



INCREASING RIDERSHIP ON THE FAIRMOUNT LINE

Final Report

April 2017

The Boston
Foundation 


NELSON
NYGAARD



Dear Friends,

Imagine a region so populous that it would be ranked the third-largest city in New England. Now picture this major urban area with no effective rail system—close to 200,000 residents stranded without an efficient way to commute to their jobs, go to school or just do the weekly grocery shopping. For many years, this was the story of the people who live along the Fairmount Line in Boston, who watched as trains flew by, barreling from Hyde Park to South Station with no stops in between. All of that began to change more than two decades ago, when a grassroots movement—seeded by grants from the Boston Foundation—rose up, sparking what would become one of the largest community-led planning initiatives in the city’s history.

Everyone in Boston owes a debt of gratitude to the many individuals who have advocated for the Fairmount Line and to the groups, particularly the Fairmount Indigo Network and the Fairmount Indigo Transit Coalition. We also owe thanks to many in city government and to the MBTA, which has made major investments in improving the Fairmount Line, including more than \$200 million for new stations and infrastructure. These efforts are beginning to yield significant returns, with a near tripling of ridership since new stations opened in 2012 and 2013 and we look forward to more progress in the years to come. Using the Fairmount Line can significantly reduce travel times for Fairmount area residents, in some cases by up to 50 percent.

This report, *Increasing Ridership on the Fairmount Line*, demonstrates what community groups have been saying for a long time: There is demand for this service and even greater potential to increase ridership along the line. It also makes recommendations for increasing that ridership.

Of course, this isn’t just about access to transit; it’s about access to opportunity for all residents of Greater Boston. The Fairmount Line serves the majority of the City of Boston’s , and in large part, the region’s communities of color that are struggling with high unemployment rates and low incomes. About one-third of the residents are under 18 and more than one-third of those children are living in poverty.

Behind the statistics, however, are people. People determined to live and raise their children in neighborhoods that are diverse, vibrant and safe. The Boston Foundation is proud of our contributions to improving the lives of those people and we thank everyone in the city who has contributed time, organizing, passion and a lot of hard work to making this dream come true. Now, let’s make it even better.

Paul S. Grogan, President and CEO

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1 INTRODUCTION

The Fairmount Line has long been viewed as an underutilized asset with the potential to increase the mobility of Boston's most transit reliant residents. The rail line connects a string of Dorchester, Mattapan, and Hyde Park neighborhoods and business districts known collectively as the Fairmount Corridor. Despite only having access to unreliable local bus lines, residents and workers in these neighborhoods ride MBTA transit services as frequently (or more) as other communities in Greater Boston. The community has long seen that the Fairmount Line could provide better, faster, more frequent, and reliable service for the benefit of its residents.

Background

Decades of community pressure and support have yielded significant investments in Fairmount Line service and infrastructure.¹ The Commonwealth of Massachusetts and its funding partners have spent over \$200 million in upgrading Fairmount Line tracks and bridges. Three new stations have been constructed while others have been renovated. An additional station is under construction at Blue Hill Avenue and expected to open in 2019.



Source: Pi.1415926535

The MBTA has added weekday peak and off-peak trips, and has begun providing all-day weekend service. The City of Boston and local organizations have conducted numerous studies focusing on economic development, residential affordability, and zoning in Fairmount Corridor neighborhoods. These investments and planning efforts have significantly increased the Fairmount Line's utility for local residents, while laying the groundwork for continued improvements in the future.

More recently, Fairmount Line advocacy efforts have focused on the provision of additional service. An ultimate community goal is providing rapid transit style frequencies of 15 minutes or less. While frequency is an essential element of a successful transit service, numerous other factors will ultimately determine the Fairmount Line's long term utility for Corridor residents, workers, and visitors. Fairmount Line service must be easy to understand, and the benefits of using the service need to be directly communicated to potential riders. The Fairmount Line must be well integrated with local neighborhoods and business districts, while also providing direct connections to transit lines serving major destinations throughout Greater Boston. Fairmount Corridor zoning and development should be Fairmount Line-centric, with the goal of increasing the density and land use mix of station areas and surrounding neighborhoods. These improvements will lead to increasing Fairmount Line ridership, justifying more frequent service and additional capital investments.

¹ For an in-depth overview of community efforts to improve the Fairmount Line, visit:
<http://www.bostonplans.org/getattachment/653f6e4d-a482-4163-ad39-11876d8f656a>

Study Purpose

This study focuses on short and medium term investments designed to increase Fairmount Line ridership. To develop investment recommendations, the study team strived to answer the following questions:

- Who rides the Fairmount Line today? Why do they choose to ride the Fairmount Line over other mobility options?
- What are the current barriers to using the Fairmount Line?
- What is the potential Fairmount Line ridership market? How does this market compare to other communities with rapid transit service?
- What strategies and investments could be used to remove barriers for using the Fairmount Line?

Report Structure

Using these questions as a framework, this report is structured into the following four chapters:

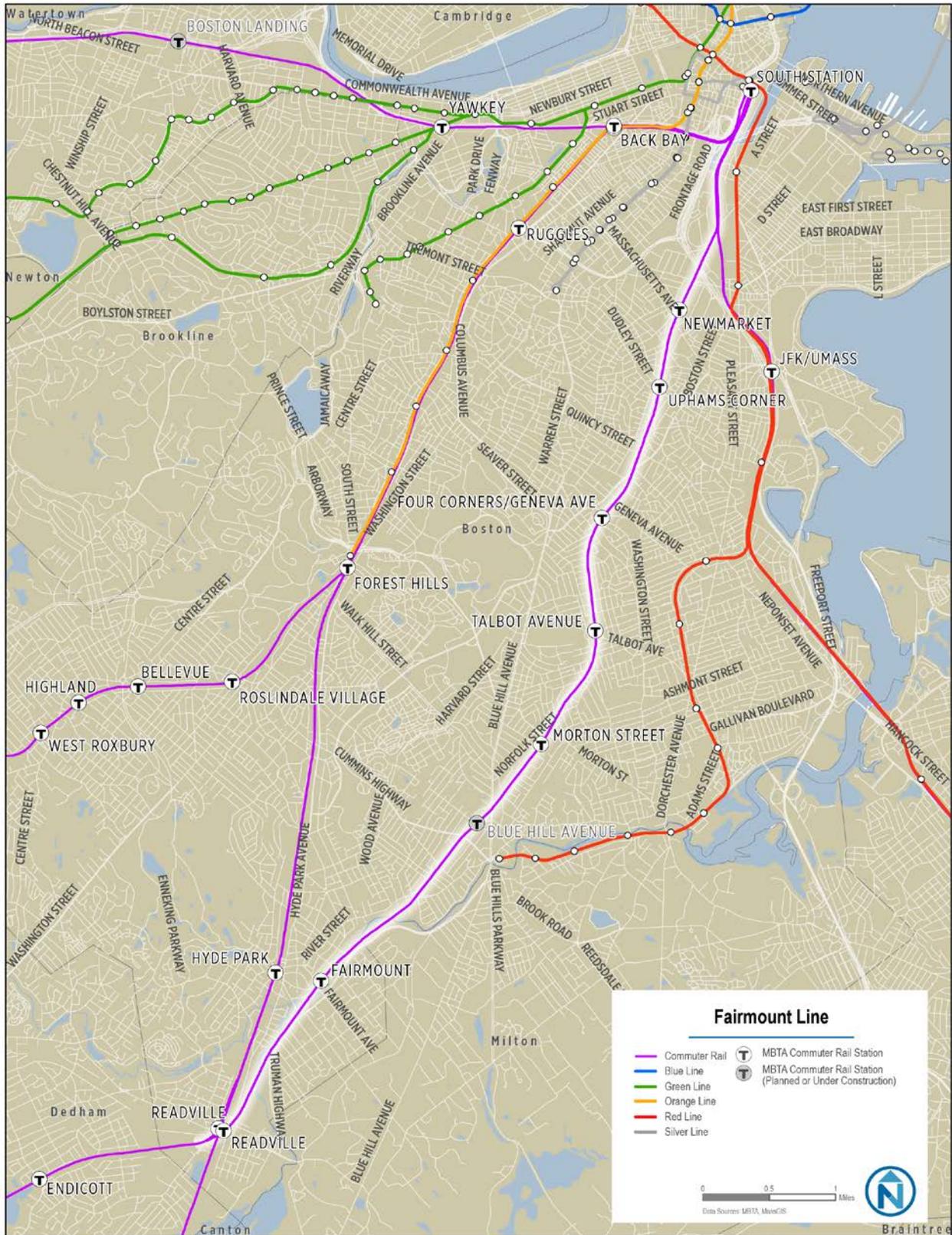
- **Chapter 2: Fairmount Line Today:** An overview of existing Fairmount Line infrastructure, service and ridership, including an analysis of the June 2016 ridership count conducted by Nelson\Nygaard and community members.
- **Chapter 3: Past Analysis of the Fairmount Line:** Brief descriptions of past Fairmount Line and Fairmount Corridor studies and reports, with a focus on recommendations.
- **Chapter 4: Market Analysis:** A review of the potential Fairmount Line ridership market, including an analysis of station area population and employment density.
- **Chapter 5: Recommendations to Increase Ridership:** Short and medium term recommendations for increasing Fairmount Line ridership.
- **Chapter 6: Long Term Recommendations:** Concepts and strategies for the long-term success of the Fairmount Line.

Acknowledgements

Many organizations and individuals provided invaluable input, guidance and insights during this process. We want to thank the members of the Fairmount Indigo Network, particularly Allentza Michel, as well as Mela Miles and the members of the Fairmount Indigo Transit Coalition for their input and support. We would also like to thank Noah Berger for his contributions to the study and for providing the cover image.

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Figure 1 | Fairmount Line Map



2 FAIRMOUNT LINE TODAY

With many recent changes, establishing a strong understanding of the current use of and market for the Fairmount Line is critical. This existing conditions analysis included a review of Fairmount Line infrastructure, service, and fare policy. The project team also led the first comprehensive ridership count and analysis since 2012, which provides the first insight into how Fairmount Line improvements have affected ridership patterns. The existing conditions analysis is organized in the following sections:

- **Service Area:** An overview of neighborhoods served by the Fairmount Line, including adjacent transit services.
- **Infrastructure:** A review of existing Fairmount Line infrastructure and design characteristics.
- **Service:** An overview of current Fairmount Line service levels, including comparisons with other MBTA transit services.
- **Fares:** A review of Fairmount Line fare policy, with a specific focus on the integration of the Fairmount Line with MBTA local bus and rapid transit services.
- **June 2016 Ridership Count:** An analysis of comprehensive ridership count results, including comparisons with other MBTA transit services.

Using the existing conditions and ridership analysis as a guide, the project team identified barriers faced by residents when they choose – or choose not – to ride the Fairmount Line. Developing solutions that reduce these barriers is the basis of the short and medium term recommendations presented later in this report.

SERVICE AREA

The Fairmount Line is the only MBTA commuter rail line that operates entirely within the City of Boston.

The Fairmount Line is a 9.2-mile commuter rail service with eight stations (Figure 1), and one more station under construction. The line begins at South Station in Downtown Boston and continues south to Readville via Dorchester, Mattapan, and Hyde Park. Intermediate stations serve a series of neighborhoods known collectively as the Fairmount Corridor.

The Fairmount Corridor is primarily residential.

Fairmount Corridor neighborhoods are primarily residential with a mix of single family and small multi-unit buildings, as well as some larger apartment complexes. Most Fairmount Line stations are located just outside of a local business district, which typically consist of retail establishments and small businesses. Larger industrial complexes are located near Readville and Newmarket stations. Newmarket is also adjacent to a regional shopping center.

The Fairmount Corridor has a higher proportion of minority and low income residents than neighborhoods served by any MBTA Rapid Transit line.

The Fairmount Line serves racially and economically diverse neighborhoods. Over 80% of Fairmount Corridor residents identify as a minority, with about 50% of residents identifying as black (non-Hispanic). Apart from the Mattapan Line, no MBTA Rapid Transit lines serve neighborhoods with greater than 50% minority residents. The Fairmount Corridor also has a higher proportion of low-income residents than any MBTA Rapid Transit corridor, with just under 24% of residents living in a low-income household.

Fairmount Corridor neighborhoods are served by a robust and well utilized local bus network.

Fairmount Corridor residents, workers, and visitors have access to a wide range of local bus services. The primary transportation corridors near the Fairmount Line are Hyde Park Avenue, Blue Hill Avenue, Talbot Avenue, Washington Street, and Dudley Street. Each of these streets are served by MBTA Key Bus Routes, which are among the most frequent and highest ridership bus services in Greater Boston (Figure 2). For example, Route 23, which connects Ashmont Station to Ruggles Station via Washington St, operates every five minutes during rush hour and serves over 12,500 riders per day.

Fairmount Corridor bus routes do not provide direct service and are unreliable.

Nearly all bus routes in the Fairmount Corridor end at either an Orange Line, Red Line, or Silver Line station. Riders must transfer from the bus to one of these rapid transit lines to reach Boston’s largest business districts. Most Fairmount Corridor bus services run on schedule less than 75% of the time, and on-time performance during some months can dip below 60%. Unreliable service, coupled with multiple transfers per trip, result in Fairmount Corridor residents having among the longest commutes in the Greater Boston region.

Figure 2 | Fairmount Corridor Key Bus Routes

Route	Primary Corridor	Rapid Transit Connection	Peak Frequency	Peak Reliability	Weekday Ridership
28	Blue Hill Ave	Orange/Red/Silver	7-10	70%	14,057
23	Washington St	Orange/Red/Silver	5-8	74%	12,527
32	Hyde Park Ave	Orange	3-6	80%	11,020
22	Talbot Ave	Orange/Red	8-10	72%	8,656
15	Dudley St	Orange/Silver*	4-9	70%	6,309

*Route 15 also provides a connection to the Red Line on nights and weekends only

Source: MBTA Blue Book (Fall 2012 Bus Ridership Counts); MBTA Performance Dashboard (October 2016 Reliability Data)

INFRASTRUCTURE

Over \$200 million has been invested in Fairmount Line infrastructure upgrades in the last 10 years.

In 1979, the MBTA began using the Fairmount Line as the primary route into South Station during the reconstruction of the Amtrak Northeast Corridor. Local service was provided at temporary stations at Fairmount, Morton Street, and Uphams Corner, with the intention of ending service once the Northeast Corridor reopened. After a brief suspension of service in the 1980s, the MBTA permanently restored local service on the Fairmount Line. By the 1990s, much of the Fairmount Line’s infrastructure had fallen into disrepair, and temporary stations were poorly maintained and lacked modern amenities.

After a series of studies in the 1990s and early 2000s (described in Chapter 3), the Commonwealth of Massachusetts and its funding partners invested over \$200 million in Fairmount Line infrastructure upgrades. New ADA accessible stations with full length, high-level platforms and modern amenities were constructed at Talbot Avenue, Four Corners/Geneva, and Newmarket. Existing stations at Morton Street and Uphams Corner received full upgrades, and stations at Fairmount and Readville were made ADA-compliant. MassDOT also reconstructed several nearly failing bridges, upgraded signals, and replaced some sections of track. As upgrades came online, the MBTA began to operate somewhat more frequent

service on the Fairmount Line with extended evening hours and initiated all day service on Saturday and Sunday.

Fairmount Line station infrastructure is similar to other new commuter rail stations in the MBTA network.

As the Fairmount Line is part of the MBTA commuter rail network, new and upgraded stations along the line were built to commuter rail design standards. Each station has an 800+ foot full length high-level platform. These platforms allow riders to board without using stairs, which ensures access for many riders with disabilities and reduces boarding times. Most stations have one or two ADA-accessible entrances with long entry ramps. None of the stations are fully enclosed with fare gates, as the commuter rail collects fares on board. All stations feature the standard commuter rail signage package, including a regional system map, line schedules, and fare information.

Fairmount Line stations are spaced more like a rapid transit line than a commuter rail line.

MBTA commuter rail lines are primarily utilized by suburban workers commuting to jobs in Downtown Boston. To serve this market, most commuter rail lines have stations spaced two to five miles apart. This design preferences speed over access, as commuter rail riders want a fast trip to Downtown and are generally accessing stations by car. Stations on the Fairmount Line, however, are spaced about one mile apart, similar to many segments of the MBTA subway network. This design preferences access over speed, providing more opportunities for riders to walk or bike to stations and make shorter neighborhood-to-neighborhood trips.

Figure 3 | MBTA Commuter Rail and Rapid Transit Line Station Spacing

Line	Length (miles)	Average Station Spacing (miles)	Typical Travel Time (minutes)
Fairmount Line	9.2	1.2	30
Franklin Line	30.3	2.3	60-70
Providence Line	62.9	5.2	90-110
Worcester/Framingham Line	44.2	2.8	80-95
Greenbush Line	27.6	2.8	60
Red Line - Ashmont	11.5	0.8	39-45
Orange Line	11.0	0.5	37-39

Source: MBTA Blue Book (2014)

While most Commuter Rail stations are surrounded by Parking, Fairmount Line stations are linked to their surrounding neighborhoods

Many MBTA commuter rail stations, especially stations constructed in the past few decades, are designed to be accessed almost exclusively by car. Stations are typically located just outside of suburban downtowns and are surrounded by large surface parking lots or garages. Apart from Readville, Fairmount Line stations are designed more similarly to rapid transit stations than commuter rail stations. Fairmount Line stations have little dedicated parking, and are intended to be accessed by people walking, biking, or transferring from the bus. Many connections could be improved and better integrated to their surroundings, but nevertheless, station entrances typically lead to local streets that are served by public transportation. Most stations have directly abutting homes and businesses, and much of the Fairmount

Line's ridership is generated from people living and working near stations. In total, Fairmount Line stations have just over 400 parking spaces and only Readville has more than 100 total spaces (Figure 4). In total, the line has significantly less parking than any other commuter rail or subway line.

Figure 4 | MBTA Commuter Rail and Rapid Transit Parking Inventory

Line	Total Parking Spaces	Stations with 100+ Parking Spaces#
Fairmount Line	405	1 of 7* (14%)
Franklin Line	3,906	8 of 12 (66%)
Providence Line	8,676	8 of 11 (72%)
Worcester/Framingham Line	3,925	12 of 15 (80%)
Greenbush Line	3,192	7 of 8 (88%)
Red Line – Ashmont/Braintree	8,745	6 of 22 (27%)
Orange Line	4,814	6 of 20 (30%)

*The future ninth station on the Fairmount Line at Blue Hill Avenue is planned to have minimal parking facilities.

Commuter Rail space counts do not include South Station.

Source: MBTA Blue Book (2014); Parking space counts include both "MBTA Auto Spaces" and "Other Community Spaces" as of Fall 2013

SERVICE

The Fairmount Line provides service seven days a week, with trains departing every 40 to 60 minutes depending on the time of day.

The Fairmount Line operates seven days a week, with separate schedules for weekday service and weekend service. Nearly all trains serving the Fairmount Line are scheduled to take 30 minutes in each direction. On weekdays, trains run every 40-50 minutes during rush hour service and every hour during off-peak service (Figure 5). The first weekday inbound train departs Readville at 5:39 am and the last outbound train departs South Station at 11:00 pm. All Fairmount Line trains stop at all stations, with the exception of a single inbound weekday trip that runs express from Readville to South Station. Both this single express train and the first train each weekday are continuations of an inbound Franklin Line trip. All other Fairmount Line trips begin or end at Readville Station. On weekends, trains run once each hour throughout scheduled service. The first weekend inbound train departs Readville at 7:30 am and the last outbound train departs South Station at 10:50 pm.

Figure 5 | Fairmount Line Inbound Weekday Schedule (Nov. 2016)

Inbound to Boston		AM										PM											
2016	STATION	TRAMP #	790	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	
			5:39	6:25	7:15	7:55	8:45	10:00	11:00	12:00	1:00	2:00	2:40	3:30	4:15	5:00	5:45	6:25	6:30	7:15	8:00	9:00	9:45
	2	Readville	5:39	6:25	7:15	7:55	8:45	10:00	11:00	12:00	1:00	2:00	2:40	3:30	4:15	5:00	5:45	6:25	6:30	7:15	8:00	9:00	9:45
	1A	Fairmount	5:42	6:28	7:18	7:58	8:48	10:03	11:03	12:03	1:03	2:03	2:43	3:33	4:18	5:03	5:48	-	6:33	7:18	8:03	9:03	9:48
	1A	Morton Street	5:47	6:33	7:23	8:03	8:53	10:08	11:08	12:08	1:08	2:08	2:48	3:38	4:23	5:08	5:53	-	6:38	7:23	8:08	9:08	9:53
	1A	Talbot Avenue	5:50	6:36	7:26	8:06	8:56	10:11	11:11	12:11	1:11	2:11	2:51	3:41	4:26	5:11	5:56	-	6:41	7:26	8:11	9:11	9:56
	1A	Four Corners/Geneva Avenue	5:53	6:39	7:29	8:09	8:59	10:14	11:14	12:14	1:14	2:14	2:54	3:44	4:29	5:14	5:59	-	6:44	7:29	8:14	9:14	9:59
	1A	Uphams Corner	5:56	6:42	7:32	8:12	9:02	10:17	11:17	12:17	1:17	2:17	2:57	3:47	4:32	5:17	6:02	-	6:47	7:32	8:17	9:17	10:02
	1A	Newmarket	5:59	6:45	7:35	8:15	9:05	10:20	11:20	12:20	1:20	2:20	3:00	3:50	4:35	5:20	6:05	-	6:50	7:35	8:20	9:20	10:05
	1A	South Station	6:09	6:55	7:45	8:25	9:15	10:30	11:30	12:30	1:30	2:30	3:10	4:00	4:45	5:30	6:15	6:45	7:00	7:45	8:30	9:30	10:15

Trains in purple box indicate peak period trains.

The Fairmount Line is served by more trips per day than many other MBTA commuter rail lines.

As of November 2016, the MBTA operates 41 trips along the Fairmount Line each weekday. This number of trips exceeds service levels on several other MBTA commuter rail lines, all of which have significantly

higher ridership than the Fairmount Line (Figure 6). Both the Middleborough/Lakeville and Needham Line, for example, are served by the same number of peak trips as the Fairmount Line, but have significantly less off-peak service. The Franklin Line, which serves over four times as many riders as the Fairmount Line, has the same number of trips per day.

Figure 6 | Comparison of Weekday Service (Peak vs. Off Peak Trips)

Commuter Rail Line	Trips Per Day	Peak Trips	Off Peak Trips
Fairmount Line	41	10	31
Franklin Line	41	15	26
Needham Line	32	10	22
Framingham/Worcester Line	54	21	33
Middleborough/Lakeville Line	24	10	14

Source: MBTA Schedules (November 2016)

The Fairmount Line schedule is designed more like a low frequency bus route than a commuter rail line.

Most MBTA commuter rail lines operate frequently during rush hour in the peak direction, and have only limited trips during off-peak service (Figure 6). The Fitchburg Line, for example, runs every 25 minutes during rush hour, but only every 60-90 minutes during mid-day and evening service. This schedule is designed to serve commute trips to and from Downtown Boston, but provides minimal utility for people traveling outside regular commuting hours. The Fairmount Line has generally consistent service levels throughout the day, but operates relatively infrequently. Fairmount Line riders therefore always have to plan their trips based on the schedule, even during commuting hours, but are able to rely on the service for trips throughout the day. In this way, riders are approaching the service like a low frequency bus route, rather than as a walk-up service like the Red Line or a Key Bus Route.

FARES

Most Fairmount Line stations are within Zone 1A and have the same fare prices as MBTA subway lines.

The Fairmount Line uses the standard MBTA zone-based commuter rail fare system. Each MBTA commuter rail station is assigned a zone number, and the cost of a ticket increases based on the number of zones a trip passes through. All Fairmount Line stations are in fare Zone 1A, except for Readville, which is in Zone 2. Single ride tickets between Zone 1A stations cost \$2.25, the same price as an MBTA subway fare. Zone 1A monthly passes cost \$84.50, the same price as the monthly LinkPass for subway and local bus services. Discounted senior/disabled passes and student passes are also available to qualifying riders. Fairmount Line tickets and passes can be purchased at MBTA ticket vending machines, authorized ticket vendors, on smartphones through the mTicket app, through an employer, online through the MBTA website, or from a conductor onboard the train.

Readville is in Zone 2 rather than Zone 1A, significantly increasing the fare for trips to and from the station.

Unlike all other Fairmount Line stations, Readville is a Zone 2 station rather than Zone 1A. Trips that begin or end in Readville thus require a Zone 2 ticket or pass, which are significantly more expensive than

Zone 1A tickets and passes. A Zone 2 single ride ticket costs \$6.75, more than four dollars greater than a Zone 1A ticket. A Zone 2 monthly pass costs more than double a Zone 1A monthly pass (\$84.50 vs \$217.75). This pricing structure significantly increases the cost riders pay for Fairmount Line trips between Readville and South Station, although the MBTA does allow the \$2.25 fare for Fairmount Line trips between Readville and other stations.

Standard CharlieCards cannot be used on the Fairmount Line.

Most MBTA subway and bus riders use a CharlieCard to pay their fare. CharlieCards are a reusable electronic fare card that can hold both cash fares and passes. Riders tap their CharlieCard at a subway entry gate or bus fare box to pay their fare. The MBTA commuter rail system, however, relies exclusively on tickets that are visually inspected by a conductor. Riders cannot use the standard CharlieCard they use to pay their subway or bus fare to pay their fare on the Fairmount Line.

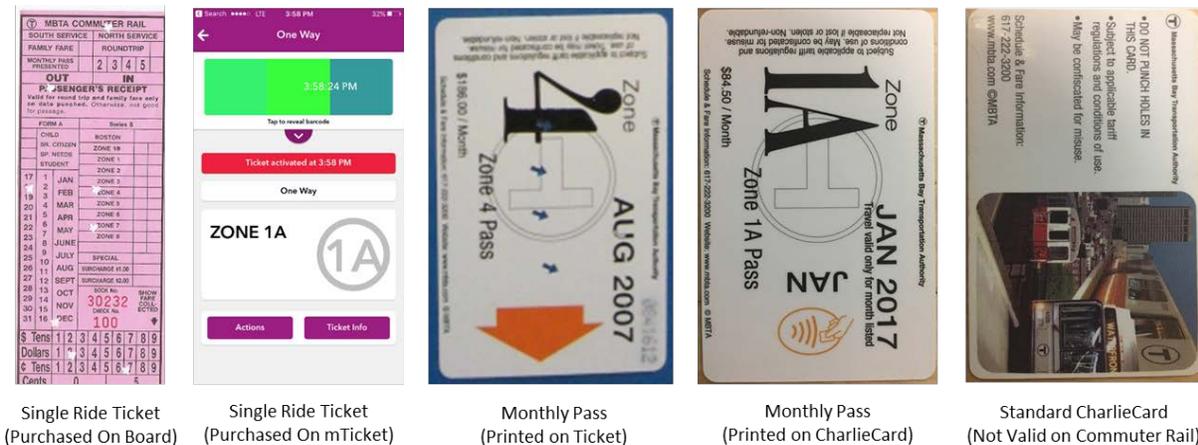
Fairmount Line single ride tickets do not include a free transfer to the subway or the bus.

Many riders have to transfer between public transit services to complete their trip. The MBTA allows those who buy a single subway fare to transfer between subway lines and to local bus lines for free. A single ride Zone 1A ticket costs the same as a single ride fare on the subway. Unlike subway fares, however, Zone 1A tickets do not include a free transfer to subway or local bus lines. Fairmount Line riders must therefore pay an additional full fare to transfer to the subway or bus, doubling the cost of their trip.

The MBTA monthly LinkPass is not valid on the Fairmount Line.

The MBTA sells a monthly pass, known as the LinkPass, that provides unlimited trips on the subway and on local bus lines. This pass costs exactly the same as the Zone 1A monthly pass. Unlike Zone 1A monthly passes, the LinkPass is stored electronically on a CharlieCard and cannot be visually inspected by a commuter rail conductor. The LinkPass is therefore not valid on the Fairmount Line. LinkPass holders must purchase an additional fare to ride the Fairmount Line, even though they are already paying for a pass that costs the same as a Fairmount Line monthly pass. It is unlikely that most LinkPass holders would choose to pay extra to use the Fairmount Line over riding the subway or local buses at no additional cost.

Figure 7 | MBTA Commuter Rail Fare Media



During the school year, M7 student passes are valid on the Fairmount Line, but S-Card student passes are not.

The MBTA allows participating schools to offer two different types of fare passes to middle and high school students:

- The CharlieCard 7 Day Student Pass, known as the M7 pass, allow students to make unlimited trips on local bus and subway lines and between commuter rail stations in Zone 1A-2 from September 1 to June 30. M7 cards are electronic CharlieCards that are preloaded with a school-year length monthly pass and have a printed expiration date. When valid (between September 1 and June 30), M7 cards can be used to ride for free on the Fairmount Line.
- The Student Stored Value CharlieCard (S-Card) provides students a 50% fare discount on all local bus, express bus, and subway lines. Students can also load a monthly pass onto an S-Card for \$30. S-Cards are standard electronic CharlieCards that cannot be visually inspected. Therefore, they are not valid on any commuter rail line including the Fairmount Line.

M7 student passes are not valid on the Fairmount Line during the summer.

During the summer, from July 1 to August 31, M7 cards do not provide unlimited rides for students. Instead, the card functions similarly to an S-Card by providing discounted single ride fares and monthly passes for local bus, express bus, and subway lines. When functioning as an S-Card, the fares on M7 cards cannot be visually inspected by a train conductor. Therefore, students cannot use fares stored on the card to pay for a Fairmount Line trip.

MBTA Youth Passes are not valid on the Fairmount Line.

The new MBTA Youth Pass is available to youth and young adults who are not enrolled in school and live in either Boston, Chelsea, Malden, or Somerville. Eligible participants in the program can purchase a discounted monthly LinkPass or add stored value and pay single fares at a reduced rate. Similar to the S-Card, Youth Passes are distributed on electronic CharlieCards and cannot be used to pay for commuter rail fares. Riders therefore cannot use the Youth Pass to pay their fare on the Fairmount Line, even if they have loaded a LinkPass.

Figure 8 | Fare Types and Transfer Policy

Fare Type	Price	Bus/Subway Transfer
Zone 1A – Fairmount Line (except Readville)		
Single Ride (Ticket or mTicket)	\$2.25	No
10-Ride Ticket (mTicket)	\$22.50	No
MonthlyPass (Ticket or printed on CharlieCard)	\$84.50	Yes
Senior/Disabled Single Ride	\$1.10	No
Student Pass – M7 Pass (Sept 1 to June 30)	\$30.00	Yes
Student Pass – S-Card and M7 Pass (Summer)	Not Valid	
Youth Pass – Monthly or Stored Value	Not Valid	
Zone 2 – Readville		
Single Ride to South Station (Ticket or mTicket)	\$6.75	No
Intra-Fairmount Line Single Ride (Ticket or mTicket)	\$2.25	No
Monthly Pass (Ticket or CharlieCard)	\$217.75	Yes
Monthly Pass (mTicket)	\$207.75	No
Local Bus/Subway (with CharlieCard)		
Local Bus Single Ride	\$1.70	Local Bus Only
Subway Single Ride	\$2.25	Yes
Monthly LinkPass (valid on local bus and subway)	\$84.50	Yes

Source: MBTA (February 2017)

JUNE 2016 RIDERSHIP COUNT

The Boston Foundation and Nelson\Nygaard conducted a full day weekday ridership count on the Fairmount Line in June 2016. This ridership count was the most comprehensive effort since the 2012 count conducted by the Boston Regional Metropolitan Planning Organization, which occurred before new Fairmount Line stations opened at Talbot Avenue, Four Corners/Geneva, and Newmarket. The June 2016 ridership count therefore provides the first insights into how new stations and increased service have affected Fairmount Line ridership.

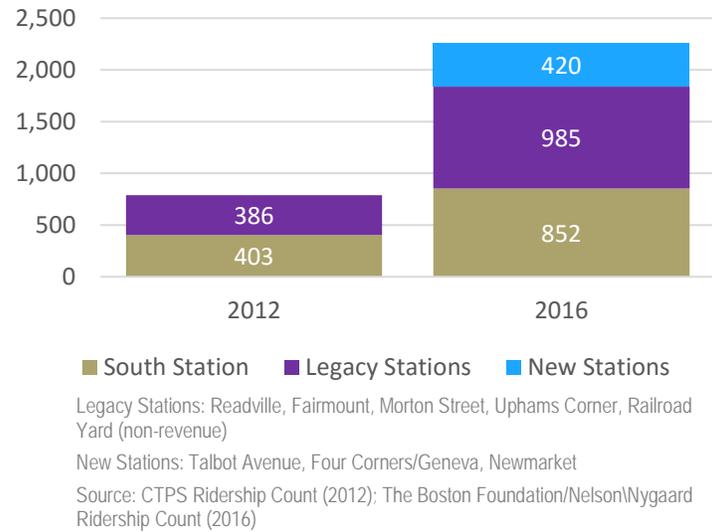
The June 2016 ridership count was organized by Nelson\Nygaard staff members and with actual counts conducted primarily by community members identified by The Boston Foundation, Fairmount Indigo Transit Coalition, and the Fairmount Indigo Network. The Boston Foundation and Nelson\Nygaard would like to thank Achale Takang, Mechelle Merritt, Wayne Carle, Michael Forman, Larry Marshall, and Symone Major for participating in the ridership count.

The ridership count was completed on June 1, a Wednesday, to ensure that high schools and middle schools were still in session. Community members rode each Fairmount Line trip throughout an entire service day and manually tallied riders boarding and alighting at each station. Nelson\Nygaard staff trained those conducting the counts, and independently tallied riders on a selection of trips to verify that the overall counts were accurate.

Weekday ridership on the Fairmount Line has almost tripled since 2012.

The June 2016 ridership count found that 2,257 riders board the Fairmount Line on a typical weekday, compared to 789 daily boardings captured in 2012. This change represents a 186% increase in daily boardings since new Fairmount Line stations opened at Talbot Avenue, Four Corners/Geneva, and Newmarket. Approximately 30% of new boardings occurred at the three new stations, compared to 40% at the legacy neighborhood stations and 30% at South Station (Figure 9).

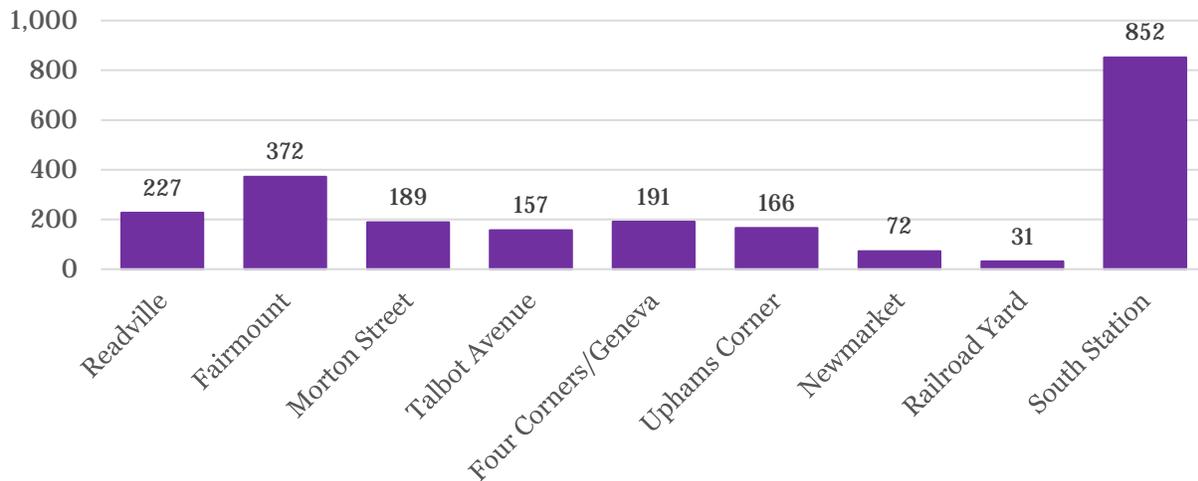
Figure 9 | Comparison of Fairmount Line Ridership in 2012 and 2016



New stations (Talbot Avenue and Four Corners/Geneva) have similar ridership to legacy stations (Morton Street and Uphams Corner). Newmarket appears to be underperforming.

Legacy neighborhood stations at Morton Street and Uphams Corner and new stations at Talbot Avenue and Four Corners/Geneva each attract between 150-200 total daily boardings. Ridership at Newmarket is significantly lower, with only 72 weekday boardings. Readville and Fairmount continue to outperform all other neighborhood stations, with a combined 597 daily boardings. South Station remains the highest ridership Fairmount Line station with 852 boardings each weekday (Figure 10).

Figure 10 | Fairmount Line Ridership by Station (June 2016)



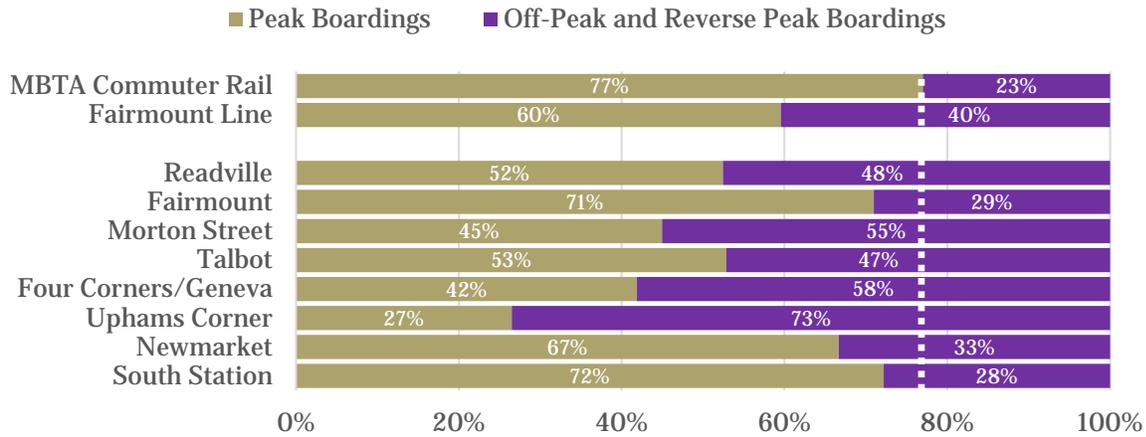
Source: The Boston Foundation/NelsonNygaard Ridership Count (2016)

The Fairmount Line attracts significantly higher off-peak ridership than other commuter rail lines.

MBTA commuter rail service is primarily designed to serve work commutes. Commuter rail ridership and service is thus typically concentrated on rush hour trips towards Downtown Boston in the morning and away from Downtown Boston in the evening. About 77% of all MBTA commuter rail boardings occur during peak service in the peak direction, following the traditional work commuting pattern.

On the Fairmount Line, only 60% of boardings occur during peak service in the peak direction, significantly less than any other MBTA commuter rail line (Figure 11). Fairmount, Newmarket, and South Station are the only Fairmount Line stations where more than 55% of passengers board during peak service. Uphams Corner likely has the highest proportion of off-peak and reverse-peak boardings of any MBTA commuter rail station open to the general public. This high rate of off-peak ridership suggests that Fairmount Line riders have found the service to be useful for making trips outside of the standard 9-to-5 downtown commute.

Figure 11 | Comparison of Weekday Peak Boardings and Weekday Off-Peak Boardings



Source: CTPS Ridership Count (2012); The Boston Foundation/NelsonNygaard Ridership Count (2016)

More riders use the Fairmount Line for intra-corridor trips outside of Downtown Boston than any other commuter rail line.

Almost 95% of all MBTA commuter rail trips begin or end at stations in Downtown Boston and surrounding major business districts. Fairmount Line riders, however, are increasingly using the service to travel between Fairmount Corridor neighborhoods. The 2016 ridership count found that 25% of all Fairmount Line trips were intra-corridor trips between stations outside of Downtown Boston, a rate five times higher than the MBTA commuter rail system average (Figure 12). On off-peak and reverse peak trips, nearly half of all Fairmount Line riders are making intra-corridor trips.

Figure 12 | Commuter Rail Trips Not to Downtown by Line

Commuter Rail Line	Non-Downtown Trips (All Times)	Non-Downtown Trips (Off-Peak and Reverse Peak Service)
<i>MBTA Commuter Rail</i>	5%	13%
Fairmount Line	25%	49%
Newburyport/Rockport Line	11%	25%
Framingham/Worcester Line	5%	12%
Providence Line	3%	5%
Needham Line	2%	8%
Franklin Line	2%	5%

Source: CTPS Ridership Count (2012); The Boston Foundation/NelsonNygaard Ridership Count (2016)

Intra-corridor ridership has increased dramatically since the three new stations opened.

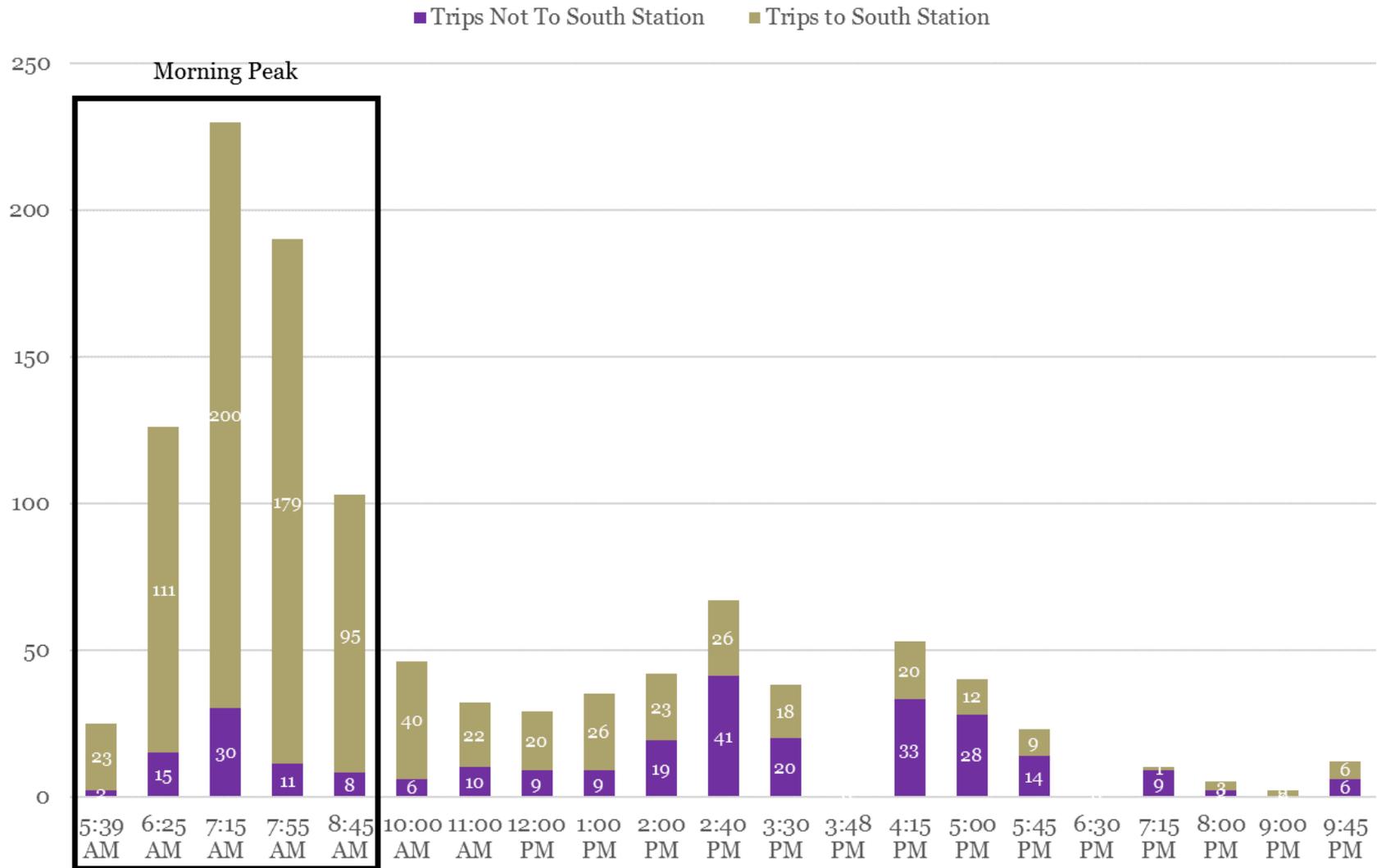
In 2012, about 97% of Fairmount Line trips were to or from South Station. In 2016, only 75% of all Fairmount Line trips began or ended at South Station. This significant change indicates that the new stations have increased the range of trip purposes that can be served by the Fairmount Line. Without prompting, riders are finding utility in using the Fairmount Line for trips between Fairmount Corridor neighborhoods, rather than just using the line for trips to Downtown Boston.

Intra-corridor trips account for as much as 40% of additional boardings on the Fairmount Line between 2012 and 2016.

Between 2012 and 2016, Fairmount Line ridership increased by nearly 1,500 boardings per weekday, and intra-corridor trips account for as much as 40% of that growth. The strong growth in intra-corridor trips has occurred organically, as Fairmount Line marketing campaigns have focused almost exclusively on the benefits of using the service for trips to Downtown Boston.

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The Boston Foundation

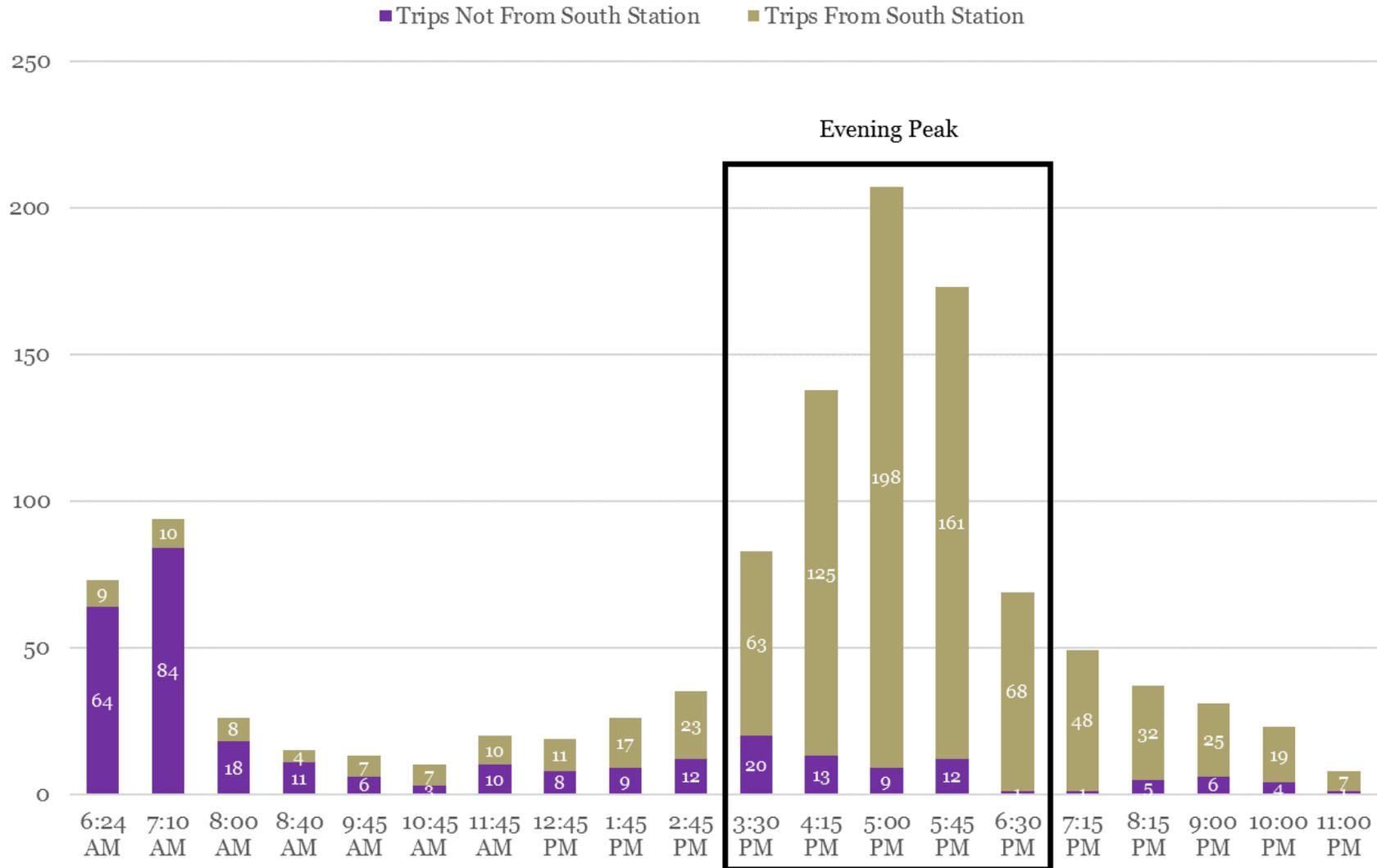
Figure 13 | Fairmount Line Weekday Inbound Ridership by Trip (2016)



Source: The Boston Foundation/NelsonNygaard Ridership Count (2016)

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The Boston Foundation

Figure 14 | Fairmount Line Weekday Outbound Ridership by Trip (2016)



Source: The Boston Foundation/Nelson\Nygaard Ridership Count (2016)

At Uphams Corner and Newmarket, more passengers board trains going south towards Readville than going north towards Downtown Boston.

More than 60% of boardings at both Uphams Corner and Newmarket are on outbound trains going south towards Readville. This ridership pattern indicates that intra-corridor trips are currently the primary travel market at both stations. Four Corners/Geneva also has strong southbound ridership, with over 40% of boardings on outbound trains.

The majority of outbound boardings at both Uphams Corner and Four Corners/Geneva are on the first three early morning Fairmount Line trains. It is very likely that riders on these trains are making reverse commutes to work or school. Outbound boardings at Newmarket occur almost exclusively during midday, afternoon, and evening trips. Given the timing of inbound alightings, riders boarding outbound at Newmarket are likely making shopping or work commute trips.

Figure 15 | Outbound Fairmount Line Boardings by Station

Station	Total Boardings	Total Outbound Boardings	Outbound Boarding %
South Station	852	852	100%
Newmarket	72	44	61%
Uphams Corner	166	107	64%
Four Corners/Geneva	191	80	42%
Talbot Avenue	157	32	20%
Morton Street	189	23	12%
Fairmount	372	2	1%
Readville	227	0	0%

Note: Does not include boardings at Railroad Yard. As South Station is the northern terminus, riders can board only in the outbound direction. As Readville is the southern terminus, riders can only board only in the inbound direction.

Source: The Boston Foundation/NelsonNygaard Ridership Count (2016)

Students likely drive strong intra-corridor, off-peak, and reverse commute ridership on the Fairmount Line.

Intra-corridor ridership on the Fairmount Line is strongest on early morning outbound trips and afternoon inbound trips. Boarding and alighting data, as well as observations during the ridership count, indicate that many riders on these trips are students. The first two outbound trips of the day have nearly 150 outbound boardings, primarily at Uphams Corner and Four Corners/Geneva. On the first trip, 80% of outbound riders got off the train at Fairmount or Readville. These stations are within walking distance of at least four charter high schools. On the second trip, 54 of 84 outbound riders got off the train at Morton Street, which is within walking distance of Boston International High School. In the afternoon, several inbound trips have high ridership at Readville, Fairmount, and Morton Street as students leave school. These ridership patterns indicate that many students have independently found that the Fairmount Line provides a viable alternative for getting to and from school.

BARRIERS TO USING THE FAIRMOUNT LINE

The existing conditions and ridership analysis uncovered numerous barriers faced by existing and potential Fairmount Line riders. These barriers include:

The Fairmount Line is marketed as a commuter rail service, but comparatively functions and is used more like a local bus route.

The Fairmount Line is officially part of the MBTA commuter rail system, and uses commuter rail vehicles and branding. The public generally perceives commuter rail as a service for traveling to and from Downtown Boston. Previous Fairmount Line marketing efforts have focused almost exclusively on travel time benefits for trips to South Station. Actual Fairmount Line service, however, does not match the profile of a typical commuter rail line. Trains operate a relatively low, but consistent, frequency throughout the day. Stations are spaced more closely together and located within residential neighborhoods. Fairmount Line fares are the same as subway fares, apart from the transfer policy. In these ways, the Fairmount Line is more similar to a local bus route than a commuter rail line. Some riders have discovered that they can use the service for local trips, but the line continues to be marketed as a service primarily for work commutes.

Fairmount Line trips that require a transfer can cost twice as much as a comparable subway trip.

Public transportation is most effective when riders can easily transfer between services to reach a broader range of destinations. The MBTA network design is predicated on riders transferring between the local bus and subway network to complete many trips. MBTA subway fares include free transfers to local bus routes, and monthly passes allow riders to use most services in the entire network. Many Fairmount Line fares, however, do not include free transfers. Trips on the Fairmount Line that require a transfer therefore cost twice as much as a comparable subway fare. The lack of a free transfer discourages riders from using the Fairmount Line, as Fairmount Corridor residents have access to numerous other public transportation options.

Student pass options are confusing to understand and often do not provide discounts for the Fairmount Line.

Students are a major driver of increased Fairmount Line ridership. The various student pass products offered by the MBTA are confusing, and some are not valid for Fairmount Line service. Fairmount Line rides are included in the M7 pass during the school year, but the pass provides no discount for Fairmount Line rides during the summer. Students with S-Cards receive no discount for riding the Fairmount Line, and can't use the money stored on their cards to pay for Fairmount Line tickets. The new Youth Passes also cannot be used for the Fairmount Line. These complex pass products present a significant barrier for growing student ridership on the Fairmount Line.

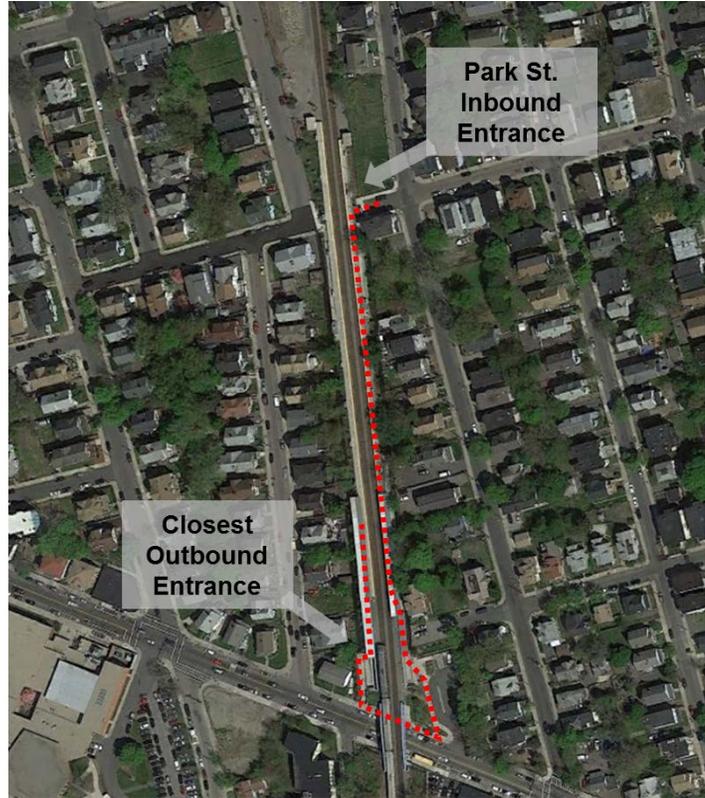
Fairmount Line stations are difficult and confusing to access.

Most Fairmount Line stations have one entrance to each platform, which are commonly located on one end of the station only. Riders boarding from neighborhoods on the other end of the platform have to walk on local streets to reach the station.

Residents at the Morton Village Apartments, for example, have to walk almost a half mile to reach the entrance to Morton Street Station, even though the station platform abuts their building. Long walking times to Fairmount Line stations decrease potential time savings from using the service, and present a barrier for riders attempting to use the Fairmount Line for the first time. Local streets lack signage directing riders to the station entrances, and many streets lack adequate facilities and lighting for people walking or biking.

Internal signage at stations often does not provide enough information for new and occasional riders. For example, Talbot Avenue has entrances from Park Street that provide access to service in only one direction. The entrance on West Park Street provides access to Readville-bound service only, while the entrance on East Park Street provides access to South Station-bound service only. There are no signs at either entrance to direct passengers to the opposing platform, and station signage is not very clear on which direction each platform serves. The lack of signage makes service more confusing, and likely leads some riders to abandon efforts to try the Fairmount Line.

Figure 16 | Pathway from Park St Inbound Entrance to Closest Outbound Entrance at Talbot Avenue Station



3 PAST ANALYSIS OF THE FAIRMOUNT LINE

Numerous analyses of both the Fairmount Line and its adjacent neighborhoods have been conducted over the past 20 years. This chapter provides brief summaries of a sampling of key analyses, as well as insights into whether study recommendations have been implemented in practice. The reviewed studies are categorized into four topics:

- **Service and Infrastructure:** Studies that focus on potential improvements to Fairmount Line infrastructure, as well as the potential methods for and benefits of increasing service on the corridor.
- **Station Area Planning:** Studies that focus on increasing economic development, employment, and housing opportunities along the Fairmount Line corridor.
- **Community Benefits:** Studies that focus on how improving Fairmount Line service would benefit residents and businesses along the corridor, particularly in the context of Environmental Justice.
- **Fairmount as Case Study:** Evaluations of Fairmount Line planning initiatives conducted as part of broader reviews of transit-oriented development.

SERVICE AND INFRASTRUCTURE STUDIES

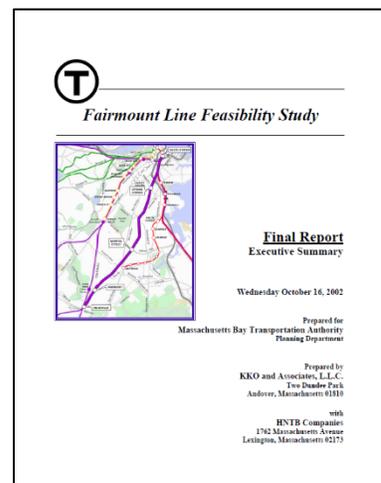
Fairmount Line Feasibility Study

KKO and Associates/HNTB/Massachusetts Bay Transportation Authority

October 2002

In 2002, KKO and HNTB conducted a feasibility analysis of potential physical and policy improvements to Fairmount Line service. The feasibility analysis was preceded by an existing conditions and market assessment. The market assessment found that the Fairmount Line corridor had high residential density, low employment density, and had a higher rate of minority residents and low-income households than both Boston and the greater region. Over 65% of residents relied on private cars to commute to work, but transit usage was significantly higher among the 15,200 residents that commuted to Downtown Boston. The study team estimated that using the Fairmount Line reduced travel time to South Station by 11 to 20 minutes compared to local bus and subway lines. These estimates may overstate Fairmount Line travel time benefits for many potential users, as the analysis compared travel times between station areas and South Station, rather than other common trips such as from neighborhood centers to Downtown Crossing.

The study team evaluated five potential Fairmount Line improvement strategies, ranging from basic improvements at existing stations to adding up to five stations, equalizing fares with MBTA rapid transit service, and improving service frequency. Estimated ridership growth between 2000 and 2025 ranged from 40% percent for the most basic improvements to nearly 400% for the greatest level of upgrades. The vast majority of this growth would come from existing MBTA riders switching to the Fairmount Line, rather than new transit riders. None of the five analyzed improvement packages completely matches the



improvements that have been completed as of 2016. Furthermore, the analysis relied on a 2000 base year ridership estimate (2,720) that was nearly 500 passengers greater than Fairmount Line ridership as of 2016.

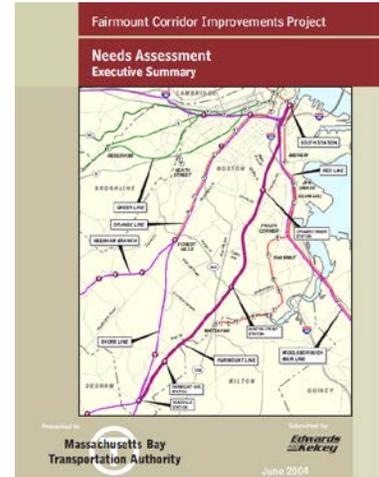
Fairmount Corridor Improvements Project Needs Assessment

Edwards and Kelcey/Massachusetts Bay Transportation Authority

June 2004

The Fairmount Corridor Improvements Project Needs Assessment identified the key projects required to implement improved services on the rail corridor. These projects included a range of bridge reconstructions, signal upgrades, and track work, much of which was deemed necessary to maintain even existing service levels on the Fairmount Line. The assessment also evaluated station locations identified in the Feasibility Study noted above, and suggested several modifications based on identified challenges. After identifying potential projects, the study team developed cost estimates, prioritized projects required for state of good repair, and developed an implementation plan.

The study team first recommended that the MBTA upgrade the signal system and construct a new interlocking that would allow for single track operation. Facilitating single track operation would allow the MBTA to replace several key bridges without suspending Fairmount Line service during construction. Finally, the implementation plan laid out the progression for constructing new stations. As of 2016, the MBTA has completed construction of many key projects identified in the needs assessment, with the exception of a station at Blue Hill Avenue, which is now expected to open in 2019.



Fairmount Line Service Improvements: Potential Use of DMUs

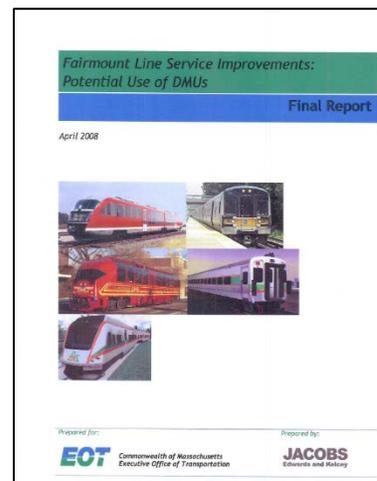
Jacobs (Edwards and Kelcey)/Massachusetts Executive Office of Transportation and Public Works (EOTPW)

April 2008

The EOTPW evaluated the potential benefits of using Diesel Multiple Units (DMUs) on the Fairmount Line. DMUs are individually powered railcars that can accelerate significantly faster (.8 to 2.4 mph per second) than the push-pull train consists currently used for Fairmount operations (.5 mph per second). Under certain conditions, faster acceleration can significantly increase average speed between stations and thus decrease total travel time. DMU emissions are also based primarily on the number of cars in a given train, rather than having fixed emissions regardless of train length like diesel locomotive-powered push-pull trains.

The travel time between stations and the amount of time, or “dwell time,” that a train spends at each station are the primary determinates of total travel time on a given route. The number and width of doors in each train car have a significant effect on dwell time. EOTPW therefore compared the performance of three different train vehicles and configurations:

- DMUs, which have faster acceleration and typically have three or more doors per car;



- Existing push-pull trainsets, which have slower acceleration and only two doors per car; and
- Modified trainsets, which are existing push-pull trainsets with a modification that adds an additional wide center door to each car.

Performance of each vehicle configuration was compared based on the full implementation of Fairmount Line improvements, including the planned Blue Hill Avenue station.

EOTPW found that the increased acceleration speed from DMUs would provide nearly identical travel time benefits as having three or more doors per car on a modified push-pull trainset. Based on this finding, EOTPW generated the following peak-period travel time estimates between Readville and South Station:

- Existing push-pull trainsets: 31 minutes
- DMUs: 25-26 minutes (16%-19% reduction)
- Modified trainsets: 28 minutes (10% reduction)

EOTPW worked with CTPS to determine how these travel time reductions, along with potential increases in service frequency, would affect Fairmount Line ridership. CTPS found that increasing service had a significantly more positive affect on ridership than decreasing travel time. While decreased travel time on DMUs did increase ridership, simply adding service using existing trainsets resulted in much larger ridership gains.

Using these ridership figures, EOTPW determined the incremental cost per passenger on each train vehicle configuration. EOTPW found that DMUs require significant upfront capital expenditures, but would have a lower incremental cost per passenger if service was operated every fifteen minutes. Similarly, DMUs have lower operating costs than existing or modified push-pull trains, but the incremental benefit from DMUs decreased with less frequent service. DMU operation was also found to require less fuel, and produce fewer emissions, than other vehicle types, regardless of service frequency.

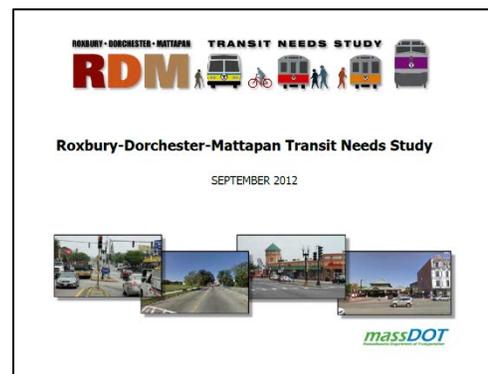
Based on these findings, EOTPW strongly recommended that DMU operation on the Fairmount Line only be implemented if the MBTA committed to operate service at least every 15 minutes for peak periods and slightly lower frequency at other times.

Roxbury-Dorchester-Mattapan Transit Needs Study

Massachusetts Department of Transportation

September 2012

The Roxbury-Dorchester-Mattapan Transit Needs Study focused on understanding challenges to mobility in Boston's most transit-reliant neighborhoods, and developed short, medium, and long term proposals for meeting the current and future needs of local residents. The report highlights the distrust many residents have of transit planning processes, and the lack of reliable transit options for many in the study area since the relocation of the Orange Line in the 1980s. Overall recommendations primarily focused on bus service improvements, including increasing service frequency on overcrowded routes, policies to improve conditions on the bus, and priority treatments to increase the speed and reliability of bus service. Fairmount Line recommendations included fare integration with other MBTA services, higher service frequency, and using DMUs to provide rapid transit-like services.



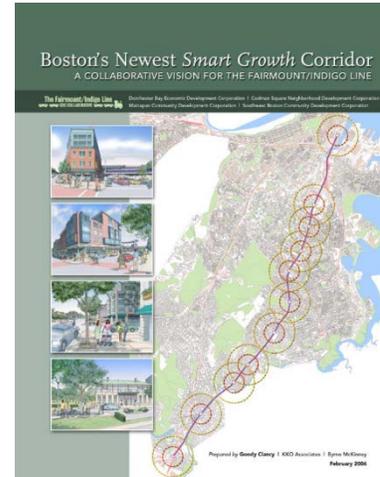
STATION AREA PLANNING STUDIES

Boston's Newest Smart Growth Corridor

Goody Clancy/Fairmount-Indigo Line CDC Collaborative

February 2006

In collaboration with members of The Fairmount/Indigo Line CDC Collaborative, Goody Clancy developed growth plans for each of the then-proposed Fairmount Line station areas. The study recommended a variety of development strategies, with a specific focus on leveraging demand for transit-oriented development to construct housing for all income levels. Each station area plan included context-sensitive housing and commercial development recommendations, balancing an increase in density with maintaining neighborhood character. In some station areas, such as Four Corners, the recommended development strategies focused primarily on building rehabilitation and smaller scale residential developments. In station areas with larger open parcels, such as Morton Street, strategies focused on larger mixed-use developments with several hundred units. Overall, Goody Clancy found that the immediate station areas could support from 3,000 to 5,000 new housing units, including 1,200 to 1,400 low- to moderate-income housing units.

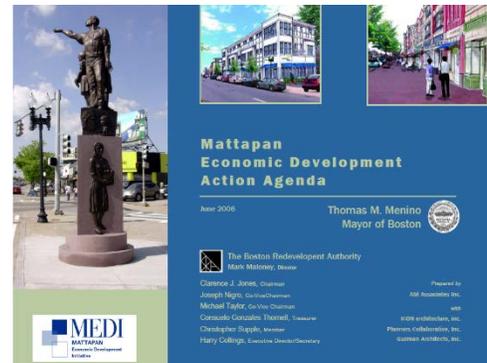


Mattapan Economic Development Action Agenda

Abt Associates Inc./Boston Redevelopment Authority

June 2006

In 2006, the BRA conducted a market analysis and economic development action plan for the Mattapan neighborhood. The study area included the Morton Street station area and the business district near the planned Blue Hill Avenue station. The market analysis found that most of Mattapan's businesses are neighborhood-focused discount stores, but there is a significant demand for larger-scale retail, such as sit-down restaurants, apparel stores, and/or a supermarket. Recommendations included increasing density along Mattapan's major streets and near Fairmount Line station areas.



Mid-Dorchester Action Plan

Boston Redevelopment Authority/Department of Neighborhood Development/Bowdoin Geneva Main Street/Codman Square Neighborhood Development Corporation/Four Corners Main Street

2008-2010

The Mid-Dorchester Action Plan is a planning process centered on the development of publicly owned properties in three Fairmount Line communities: Four Corners, Bowdoin-Geneva, and Codman Square. The study initially focused on cataloging properties owned by the Department of Neighborhood Development (DND) and conducting a market assessment of each district. DND identified 270 publicly-owned properties in the study area, and noted that many are clustered amongst vacant privately-owned land. Such clusters may be suitable for larger-scale residential and commercial development. The market analysis found that all three commercial districts were dominated by service businesses and lacked retailers, such as food and general merchandise stores. Despite a lower proportion of these businesses, almost \$190 million were spent at retailers and restaurants in the three communities.



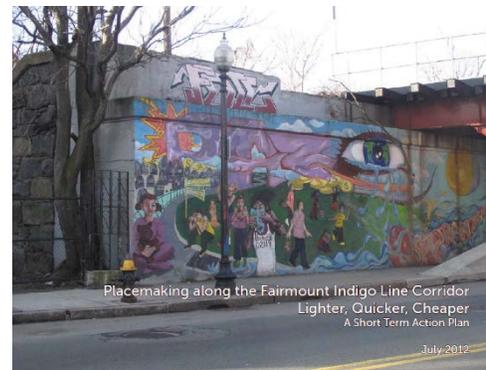
The BRA and DND used the market assessment, as well as input from community stakeholders, to establish development guidelines for major parcels in Mid-Dorchester. The guidelines include the community vision for the parcel, an overview of existing conditions, and land use and design guidelines for a range of potential commercial, residential, and community uses. Each of the nine identified development clusters are located within walking distance of the Fairmount Line, though none directly abut a station.

Placemaking along the Fairmount Indigo Line Corridor

Project for Public Spaces/Massachusetts Smart Growth Alliance/Fairmount Collaborative

July 2012

In 2012, Project for Public Spaces (PPS) initiated a placemaking study to develop targeted interventions for increasing the attractiveness of key sites along the Fairmount Line. In consultation with local community groups, PPS recommended a range of interventions on sites and corridors in Four Corners and Upham's Corner. Proposed projects included the activation and visual enhancement of vacant lots, storefronts, and Fairmount Line station areas, as well as traffic calming on Dudley and Washington Streets. Potential activation strategies ranged from temporary outdoor plazas and outdoor seating at existing restaurants to community art and murals. PPS also recommended the installation of a new wayfinding system designed to increase the Fairmount Line's usability and facilitate movement between station areas and local businesses. PPS noted that each of these interventions would require partnerships between local community members, property owners, and the City of Boston, and present opportunities to engage youth and unemployed residents.



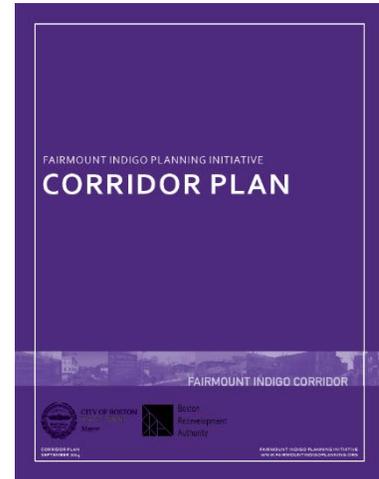
Fairmount Indigo Planning Initiative Corridor Plan

Boston Redevelopment Authority

September 2014

The Fairmount Indigo Planning Initiative is a corridor planning and economic development study focused on developing strategies for enhancing and connecting communities around Fairmount Line stations. The initiative evaluated the existing conditions and potential market of the communities along the line, and developed a wide ranging set of recommendations and strategies. These strategies were centered on six specific focuses: Prosperity, Home, Place, Getting Around, Parks/Public Space, and Quality of Life.

A number of Fairmount Indigo Planning Initiative recommendations focus specifically on leveraging investments in the Fairmount Line. The study found that many Fairmount Line stations are not integrated into the communities that they serve, and recommended that transit-oriented development be used to “reorient activity to the station [areas].” The study also recommends that station areas become “mobility hubs” with direct bus connections, enhanced pedestrian access, and a comprehensive wayfinding system. For the Fairmount Line specifically, the study proposes increased weekday service, the establishment of weekend service (which had not started then), expanding subway fares to Readville, and using DMUs.



COMMUNITY BENEFIT STUDIES

Analyzing Transit Equity Using Automatically Collected Data

Massachusetts Institute of Technology, Master's Thesis

This study utilized data from the MBTA's automated fare collection system to determine the origin and destination of trips made using local buses and the rapid transit network in Boston. The methodology improves on basic ridership information by determining how users transfer between lines on a given trip. The study then uses the generated trip data to compare the average trip times and travel speeds for commuters from predominantly white and black neighborhoods.

The study found that commuters from Boston's African-American neighborhoods had longer average commuting times than commuters from white neighborhoods. While commuters from black neighborhoods had shorter average trip distances, their trips typically required more transfers and operated at lower average speeds. Overall, the average trip from a predominantly black neighborhood was estimated to take 3.1 minutes longer than a trip originating in a white neighborhood.

Using these findings, the study then investigates potential projects that would decrease the travel times from predominantly black communities. The study found that increasing the frequency and speed of the Fairmount Line would reduce the difference in travel time by up to 35%, significantly more than any other investigated project. Riders switching to the enhanced Fairmount Line saved an average of 13.5 minutes per trip. Other recommendations include through-routing buses that currently terminate at Dudley



Square, extending the Silver Line to Grove Hall or Mattapan Square, and improving reliability on some bus routes.

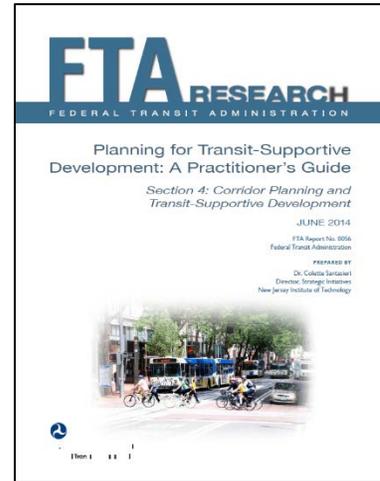
FAIRMOUNT AS A CASE STUDY

Planning for Transit-Supportive Development (Report No. 0056)

New Jersey Institute of Technology/Federal Transit Administration

June 2006

As part of a broader overview of transit-supportive development practices, the FTA conducted a case study of Fairmount Line planning initiatives. The study first details the unique community-led development of the rail corridor, from initial protests that led to complete grade separation in the 1840s to the Indigo Line vision that began in the 1990's. The Indigo Line vision galvanized a larger community development process that has laid the foundation for both large and small scale redevelopment projects, as well as the establishment of new zoning regulations. The primary lessons drawn from the case study focus on the benefits of community-led planning efforts that establish both a localized and regional vision. The study also highlights the benefits of strong CDCs that can lead all aspects of a transit-supported planning effort, including generating support for transit capital projects, developing and working to implement zoning changes, and purchasing and redeveloping sites in a manner consistent with community goals.

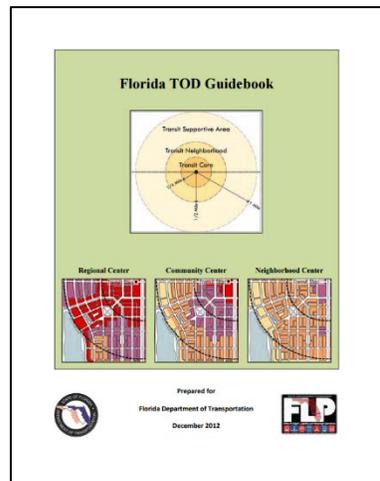


Boston's Fairmount/Indigo Line Corridor

Florida Department of Transportation

December 2012

The Florida Department of Transportation (FDOT) created a Transit Oriented Development (TOD) Guidebook, designed as a framework for communities developing TOD policies. The guidebook includes an evaluation of best practices in TOD planning, including a section specifically on the Fairmount Line corridor. The Fairmount Line served the most mature neighborhoods of any corridor evaluated by FDOT, which leads to unique challenges for TOD. The corridor has 345 acres of adjacent underutilized land, much of which is subdivided into small parcels that are difficult to independently develop. TOD is further hindered by Massachusetts' strict limitations on home rule authority, which limits the ability for local governments to enact policies favoring dense development near transit, as well as inconsistently applied local zoning ordinances. As a result, FDOT found that most TOD along the Fairmount Corridor has been developed by community development corporations (CDCs), which have also led TOD policy and corridor planning efforts. CDCs have been increasingly supported by state level agencies, primarily through financing mechanisms and technical assistance, but continue to face barriers at the local level.



FDOT's primary lessons for their Fairmount Corridor evaluation focused on the need to reduce fragmentation of development policies and financing mechanisms. The agency suggested that Massachusetts preference TOD in existing affordable housing funding, rather than creating dedicated

streams that are difficult for local developers to access. FDOT also suggested that the City of Boston codify TOD and smart growth zoning policy initiated at the community level, reducing the potential for projects that undermine local economic development efforts.

4 MARKET ANALYSIS

Public transportation services are most successful when they connect neighborhoods and destinations with a high density of people and jobs. The highest ridership transit routes often serve communities where residents lack regular access to a car, or where driving is difficult due to congestion or expensive parking. The success of a new or improved transit service is also determined in large part by its utility compared to other mobility options.

To determine the current and future ridership market for the Fairmount Line, the project team conducted a market analysis that considered the following factors:

- **Population and Employment Density:** An analysis of the population and employment density around Fairmount Line stations, as well as the socio-economic characteristics of station area residents.
- **Major Trip Generators:** A review of existing regional destinations and potential growth areas served by the Fairmount Line.
- **Existing Transit Use:** An overview of how residents and visitors currently use transit services available in Fairmount Corridor neighborhoods.
- **Travel Time Savings:** A comparison of travel times using the Fairmount Line compared to other available transit services.
- **Station Area Market Comparisons:** An analysis of how Fairmount Line station areas compare to other neighborhoods served by the existing MBTA Rapid Transit network.

POPULATION AND EMPLOYMENT

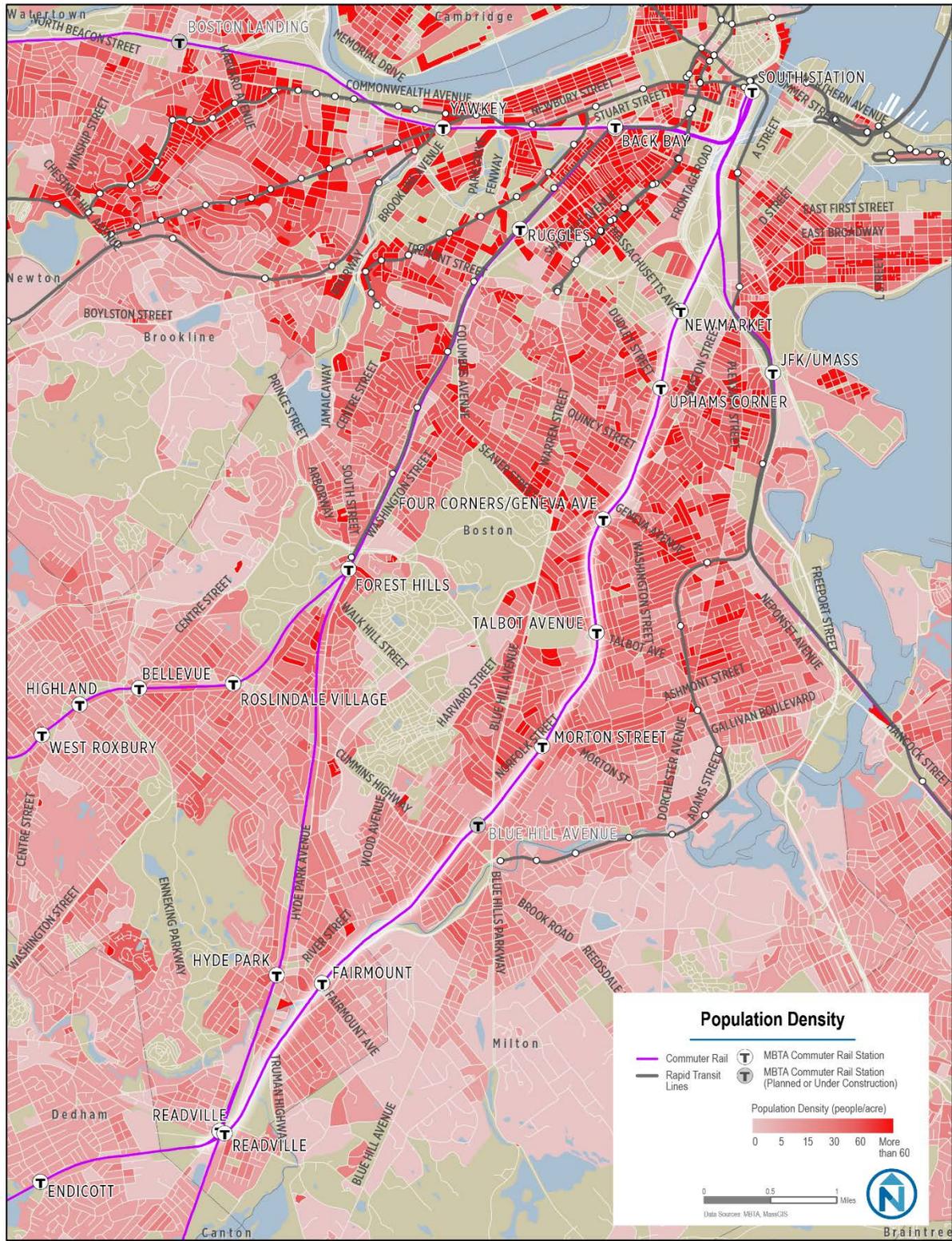
High frequency transit services are most successful when immediate station areas are located in strong business districts or adjacent to high density housing. Transit ridership can be further enhanced in communities where a high proportion of residents have socioeconomic characteristics that make them more likely to rely on public transportation. In general, neighborhoods with at least 30 residents and jobs per acre can support high capacity transit modes such as Bus Rapid Transit and Light Rail. The project team evaluated the population and employment density of Fairmount Corridor neighborhoods, as well as the socioeconomic characteristics of area residents. These densities were then compared to neighborhoods served by the MBTA Rapid Transit network.

Many Fairmount Corridor neighborhoods are densely populated and could likely support high frequency transit independent of employment opportunities.

The Fairmount Line serves some of Greater Boston's highest density residential neighborhoods (Figure 17). As of 2010, nearly 115,000 people live within a half mile of a Fairmount Line station. Both Four Corners/Geneva and Uphams Corner serve neighborhoods with over 30 residents per acre, a level of density that could support high frequency transit independent of local employment opportunities. These stations would place among the top half of MBTA Rapid Transit station areas in terms of residential population density. Talbot Avenue and Morton Street stations serve somewhat less dense neighborhoods with between 25-30 people per acre. These stations are just outside the top half of MBTA Rapid Transit station areas.

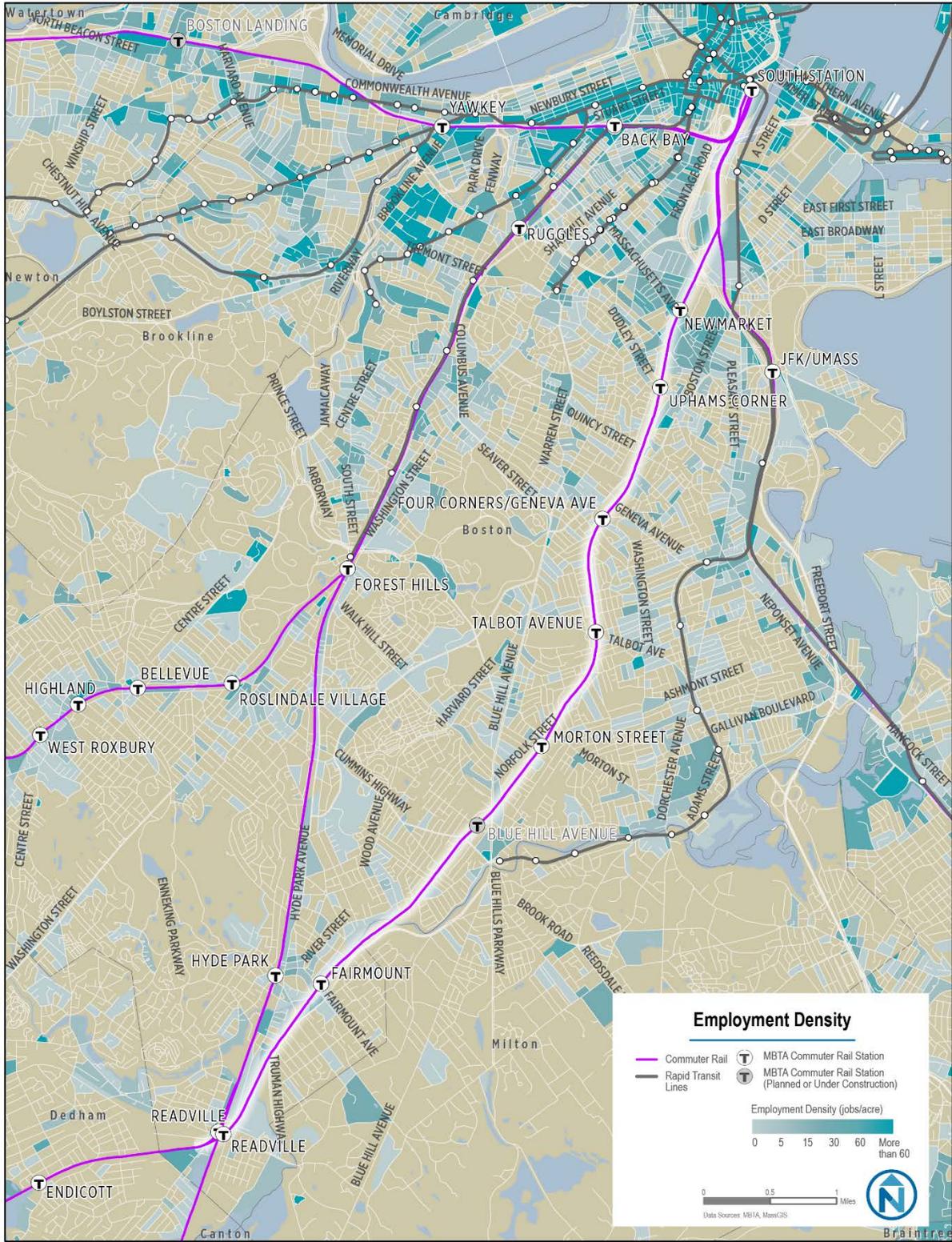
INCREASING RIDERSHIP ON THE FAIRMOUNT LINE | FINAL REPORT
 The Boston Foundation

Figure 17 | Fairmount Corridor Population Density Map



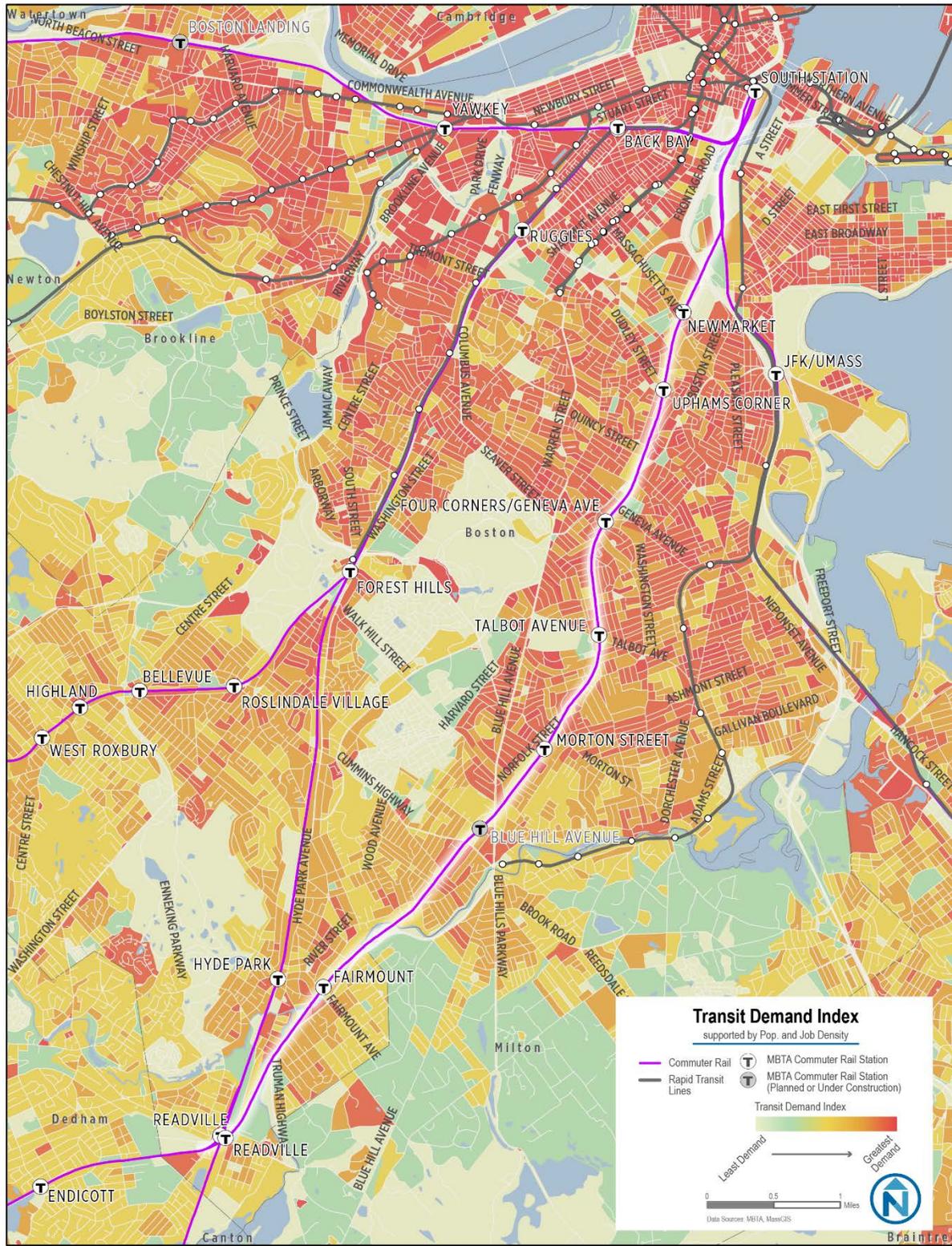
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Figure 18 | Fairmount Corridor Employment Density Map



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Figure 19 | Fairmount Corridor Transit Demand Index (Population + Employment Density) Map



Fairmount Corridor neighborhoods south of Morton Street have relatively low population density.

South of Morton Street, the Fairmount Line serves less densely populated neighborhoods. Fairmount Station and the future Blue Hill Avenue Station both serve neighborhoods with less than 20 people per acre. Readville, which is adjacent to a large industrial park and several railyards, serves just 5 people per acre. These stations would place in the bottom third of MBTA Rapid Transit stations in terms of population density, with Readville having among the lowest population densities of any station in the MBTA system.

There are fewer jobs near Fairmount Line stations than most MBTA Rapid Transit stations.

Fairmount Line stations provide access to significantly fewer jobs than the vast majority of MBTA Rapid Transit stations (Figure 18). There are approximately 166,000 jobs within a half mile walking distance of a Fairmount Line station. Nearly 90% of those jobs, however, are located within walking distance of South Station. Apart from Newmarket, there are only limited employment opportunities near Fairmount Line stations. Without any substantial employment market, most trips on the Fairmount Line are made by local residents, rather than commuters from the Greater Boston region. The lack of jobs along the Fairmount Corridor reduces the potential pool of Fairmount Line riders and limits opportunity for future growth.

The Fairmount Line disproportionately serves residents that are more likely to rely on transit for mobility.

Many people rely on public transportation because they lack access to other mobility options. Older adults, students, people with disabilities, residents of low income households, and people without access to a vehicle are significantly more likely to rely on transit than the general population. Neighborhoods with a high concentration of residents with these socio-economic characteristics may have high transit ridership even with low or moderate overall population and employment density. Appendix I includes population density maps for socio-economic groups that are more likely to rely on transit.

Compared to other MBTA Rapid Transit services, the Fairmount Line disproportionately serves residents that are more likely to rely on transit for mobility. More middle and high school age children live within a half mile of a Fairmount Line station than any MBTA Rapid Transit line. The Fairmount Line also serves a disproportionate percentage of residents of low income households and people with disabilities. About 55% of all black (non-Hispanic) residents that are served by either an MBTA Rapid Transit line or Fairmount Line are within walking distance of a Fairmount Line station. This percentage is more than twenty-five points higher than the directly adjacent Red Line –Ashmont Branch.

MAJOR TRIP GENERATORS

Most high quality transit lines serve multiple major trip generators that drive additional ridership demand beyond population and employment density alone. The more major trip generators served by a transit route, the higher the likelihood that residents and visitors along the line will rely on transit for a greater proportion of their trips. Riders from other parts of the transit network will also transfer between services to access a regional destination, further increasing ridership on a given transit line. Major trip generators include primary and secondary employment centers, as well as universities, hospitals, regional shopping centers, and corporate campuses.

Downtown Boston is the only regional trip generator served by the Fairmount Line.

Much of Downtown Boston and the South Boston Waterfront are within a 10-minute walk of the Fairmount Line's South Station terminal. As of 2010, over 145,000 jobs were located in a half mile radius around South Station. Thousands of additional jobs have been added in recent years, especially in adjacent Fort Point office buildings. Downtown Boston, however, is the most transit accessible destination in Greater Boston. Thus, it is unlikely that providing access to Downtown Boston generates additional Fairmount Line ridership from people traveling to and from destinations outside of the Fairmount Corridor.

The Fairmount Line lacks strong secondary ridership generators.

Unlike other MBTA Rapid Transit lines, the Fairmount Line lacks a strong secondary ridership generator. Outside of Downtown Boston, the Fairmount Line serves commercial centers that primarily cater to local residents. There are no universities, hospitals, or major employers located directly at station areas. Apart from continued development at South Bay Center, there are no large-scale development projects currently proposed near Fairmount Line stations. This continued lack of secondary ridership generators will limit potential ridership generated from transfers made from other parts of the MBTA system.

No Fairmount Line stations act as major local bus terminals, reducing ridership generated from transfers.

Within the Inner Core, the MBTA local bus network is primarily designed as a feeder service for the rapid transit network. In many neighborhoods, such as West Roxbury for example, nearly all bus routes end at one or two rail stations. Residents of those neighborhoods cannot access any major destinations without first transferring to a subway line. Nearly all of the highest ridership bus stops in the system are subway stations, and the majority of bus riders boarding or alighting at those stations are transferring to or from a subway line. While these riders are not generating additional transit trips when they transfer, they are counted as additional rail boardings. Outside of Greater Boston's primary business districts, most of the highest ridership rail stations in the MBTA are major bus terminals.

While many bus routes serve Fairmount Line stations, no station on the line currently functions as a bus terminal. Riders traveling to Fairmount Corridor destinations may transfer from local bus lines, but few if any riders are being forced to transfer from buses to the Fairmount Line. Bus to Fairmount Line transfers are likely made mostly by riders who are beginning or ending their trip at a Fairmount Corridor destination. Given more frequent Red Line service, most bus riders likely currently choose to ride to the Red Line rather than transferring at a Fairmount Line station.

As Fairmount service levels are increased, it is likely more bus riders will find utility in transferring to the Fairmount Line as part of their trip. It is unlikely, however, that any Fairmount Line station will be developed as a major bus terminal. The MBTA network has few routes that could naturally end at a Fairmount Line station, and it is unlikely that routes that currently terminate at the Red Line would be truncated to force riders onto the Fairmount Line.

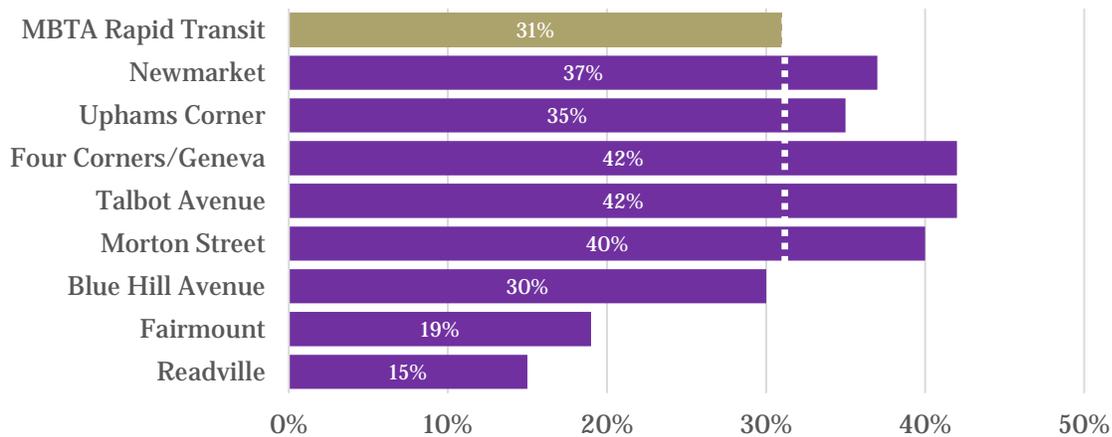
EXISTING TRANSIT USE

While improved transit services usually lead to an overall increase in transit ridership, existing riders are a major determinate of the potential ridership market of a new or improved service. The project team evaluated existing overall public transportation ridership along the Fairmount Corridor to provide an indication of the potential ridership market for an improved Fairmount Line.

Fairmount Corridor residents use transit to get to work at a higher rate than people living near an MBTA Rapid Transit station overall.

Work commute trips are the single largest market segment for public transportation. About 34% of Fairmount Corridor residents use public transportation for commuting to work. This rate is three percentage points higher than the rate for residents living within a half mile of an MBTA rapid transit station overall. Fairmount Corridor transit usage is highest in the central segment of the line, where about 40% of all residents rely on transit to get to work. Overall transit usage for commuting trips is significantly lower in Hyde Park, where residents are more likely to own vehicles.

Figure 20 | People Commuting to Work using Public Transit



Source: US Census/American Community Survey (2014)

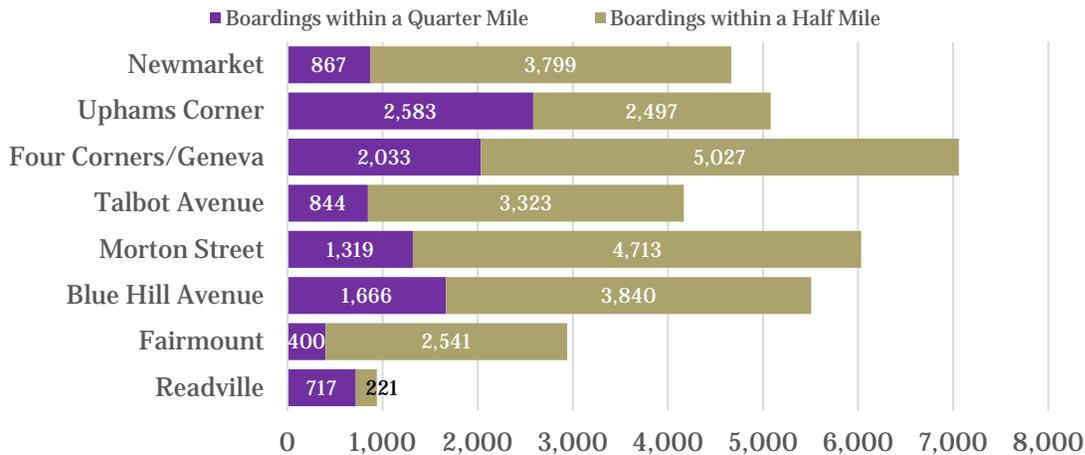
There are nearly 36,400 local bus boardings within a half mile of a Fairmount Line station each weekday.

As of 2013, nearly 36,400 riders board local buses at stops located within a half mile of a Fairmount Line station each weekday (Figure 21). Local bus ridership is highest within a half mile of Four Corners/Geneva station, with over 7,000 weekday boardings. Over 4,000 weekday boardings occur within a half mile of Newmarket, Uphams Corner, Talbot Avenue, and Morton Street, as well as within a half mile of the planned Blue Hill Avenue station site. There are about 3,000 daily bus boardings near Fairmount station, and just under 1,000 boardings near Readville.

Fairmount Corridor bus ridership is strongest in local business districts and along major streets just beyond immediate Fairmount Line station areas.

While there is strong bus ridership along the Fairmount Corridor, many of the highest ridership bus stops are not located directly adjacent to Fairmount Line stations. Instead, these high ridership bus stops are located at the center of nearby local business districts and along major transit streets, especially Blue Hill Avenue. At Four Corners/Geneva, for example, just over 2,000 riders board buses each weekday within a quarter mile of the station. A further 5,000 boardings, however, occur between a quarter and a half mile of the station, with the highest ridership stops along Blue Hill Avenue near Franklin Park.

Figure 21 | Bus Boardings within a Quarter Mile and a Half Mile of Fairmount Line Stations



Note: Bars and figures for "Boardings within a Half Mile" equal the total bus boardings between a quarter mile and a half mile radius of a Fairmount Line station. The sum of each bar is equal to the total number of boardings within a half mile of a Fairmount Line station.

Source: MBTA Automated Passenger Counts (2012)

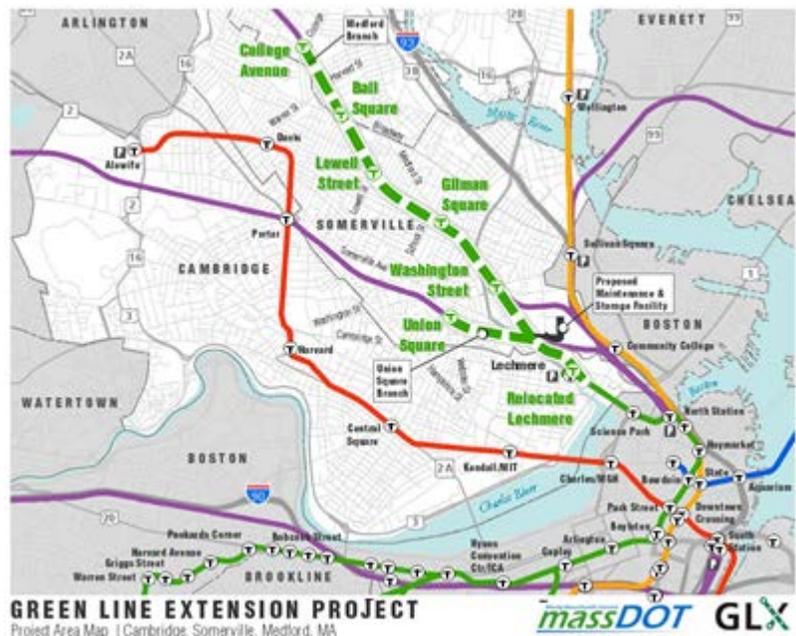
Fairmount Line ridership accounts for only 4% of overall transit ridership along the Fairmount Corridor.

Fairmount Line boardings account for just 1,374 of the 37,764 boardings that occur within a half mile of a Fairmount Line station. This capture rate is significantly lower than any MBTA Rapid Transit service. The capture rate is highest near Readville, where almost 25% of transit boardings are on the Fairmount Line. Apart from Fairmount Station, the capture rate at all other Fairmount Line station areas is less than 4%. This low overall capture rate suggests significant room to grow Fairmount Line ridership, even with existing service levels.

There are more than twice as many transit boardings within a half mile of the Fairmount Line than within a half mile of the planned Green Line Extension.

As of 2013, just under 17,900 riders boarded local bus services within a half mile of the seven new stations planned as part of the Green Line Extension compared to 36,400 boardings near Fairmount Line stations. Like the Fairmount Corridor, neighborhoods that will be served by the Green Line Extension currently lack rail service. Somerville transit riders must transfer from local buses to the Orange, Red, or Green Lines to

Figure 22 | Green Line Extension Map



Source: MassDOT

access most major destinations in the Greater Boston area. The significantly higher existing transit ridership along the Fairmount Line suggests that the service could attract as many, if not, more riders than the Green Line Extension in the long term.

TRAVEL TIME SAVINGS

A primary perceived benefit of the Fairmount Line is that it is able to provide faster and more reliable service than alternative public transit options. Previous studies and marketing programs have focused almost exclusively on potential travel time savings between Fairmount Line station areas and South Station. While savings on these trips are significant, most riders are not traveling directly from a Fairmount Line station to South Station. Therefore, this study evaluated a wide range of potential trips between the Fairmount Corridor and destinations in Greater Boston. Travel time savings calculations also considered all four major components of transit travel time, providing a more realistic estimate of how riders could benefit from using the Fairmount Line. These components included:

- **Station Access Time:** The amount of time it takes to walk between a rider's origin/destination and the first and last bus stop or rail station on their trip.
- **Initial Wait Time:** The amount of time a rider waits for the first bus or train they use on their trip. Many riders rely on schedules to reduce their initial wait time to as close to zero as possible, especially on services that operate less frequently. If a rider just misses their train or bus, however, the initial wait time will be equal to the amount of time until the next train or bus departure.
- **In-Vehicle Travel Time:** The amount of time a rider spends traveling in a train or bus during their trip. Service reliability issues such as traffic congestion or maintenance problems often effect in-vehicle travel time.
- **Transfer Time:** The amount of time a rider waits while transferring between transit services, if required.

All travel times estimates in this report assume that riders will wait half the maximum possible wait time when transferring between services. Estimates do not include a proxy for in-vehicle travel time delays, which are highly variable. In some circumstances, this approach will underestimate typical travel time, especially on trips that include local bus services that frequently run behind schedule due to congestion.

The Fairmount Line can reduce travel time from station areas to Downtown Crossing by over 20%.

The Fairmount Line provides direct service to Downtown Boston from neighborhoods where most other transit options require at least one transfer between a bus and rail line. Riders who live directly adjacent to a Fairmount Line station, and can plan their trips around the train schedule, can reduce their travel time to Downtown Crossing by over 20% (Figure 23). Travel time savings are greatest at Fairmount Station, where riders otherwise have to walk to Route 32 in order to access the Orange Line. Apart from Newmarket Station, riders boarding at all other Fairmount Line stations can reduce their travel time between 18% and 24%. At Newmarket, the Fairmount Line provides similar travel times to Downtown Boston as alternative transit options.

Figure 23 | Travel Time from Fairmount Line Stations to Downtown Crossing

Station	Fairmount Travel Time	Best Alternative Route	Alternative Travel Time	Fairmount Time Savings
Readville	36	32 to Orange Line*	44	12 (18%)
Fairmount	33	32 to Orange Line*	51	18 (35%)
Morton Street	28	21 to Red Line	35	7 (20%)
Talbot Avenue	25	22 to Red Line	33	8 (24%)
Four Corners/Geneva	22	19 to Red Line	28	6 (21%)
Uphams Corner	19	41 to Red Line	25	6 (24%)
Newmarket	16	10 to Red Line	16	0 (0%)

*The Franklin Line and Providence/Stoughton Line both provide faster service to Downtown Crossing than the Fairmount Line.

Note: Travel times based on an inbound trip beginning at around 8 am on a Monday as of February 2016. All calculations used 8 Summer Street, Boston, MA as the destination address. All travel times are based on route schedules and assume the riders will wait half the possible maximum wait time for transfers.

Source: MBTA Timetables (as of February 2016); Google Maps (for walking times)

The Fairmount Line can reduce travel times on trips from station areas to destinations served by the Red Line and Silver Line.

Most Fairmount Corridor residents have the option of using local bus services to access Red Line stations on the Ashmont Branch. From the Red Line, residents can access regional destinations such as Kendall Square, or transfer to Silver Line service at South Station to access the South Boston Waterfront and Logan Airport. For residents living directly adjacent to a station, however, the Fairmount Line can provide faster service to South Station than the typical local bus-to-Red Line alternatives. At South Station, riders can quickly transfer to the Red Line or Silver Line. As a result, using the Fairmount Line can reduce travel times to regional destinations served by these lines by up to 30%.

Figure 24 | Scheduled Travel Time from Morton Street Station to Secondary Business Districts

Destination	Fairmount Route	Fairmount Travel Time	Best Alternative Route	Alternative Travel Time	Maximum Fairmount Time Savings
South Boston Waterfront	Fairmount to SL 1/2	32	21 to Red Line to SL 1/2	47	15 (32%)
Kendall Square	Fairmount to Red Line	38	21 to Red Line	46	8 (17%)
Logan Airport	Fairmount to SL 1	46	21 to Red Line to SL 1	61	15 (25%)

Note: South Boston Waterfront = World Trade Center Station; Kendall Square = Kendall Square Red Line Station; Logan Airport = Logan Airport Terminal A.

Note: All travel times are based on route schedules and assume the riders will wait half the possible maximum wait time for transfers.

Source: MBTA Timetables (as of February 2016); Google Maps (for walking times)

The Fairmount Line provides significantly faster service between Fairmount Corridor neighborhoods (intra-corridor) than existing local bus routes.

Bus trips between Fairmount Corridor destinations often require multiple transfers, long walks, or out-of-direction travel. The Fairmount Line cuts across the local bus network and provides one-seat trips between otherwise poorly linked destinations. The line also provides faster and more reliable service than local bus routes. For many Fairmount Corridor residents, using the Fairmount Line for a local trip can cut travel times nearly in half. Travel time savings are especially significant for students commuting from Dorchester to schools in Mattapan and Hyde Park, as well as for workers and shoppers traveling to the South Bay Center (Figure 25).

Figure 25 | Travel Times from the Boston Public Library Grove Hall Branch to Selected Destinations

Destination	Best Alternative Route	Minimum Alternative Travel Time	Fairmount Travel Time	Maximum Fairmount Time Savings
Home Depot (South Bay Center)	Route 16	34	18	16 (47%)
Boston International High School	Route 28	31	18	13 (42%)
Pacific Rim Charter School	Route 16 to Route 32	50	33	17 (34%)
Codman Square Health Center	Route 23	19	18	1 (5%)

Note: All travel times are based on route schedules and assume the riders will wait half the possible maximum wait time for transfers.
Source: MBTA Timetables (as of February 2016); Google Maps (for walking times)

The benefits of riding the Fairmount Line would increase with faster service between Newmarket and South Station.

The Fairmount Line currently takes about ten minutes to travel 2.3 miles between Newmarket and South Station, with an average speed of about 14 mph. Trains travel at 21 mph between Readville and Newmarket, covering 6.9 miles and five intermediate stops in just twenty minutes. Rail traffic congestion and complicated switching patterns are the primary causes of slow travel speeds between Newmarket and South Station. Reducing travel times between the two stations from ten minutes to five minutes, likely through both capital investments and operational improvements, would significantly increase the benefits of Fairmount Line service (Figure 26). For example, using the Fairmount Line between Morton Street Station and the South Boston Waterfront would reduce travel times by up to 20 minutes, compared to 15 minutes with the existing schedule.

Figure 26 | Travel Time with Improved Newmarket-South Station Service from Morton Street Station to Major Destinations

Destination	Minimum Alternative Travel Time	Current Fairmount Travel Time	Improved Fairmount Travel Time	Current Fairmount Time Savings	Improved Fairmount Time Savings
Downtown Crossing	39	28	23	11 (28%)	16 (41%)
South Boston Waterfront	47	32	27	15 (32%)	20 (43%)
Kendall Square	46	38	33	8 (17%)	13 (28%)
Logan Airport	61	46	41	15 (25%)	20 (33%)

Note: South Boston Waterfront = World Trade Center Station; Kendall Square = Kendall Square Red Line Station; Logan Airport = Logan Airport Terminal A. All travel times are based on route schedules and assume the riders will wait half the possible maximum wait time for transfers.

Source: MBTA Timetables (as of February 2016); Google Maps (for walking times)

The Fairmount Line provides less significant travel time savings on trips that begin or end farther from station areas, reducing the potential ridership market.

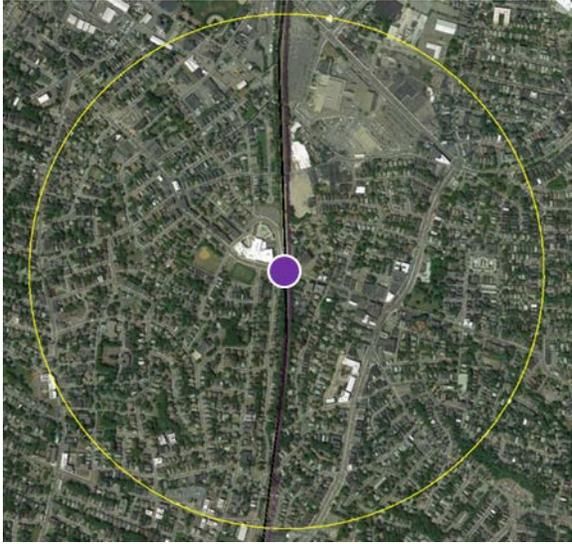
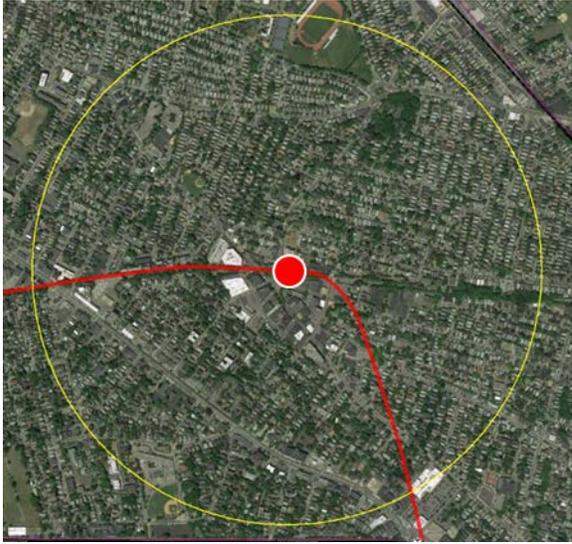
Much of the benefit from riding the Fairmount Line comes from eliminating a local bus to subway transfer. As riders begin or end their trip farther from station areas, the walking time to the Fairmount Line begins to reduce or eliminate the benefit from not having to transfer to a local bus. For example, riders boarding at Morton Street Station save seven minutes on trips to Downtown Crossing by using the Fairmount Line instead of taking a local bus to the Red Line. If a rider begins their trip at the intersection of Morton and Fairmount Streets, just a 1/3 of a mile from the station, the travel time savings from using the Fairmount Line are essentially eliminated (Figure 27). At Morton Street, and many other Fairmount Line stations, the relationship between walking access time and travel time savings works to reduce the potential capture area for the Fairmount Line.

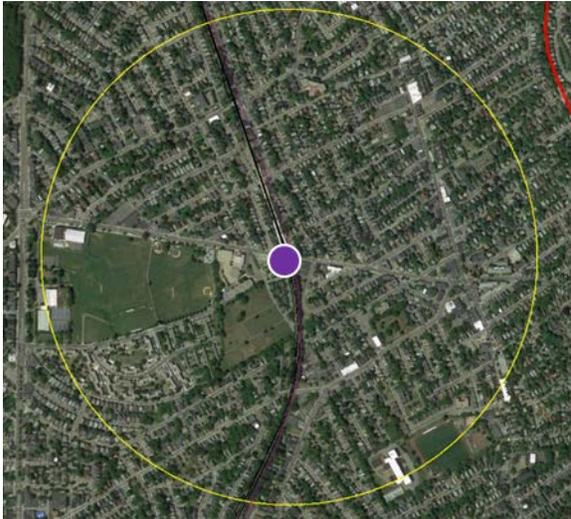
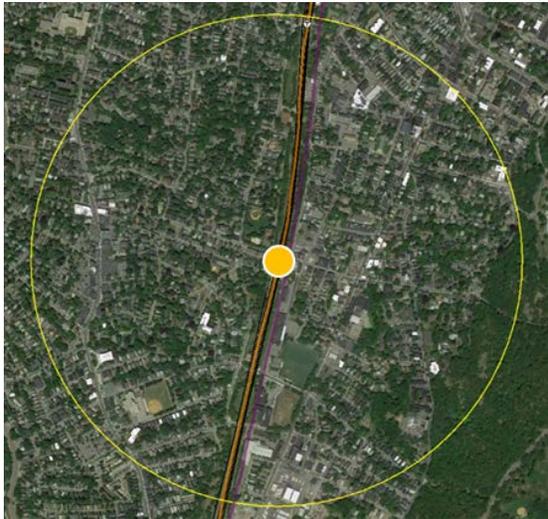
Figure 27 | Travel Time to Downtown Crossing from Morton Station vs. Morton Street/Fairmount Street

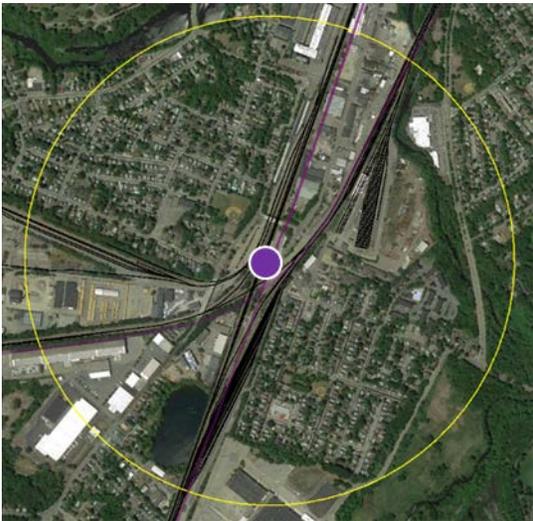


STATION AREA MARKET COMPARISONS

While high-level statistical analysis can provide significant insight into the market for transit at a given location, there are range of site-specific factors that ultimately determine transit ridership at a given station. In order to more fully understand the Fairmount Line's ridership potential, the project team conducted a series of comparisons of Fairmount Line stations and MBTA Rapid Transit stations. Comparisons were initially selected based on population and employment density, and further narrowed down based on characteristics of the station area. For example, the project team compared Readville and Braintree because both stations serve low-density mixed-use neighborhoods and are the terminals of their respective lines. Ultimately, these comparisons generally show that Fairmount Line station areas lack some of the characteristics that drive high rapid transit ridership, and that additional development is likely required to draw more riders to the service in the long term.

Uphams Corner	Davis Square
	
<ul style="list-style-type: none"> ▪ Population: 21,000 ▪ Employment: 5,500 	<ul style="list-style-type: none"> ▪ Population: 20,500 ▪ Employment: 6,000
<ul style="list-style-type: none"> ▪ Fairmount Line Boardings: 166 ▪ Bus Lines: 8, 10, 15, 16, 17, 41, 45 ▪ Bus Boardings: 5,080 ▪ Daily Transit Ridership: 5,246 	<ul style="list-style-type: none"> ▪ Red Line Boardings: 12,857 ▪ Bus Lines: 77, 80, 83, 87, 88, 89, 90, 94, 96 ▪ Bus Boardings: 5,238 ▪ Daily Transit Ridership: 18,095
<p>Uphams Corner on the Fairmount Line and Davis Square on the Red Line both serve neighborhood centers and surrounding residential streets. Both stations are among the top half of MBTA Rapid Transit stations in terms of overall density, and serve similar amounts of people and jobs. Despite these similarities, over three times as many riders board transit services near Davis Square than near Uphams Corner.</p> <p>The significant disparity in transit ridership between Uphams Corner and Davis Square is likely the result of several factors related to neighborhood composition and transit network design. Davis Square station serves a directly adjacent neighborhood center with a high concentration of jobs and residents. Jobs at Uphams Corner are located farther from the station area, and are concentrated at industrial businesses (such as Eversource) where workers are more likely to drive. Davis Square is served by the Red Line, which provide faster service to a wider range of major destinations than the Fairmount Line. The station also serves as a major bus hub for both MBTA riders and Tufts University shuttles.</p> <p>Even with more frequent Fairmount Line service, it is unlikely that Uphams Corner will draw comparable ridership as Davis Square without a significant increase in people and jobs. Davis Square is a more centrally located station that also serves as a natural hub for MBTA buses, thus drawing local and regional transit riders. Uphams Corner serves primarily local and intra-corridor traffic, with many bus riders transferring to the Red Line and Orange Line to reach destinations not served by the Fairmount Line. Thus increasing transit ridership at Uphams Corner is likely predicated on increasing local traffic at the station, and developing destinations that draw riders from across the region.</p>	

Talbot Avenue	Green Street
	
<ul style="list-style-type: none"> ▪ Population: 19,000 ▪ Employment: 1,000 	<ul style="list-style-type: none"> ▪ Population: 14,000 ▪ Employment: 4,000
<ul style="list-style-type: none"> ▪ Fairmount Line Boardings: 157 ▪ Bus Lines: 22, 23, 26, 29, 45 ▪ Bus Boardings: 4,167 ▪ Daily Transit Ridership: 4,324 	<ul style="list-style-type: none"> ▪ Orange Line Boardings: 3,618 ▪ Bus Lines: 38, 39, 41, 42 ▪ Bus Boardings: 2,317 ▪ Daily Transit Ridership: 5,935
<p>Talbot Avenue and Green Street are both neighborhood stations along the Fairmount Line and Orange Line respectively. The neighborhoods served by both stations are predominately residential and are among the bottom third of MBTA Rapid Transit and Fairmount Line stations in terms of combined population and employment density. Talbot Avenue serves a residential neighborhood and has a large park immediately adjacent to the station. Codman Square and Washington Street, the main neighborhood center in the Talbot Avenue service area, is about a five to ten minute walk from the station. Green Street also serves a primarily residential neighborhood with a small cluster of retail establishments in its immediate station area. Like Talbot Avenue, the primary neighborhood center along Centre Street is located on the periphery of Green Street’s service area.</p> <p>Green Street serves over 3,600 daily boardings compared to just 157 Fairmount Line boardings at Talbot Avenue. Almost twice as many bus boardings occur daily within a half mile of Talbot Avenue. Both stations have strong bus ridership on routes that go to destinations not served by the rail line. At Talbot Avenue, however, many bus riders are likely riding to the Red Line, Orange Line, or Dudley Square to reach service to Downtown Boston. An improved Fairmount Line could likely better serve many of these riders, and potentially attract additional riders to rail service. Ultimately, overall transit ridership on rail and bus at Talbot Avenue could match or exceed Green Street transit ridership without significant population or employment growth.</p>	

Readville	Braintree
	
<ul style="list-style-type: none"> ▪ Population: 4,500 ▪ Employment: 2,000 	<ul style="list-style-type: none"> ▪ Population: 4,000 ▪ Employment: 3,000
<ul style="list-style-type: none"> ▪ Fairmount Line Boardings: 227 ▪ Other Commuter Rail Boardings: 203 ▪ Bus Lines: 24, 32, 33 ▪ Bus Boardings: 938 ▪ Daily Transit Ridership: 1,368 	<ul style="list-style-type: none"> ▪ Red Line Boardings: 5,122 ▪ Commuter Rail Boardings: 235 ▪ Bus Lines: 230, 236 ▪ Bus Boardings: 643 ▪ Daily Transit Ridership: 6,000
<p>Readville and Braintree serve as the southern terminals of the Fairmount Line and Red Line respectively. The neighborhoods accessible from both stations are among the least dense areas served by the MBTA Rapid Transit network and the Fairmount Line, with less than 8,000 residents and jobs. Readville serves a mix of industrial facilities and suburban residential neighborhoods, while Braintree services an office park, several big box retail complexes, and suburban town center. Neither station acts as a major hub for the MBTA bus system, though both offer local bus connections.</p> <p>Braintree station serves over 5,000 daily transit boardings, compared to just 227 Fairmount Line boardings at Readville. As a terminal station, Readville is frequently compared to terminal stations on MBTA Rapid Transit network lines. While Readville and Braintree serve areas with similar density, Braintree is much better suited as a park and ride station and likely draws from a larger area than Readville. Braintree has direct access to Route 3 and a parking garage with over 1,100 spaces that regularly reaches capacity during weekday service. Readville has significantly less parking, does not have direct highway access, and is much more difficult to reach from surrounding residential neighborhoods. The strongest ridership market for Readville is likely the neighborhoods immediately adjacent to the station, atypical for a terminal station. Therefore, further population and employment growth is likely needed for Readville to achieve similar transit ridership as Braintree.</p>	

5 SHORT AND MEDIUM RECOMMENDATIONS TO INCREASE RIDERSHIP

Using information gathered during the existing conditions, ridership, and market analyses, the project team developed short and medium term recommendations for increasing ridership on the Fairmount Line. These recommendations are designed to provide near term benefits for existing Fairmount Line riders and attract new riders to the service. Successful implementation of recommended projects will also lay a foundation for future ridership improvements as service frequency on the line is increased over time. Recommended projects and strategies are grouped in five categories:

- **Marketing:** Strategies designed to increase awareness of the Fairmount Line.
- **Rail Service Improvements:** Strategies and projects focused on cost-effective near term improvements to Fairmount Line service.
- **Station Access Improvements:** Low-cost interventions to increase access to Fairmount Line stations for people walking, biking, or transferring from the bus.
- **Capital Improvements:** Medium term capital investments that enhance Fairmount Line service.
- **Fare Collection:** Interim recommendations for improving Fairmount Line fare collection practices as well as Fairmount Line-specific recommendations for the next-generation CharlieCard system (Automatic Fare Collection 2.0).

Each recommendation description includes the following components:

- **Recommendation:** Overview of the recommended strategy or project.
- **Opportunity:** Background information regarding the barriers and challenges that present an opportunity for improving the Fairmount Line and increasing ridership.
- **Description:** Detailed description of the recommendation and its potential benefits.

MARKETING

Targeted Marketing Programs to Specific User Groups

Recommendation: Develop and implement marketing programs targeted at user groups that gain the greatest benefits from using the Fairmount Line.

Opportunity: Previous Fairmount Line marketing has centered primarily on commuting trips to South Station. While these campaigns have increased Fairmount Line ridership, much of the ridership growth has occurred from riders discovering that the Fairmount Line can meet other travel needs. Targeted marketing programs should focus on these non-traditional users that are served well by the Fairmount Line, including:

- *Intra-corridor Trips between Fairmount Corridor Neighborhoods:* The Fairmount Line provides substantial time savings on trips between station areas compared to alternative local bus service. For example, trips between the Kroc Center and Codman Square take 14 minutes on the Fairmount Line versus 35 minutes using Routes 16 and 23.

- *Students:* There are over 30 schools within a ten-minute walk of a Fairmount Line station. Some students are already relying on the Fairmount Line to get to school, as evidenced by high ridership on morning reverse commute trains.
- *Fairmount Corridor Residents Working in the South Boston Waterfront:* The South Boston Waterfront is among the fastest growing employment centers in Greater Boston, with over 60,000 jobs projected by 2040. The Fairmount Line can save corridor residents as much as 15 minutes on trips to and from South Boston Waterfront employers.
- *South Bay Center Employees and Shoppers:* The Fairmount Line provides the most direct access to South Bay Center from many parts of Dorchester, Mattapan, and Hyde Park. Newmarket Station currently serves less than 75 passengers per day, suggesting significant room for growth.

Description: Targeted marketing programs are designed to attract travelers making specific types of trips to start regularly riding the Fairmount Line. Campaigns focus on growing existing travel markets, and thus are typically more successful than general advertising campaigns for a given transit service. Targeted marketing strategies could include pamphlets highlighting specific benefits of using the Fairmount Line, travel training assistance, and community ambassador programs.

Close partnerships with community stakeholders would ensure that marketing products best address potential rider's travel needs. For example, Boston Public Schools could work to develop a marketing campaign targeted towards students. Student marketing materials could include walking directions between a school and the closest Fairmount Line station as well as train times that best meet class schedules. School staff members or students could also act as ambassadors that help promote the Fairmount Line and provide travel training assistance. There is also an opportunity to market Fairmount service to large institutions within walking distance of Fairmount Line stations, such as Boston Medical Center, Franklin Park Zoo, and Curry College.

Targeted Advertising at Key Destinations/Facilities to Build Awareness

Recommendation: Develop and implement advertising campaigns at key destinations that have the potential to generate significant additional ridership given current Fairmount Line service design.

Opportunity: Several previous Fairmount Line advertising campaigns have focused on the Downtown Boston commuter market. This market, along with others, continues to present viable opportunities for successful traditional location-based advertising campaigns to build awareness of Fairmount Line service and attract new riders. Potential advertising markets include:

- *Park and Ride Facilities:* There are 405 spaces in MBTA parking lots at Readville and Fairmount stations. Only about 125 of these parking spaces are utilized on a typical weekday. The Fairmount Line provides the closest park and ride option for much of Hyde Park, East Dedham, and Milton.
- *Bus Riders Using Fairmount-adjacent Services:* There are 36,400 weekday boardings on bus routes within a half mile of Fairmount Line stations. Many riders using these bus services may be unaware of the Fairmount Line and its potential travel time benefits.
- *Fairmount Corridor Neighborhood Centers:* The Fairmount corridor has numerous neighborhood centers with strong commercial anchors and dense residential developments.

Description: Location-based advertising campaigns can boost overall awareness of the Fairmount Line while also attracting riders from a specific travel market. These campaigns typically include billboard advertisements and similar signage, as well as pamphlets or informational signage. Advertisements should highlight a specific benefit of the Fairmount Line. Park and Ride advertisements, for example, might highlight the driving time to the nearest Fairmount Line station or peak-hour departure times. Advertisements at bus stops could include information about Fairmount Line travel times to various

destinations. Fairmount Line advertisements could also be coordinated with ongoing campaigns highlighting Fairmount corridor neighborhood centers.

Highlight All Zone 1A Stations (including Fairmount Line) on MBTA Rapid Transit System Map

Recommendation: Highlight the Fairmount Line on the MBTA Rapid Transit/Key Bus Route System Map using a distinctive color and line thickness compared to other commuter rail services.

Opportunity: The Rapid Transit/Key Bus Routes Map is designed to highlight the highest quality transit services provided by the MBTA, including the four subway lines and the 15 most frequent bus routes. The map also includes inner suburban commuter rail lines and stations to help riders identify transfer opportunities with the rapid transit and key bus routes network.

The Fairmount Line does not fall cleanly within the typical MBTA service categories, and thus is poorly explained by the existing Rapid Transit/Key Bus Routes Map design. All Fairmount Line stations are within Boston and serve dense urban neighborhoods, much more similar to a subway line than a commuter rail service. Apart from Readville Station, the Fairmount Line is entirely within Zone 1A, and thus costs the same to ride as the subway. Fairmount Line service is less frequent than on subway lines and Key Bus Routes overall, but off-peak service is more consistently frequent than on other commuter rail lines. Current Fairmount Line riders use the service for a wide range of trips, rather than mostly for rush hour commutes.

By giving the Fairmount Line the same muted color and thinner route line as other commuter rail branches, the map fails to highlight the service as an urban mobility option. However, displaying the Fairmount Line with the same line thickness and color intensity as a subway line would give the false impression of all-day high frequency service.

Description: To better convey the Fairmount Line's utility as an urban mobility option, the MBTA could apply a wider line thickness and less muted color to all Zone 1A commuter rail stations and route segments on the MBTA Rapid Transit/Key Bus Routes Map (Figure 28). This design feature would highlight all stations that riders can travel between for the same fare as a subway line. Nearly all Zone 1A segments have close to hourly off-peak service and are already used by riders as part of trips within Boston and other urban core communities. As many of these segments have been proposed as DMU corridors, the new map design element could also act as a catalyst to advocate for improved urban core commuter rail service frequency.

Figure 28 | MBTA Rapid Transit/Key Bus Routes Map Highlighting Zone 1A Service



RAIL SERVICE IMPROVEMENTS

Run Off-Peak Franklin Line Trains on the Fairmount Line to Increase Frequency

Recommendation: Run additional Franklin Line trains via the Fairmount Line during off-peak service to increase service frequency without additional operating costs.

Opportunity: The Fairmount Line has the highest proportion of off-peak ridership on any commuter rail line in Greater Boston. Off-peak ridership on the Fairmount Line is highest during morning and late evening service in the outbound direction and afternoon service in the inbound direction. Many off-peak

riders are likely students, as well as residents making non-work related trips. More frequent off-peak service would attract additional riders from these user groups.

Description: To increase off-peak service frequency on the Fairmount Line without increasing operating costs, the MBTA could run additional Franklin Line trains via the Fairmount Line. The Franklin Line is a commuter rail service connecting Downtown Boston to Franklin via Dedham, Norwood, Walpole, and Norfolk. Franklin Line tracks connect to both the Amtrak Northeast Corridor and the Fairmount Line at Readville Station. The MBTA currently runs all but two inbound Franklin Line trains via the Northeast Corridor, which provides faster service to South Station (8-14 minutes less than Fairmount) and has stops at Back Bay, Ruggles, and Hyde Park.

Figure 29 | Franklin Outbound Schedule (Excluding Peak Trains and Northeast Corridor Stops)

Monday to Friday		AM										PM									
Outbound from Boston		701	741	703	705	707	709	711	713	715	743	717	745	719	721	723	725	727	729	731	
ZONE	STATION	TRAIN #	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	
	Bikes Allowed		6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	
1A	South Station	6	3:50	6:45	8:04	9:40	11:00	12:20	1:35	2:40	3:48	4:15	4:43	5:02	5:20	5:45	6:20	7:45	9:00	10:30	11:50
1A	Back Bay	6	-	6:50	8:09	8:45	11:05	12:25	1:40	2:45	3:53	4:20	4:48	5:07	5:25	5:50	6:25	7:50	9:05	10:35	11:55
1A	Ruggles	6	-	-	8:13	-	11:08	12:28	1:44	2:49	3:57	4:24	4:52	5:11	5:29	5:54	6:29	7:54	9:08	10:38	11:58
1	Hyde Park	6	-	-	-	-	-	-	-	-	-	4:33	-	5:20	-	-	-	-	-	10:46	-
2	Readville	6	-	7:01	-	9:56	-	12:38	1:53	2:59	-	4:37	-	5:24	-	-	6:38	8:03	9:18	10:50	12:08
2	Endicott	-	-	7:04	-	9:59	11:19	12:41	1:57	3:02	-	4:40	-	5:28	-	6:08	6:42	8:06	9:21	10:53	12:11
2	Dedham Corp. Center	6	-	7:07	8:26	10:02	11:22	12:44	1:59	3:05	4:12	4:43	5:07	5:32	5:46	6:11	6:45	8:09	9:24	10:56	12:14
3	Islington	-	-	7:10	8:29	10:05	11:25	12:47	2:02	3:08	-	4:46	5:10	5:35	5:49	-	6:48	8:12	9:27	10:59	12:17
3	Norwood Depot	6	-	7:13	8:32	10:08	11:28	12:50	2:05	3:11	-	4:49	5:13	5:39	-	6:18	6:52	8:15	9:30	11:02	12:20
3	Norwood Central	6	L 4:12	7:16	8:35	10:11	11:31	12:53	2:08	3:14	4:17	4:52	5:17	5:43	5:54	6:22	6:56	8:18	9:33	11:05	12:23
4	Windsor Gardens	-	-	7:19	8:39	10:15	11:35	12:57	2:12	3:18	4:21	-	5:21	-	5:58	6:26	7:00	8:22	9:37	11:08	12:26
4	Plimptonville	-	-	-	-	-	-	-	-	-	-	-	-	1:50	-	-	-	-	-	-	-
4	Walpole	L 4:18	7:23	8:43	10:19	11:39	1:01	2:16	3:22	4:26	-	5:27	5:54	6:04	6:31	7:05	8:27	9:42	11:12	12:31	
5	Norfolk	6	-	-	8:49	10:25	11:45	1:07	2:22	3:30	4:34	-	5:35	-	6:10	6:38	7:12	8:34	9:49	11:19	12:38
6	Franklin/Dean College	6	4:30	-	8:56	10:32	11:52	1:14	2:29	3:37	4:41	-	5:42	-	6:17	6:45	7:19	8:41	9:56	11:26	12:45
6	Forge Park/Route 495	6	4:40	-	9:04	10:40	12:00	1:22	2:37	3:45	4:49	-	5:50	-	6:25	6:52	7:27	8:49	10:04	11:34	12:53

Only about 19% of Franklin Line boardings occur during off-peak service, among the lowest in the MBTA commuter rail system. About 60% of off-peak Franklin Line trips begin or end at South Station, compared to about 35% at Back Bay or Ruggles. Franklin Line off-peak ridership is particularly low during morning outbound service, when the Fairmount Line could attract additional student ridership.

Rerouting off-peak Franklin Line trains would allow the MBTA to add up to 20-25 additional one-way trips per day on the Fairmount Line. With additional Franklin Line trains, Fairmount Line frequency could increase to about 40 minutes during mid-day and late night service and 30 minutes during rush hour in the off-peak direction. Rerouted Franklin Line trains present an interim opportunity to increase Fairmount Line service at no additional cost, while having only a minor impact on most Franklin Line passengers. Figure 29 shows the outbound schedule with trains that could be rerouted via the Fairmount Line.

Develop Service Reliability Policy

Recommendation: Develop policy standard for limiting dropped trips on the Fairmount Line.

Opportunity: Fairmount Line service performance has increased significantly in recent years, with fewer dropped trips and more on-time arrivals. Between December 2015 and May 2016, only about 6% of Fairmount Line trips ran more than five minutes behind schedule. This on-time performance rate is comparable to the highest performing commuter rail lines systemwide. The MBTA has, however, continued to cancel a limited number of Fairmount Line trains when additional railcars are needed to maintain schedules on other lines. Historically poor on-time performance, along with continued

occasional dropped trips, has generated a perception that the Fairmount Line is an unreliable transportation option.

Description: Developing a clear public-facing policy for limiting dropped Fairmount Line trips would help reduce the perception of unreliable service. This policy should prohibit Fairmount Line trips from being canceled to provide replacement vehicles on other commuter rail lines. The MBTA should also immediately publically announce the cause of any Fairmount Line service cancellation or delay when possible, and regularly post reports both online and at stations about any ongoing issues. As the MBTA often does not provide replacement bus service when Fairmount Line trains are canceled, Zone 1A tickets and passes should be honored for alternative services. These services include all buses serving Fairmount Line stations, Zone 1 and 2 stations at Readville and Hyde Park, and key stops on the Red, Orange, and Silver Lines. This fare honor policy is similar to the policy instituted on Route 39 when the MBTA temporarily suspends service between Brigham Circle and Heath Street on the Green Line E Branch.

Sponsorships to Support Additional Service

Recommendation: Solicit sponsorships to support additional service frequency or specific additional trips on the Fairmount Line.

Opportunity: Fairmount Line service is not frequent enough to be utilized as a walk-up transportation option. Low frequency transit services are less attractive, as riders must rely on a schedule to plan their trips. Limited funding is currently available to increase Fairmount Line service. Corporate sponsorships present an opportunity to increase service without requiring additional operating expenditures by the MBTA.

Description: Funding from corporate sponsorships could be used to add additional service frequency or specific additional trips on the Fairmount Line. Trips could be added during off-peak service, especially near school start and release times, or to increase overall frequency during peak service.

The cost per additional Fairmount Line round trip is approximately \$750 dollars, given available railcars at the desired time of service. An additional trip during peak service would cost about \$200K annually, and would increase service frequency from every 40 minutes to every 20 minutes, at least for a part of one peak period. An additional train all day during the existing weekday off-peak service span would cost about \$2M per year, and increase service frequency from every 60 minutes to every 40 minutes. Off-peak service may also be more feasible since constraints on space at South Station and/or available locomotives and coaches would be much less of a factor.

The MBTA does not currently have a program in place that allows private entities to directly fund MBTA service. Many transit agencies have been wary to allow private transit subsidies, as they may be responsible for continuing to fund additional service once the subsidy ends. The MBTA,

however, recently reached a deal with the Wynn Boston Harbor casino to provide funding for additional off-peak Orange Line trips, providing a precedent for a similar program on the Fairmount Line. Successful corporate sponsorship programs have also been implemented by select transit agencies throughout the United States. Cleveland RTA, for example, funds part of the operations and maintenance of its flagship Bus Rapid Transit service through sponsorships with local health, education, and financial institutions (Figure 30).



Figure 30 | Cleveland BRT Naming Rights Logo

Extend Fairmount Line Service South to Legacy Place

Recommendation: Provide additional service between the Fairmount corridor and Dedham Corporate Station.

Opportunity: Dedham Corporate Station provides direct access to several thousand retail and office jobs and over 700 transit-oriented apartments. The Franklin Line reliably connects Dedham Corporate to Downtown Boston with service that is almost always faster than driving. Despite being just 2.25 miles from Readville Station, jobs and retail destinations at Dedham Corporate are not very accessible from Fairmount corridor neighborhoods. Traveling from Four Corners/Geneva to Legacy Place, for example, takes between 60 and 90 minutes via Route 16 and Route 34E or the Fairmount and Franklin Lines. As the Fairmount and Franklin Lines have a direct connection at Readville, it is possible to provide a faster, one-seat ride between Dedham Corporate and the Fairmount corridor.

Figure 31 | Readville to Dedham Corporate/Legacy Place



Description: To provide access to jobs and retail destinations from the Fairmount corridor, the MBTA could provide direct service between Fairmount Line stations and Dedham Corporate (Figure 31). Direct service would cut travel times between Fairmount corridor neighborhoods and Legacy Place by up to 50%. Better access to Dedham jobs and retail destinations would stimulate additional off-peak ridership on the Fairmount Line.

Fairmount Line trips do not have enough schedule padding to simply extend all service to Dedham Corporate while maintaining existing service frequency. There are also no track switches or sidings near Dedham Corporate Station, which increases the amount of time required to turn around the train and significantly reduces station capacity. To improve service between the Fairmount corridor and Dedham Corporate, the MBTA could analyze and potentially pursue one or a combination of the following options:

- *Timed transfers between the Fairmount Line and Franklin Line at Readville.* The MBTA could coordinate train schedules to allow riders to easily transfer between the Fairmount and Franklin Line on some trips. Ideally, riders would be charged only a Zone 1A fare for trips between the Fairmount Line and Dedham Corporate. Timed transfers could not be provided for all trips without adjustments to service frequency, which would not be cost neutral.

- *Run off-peak Franklin Line trains via Fairmount Line.* As discussed above, running off-peak Franklin Line trains via the Fairmount Line would be a cost neutral option that provides direct service to Dedham Corporate. Fairmount corridor residents would not see improvement during peak periods.
- *Extend some or all Fairmount Line trips.* The MBTA could extend all or some Fairmount Line trips to Dedham Corporate. This option would require the MBTA to reduce Fairmount Line service frequency to be cost neutral. A track switch and/or siding near Dedham Corporate may be required to maintain Franklin Line schedules.

Reduce Travel Time Between Newmarket and South Station

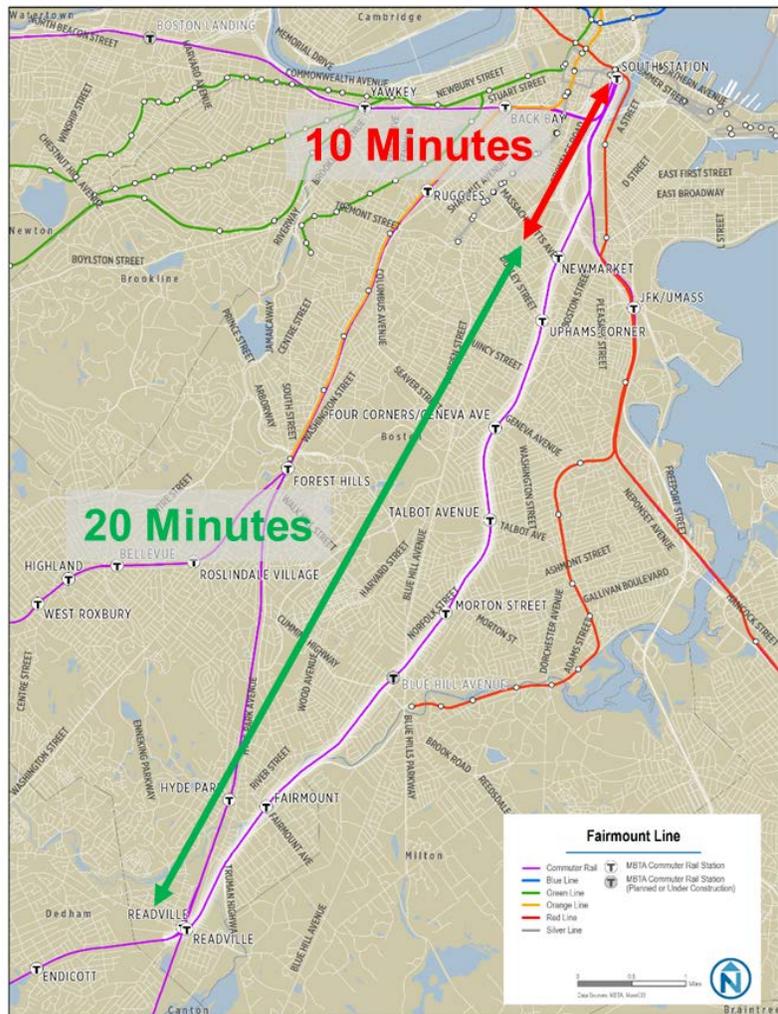
Recommendation: Implement operational strategies or capital improvements to reduce travel time between Newmarket and South Station.

Opportunity: Fairmount Line trains are scheduled to take 10 minutes to travel between Newmarket and South Station, accounting for one third of every 30-minute one-way trip (Figure 32). Fairmount Line schedules between the two stations are buffered to account for potential track congestion in the Southamptton Yards and at South Station.

The schedule also enables Keolis to stop Fairmount Line trains to pick up railroad employees during shift changes. Increased travel time near South Station has a greater effect on Fairmount Line riders than riders on other commuter rail lines, as most Fairmount Line riders are making shorter trips. For example, travel time between JFK/UMass and South Station is just 7 minutes of each 58-minute one-way trip on the Middleborough/Lakeville Line.

Description: Reducing travel time between Newmarket and South Station will make the Fairmount Line a more attractive option for riders traveling to and from Downtown Boston. For example, with a five minute or 50% reduction, travel time from Uphams Corner to Downtown Crossing via the Fairmount Line would be reduced from 22 minutes to 17 minutes. This reduction would make using the Fairmount Line much more competitive with the Red Line, which provides a 20-30 minute comparable trip with a bus connection.

Figure 32 | Newmarket to South Station Travel Time



STATION ACCESS IMPROVEMENTS

Add Entrances to Fairmount Line Platforms

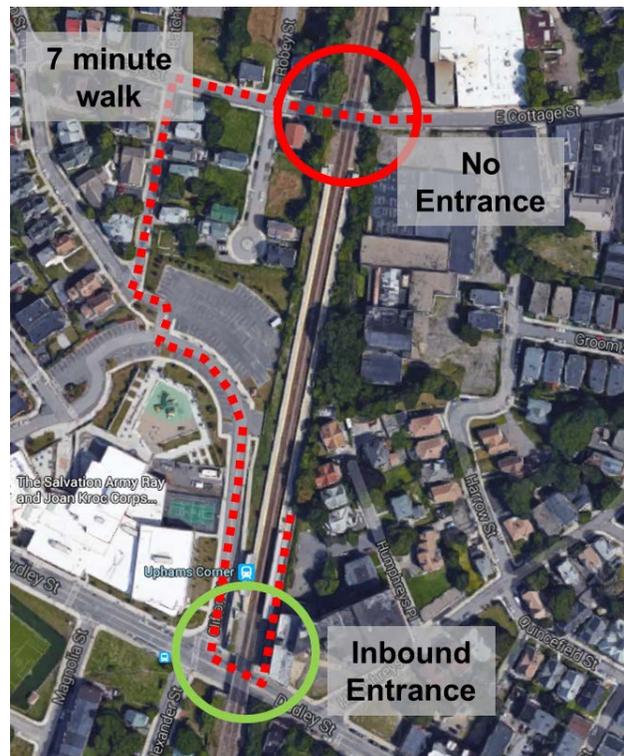
Recommendation: Add entry points to Fairmount Line platforms to reduce walking time. Construct bridges between Fairmount Line platforms if funding becomes available.

Opportunity: Most transit riders are willing to walk between a quarter and half mile to access a rail station. Several Fairmount Line stations have only one entrance to one or both platforms. Entrances at these stations are typically located at the far end of the platform. Due to this configuration, many riders within a half mile radius of a Fairmount Line station may actually have to walk farther than ½ mile to access service. Riders living beyond a half mile walking distance of transit are much less likely to utilize the service, and therefore adding station entrances could increase the pool of potential Fairmount Line riders.

Description: Adding entrances to Fairmount Line stations will reduce walking time for many existing and potential riders. New entrances can be integrated into developments adjacent to stations, with the developer contributing funds and/or land for construction. Access to both directions of Fairmount Line service could also be enhanced by constructing bridges between platforms. Projects to add platform entrances should be prioritized over bridges between platforms, as new entrances typically enhance station access at a lower cost. Existing stations where access could be improved by added new entrances or bridges include:

- Morton Street: The existing entrance to both platforms is on Morton Street at the north end of the station. There is no direct access to neighborhoods south of Morton Street, including the Morton Village Apartments.
- Talbot Avenue: Entrances to Park St on the north side of the station provide access to only one platform. A new bridge near these entrances would reduce walking times on one leg of round trips.
- Uphams Corner: The existing entrance to both platforms is on Dudley Street at the south end of the station. A new entrance to the inbound platform will be constructed as part of the Indigo Block project. Uphams Corner will continue to lack an outbound platform entrance at Cottage Street, increasing access time for residents and workers north of the station.
- Newmarket: The existing entrance to both platforms is on Massachusetts Avenue at the south end of the station. As development occurs in Newmarket Square and at South Bay Center, there could be opportunities to add an entrance at the north end of the station. This entrance would enhance access to both new developments and Southampton Street, which is about 700 feet north of the station.

Figure 33 | Uphams Corner Entrance Access



Install Highly Visible Real-Time Information Signage at Stations and Adjacent Destinations

Recommendation: Install real-time information signage that displays the current best travel option between Fairmount Line stations/nearby bus stops and major destinations.

Opportunity: As the Fairmount Line operates only every 40-60 minutes, riders must plan their trips around the schedule to effectively use the service. In most Fairmount Line neighborhoods, bus routes operate frequently enough that riders can easily make spontaneous trips without checking a bus schedule or a real-time bus arrival smartphone app. Many Fairmount corridor residents opt to only use these high frequency bus services, even when the Fairmount Line might provide faster service to their final destination. These riders may not be aware of an upcoming Fairmount Line departure, or they may not even know that the line can serve their travel needs.

Description: Real-time information signage could be installed at Fairmount Line stations and adjacent bus stops. In addition to providing arrival time of the next Fairmount Line train, the signs should also provide dynamic information on the best service(s) to use for accessing major destinations. When the Fairmount Line provides a faster option than comparable local bus services, the signs would direct riders to use the train. If local bus services would provide a faster trip, the signs would direct riders to the closest bus stop. The signage would act as a dynamic advertisement for Fairmount Line service, while also providing alternatives for riders who miss their train. Such signage could be provided under the MBTA's new digital advertising contract.

Improve Fairmount Line Wayfinding

Recommendation: Add signage directing riders to the Fairmount Line from neighborhood centers, nearby bus stops, and key points of interest.

Opportunity: Most Fairmount Line stations are located about a five to ten-minute walk from the neighborhood centers that they are designed to primarily serve. Visitors to these neighborhood centers may not be aware that the Fairmount Line provides a nearby high quality transportation option. While standard MBTA commuter rail wayfinding signage has been installed at all stations, these signs provide little context for Fairmount Line service. As commuter rail is most typically associated with work trips, this signage may actually discourage potential Fairmount Line riders from using the service.

Description: A robust wayfinding system would direct riders between Fairmount Line stations and local destinations, while also providing contextual service information. Signage at destinations throughout the Fairmount corridor could direct riders to the closest Fairmount Line station and provide basic service information. At major destinations, signage could be outfitted for real-time next train information. At Fairmount Line stations, wayfinding signage could provide directions and walk time information to nearby destinations and attractions. Station signage could also include information about local bus connections, including connections to nearby bus routes accessible from stops beyond the immediate station area.

Improve Internal Signage at Fairmount Line Stations

Recommendation: Install signage within Fairmount Line stations that includes clear information designed to reduce barriers for new and occasional riders.

Opportunity: All Fairmount Line stations are outfitted with the standard MBTA commuter rail sign package, including commuter rail system maps, schedules, and basic directional information. This signage is appropriate at stations where riders are almost exclusively traveling to and from Downtown Boston. For

services that are also oriented toward local travel, such as the Fairmount Line, the commuter rail sign package does not provide enough contextual information to reduce barriers for new or occasional riders.

Some Fairmount Line stations have complex internal circulation patterns that may present barriers for riders arriving on foot or transferring from another transit service. Most Fairmount Line station entrances provide access to a platform with only one direction of service. To board a train in the opposite direction, riders must find the entrance to the opposing platform. At some stations, there is a significant distance between entrances to opposing platforms. For example, to access the opposite direction of service from Talbot Station's Park Avenue entrances, riders must enter the station, exit the station at Talbot Avenue, cross under the railroad bridge, and re-enter the station at the opposing platform. When entering at Park Avenue, signage only indicates the terminal station of service available from that platform. No directions to the opposing platform are provided, leaving customers without information on how to access service in the opposite direction.

Recommendation: All Fairmount Line stations should have internal signage that reduces common barriers faced by new or occasional riders. Sign packages should be created for each station individually, taking into account station design, neighborhood context, and available transfer options. Potential signage options include:

- Directional signage and/or maps explaining pathways to opposing platforms
- Strip maps that show stops which are accessible using service from a given platform, similar to maps found throughout the rapid transit network
- Route maps for local buses accessible from nearby bus stops
- Neighborhood maps that identify key destinations, such as schools and shopping centers
- Fare information specific to the Fairmount Line, including an explanation of how to acquire fares that include free transfers to the subway and local bus lines

Improve Connectivity with Nearby Bus Stops

Recommendation: Coordinate existing roadway and bus stop improvement programs to ensure connections between Fairmount Line stations and adjacent bus stops are safe and accessible.

Opportunity: All Fairmount Line stations have nearby connections to local bus services. Despite typically being located at station entrances, bus stops near the Fairmount Line often lack basic pedestrian improvements that ensure safe and reliable access for train riders. At Talbot Avenue, for example, the outbound bus stop is located directly across the street from the station entrance. The closest crosswalk is over 200 feet away from the station and stop, leading passengers to frequently cross Talbot Avenue at an unmarked crossing. Similar common crossing locations without crosswalks are found at nearly every Fairmount Line station.

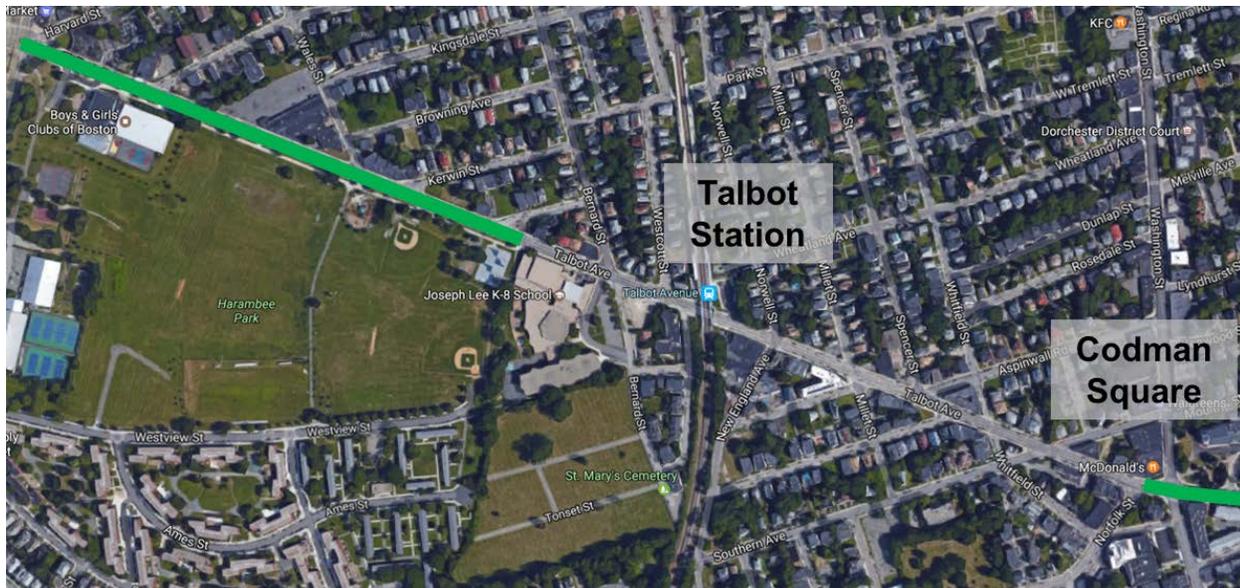
Recommendation: All Fairmount Line stations should have safe and accessible pedestrian connections to adjacent bus stops. The most common paths between bus stops and station entrances should be designed and signalized to preference pedestrian safety, including crosswalks, narrow travel lanes, and traffic signals. Bus stops should be relocated as necessary to ensure that the most direct pathway from the station is safe for all riders and that pedestrians cross behind a stopped bus. All pathways between station entrances and bus stops should be ADA accessible, including pathways to bus stops with key connections located several blocks from the Fairmount Line. These improvements could be made as part of ongoing roadway, sidewalk, and bus stop improvement efforts. These efforts should be coordinated when possible to ensure that a given station area is safe and accessible.

Enhance Cycling Facilities Near Fairmount Line

Recommendation: Fill key gaps in existing bicycle facilities near Fairmount Line stations, with the goal of providing high quality bicycle infrastructure that connects each station to nearby neighborhood centers.

Opportunity: Many transit riders use bicycles as a first or last mile connection. Direct and safe pathways for people biking are particularly important for the Fairmount Line, as stations are typically located just outside of neighborhood commercial centers. There are currently no bike lanes or paths connecting to any Fairmount Line station. In fact, Fairmount Line station areas are often critical missing links in Boston's broader bicycle infrastructure network. These gaps make accessing the Fairmount Line by bike difficult and less safe, limiting the range of destinations from which people can easily access the service. More robust bicycle infrastructure would increase the Fairmount Line's attractiveness to potential riders living farther from the stations.

Figure 34 | Bike Lanes Near Talbot Avenue Station



Description: The City of Boston should work to fill key gaps in existing bicycle facilities near Fairmount Line stations, and also work to expand the bicycle network throughout the Fairmount corridor. Safe and direct bicycle connections between the Fairmount Line and neighborhood centers will decrease travel times and increase the range of destinations accessible using the rail service. Specific emphasis should also be placed on providing safe bicycle access between Fairmount Line stations and the numerous schools located along the corridor. Potential early action projects include:

- Fairmount Station: Complete a bi-directional bike lane on Truman Parkway and add a bike facility on Fairmount Avenue towards Cleary Square.
- Talbot Avenue Station: Fill the gap in the Talbot Avenue bike lane between Helen Street and Norfolk Street (Figure 34).
- Four Corners/Geneva Station: Add a bike facility on Geneva Avenue between Olney Street and Blue Hill Avenue.
- Uphams Corner Station: Add a bike facility on Dudley Street between the Kroc Center and Columbia Road.

Add Hubway Stations along Fairmount Line and Nearby Destinations

Recommendation: Add Hubway docking stations at each Fairmount Line station as well as nearby destinations.

Opportunity: Hubway is a bike share service that allows people in Boston and surrounding communities to easily rent bicycles for short time periods. Many MBTA riders rely on Hubway to quickly move between transit and their origin or destination. Hubway also makes it easier to bicycle to subway and commuter rail lines, as the MBTA prohibits bicycles on trains during rush hour service. As Fairmount Line stations are usually located a quick bike ride away from neighborhood business districts, Hubway could be a critical tool for increasing the potential Fairmount Line ridership market.

Hubway bike rentals must begin and end at a docking station. Over the past few years, Hubway docking stations have been installed along the Fairmount Line at South Station, Newmarket, and Uphams Corner. No Hubway docking stations have been added in neighborhoods south of the Franklin Park Zoo.

Description: To increase access to the Fairmount Line, the City of Boston could install additional Hubway docks at all stations south of Uphams Corner. Hubway docks should also be installed throughout Fairmount corridor neighborhoods and business centers. An effective network of Hubway stations would significantly increase the capture area of each Fairmount Line station. For example, a Hubway network in Hyde Park would allow riders to travel from Curry College and Georgetowne Homes to the Fairmount Line in 15 minutes or less.

Coordinate local bus schedules to ensure fast and reliable transfers to and from the Fairmount Line.

Recommendation: Coordinate Fairmount Line and local bus schedules to ensure fast and reliable transfers between services.

Figure 35 | Fairmount Corridor Bus Routes with 16+ Minute Peak Frequency

Bus Route	Fairmount Station Areas Served	Weekday Peak Frequency	Weekday Off-Peak Frequency
8	Newmarket	27	45-50
10	Newmarket	24	35-60
14	Four Corners/Geneva	45	63
16	Four Corners/Geneva, Uphams Corner, Newmarket	25	30-50
19	Four Corners/Geneva	27	60
24	Fairmount	30	50-60
26	Morton Street	30	30-70
30	Blue Hill Avenue	20	40-50
33	Readville, Fairmount	35	60
41	Uphams Corner	25	30
50	Fairmount	22	60
CT3	Newmarket	25	60

Source: MBTA Official Public Transit System Map

Opportunity: Over two dozen local bus routes directly serve Fairmount Line stations and adjacent neighborhoods. Many of these bus routes operate at least every 15 minutes during most times of day,

allowing riders to easily transfer to and from the Fairmount Line. Some bus routes, however, operate less frequently, especially during mid-day service, at night, and on weekends (Figure 35). The MBTA does not actively coordinate schedules between the Fairmount Line and these bus routes, potentially leading to long transfer times.

Description: To ensure reliable transfers between the Fairmount Line and local bus routes, the MBTA should consider opportunities to coordinate Fairmount Line and local bus schedules. Coordinated schedules will reduce the time it takes to transfer between the Fairmount Line and local bus lines, reducing overall travel times for Fairmount Corridor riders. Changes to bus schedules affect all route passengers, and therefore overall costs and benefits of such changes need to be carefully considered.

FARE COLLECTION

Provide Free CharlieTicket Transfers to Fairmount Line Riders

Recommendation: Provide conductors CharlieTickets programmed with one local bus or subway fare to pass out to Fairmount Line riders upon request.

Opportunity: With the exception of trips to and from Readville, all Fairmount Line single ride fares and multi-ride passes cost the same as on the subway system. Unlike subway fares, however, only Zone 1A monthly passes provide a free transfer to local bus or subway services. Riders who purchase single ride tickets or online tickets must pay an additional \$2.25 to transfer. The lack of a free transfer thus doubles the cost of many Fairmount Line trips, likely significantly reducing ridership.

Description: The MBTA could supply CharlieTickets programmed with one local bus or subway fare to Fairmount Line conductors. Fairmount Line riders who are making transfers could request these CharlieTickets from the conductor, eliminating the additional charge for the second leg of their trip. To facilitate round trips, conductors could provide two CharlieTicket transfers. This strategy would equalize the cost of multi-seat Fairmount Line and Red/Orange/Silver Line trips, allowing more customers to ride the Fairmount Line instead of taking longer trips via the subway and local buses.

Providing free CharlieTicket transfers would result in some revenue loss for the MBTA, especially if riders were given two transfers to facilitate round trips. If all current Fairmount Line passengers on weekdays requested two free transfers, the maximum total value of the transfer passes would be approximately \$2.5 million annually.

Sponsorships to Provide Free Fares on the Fairmount Line

Recommendation: Solicit sponsorships to subsidize free fares on the Fairmount Line.

Opportunity: Assuming an average of \$2.00 in revenue per boarding, the MBTA generates approximately \$1.1 million in revenue from weekday Fairmount Line service. Current Fairmount Line fare policies restrict passengers' travel options, as an additional fare is required to transfer between the Fairmount Line and other transit services. Providing free fares on the Fairmount Line would provide the equivalent of a free transfer, while also attracting additional riders to the service.

Description: The MBTA could solicit sponsorships from private entities to subsidize free fares on the Fairmount Line. Sponsors would likely be required to cover all lost revenue currently generated from Fairmount Line fares, as well as some amount of revenue lost from existing riders switching from local buses to the Fairmount Line. These costs would likely amount to between \$1.2 and \$1.5 million per year. To reduce this cost, sponsors could opt to subsidize free fares only during certain service periods.

The MBTA anticipates implementing the next-generation CharlieCard system (Automated Fare Collection 2.0) in three to five years. The new fare collection system would potentially allow the Fairmount Line to be fully integrated into the MBTA subway fare structure, including free transfers. This near-term fare solution provides an ideal framework for a temporary free fare sponsorship program on the Fairmount Line. The program could be framed as an interim solution for providing free transfers to and from the Fairmount Line, while also acting as a marketing campaign to attract new riders. Next-generation CharlieCard implementation would provide a definitive end date for the free fare program. Providing free fares on the Fairmount Line for the next three to five years would cost about \$3.5 to \$7.5 million total.

Use Mobile Fare Validators to Collect Fairmount Line Fares

Recommendation: Deploy mobile fare validators on the Fairmount Line to allow riders to pay fares using CharlieCards.

Opportunity: The MBTA owns several mobile fare validators that allow ticket inspectors to collect fares from CharlieCards. The validators are currently used to collect fares at the rear doors of select Green Line trains, as well as check for fare compliance. Redeploying these mobile fare validators to the Fairmount Line would allow passengers to pay their Zone 1A fare using CharlieCards. The MBTA could also provide a free transfer to subway and local bus lines to Fairmount Line riders paying with a CharlieCard.

Description: The MBTA could redeploy mobile fare validators to Fairmount Line conductors, allowing passengers to pay Zone 1A fares using CharlieCards. The validators would allow the MBTA to provide Fairmount Line riders with a free transfer to the subway and local bus, reducing trip costs and expanding the utility of Fairmount Line service. Mobile fare validators would provide an interim solution for integrating the Fairmount Line into the subway network fare structure before the MBTA implements the next-generation CharlieCard system.

Recommendations for Next-Generation CharlieCard System (Automated Fare Collection 2.0)

Recommendation: Automated Fare Collection 2.0 should be designed to allow Fairmount Line fare collection to be fully integrated with the subway fare collection system.

Opportunity: The MBTA recently issued a Request for Proposals for the next-generation CharlieCard system. The complete redesign of MBTA fare collection is the ideal catalyst for more fully integrating the Fairmount Line with the subway network. The MBTA anticipates the new fare collection system will be fully operational in the next three to five years.

Description: The next-generation CharlieCard system should fully integrate Fairmount Line fare collection with the broader subway and local bus system. The Fairmount Line should have the same single ride and multi-ride fares as MBTA subway lines. All fares should be subject to the same transfer policies as subway lines. This fare design will allow Fairmount Line riders to use the service the same way they use the Green, Orange, Red, Blue, and Silver Lines.

The new fare solution should be designed with maximum flexibility for both purchasing and collecting fares. Fairmount Line riders should be able to pay using smartphones, but also have easy widespread access to fare media that can be purchased with cash. The fare collection solution should allow for barrier-free stations, allowing Fairmount Line fares to be collected without installing fare gates. Barrier-free fare collection is essential for adding subway-style frequencies to commuter rail services, as sealing most commuter rail stations is cost prohibitive. If integrating all of Commuter Rail into the subway fare structure proves infeasible, then special provisions should be made for the Fairmount Line, since the line is used more like a local service than traditional commuter rail.

MEDIUM TERM CAPITAL IMPROVEMENTS

High-Level Platforms at Readville and Fairmount Stations

Recommendation: Construct full length high-level platforms at Readville Station and Fairmount Station.

Opportunity: MBTA commuter rail stations have a mix of high-level, mini-high, and low-level platforms (Figure 36). At high-level platforms, all train doors open flush with the platform, allowing riders to board without climbing stairs. Mini-high platforms provide this same amenity, but only at one train door. Low-level platforms are at ground level and require riders to climb stairs in order to board the train.

Figure 36 | Commuter Rail Platform Types



Left to Right: Low-Level Platform, Mini-High Platform, High-Level Platform

Readville and Fairmount are the only Fairmount Line stations that lack full length high-level platforms. Both stations have mini-high platforms that allow for level, accessible boarding at only one train door. Except during peak service, Fairmount Line riders are asked to board using the mini-high platform to avoid requiring the conductor to manually open multiple doors along the train.

Commuter rail coaches with automatic doors cannot be deployed on the Fairmount Line without full length high-level platforms at all stations. Each train must therefore have a conductor to deploy stairs and open train doors, increasing boarding times and operating costs.

Description: The MBTA should consider constructing full length high-level platforms at Readville Station and Fairmount Station. High-level platforms reduce boarding times and increase operational flexibility. With all high-level platforms and a new fare collection system, the MBTA could deploy trains with automatic doors and consider operating service without a conductor. Eliminating conductors on the Fairmount Line would significantly reduce operating costs and allow for additional service to be operated on the corridor.

South Station Improvements

Recommendation: Add enhancements at South Station that make using the Fairmount Line simple and easy to understand.

Opportunity: Accessing the Fairmount Line at South Station is not intuitive for new and occasional riders. The station is designed primarily to serve long distance commuting traffic rather than the short trips typically taken on the Fairmount Line. The Fairmount Line does not have a dedicated platform at South Station, and trains arrive at different tracks throughout daily service. Riders must therefore wait for the platform to be assigned for each trip, making the Fairmount Line more complicated to use.

The MBTA also does not use consistent branding for the Fairmount Line. Timetables and the MBTA website refer to the service as the “Fairmount Line.” Announcements and signage at South Station refer to

the service as “Readville.” This discrepancy is confusing for riders and makes finding the assigned platform for each trip more complicated.

Description: The MBTA could add enhancements at South Station that reduce barriers for new and occasional Fairmount Line riders. Dynamic signage dedicated specifically for the Fairmount Line should be installed both inside and outside of South Station. Signs should indicate the departure time and platform assignment for the next Fairmount Line train. All signage throughout the station should refer to Fairmount Line service as the “Fairmount Line” to maintain a clear and consistent branding.

The MBTA could also explore dedicating a specific platform for all Fairmount Line trips. A dedicated platform would allow riders to easily understand where to access the service, similar to the Red and Silver Lines. The MBTA would also be able to install Fairmount Line specific service information and maps. Current operating constraints at South Station may not allow for a dedicated platform. A dedicated platform should therefore be a centerpiece of any plan to expand South Station capacity.

Station Safety Improvements

Recommendation: Make small-scale capital investments to increase the perception that the Fairmount Line is safe to use.

Opportunity: Transit riders often feel unsafe when there are few people congregated at a station or stop, especially at night. As the Fairmount Line has lower ridership than other rail lines, and platforms can seem isolated from street-level activity, some potential riders may feel unsafe at stations and be discouraged from using the service. Bus stops near the Fairmount Line are typically well lit, but the surrounding streets and sidewalks have poor lighting. This lighting design often makes transit riders feel vulnerable, as they cannot see their surroundings.

Description: Adding lighting near Fairmount Line stations will provide an added sense of security for riders walking to and from Fairmount Line stations, especially at stations where the underpass for the railroad itself is part of the pedestrian path. Installing security cameras on Fairmount platforms, as is done with rapid transit stations, will also enhance the perception of safety, and might be accomplished with Homeland Security grant funding. Standardizing and clearly demarcating the boarding area for off-peak trains would also help by concentrating activity and resources, as well as reassuring passengers that they are waiting in the correct location on the 800-foot platform. Other recommended elements of a safety program would include enhanced maintenance and repair standards for the Fairmount stations in order to make sure that any vandalism is corrected quickly, as well as increased patrols by security and law enforcement.

6 LONG TERM RECOMMENDATIONS

The short and medium term recommendations presented in this report will provide a strong foundation for increasing Fairmount Line ridership and a pathway towards providing rapid transit-like service. In order for the Fairmount Line to achieve its full potential, however, the community, the City of Boston, and the Commonwealth of Massachusetts must commit to a broad long term vision for the Fairmount Corridor. *This vision should be centered around both intensive, Fairmount-centric development and the full integration of the Fairmount Line with the broader public transit network.* The implementation of this vision will have compounding benefits for Fairmount Line ridership, and encourage further increases in service frequency and span.

FAIRMOUNT CORRIDOR DEVELOPMENT

Increased population and employment density is key to improving Fairmount Line ridership.

While the Fairmount Corridor is denser than the Greater Boston area overall, the Fairmount Line serves neighborhoods that have lower overall population and employment density than many MBTA Rapid Transit station areas. Serving fewer people – and especially fewer jobs – than other lines significantly hinders the long term ridership potential of the Fairmount Line. Existing neighborhood plans and studies have traditionally worked to restrict potential growth, and thus limit Fairmount Line ridership. The Fairmount Indigo Planning Initiative Corridor Plan found that the Fairmount Corridor could support just 2,000 additional housing units. This projection drastically underestimates potential growth near Fairmount Line stations. For example, a single development near Readville, which was projected to support 75 new housing units, is proposed to have over 500 units (Figure 37). Given underutilized land near the station, it is likely that Readville alone could support 2,000 additional units.

In order for the Fairmount Line to be productive in the long term, the City of Boston and its community partners must agree to allow and facilitate substantial development along the Fairmount Corridor. Residents and workers in these developments will expand the customer base for Fairmount Line service, leading to increased ridership and demand for more frequent service.



Figure 37 | Planned 40 Sprague Street Residential Development at Readville Station

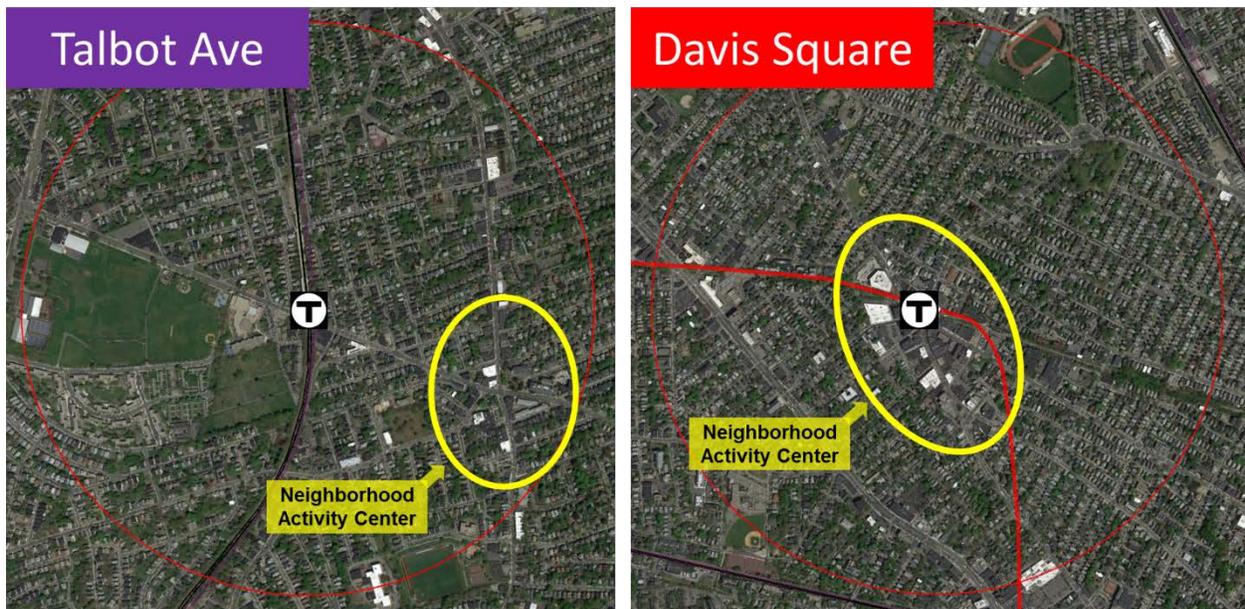
Dense mixed-use should be encouraged in immediate Fairmount Line station areas.

Residents and employees living and working in buildings immediately adjacent to stations are, and will continue to be, the market most likely to use Fairmount Line service. Fairmount Line station areas, however, are typically less dense than the neighborhood centers, near to, but on the periphery of the

Fairmount Corridor. This historical artifact has plagued ridership on the line throughout its operation. Stations like Talbot Avenue and Morton Street are directly surrounded primarily by single family housing and small apartment buildings, in contrast to high density developments around many MBTA Rapid Transit stations. For example, Codman Square is located over a quarter mile from Talbot Avenue station while Davis Square station on the Red Line is located at the center of the neighborhood activity center it serves (Figure 38).

As demonstrated by the travel time calculations presented above, riders who are able to access a Fairmount Line station in one or two minutes receive the greatest travel time benefits from using the line. Therefore, developing policies that permit and encourage the construction of high density residential and commercial development directly around Fairmount Line stations is paramount to the long term success of the service. The more people who live and work directly adjacent to a station, the more people will choose to ride the Fairmount Line.

Figure 38 | Relationship between Neighborhood Activity Center and Station Area (Talbot Avenue vs. Davis Square)



Newmarket, Readville, and Legacy Place should be developed as regional mixed-use destinations.

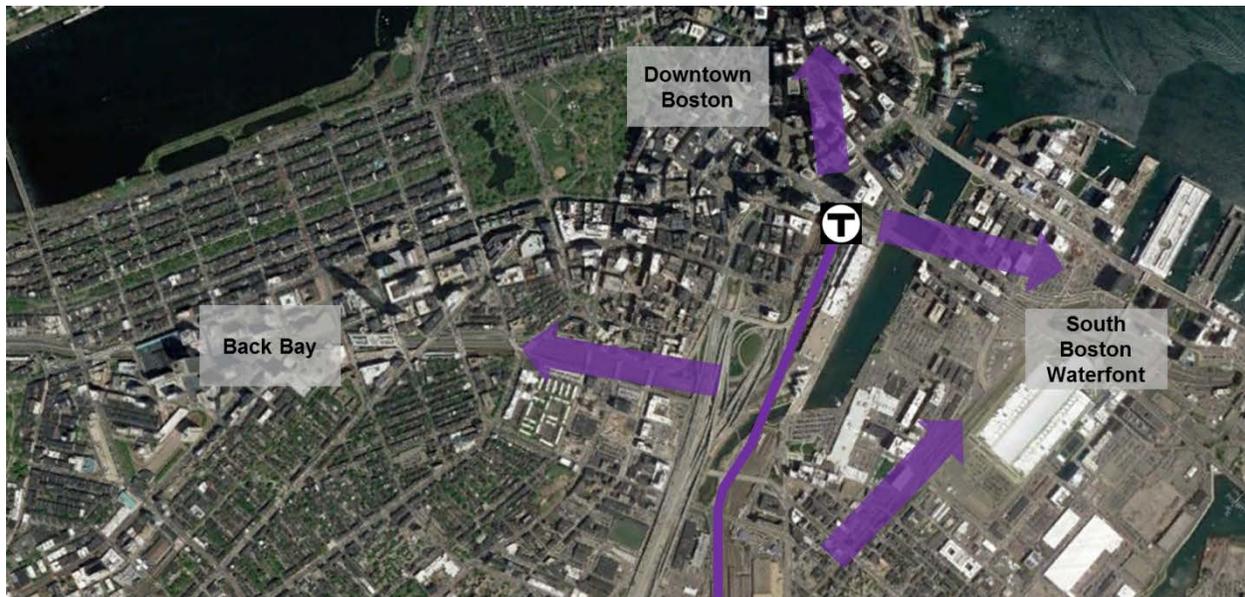
Unlike all MBTA Rapid Transit lines, the Fairmount Line lacks even a secondary regional destination to draw ridership from throughout the Boston area. The only major ridership generator served by the Fairmount Line is Downtown Boston, which is the most transit accessible location in the region. In order to draw riders transferring from the rest of the transit network, the development of a new regional mixed-use destination should be encouraged somewhere along the Fairmount Corridor. The Assembly Row development in Somerville provides a model for the rapid development of a transit-accessible regional destination. Similar projects could potentially be viable in the long term at several locations along the Fairmount Line, including at Newmarket, Readville, and Legacy Place (if service is extended south).

FAIRMOUNT LINE TRANSIT NETWORK INTEGRATION

Fairmount Line service should be extended to provide a one-seat ride to additional destinations.

The Fairmount Line currently terminates at South Station in Downtown Boston, the most transit accessible neighborhood in the Greater Boston region. Even within the Fairmount Corridor, the Fairmount Line often competes with Red Line service as a transit option for riders going Downtown. Extending the Fairmount Line to additional destinations provides a unique opportunity to expand the range of reliable one-seat rides available from Fairmount Corridor neighborhoods. Such extensions would expand the Fairmount Line's role as a complement to Red Line and other transit services, rather than a competitor. Fairmount Line service could potentially be extended to the South Boston Waterfront, further into Downtown Boston, or toward Back Bay. Planning for any such extension should consider the effects on existing riders, as well as travel time benefits compared to other transit options.

Figure 39 | Potential Fairmount Line Service Extensions



High quality transit services should be created between the Fairmount Line and nearby neighborhoods and destinations.

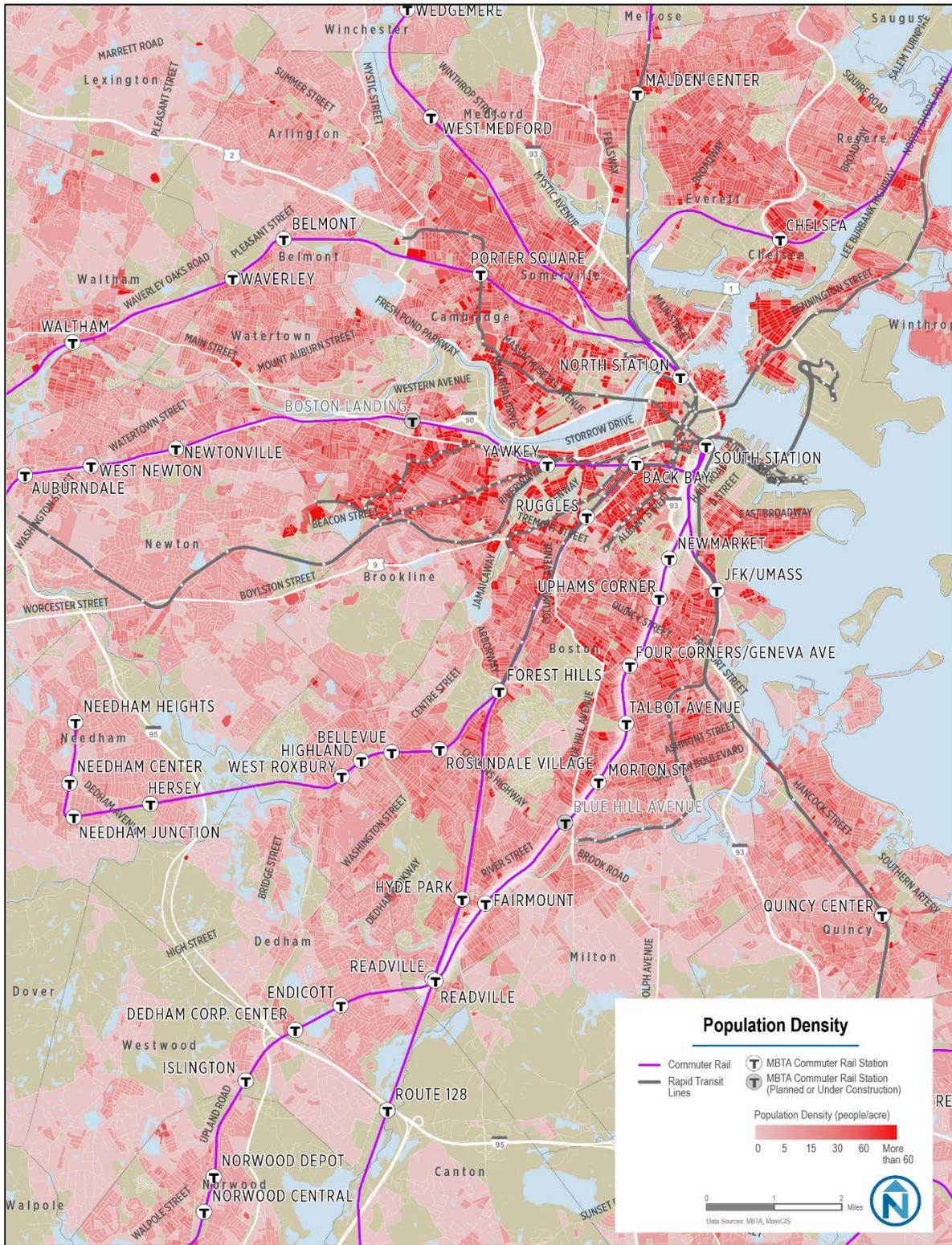
Public transit services are most successful when they are well integrated with a broader transit network. While the Fairmount Line provides a one-seat ride to Downtown Boston and between Fairmount Corridor neighborhoods, riders must transfer to other services to access most major destinations in the Greater Boston area. With increased Fairmount Line service, transfers will become faster and more reliable. However, most current connecting services from the Fairmount Line to destinations like Back Bay, the Longwood Medical Area, and South Boston are unreliable local bus routes. Upgrading these routes with transit priority strategies and enhanced amenities is imperative for increasing Fairmount Line utility.

Improved connections to Back Bay and the Longwood Medical area would likely be the highest value for increasing Fairmount Line ridership. Corridors connecting these destinations to the Fairmount Line, such as Massachusetts Avenue, Seaver Street and Dudley Street, have been prioritized by the City of Boston for transit investments.

APPENDIX I: ADDITIONAL MARKET ANALYSIS MAPS

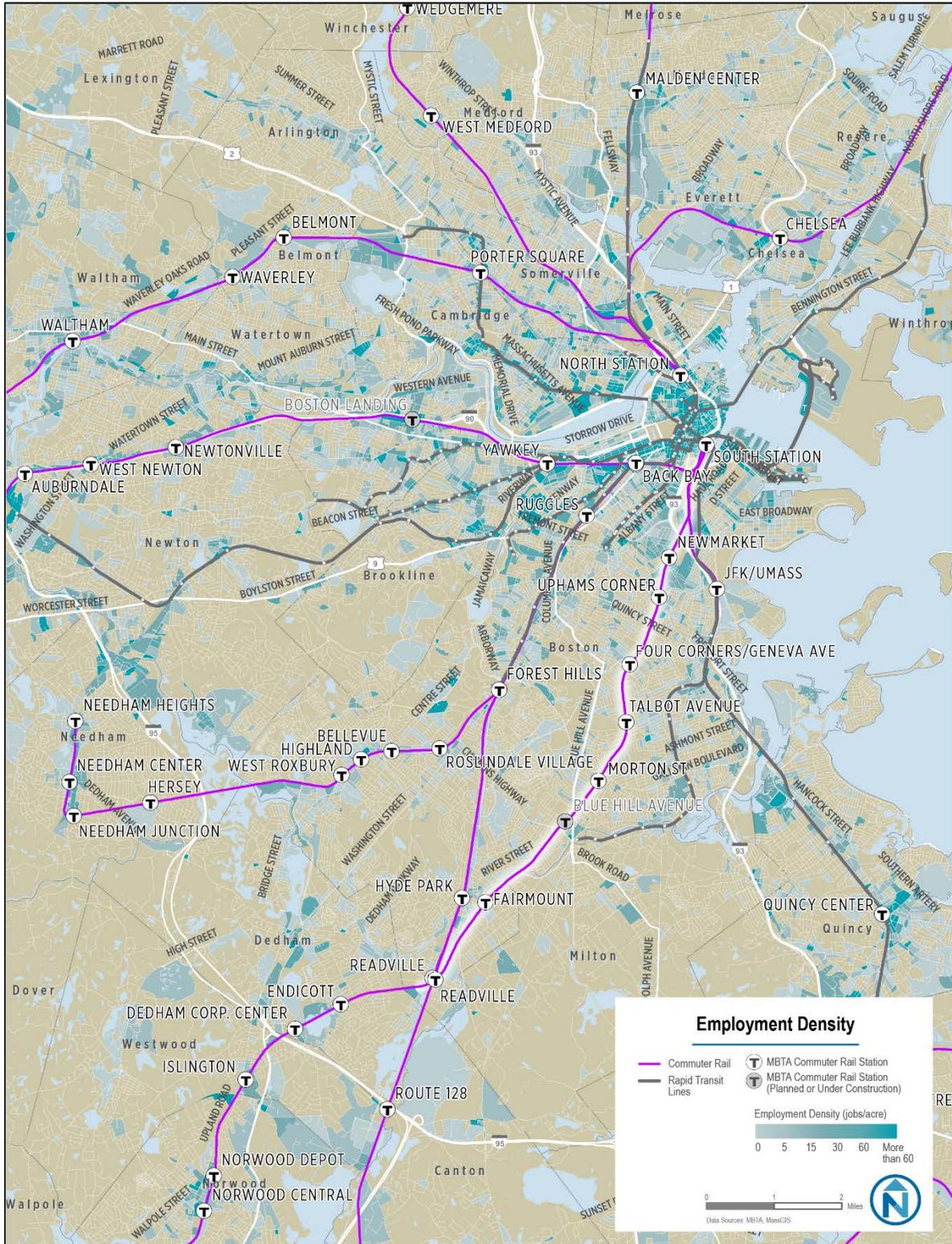
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Figure 40 | Greater Boston Population Density Map



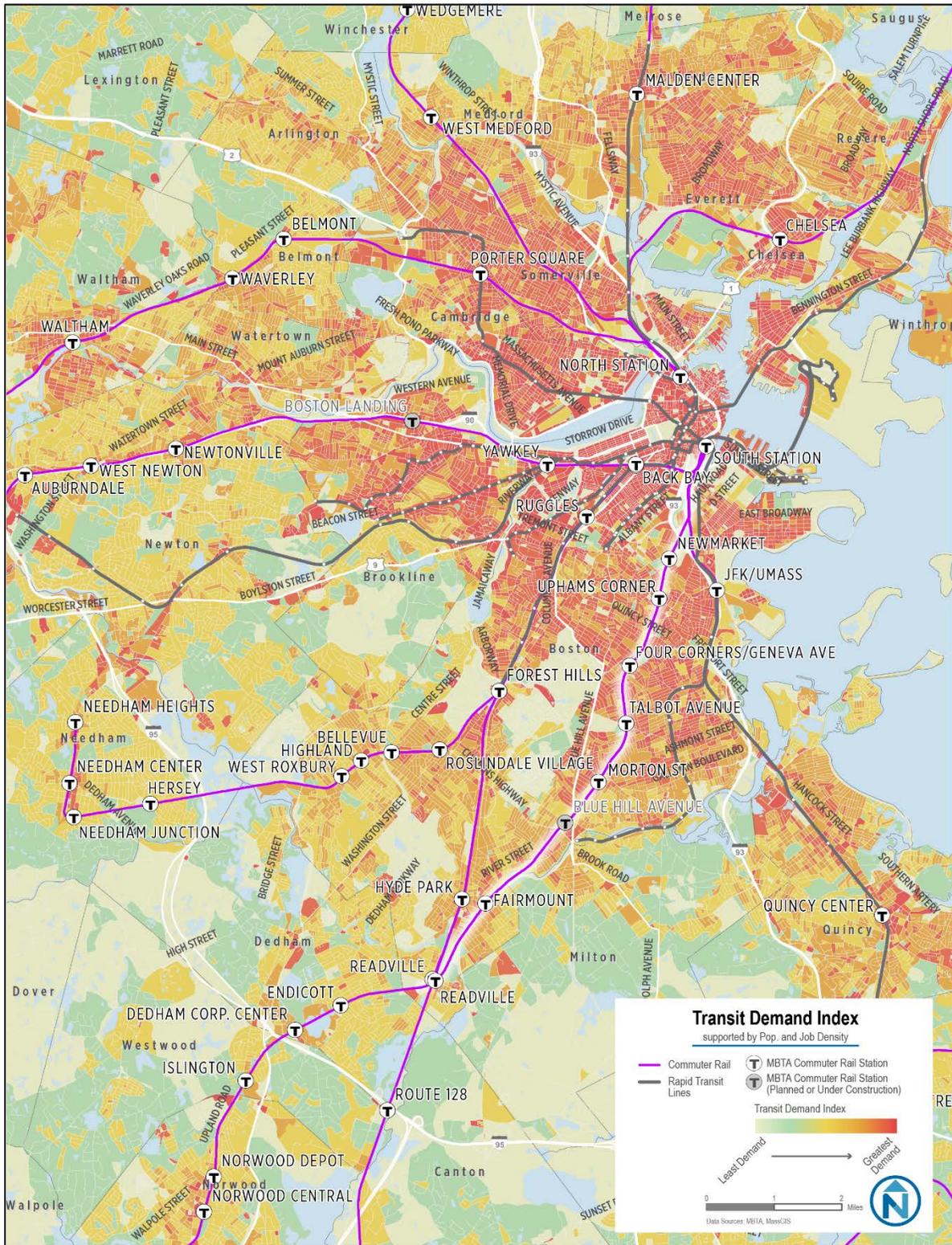
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Figure 41 | Greater Boston Employment Density Map



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Figure 42 | Greater Boston Transit Demand Index (Population + Employment Density) Map



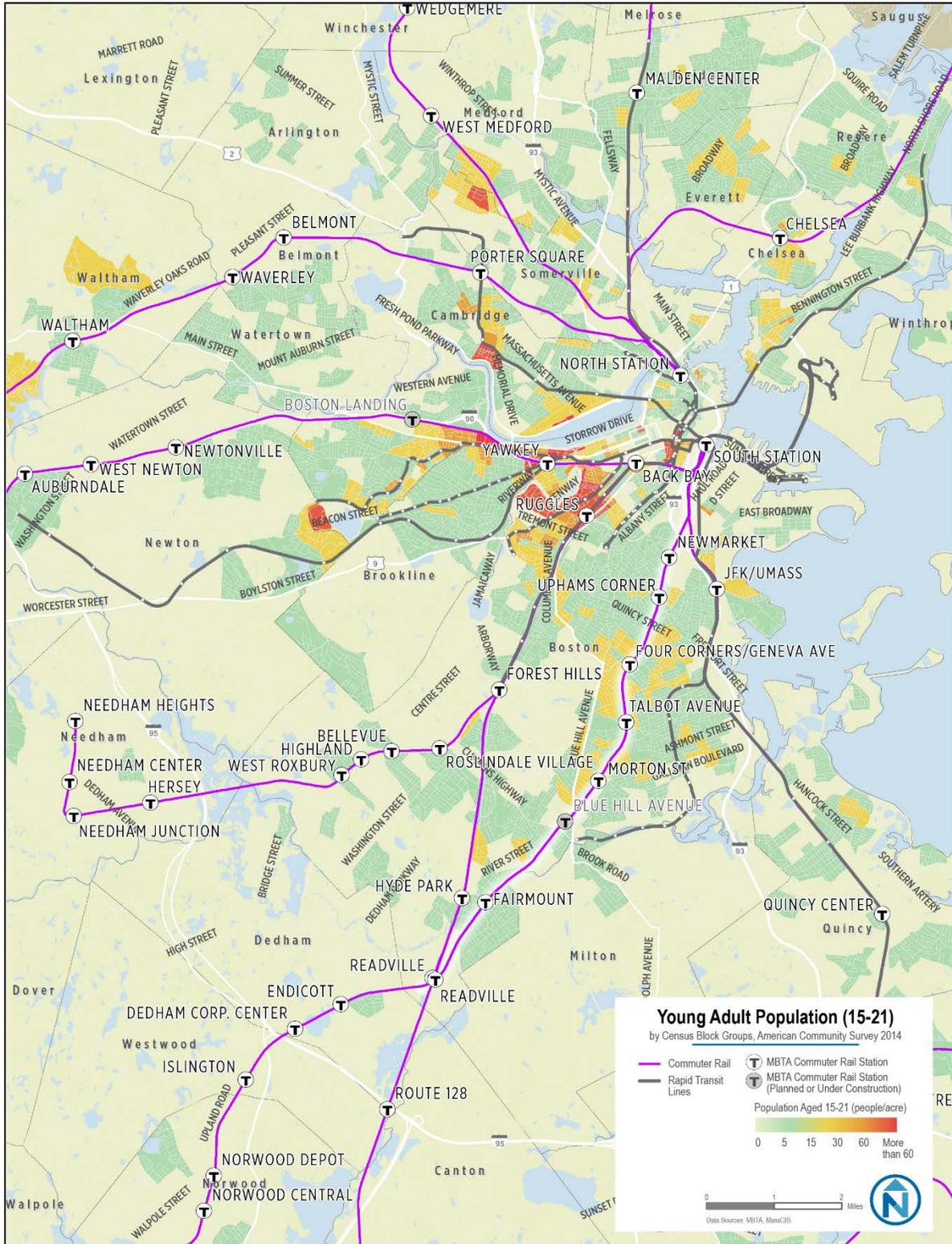
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Figure 43 | Youth (Age 10-17) Population Density



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Figure 44 | Young Adult (Age 15-21) Population Density

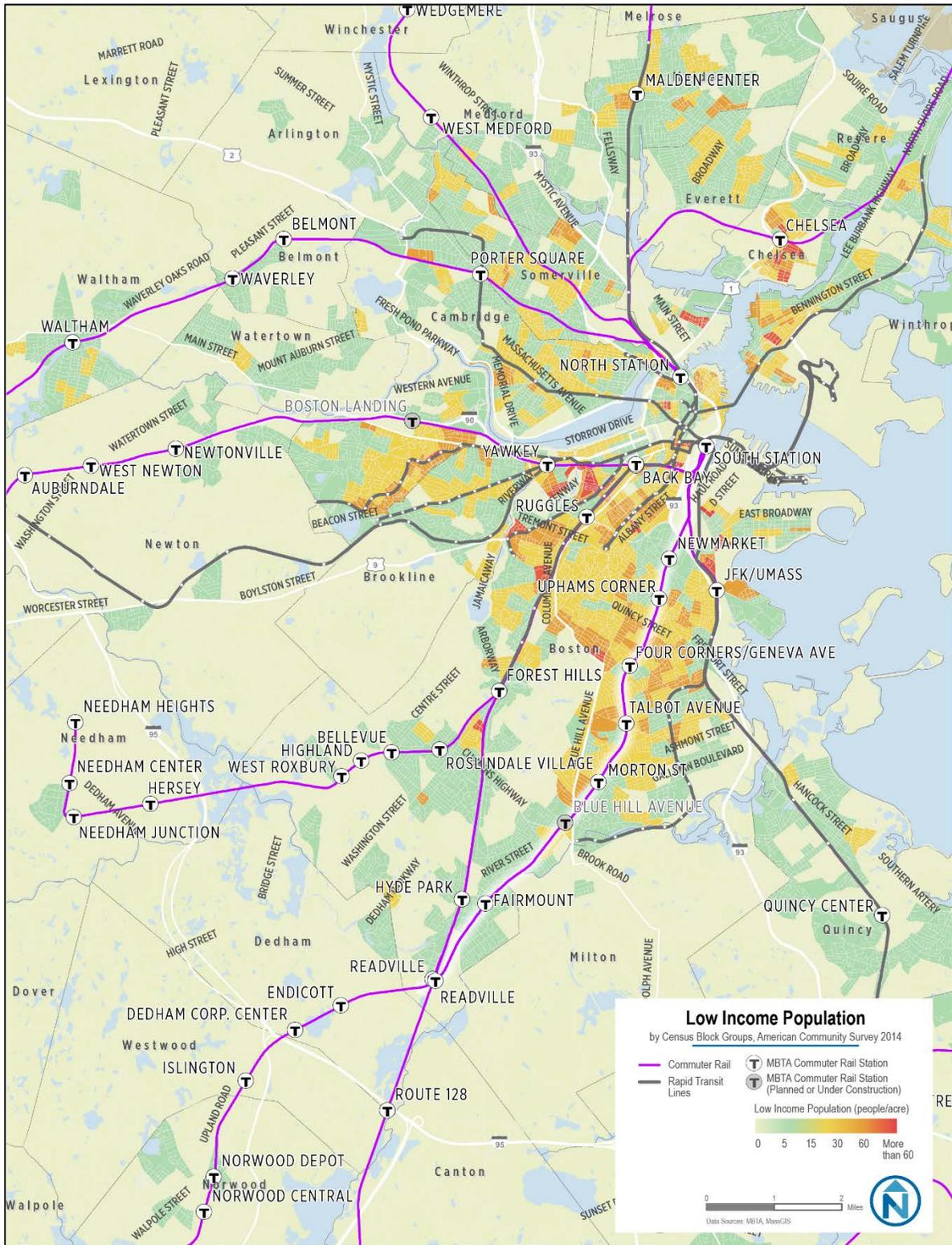


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Figure 45 | Older Adult (Age 65+) Population Density

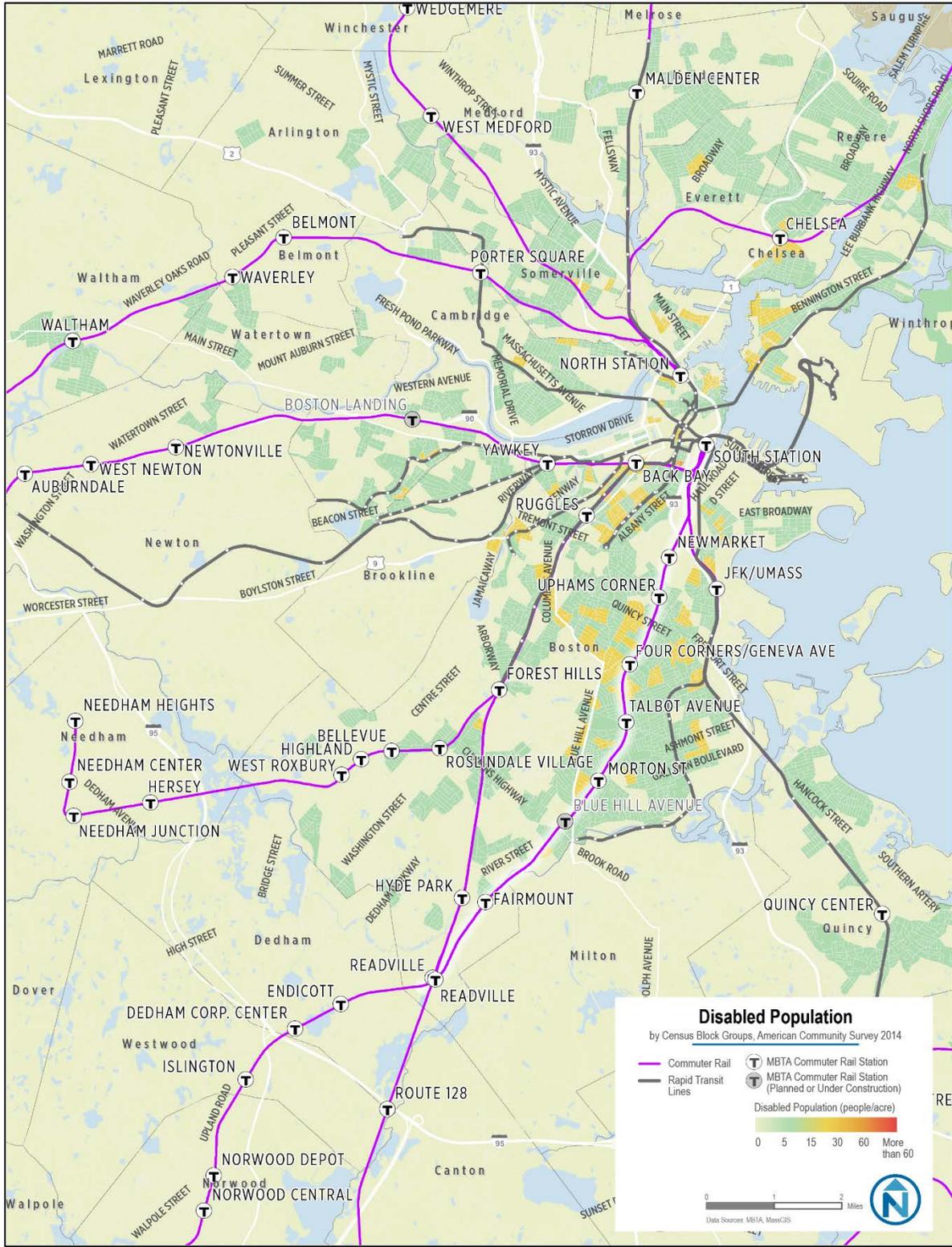


Figure 46 | Low Income Population Density



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Figure 47 | Disabled Population Density



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Figure 48 | Minority Population Density

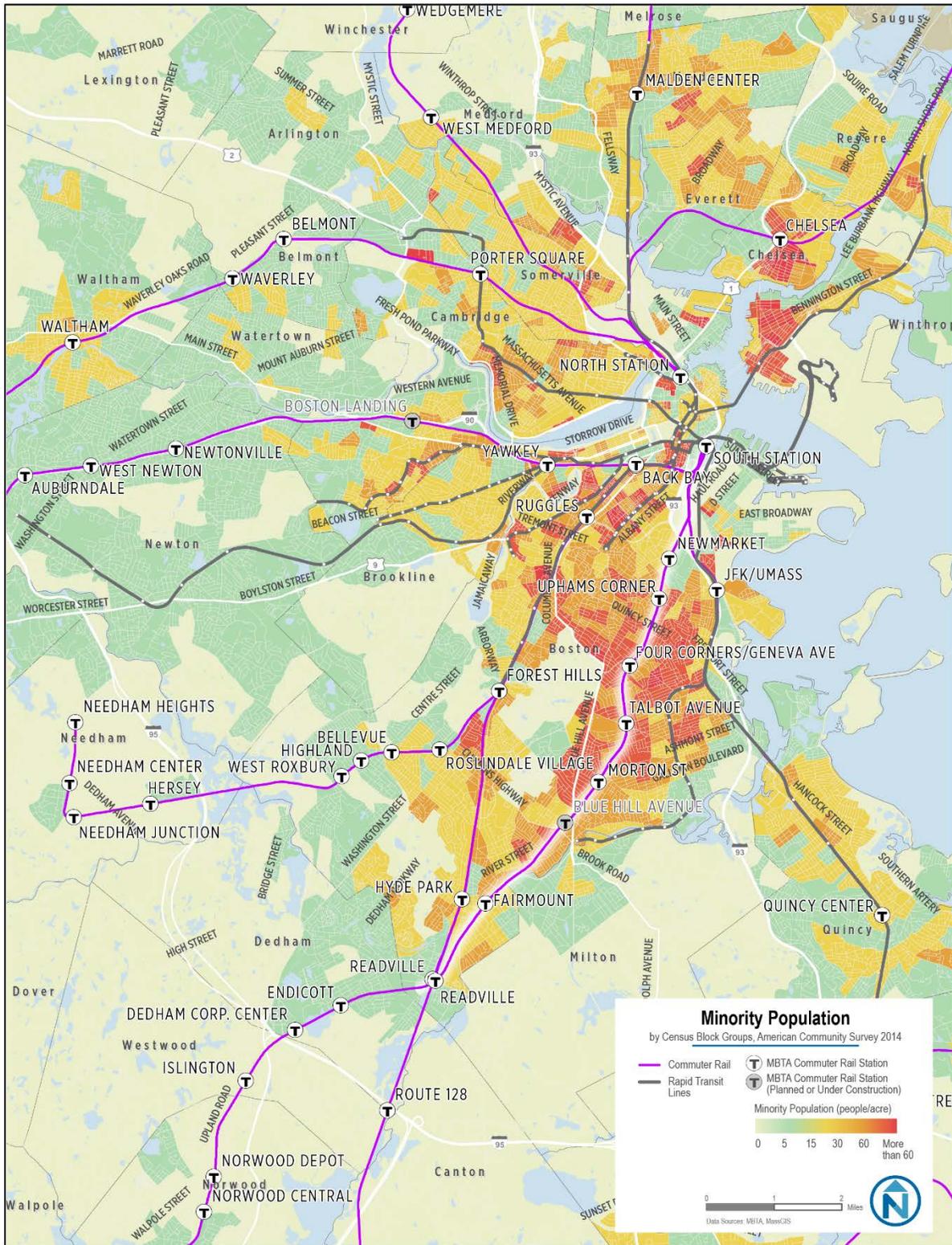


Figure 49 | Black (Non-Hispanic) Population Density

