery Street provides a more comfortable pedestrian and bicyclist route.

b. Construct Service Corridor/Edge Road along the western edge of the Study Area.

The service corridor along the western edge removes truck traffic and complex turning movements off of Ellery and Dorchester Avenue and allows traffic to connect to I-93 without burdening Andrew Square.

To maximize use and to absorb future traffic, it is important to work with MassDOT to determine if an effective connection between the Service Corridor and the South Boston Bypass Road could be made. The connection presents numerous challenges including grade changes and the parallel Track 61 which will require creative design strategies and potentially significant investment.

c. Ensure compliance of street setbacks by new development as articulated in the 2017 PLAN including along Dorchester Avenue and Old Colony Boulevard

Increasing setbacks by new development will provide additional space for safer, more comfortable separated bicycle facilities and wider sidewalks able to accommodate pedestrians between Andrew Square and Broadway T Station. Wider sidewalks also allow for turning lanes and other activities such as outdoor dining where appropriate.

d. Ensure any proposed changes to, or removal of, east/west roadways within the proposed grid do not negatively impact connectivity for all modes.

Should removal of east/west segments be proposed by developers, ensuring key east-west connections remain – e.g. to D Street – will ensure traffic continues to distribute more evenly, and won't disrupt future transit, pedestrian and bicycle network opportunities. Implications for long-term build out and the planned locations of additional signalized intersections is also a consideration for removal or relocation of planned east/west streets.

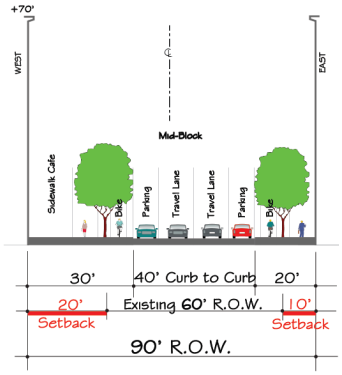


Figure 72. 2017 PLAN Vision - Dorchester Avenue

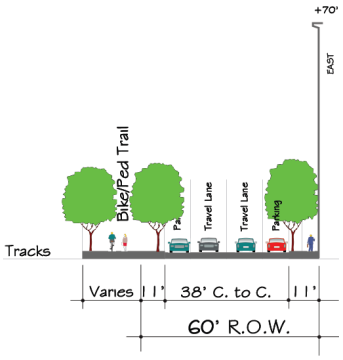


Figure 73. 2017 PLAN Vision - Edge Road

Figure 74. Peak Vehicle Trips Using SBBR

VEHICLE TRIPS	AM	PM
Total	1,600	2,000
# using SBBR	590	634
% using SBBR	37%	32%

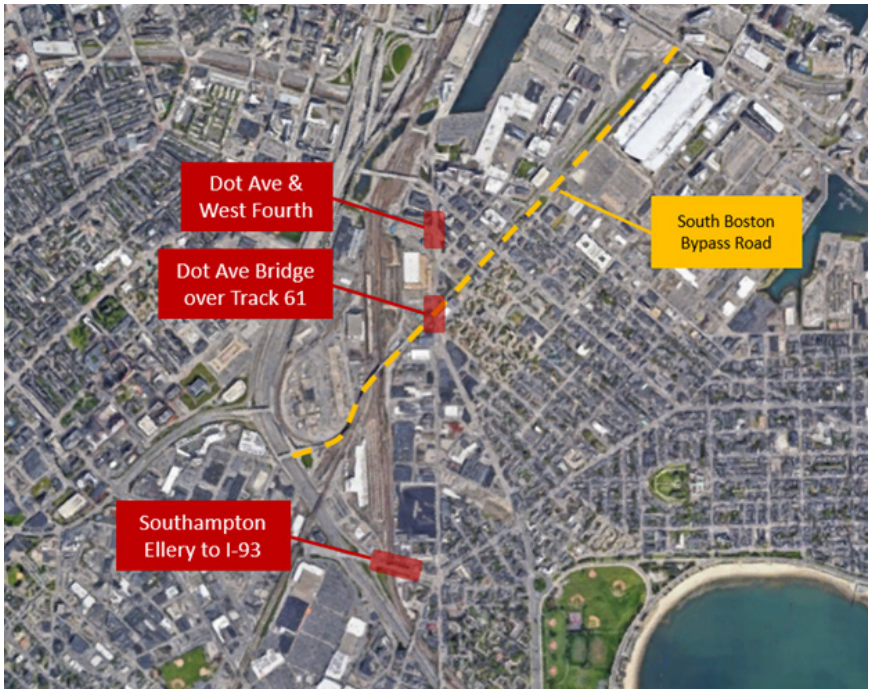
Figure 74 summarizes the AM and PM peak hour vehicle trips forecasted to be generated by the study area redevelopment, and the portion assumed to use the SBBR.

The 2017 PLAN street network includes a connection between the proposed street grid and the SBBR. The future conditions traffic analysis shows that the Study Area intersections along the SBBR had ample capacity, even with the additional traffic generated by the Study Area development.

It is recognized that until officially made permanent, assuming general purpose use of SBBR contains within it some vulnerability and risk. Therefore, the Plan considered a scenario where the SBBR converted back to freight-only use, and no connection was possible between the proposed street grid and the SBBR. While a full traffic analysis was not conducted for this scenario in Synchro, some considerations were given to how this change would affect trip distribution. Major findings are that there are three locations within the Study Area, as shown in in Figure 75, that would see additional pressure from the increase in vehicle traffic:

- Dorchester Avenue and West Fourth Street
- Dorchester Avenue in the vicinity of the SBBR overpass
- Southampton Street between Ellery Street and I-93

Figure 75. Capacity Constrained Locations in Scenario Without Access to SBBR



Of the three, the first two are impacted in a minor or moderate level, as Southampton Street provides a more direct connection for most vehicles. In the event that a connection to SBBR is not possible, Southampton Street would need to be widened to accommodate additional vehicles between Ellery Street and I-93. In the event that a connection to the SBBR is not feasible, the need for additional vehicle capacity should be evaluated in each of these locations.

4.3 ANDREW SQUARE

Andrew Square is a crash hot spot, with major pedestrian and bicycle safety concerns – including a recent fatality. To enhance safety and reduce congestion at Andrew Square, strategies must address the following conditions:

- Complex six-legged intersection, which is further complicated by many driveways to businesses and residences
- Multiple signal cycles create travel delay
- Inadequate pedestrian crossings and geometries
- Limited bicycle facilities through the intersection.

While the below recommendations focus on the immediate Andrew Square area, a more holistic approach including recommendations within the vicinity of the square iis needed to best address congestion, safety and accessibility. See Section 4.4. for more on these.

Figure 76. *Andrew Square Today*

4.3.1 Finalize design interventions and implement BTD's Vision Zero Rapid Response Project to improve safety.

In response to the recent pedestrian fatality, BTD's proposed concept features tactical interventions to improve safety, particularly for pedestrians and bicyclists, through the reallocation of roadway space. Proposed improvements illustrated in Figure 78 aim to lower speeds, improve visibility, and create more intuitive driving patterns through defined lane assignments. Specific safety interventions include:

- Pedestrian crossing distances reduced at 4 of the 6 approaches
- Provide median refuge crosswalk to reduce pedestrian exposure to vehicles at the crossing at Southampton and Dorchester Avenue as well as the crossing at Dorchester Street and Dorchester Avenue.
- All approaches will be reduced from two receiving lanes to one
- Left turn lanes will be separated from the through traffic to slow traffic and reduce conflicts.
- Improved bike safety by the addition of:
    - New bike lanes on Preble Street (to be implemented as part of planned Preble Street improvements);
    - New bike lanes on Dorchester Street
    - Bike turning boxes on Preble and Dorchester Avenue;
    - Buffered bike lanes on Dorchester Avenue protected by flex posts to prevent double parking or blocking

Figure 77. Andrew Square Existing Conditions

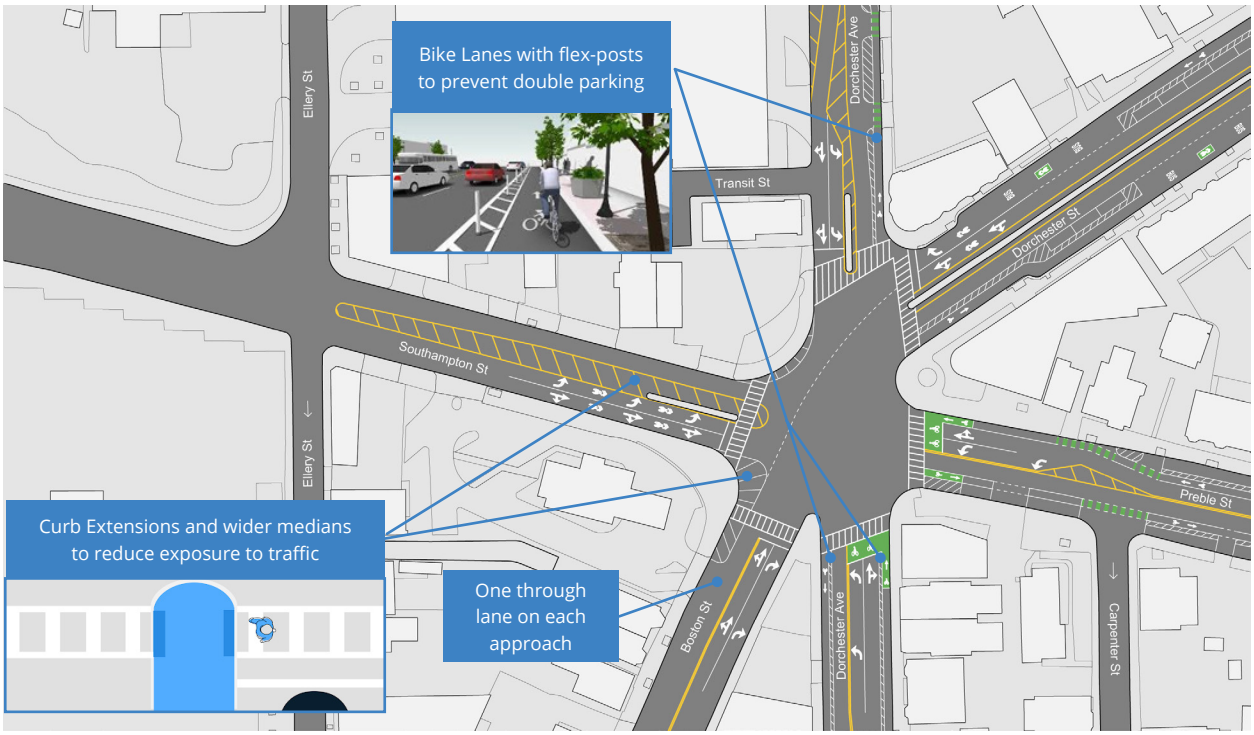


Figure 78. Short-Term Andrew Square Improvements

4.3.2 Implement accessibility and access improvements at Southampton and Ellery Street.

With many multifamily residences on Ellery Street south of Southampton Street and the back entrance to Andrew T station at Ellery Street north of Southampton Street, this is a desirable, albeit challenging, pedestrian crossing. With four lanes of travel, the complicated Andrew Square intersection, sight distance issues caused by the structure over the Old Colony commuter rail lines, and proximity to I-93 on-ramps, a lot of cars travel this section of Southampton Street, sometimes at high speeds

a. Add a new signal at Southampton and Ellery Street

The new vehicle and pedestrian actuated signal will provide safe and efficient access at Southampton for the extended Ellery Street, allowing some vehicles to avoid Andrew Square and reduce overall congestion, and provide a signal protected pedestrian crossing across Southampton at a location that will have more pedestrians in the future condition.

b. Add a crosswalk across Southampton Street at Ellery Street with a pedestrian crossing island for pedestrians to safely wait when needed.

4.3.3 Implement circulation changes to Andrew Square.

a. Convert Boston Street to one-way, southbound traffic only.

Converting Boston Street allows for the removal of one of the signal phases, shortening the overall cycle length, reducing waiting times for all users.

Alternatives for northbound cars could include utilizing Father Songin Way to Dorchester Avenue, or connect west to Southampton if Ellery Street is converted to two way travel..

b. Add shared bus and bike lanes in both directions along Southampton.

A shared bus-bike lane is recommended to improve bus reliability and provide a safer bicycle environment.

Figure 79. Andrew Square Existing Conditions

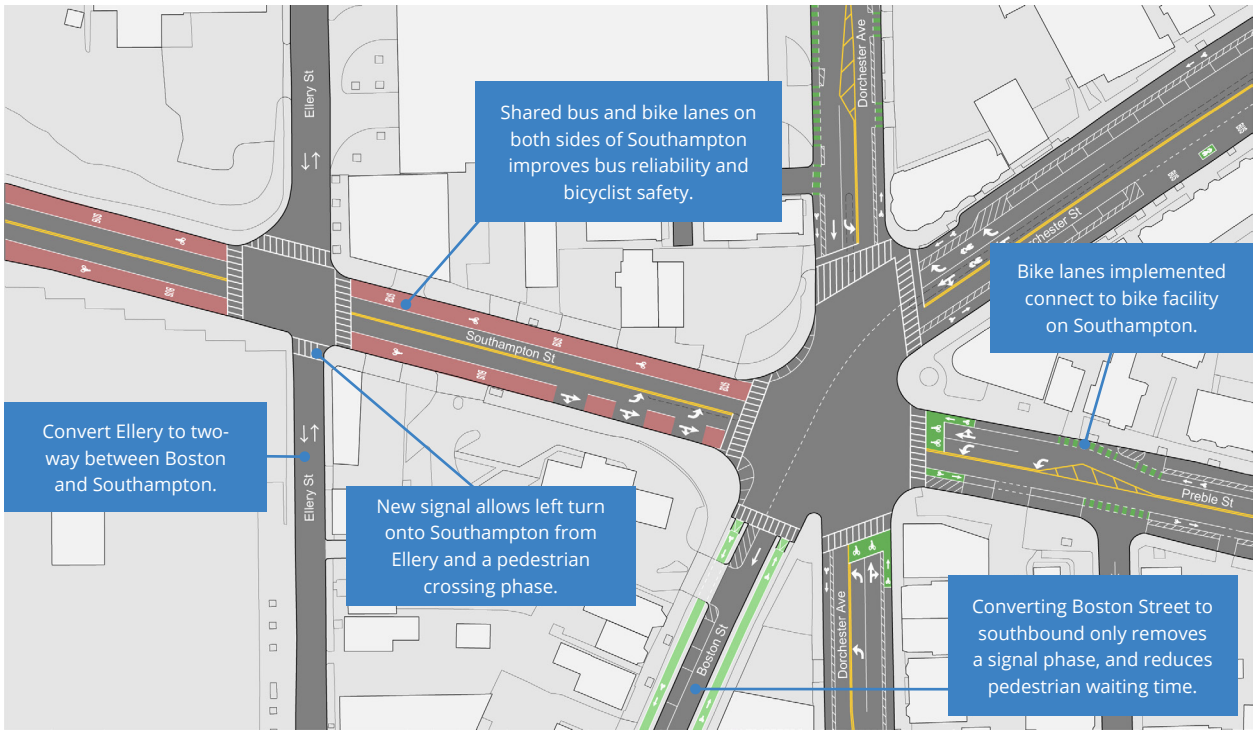


Figure 80. Long-Term Andrew Square Intersection Improvements

4.3.4 Redesign Andrew Square intersection as a "peanut" roundabout.

Given the many conflicts, problematic geometries and multimodal nature of Andrew Square, more creative strategies are needed. The intervention of a traditional roundabout was evaluated for feasibility. It was not possible to accomodate a traditional roundabout given the existing right-of-way dimension. Although a traditional roundabout was not feasible, it is possible to implement a "peanut" roundabout.

Benefits of a "Peanut" roundabout in Andrew Square include:

- Slower vehicle speeds
- Simplified travel pattern to one-way travel through the intersection reduces frequency of rear-end and right angle collisions
- Implementation of raised crosswalks to slow vehicles and to increase pedestrian visibility and safety.
- Installation of protected bike lanes around the entire intersection.
- Accomodation of truck movements through installation of aprons

Figure 81. Andrew Square Alternative Long-Term "Peanut" Roundabout Concept

4.4 VICINITY OF ANDREW SQUARE

Improved connectivity for all modes in areas around Andrew Square will ease congestion by providing safe, comfortable and convenient alternatives to ease the burden on Andrew Square.

Short-Term Recommendations

4.4.1 Enhance pedestrian and bicycle safety through"daylighting" to improve visibility.

Daylighting is restricting the parking ahead of a crosswalk or intersection. Parked vehicles or other obstructions can block views of other people driving, biking, or waiting to cross. When parking is restricted, drivers are more likely to see approaching vehicles or people crossing the street. This reduces the likelihood of crashes at intersections. Clear corners also make it easier for fire trucks, delivery trucks, and other larger vehicles to turn. With clear corners, these bigger vehicles are less likely to scrape other parked cars or get stuck.

Daylighting is implemented by "No Parking" signs to mark the area where parking is prohibited. It is also done by adding a painted box with diagonal lines and plastic posts in the space as a reminder. In construction projects, the City can build curb extensions using granite and concrete to prevent people from parking too close.

Andrew Square and the surrounding streets are good candidates for daylighting. The City will evaluate locations to clear the corners around crosswalks within the Study Area. Initial locations the City is exploring include on Dorchester Street at Woodward and Middle Streets.

4.4.2 Upgrade pedestrian amenities at Southampton and I-93 ramps.

Southampton Street is inhospitable to pedestrians at the entrances to the I-93 ramps. Interventions that slow cars and minimize pedestrian conflicts should be prioritized. This could include:

a. **Install pedestrian signals (with exclusive phasing)**

b. **Ensure crosswalks are maintained and highly visible.**

c. **Upgrade all crossings/ramps to be ADA compliant.**

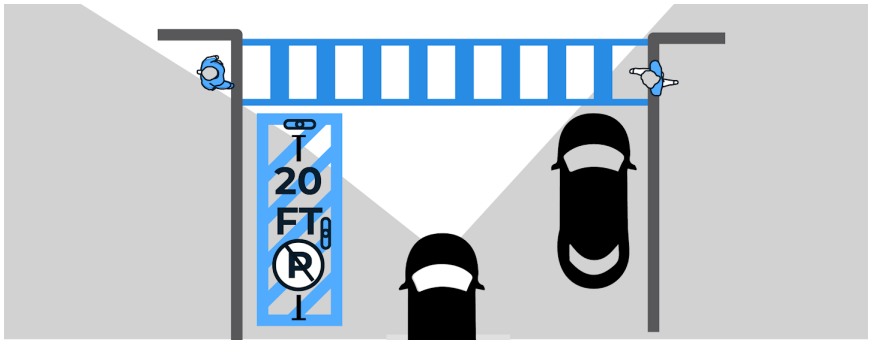


Figure 82. ***Daylighting***

Clear corners installed at the intersection on Washington Street in Egleston Square.

Figure 83. ***Pedestrian Improvements Southampton / I-19 Ramps***

I-93 ramps create dangerous, uncomfortable pedestrian conditions. Strategies to reduce crossing distances, slow turning cars and more would improve safety and potentially encourage more to walk.

4.5 DORCHESTER STREET

Dorchester Street is part of an important, heavily traveled east-west corridor linking the highway network to the Study area, the fabric of the South Boston neighborhood and to the rapidly developing Seaport. Currently, the roadway offers no bicycle facilities, and experiences frequent double parking and travel delays near retail areas. With 2 lanes in each direction off-peak speeding is also a problem.

Short-Term Recommendations

4.5.1 Implementing tactical design interventions between Andrew Square and Broadway.

Tactical interventions on Dorchester Street would include the implementation of:

- Curb extensions
- Parking protected bike lanes
- More efficient, and accessible bus stops
- Short-term designated parking spaces at retail locations for pick-up/drop-off activity
- Road rightsizing
- Daylighting

Safer vehicle operations and better pedestrian safety at intersections with dedicated left turn lanes and signal phases

These recommendations will reduce vehicle speeds, congestion and double parking. The recommendations will also provide enhanced pedestrian safety, bicycle safety, and improved bus reliability.

Figure 84. *Dorchester Street Existing Conditions*

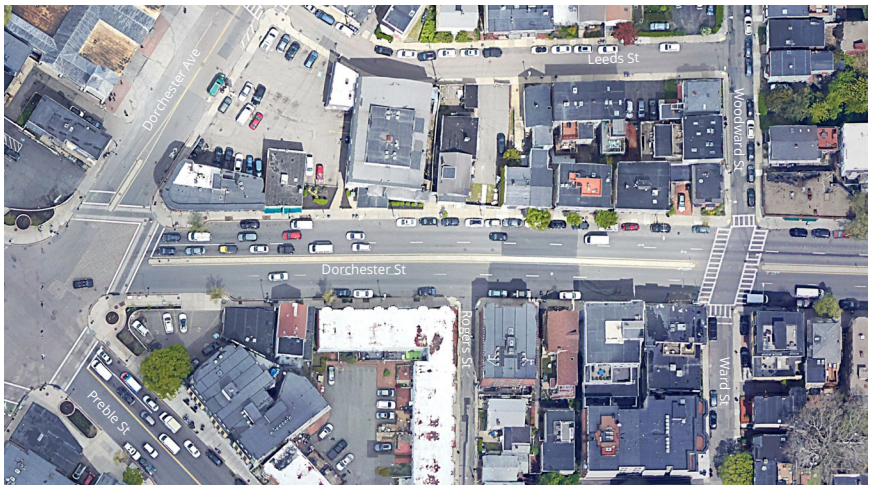
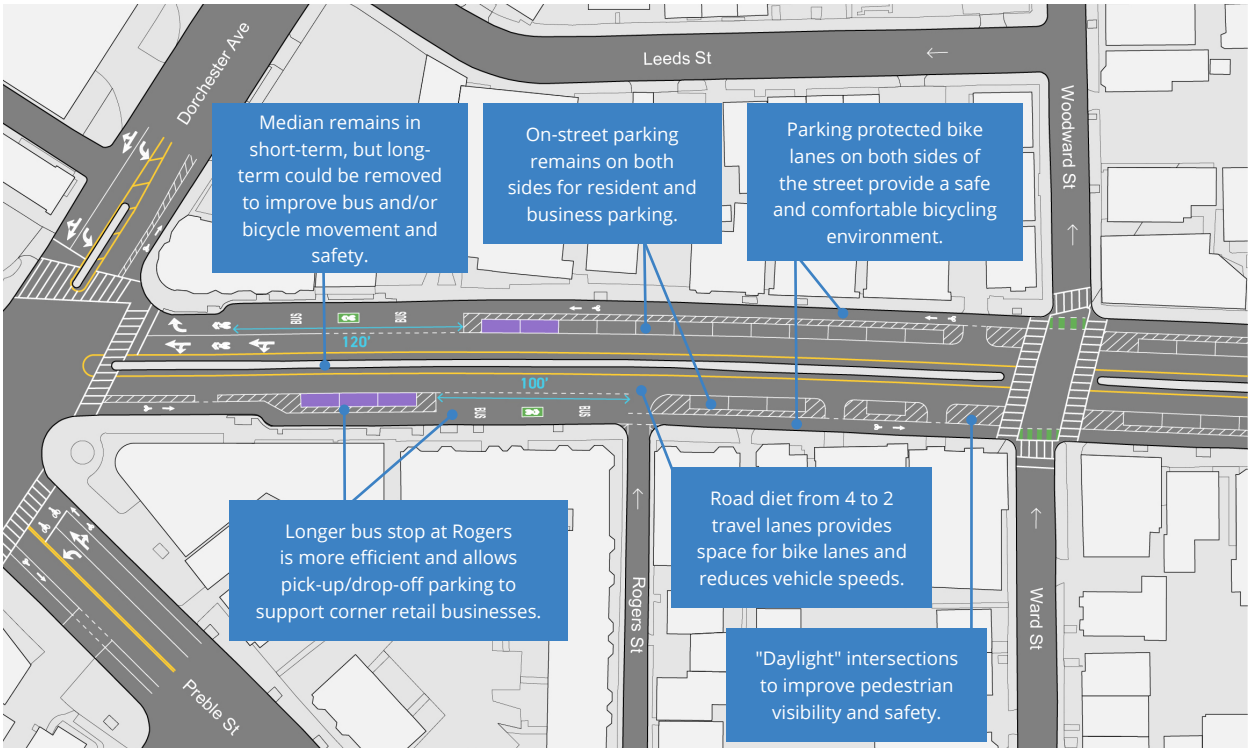


Figure 85. *Dorchester Street Short-Term Improvements*



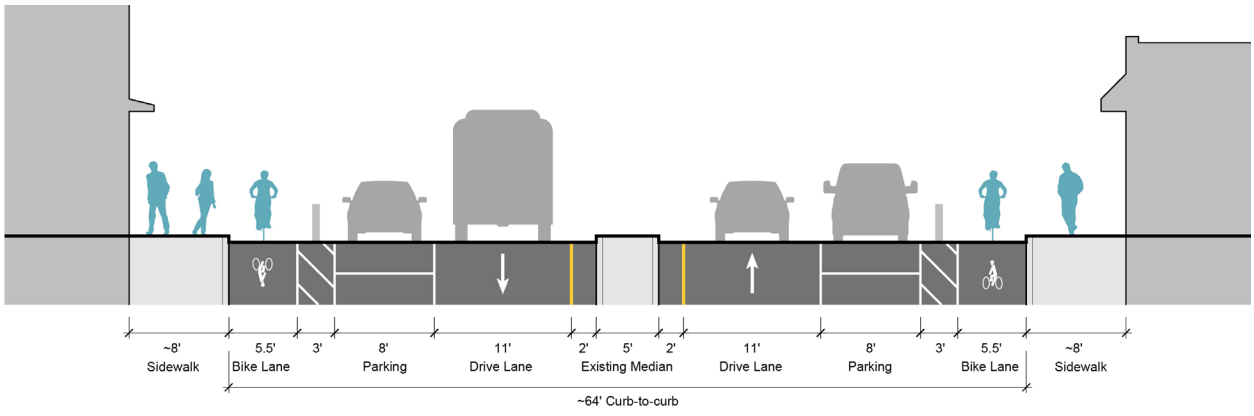


Figure 86. *Dorchester Street Typical Cross Section*

4.6 OLD COLONY AVENUE

A critical link in the bike and pedestrian network is Old Colony Avenue, which is currently uncomfortable to most pedestrians and bicyclists.

Current issues with Old Colony Avenue include its wide cross section – four travel lanes, a cobble median and on-street parking – encouraging higher speeds, long pedestrian crossing distances,lack of bicycle facilities, and relatively narrow sidewalks and non-ADA compliant crossings. Reimagining Old Colony Avenue as a complete street corridor able to safely and comfortably accommodate all users must be prioritized.

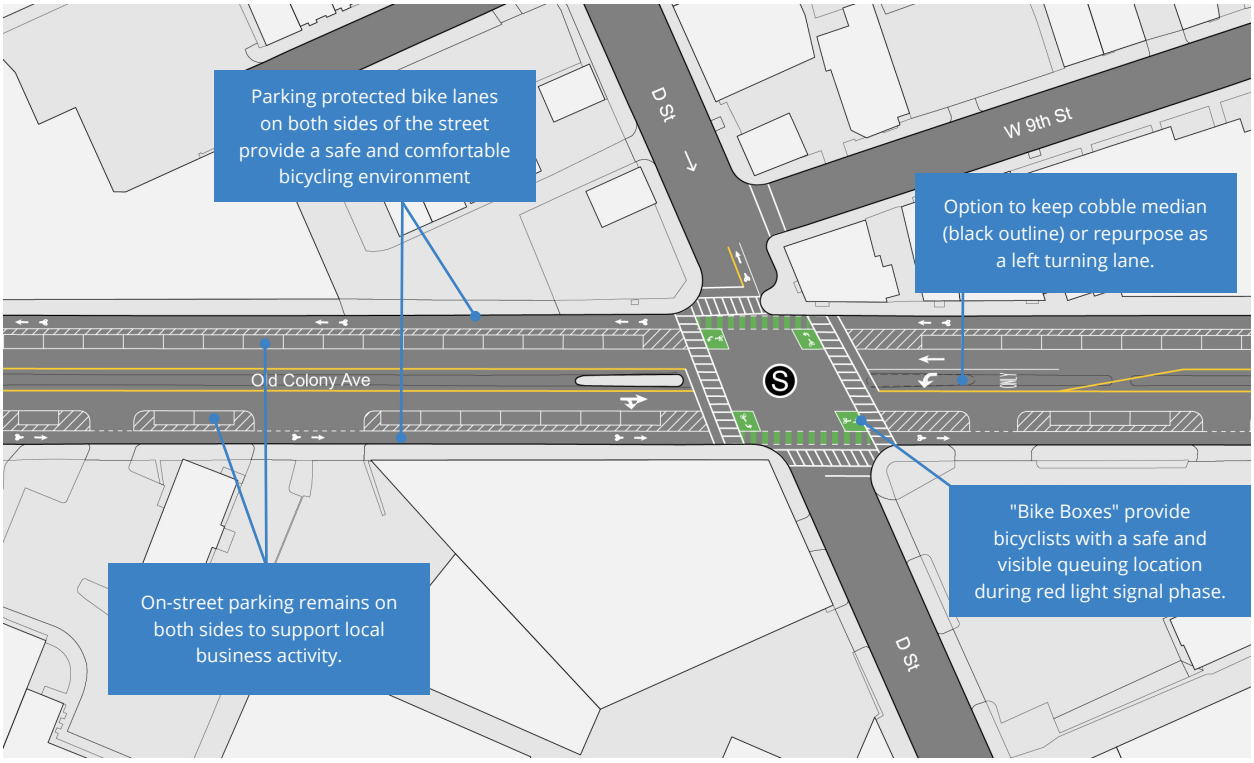
Short-Term Recommendation

4.6.1 Repurpose Old Colony Avenue as a Complete Street.

The short-term strategy is to reallocate street space on Old Colony Avenue. Reducing the number of travel lanes on Old Colony makes room for bike infrastructure. The concept plan (Figure 88), reduces travel lanes from 4 to 2 – one in each direction,with a center left turn lane at intersections where possible; retains on-street parking except at the intersection approaches, and adds separated, parking protected bicycle facilities in each direction.

Figure 87. Old Colony Existing Conditions

Figure 88. Old Colony Short-Term Improvements



PARKING PROTECTED BIKE LANES

Transforming Space to Serve All Modes

The City of Boston reallocated space on Beacon Street along the Public Garden to calm traffic speeds and give people a safe place to bike.

Figure 89. ***Parking Protected Bike Lanes***

left: after installation
below: before installation

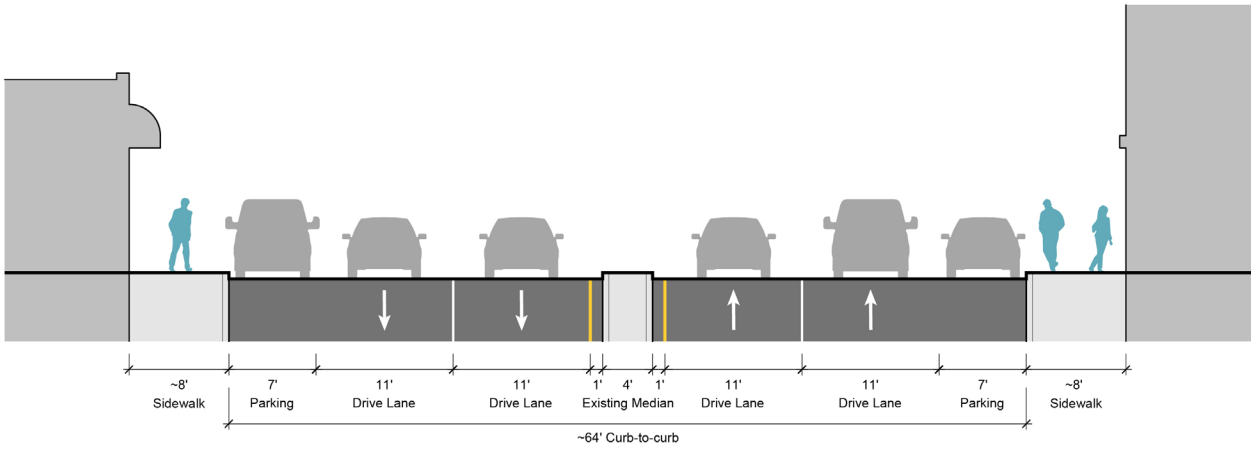


Figure 90. Old Colony Avenue - Existing Conditions

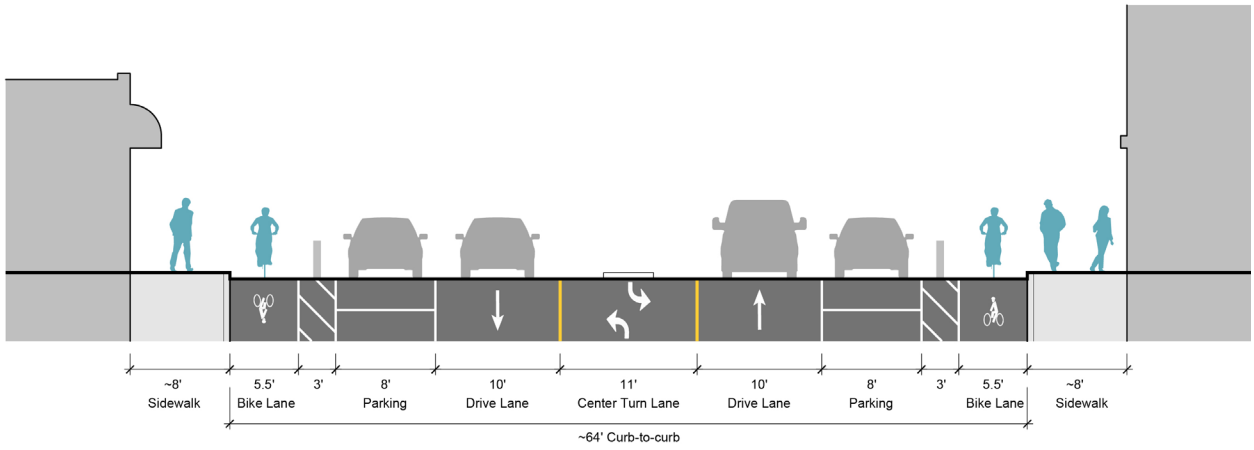


Figure 91. Old Colony Avenue - Short Term Improvements

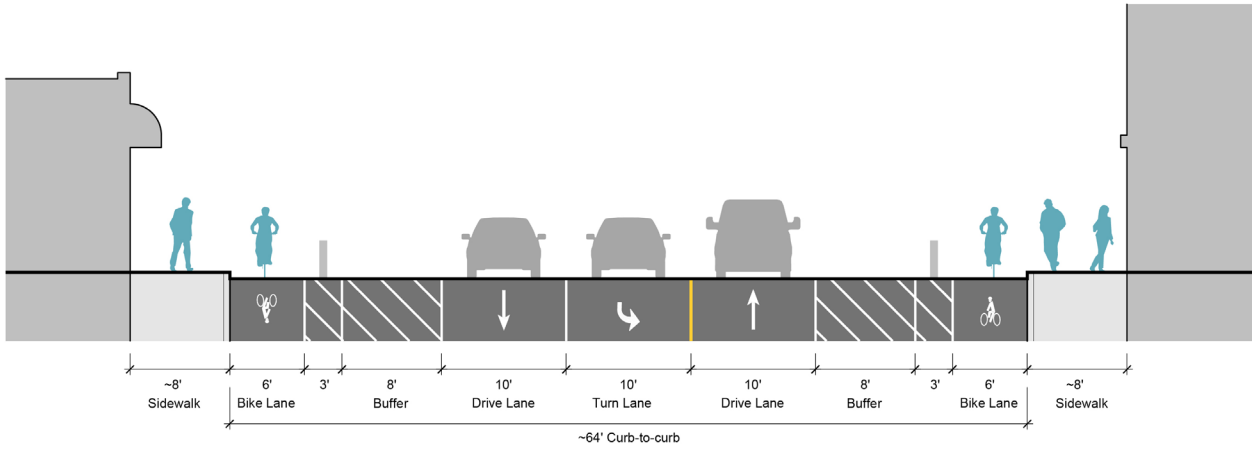


Figure 92. Old Colony Avenue - Short Term Intersection Improvements

4.6.2 Redesign the Old Colony and Dorchester Avenue intersection.

Current issues at this intersection include long crossing distances, no bicycle facilities, and low traffic capacity utilization (v/c). The proposed concept eliminates northbound right turns from Dorchester Avenue to Old Colony Avenue, as well as from Old Colony Avenue to W 7th Street since these turns have low demand but require a lot of roadway space. Through better striping and larger curb extensions, it reduces crossing width for pedestrians and allows for bicycle infrastructure, all without moving any signal equipment. Individual improvements include:

- Curb extensions
- Removing the slip lane
- Expanding the pedestrian realm
- Maintaining the current bus routes
- Realizing the crosswalk when development occurs
- Introducing a bike signal control and queueing area
- Reconfiguring Dorchester Avenue southbound to one lane north of the intersection

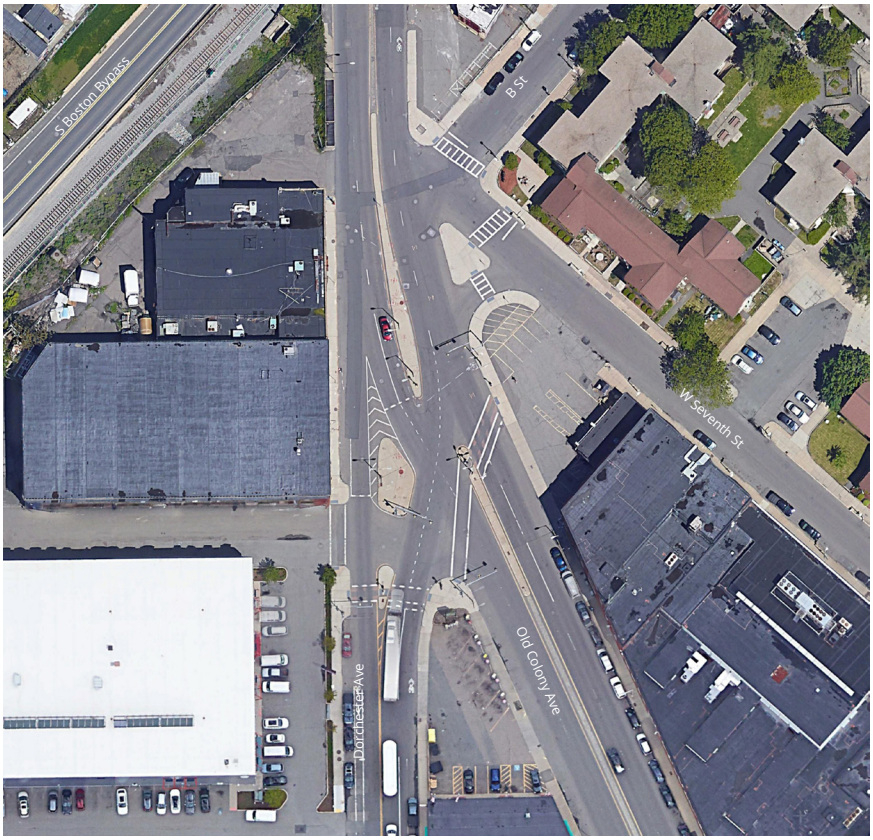


Figure 93. Dorchester Avenue and Colony Intersection Existing Conditions

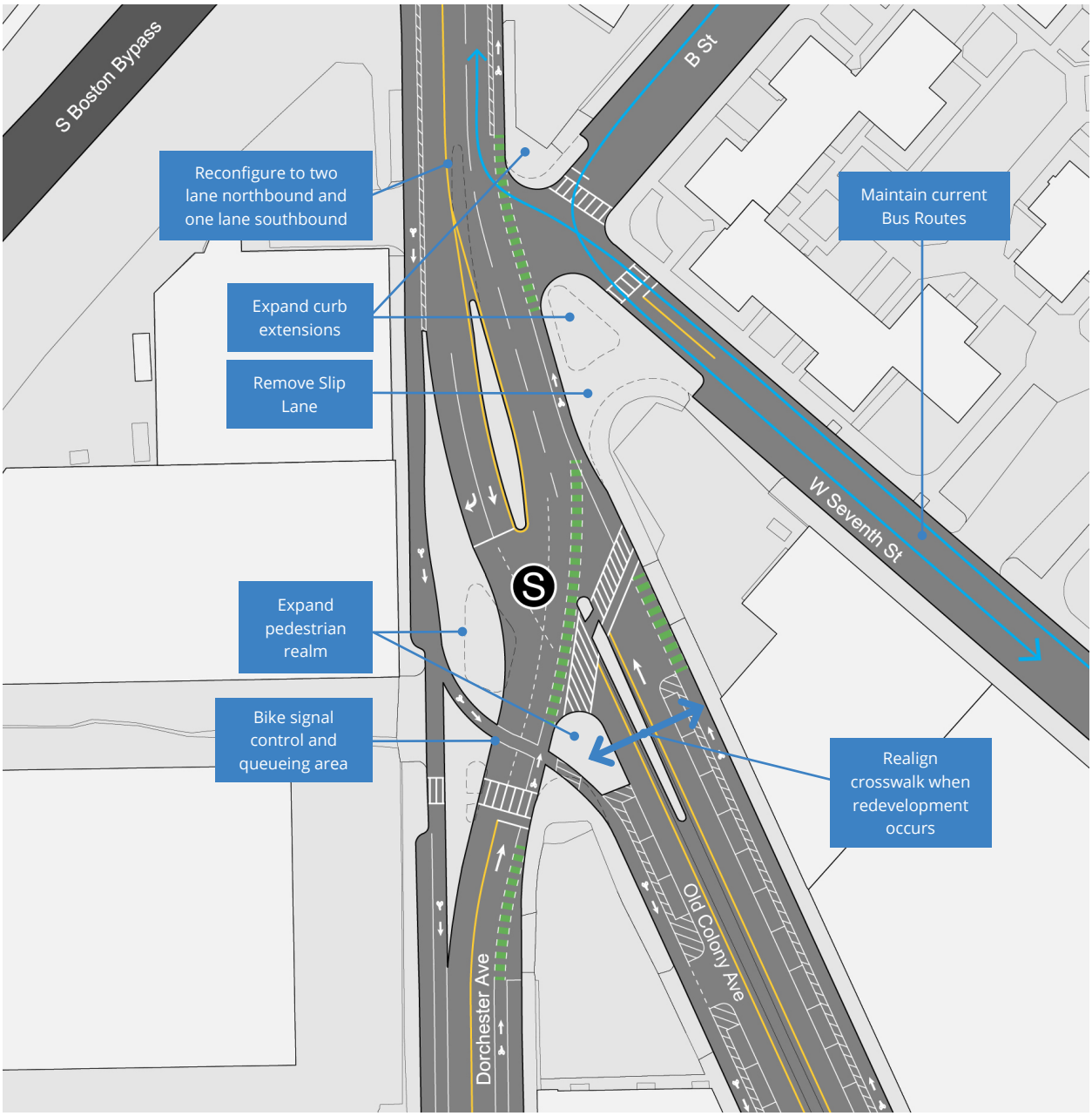


Figure 94. Dorchester Avenue and Colony Intersection Improvements

4.6.3 Reconfigure Old Colony Avenue & Dorchester Street intersection.

Short-term improvements to focus on strategies that both improve bicycle and pedestrian safety and reduce vehicle delay. To minimize cost and expedite implementation, improvements focus on striping and other design efficiencies within the existing right-of-way and maintain existing concrete medians. These include:

- Bicycle lanes through the intersection and bike boxes provide a safer, more comfortable bicycling environment.
- Left turn lanes with exclusive signal phases reducing driver confusion and left turning conflicts to improve safety.
- Shorter crosswalks with concurrent pedestrian phases and leading pedestrian intervals (LPI) enhance safety for those walking.
- Design reduces perception of roadway width to reduce off-peak speeding.

Figure 95. Dorchester Street and Old Colony Intersection Existing Conditions

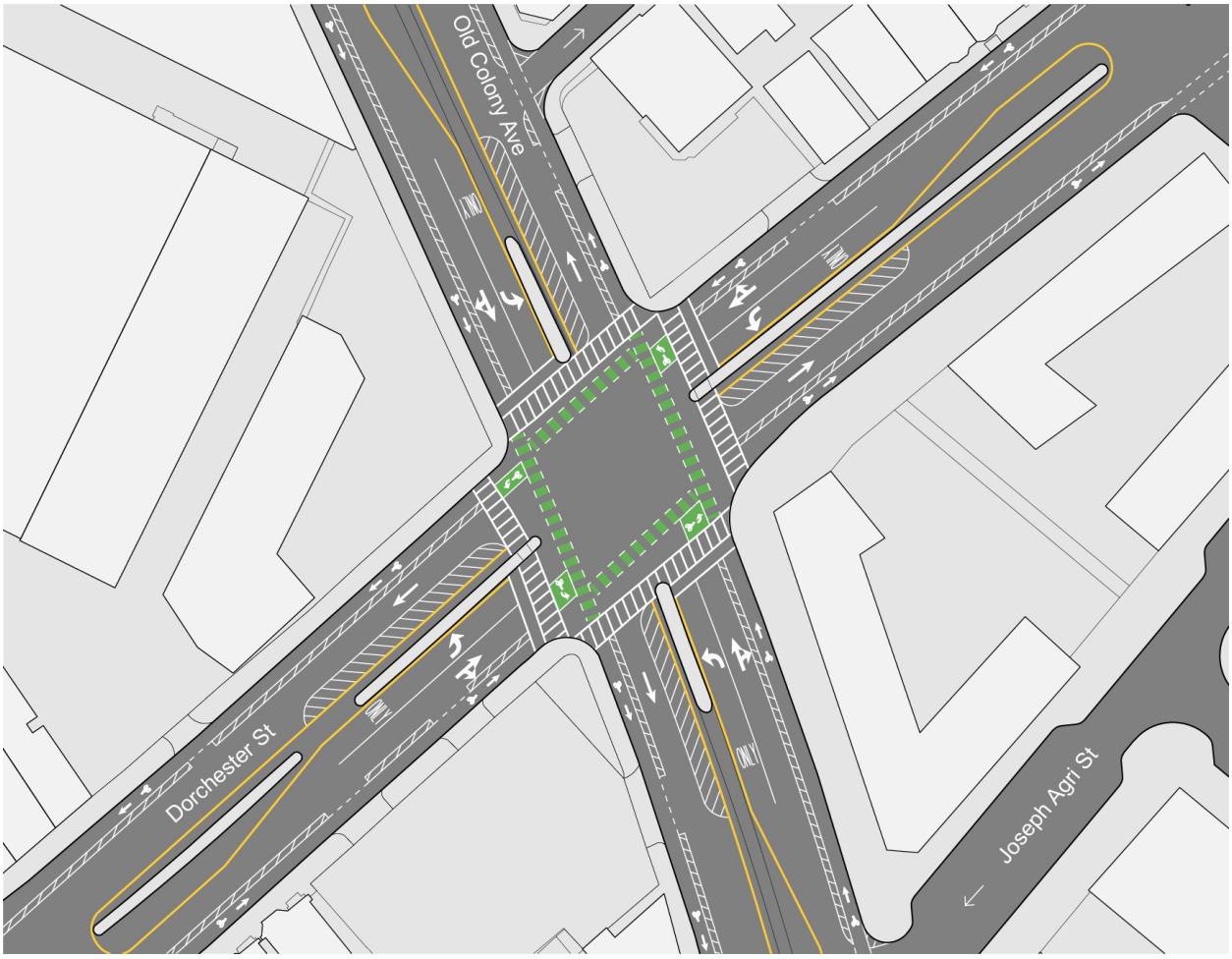


Figure 96. Dorchester Street and Old Colony Intersection Short-Term Improvements - Plan View

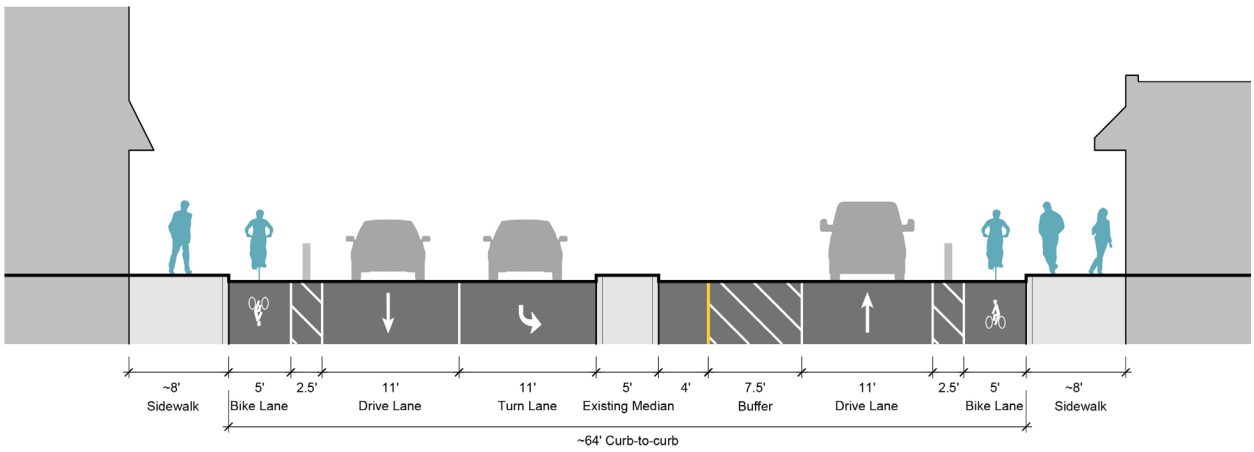


Figure 97. Dorchester Street and Old Colony Intersection Short-Term Improvements - Typical Section

4.6.4 To accommodate future conditions traffic, redesign the Old Colony Avenue and Dorchester Street intersection to add capacity and maintain bike accommodations and pedestrian safety improvements from short-term improvements.

Based on traffic modeling, more comprehensive design changes are required at the intersection. In order to maintain the bicycle and pedestrian crossing improvements achieved along the corridor from the short-term complete streets design, design interventions to maintain acceptable traffic operations at the intersection. This includes:

- Removing center medians on both Old Colony Avenue and Dorchester Street and adding right turn lanes on all four approaches to minimize traffic delays (including buses).
- Convert on-street buffered bike lanes to sidewalk grade cycle tracks and build "protected intersections" for cyclists

Figure 98. Dorchester Street and Old Colony Intersection Existing Conditions

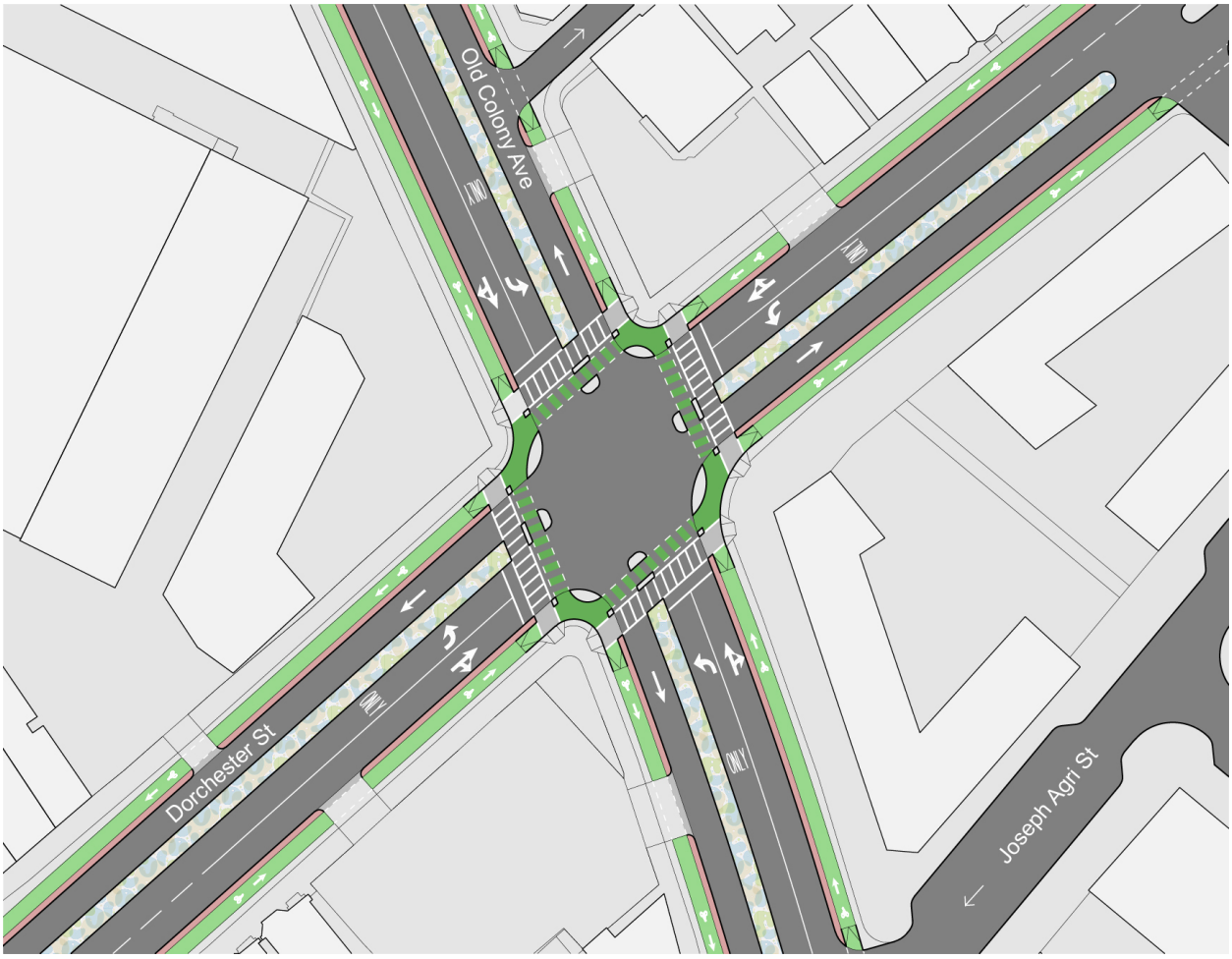


Figure 99. Dorchester Street and Old Colony Intersection Long-Term Improvements - Plan View

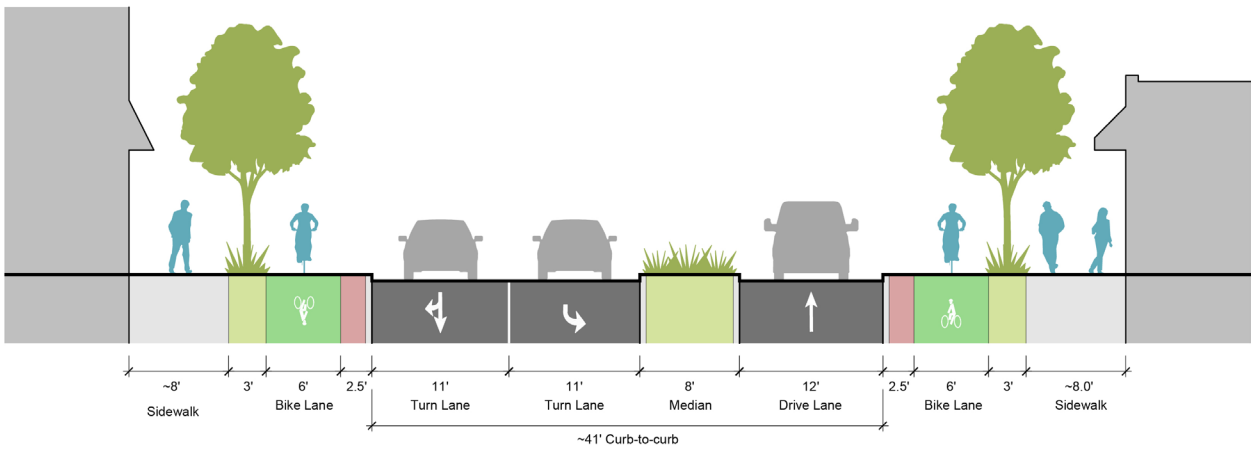


Figure 100. Dorchester Street and Old Colony Intersection Long-Term Improvements - Typical Section

4.7 DORCHESTER AVENUE – NORTH END OF STUDY AREA

As described in the Dorchester Avenue Transportation Plan Existing Conditions Report, the bridge structure on Dorchester Avenue over Haul Road (South Boston Bypass Road) is of insufficient width. In addition to the extremely poor drainage and pavement quality along the sidewalk, a large utility line occupies half of the sidewalk width across the bridge on the eastern side, often forcing pedestrians into the adjacent vehicle travel lanes. This creates substantial safety concerns for both pedestrians and autos.

4.7.1 Reduce travel lane widths to allow for a wider, ADA-accessible sidewalk over Haul Road Bridge.

Narrow the travel lanes on Dorchester Avenue by 1-2' each, allowing the sidewalk on the eastern side to be widened by 2-4' to improve accessibility for all and to comply with ADA requirements. This investment would require coordination with MassDOT, as they own and maintain the bridge.

4.7.2 Eliminate one southbound lane on Dorchester Avenue to provide bicycle accommodations and a wider sidewalk.

Currently, bicycle lanes are not continuous in both directions along the stretch of Dorchester Avenue between the Andrew Square and Broadway T stations. The section north of Old Colony Avenue has wide curb-to-curb width, high vehicle speeds, long crossing distances, and discontinuous bicycle facilities. There is unbalanced vehicle traffic whereas the northbound peak ~1,500, afternoon southbound peak ~1,000, so southbound lanes are underutilized. It is therefore proposed that the cross-section be changed so that a southbound travel lane is reallocated for bicycle lanes on both sides of Dorchester Avenue. Over the Haul Road Bridge, as mentioned above, excess dimension in the travel lanes can be reallocated to provide a wider sidewalk on the east side.

Figure 101. Dorchester Avenue / Haul Raod Bridge Existing Conditions

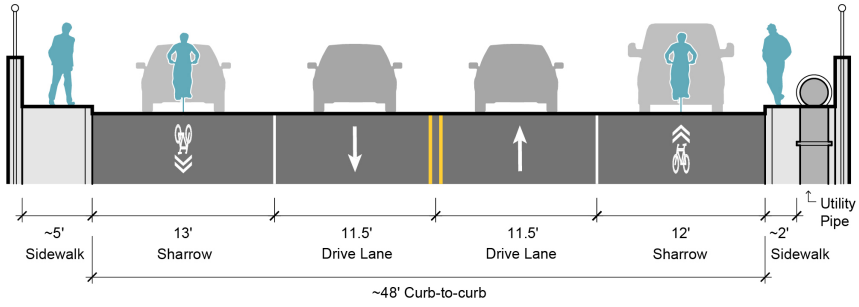


Figure 102. Dorchester Avenue / Haul Raod Bridge Existing Cross Section

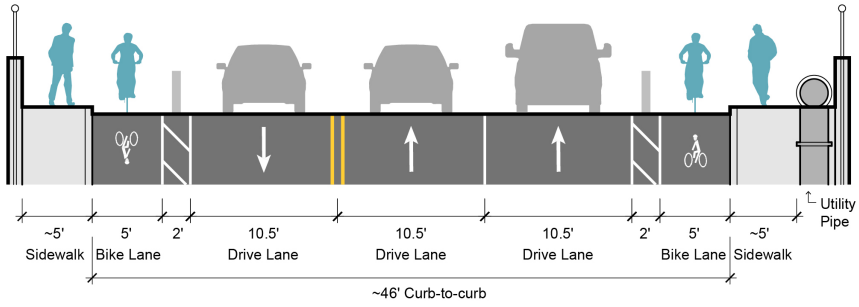


Figure 103. Dorchester Avenue / Haul Raod Bridge Proposed

4.8 THE COMPLETE PICTURE BY MODE: PUTTING THE PIECES TOGETHER

In addition to the more specific locations along specific corridors within the Study Area, this section provides recommendations related to specific modes and may include specific projects, policies and programs.

4.8.1 Street Network

As detailed in Recommendation 4.1, the 2017 PLAN street grid must be constructed to better distribute thousands of new person trips projected by 2040, including those taken by car, bus, bicycle or on foot. In addition to implementing the street grid, it is as important that existing roadways prioritize the movement of people (not just cars) efficiently and safely. Recommendations include:

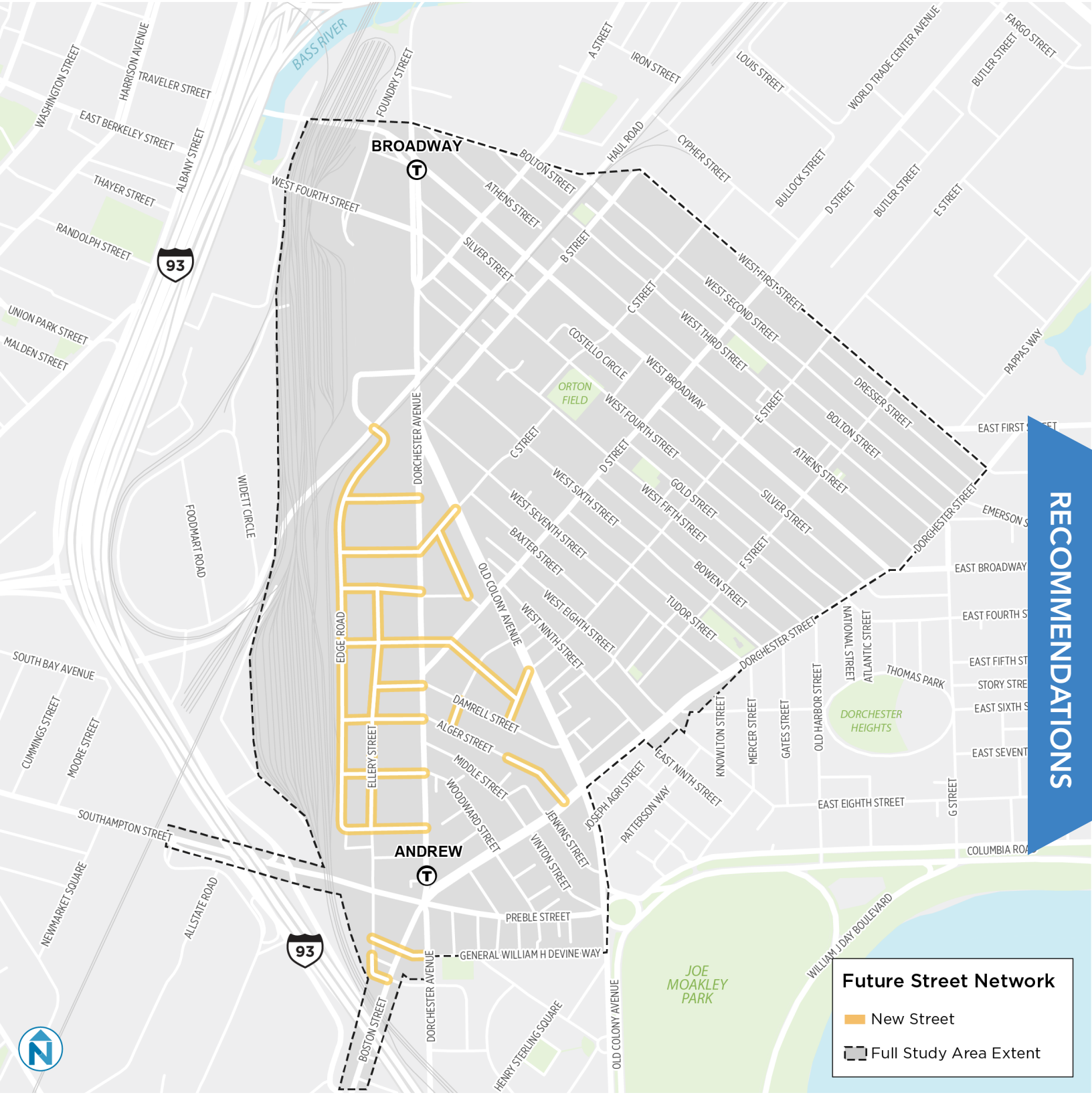
a. **Ensure roadways are well maintained to increase safety (for all users) and comfort for all users.**

b. **Install an integrated network of smart signals able to adapt to changing traffic and provide transit priority.**

c. **Minimize travel delay from double parking and design the curb lane for multiple uses and adaptable/flexible to changing transportation needs and preferences.**

   To minimize double parking in travel lanes, the curb lane must be designed for multiple users. Once reserved almost exclusively for on-street parking, the curb must accommodate increasing demand for service and delivery vehicles, passenger pick-up and drop-off (e.g. TNCs), active programming (e.g. parklets), safer bike facilities, bus priority lanes, and yes, on-street parking.

Figure 104. *Future Street Network*



4.8.2 Transit Network

Thousands of new person trips must be accommodated on transit to support the future development envisioned in the 2017 PLAN. As detailed in the Transit section of this chapter, the Red Line will absorb a significant portion of new transit trips; however, the bus network will require greater frequency of service, as well as new, realigned and extended bus routes. This includes the following:

a. Enhance Access to the Seaport

- **Route 11:** Reroute and create bi-directional connection between Broadway, the Seaport and South Station along A Street.
- **Route 16 and Route 17:** Extend bus routes from Andrew Square to the Seaport along D Street.
- **Uphams Corner Route:** Add new route from Uphams corner through Andrew Square and to the Seaport along D Street.

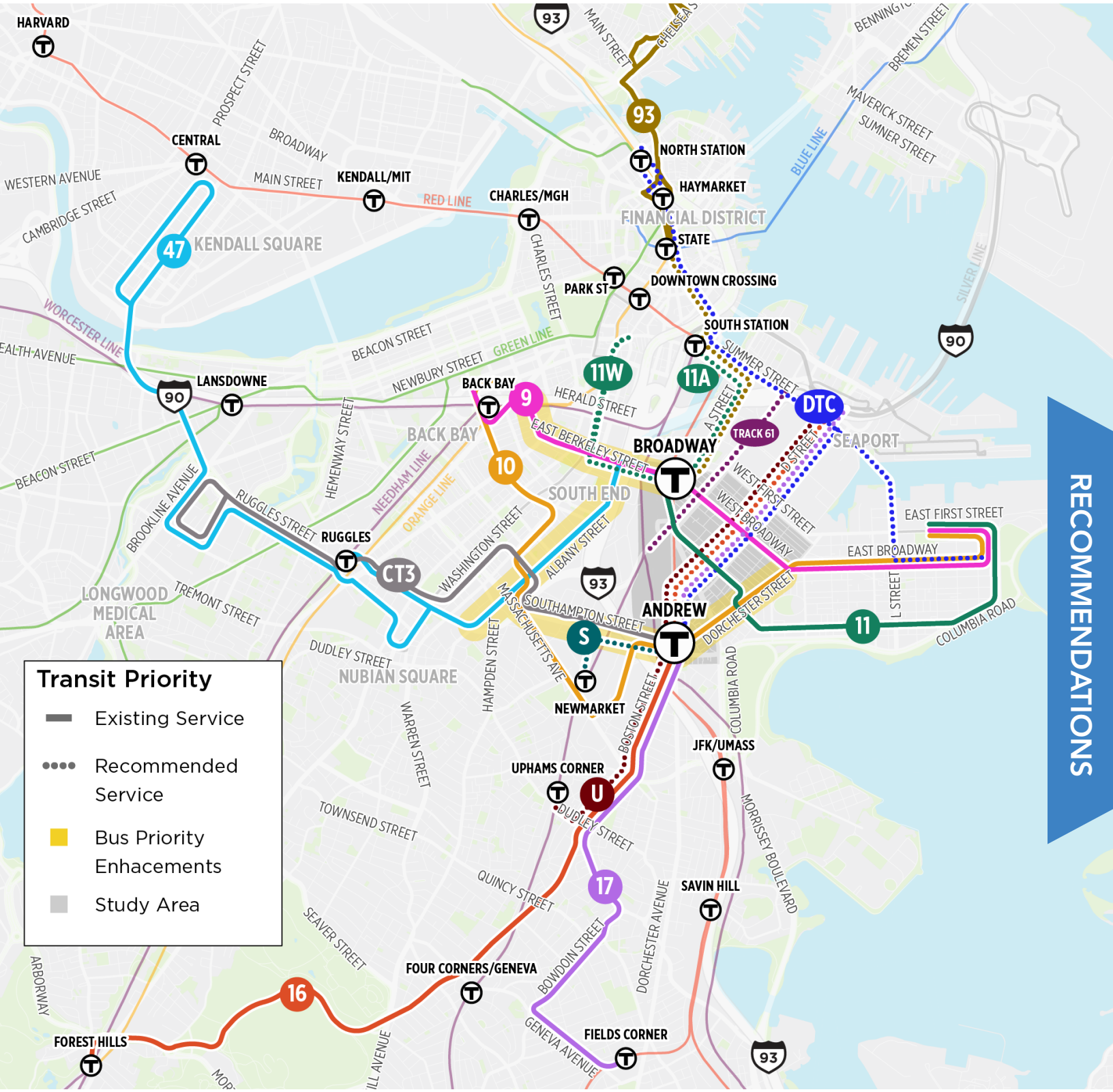
b. Make better connections to the north

- **Downtown Connector:** New rapid bus connection between North Station, the Seaport and then along D Street to Andrew Square.
- **Route 93:** Extend route from Charlestown and North Station along Downtown Connector route and then along A Street to Broadway.

c. Improve access to Dorchester and Roxbury, and major job and activity centers through bus priority.

- **Route 11:** Reroute and create bidirectional service between Broadway and the South End and Washington Street (bus priority) to Tufts Medical Center, Chinatown and Downtown.
- **Route 9:** Bus priority enhancements along East Berkeley Street improve access to Back Bay.
- **Newmarket-South Bay-Andrew Square Shuttle:** New service provides direct connection for residents and workers, including Fairmont Line riders, expedited through bus priority improvements on Southampton Street.
- **Route 47:** Bus priority improvements along Albany Street and other improvements improve connectivity to Nubian Square, the Fenway and Cambridge.
- **CT3:** Bus priority along Southampton, Dorchester Street and Albany Street better connect Nubian Square and the LMA.

Figure 105. Future Transit Network



d. Set aside retail land adjacent to Track 61 for a potential future rail station and connection. (More details are provided in Section 4.1.8.)

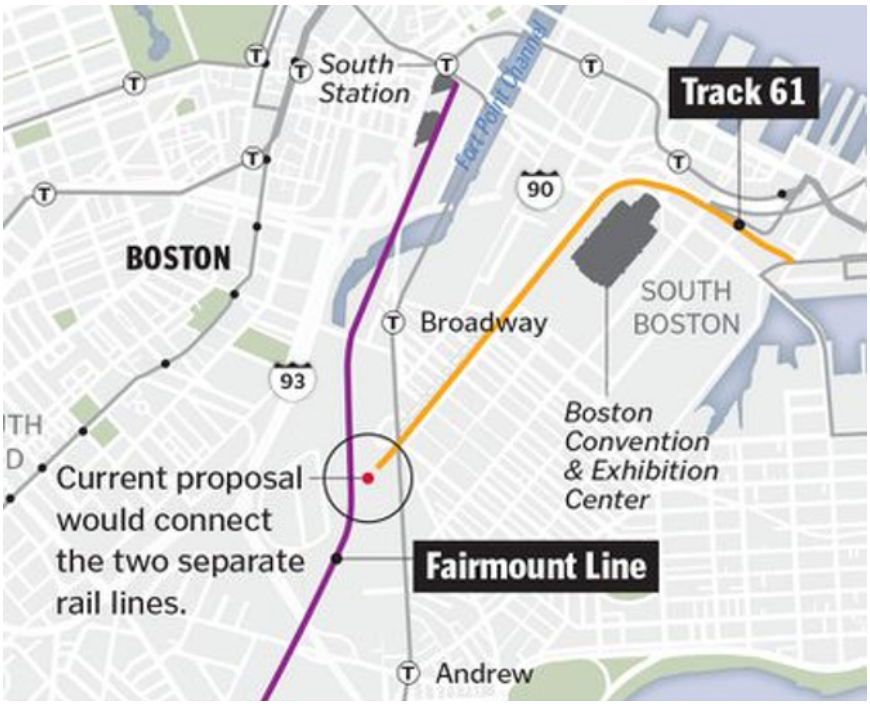


Figure 106. Track 61 Future Rail Station Area Options

4.8.3 Bicycle Network

Encouraging residents, workers and visitors to choose active transportation as their primary way of getting to, from and around the Study Area requires a highly connected network of bicycle facilities and amenities. To shift more to bicycling, the network must also provide a safe and convenient alternative to the car, as well as a comfortable experience to bicyclists with varying levels of experience riding in urban environments.

Given the existing lack of, or disjointed, bicycle lanes within the Study Area, the following is recommended for implemented over time to provide residents, workers and visitors with a network of bicycle facilities that provide the safety, comfort and connectivity to key destinations – including transit transfers – to attract bicyclists of all comfort levels.

a. Dorchester Avenue: Provide continuous bicycle facilities along the entire corridor between Broadway and Andrew Square.

- **Short-Term** improvements include providing buffered bike lanes through low-cost tactical interventions including restriping to reduce travel lane widths to open up additional space for the new facilities.
- **Long-Term**, separated bicycle facilities should be provided offering increased safety and comfort. To achieve this, the

building setbacks in the 2017 PLAN for new construction along Dorchester Avenue, must be adhered to in order to ensure sufficient room is available.

b. **Broadway/Traveler Street and West Fourth Street**: Continue to enhance bicycle safety and comfort along these roadways and link to future Dorchester Avenue facilities, to improve east-west bicycle connectivity to and from the Study Area.
   - **Short-Term:** Ensure all Dorchester Avenue bike improvements are designed to connect seamlessly and safely with Broadway/Traveler/W Fourth lanes (scheduled for 2021 completion by the South Bay Harbor Trail project).

c. **Old Colony Avenue:** Provide high comfort bicycle facilities between Dorchester Avenue and Dorchester Street.
   - **Short-Term:** Stripe parking protected bike lanes along the curb using additional space gained from the lane reallocation.
   - **Long-Term:** Upgrade parking protected bike lanes to separated bike lanes.

d. **Ellery Street:** Provide high comfort bicycle facilities along all of Ellery Street when constructed.
   - **Short-Term:** Establish roadway design criteria for all of Ellery requiring fully protected bicycle lanes along the entire corridor, ideally as cycle tracks.
   - **Long-Term:** As part of the development review process and approval, require developers to construct Ellery Street as envisioned.

e. **Southampton Street:** Construct bus/bike lanes along Southampton from Dorchester Avenue to Massachusetts Avenue to enhance east-west active transportation connectivity and to jobs in South Bay and Newmarket.
   - **Medium-Term:** Provide bus-bike lanes on both sides of Southampton Street.
   - **Long-Term:** Upgrade to separated facilities wherever ROW provides room to accommodate both bus priority and separated bike lanes.

f. **Dorchester Street:** Provide high comfort bicycle facilities between Dorchester Avenue and Broadway.
   - **Short-Term:** Provide parking protected bike lanes through tactical roadway improvements as described in recommendation.
   - **Long-Term:** Upgrade parking protected bike lanes to cycle tracks.

g. **Boston Street:** Include bicycle lanes along Boston Street when converted to Southbound vehicle traffic only.

   - **Long-Term:** Install protected bike lanes.

h. **Preble Street Bicycle Accommodations:** Provide high comfort bicycle facilities between Andrew Square and Kosciuzscko Circle.

   - **Short-Term:** Construct planned parking protected bike lanes on Preble Street east of Andrew Square.

i. **New Streets:** Improve east-west bicycle connectivity in the new grid by including bicycle lanes.

   - **Short-Long Term:** When new roadways are constructed to support developments, require protected or separated bicycle lanes to be constructed particularly those that connect to bicycle existing bicycle accommodations that continue outside the Study Area (e.g. D Street, South Bay Harbor Trail).

j. **Bicycle Parking and Amenities:**
Provide plentiful public bike parking throughout the Study Area to increase convenience and encourage more bicycling.

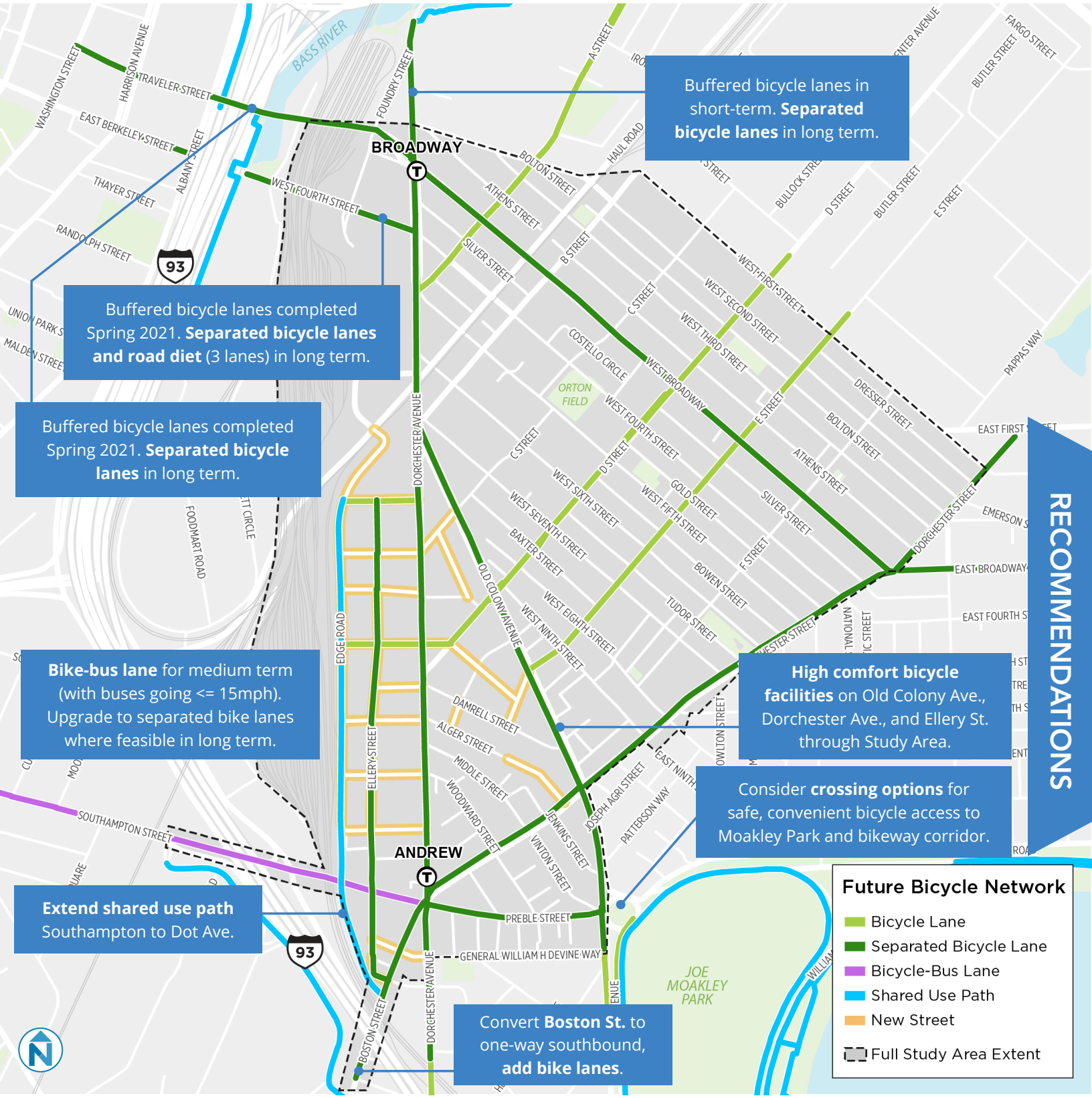
   Short- to Long-Term:

   - Provide public bike racks on every block with commercial uses to ensure those traveling to work or visiting the Study Area have a place to safely lock their bike.
   - Ensure adequate bike parking is provided at Andrew and Broadway T stations – preferably bike cages and/or lockers – to encourage transit ridership.
   - Provide bike parking adjacent to high ridership bus stops.
   - Require developers to provide both on-street, short-term bike parking, and secured indoor bicycle parking in highly visible locations most convenient and accessible for residents and workers (and not in hard to locate and access basements or lower-level underground parking structures), in compliance with the City's Bicycle Parking Guidelines.
   - Bike Share – Strategically locate and install BlueBikes stations throughout the Study Area to encourage more bike trips.

   Short-Term:

   - Ensure that bike share is never more than a short, convenient walk from any destination in the Study Area.
   - Whenever possible, locate bike share hubs at locations where multiple bicycle facilities connect.
   - Co-locate bike share with other transportation services including at major bus and rail stations.

Figure 107. Future Bicycle Network



4.8.4 Pedestrian Network

Short-Term Recommendations

Several non-site-specific recommendations have been identified that would improve the pedestrian environment. These could be implemented holistically or individually as resources allow.

a. **Ensure all sidewalks are maintained and free of tripping hazards.**

b. **Ensure sidewalks are designed and constructed to be consistent with City of Boston sidewalk guidelines based on street typologies** to ensure sidewalks are wide enough to accommodate two-way pedestrian movement, ADA-accessibility, and space for activity (e.g. outdoor dining along commercial corridors), and ample space for transit shelters and waiting areas.

c. **Require street trees to be planted and maintained to provide cooling shade for pedestrians during warmer months.**

d. **Construct and ADA ramps where they do not already exist, maintain those in need of repair.**

e. **Daylight intersections and regularly stripe crosswalks** to increase visibility of people walking.

f. **Prohibit turns on red to reduce conflicts with pedestrians** where not already allowed at high pedestrian traffic intersections.

g. **Shorten signal cycle lengths where possible to reduce pedestrian delay.**

h. **Add LPIs to signalized intersections** to allow pedestrians a "head start" in crossing an intersection before giving green light to autos.

4.9 PARKING AND TRANSPORTATION DEMAND MANAGEMENT (TDM)

Parking supply and availability are challenging issues with new devel¬opment, no more so than in South Boston, a neighborhood with limited parking availability both on- and off-street. As described in Existing Conditions, the entire Study Area is within the South Boston Parking Freeze. West of Dorchester Avenue is within the "Industrial Zone" that requires approval for building new off-street parking spaces and are limited by a finite "bank" of available spaces to draw from. Any new parking spaces for commercial land uses, as well as residential spaces beyond 1 space per residential unit are required to fit within the total "bank" of parking spaces.

There are approximately 1,800 parking spaces already permitted in the study area that could be reallocated as these parcels redevelop, however with less than 2,000 total parking spaces remaining in the parking freeze "bank", most new development in the Study Area will have limitations on new off-street parking supply. As such, businesses must rely on alternative modes to transport their workers and visitors.

Given the above, robust Transportation Demand Management (TDM) policies and programs are needed to incentivize employees to work, and to support residents who live in the area. Given the lack of off-street parking possible within the district, on-street parking and curbside use policies must discourage long-term parking, while still providing options for customers needed to support retail and service uses.

4.9.1 Complete and adopt the City of Boston's new TDM points system and policy to reduce parking demand and incentivize use of sustainable modes over SOVs.

TDM Plans are required based on the the location of the site; its walk-ability, multimodal and transit access; its access to grocery stores and jobs; the type of use; the projected number of trips to the site; the number of parking spaces; the number of employees; and the square footage of the development (or redevelopment). Requirements reflect both the geography and size or magnitude of the development.

The Boston Transportation Department currently enforces a TDM Menu of Options through the TAPA that sets baseline requirements for TDM measures, which is part of wider revisions to the current TAPA process. BTD and BPDA are working to develop a new point system that builds off the TDM options below, new parking ratios, and bringing the TAPA process online. The TDM menu of options will eventually be replaced by the point system. In the meantime, BTD and BPDA must work with developers to choose options that are most applicable and useful to lowering the development's drive alone rates. Options selected are up to BTD discretion and must be approved before a TAPA is signed.

Examples of Development-Related TDM Measures include:

- Subsidized transit passes
- Subsidized BlueBikes memberships
- Parking reduction
- Parking cash-out programs
- Shuttle or van service
- Emergency Ride Home
- Car share service
- Land use diversity (ie: delivery supportive amenities, on-site grocery store)
- Requirements for transit amenities
- Transportation Management Associations Membership

Adoption and enforcement of the TDM points system when it is completed will have a very real benefit to travel in the study area. We encourage the consistent use of the points system in conversations between BPDA and BTD staff and developers as a means to shift the mindset of what developments look like in the study area.

4.9.2 Proactively manage on-street parking to encourage turnover and discourage long-term parking.

With off-street parking availability limited due to the parking freeze, on-street parking must be managed properly to discourage all-day employee and/or visitors. On-street parking should prioritize short-term parking to support local business activity where appropriate.

a. **Limit on-street parking on primary arterial streets with commercial uses to a maximum of 4-hours between 8am and 8pm.**

   Four-hour parking provides greater flexibility for visitors to park once and visit multiple stores and service establishments.

b. **Price on-street parking to encourage greater turnover and increased availability - Performance Parking.**

   When parking is priced too low, visitors are more likely to stay longer than needed. To encourage turnover in most convenient and desirable locations, price parking at a higher price than in more remote and less desirable areas.

c. **Consider graduated pricing to further encourage parking turnover.**

   Graduated pricing – per hour cost increases the longer a car is parked – to encourage shorter stays.

d. **Require developers to provide parking kiosks on new roadways.**

   Where parking will be regulated by pricing on new roadways, require developers to include parking kiosks in design documents and to pay for their installation during construction.

4.9.3 Design and program the curb lane to minimize SOV trips, and minimize traffic delay from double parking.

Competition for space in the curb lane has increased and will continue to shift based on transportation trends and preferences, for example increased ride hailing, delivery needs, and active uses.

a. **Designate areas for pick-up and drop-off to accommodate growing ride-hailing and shared transportation services, as well as increased delivery services.**

   Pick-up/drop-off curb zones should be provided proximate to retail and service clusters where demand is highest and frequent double parking is most likely to result in travel delay and increased congestion.

b. **Incorporate safe bicycle facilities and/or transit priority into curb lane design to provide more efficient, comfortable and safe alternatives to the SOV.**

(Refer to BTD's curbside design guidelines for additional information about preferred curbside use for different street typologies.)

IMPLEMENTATI

ON

5.1 SUMMARY OF RECOMMENDATIONS

The recommendations described in Chapter 4 are summarized in the Table over the following pages. These recommendations are organized by type of recommendation where possible (transit, street grid, roadway, bicycle) though some recommendations are multimodal in nature. The table delineates the timeframe for implementation, responsible parties, and strategy. This Plan is not fiscally constrained and actions are not binding.

Strategy

- **I: Infrastructure** – the bulk of the transportation recommendations are infrastructure related. These are recommendations that change the roadway or transit station infrastructure somehow to improve modal accommodations, safety and operations.
- **O: Operations** – related to transit service/routing changes or to traffic signals, recommendations that will improve service, safety and operations.
- **P: Policy** - a course or principle of action adopted by the City of Boston. Policies listed in the chart may be existing or new.
- **G: Guidance** - a general rule or principle that the City will follow while guiding the Plan's implementation, but which has not been formally adopted.

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.1	**TRANSIT**			
4.1.1	**Pilot transit priority improvements on high ridership bus routes that provide service to and from the Study Area.**	**Short-Term**	**City of Boston + MBTA**	**I**
	a. Route 11: Introduce transit priority along E Berkeley Street and W 4th Street. Consolidate bus stops along Dorchester Street between Andrew Square and Broadway.	Short-Term	City of Boston + MBTA	I
	b. Route 9: Provide bus priority around Broadway Station (benefits other routes as well).	Short-Term	City of Boston + MBTA	I
	c. Route 10: Provide bus priority along Southampton Street (benefits other routes as well), and consider routing through Andrew Square without circulating through the Andrew Square Station Busway.	Short-Term	City of Boston + MBTA	I
	d. Route 47: Provide bus priority along all or segments of the route (e.g. Albany Street) between Broadway Station and LMA.	Short-Term	City of Boston + MBTA *Support: MassDOT*	O
4.1.2	**Increase Service Frequency on Existing Bus Routes**	**Short-Term**	**MBTA**	**O**
	a. Route 7: Increase service frequency	Short-Term	MBTA	O
	b. Route 11: Increase service frequency	Short-Term	MBTA	O

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.1.3	**Complete design and construct new headhouses at the Broadway and Andrew Square Red Line stations to enhance access to and from the subway.**	**Short-Term**	**MBTA** *Support: City of Boston*	**I**
4.1.4	**Improve access to the Study Area through direct connections to the Seaport and beyond.**	**Long-Term**	**MBTA** *Support: City of Boston*	**Varied**
	a. A Street: Create a bi-directional connection between the Study Area and the Seaport along A Street.	**Long-Term**	**MBTA** *Support: City of Boston*	**O**
	b. D Street: Provide bus service and bus priority improvements along D Street.	**Long-Term**	**MBTA** *Support: City of Boston*	**I**
4.1.5	**Improve connections to the North - North Station, Blue Line and Charlestown Connections.**	**Short-Term**	**City of Boston + MBTA**	**Varied**
	a. Create a rapid bus connecting North Station to the Study Area.	Short-Term	City of Boston + MBTA	I
	b. Extend Route 93 to the Study Area via A Street to the Broadway Red Line Station.	Long-Term	MBTA *Support: City of Boston*	O
4.1.6	**Improve access to other major job and activity centers in Boston.**	**Long-Term**	**City of Boston + MBTA**	**O**
	a. Improve connections to South End, Chinatown and Tufts Medical Center.	Long-Term	City of Boston + MBTA	O
	b. Increased Access to Back Bay.	Long-Term	City of Boston + MBTA	O
	c. Improve connections to Newmarket, BU Medical Campus, Nubian Square, and LMA.	Long-Term	City of Boston + MBTA	O

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.1.7	**Improve access to the Study Area and Seaport from Dorchester and Roxbury.**	**Long-Term**	**City of Boston + MBTA** *Support: Developers*	**Varied**
	a. Route 47: Albany Street bus enhancements improve access between the Study Area and Nubian Square.	Long-Term	MBTA *Support: MassDOT*	I
	b. Route 16, Route 17 extensions and/or new Uphams Corner Route: along D Street improve connectivity between Dorchester, the Study Area and the Seaport.	Long-Term	MBTA	O
	c. Newmarket-South Bay-Andrew Square Shuttle: increases access to the Study Area for Fairmount Line riders.	**Long-Term**	**MBTA** *Support: MassDOT*	**I**
4.1.8	**Retain land adjacent to Track 61 to the east of Dorchester Ave, for a potential future rail station.**	**Long-Term**	**City of Boston + MBTA + MassDOT + Massport** *Support: Developers*	**P**
4.1.9	**Encourage bus transit ridership by providing greater comfort and convenience by investing in supportive infrastructure and amenities at bus stops.**	**Long-Term**	**City of Boston + MBTA**	**P**

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.1.10	**Encourage transit ridership though TDM Point System including subsidized transit passes.**	**Long-Term**	**City of Boston**	**P**
4.2	**STREET GRID**			
4.2.1	**Ensure that the street grid developed as part of the 2017 PLAN is implemented**	**Short-Term / Long-Term**	**Developers** *Support: City of Boston*	**Varied**
	a. Ensure Ellery Street as envisioned is built out parallel to Dorchester Avenue	Short-Term / Long-Term	Developers *Support: City of Boston*	I
	b. Construct Service Corridor/Edge Road along the western edge of the Study Area.	Short-Term / Long-Term	Developers *Support: City of Boston + MassDOT + Massport*	I
	c. Ensure compliance of street setbacks by new development as articulated in the 2017 PLAN including along Dorchester Avenue and Old Colony Boulevard	Short-Term / Long-Term	BPDA *Support: City of Boston*	P
	d. Ensure any proposed changes to, or removal of, east/west roadways within the proposed grid do not negatively impact connectivity for all modes.	Short-Term / Long-Term	BPDA *Support: City of Boston*	G

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.3	**ANDREW SQUARE**			
4.3.1	**Finalize design interventions and implement Boston Transportation Department's Vision Zero Rapid Response Project to improve safety.**	**Short-Term**	**City of Boston**	**I**
4.3.2	**Implement accessibility and access improvements at Southampton and Ellery Street.**	**Short-Term**	**City of Boston** *Support: Developers*	**I**
	a. Add a new signal at Southampton and Ellery Street	Short-Term	City of Boston *Support: MassDOT, Developers*	O
	b. Add a crosswalk across Southampton Street at Ellery Street with a pedestrian crossing island for pedestrians to safely wait when needed.	Short-Term	City of Boston *Support: MassDOT, Developers*	I
4.3.3	**Implement circulation changes to Andrew Square.**	**Short-Term**	**City of Boston**	**I**
	a. Convert Boston Street to one-way, southbound traffic only.	Short-Term	City of Boston	I
	b. Add shared bus and bike lanes in both directions along Southampton.	Medium-Term	City of Boston	I
4.3.4	**Redesign Andrew Square intersection as a "peanut" roundabout.**	**Long-Term**	**City of Boston**	**I**

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.4	**VICINITY OF ANDREW SQUARE**			
4.4.1	**Enhance pedestrian and bicycle safety through "daylighting" to improve visibility.**	**Short-Term**	**City of Boston**	**I**
4.4.2	**Upgrade pedestrian amenities at Southampton and I-93 ramps.**	**Short-Term**	**MassDOT** *Support: City of Boston*	**I**
4.5	**DORCHESTER STREET**			
4.5.1	**Implement tactical design interventions between Andrew Square and Broadway.**	**Short-Term**	**City of Boston** *Support: Developers*	**I**
4.6	**OLD COLONY AVE**			
4.6.1	**Repurpose Old Colony Avenue as a Complete Street.**	**Short-Term**	**City of Boston** *Support: Developers*	**I**
4.6.2	**Redesign the Old Colony and Dorchester Avenue intersection.**	**Short-Term**	**City of Boston** *Support: Developers*	**I**
4.6.3	**Reconfigure Old Colony Avenue & Dorchester Street intersection.**	**Short-Term**	**City of Boston** *Support: Developers*	**I**
4.6.4	**Redesign the Old Colony Avenue and Dorchester Street intersection.**	**Long-Term**	**City of Boston** *Support: Developers*	**I**
4.7	**DORCHESTER AVENUE – NORTH END OF STUDY AREA**			
4.7.1	**Reduce travel lane widths to allow for a wider, ADA-accessible sidewalk over Haul Road Bridge.**	**Short-Term**	**MassDOT + City of Boston** *Support: Developers*	**I**
4.7.2	**Eliminate one southbound lane on Dorchester Avenue to provide bicycle accommodations and a wider sidewalk.**	**Short-Term**	**City of Boston** *Support: MassDOT*	**I**

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.8	**THE COMPLETE PICTURE BY MODE: PUTTING THE PIECES TOGETHER**			
4.8.1	**Roadway Network**	**Long-Term**	**City of Boston**	**Varied**
	a. Ensure roadways are well maintained to increase safety (for all users) and comfort for all users.	Long-Term	City of Boston	P
	b. Install an integrated network of smart signals able to adapt to changing traffic and provide transit priority.	Long-Term	City of Boston	O
	c. Minimize travel delay from double parking and design the curb lane for multiple uses and adaptable/flexible to changing transportation needs and preferences.	Long-Term	City of Boston	G
4.8.2	**Transit Network**		**City of Boston + MBTA**	
	a. Enhance Access to the Seaport		City of Boston + MBTA	
	b. Make better connections to the north		City of Boston + MBTA	
	c. Improve access to Dorchester and Roxbury, and major job and activity centers through bus priority.		City of Boston + MBTA	
	d. Set aside retail land adjacent to Track 61 for a potential future rail station and connection.		City of Boston + MBTA	

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.8.3	**Bicycle Network**	**Varied**	**City of Boston + Developers**	
	a. Dorchester Avenue: Provide continuous bicycle facilities along the entire corridor between Broadway and Andrew Square.	Varied	City of Boston *Support: Developers*	I
	b. Broadway/Traveler Street and West Fourth Street: Continue to enhance bicycle safety and comfort along these roadways.	Short-term	City of Boston	I
	c. Old Colony Avenue: Provide high comfort bicycle facilities between Dorchester Avenue and Dorchester Street.	Short-term	City of Boston	I
	d. Ellery Street: Provide high comfort bicycle facilities along all of Ellery Street when constructed.	Varied	Developers *Support: City of Boston*	I
	e. Southampton Street: Construct bus/bike lanes along Southampton from Dorchester Avenue to Mass Ave.	Medium-term	City of Boston	I

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
	f. Dorchester Street: Provide high comfort bicycle facilities between Dorchester Avenue and Broadway.	Short-term, Long-term	City of Boston	I
	g. Boston Street: Include bicycle lanes along Boston Street when converted to Southbound vehicle traffic only.	Long-term	City of Boston	I
	h. Preble Street Bicycle Accommodations: Provide high comfort bicycle facilities between Andrew Square and Kosciuzscko Circle.	Short-term	City of Boston	I
	i. New Streets: Improve east-west bicycle connectivity in the new grid by including bicycle lanes.	Varied	Developers	I
	j. Bicycle Parking and Amenities: Provide plentiful public bike parking.	Varied	City of Boston + Developers	I
	k. Bike Share: Strategically locate and install BlueBikes stations throughout the Study Area to encourage more bike trips.	Short-term	City of Boston + Developers	I

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.8.4	**Pedestrian Network**		**City of Boston** *Support: Developers*	
	a. Ensure all sidewalks are maintained and free of tripping hazards.		City of Boston	
	b. Ensure sidewalks are designed and constructed to be consistent with City of Boston sidewalk guidelines based on street typologies		City of Boston *Support: Developers*	
	c. Require street trees to be planted and maintained to provide cooling shade for pedestrians during warmer months.		City of Boston *Support: Developers*	
	d. Construct and ADA ramps where they do not already exist, maintain those in need of repair.		City of Boston	
	e. Daylight intersections and regularly stripe crosswalks		City of Boston	
	f. Prohibit turns on red to reduce conflicts with pedestrians where not already allowed at high pedestrian traffic intersections.		City of Boston	
	g. Shorten signal cycle lengths where possible to reduce pedestrian delay.		City of Boston	
	h. Add LPIs to signalized intersections		City of Boston	

ID	RECOMMENDATION	TIME FRAME	PRIMARY RESPONSIBILITY	STRATEGY
4.9	**PARKING AND TDM**			
4.9.1	**Complete and adopt the City of Boston's new TDM points system and policy to reduce parking demand and incentivize use of alternative modes over the SOV.**	**Short-term**	**City of Boston** *Support: Developers*	**G**
4.9.2	**Proactively manage on-street parking to encourage turnover and discourage long-term parking.**	**Short-term**	**City of Boston**	**Varied**
	a. Limit on-street parking on primary arterial streets with commercial uses.	Short-term	City of Boston	P
	b. Price on-street parking to encourage greater turnover and increased availability - Performance Parking.	Short-term	City of Boston	P
	c. Consider graduated pricing to further encourage parking turnover.	Short-term	City of Boston	P
4.9.4	**Design and program the curb lane to minimize SOV trips, and minimize traffic delay from double parking.**	**Short-term**	**City of Boston**	**P**
	a. Designate areas for pick-up and drop-off to accommodate growing ride-hailing and shared transportation services, as well as increased delivery services.	Short-term	City of Boston	P
	b. Incorporate safe bicycle facilities and/or transit priority into curb lane design.	Short-term	City of Boston	P

5.2 PHASING OF IMPLEMENTATION

The key for the timeframes identified above is as follows:

Timeframe

- Short-Term: 1-5 years
- Medium-Term: 5-10 years
- Long-Term: 10-20 years

Those recommendations identified as being short-term are largely those that are within the control of the City of Boston and/or the development community to implement, that are relatively low cost, within existing rights-of-way or development parcels, and that have a clear safety benefit. Short-term recommendations are set up so that they compliment and do not conflict with any planned long-term planning efforts.

Medium-term recommendations are those identified as having nearer value and in some cases may be an interim condition until funding for a longer-term strategy is identified.

Long-term recommendations are largely those which are of high cost and complexity, require additional City partners and/or are in conjunction with significant land use changes.

5.3 IMPLEMENTATION CONSIDERATIONS

The table above identifies a responsible lead party to implement each of the Plan's recommendations. This responsible party is likely not the only party involved in implementation. Rather, it will be on their shoulders to be the lead in advancing the project. Below is a list of responsible parties and their role moving forward:

- **Developers** – this group is responsible for mitigating impacts resulting from developments occurring within the Study Area. Through discussions with the City, it was determined that it could make sense for developers to complete or help to advance several items within the recommendations chapter.
- **City of Boston** – infrastructure recommendations could be led by BTD and constructed by PWD. Guidance and policy recommendations are likely to be led by BPDA and BTD. BPDA, BTD, and BPW were actively involved in the development of this Plan and its recommendations.
- **MBTA** – many of the transit operations recommendations, and some of the transit infrastructure recommendations, would be led by MBTA. Bus priority improvements on City streets would be done in partnership with the MBTA. All bus transit route recommendations have been developed with the MBTA and they will be considered as part of their system-wide Bus Network Redesign effort currently underway.
- **MassDOT** – a handful of recommendations touch on or occur on rights-of-way owned and maintained by MassDOT. In which case, MassDOT would either be the lead agency responsible for implementation, or coordination with MassDOT would be needed to advance the recommendation.
- **Massport** – Massport is a major landowner in the Seaport and a responsible party for the operations of the Boston Convention and Exhibition Center and the Ray Flynn Marine Park. They are an important stakeholder in conversations that could impact freight movement between the Seaport and the regional transportation network, including South Boston Bypass Road and I-93.