FAIRMOUNT INDIGO PLANNING INITIATIVE

CORRIDOR PLAN

APPENDICES

DRAFT

CITY OF BOSTON
Marty J. Walsh
Mayor

Boston
Redevelopment
Authority

FAIRMOUNT INDIGO PLANNING INITIATIVE

CORRIDOR PLAN

APPENDICES

DRAFT Appendices Contents

PROCESS AND MEETINGS

The Fairmount Indigo Planning Initiative was over a 2 year long process that involved extensive community outreach, participation and conversation. The Planning Initiative involved separate, but parallel processes for Corridor-wide planning and Station Area planning. The City of Boston appointed members of a Corridor Advisory Group (CAG) to be a consistent voice of the Corridor community and neighborhoods throughout the process.

The CAG Members dedicated over a year of meetings and discussion to the Corridor and the City is grateful for their contributions. All Corridor Advisory Group meetings were open to the public, held in locations throughout the Corridor and attended by members of the community. The following is a list of meetings and agendas that were a part of this community planning process:

Corridor Advisory Group Meeting #1

June 14, 2012

1. Meeting Introduction
2. Fairmount Indigo Planning Initiative
3. Consultant Introduction
4. Planning Process
5. Next Steps

Corridor Advisory Group Meeting #2

August 1, 2012

1. Introduction
2. City-wide Context
3. Corridor Context
4. Station Context
5. Case Studies
6. Next Steps Discussion

Corridor Advisory Group Meeting #3

September 12, 2012

1. Meeting Introduction
2. Summary of Previous Meeting
3. Organizing the Plan by Themes and Topics
4. Existing Conditions by Topic
5. CAG Discussion
6. Suggested Case Studies of Corridors
7. Community Forum Preparations
8. Next Steps

Corridor Advisory Group Meeting #4

October 10, 2012

1. Welcome and Introductions
2. Summary of Previous Meeting
3. Department of Neighborhood Development
4. Community Forum
5. Corridor Case Studies
6. Next Steps

Corridor Advisory Group Meeting #5

November 13, 2012

1. Overview of Community Forum
2. CAG Member Roles at Forum
3. Virtual Corridor Tour and CAG Speakers
4. Discussion of Break-out Group Questions
5. Next Steps for CAG and Public Outreach

Corridor Community Forum

November 17, 2012

1. Planning Study Introduction
2. Fairmount Indigo Corridor Summary
3. Fairmount Corridor Identity
4. Virtual Corridor Tour
5. Break-out Discussion Groups
6. Lunch Break
7. Concluding Presentation

Corridor Advisory Group Meeting #6

December 12, 2012

1. Welcome and Introductions
2. Overview of the Community Forum
3. Corridor Shared Themes
4. Additional Station Areas
5. Greenway Presentation

6. Talbot Norfolk Triangle LEED ND
7. Next Steps

Corridor Advisory Group Meeting #7

January 9, 2013
1. Introductions/Other Business
2. Talbot Norfolk Triangle LEED ND
3. Corridor Shared Themes
4. Selection of Additional Stations
5. Corridor Growth Strategy
6. Next Steps

Corridor Advisory Group Meeting #8

March 12, 2013
1. Introductions/Other Business
2. Selection of Additional Stations
• Consensus on selection criteria
• Proposed two additional stations
3. Corridor Growth Strategy
4. Next Steps

Corridor Advisory Group Meeting #9

April 9, 2013
1. Summary of Station Selection Results
2. Overall Schedule Update
3. Growth Strategy Framework and Preview
4. Brand Strategy and Corridor Identity
• What is a Brand Strategy?
• Key Observations - Brand Strategy
• Key Observations - Corridor Identity
• Cultivating the Big Idea

Corridor Advisory Group Meeting #10

May 13, 2013
1. Welcome and Introductions
2. Project Schedule
3. Corridor Growth Strategy and Discussion
• Objectives
• Context
• Specific Strategies
• Targets
• Station Area Targets and Strategies
4. Transit Equity Discussion
5. Project Schedule/Next Steps

Corridor Advisory Group Meeting #11

June 11, 2013
1. Welcome and Introductions
2. Transit Equity Discussion
3. Corridor-wide Planning Review
4. Open Discussion
5. Community Comment/Questions
6. Project Schedule
7. Next Steps

Corridor Advisory Group Meeting #12

September 17, 2013
1. Welcome and Introductions
2. Initiative Update
3. MBTA Update
4. Draft Executive Summary
• Community Vision Summary
• Brand Strategy Summary
• Growth Strategy Summary
• Station Action Plans
5. Discussion
6. Community Open House
7. Next Steps

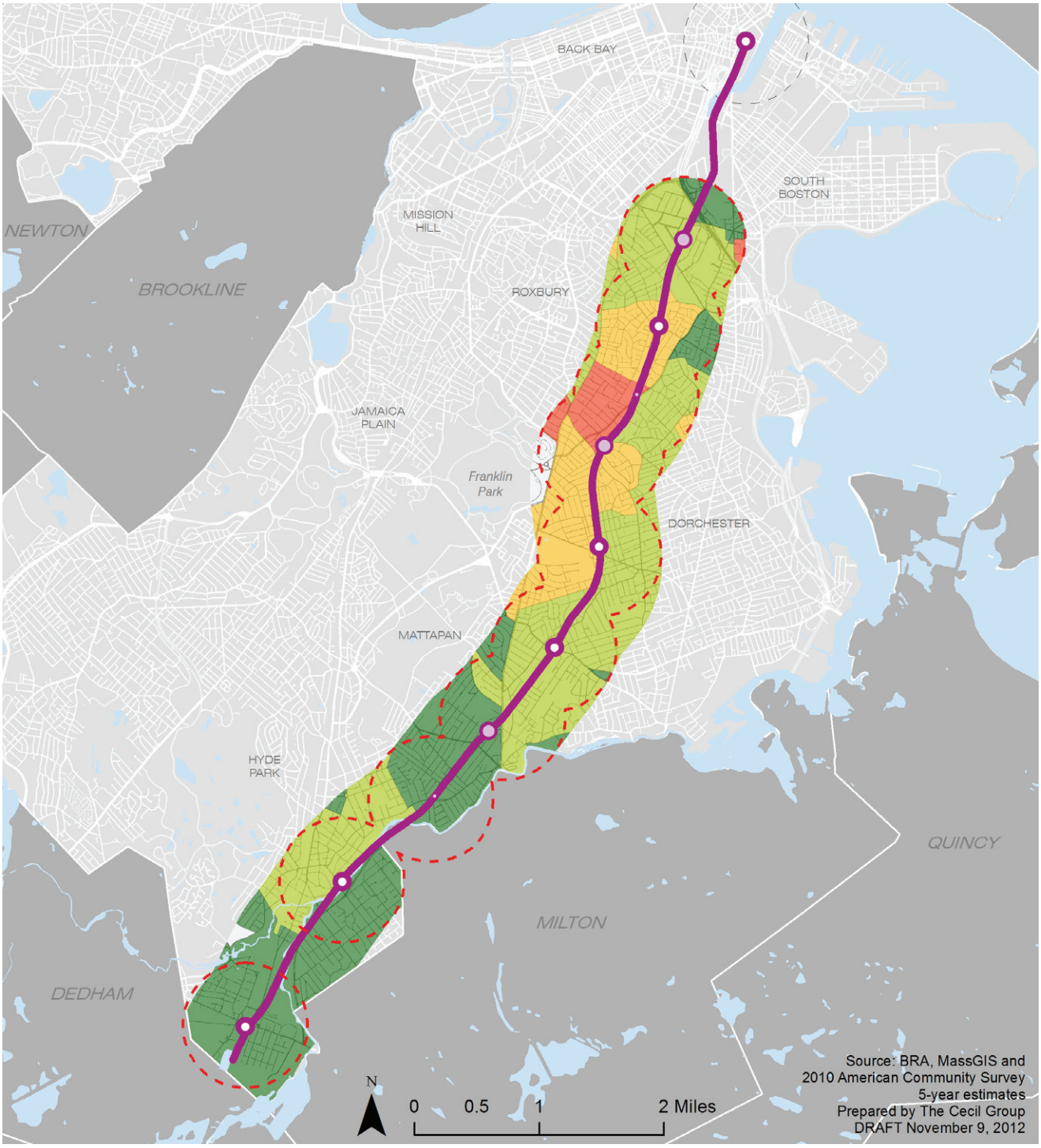
Corridor Advisory Group Meeting #13

October 16, 2013
1. Welcome and Introductions
2. Discussion of Draft Executive Summary
3. Community Open House
4. Next Steps

Corridor Community Open Houses

March 2014

EXISTING CONDITIONS ANALYSIS



Median Household Income

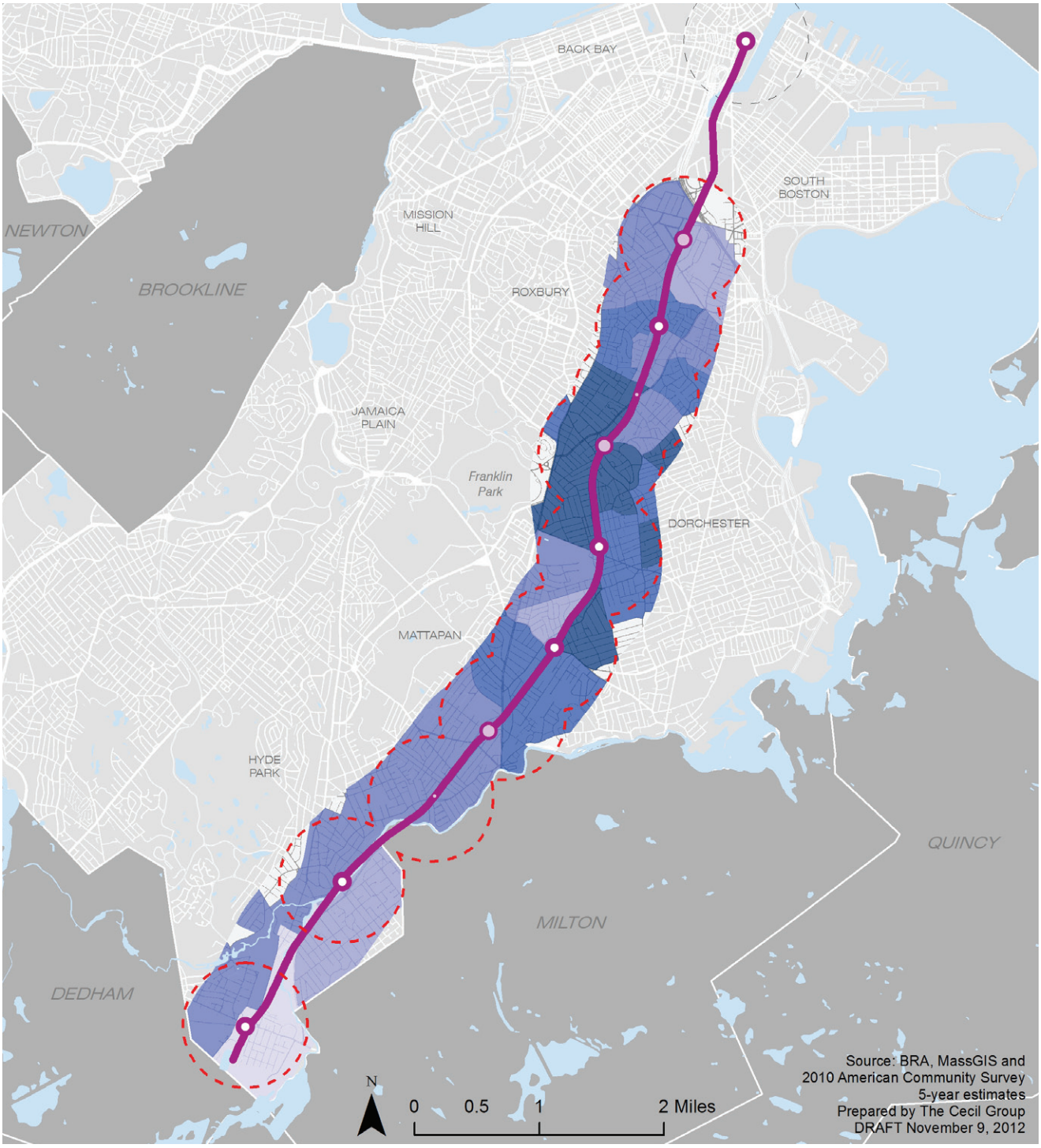
In Past 12 Months By Census Tract

- <$22,314 (poverty threshold)
- $22,314.01 - $35,000
- $35,000.01 - $50,000
- >$50,000.01

Fairmount Indigo Line

Half Mile Station Areas

BOSTON: $50,684 median household income



Unemployment

By Census Tract

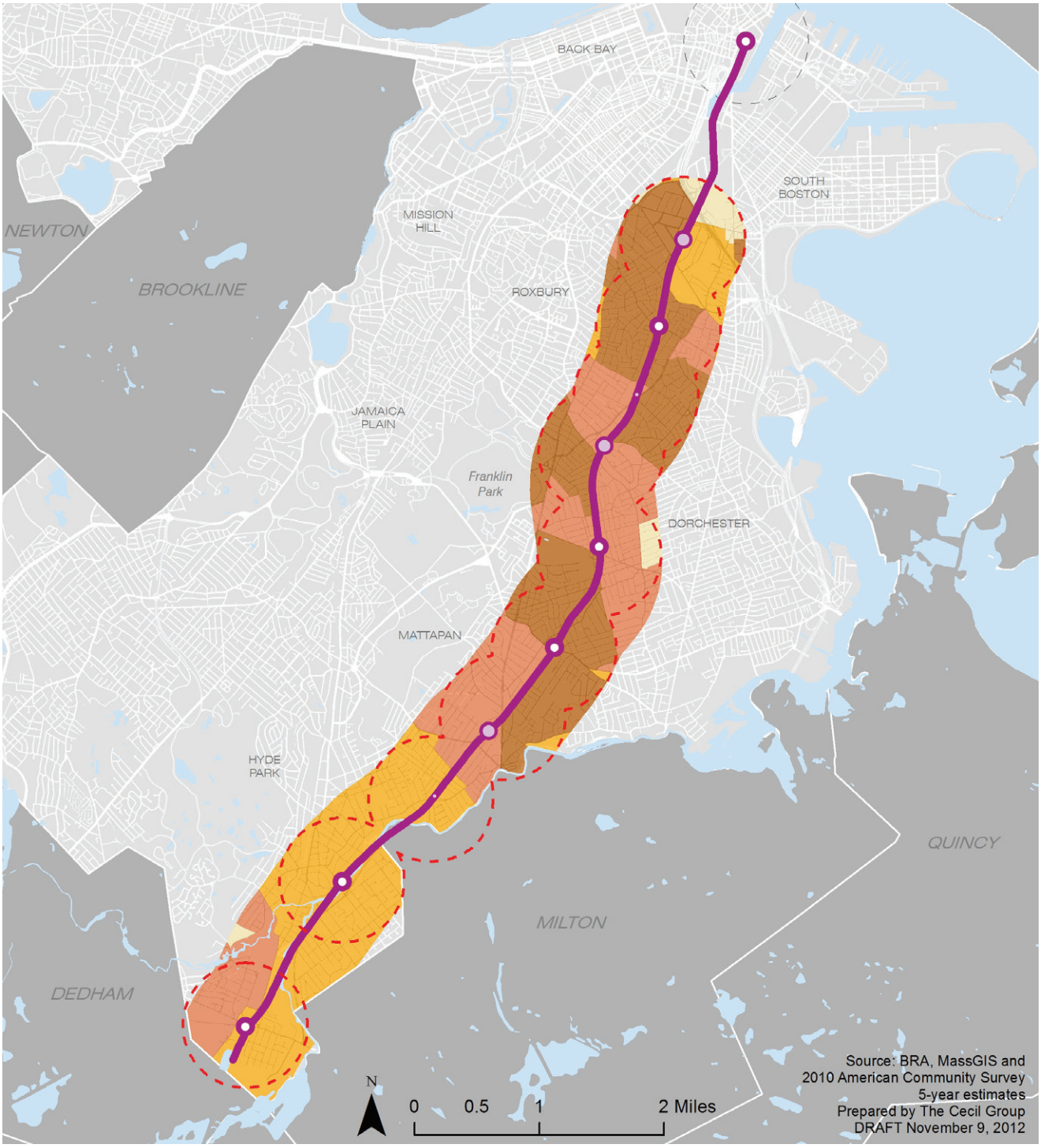
% of pop. age 16+ unemployed

- < 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 20%
- > 20%

Fairmount Indigo Line

Half Mile Station Areas

BOSTON: 9.3% unemployment rate



Education

By Census Tract

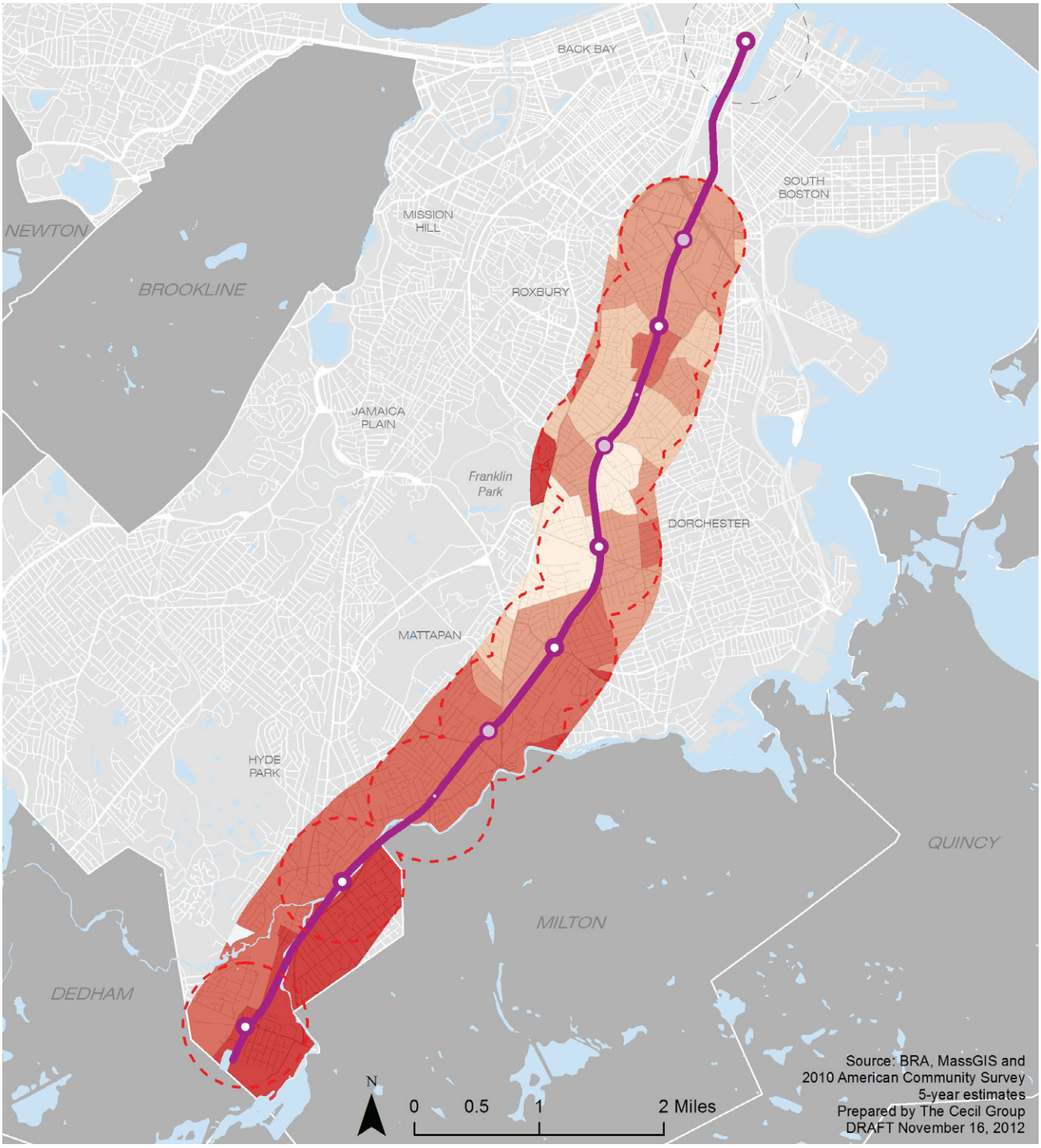
% of pop. age 25+ with no more than a High School diploma

- < 40%
- 40.0 - 50%
- 50.1 - 60%
- > 60.1%

Fairmount Indigo Line

Half Mile Station Areas

BOSTON: 39.3% with no more than a high school diploma



Median Age

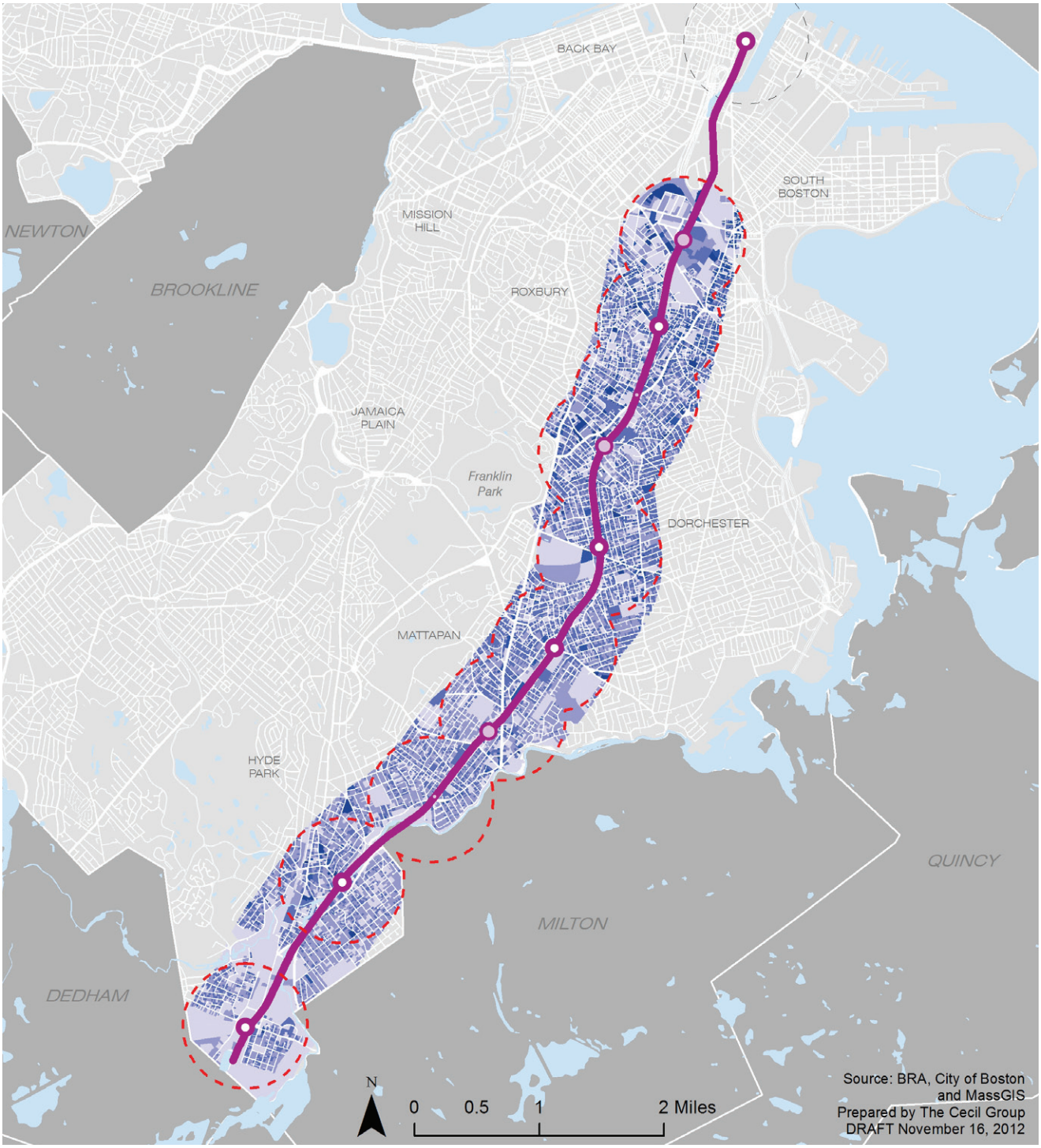
By Census Tract

- < 25
- 25.1 - 30
- 30.1 - 35
- 35.1 - 40
- > 40

Fairmount Indigo Line

Half Mile Station Areas

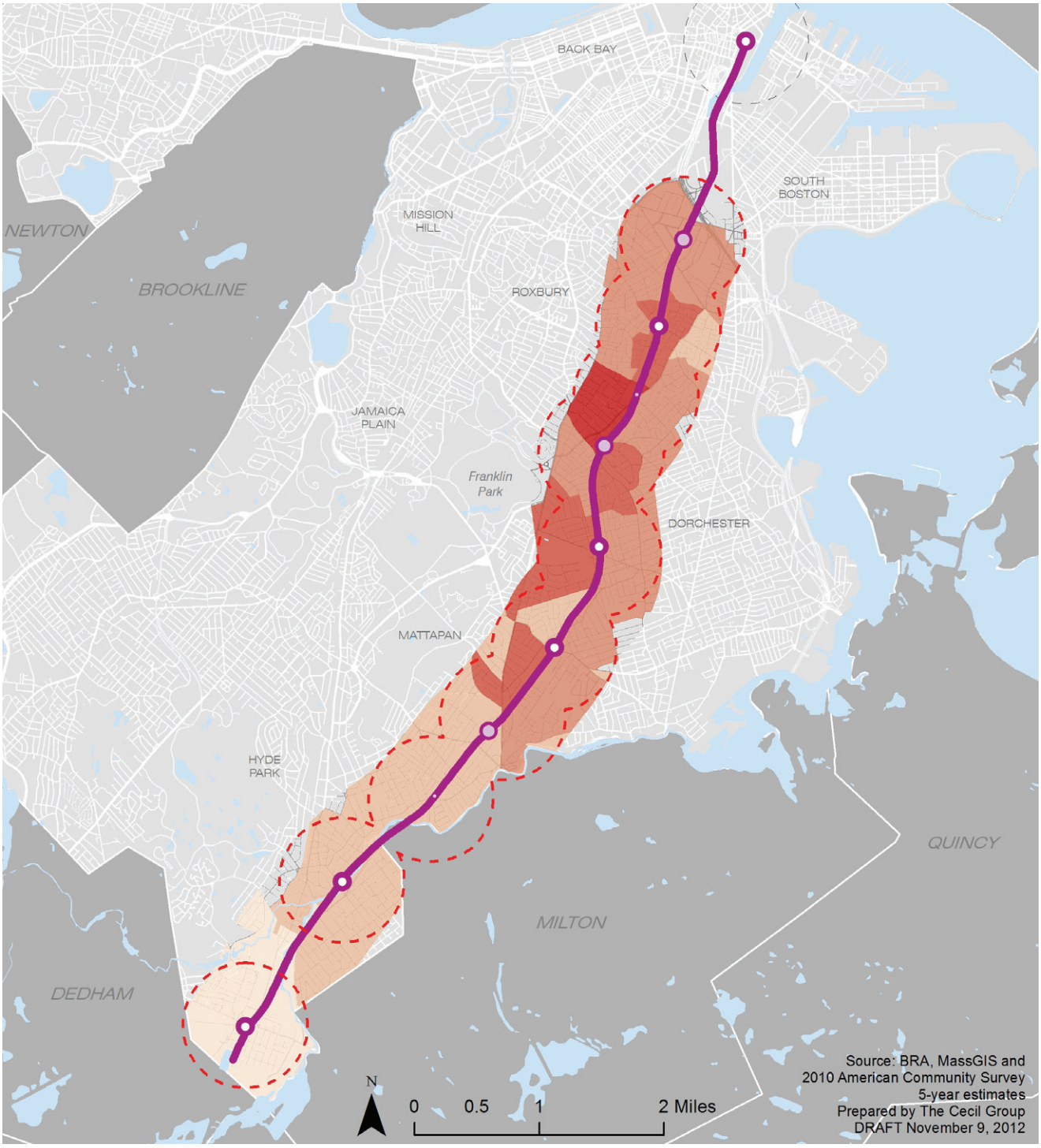
BOSTON: 30.9 median age



Assessed Value

- < $25
- $25 - $50
- $50.01 - $100
- $100.01 - $150
- > $150

- Fairmount Indigo Line
- Half Mile Station Areas



Poverty

By Census Tract

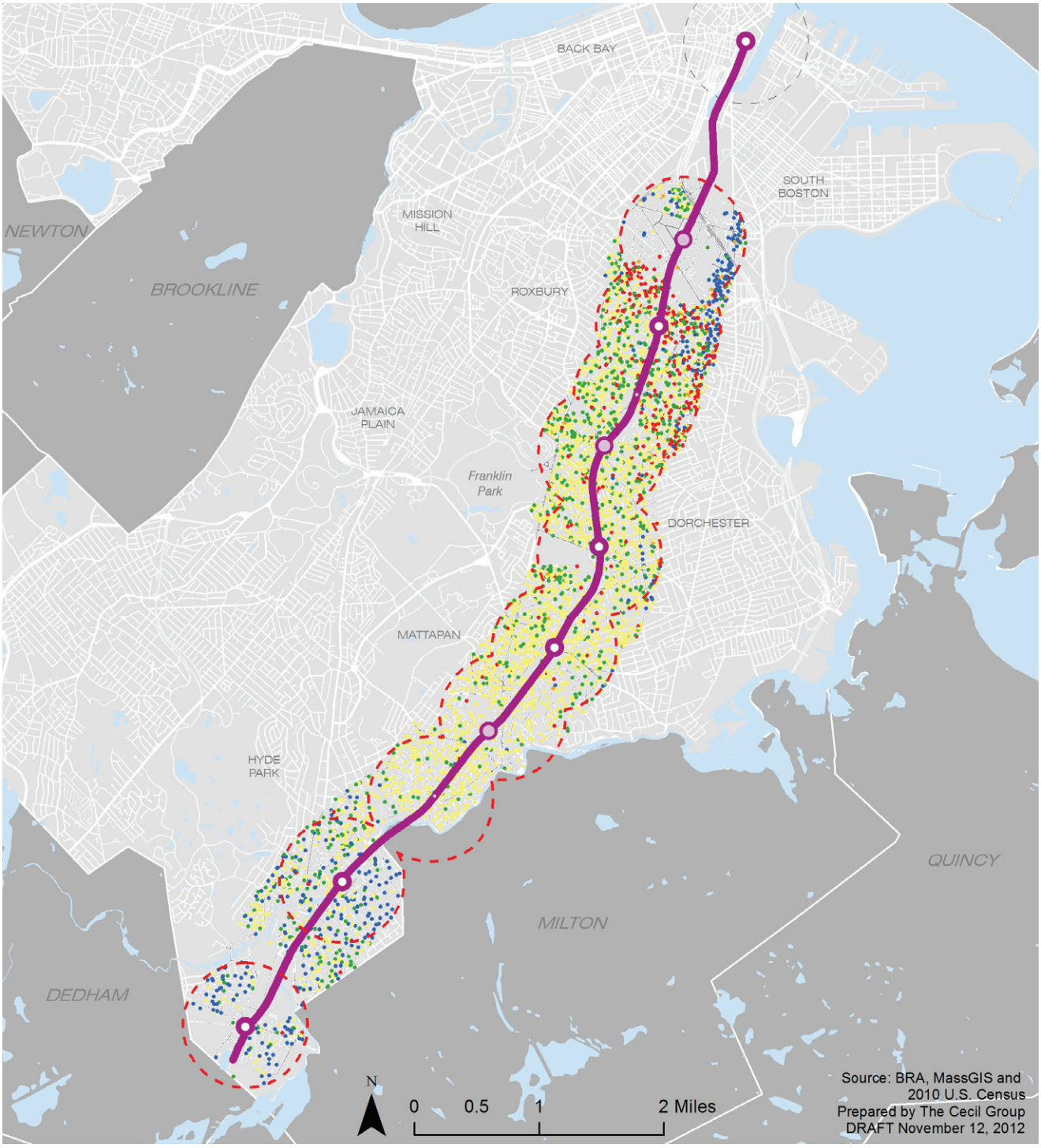
% Pop. Below Poverty

- < 10%
- 10% - 20%
- 20.1% - 30%
- 30.1% - 40%
- > 40%

Fairmount Indigo Line

Half Mile Station Areas

BOSTON: 21.2% below poverty



Race and Ethnicity

By Census Block

1 Dot = 25

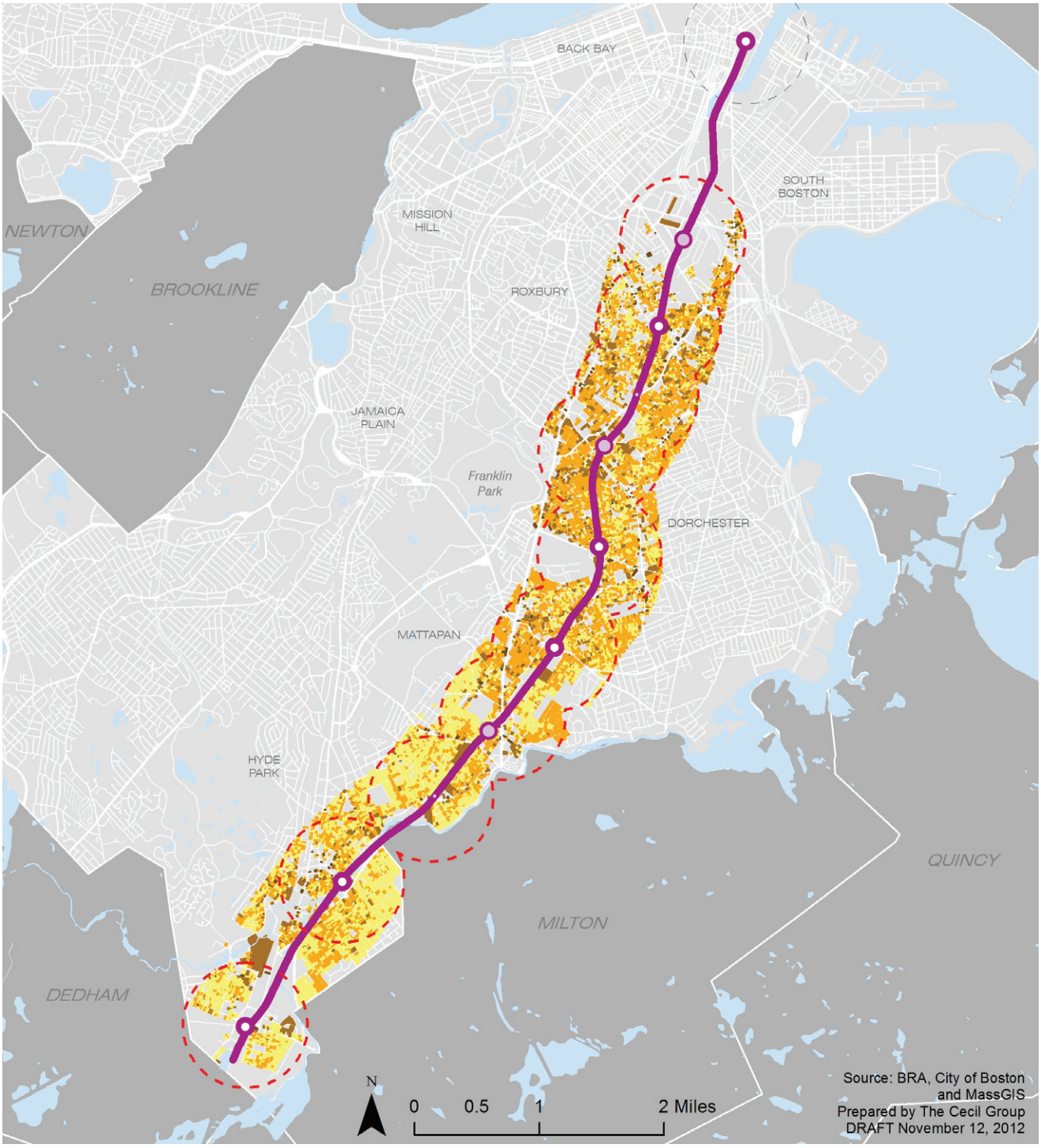
- White
- Hispanic or Latino
- Black
- Asian
- Other

Fairmount Indigo Line

Half Mile Station Areas

BOSTON:

47% White
17.5% Hispanic or Latino
22.4% Black
8.9% Asian
4.3% Other

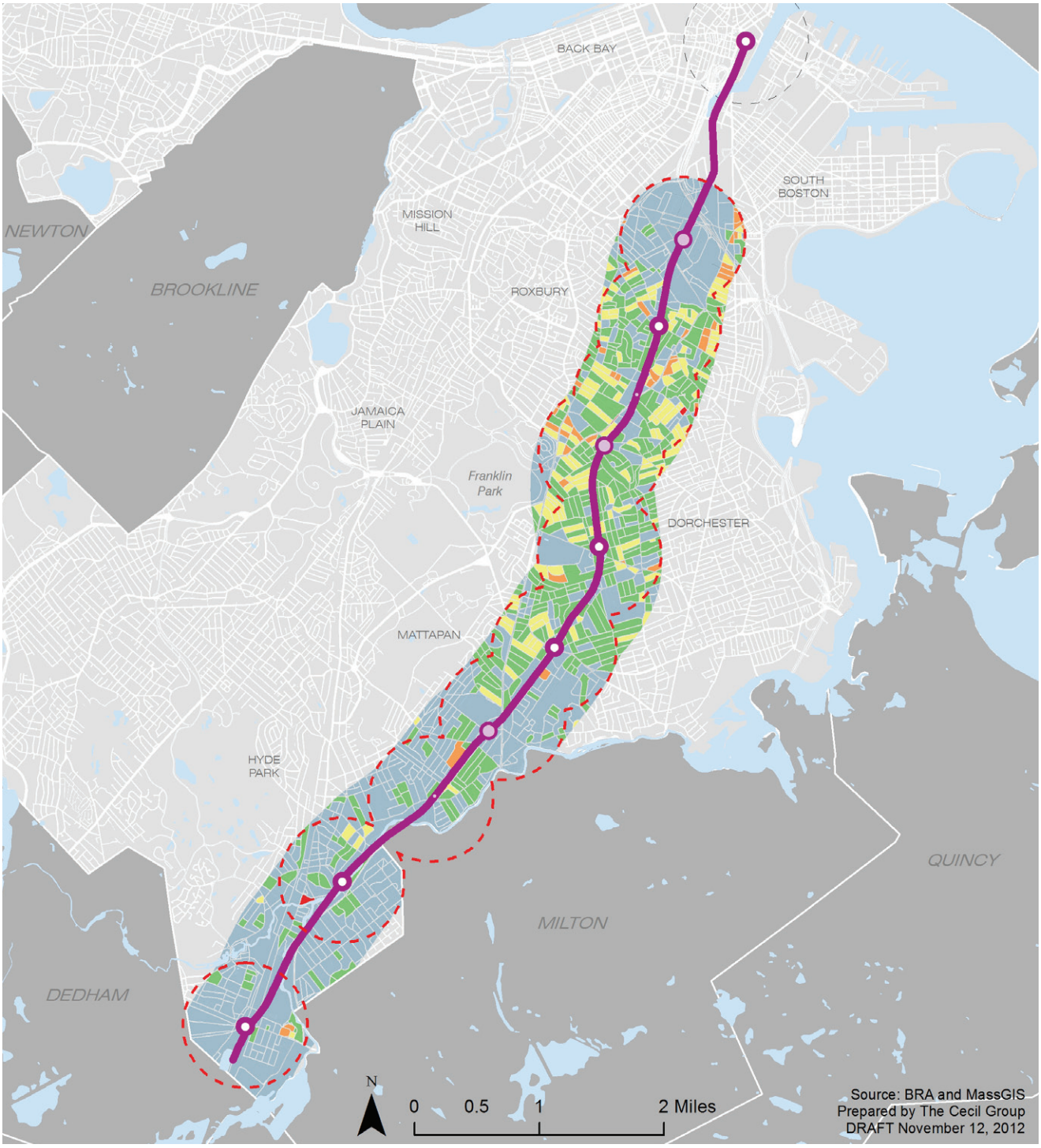


Housing Type

By Parcel

- Single Family
- Two or Three Family
- Multifamily
- Mixed Use

- Fairmount Indigo Line
- Half Mile Station Areas



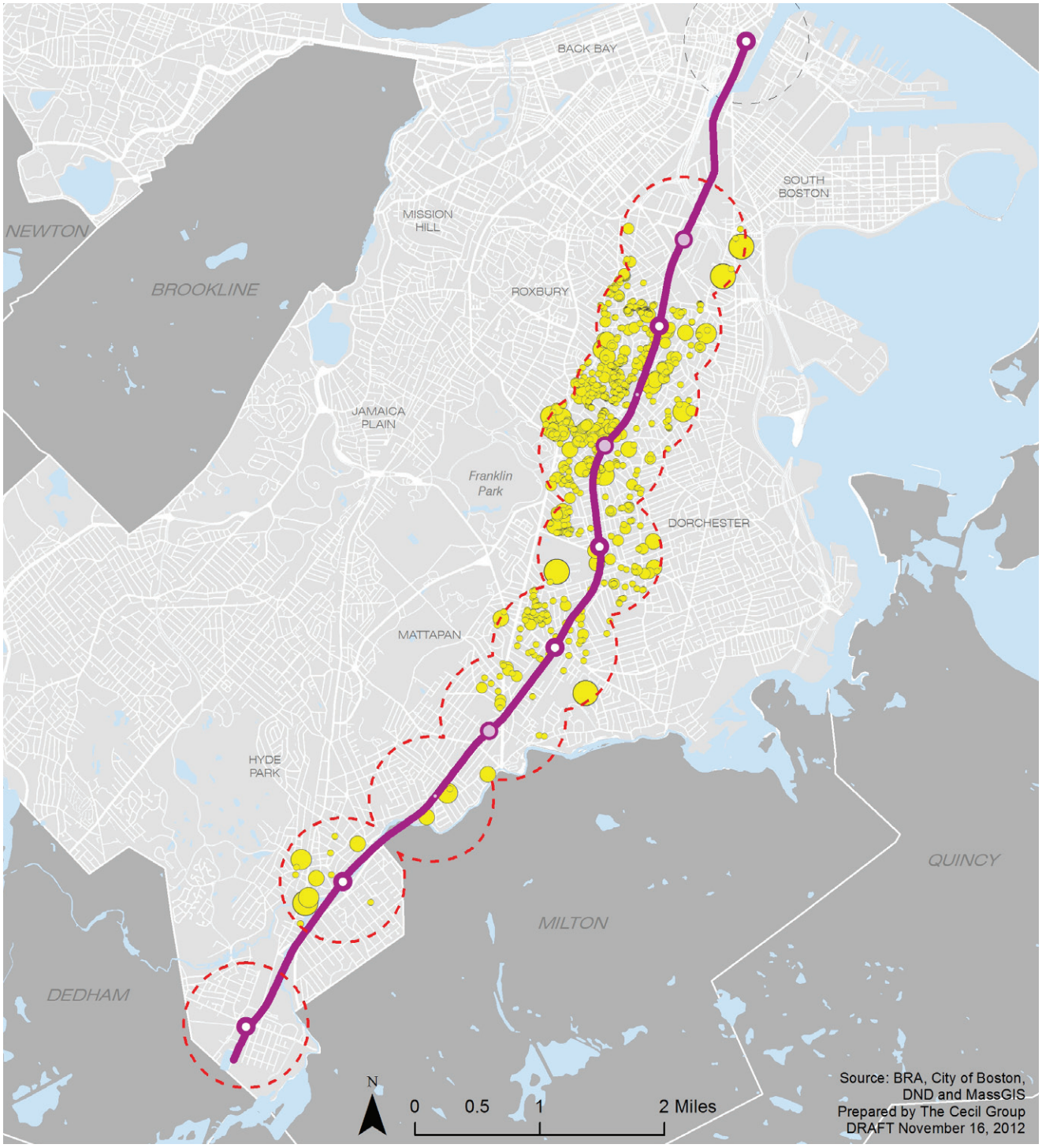
Housing Density

By Census Block

Housing Units / Acre

- < 8 (1-family)
- 9 - 16 (2-family)
- 17 - 24 (3-family)
- 15 - 49 (multifamily)
- 50 - 100 (multifamily)

- Fairmount Indigo Line
- Half Mile Station Areas



Affordable Housing

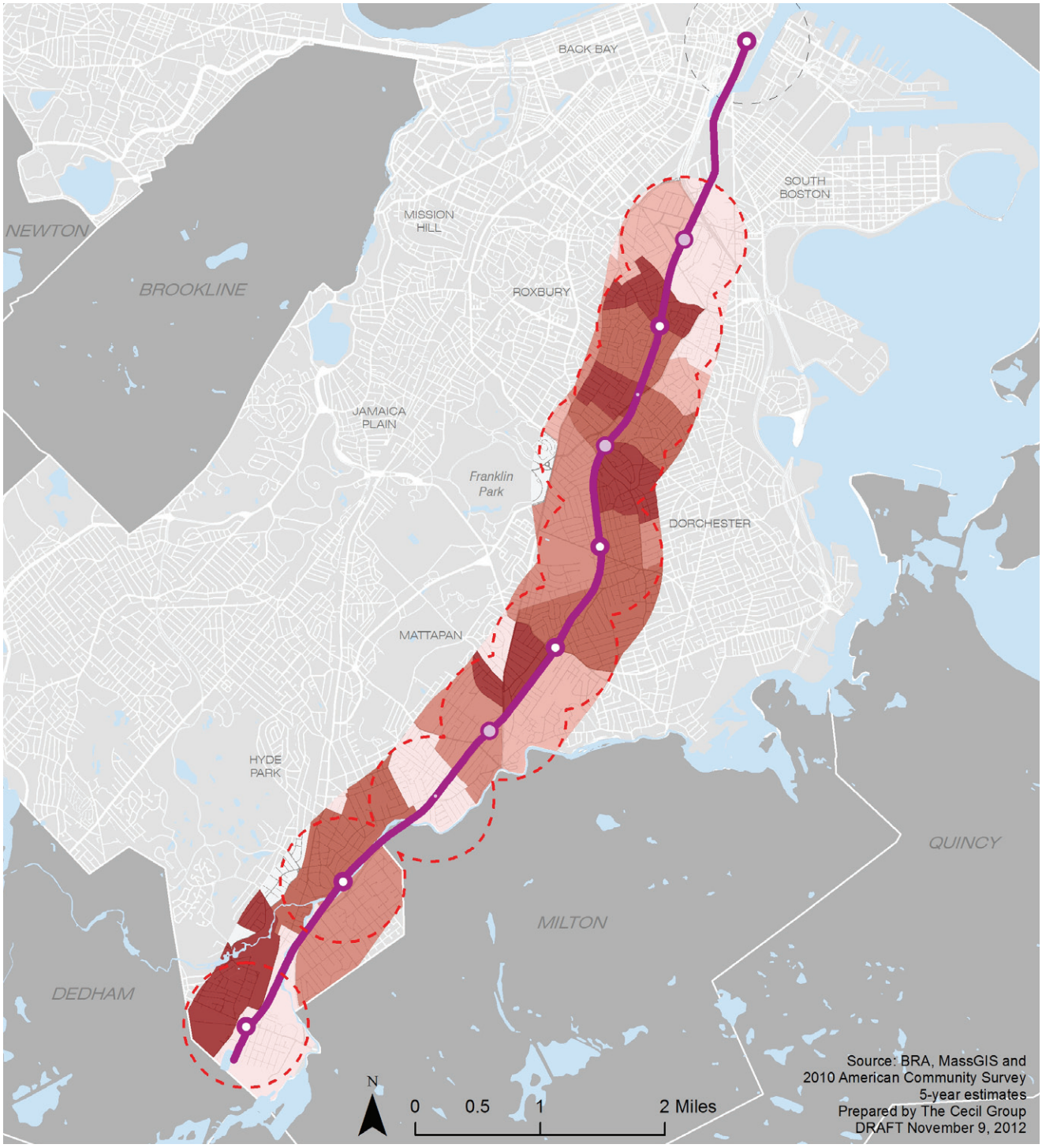
By Development

# of Affordable Units
within half mile of stations

- 1 - 10
- 11 - 25
- 26 - 50
- 51 - 100
- 101 - 750

Fairmount Indigo Line

Half Mile Station Areas



Severely Rent Burdened

By Census Tract

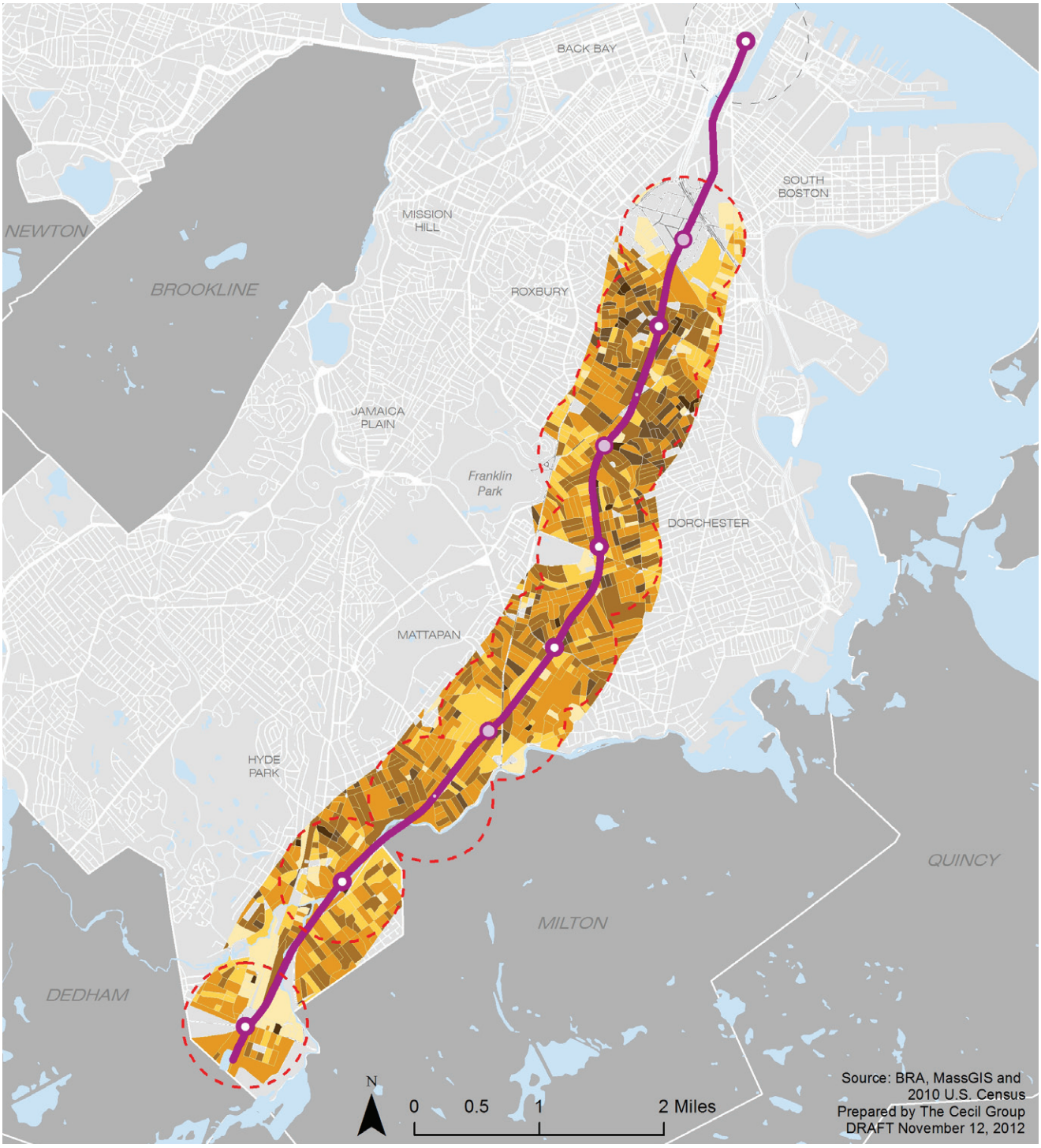
% of renter-occupied homes where at least half of household income is spent on rent

- < 25%
- 25.01% - 30%
- 30.01% - 35%
- 35.01% - 40%
- > 40.01%

Fairmount Indigo Line

Half Mile Station Areas

BOSTON: 27% severely rent burdened

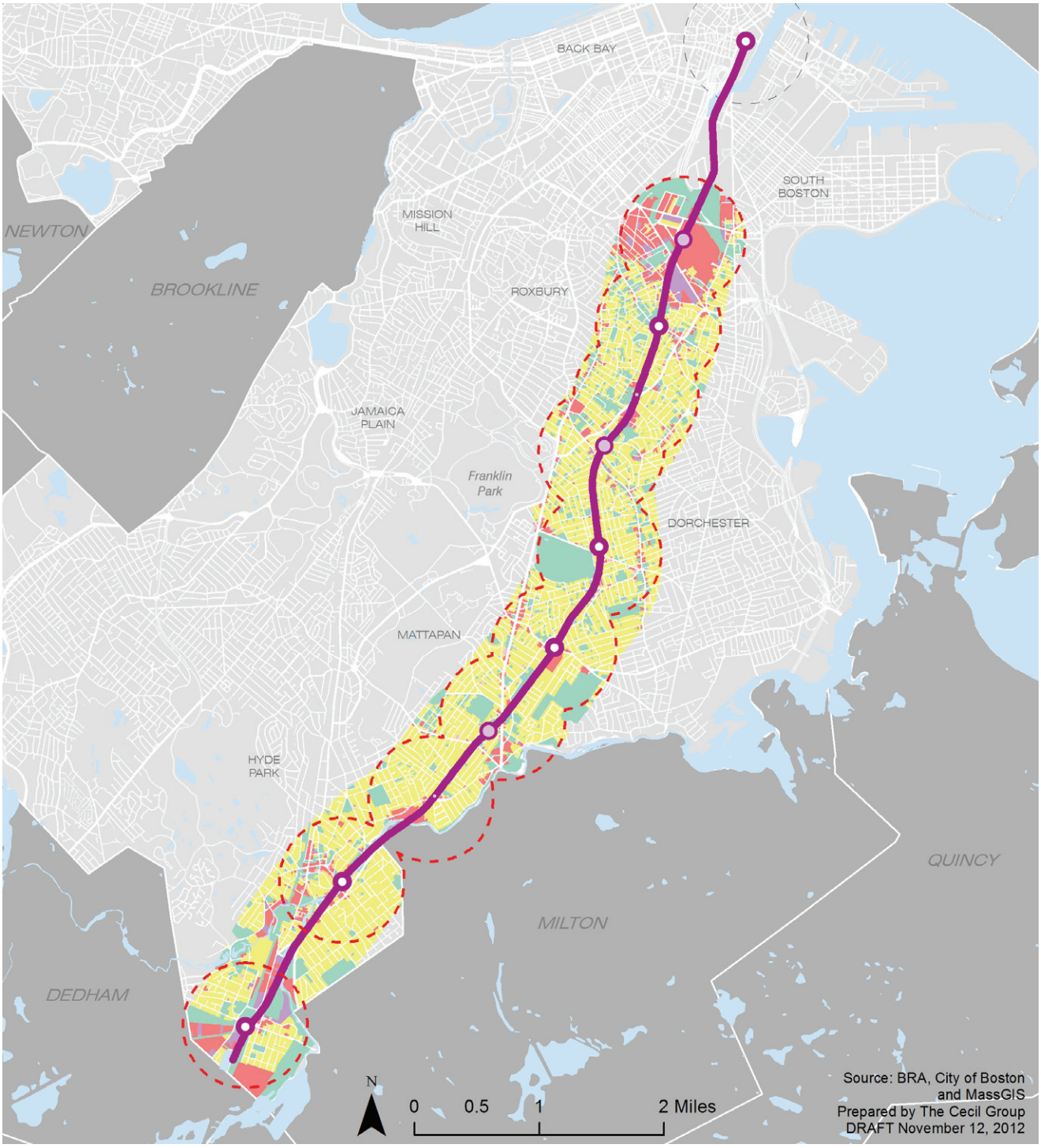


Average Household Size

By Census Block

- 1 - 2
- 2.01 - 2.50
- 2.51 - 3
- 3.01 - 3.50
- 3.51 - 4
- > 4

- Fairmount Indigo Line
- Half Mile Station Areas



Land Use

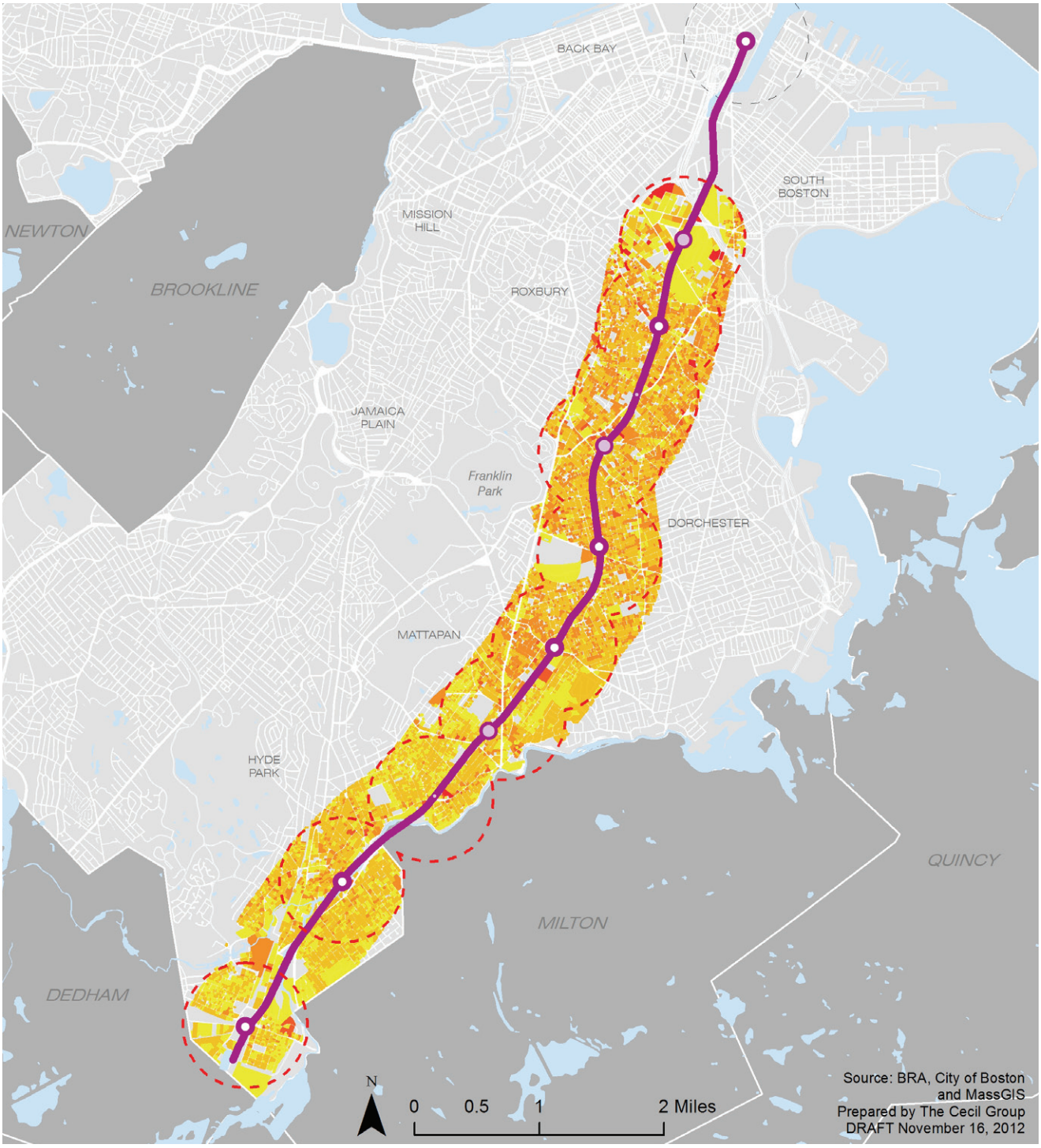
By Parcel

- Commercial
- Mixed Use (Res/Com)
- Residential
- Tax Exempt
- Industrial
- Other

- Fairmount Indigo Line
- Half Mile Station Areas

BOSTON:

9% Commercial
36% Residential
4% Industrial
51% Tax Exempt

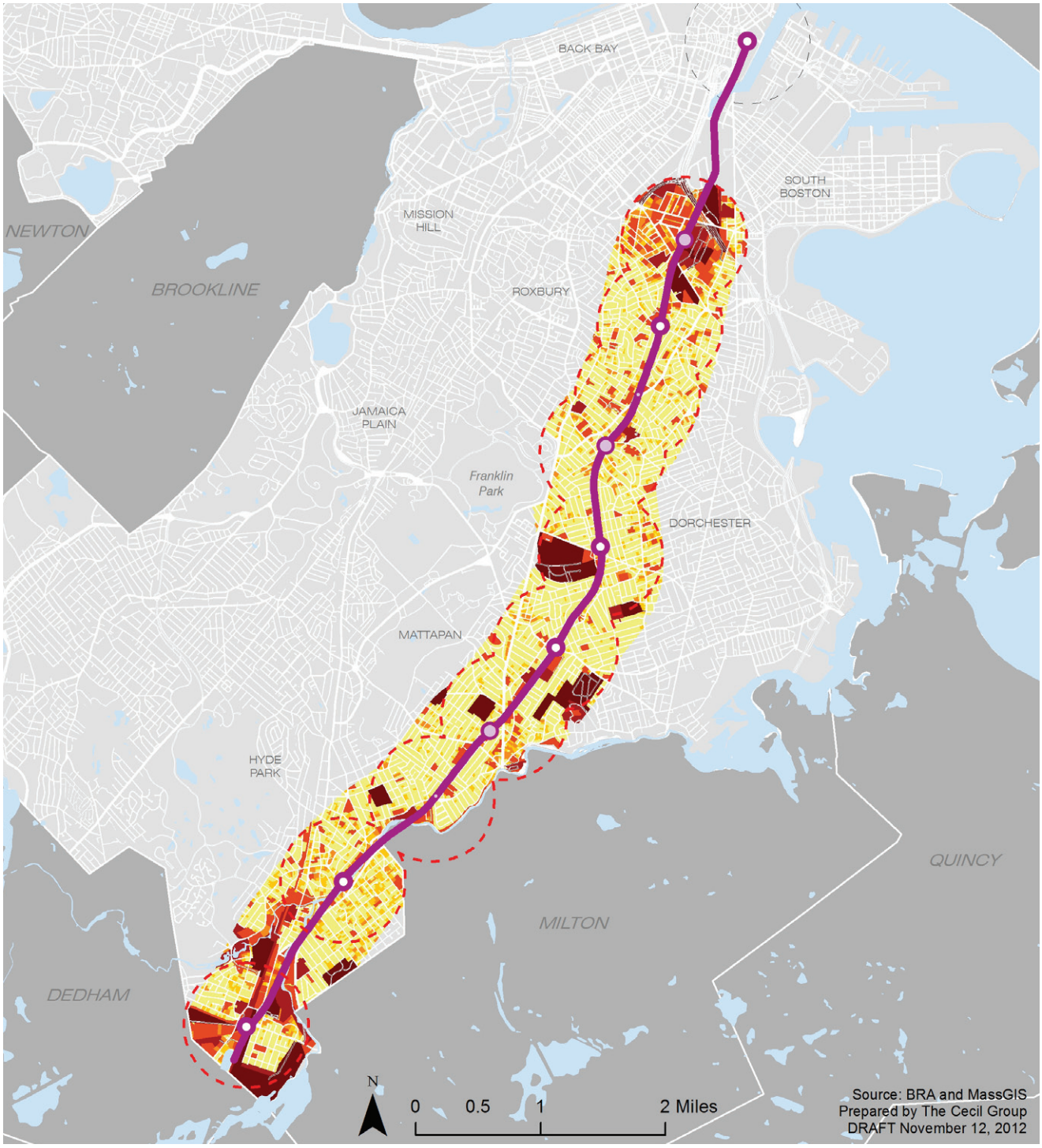


Building Height

Number of Floors

- 1 - 1.5
- 2 - 2.5
- 3 - 3.5
- 4 - 4.5
- 5+

- Fairmount Indigo Line
- Half Mile Station Areas

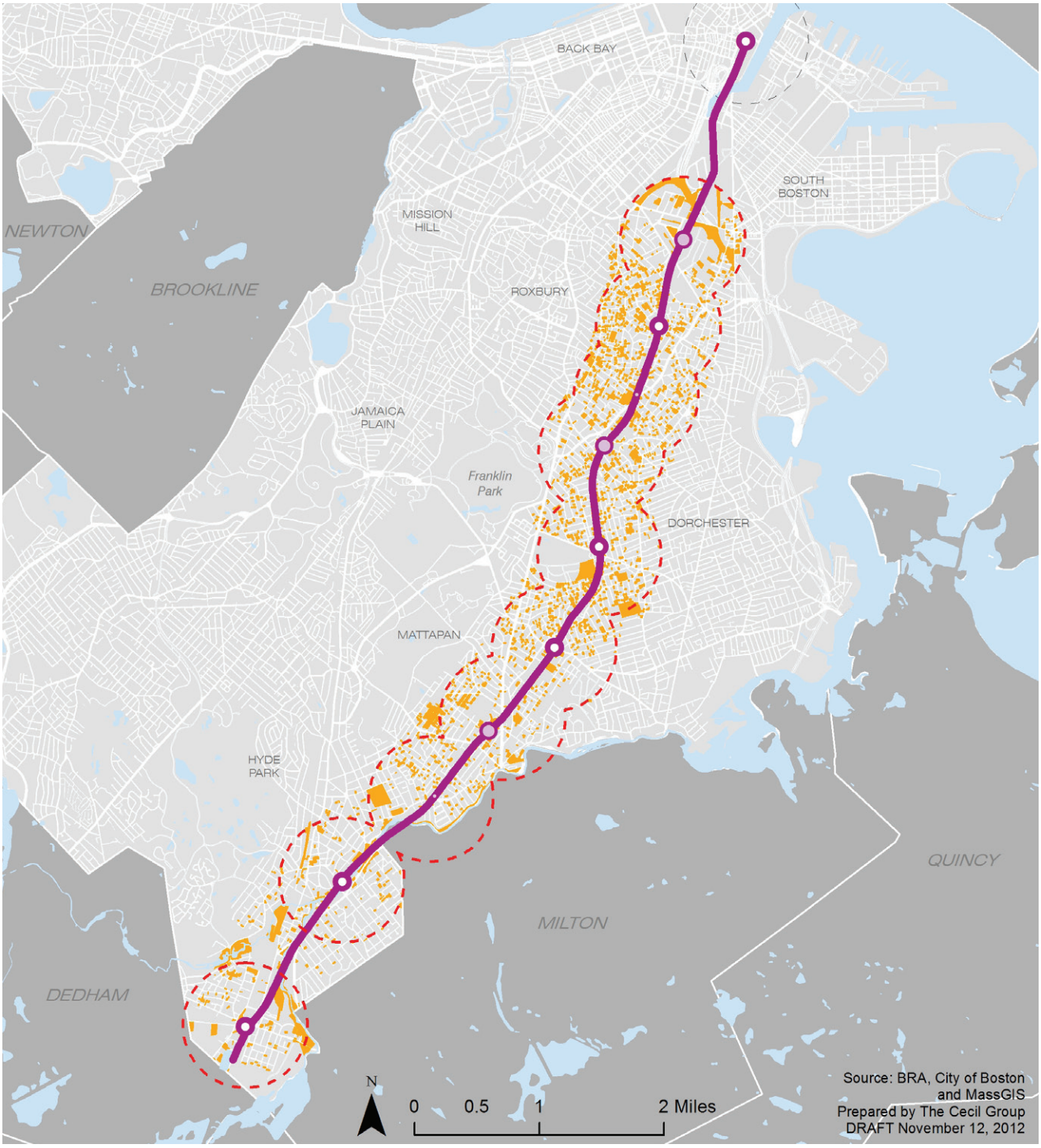


Parcel Size

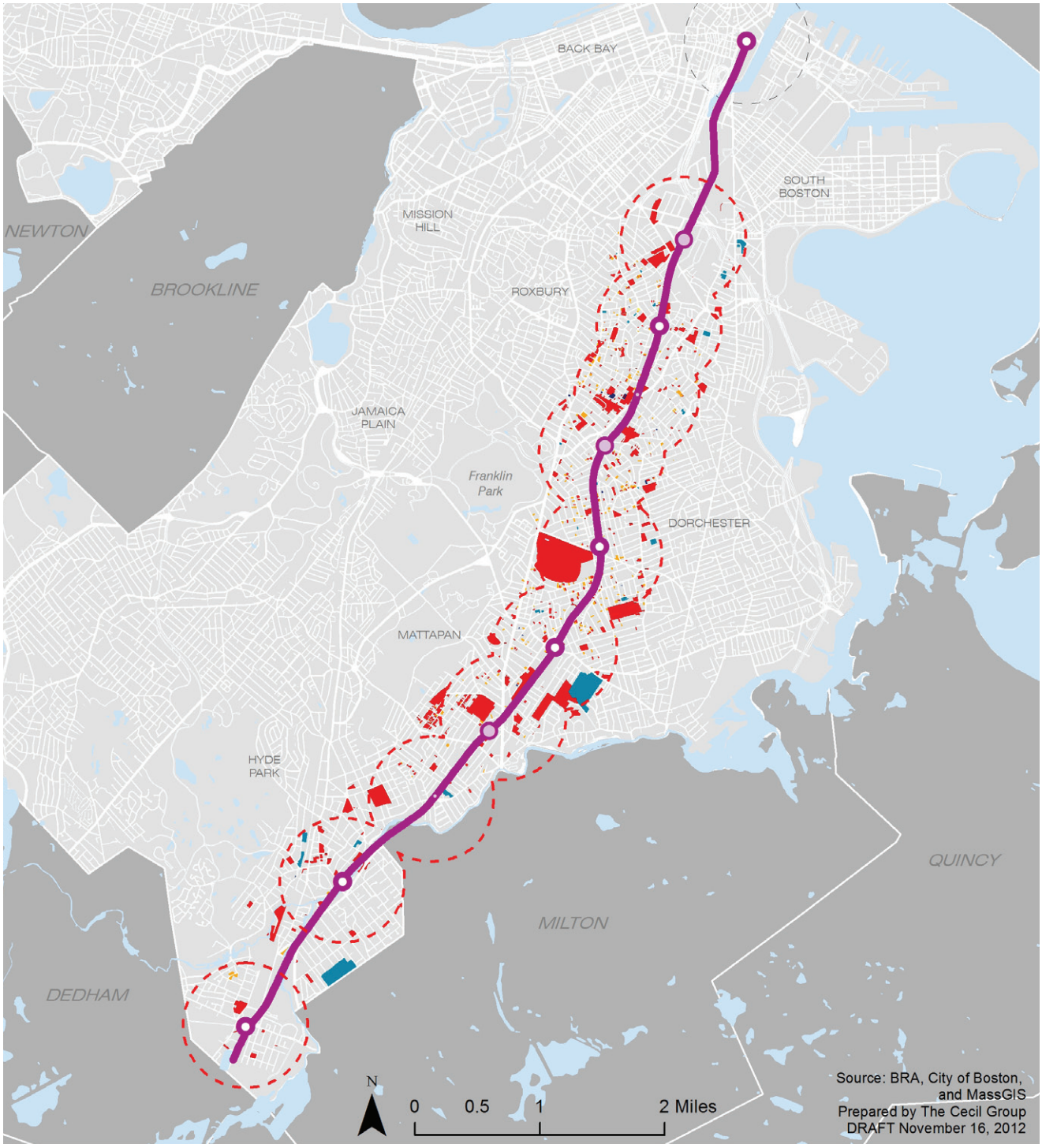
By Parcel

- < 0.25 acre
- 0.25 to 0.49 acre
- 0.5 to 1 acre
- 1.01 to 5 acres
- 5.01 to 10 acres
- > 10 acres

- Fairmount Indigo Line
- Half Mile Station Areas

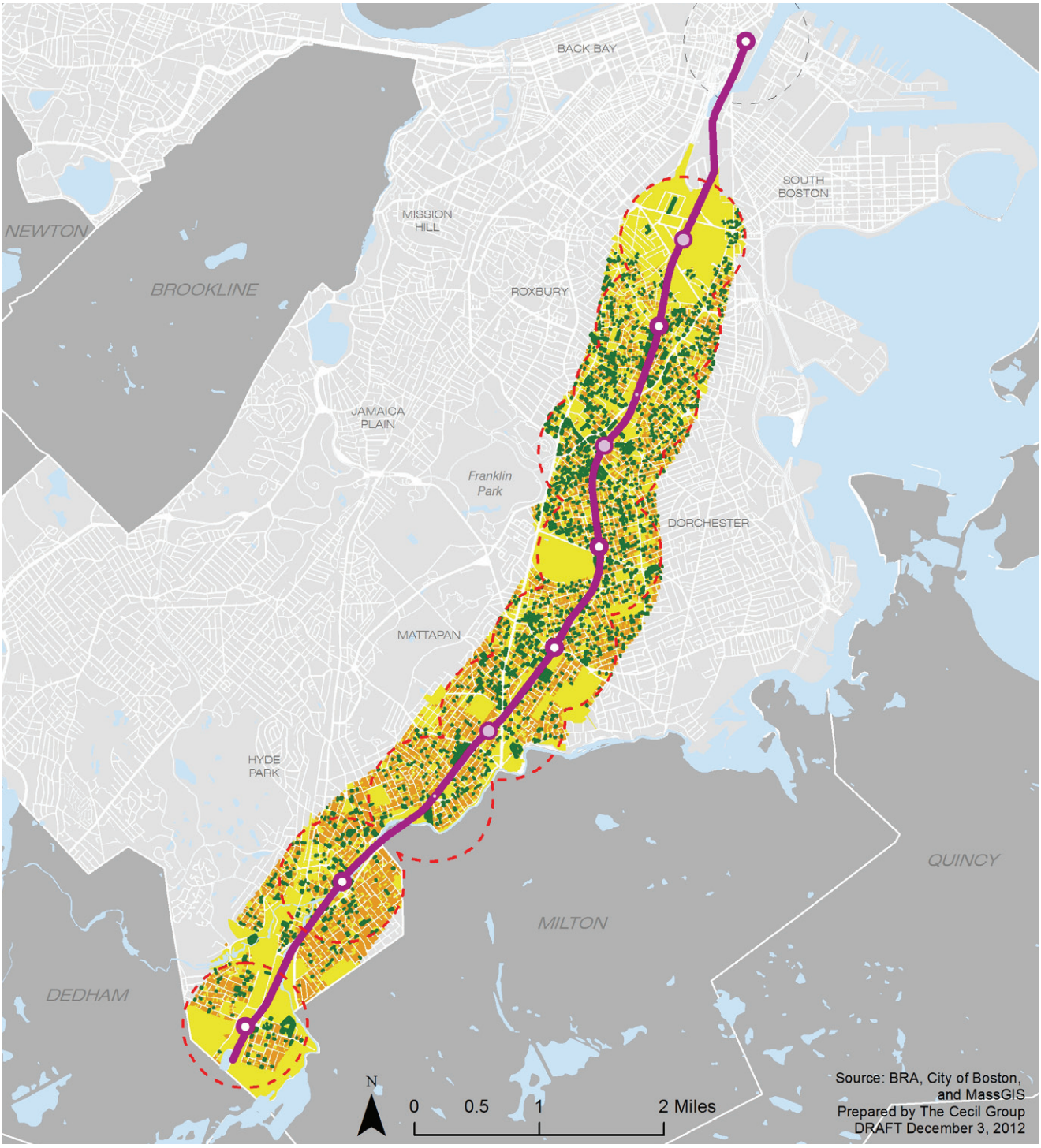


Vacant Properties



City-owned Properties

- City of Boston
- City of Boston by Foreclosure
- City of Boston Trust
- Boston Housing Authority
- Boston Redevelopment Authority
- Fairmount Indigo Line
- Half Mile Station Areas



Absentee Landlords

By Parcel

Absentee Landlord

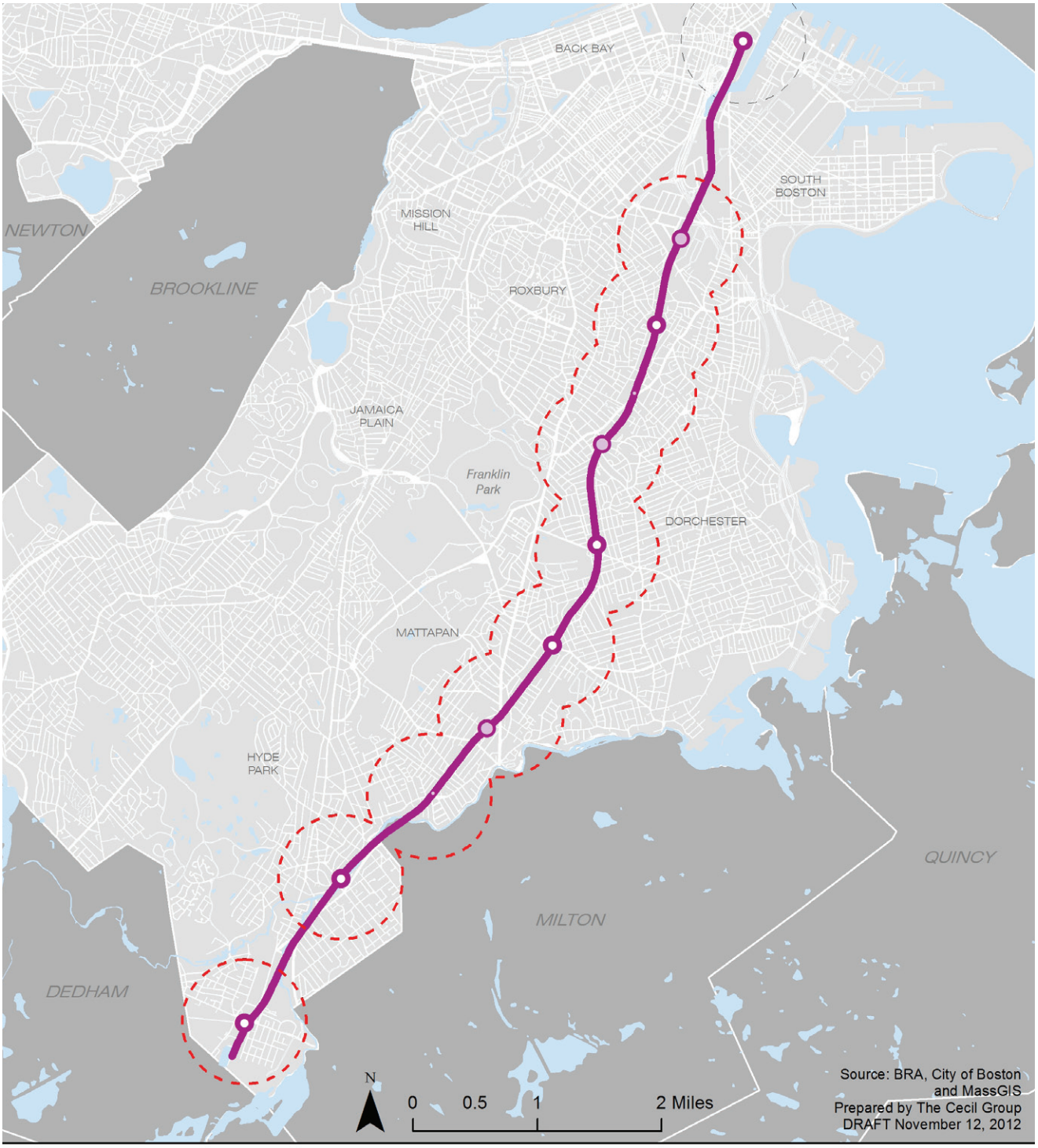
Owner-Occupancy Residential Exemption

Yes

No

Fairmount Indigo Line

Half Mile Station Areas



Station Status

- Existing Station
- Under Construction
- Potential Station
- Fairmount Indigo Line
- Half Mile Station Areas

Existing Transit Services

The defining transit service within the Fairmount Indigo Planning Initiative Corridor is the MBTA Fairmount Commuter Rail Line service that runs the length of the Corridor, in a north-south direction, providing connections between the Corridor and downtown Boston. The other public transit services in the corridor are MBTA bus services that principally run in an east-west direction, providing connections between the corridor and MBTA subway lines or other locations in Boston.

The transit services that immediately serve the Fairmount Corridor Station Areas include the MBTA Fairmount Commuter Rail Line service and the sixteen MBTA bus services. The following section describes the operating characteristics of the current transit lines on the Corridor. These attributes include:

- Station/Bus Stop Locations
- Service Headways (frequencies)
- Service Hours,
- Major Connections and Travel Times

The description of transit services begins with the Fairmount Commuter Rail service, which serves the entire corridor. This is followed by a description of bus services in each of the Station Areas.

Fairmount Indigo Commuter Line

The Fairmount Indigo Line service operates along a 9.2-mile rail line that runs from South Station and currently serves seven stations located at Newmarket, Upham's Corner, Four Corners/Geneva, Talbot Avenue, Morton Street, Fairmount, and Readville exclusively serving neighborhoods within the City of Boston.

The line recently underwent improvements through the Fairmount Line Improvement Project which included the rehabilitation of the existing Upham's Corner and Morton Street Stations and construction of four new stations: Newmarket, Four Corners, Talbot Avenue, and Blue Hill Avenue. In addition the project included the reconstruction of six existing railroad bridges and improvements to railroad signal equipment along the line.

The Fairmount Indigo Line service includes the following service attributes:

Stations:

- South Station,
  Located at Atlantic Avenue and Summer Street, Boston
- Newmarket,
  Located at 383 Southampton Street, Boston
- Upham's Corner,
  Located at 691 Dudley Street Dorchester
- Four Corners,
  Located at 165 Geneva Avenue, Dorchester
- Talbot Avenue,
  Located at 206 Talbot Avenue, Dorchester
- Morton Street,
  Located at 865 Morton Street, Mattapan
- Fairmount,
  Located at Fairmount Avenue and Truman Highway, Hyde Park
- Readville,
  Located at 1800 Hyde Park Avenue, Hyde Park

The stations being planned, designed and built as a part of the Fairmount Line Improvement Project include the following:

- Blue Hill Avenue Station, Blue Hill Ave., Mattapan

The Blue Hill Ave. Station remains in the design process with construction completion before 2015 unlikely.

There are two additional stations that were contemplated during previous studies, the Columbia Road Station and the River Street Station. The Columbia Road Station was contemplated in a feasibility study developed in 2002, but any further development was deferred when a 2004 assessment of the line identified engineering and ridership concerns related to a station at the Columbia Road location.

Headway (Weekdays): Peak Period: about 40 minutes (peak direction), Off-peak Periods: about 120 minutes. Headways are the time between each train.

Service Hours: Monday – Friday 5:48 am – 10:45 pm

Major Connections: South Station (Red Line, Silver Line, Amtrak and five other commuter rail lines)

Travel time to South Station: Upham's Corner (11 minutes), Morton Street (18 minutes), Fairmount (22 minutes), Readville (25 minutes)

On-Time Performance:

- 2011(Jan.-Dec.): 95%
- 2012 (Jan.-July): 97%

Newmarket Station Area Bus Services

There are two MBTA bus routes that serve the New Market Station Area. They provide service to Red Line stations and the BU Medical Center with a maximum service of 3 to 5 buses per hour. The service routes are:

- Route 8-Harbor Pt./UMass - Kenmore Station
- Route 10-City Point - Copley Square

Stops within Station Area: Along Massachusetts Ave. (in front of station), within South Bay Center

Service Hours: M-F 5:15 to 1 AM, Sat/Sun: 6:30 to 1 AM

Major Connections Route 8: JFK/UMass Red Line Station (8 minutes), BU Medical Center (15 – 18 minutes); Route 10: Andrews Red Line Station (2 minutes), BU Medical Center (15 – 18 minutes)

Upham's Corner Station Area Bus Services

There are two MBTA bus routes that serve the Upham's Corner Station Area. They provide service to the Dudley Square (Silver Line) area and the JFK/UMass Red Line Station. These routes include service with as many as 10 buses per hour. The service routes include:

- Route 15 - Kane Square - Ruggles Station
- Route 16 - Forest Hills Station - UMass

Stops within Station Area: Along Dudley St. (in front of station)

Service Hours: M-F 4:00 to 1 AM*, Sat-Sun: 6:30 to 1 AM, Route 15 starts as early as 4AM, Route 41 ends operation before 9PM (M-F) and before 7PM (S/S)

Major Connections Route 15: Dudley Sq. Silver Line Station (10 minutes); Route 41: Dudley Sq. Silver Line Station (10 minutes), JFK/UMass Red Line Station (9 minutes)

Growth: Over the next 25 years, ridership on the route is projected to increase by 8% on Route 15 and 6% on Route 41

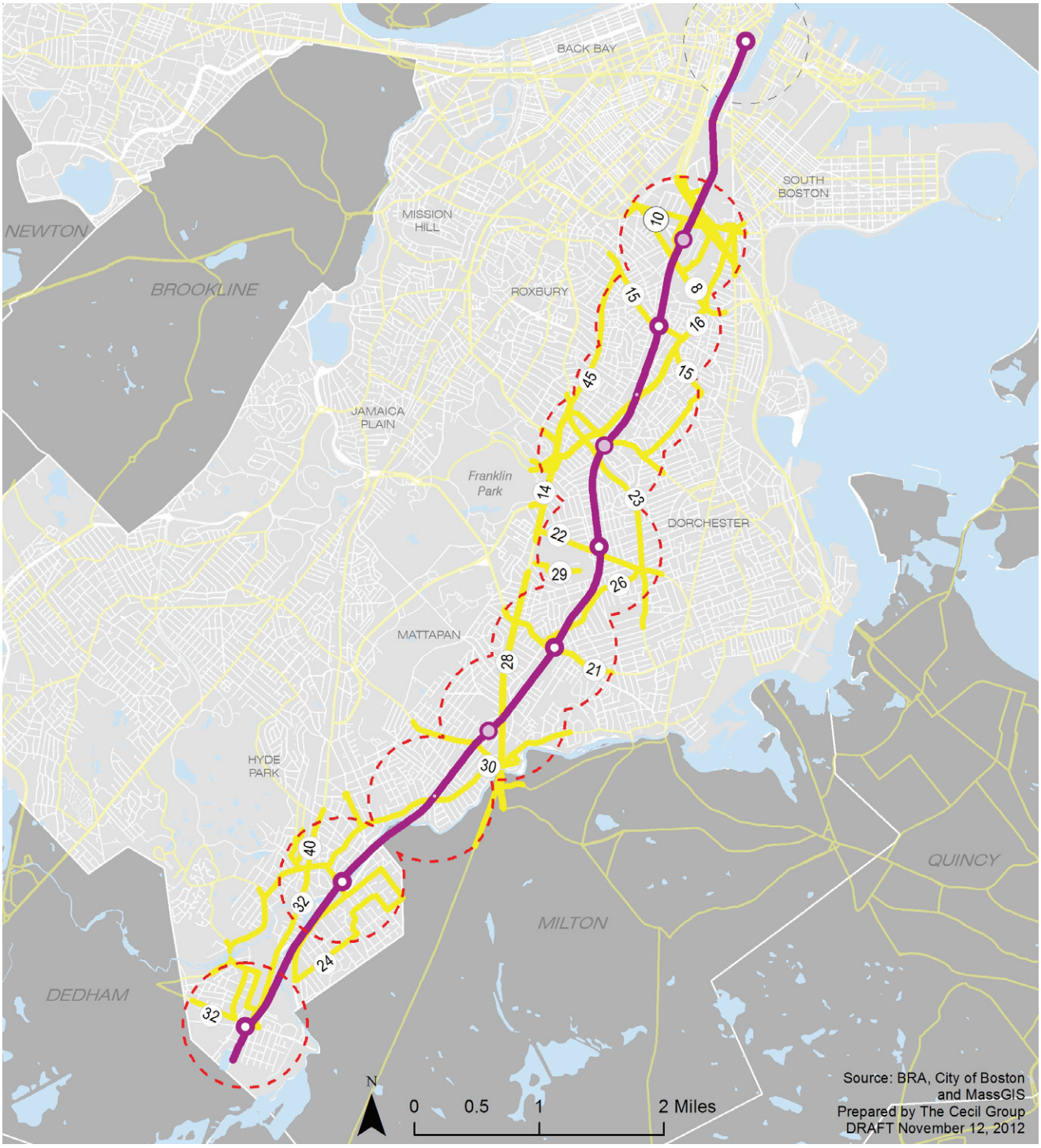
Columbia Road Station Area Bus Services

There is only one MBTA bus routes that would serve the future Columbia Road Station Area providing a connection to the Orange Line and the Red Line. During peak periods the service operates with as many as four buses per hour. The route that serves this Station Area is:

- Route 16 – Forest Hills Station - UMass

Stops within Station Area: Along Columbia Road (near Hamilton St. and Intervale St.)

Service Hours: M-F 5:00 to 1:30AM, Sat/Sun: 6:30 to 1 AM



Bus Routes

MBTA Bus Routes

Fairmount Indigo Line

Half Mile Station Areas

Major Connections Forest Hills Orange Line Station (14 minutes), Andrew Red Line Station (13 minutes)

Four Corners/Geneva Bus Services

There are two MBTA bus routes that serve the Four Corners/ Geneva Station Area. They provide a quick connection to the Fields Corner Red Line Station (5 minute trip time) or a frequent connection to Dudley Square (every five to seven minutes during peak periods). The service routes include:

- Route 19- Fields Corner Station - Ruggles or Kenmore
- Route 23- Ashmont Station - Ruggles Station via Washington St.

Stops within Station Area: Route 19 – Along Geneva Ave., Route 23 – Along Washington St.

Service Hours: Rt. 19 - M-F 6 AM to 7:30 PM, Sat/Sun: No Service (Rt# 19), Rt. 23 – M-F 5 AM to 1:30 AM, Sat 5 AM to 1:30 AM, Sun 5:45 AM to 1 AM

Major Connections Fields Corner Red Line Station (5 minutes), Dudley Sq. Silver Line Station (14 minutes)

Growth: Over the next 25 years, ridership on the routes are projected to increase by 10% on Route 19 and 8% on Route 23

Talbot Ave Station Area Bus Services

There is only one MBTA bus routes that serves the Talbot Ave. Station Area providing a connection to the Ashmont Red Line Station. During peak periods the service operates with as many as seven buses per hour. The route that serves this Station Area is:

- Route 22 - Ashmont Station - Ruggles Station via Talbot Ave.

Stops within Station Area: Along Talbot Ave.

Service Hours: M-F: 5 AM to 1:30 AM, Sat/Sun: 5/6 AM to 1:30 AM

Major Connections Ashmont Red Line Station (7 minutes)

Growth: Over the next 25 years, ridership on the route is projected to increase by 9% on Route 22

Morton Street Station Area Bus Services

There are two MBTA bus routes that serve the Morton Street Station Area. They provide connections to the Red Line and Orange Line. The service routes include:

- Route 21 - Ashmont Station- Forest Hills Station
- Route 26 - Ashmont Station- Norfolk and Morton Belt Line

Stops within Station Area: Along Morton Street (in front of station)

Service Hours: M-F: 5 AM to 1 AM, Sat/Sun: 5/6 AM to 12:30/1 AM

Major Connections Ashmont Station (8-12 minutes), Forest Hills Station (10 minutes)

Blue Hill Ave. Station Area Bus Services

The Blue Hills Avenue Station Area is served by three bus services. The routes generally operate along Blue Hill Avenue providing frequent service throughout the day. They provide connections to Dudley Square and or Orange Line Stations.

- Route 28 - Mattapan Station- Ruggles Station via Dudley Station
- Route 29 - Mattapan Station- Jackson Sq. Station
- Route 31 - Mattapan Station- Forest Hills Station

Stops within Station Area: Along Blue Hill Ave. (in front of station)

Service Hours: M-F: Route 28 - 3 AM to 1:30 AM, Other Routes – 5/6 AM to 1 AM, Sat/Sun: Route 28 - 3 AM to 1:30 AM; Route 29 – 8PM to 1 AM (Sat. Only;

Route 30 – 5 AM to 1 AM (Sat), Route 30 – 8 AM to 9 PM (Sun); Route 31 – 5/6 AM to 1 AM

Major Connections Mattapan Station (5 minutes), Ruggles Station (22 to 32 minutes), Jackson Square Station (20 to 30 minutes), Forest Hills Station (12 minutes)

Fairmount Station Area Bus Services

There is only one MBTA bus routes that serves the Fairmount Station Area providing a connection to the Mattapan Station. The route has relatively limited service providing a maximum frequency of three buses per hour.

- Route 24 - Wakefield Ave. & Truman Hwy - Mattapan or Ashmont Station

Stops within Station Area: Along Fairmount Ave. (in front of station)

Service Hours: M-F: 6 AM to 1 AM, Sat: 6 AM to 1:30 AM, Sun: 9:30 AM to 9:30 PM

Major Connections Mattapan Station (14 minutes)

Readville Station Area Bus Services

There are two MBTA bus routes that serve the Readville Station Area providing a connection to the Mattapan Station or Forest Hills Station. The route has relatively limited service providing a maximum frequency of three buses per hour.

- Route 32 - Wolcott Sq./Cleary Sq – Forest Hills Station
- Route 33 – Dedham Line – Mattapan Station

Stops within Station Area: Route 32 - Along Hyde Park Ave. (in front of station), Route 33 – Corner of Readville St, and West Milton St.

Service Hours: Route 32 - M-F: 5 AM to 1:30 AM, Sat: 5 AM to 1:30 AM, Sun: 5:30 AM to 1:30 AM; Route 33 - M-F: 5:45 AM to 7:30 PM, Sat: 6:45 AM to 7:30 PM, Sun: No Service

Major Connections Forest Hills Station (14 – 20 minutes), Mattapan Station (30 minutes)

Transit Effectiveness

A transit service's effectiveness in meeting the needs of the community can be most simply measured through the ridership for the service. Ridership volumes can be influenced by many service attributes such as cost, frequency, and bus loading. However ridership volumes generally indicate the overall demand for the connections that are being made, or for the speed at which the service can make those connections. The following section focuses on ridership and ridership trends to provide an indication of the effectiveness of the services in the Corridor.

Ridership on the Fairmount Indigo Line remained relatively steady between 2003 and 2008. Since that time ridership on the line has dropped dramatically. This drop in ridership is a combination of a number of influences. First and foremost the ridership change is reflective of the level of service. Prior to 2009, the service included 22 daily trips and since that time the service level dropped to 16 daily trips primarily to accommodate construction activities along the line. In addition, during this same period of decreased service there was a dramatic change to the economy and employment rates as well as changes to the parking and fare structure of the service.

- Upham's Corner - Average Daily Inbound Boarding - 154
- Morton Street - Average Daily Inbound Boarding - 203
- Fairmount - Average Daily Inbound Boarding - 218
- Readville - Average Daily Inbound Boarding - 223

Source: February 2009 ridership from MBTA Ridership Statistics, 2010

The ridership along the line is approximately evenly distributed among the stations, with the exception of Upham's Corner station which hosts only about 60%

to 75% of the volume of the other stations. Reliable inbound boarding station counts at Readville prior to 2006 are not available due to data collection methods prior to that time. Ridership on the Fairmount Line remained relatively steady between 2003 and 2008. Since that time ridership on the line has dropped dramatically.

This drop in ridership is a combination of a number of influences. First and foremost the ridership change is reflective of the level of service. Prior to 2009, the service included 22 daily trips and since that time the service level dropped to 16 daily trips primarily to accommodate construction activities along the line. In addition, during this same period of decreased service there was a dramatic change to the economy and employment rates as well as changes to the parking and fare structure of the service. In 2013, the fare structure was changed to bring it in alignment with Subway service fares. This change and increases in service in the future should attract new riders to the line.

A ridership survey was conducted in 2008-2009 that included questions about trip origins-destinations, routes, access, purposes and other attributes of commuter rail trip making. The following is a summary of the relevant results of the survey.

Trip Purpose

- 95% of riders use the service to travel between home and work
- 3% or riders use the service for work related travel
- 2% of riders use the service to travel between home and school

Reasons for use

The top five reasons cited for using the line (with % riders providing reason):

- Convenience: 82%
- Speed/Travel Time: 69%
- Avoid Driving/Traffic: 61%
- Avoid Parking at Destination: 54%
- Can Read/Do Work: 51%
- 9% of riders stated that the Fairmount Line was the "Only Transportation Available".

Trip Origins

- Readville Station: Dedham (51%), Hyde Park (29%), Canton (5%)
- Fairmount Station: Hyde Park (76%), Milton (16%)
- Morton Street Station: Mattapan (47%), South Dorchester (38%)
- Upham's Corner Station: North Dorchester (100%)

Bus ridership on the routes that serve the corridor vary greatly. The routes that serve the Blue Hills Ave. Station Area, which include Routes #29, #29 and #31, carry over 16,500 passengers each weekday. However the route that serves the Fairmount Station Area only carries 1,460 passengers each weekday.

Transit Access

The typical ways that passengers access transit service vary depending upon the transit service mode.

Access to Bus Services

The MBTA conducted a survey of how bus passengers typically access the bus service. The results were summarized for the services operating out of each bus garage operated by the MBTA. The results for routes from the Cabot Garage, which include many of the Fairmount Corridor Routes, was summarized as follows.

The most common mode of access to Cabot Garage bus routes was walking, which accounted for 71% of the trips. The next-most-common access modes were transferring from

rapid transit (12%), transferring from another MBTA bus (11%), and driving (2%).

Overall, people who walked to the place where they boarded the bus made the shortest access trips (7 minutes on average). People who were dropped off had the second-lowest average access time (10 minutes), and riders who drove themselves had the longest (13 minutes). Slightly more than 55% of the respondents made access trips of less than or equal to 5 minutes, and 81% made access trips of less than or equal to 10 minutes.

These results are similar to the other areas of the MBTA bus network. In general, most people access bus service either by walking or by transferring to/from another transit service. This magnifies the importance of making connections between transit services seamless and the importance of providing good pedestrian access to bus stops.

Fairmount Indigo Line Access

A similar survey was conducted of morning passengers of the Fairmount Indigo Line service. The results vary considerably depending on the station. All passengers that board the train at Upham's Corner walk to get to the train, while only 18% walk to access the train at Readville Station.

Station Access

Entry Station	Walk	Drive/ Park	Drop Off	MBTA
Readville	18%	69%	13%	0%
Fairmount	44%	24%	20%	12%
Morton Street	62%	30%	8%	0%
Upham's Corner	100%	0%	0%	0%
South Station	37%	0%	0%	63%

There is a striking difference in modes of egress from the station (when departing the train). While most survey respondents were exiting the train at South Station, the few that exited trains at other stations generally walked to their ultimate destination.

Station Access Time

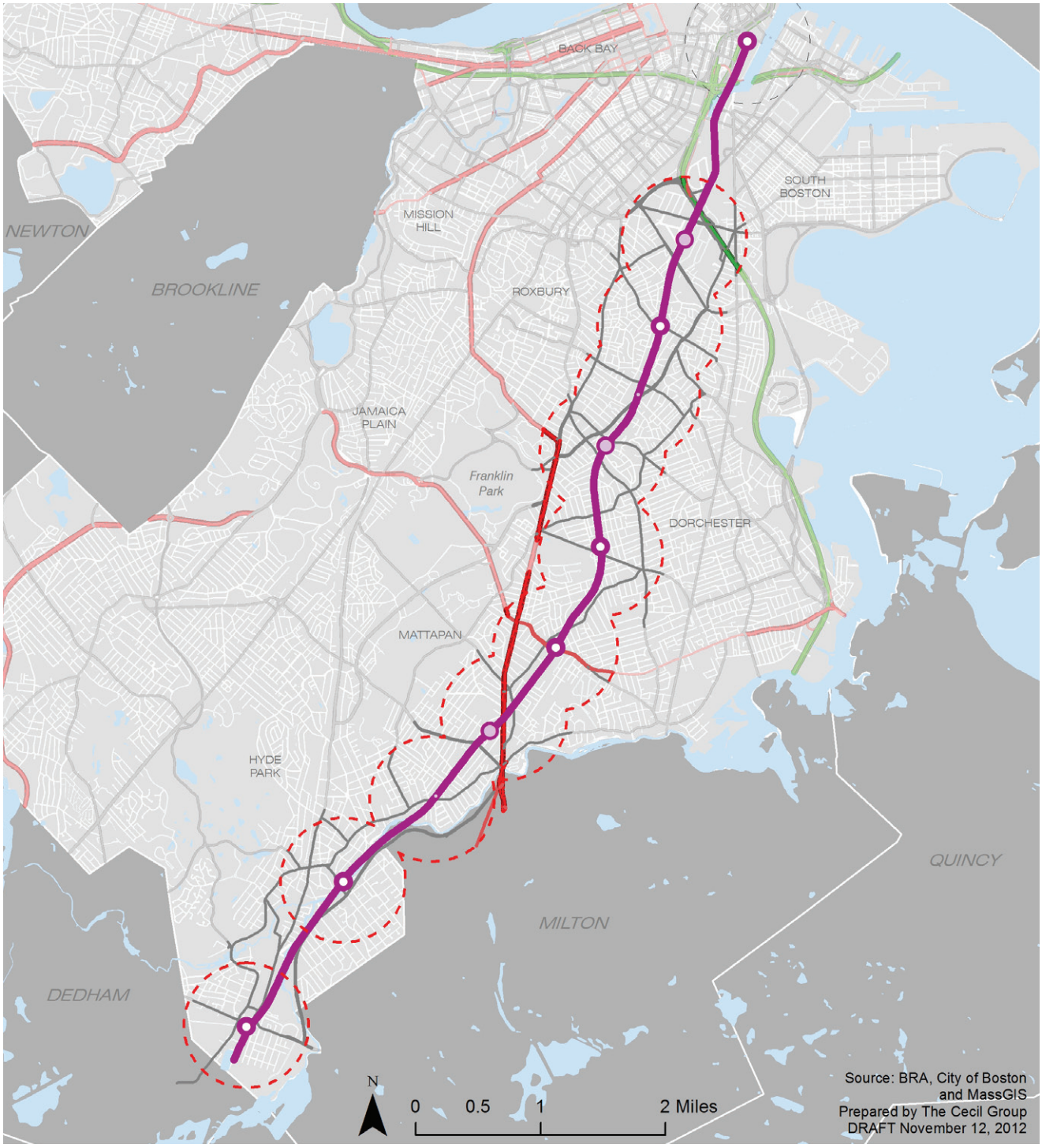
80% of all riders that access the station by foot are less than a 10 minute walk from the station. 90% of all riders that access the station by auto are less than a 10 minute drive from the station. There were no survey respondents that walk or drive for more than 30 minutes to access the Fairmount Indigo Line. The average times to access the Fairmount Indigo Line stations vary from station to station. The average walk times range from 7.1 minutes at Morton St. Station to 12.8 minutes at Readville Station.

Other Alternative Modes

Bicycle sharing is a new transportation option in Boston for commuters, residents and visitors. A bicycle sharing system, call Hubway, was initiated in July of 2011 with 600 bikes at 61 bike stations in the city.

Hubway operates on a membership basis, with annual memberships available online, or daily or three-day passes available at a bike station. Members can take unlimited station-to-station rides, with charges only for rides over 30 minutes. Upon opening in the summer of 2011, the system was an instant success, attracting more than 3,500 annual subscribers and 100,000 trips in the first ten weeks of operation. Although the system closes down for the winter, enthusiasm for the system continued to grow during its first winter, with 50,000 rides in the first month of reopening. Since then the system has been expanded to include bike stations in Brookline, Cambridge, and Somerville. By the end of the 2012 season, 1,000 bikes at over 108 bike stations across the metro area will be in the system.

Presently there are a limited number of bike stations within the Fairmount Indigo Corridor. There is a large bike station located at South Station (700 Atlantic Ave.) which has a capacity of 47 bicycles. The only other bike station in the corridor is located on Massachusetts Ave. at the south side of South Bay Center. This bike station has a capacity of 15 bicycles and is located within walking distance of the Newmarket Station. Other station locations are under consideration for Upham's Corner.

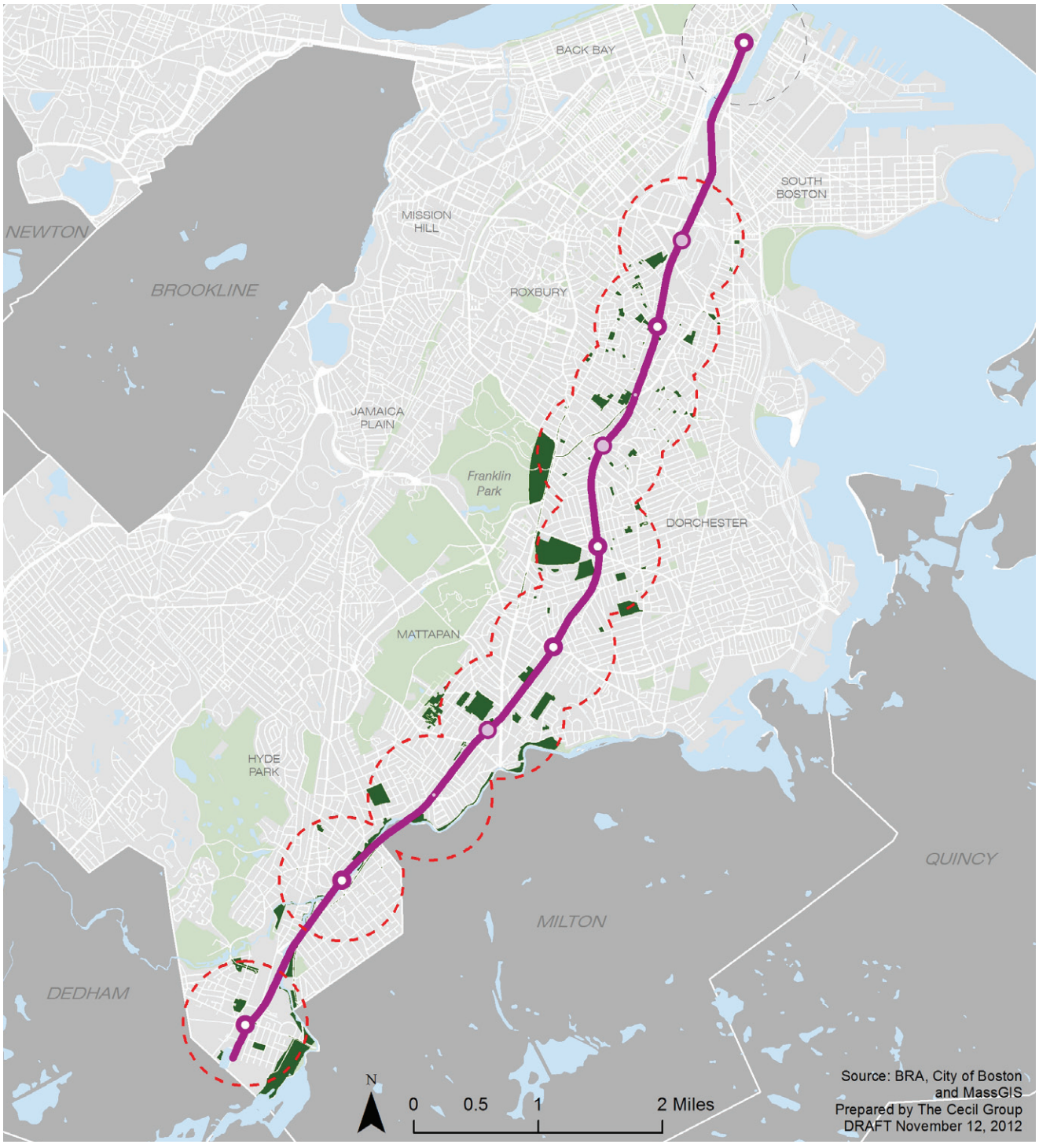


Street Network

Road Classification

- Limited Access Highway
- Multi-lane Hwy, not limited access
- Other Numbered Highway
- Major Road, Collector

- Fairmount Indigo Line
- Half Mile Station Areas

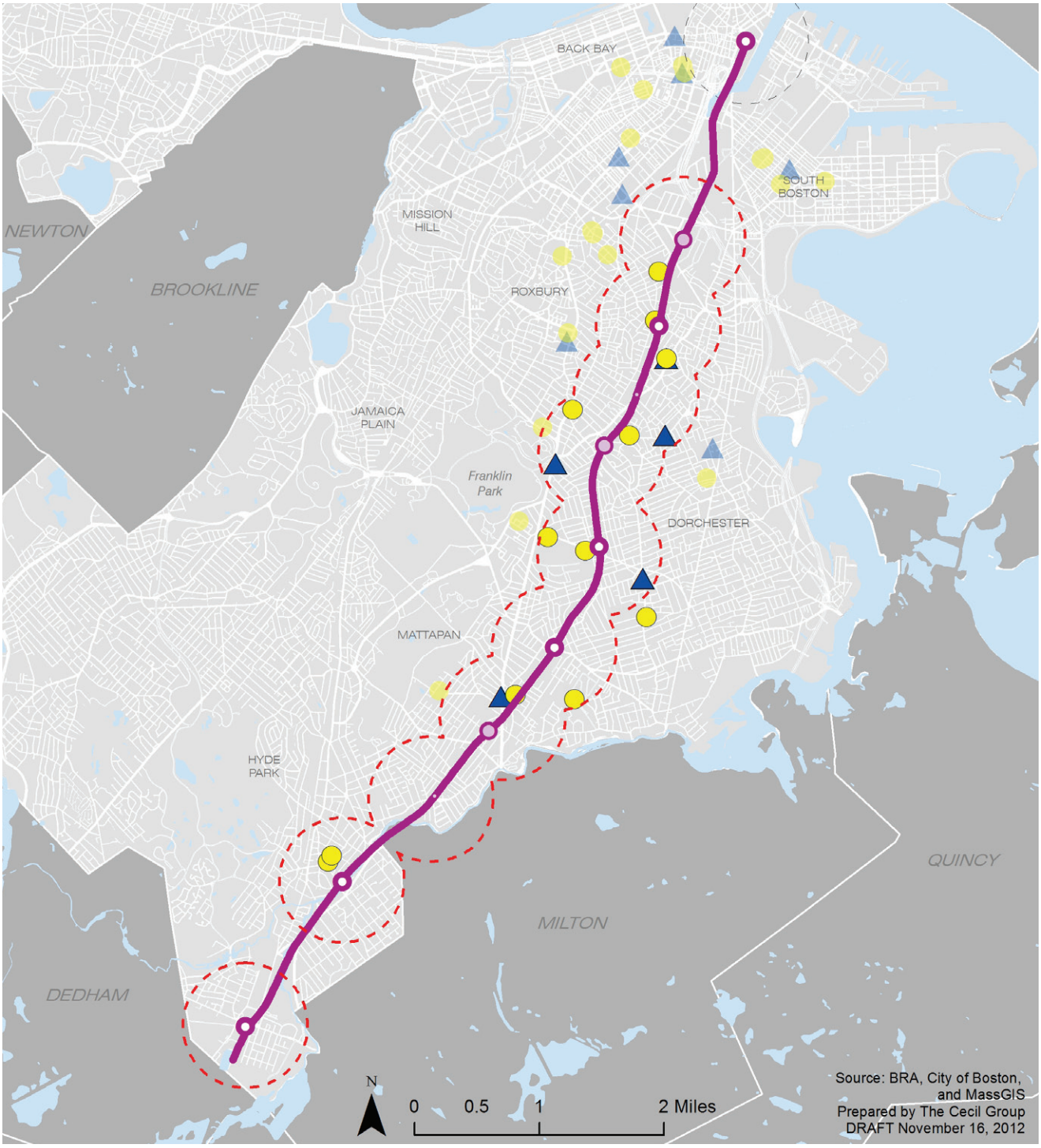


Open Space

Open Space within a Half Mile of the Fairmount Indigo Line

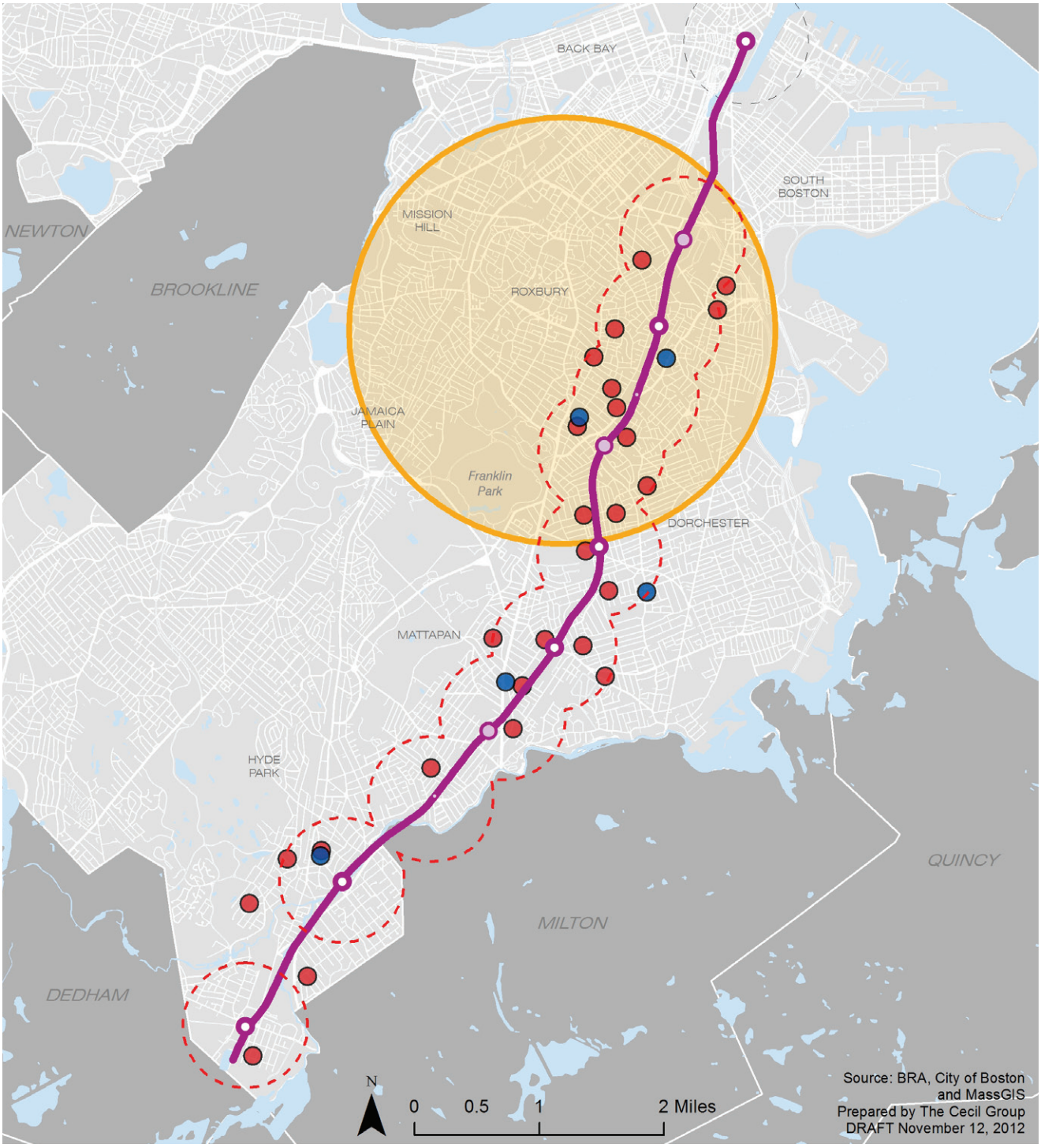
Fairmount Indigo Line

Half Mile Station Areas



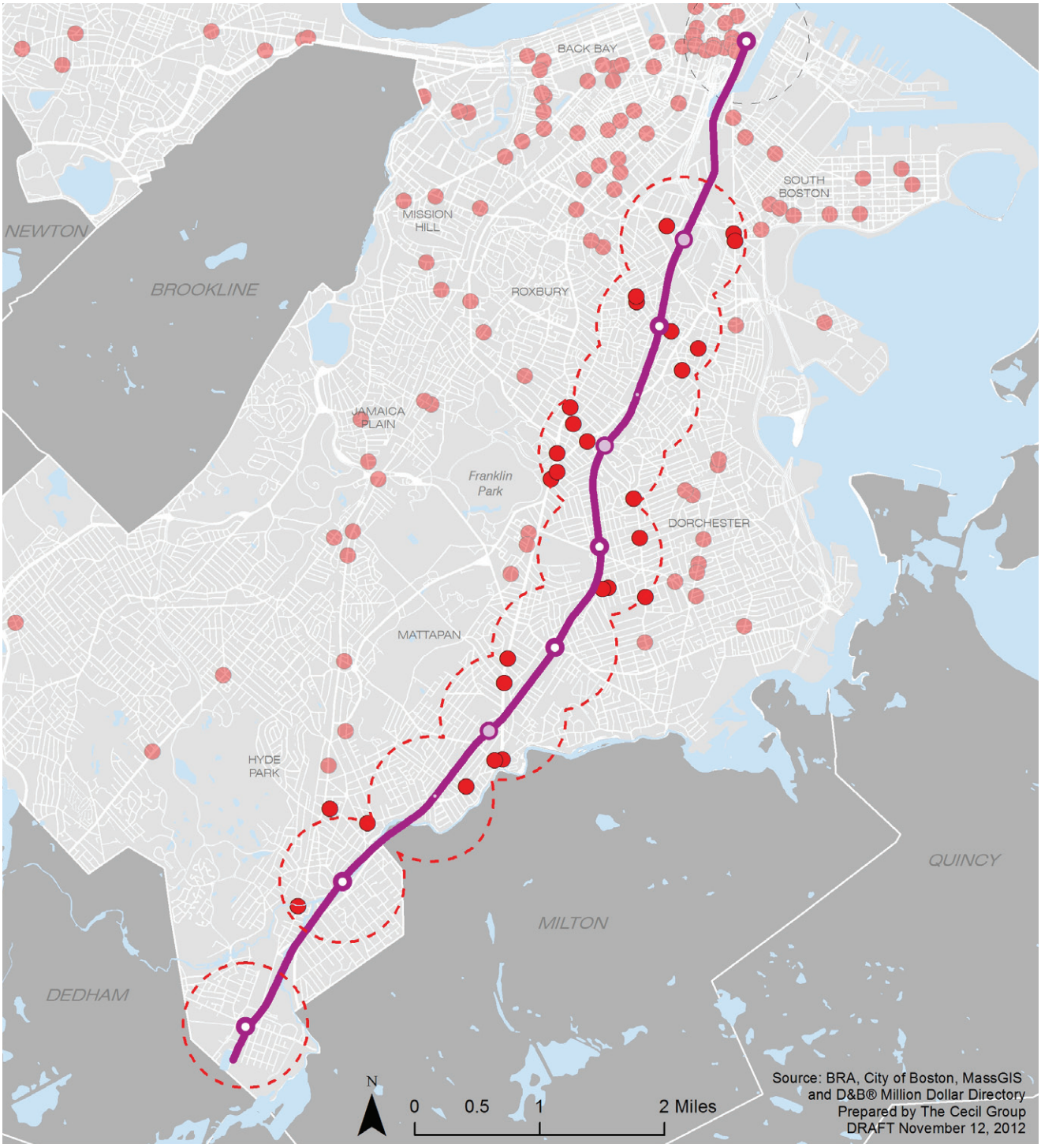
Community and Health Centers

Community Centers
Health Centers
Fairmount Indigo Line
Half Mile Station Areas



Programs and Organizations

- Public Libraries
- Public Schools
- Circle of Promise
- Fairmount Indigo Line
- Half Mile Station Areas

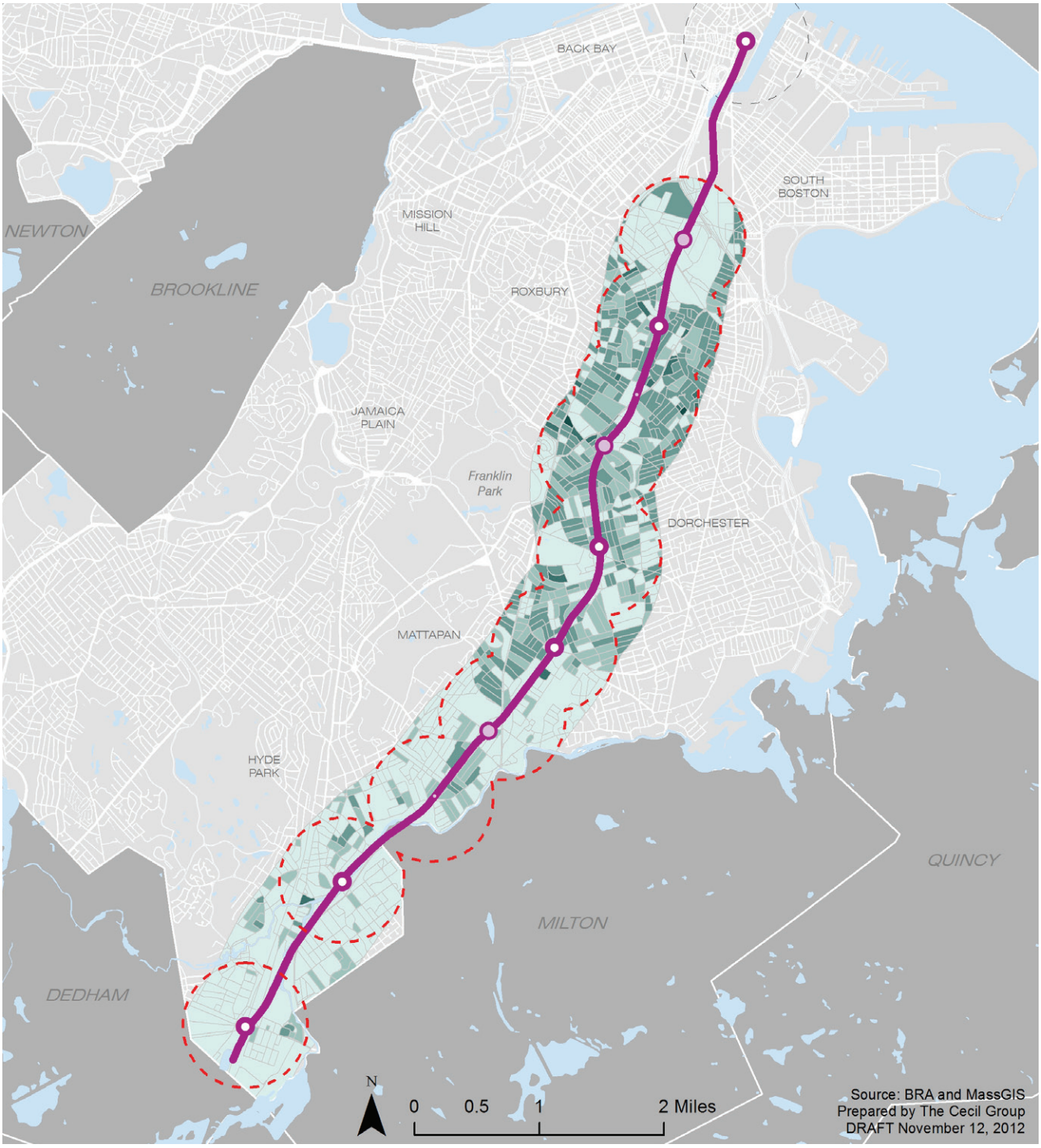


Grocery Stores and Supermarkets

Grocery Store/Supermarket

Fairmount Indigo Line

Half Mile Station Areas



Population Density

By Census Block

Population / Acre

- 1 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- 101 - 250

- Fairmount Indigo Line
- Half Mile Station Areas

GROWTH STRATEGY METHODOLOGY

The following appendix documents the data sources, process and methods by which HDR Decision Economics has assessed the capacity and potential for growth along the Fairmount Indigo Corridor.

Explanation of Data Sources

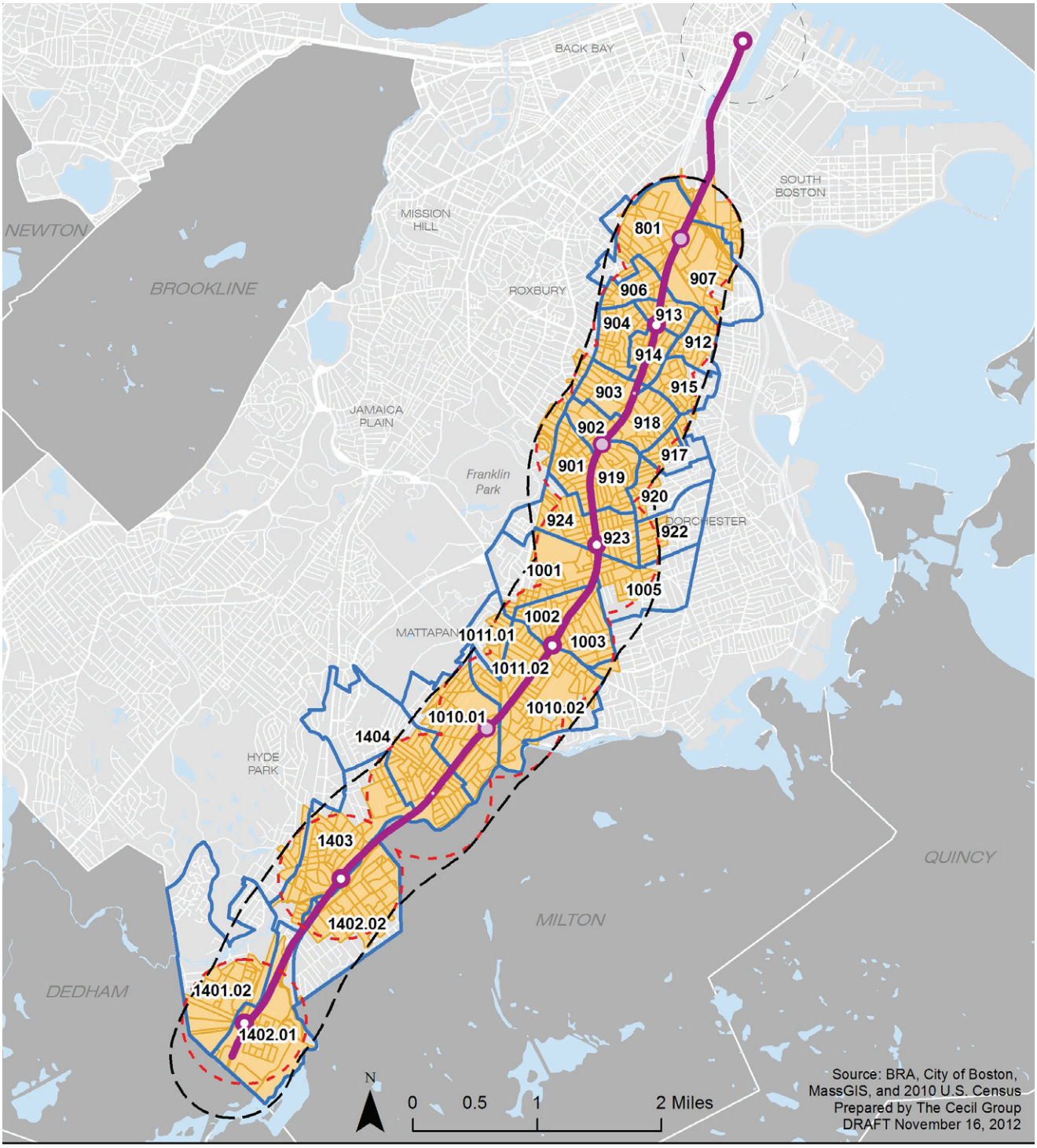
The data utilized for the existing economic conditions figures and observations are primarily based on 2010 US Bureau of the Census data, 2010 InfoUSA data, and the 2006-2010 US Bureau of the Census, American Community Survey (ACS). The Boston Redevelopment Authority Research Division and the Cecil Group team worked together to collect and analyze the data utilized in the existing conditions assessment.

When Census data (and ACS) were utilized in the existing conditions assessment, it was based on census tracts that overlay the Fairmount Indigo Corridor and come closest to a ½ mile radius around the stations. Because tracts do not precisely match the ½ mile buffer, Boston Redevelopment Authority guidance was used to include or exclude individual tracts. In general, the decision was based on how much of the tract land area fell within ½ mile of the station.

The map identifies the US Census tracts that were used for the existing conditions assessment. Although most of the stations are close enough that the ½ mile station buffers overlap, there is an area north of Newmarket and south of South Station that was not included in the definition of the Corridor. This excluded area includes census tracts 607, 608, 611.01, 612, 704.02, 712.01.

Because South Station is quite different from other areas of the Corridor, a decision was made by BRA, and based on Corridor Advisory Group input, that South Station should be excluded from the definition of the Corridor for this study. Tracts 606, 701.01, and 702 were treated as a proxy for South Station and removed from the study area definition. All references to "Corridor" in this existing conditions report exclude the South Station proxy tracts, as well as those census tracts between New Market and South Station, as defined previously.

Census tract information is also provided with InfoUSA data, which was utilized to better understand the businesses and employment picture in the Corridor.



Corridor Census Tracts and Blocks

Census 2010 Tracts
Census 2010 Blocks
Fairmount Indigo Line
Half Mile Station Areas
Half Mile Fairmount Corridor

Generating Capacity

Several steps were taken to assess the economic development capacity of the areas within a one-half mile radius of stations along the Fairmount-Indigo Corridor. It is important to note that the numbers presented in the analysis represent total capacity available in the Corridor, and not development projections associated with rail service. In other words, this is the maximum level of development that would be possible in the Corridor, based on the assumptions and data included in the analysis. Assuming maximum development is desired, the results of this analysis yield development targets for the Corridor.

The analysis is based on FY 2009 City of Boston Property Parcel data provided to the team. This property data contains land use codes indicating the designated use of each parcel as well as the property value, the parcel size and living space available, and the number of floors in any building on the parcel. This information, in combination with vacancy rates for the area, was used to determine the available capacity for development within one-half mile of each of the stations along the Fairmount-Indigo Corridor.

The first step in determining the available capacity in the Corridor was to estimate the amount of space available in current buildings for in-fill or redevelopment. To do this, the Property Parcel data was summed by land-use code – residential, commercial, industrial, or government or other exempt – to determine the total amount of livable space in each use category.

Vacancy rates for each type of space were assembled. For residential vacancy, rates are based on data from the 2010 Census. For commercial vacancy, rates are based on the COSTAR 2012 Report for the Dorchester/Roxbury area. These rates were applied to the livable space totals in each category to estimate the amount of vacancy within existing buildings. The vacancy rates for each Station Area are summarized in the table below.

	Residential	Commercial - Office	Commercial - Retail	Industrial	Warehouse	Government & Exempt
Newmarket	12.5%	4.4%	3.6%	7.5%	8.6%	2.0%
Uphams Corner	14.8%	4.4%	3.6%	7.5%	8.6%	2.0%
Columbia Road	15.6%	4.4%	3.6%	7.5%	8.6%	2.0%
Four Corners	12.8%	4.4%	3.6%	7.5%	8.6%	2.0%
Talbot Ave	11.9%	4.4%	3.6%	7.5%	8.6%	2.0%
Morton Street	11.7%	4.4%	3.6%	7.5%	8.6%	2.0%
Blue Hill Ave	6.5%	4.4%	3.6%	7.5%	8.6%	2.0%
River Street	7.4%	4.4%	3.6%	7.5%	8.6%	2.0%
Fairmount	7.8%	4.4%	3.6%	7.5%	8.6%	2.0%
Readville	6.7%	4.4%	3.6%	7.5%	8.6%	2.0%

Table 1: Vacancy Rates by Land Use and Station Area

[1] For purposes of this analysis, mixed-use parcels have been excluded as their use allocation is unclear. These parcels account for between 0.2 and 4.2 percent of land in each station area, with the average being approximately 1.5 percent of gross area.

The second step of the analysis was to determine the amount of vacant land, based on the Property Parcel data. Vacant land would be available for new buildings in the Corridor. To estimate the vacant land in the area, parcels with land use codes indicating that land is residential vacant, commercial vacant, industrial vacant, or a parking lot were combined. For the purposes of this analysis, parcels classified as parking lots were considered vacant space that would be available for development.

The total vacant land area for each use code was then converted to available space using three different methods based on information for the non-vacant parcels in the Parcel Data file – average building height, ratio of gross area to shape area, and ratio of living area to shape area. Each of these methods assumes that the future build conditions would reflect existing conditions. The building height is a field provided in the Property Parcel data.

1. Average building height: The average building heights for each use type were multiplied by the respective square footage (shape area) of vacant land. It was assumed that vacant parcels kept their current zoning status and that future development would be consistent with existing development.

2. Gross area: This metric was provided in the Property Parcel data. The gross area square footage for each land use category was divided by the total shape area for that category to create a ratio that would then be applied to the vacant land area. This ratio reflects the amount of gross space relative to the size of the parcel.

3. Living area: This metric is also provided in the Property Parcel data. The living area square footage for each land use category was divided by the total shape area for that category to create a ratio that could be applied to the vacant land area. The ratio reflects the amount of livable space relative to the size of the parcel.

These calculations gave a range of available capacity for each use type. The specific assumptions related to these estimates can be found at the end of this report.

Since parking lots are not zoned for a particular use, the average heights across all land uses were taken for each of the three methodologies to determine an average development capacity based on building height, gross area ratio and living area ratio. This square footage total was then allocated to residential, commercial, industrial or government/exempt usage based on the current shares of each use type in each Station Area.

Once the total available capacity by use was determined, adjustments were made to account for parking spaces. Based on the Boston Transportation Department's guidelines, 1.25 parking spaces per 1000 square feet of development were allotted. The average parking space, including access, is approximately 300 square feet. Thus, capacity was reduced by 37.5 percent to reflect the need for parking. This parking adjustment was made only to currently vacant land, as it is assumed that the vacancies in existing developments already meet the parking requirements. The following table shows the total available capacity by Station Area. The range of square footage on vacant land reflects the low and high of the three different analysis methods for determining capacity.

[2] Land categorized as vacant (unusable) was excluded from this analysis.

[3] Guidelines by the Boston Transportation Department for use by the zoning Board of Appeal – Access Boston 2000 – 2010. Rates used were for Dorchester, Hyde Park, Mattapan and Roxbury.

Use Type	Development Capacity				
		Vacant for New Development		TOTAL DEVELOPMENT CAPACITY	
	Vacant for Infill	Low	High	Low	High
Newmarket	344,000	474,000	1,083,000	818,000	1,427,000
Uphams Corner	1,037,000	424,000	689,000	1,461,000	1,726,000
Columbia Road	337,000	32,000	85,000	369,000	422,000
Four Corners	1,097,000	147,000	405,000	1,244,000	1,502,000
Talbot Ave	606,000	103,000	275,000	709,000	881,000
Morton Street	748,000	160,000	488,000	908,000	1,236,000
Blue Hill Ave	267,000	95,000	219,000	362,000	486,000
River Street	152,000	20,000	80,000	172,000	232,000
Fairmount	312,000	76,000	213,000	388,000	525,000
Readville	227,000	93,000	281,000	320,000	508,000
TOTAL	**5,127,000**	**1,624,000**	**3,818,000**	**6,751,000**	**8,945,000**

Table 2: Total Development Capacity by Station Area

Estimating Jobs and Population

The development capacity estimates were then used to project associated new residents and jobs. To estimate the potential population associated with the development capacity, average unit size for residential properties was calculated based on the values in the Property Parcel data for the various residential categories.

The average square footage was calculated by dividing the total living area by the number of floors and by the number of parcels for each residential unit type. A range of estimates was considered based on the low, average, and high of the various residential categories. The total available residential space was then divided by the average unit size to determine the number of potential units to be filled.

To determine the average unit occupancy, the weighted average of the owner / renter mix and occupancy values from the Census 2010 DP04 tables for census tracts within each Station Area were used. The table below indicates these averages and the applicable Census Tracts for each station. The number of available units and the occupancy per unit were then multiplied to determine the potential range of new residents if all of the capacity were to be filled. The population estimates can be seen in Table 5.

[4] A potential issue with this approach is that there are four categories of apartments that contain multiple units – 4-6 units, 7-30 units, 31-99 units, and 100+ units – where the number of units within that range is unknown from the data. The calculation applied to each parcel type accounts for the number of stories in a building, but not the number of units, as there is no information on this factor other than the wide range in the property classification. Thus, the calculation does not consider multiple units on each floor of a building, likely overestimating the size of each unit. This current approach will lead to a slightly conservative estimate of overall population, as it assumes a larger unit size than may be the case, reducing the total number of units and thus the overall population.

Residential	Average Occupancy	Census Tracts
Newmarket	2.49	801, 907
Uphams Corner	2.76	904, 906, 912, 913, 914
Columbia Road	2.91	903, 915, 918
Four Corners	3.13	901, 902, 917, 919, 920
Talbot Ave	2.89	922, 923, 924, 1001, 1005
Morton Street	2.99	1002, 1003, 1010.02, 1011.01, 1011.02
Blue Hill Ave	2.63	1010.01
River Street	2.76	1404
Fairmount	2.84	1402.02, 1403
Readville	2.53	1401.02, 1402.01

Table 3: Average Unit Occupancy and Applicable Tracts by Station Area

Potential employment capacity was also calculated for the Corridor area. This calculation applied the average number of jobs per thousand square feet, based on varying use types, to the appropriate available square footage. These usage rates are based on energystar.gov recommendations with a slight variation around the mean to account for differing conditions and potential variations in intensity of use. The factors used to estimate jobs based on square footage are shown in Table 4 below. The overall estimates of potential new residents are in Table 5.

As shown in the table below, the largest number of new residents could be accommodated in the Four Corners area of the Corridor. With respect to employment, Newmarket is best positioned to experience significant growth.

Jobs Per Square Feet	Low	Most Likely	High
Commercial - Office	2.2	2.4	2.8
Commercial - Retail	1	1.2	1.4
Industrial	0.5	0.8	1
Government/Exempt	1.5	1.75	2

Table 4: Jobs per Thousand Square Feet by Space Type

Area	New Residents & Jobs			
	Population		Employment	
	Low	High	Low	High
Newmarket	287	318	835	1,601
Uphams Corner	820	925	318	508
Columbia Road	362	408	43	59
Four Corners	1,571	1,807	151	258
Talbot Ave	761	943	102	133
Morton Street	655	896	120	159
Blue Hill Ave	76	102	69	100
River Street	167	200	26	66
Fairmount	126	173	88	108
Readville	141	237	158	242
TOTAL	**4,967**	**6,008**	**1,910**	**3,234**

Table 5: Potential New Residents and Jobs based on Capacity

Station Growth Assumptions

Newmarket	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.2	0.8	0.6	20.5%
Commercial – Office	1.0	0.4	0.4	4.4%
Commercial – Retail	0.9	0.6	0.6	23.7%
Industrial	0.7	0.5	0.9	6.9%
Warehouse	1.8	0.4	0.3	21.3%
Government & Exempt	1.5	GA %	0.0	21.3%

Uphams Corner	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.6	1.6	1.1	69.8%
Commercial - Office	1.0	0.7	0.5	1.3%
Commercial - Retail	0.5	0.3	0.2	4.0%
Industrial	0.4	0.3	0.2	2.5%
Warehouse	1.3	0.7	0.7	4.0%
Government & Exempt	1.5	0.5	0.4	15.3%

Columbia Road	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.4	0.6	0.4	80.2%
Commercial - Office	0.4	0.3	0.2	0.5%
Commercial - Retail	0.3	0.3	0.2	3.3%
Industrial	0.0	0.0	0.0	0.0%
Warehouse	0.0	0.0	0.0	0.0%
Government & Exempt	1.0	0.4	0.3	11.6%

Four Corners	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.2	0.6	0.4	80.3%
Commercial - Office	0.6	0.1	0.1	0.2%
Commercial - Retail	0.4	0.3	0.2	3.4%
Industrial	0.7	0.2	0.2	0.6%
Warehouse	0.8	0.5	0.4	0.6%
Government & Exempt	1.4	0.7	0.6	13.2%

Talbot Ave	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.4	0.7	0.5	73.2%
Commercial - Office	0.6	0.5	0.3	0.7%
Commercial - Retail	0.4	0.3	0.2	3.4%
Industrial	0.2	0.1	0.1	0.2%
Warehouse	0.4	0.2	0.2	0.3%
Government & Exempt	1.3	0.3	0.2	20.0%

Morton Street	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.8	0.8	0.5	78.8%
Commercial - Office	0.1	0.1	0.1	0.1%
Commercial - Retail	0.4	0.3	0.2	3.5%
Industrial	0.0	0.0	0.0	0.0%
Warehouse	0.7	0.5	0.5	1.4%
Government & Exempt	1.0	0.2	0.2	14.9%

Blue Hill Ave	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.2	0.6	0.5	81.6%
Commercial - Office	0.7	0.5	0.3	1.6%
Commercial - Retail	0.5	0.3	0.2	5.9%
Industrial	0.1	0.0	0.0	0.1%
Warehouse	0.8	0.3	0.2	0.7%
Government & Exempt	0.5	0.1	0.0	8.4%

River Street	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	0.9	0.3	0.2	92.3%
Commercial - Office	0.1	0.0	0.0	0.1%
Commercial - Retail	0.3	0.1	0.1	3.2%
Industrial	0.1	0.0	0.0	0.0%
Warehouse	0.3	0.1	0.1	0.1%
Government & Exempt	0.8	0.1	0.1	4.1%

Fairmount	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.5	0.6	0.5	72.4%
Commercial - Office	0.5	0.3	0.2	1.3%
Commercial - Retail	0.7	0.4	0.3	8.8%
Industrial	0.4	0.2	0.1	0.7%
Warehouse	0.7	0.2	0.2	1.3%
Government & Exempt	1.3	0.4	0.3	13.7%

Readville	Building Heights	Gross Area / Land Area	Living Area / Land Area	Share of Land (% Gross Area)
Residential	1.0	0.3	0.2	56.8%
Commercial - Office	0.5	0.2	0.1	1.6%
Commercial - Retail	0.3	0.1	0.1	6.3%
Industrial	0.5	0.2	0.2	9.4%
Warehouse	1.0	0.3	0.3	21.6%
Government & Exempt	0.5	0.2	0.1	3.1%

FAIRMOUNT INDIGO CORRIDOR

CITY OF BOSTON
Marty J. Walsh
Mayor

Boston
Redevelopment
Authority

CORRIDOR PLAN ***DRAFT***
MARCH 2014

FAIRMOUNT INDIGO PLANNING INITIATIVE
WWW.FAIRMOUNTINDIGOPLANNING.ORG