FAIRMOUNT INDIGO PLANNING INITIATIVE

BLUE HILL AVENUE/ CUMMINS HIGHWAY

STATION AREA PLAN

APPENDICES




CITY OF BOSTON
Martin J. Walsh
Mayor

Boston
Redevelopment
Authority

BLUE HILL AVENUE/CUMMINS HIGHWAY
STATION AREA PLAN
SEPTEMBER 2014

FAIRMOUNT INDIGO PLANNING INITIATIVE
WWW.FAIRMOUNTINDIGOPLANNING.ORG

FAIRMOUNT INDIGO PLANNING INITIATIVE

BLUE HILL AVENUE/ CUMMINS HIGHWAY STATION AREA PLAN

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. In the first phase of planning, three Station Area Plans were undertaken. The Blue Hill Avenue/Cummins Highway Station Area Plan is the result of a community process that focused on the neighborhoods, residents and businesses around the Blue Hill/Cummins Highway MBTA Rail Station.

The City of Boston appointed members of a Blue Hill/Cummins Highway Working Advisory Group (WAG) to be a consistent voice of the community through the process. The WAG Members dedicated nearly a year of meetings and discussion to the Station Area Plan and the City is grateful for their contributions. All Working Advisory Group meetings were open to the public 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:

Working Advisory Group Meeting
September 26, 2013

1. Welcome and Introductions
2. Roles and Ground Rules
3. Planning Context
4. Station Area Context/Background
5. Cote Ford Site Background
6. Next Steps

Working Advisory Group Meeting
October 29, 2013

1. Welcome and Introduction
2. Station Area Context/Background
3. Discussion
4. Cote Ford Scenarios and Feasibility
5. Discussion
6. Community Open House
7. Next Steps

Working Advisory Group Meeting
November 19, 2013

1. Welcome and Introductions
2. Community Visioning Forum
3. Discussion
4. Blue Hill Ave/Cummins Hwy Station Update
5. Discussion
6. Next Steps

Blue Hill/Cummins Visioning Forum
December 5, 2013

1. Introduction
2. Virtual Station Area Tour
3. Interactive Questions and Answer
4. Break-out Group Discussion 1
5. Break-out Group Discussion 2
6. Concluding Presentation

Working Advisory Group Meeting
January 27, 2014

1. Welcome and Introductions
2. Community Visioning Results
3. Discussion
4. Priorities and Discussion
5. Discussion
6. Next Steps

Working Advisory Group Meeting
February 25, 2014

1. Welcome and Introductions
2. Public Realm and Transit Context
3. Station Area Street Network
4. Priority Streets
5. Discussion
6. Next Steps

Working Advisory Group Meeting
March 18, 2014

1. Welcome and Introductions
2. Recap of Key Sites and Context
3. Development Scenarios and Feasibility
4. Discussion
5. Next Steps

Working Advisory Group Meeting
April 29, 2014

1. Welcome and Introductions
2. Revisit Public Realm Discussion
3. Revisit Economic Development Discussion
4. Urban Design and Zoning
5. Review Plan Components
6. Next Steps

Working Advisory Group Meeting
May 20, 2014

1. Welcome and Introductions
2. Station Area Plan Summary
3. Summary Discussion
4. Open House Preparation
5. Next Steps

Community Open House
June 12, 2014

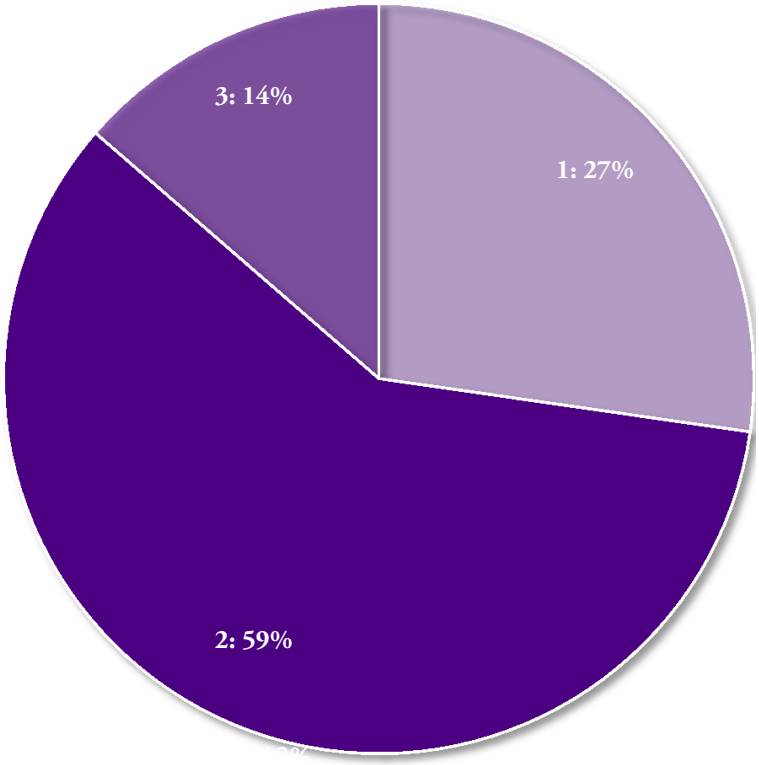
Working Advisory Group Meeting
September 2014

1. Final Station Area Plan Review
2. Next Steps

BLUE HILL/CUMMINS STATION AREA PLAN

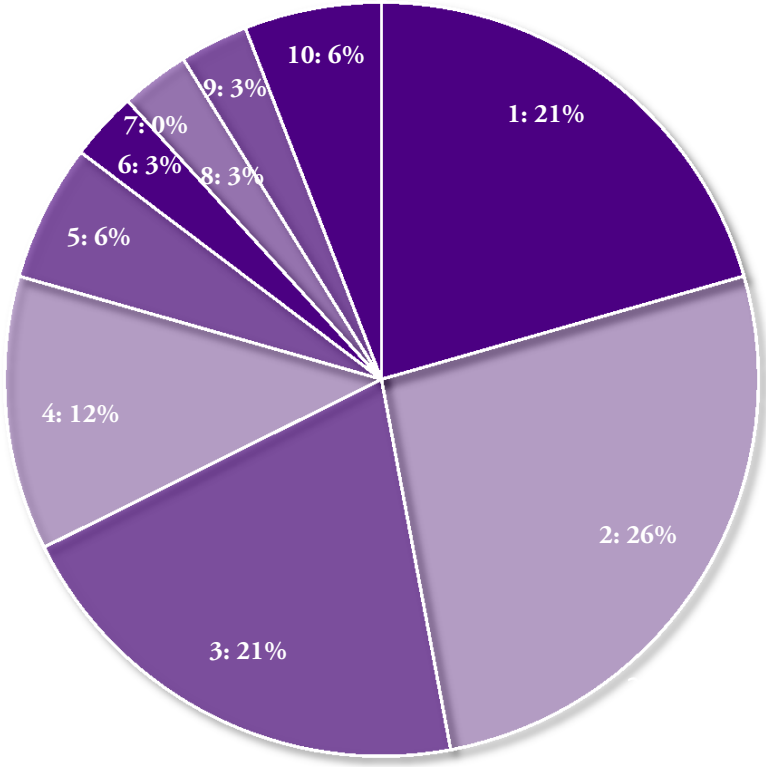
COMMUNITY OPEN HOUSE RESULTS

This summary shows the results of community feedback and strategy prioritization that was received as part of an Online Survey and Community Open House held on June 12th, 2014. The open house included over 75 participants of interested residents, business owners and local advocates. The online survey received just over 35 responses. The percentages reflect the results of responses from participants asked to prioritize the most important strategy found under each topic.



Indigo Community Vision

- 1: Minimize Displacement
- **2: Reinforce Residential Community**
- 3: Strengthen Commercial and Cultural Activity

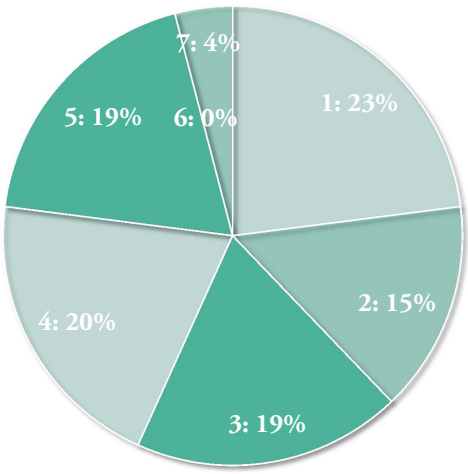


Implementation Actions

- 1: Invite positive investment at Cote Ford
- **2: Strengthen and improve Mattapan Square**
- 3: Develop innovative training
- 4: Improve traffic in the Square
- 5: Rebalance Blue Hill public realm
- 6: Enhance streetscape at Cummins Highway
- 7: Enhance connections to Neponset River
- 8: Retain diverse resident / business population
- 9: Maintain community voice and presence
- 10: Expand public arts program

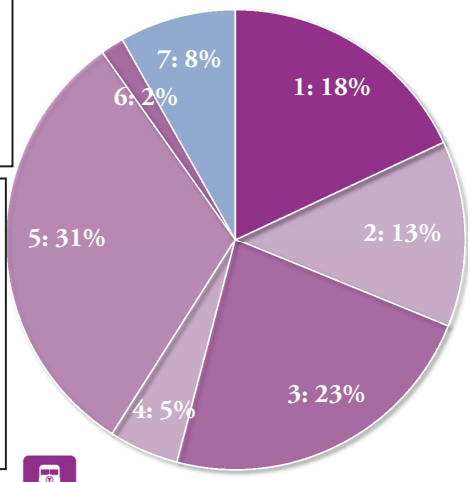
Prosperity

- **1: Focus Redevelopment Investment**
- 2: Expand Training and Connection
- 3: Reinforce Local-serving Businesses
- 4: Add Destination Attractions
- 5: Targeted Matches for Vacancy
- 6: None of the Above
- 7: Other



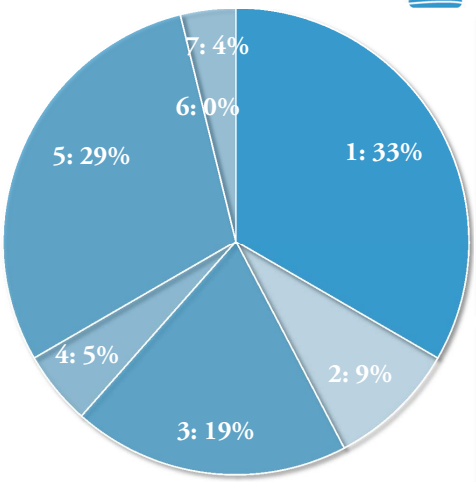
Getting Around

- 1: Enhance Station Entries
- 2: Reinforce Public Realm Connections
- 3: Improve Circulation / Congestion
- 4: Increase Neighborhood Walkability
- **5: Manage Parking**
- 6: None of the Above
- 7: Other



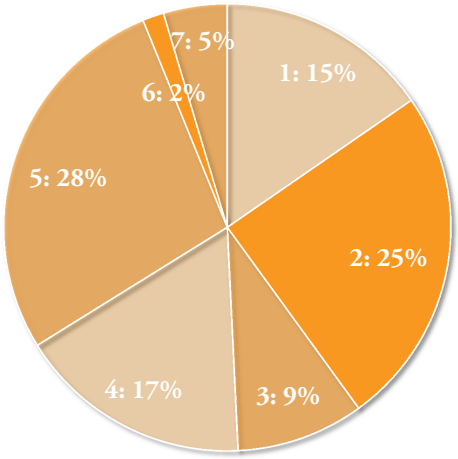
Home

- **1: Retain Diversity and Affordability**
- 2: Focus Transit-oriented Housing
- 3: Add Neighborhood Infill
- 4: Expand Mixed-use Activity
- 5: Improve Housing Quality/Sustrainability
- 6: None of the Above



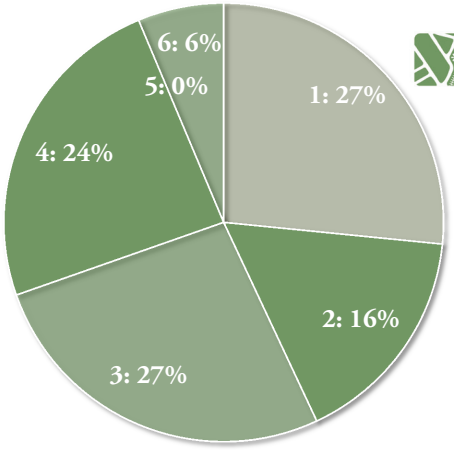
Parks/Public Space

- 1: Enhance Pedestrian Walkability
- 2: Improve Lighting and Safety
- 3: Create Development Requirements
- 4: Expand Neponset River Access
- **5: Reinforce Family/Youth Activity**
- 6: None of the Above
- 7: Other



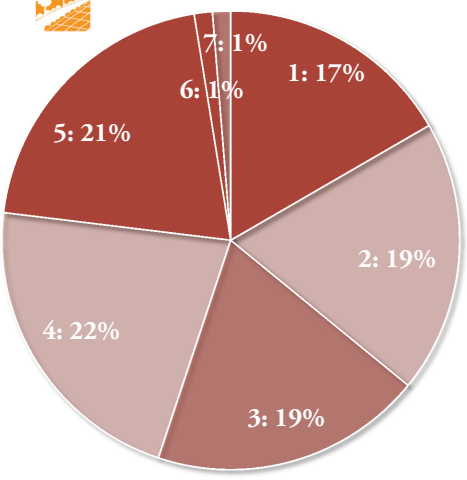
Place

- **1: Enhance Vibrancy of the Square**
- 2: Connect Vitality to the Station
- **3: Reinforce Family-oriented Streets**
- 4: Preserve and Maintain Character
- 5: None of the Above
- 6: Other



Quality of Life

- 1: Narrate History and Culture
- 2: Enhance Public Safety
- 3: Address Traffic and Parking
- **4: Build Opportunity and Success**
- 5: Expand Sustainability
- 6: None of the Above
- 7: Other



Blue Hill/Cummins Highway Station Area Plan
Community Open House and Online Survey Results

This memorandum summarizes the results of community feedback and strategy prioritization that was received as part of an online survey and community open house held on Thursday, June 12th to review the draft Blue Hill Avenue/Cummins Highway Station Area Plan. The open houses included over 75 participants of interested residents, business owners and local advocates. The online survey received over 35 responses. The number tabulating the results of responses represents a full accounting of the results combining the open house and the survey.

The original material, as written for the open house and online survey is included below for reference. The online survey was available for approximately one month from the beginning of June to the beginning of July 2014.

Responses were requested by the statement: We need your help to prioritize the most important next step found under each topic. Your input is important for prioritizing the needs of the Blue Hill Ave/Cummins Hwy area! Thank you for your time and participation.

Vision Statement

The Blue Hill/Cummins Highway Station Area is a safe and walkable community with high quality residential neighborhoods, a vital commercial and cultural district at Mattapan Square, excellent transit access and affordability.

6 • Minimize displacement of current residents and businesses to preserve diversity of the community.

13 • Reinforce residential community with safe streets, high quality parks and housing that is renewed while retaining affordability.

3 • Strengthen commercial and cultural activity in Mattapan Square.

Comments:

• I want all the bad things to stop because I'm very young and telling you people who is reading this that sometimes I'm scared to leave home because people dying every day stop the violence.

• Transparency and truth regarding areas of community disagreement with BRA proposals. We live here, and our lives are impacted by these proposals. This process is seriously flawed.

• To pay less

• What is going to happen to the "Mattress Building"? How does it relate to the Neponset Greenway?

• Woolson Street Garden – positive development at Woolson Street and Blue Hill Avenue – good positive energy and example

• Mattapan Food and Fitness – Blue Hill Avenue – Vivien Morris and Reann Gibson.

• Youth focus

• Multi-cultural center – ground floor retail
  - o Give youth a place to go
  - o After school
  - o Summer
  - o Piano lessons
  - o Multipurpose – senior center

• ABCD is gone – nothing to replace it

Prosperity

Strengthen local wealth creation in the Station Area through business, training and entrepreneurial support.

Priorities with Number of Responses

What would create more employment and economic opportunities in the Blue Hill Ave/Cummins Hwy area?

17 • Focus Redevelopment Investment – Investment in key properties, such as mixed-use redevelopment at Cote Ford, creates positive momentum for future redevelopment.

11 • Expand Training and Connection – Connect residents and businesses to new opportunities for training and education.

14 • Reinforce Local-serving Businesses - Match local needs with local businesses and services, recruit missing services and expand locally supported commerce.

15 • Add Destination Attractions and Activities - Build upon assets such as the Neponset River, the Mattapan Health Center and Mattapan Branch Library to build community attractions and destinations.

14 • Targeted Matches for Vacancy and Use – Create incentive programs, funding and resources to fill vacant upper floor spaces in Mattapan Square.

0 • None of the Above

3 • Other:

Comments:

• Charity for poor and more houses and more buses for people that don't have cars.

• Less money and more room

• Stop killing

• More house and more program for the children

• Less violence

• More economic development/build businesses/housing development

• CDC for Mattapan

• Develop businesses that will encourage spending within our community

• Mixed-use housing/ownership opportunity

Home

Provide new mixed-income housing opportunities near the station and stabilize existing neighborhood streets to support vitality and prosperity.

Priorities with Number of Responses

What solution to housing needs would work the best for the Blue Hill Ave/Cummins Hwy area?

26 • Retain Diversity and Affordability - New housing should expand quality opportunity for mixed-income, home ownership and senior housing.

7 • Focus Transit-oriented Housing - New housing units should be focused on properties adjacent to the transit stations and Mattapan Square Main Streets business district to reinforce walk-ability.

15 • Add Neighborhood Infill - Vacant neighborhood properties should be utilized as new housing to stabilize residential streets.

4 • Expand Mixed-use Activity - Upper level residential units should be added to the Mattapan Square Main Street business district to add vitality and economic activity.

23 • Improve Housing Quality and Sustainability - Create incentive programs for upgrading housing quality, utility infrastructure, and sustainability with energy and building envelope modifications or facade improvements.

0 • None of the Above

3 • Other:

Comments:

• Housing for young adults

• Home – house for poor

• Playground

• Green energy – in order to limit cost and increase wages

• Improve façade of Blue Hill commercial district

• Home and a safe environment

Place

The historic and cultural narratives of Mattapan Square are diverse and strong. The Station Area's character and physical environment should reflect the longevity of the location as an important City node and crossroads.

Priorities with Number of Responses

What will help to define a sense of place in the Blue Hill Ave/Cummins Hwy area?

21 • Enhance Vibrancy of the Square - Storefront, streetscape and public realm improvements should be used to improve the character and attractiveness of Mattapan Square and reinforce it as a vital center of the community.

13 • Connect Vitality to the Station - Activity and vitality of Mattapan Square should be extended on Blue Hill Avenue and Cummins Highway to the rail station entries.

21 • Reinforce Family-oriented Streets – Surrounding residential streets should be reinforced as safe and walk-able places that connect neighborhoods to transit and centers of activity with continuous walks, marked crossings, and expanded street trees.

19 • Preserve and Maintain Character – Community pride must be reflected in the preservation, maintenance, appearance and general attractiveness of the physical environment and character of the Mattapan Community

0 • None of the Above

5 • Other:

Comments:

• Program's for young people

• A safe place for young kids! thank you

• Ensure privacy for residential properties fronting/back of station

• Get owners of the property to be involved in Main Streets

Getting Around

The new rail station at Blue Hill Avenue/Cummins Highway would enhance connections to downtown. Focus should be on leveraging the new transit amenity to enhance connections and circulation within the Station Area for all modes of transportation.

Priorities with Number of Responses

Which of the following transportation recommendations is the most important to you for the Blue Hill Ave/Cummins Hwy area?

11 • Enhance Station Entries - Improve pedestrian crossings near future station entries with considerations for bus transfers and vehicle pick-up and drop-off.

8 • Reinforce Public Realm Connections – Enhance the streetscape between Mattapan Square and station entries.

14 • Reduce Congestion and Improve Circulation - Develop an improvement plan with funding for future study of vehicular, pedestrian and bicycle improvements at the primary intersection of Mattapan Square.

3 • Increase Neighborhood Walkability – Prioritize pedestrian crossings, curb extensions, and wider sidewalks.

19 • Manage Parking - Optimize convenient parking for Mattapan Square, particularly on Blue Hill Avenue, increase utilization and efficiency of off -street parking lots.

1 • None of the Above

5 • Other:

Comments:

• Extend Red Line to Mattapan work with current station

• Was there a previous plan to connect Mattapan and Ruggles? If so, what is the follow up?

• Traffic issues

• Parking on residential property

• Safety reinforced

• 14 year old should start driving

• More public place and more public libraries

• River Street/Blue Hill – police officer to help traffic and reduce conflict with buses

• More surveillance cameras – important at stations

• Show topography – proposed station slopes away from Woodhaven homes

• Build walkway on top of the station – connecting Blue Hill Avenue/Cummins Highway

• Establish a Hubway alongside the station walkway

• River Street is in need of attention

  o No seating for bus traffic/patrons

  o Access to Fairmount Line – no station. Mattapan Square has lots of access, none on River Street

  o Look at how transport is being ignored on River Street

• Post office parking – not enough and future development reduces supply

Parks and Public Space

Publicly accessible open space is well-distributed around the Station Area (relative to other neighborhood averages). Rather than add new open spaces, access, use and safety of existing resources should be enhanced.

Priorities with Number of Responses

Which of the following parks and public space recommendations is the most important to you for in the Blue Hill Ave/Cummins Hwy area?

10 • Enhance Pedestrian Access and Walkability - Add pedestrian crossings, curb extensions, and other amenities at primary residential streets leading to parks and public space.

16 • Improve Lighting and Safety - Parks and public spaces should be enhanced with additional lighting and maintenance to reinforce visibility and safety.

6 • Create Development Requirements – New development should require considerations for improvements to parks, streetscape, infrastructure or new open space

11 • Expand Neponset River Access - Public access to the Neponset River and future Neponset Greenway for bicyclists and water recreation should be enhanced at Mattapan Square.

18 • Reinforce Family-Oriented/Youth Activity - Recreation activities, playing fields and playgrounds should be reinforced with equipment to emphasize families and youth.

1 • None of the Above

3 • Other:

Comments:

• Public space – free ride on buses

• Surveillance of parks and bike ways

• Please help us with the new Almont Park to finish and keep

• Offer new businesses opportunities for local residents

Quality of Life

The Station Area is anchored by the Mattapan Square Main Streets district and quality of life enhancing amenities, such as the Mattapan Health Center.

Priorities with Number of Responses

Which recommendations would best improve the quality of life for residents and businesses in the Blue Hill Ave/Cummins Hwy area?

13 • Narrate History and Culture - Celebrate the local history, community, arts and culture by expanding public art, sculpture, arts programs and community events.

15 • Enhance Public Safety - Build community perception, respect and safety with residents and businesses support for positive activity and community stewardship.

15 • Address Traffic and Parking - Develop street improvements to balance high traffic volumes and parking needs in Mattapan Square and promote alternative modes of transportation.

17 • Build Opportunity and Success - Focus partnerships and programs on local wealth creation and youth development. Create a new paradigm of success stories and opportunity in Mattapan.

16 • Expand Sustainability - Build capacity for alternative modes of transportation, community gardens, energy upgrades and housing improvements.

1 • None of the Above

1 • Other:

Comments:

• Gun shot to stop now!!! No more gun shots or fighting

• Violence – killing and robbing

• Quiet and nicer neighborhoods

• Balance attention toward River Street. There is very little being done to provide transit equity on River Street. From Cleary/Logan Square to Mattapan Square. Blue Hill and Cummins get most of the attention and effort

Next Steps/Actions

The Implementation Actions are the critical components of station area strategies highlighted as actionable items.

Priorities with Number of Responses

7 • Invite positive investment at Cote Ford

9 • Strengthen and improve Mattapan Square

7 • Develop innovative resident, small business and entrepreneurial training

4 • Improve traffic in the Square

2 • Rebalance Blue Hill Avenue public realm

1 • Enhance streetscape at Cummins Highway

0 • Enhance connections to the Neponset River

1 • Retain diverse resident and business population

1 • Maintain community voice and presence

2 • Expand public arts programs

Comments:

• What is the plan for construction when it starts?

• A unified community

EXISTING CONDITIONS ANALYSIS

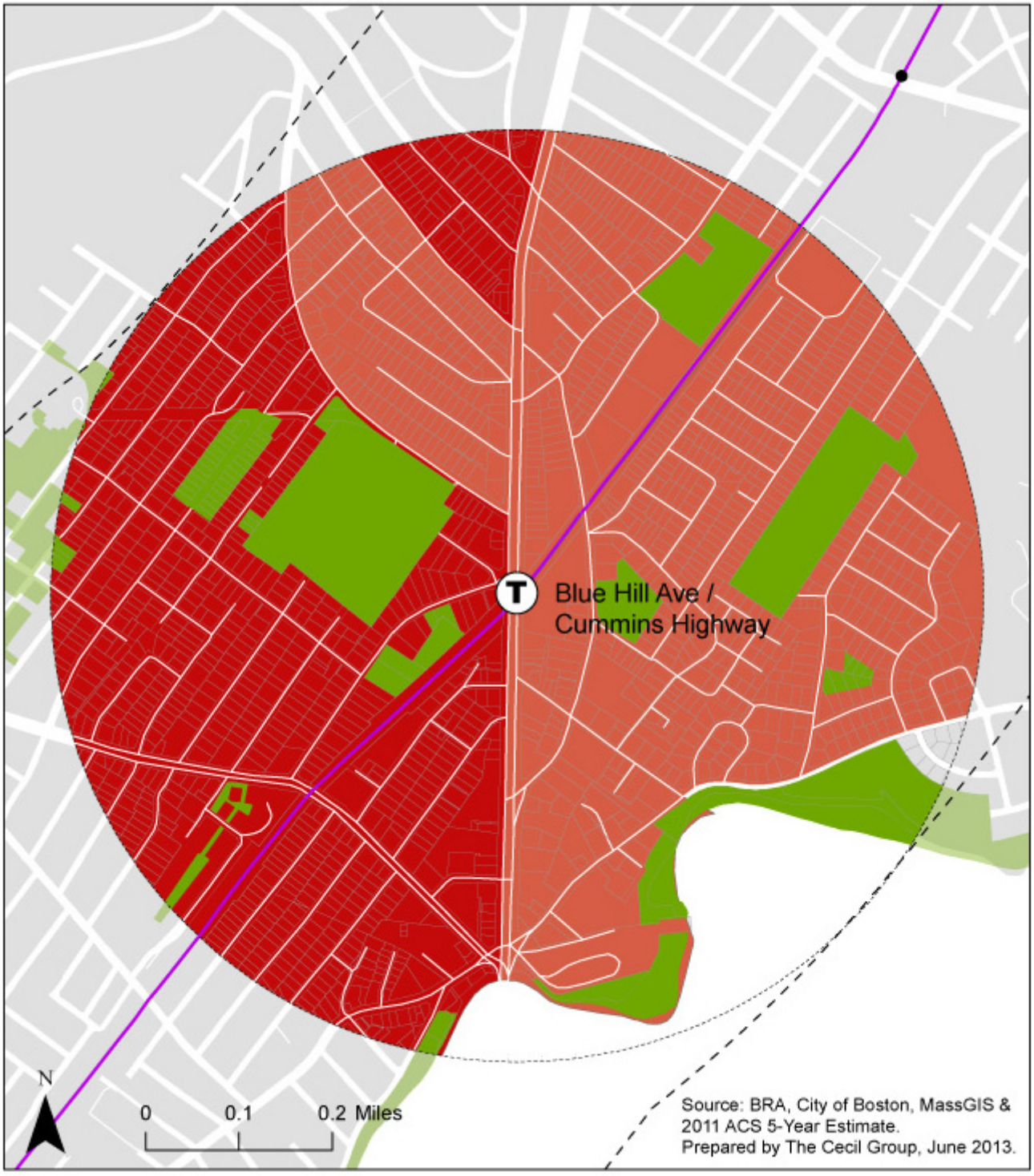
The station area as defined for this study and plan includes all parcels within 1/2 mile of the station

Census Tracts

Blue Hills / Cummins Highway

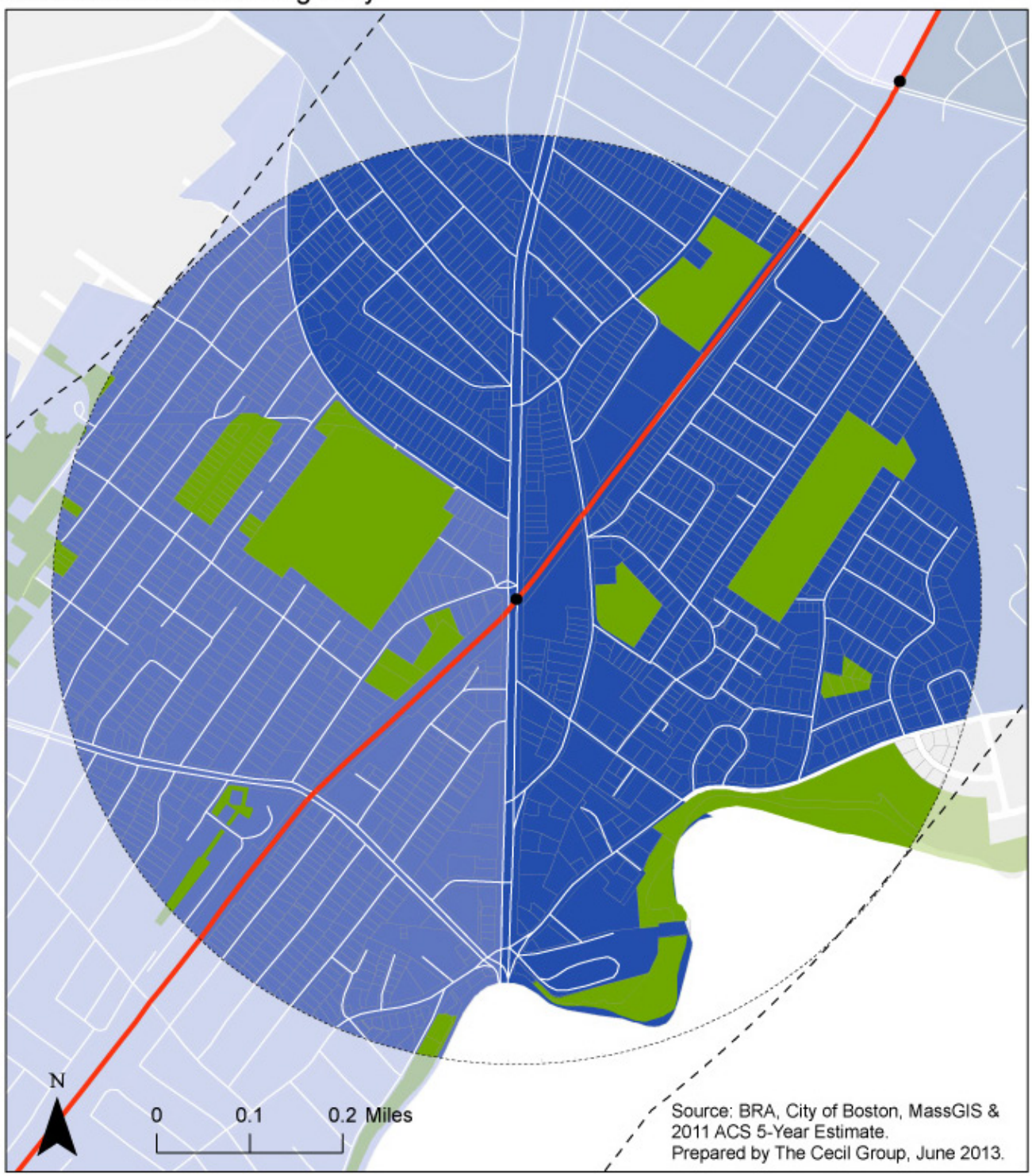
Household Income

Blue Hills / Cummins Highway



Unemployment

Blue Hills / Cummins Highway



15 - 20%

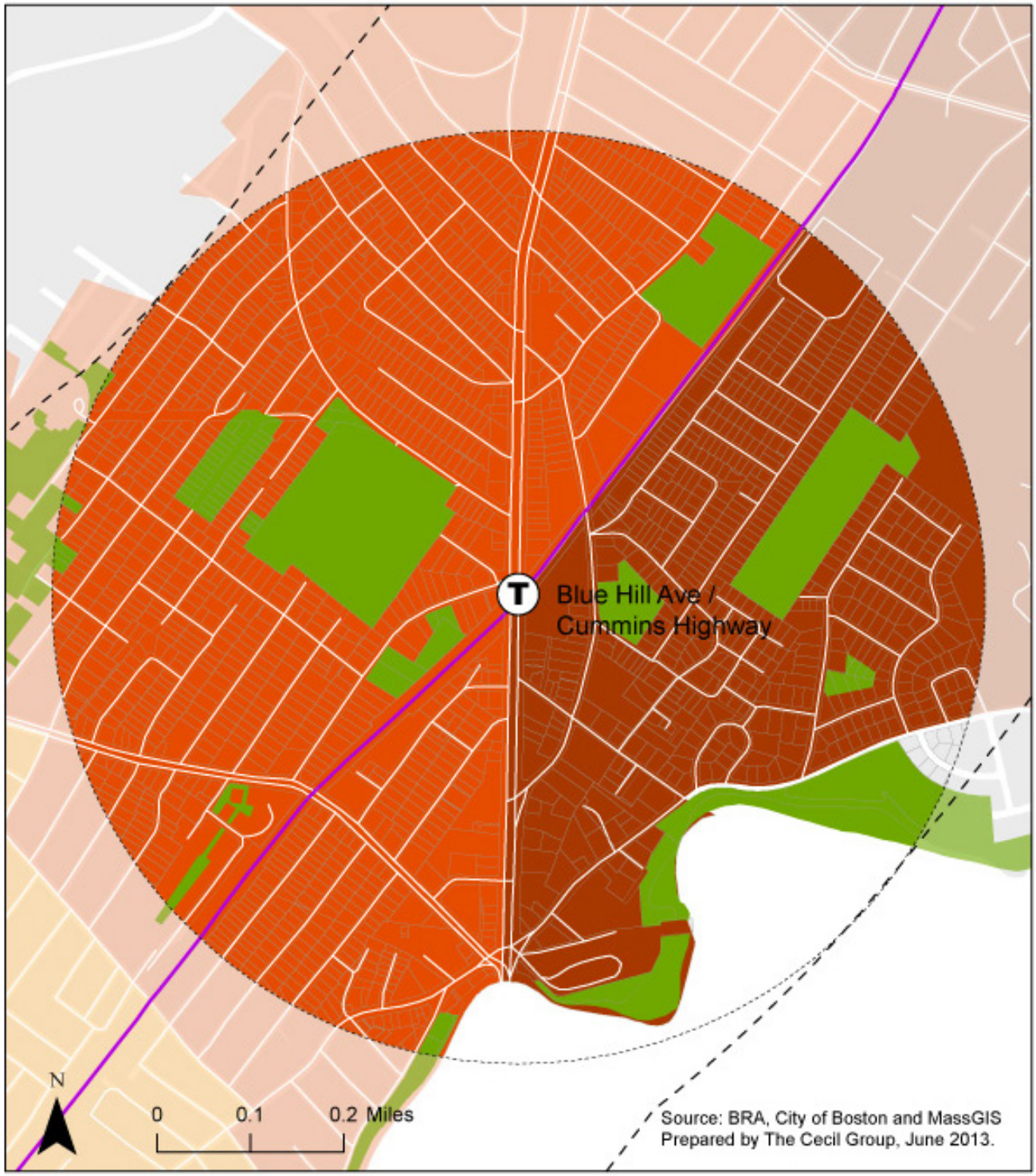
10 - 15%

Fairmount Indigo Line

Half Mile Blue Hill Ave / Cummins Highway

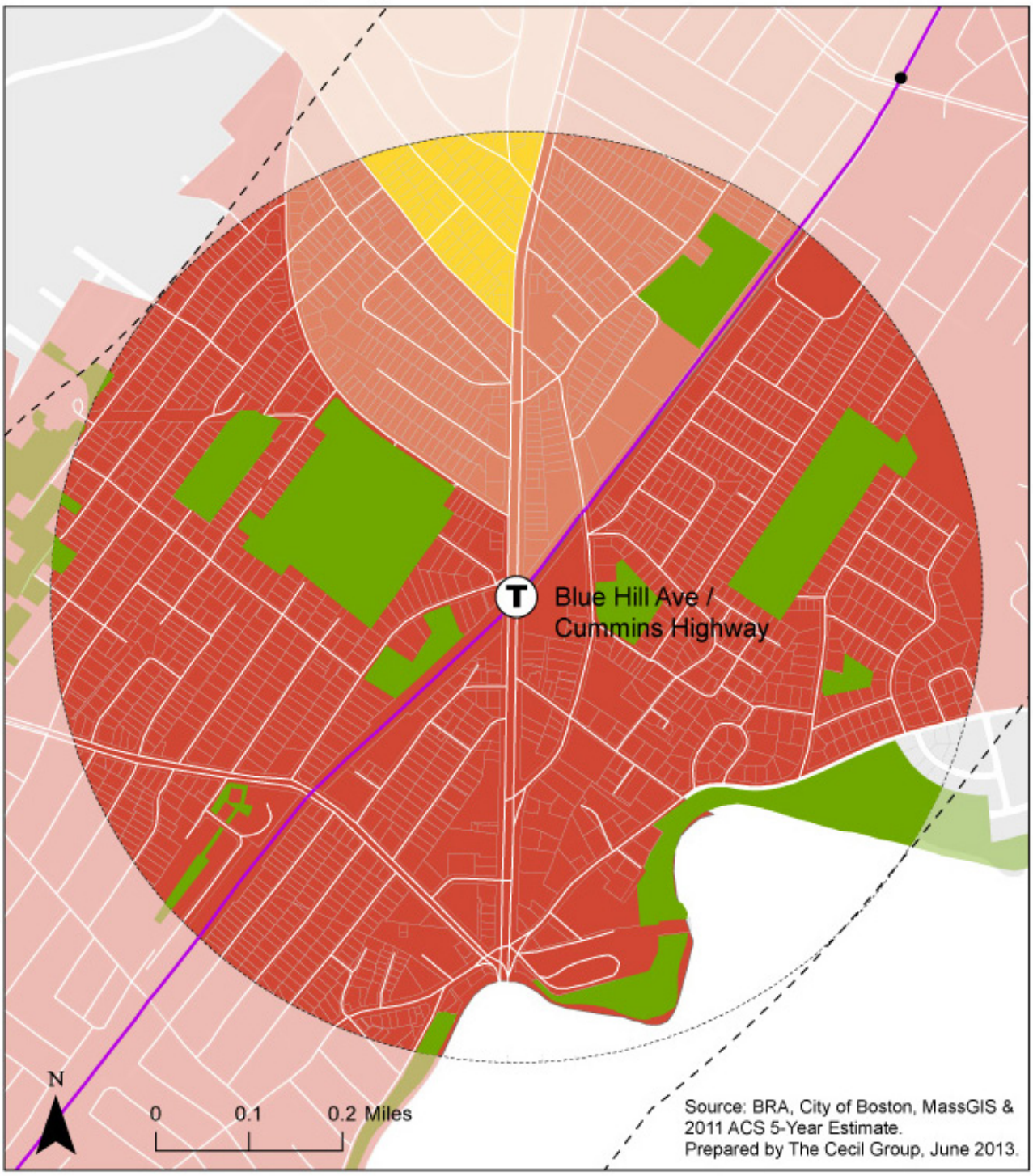
Education

Blue Hills / Cummins Highway



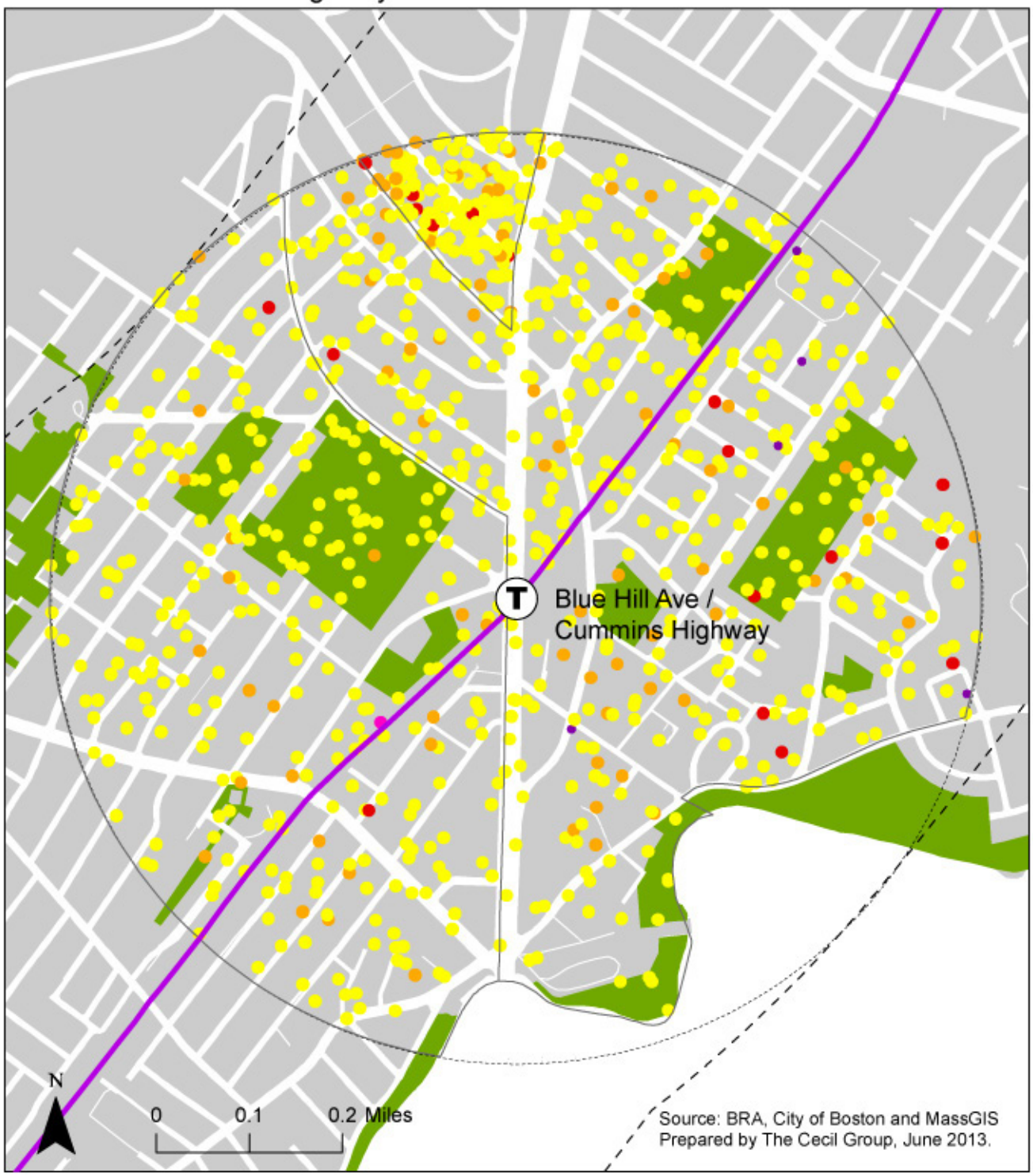
Resident Age

Blue Hills / Cummins Highway



Racial Characteristics

Blue Hills / Cummins Highway



Race
(One Dot = 20 People)

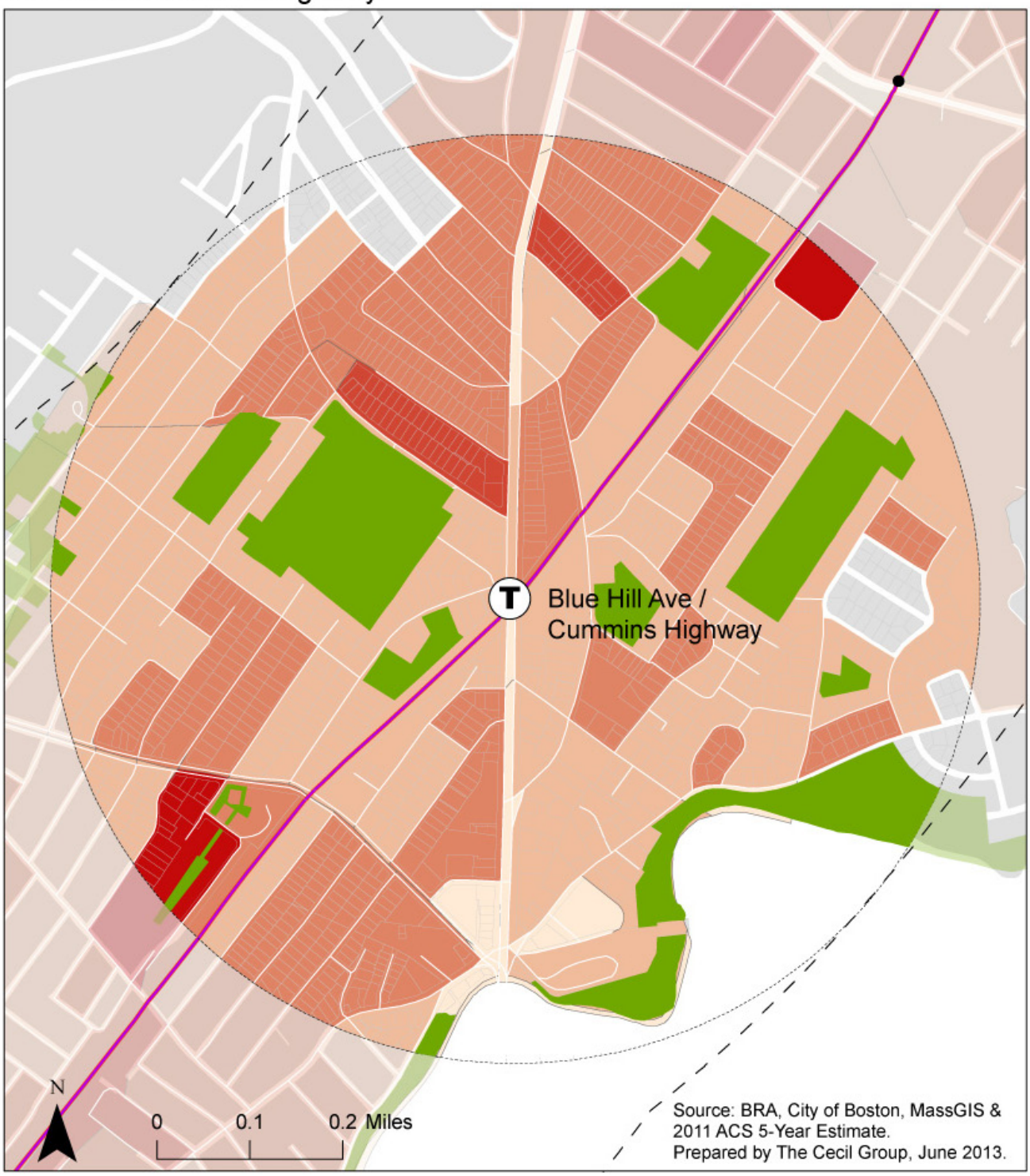
- White (non-hispanic)
- Hispanic / Latino
- Black
- Asian
- Other

Housing Type

Blue Hills / Cummins Highway

Housing Density

Blue Hills / Cummins Highway



25 - 49

17 - 24

9 - 16

1-8

Housing Affordability

Blue Hills / Cummins Highway

1-10 units

10-25 units

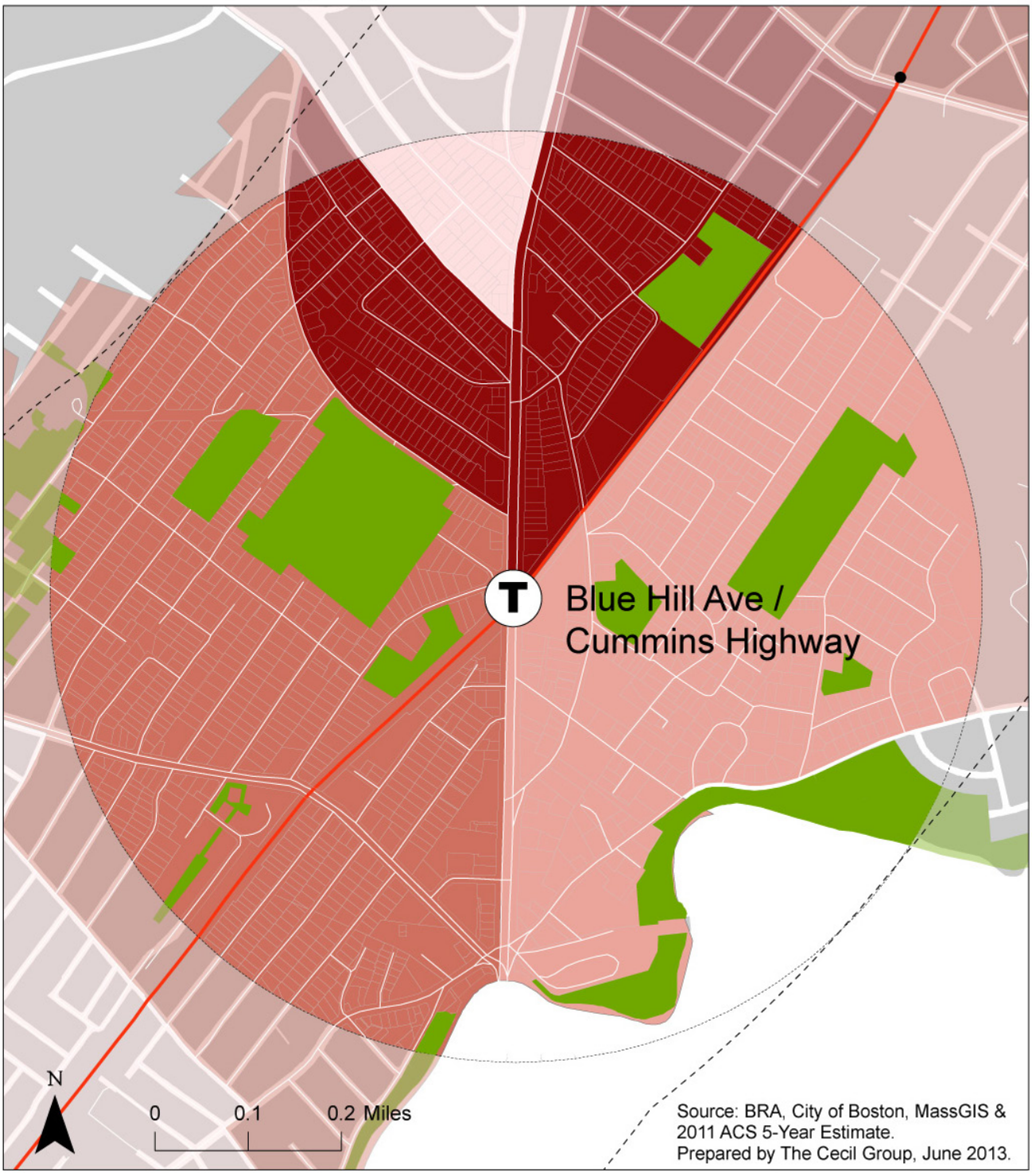
25-60 units

Percentage of Housing Units Owned by Occupant

- <25%
- 25%- 35%
- 35% - 55%
- > 55%
- Fairmount Indigo Line
- Half Mile Blue Hill Ave / Cummins Highway
- Half Mile Fairmount Corridor

Housing Affordability

Blue Hills / Cummins Highway



Neighborhood Land Use

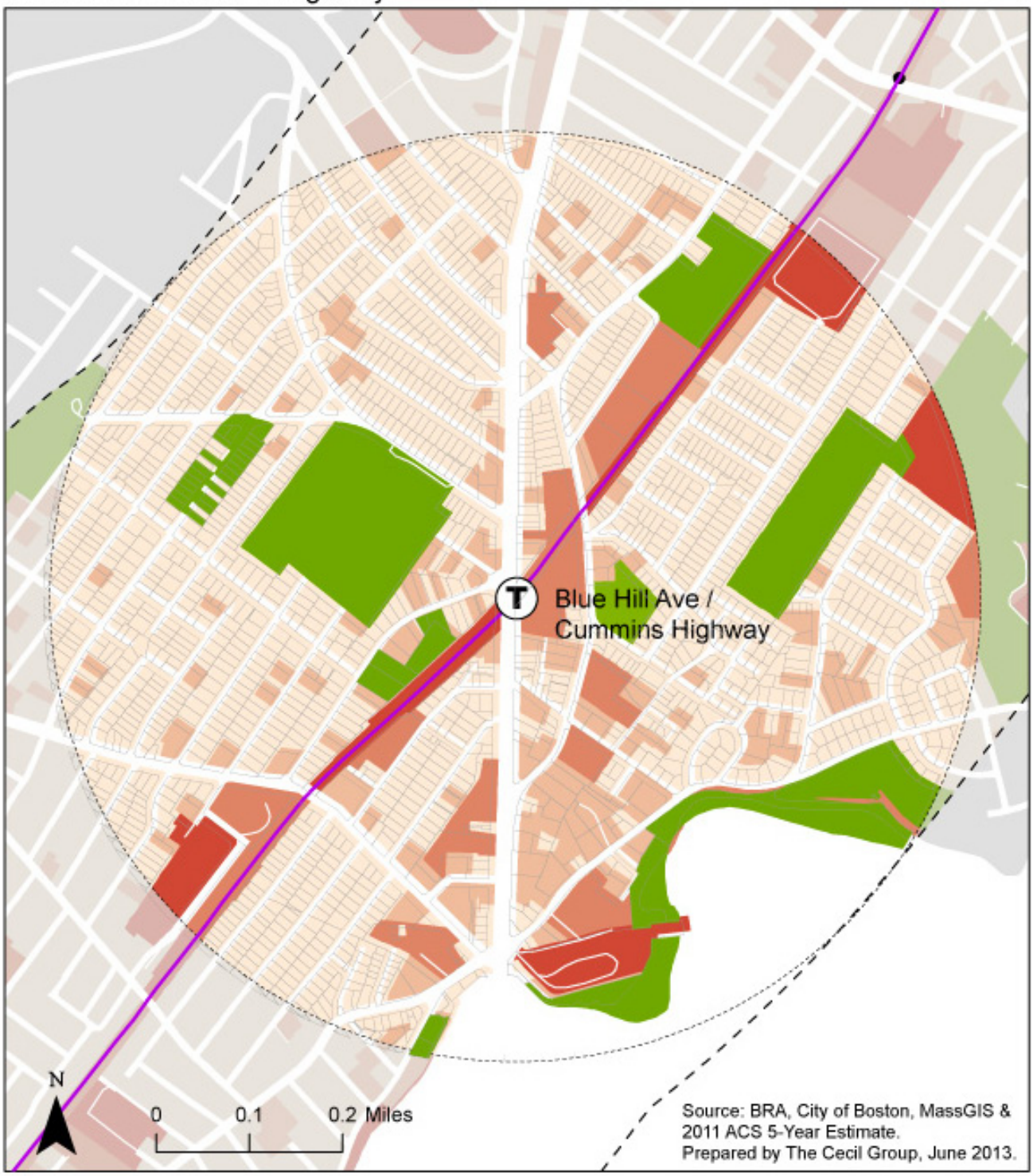
Blue Hills / Cummins Highway

Main Street

Blue Hills / Cummins Highway

Parcel Size

Blue Hills / Cummins Highway



Vacant Land

Blue Hills / Cummins Highway

Vacant Land

Parks

City Property

Blue Hills / Cummins Highway

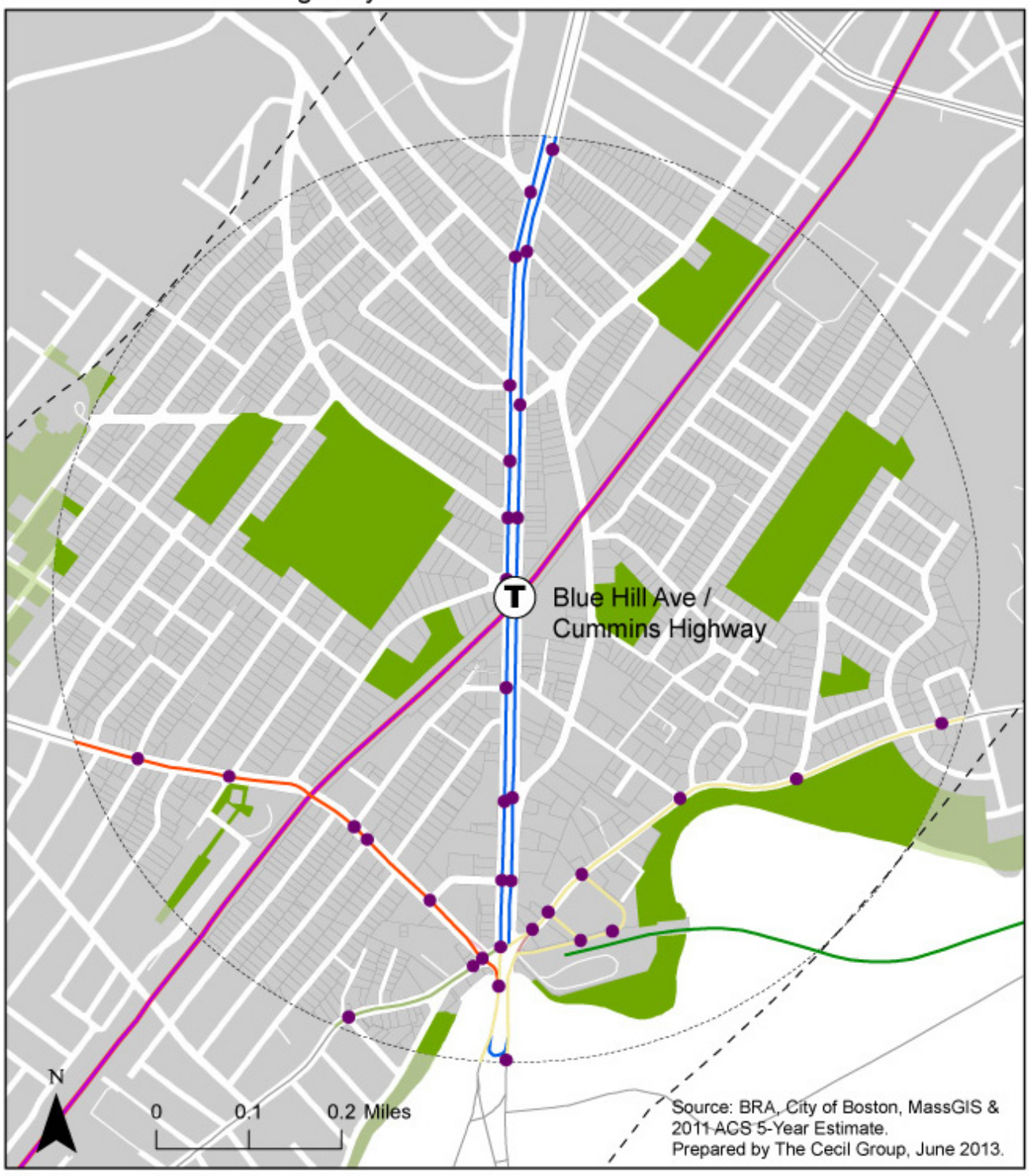

3F-6000
OS-RC
MFR
2F-5000
NS
2F-3000
LI
CF
1F-6000
OS-UW
OS-RC
1F-6000
OS-G
T
Blue Hill Ave /
Cummins Highway
2F-6000
2F-5000
2F-5000
2F-6000
CC
OS-RC
MFR
2F-4000
OS-RC
2F-5000
N
0
0.1
0.2 Miles
Source: BRA, City of Boston, MassGIS &
2011 ACS 5-Year Estimate.
Prepared by The Cecil Group, June 2013.

Street Network

Blue Hills / Cummins Highway

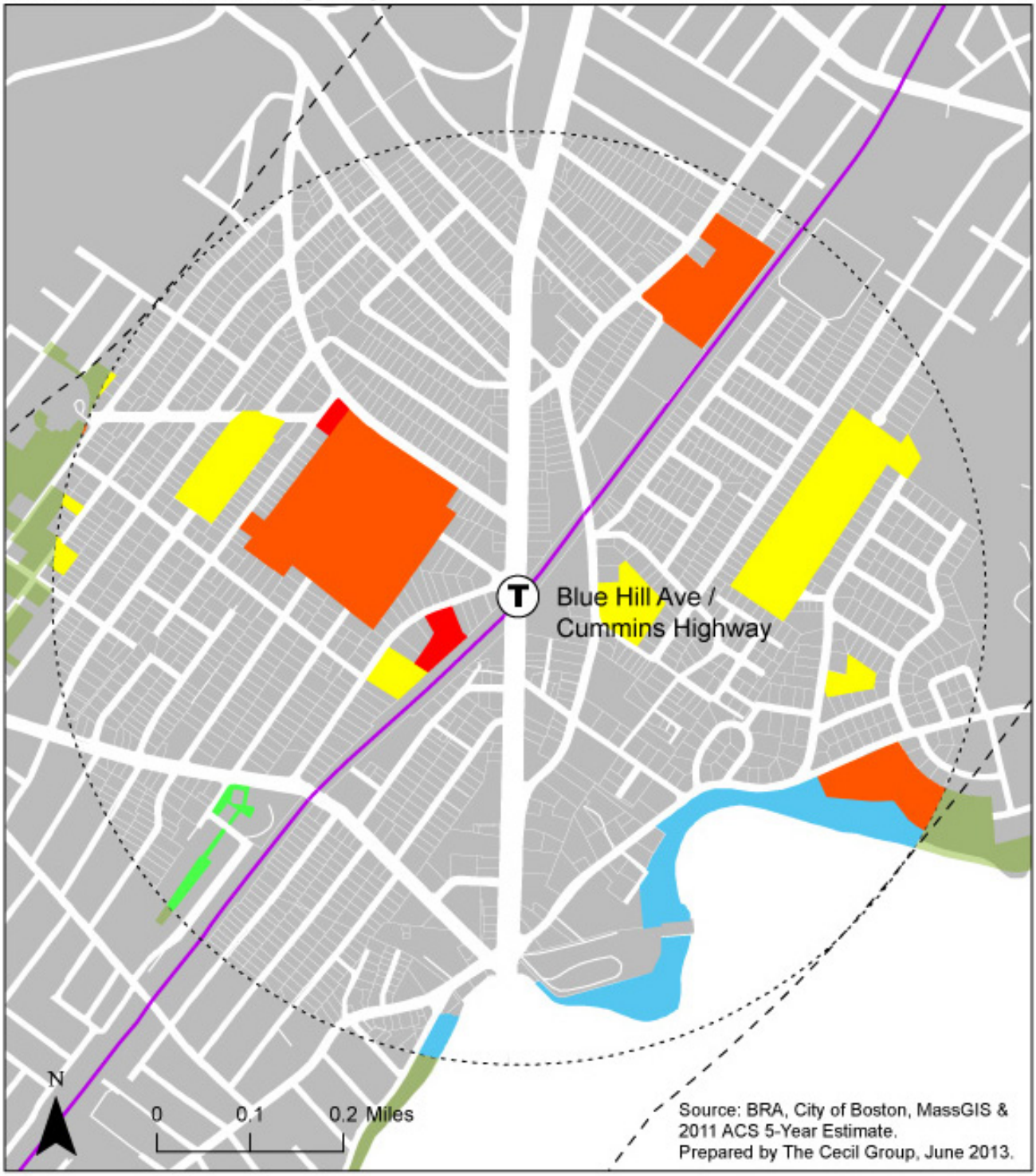
Public Transportation

Blue Hills / Cummins Highway



Public Open Space

Blue Hills / Cummins Highway



Proposed Greenway

Blue Hills / Cummins Highway

Proposed Greenway

Parks

Neighborhood Trees

Blue Hills / Cummins Highway

Parking

Blue Hills / Cummins Highway

Pavement Parking

Parks

PROFORMA FEASIBILITY TESTS

A conceptual redevelopment proforma was evaluated as part of the feasibility testing of the four key sites selected by the Working Advisory Group that tested future redevelopment opportunity for the Blue Hill Avenue/ Cummins Highway Station Area. In conjunction with financial feasibility the physical redevelopment potential of the sites was tested.

The physical fit studies were performed using digital three-dimensional building models to determine the scale of the building that is feasible on the site. An analysis of the market context helped to establish the development program that would occupy the hypothetical buildings that were conceptually tested.

The proforma analysis used the potential development program to test the balance of development costs and revenue on the particular site. All together this feasibility testing helps the community to better understand market conditions and the likelihood of a particular site to redevelop.

The information that follows documents the output of the proforma feasibility tests for the key sites studied. This information is followed by tables that reflect the market conditions of the Station Area for the residential, office, light industrial and retail markets.

1 Cote Ford Property

The tables shown below represents a basic financial feasibility analysis for the hypothetical Cote Ford redevelopment scenarios. The potential development program that was developed as part of the physical fit studies is studied to test the relationship between costs and revenue potential to understand a magnitude of profit or gap a developer would face.

Cote Ford Feasibility Tests			Scenario Definition:	# 1 Apartment/Retail Gateway Overlay Density	
Gross Potential Income					
Revenues - Private	**Units**	**RSF**	**Monthly Rent**	**Rent/SF**	**Annual Rent**
Apartment	135	135,000	$1,800	$1.80	$2,916,000
Retail (NNN)	0	23,200	$48,333	$25.00	$580,000
Parking Spaces	46	Surface	$0	$0	$0
Parking Spaces	98	Structured	$0	$0	$0
Subtotal	135	158,200		$22.10	$3,496,000
GSF (Excl. Parking)	78%	201,680			
Vacancy & Collection Losses			Residential	3.0%	($87,480)
			Retail	5.0%	($29,000)
Effective Gross Income					$3,379,520
Non-Reimburseable Expenses					
Operating			$10,000	Per Unit	($1,350,000)
Reserves			$350	Per Unit	($47,250)
Retail			3%	EGI	($16,878)
Subtotal					($1,414,128)
Net Operating Income					$1,965,392
Capitalized Value of Residential On Completion-At Stabilization					
Capitalization Rate			5.00%	Overall Rate	$39,307,840
				Rounded	$39,300,000
				Per Residential RSF	$248
				Per Unit	$291,111
Development Cost					
Land (Private Only)	Based on City Assessment		$13	Per Land SF	$614,115
Demolition	63,708 SF		$10.00	per GSF	$600,000
Hard Cost			$150.00	per GSF	$30,300,000
Parking		Structured	$15,000	per space	$1,500,000
Parking		Surface	$1,500	per space	$69,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$6,400,000
				Rounded	$39,500,000
				Per RSF	$250
				Per Unit	$292,593
Feasibility Surplus/(Gap)				Rounded	($192,160)
				% Surplus/(Gap)	-0.5%

1 Cote Ford Property

Cote Ford Feasibility Tests			Scenario Definition:	# 2	Apartment/Retail w/Educational Use
Gross Potential Income					
Revenues - Private	**Units**	**RSF**	**Monthly Rent**	**Rent/SF**	**Annual Rent**
Apartment	45	45,000	$1,800	$1.80	$972,000
Retail (NNN)	0	10,175	$21,198	$25.00	$254,375
Parking Spaces	44	Surface	$0	$0	$0
Parking Spaces	0	Structured	$0	$0	$0
Subtotal	45	45,000		$27.25	$1,226,375
GSF (Excl. Parking)	62%	72,130			
Vacancy & Collection Losses			Residential	3.0%	($29,160)
			Retail	5.0%	($12,719)
Effective Gross Income					$1,184,496
Non-Reimburseable Expenses					
Operating			$10,000	Per Unit	($450,000)
Reserves			$350	Per Unit	($15,750)
Retail			3%	EGI	($7,402)
Subtotal					($473,152)
Net Operating Income					$711,344
Capitalized Value of Residential On Completion-At Stabilization					
Capitalization Rate			5.00%	Overall Rate	$14,226,879
				Rounded	$14,200,000
				Per Residential RSF	$316
				Per Unit	$315,556
Development Cost					
Land (Private Only)	Based on City Assessment		$13	Per Land SF	$614,115
Demolition	63,708 SF		$10.00	per GSF	$600,000
Hard Cost			$150.00	per GSF	$10,800,000
Parking		Structured	$15,000	per space	$0
Parking		Surface	$1,500	per space	$66,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$2,200,000
				Rounded	$14,300,000
				Per RSF	$318
				Per Unit	$317,778
Feasibility Surplus/(Gap)				Rounded	($73,121)
				% Surplus/(Gap)	-0.5%

1 Cote Ford Property

Cote Ford Feasibility Tests			Scenario Definition:		# 3 Apartment/Retail Exceeds Gateway Density
Gross Potential Income					
Revenues - Private	**Units**	**RSF**	**Monthly Rent**	**Rent/SF**	**Annual Rent**
Apartment	308	308,000	$1,800	$1.80	$6,652,800
Retail (NNN)	0	27,260	$56,792	$25.00	$681,500
Parking Spaces	9	Surface	$0	$0	$0
Parking Spaces	252	Structured	$0	$0	$0
Subtotal	308	308,000		$23.81	$7,334,300
GSF (Excl. Parking)	80%	386,040			
Vacancy & Collection Losses			Residential	3.0%	($199,584)
			Retail	5.0%	($34,075)
Effective Gross Income					$7,100,641
Non-Reimburseable Expenses					
Operating			$10,000	Per Unit	($3,080,000)
Reserves			$350	Per Unit	($107,800)
Retail			3%	EGI	($19,832)
Subtotal					($3,207,632)
Net Operating Income					$3,893,009
Capitalized Value of Residential On Completion-At Stabilization					
Capitalization Rate			5.50%	Overall Rate	$70,781,988
				Rounded	$70,800,000
				Per Residential RSF	$230
				Per Unit	$229,870
Development Cost					
Land (Private Only)	Based on City Assessment		$13	Per Land SF	$614,115
Demolition	63,708 SF		$10.00	per GSF	$600,000
Hard Cost			$165.00	per GSF	$63,700,000
Parking		Structured	$15,000	per space	$3,800,000
Parking		Surface	$1,500	per space	$13,500
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$13,500,000
				Rounded	$82,200,000
				Per RSF	$267
				Per Unit	$266,883
Feasibility Surplus/(Gap)				Rounded	($11,418,012)
				% Surplus/(Gap)	-16.1%

1 Cote Ford Property

Cote Ford Feasibility Tests	Scenario Definition:	# 4	Apartment/Retail 2-4 Family Density

Gross Potential Income

Revenues - Private	Units	RSF	Monthly Rent	Rent/SF	Annual Rent
Apartment	66	66,000	$1,800	$1.80	$1,425,600
Retail (NNN)	0	0	$0	$25.00	$0
Parking Spaces	48	Surface	$0	$0	$0
Parking Spaces	0	Structured	$0	$0	$0
Subtotal	66	66,000		$21.60	$1,425,600
GSF (Excl. Parking)		100,020			

Vacancy & Collection Losses	Residential	3.0%	($42,768)
	Retail	5.0%	$0
Effective Gross Income			$1,382,832

Non-Reimburseable Expenses

Operating	$10,000	Per Unit	($660,000)
Reserves	$350	Per Unit	($23,100)
Retail	3%	EGI	$0
Subtotal			($683,100)

Net Operating Income	$699,732

Capitalized Value of Residential On Completion-At Stabilization

Capitalization Rate	5.00%	Overall Rate	$13,994,640
		Rounded	$14,000,000
		Per Residential RSF	$212
		Per Unit	$212,121

Development Cost

Land (Private Only)	Based on City Assessment		$13	Per Land SF	$614,115
Demolition	63,708 SF		$10.00	per GSF	$600,000
Hard Cost			$150.00	per GSF	$15,000,000
Parking		Structured	$15,000	per space	$0
Parking		Surface	$1,500	per space	$72,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$3,000,000
				Rounded	$19,300,000
				Per RSF	$292
				Per Unit	$292,424

Feasibility Surplus/(Gap)	Rounded	($5,305,360)
	% Surplus/(Gap)	-37.9%

❷ Mattapan Square #1

The tables shown below represents a basic financial feasibility analysis for the hypothetical Mattapan Square redevelopment scenarios. The potential development program that was developed as part of the physical fit studies is studied to test the relationship between costs and revenue potential to understand a magnitude of profit or gap a developer would face.

Site 2 - Mattapan Square Feasibility Tests			Scenario Definition:	# 1	Apartment/Retail
Gross Potential Income					
Revenues - Private	**Units**	**RSF**	**Monthly Rent**	**Rent/SF**	**Annual Rent**
Apartment	112	89,858	$1,440	$1.80	$1,940,939
Retail (NNN)	0	36,780	$76,626	$25.00	$919,509
Parking Spaces	44	Surface	$0	$0	$0
Parking Spaces	50	Structured	$0	$0	$0
Subtotal	112	126,639		$22.59	$2,860,448
GSF (Excl. Parking)	82%	155,134			
Vacancy & Collection Losses			Residential	3.0%	($58,228)
			Retail	5.0%	($45,975)
Effective Gross Income					$2,756,244
Non-Reimburseable Expenses					
Operating			$10,000	Per Unit	($1,123,229)
Reserves			$350	Per Unit	($39,313)
Retail			3%	EGI	($26,758)
Subtotal					($1,189,299)
Net Operating Income					$1,566,945
Capitalized Value of Residential On Completion-At Stabilization					
Capitalization Rate			5.00%	Overall Rate	$31,338,897
				Rounded	$31,300,000
				Per Residential RSF	$247
				Per Unit	$278,661
Development Cost					
Land (Private Only)	Based on City Assessment		$95	Per Land SF	$7,066,200
Demolition	113,134 SF		$10.00	per GSF	$1,100,000
Hard Cost			$150.00	per GSF	$23,300,000
Parking		Structured	$15,000	per space	$800,000
Parking		Surface	$1,500	per space	$66,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$4,800,000
				Rounded	$37,100,000
				Per RSF	$293
				Per Unit	$330,298
Feasibility Surplus/(Gap)				Rounded	($5,761,103)
				% Surplus/(Gap)	-18.4%

3 Mattapan Square #2

Site 3 - Oriental Theater Feasibility Tests	Scenario Definition:	# 1	Theater Rehab w/Mixed Use

Gross Potential Income

Revenues - Private	Units	RSF	Monthly Rent	Rent/SF	Annual Rent
Apartment	24	19,290	$1,440	$1.80	$416,665
Retail (NNN)	0	46,028	$95,892	$25.00	$1,150,709
Theater	0	18,502	$0	$0.00	$0
Office	0	33,912	$42,390	$15.00	$508,680
Parking Spaces	112	Surface	$0	$0	$0
Parking Spaces	20	Structured	$0	$0	$0
Subtotal	24	117,732		$17.63	$2,076,053
GSF (Excl. Parking)	96%	122,182			

Vacancy & Collection Losses	Residential	3.0%	($12,500)
	Retail	5.0%	($57,535)
Effective Gross Income			$2,006,018

Non-Reimburseable Expenses

Operating	$10,000	Per Unit	($241,125)
Reserves	$350	Per Unit	($8,439)
Retail	3%	EGI	($33,486)
Subtotal			($283,050)
Net Operating Income			$1,722,968

Capitalized Value of Residential On Completion-At Stabilization

Capitalization Rate	7.00%	Overall Rate	$24,613,823
		Rounded	$24,600,000
		Per NSF	$209
		Per GSF	$201

Development Cost

Land (Private Only)	Based on City Assessment		$54	Per Land SF	$6,257,500
Demolition	78,540	SF	$10.00	per GSF	$800,000
Hard Cost-New	103,680	GSF	$150.00	per GSF	$15,600,000
Hard Cost-Rehab	18,502	GSF	$400.00	per GSF	$7,400,800
Parking		Structured	$15,000	per space	$300,000
Parking		Surface	$1,500	per space	$168,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$3,200,000
				Rounded	$33,700,000
				Per RSF	$286
				Per Unit	$1,397,613
Feasibility Surplus/(Gap)				Rounded	($9,086,177)
				% Surplus/(Gap)	-36.9%

❸ Mattapan Square #2 - Alternative

Site 3 - Oriental Theater Feasibility Tests			Scenario Definition: #2 New Construction w/Mixed Use		
Gross Potential Income					
Revenues - Private	**Units**	**RSF**	**Monthly Rent**	**Rent/SF**	**Annual Rent**
Apartment	115	92,000	$1,440	$1.80	$1,987,200
Retail (NNN)	0	24,827	$51,723	$25.00	$620,675
Theater	0	0	$0	$0.00	$0
Office	0	0	$0	$15.00	$0
Parking Spaces	112	Surface	$0	$0	$0
Parking Spaces	133	Structured	$0	$0	$0
Subtotal	115	116,827		$22.32	$2,607,875
GSF (Excl. Parking)	82%	142,265			
Vacancy & Collection Losses			Residential	3.0%	($59,616)
			Retail	5.0%	($31,034)
Effective Gross Income					$2,517,225
Non-Reimburseable Expenses					
Operating			$10,000	Per Unit	($1,150,000)
Reserves			$350	Per Unit	($40,250)
Retail			3%	EGI	($18,062)
Subtotal					($1,208,312)
Net Operating Income					$1,308,914
Capitalized Value of Residential On Completion-At Stabilization					
Capitalization Rate			6.00%	Overall Rate	$21,815,227
				Rounded	$21,800,000
				Per NSF	$187
				Per GSF	$153
Development Cost					
Land (Private Only)	Based on City Assessment		$51	Per Land SF	$5,900,000
Demolition	78,609 SF		$10.00	per GSF	$800,000
Hard Cost-New	142,265 GSF		$150.00	per GSF	$21,300,000
Hard Cost-Rehab	0 GSF		$400.00	per GSF	$0
Parking		Structured	$15,000	per space	$2,000,000
Parking		Surface	$1,500	per space	$168,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$4,700,000
				Rounded	$34,900,000
				Per RSF	$299
				Per Unit	$303,478
Feasibility Surplus/(Gap)				Rounded	($13,084,773)
				% Surplus/(Gap)	-60.0%

4 Post Office Parking

The tables shown below represents a basic financial feasibility analysis for the hypothetical Post Office Parking redevelopment scenarios. The potential development program that was developed as part of the physical fit studies is studied to test the relationship between costs and revenue potential to understand a magnitude of profit or gap a developer would face.

Site 4 - Post Office Parking Lot Feasibility Tests

Scenario Definition: # 1 Apartment/Retail

Gross Potential Income

Revenues - Private	Units	RSF	Monthly Rent	Rent/SF	Annual Rent
Apartment	46	36,549	$1,600	$2.00	$877,177
Retail (NNN)	0	6,630	$13,813	$25.00	$165,750
Parking Spaces	40	Surface	$0	$0	$0
Parking Spaces	0	Structured	$0	$0	$0
Subtotal	46	43,179		$24.15	$1,042,927
GSF (Excl. Parking)	81%	53,035			

Vacancy & Collection Losses	Residential	3.0%	($26,315)
	Retail	5.0%	($8,288)
Effective Gross Income			$1,008,324

Non-Reimburseable Expenses

Operating	$10,000	Per Unit	($456,863)
Reserves	$350	Per Unit	($15,990)
Retail	3%	EGI	($4,823)
Subtotal			($477,677)

Net Operating Income			$530,648

Capitalized Value of Residential On Completion-At Stabilization

Capitalization Rate	5.00%	Overall Rate	$10,612,954
		Rounded	$10,600,000
		Per NSF	$245
		Per Unit	$200

Development Cost

Land (Private Only)	Based on City Assessment		$0	Per Land SF	$0
Demolition	0	SF	$10.00	per GSF	$0
Hard Cost-New	53,035	GSF	$150.00	per GSF	$8,000,000
Hard Cost-Rehab	0	GSF	$400.00	per GSF	$0
Parking		Structured	$15,000	per space	$0
Parking		Surface	$1,500	per space	$60,000
Soft Costs (includes financing, fee etc.)			20%	of Hard Cost	$1,600,000
				Rounded	$9,700,000
				Per RSF	$225
				Per Unit	$212,317

Feasibility Surplus/(Gap)		Rounded	$912,954
		% Surplus/(Gap)	8.6%

Market Context

As a foundation to the redevelopment scenarios and proforma analysis of potential key redevelopment sites, a general market overview and context was assessed to understand the real estate market dynamics in the Blue Hill/Cummins Highway Station Area. Underpinning this study, is the Mattapan Economic Development Initiative (MEDI) and the economic development Action Agenda that was a part of that effort in 2006.

The most important analysis for the real estate and development context is to evaluate and understand the characteristics of demand. The following simplified market considerations formulate how the various sources of demand translate into development potentials:

- **Households** - drive residential development with housing typologies, price points and match to resident requirements.
- **Labor Force** - drives commercial and industrial development with skills and match to employer requirements.
- **Employment** - drives commercial and industrial development with land and building availability and match to business requirements.
- **Visitation** - drives cultural and institutional development with visitor types and match to destination requirements.
- **Expenditures** - drive retail development with resident, employee, and visitor expenditure match to the commercial types and sale requirements.

The tables provide summary outputs of the current economic context along with a brief explanation of the relevance of the data and overall conclusions for the Station Area Plan:

- **Residential Market Background** - this table represents data pulled from the context of the Fairmount Indigo Corridor (Dorchester, Roxbury and Mattapan). The table shows a fundamental supply problem. The Corridor, and Boston more generally, are under-supplied with residential units to meet the level of demand present. This is shows in the table as a very low vacancy rate (+/- 4%). As a results of the vacancy rate reducing over time, the asking rent is increasing over time. This pattern can be expected to continue and is why introducing additional housing units is an important strategy to retain affordability.
- **Retail Market Background** - this table represents data pulled from the context of the Fairmount Indigo Corridor (Dorchester, Roxbury and Mattapan). The table also shows a very low vacancy rate of (+/- 4%) and a rate that is trending lower. This vacancy rate is low enough that it makes normal trading and moving between spaces very difficult. In the Station Area, storefront vacancies are very low.
- **Office Market Background** - this table represents data pulled from the context of the Fairmount Indigo Corridor (Dorchester, Roxbury and Mattapan). Relative to the residential and retail metrics, the apparent office demand is relatively thin and not conducive to speculative build-out of office space. The Corridor has difficulty attracting office users in a highly competitive market around Boston. Upper floor office spaces in Mattapan Square are generally vacant and underutilized.
- **Light Industrial Market Background** - this table represents data pulled from the context of the Fairmount Indigo Corridor (Dorchester, Roxbury and Mattapan). Vacancy for light industrial uses is stuck at about 10% which is relatively high and rental rates are stuck at between $8.50 and $9.00 per square foot. The figures reflect that large industrial users of the past are less in number and that the successful industrial spaces are those that are flexible and can accommodate smaller leases.
- **Neighborhood Residential Positioning**- this table represents data pulled from the Blue Hill/Cummins Highway Station Area context. The Station Area context shows that a substantial amount of residential demand is going unsatisfied by new supply in the housing market in the neighborhoods. Even when new supply is added, the vacancy rate does not decrease and rents trend upwards.
- **Neighborhood Commercial and Industrial Positioning**- this table represents data pulled from the Blue Hill/Cummins Highway Station Area context and shows that the Station Area context is consistent with the overall Corridor conditions for retail, office and industrial space. Average rents are marginally lower for some segments.

Residential Market Background

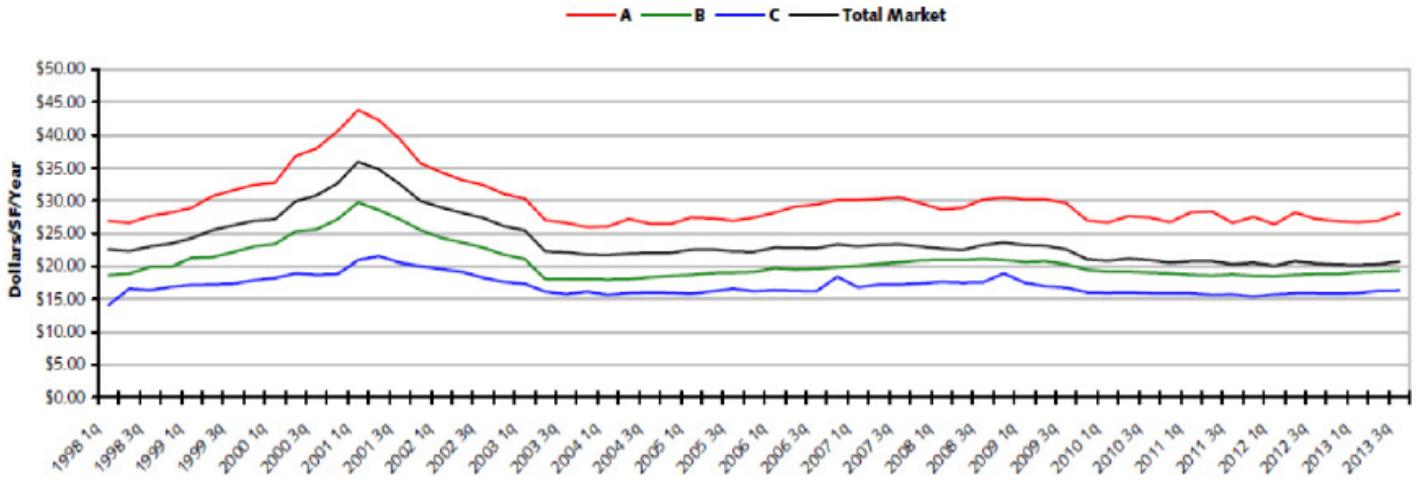
Year	Qtr	Inventory SF/Units	Completions	Inventory Growth%	Vacant Stock	Vacancy Rate	Vacancy Change(BPS)	Occupied Stock	Net Absorption	Asking Rent	Ask Rent % Chg
2007	Y	13,447	112	0.8%	511	3.8%	-170	12,936	334	$1,459	- 1.1%
2008	Y	13,507	60	0.4%	500	3.7%	-10	13,007	71	$1,554	6.5%
2009	Y	13,776	269	2.0%	854	6.2%	250	12,922	-85	$1,489	- 4.2%
2010	4	13,875	49	0.3%	666	4.8%	-50	13,209	115	$1,542	- 0.2%
2010	Y	13,875	99	0.7%	666	4.8%	-140	13,209	287	$1,542	3.6%
2011	1	13,875	0	0.0%	638	4.6%	-20	13,237	28	$1,547	0.3%
2011	2	13,875	0	0.0%	587	4.2%	-40	13,288	51	$1,560	0.8%
2011	3	13,875	0	0.0%	541	3.9%	-30	13,334	46	$1,566	0.4%
2011	4	13,875	0	0.0%	458	3.3%	-60	13,417	83	$1,577	0.7%
2011	Y	13,875	0	0.0%	458	3.3%	-150	13,417	208	$1,577	2.3%
2012	1	13,914	39	0.3%	431	3.1%	-20	13,483	66	$1,580	0.2%
2012	2	13,914	0	0.0%	417	3.0%	-10	13,497	14	$1,595	1.0%
2012	3	13,914	0	0.0%	417	3.0%	0	13,497	0	$1,610	0.9%
2012	Y	13,982	87	0.3%	423	3.0%	0	13,539	122	$1,620	2.7%
2013	Y	14,223	261	1.9%	434	3.1%	0	13,789	250	$1,683	3.9%
2014	Y	14,884	661	4.6%	476	3.2%	20	14,408	619	$1,768	5.0%
2015	Y	15,005	121	0.8%	453	3.0%	-20	14,552	144	$1,826	3.3%
2016	Y	15,150	145	1.0%	406	2.7%	-30	14,744	192	$1,872	2.5%

Retail Market Background

	Existing Inventory		Vacancy		Net	Delivered Inventory		UC Inventory		Quoted
Period	# Bldgs	Total RBA	Vacant SF	Vacancy %	Absorption	# Bldgs	Total RBA	# Bldgs	Total RBA	Rates
2013 3q	2,410	23,139,648	533,711	2.3%	17,606	0	0	1	50,000	$28.33
2013 2q	2,410	23,139,648	551,317	2.4%	34,998	2	17,460	0	0	$26.80
2013 1q	2,408	23,122,188	568,855	2.5%	35,910	0	0	2	17,460	$24.62
2012 4q	2,409	23,164,188	646,765	2.8%	25,015	1	33,000	2	17,460	$24.11
2012 3q	2,408	23,131,188	638,780	2.8%	32,380	0	0	3	50,460	$23.59
2012 2q	2,408	23,131,188	671,160	2.9%	691	0	0	2	50,000	$23.60
2012 1q	2,408	23,131,188	671,851	2.9%	114,401	2	6,933	2	50,000	$17.89
2011 4q	2,406	23,124,255	779,319	3.4%	(19,951)	0	0	3	39,933	$18.45
2011 3q	2,408	23,141,406	776,519	3.4%	12,267	0	0	2	6,933	$20.97
2011 2q	2,409	23,148,420	795,800	3.4%	151,531	3	41,000	0	0	$20.06
2011 1q	2,408	23,114,965	913,876	4.0%	82,892	1	2,905	3	41,000	$20.79
2010 4q	2,408	23,114,969	996,772	4.3%	140,303	1	46,400	4	43,905	$21.23
2010 3q	2,408	23,085,039	1,107,145	4.8%	(17,414)	1	2,200	4	80,305	$21.60
2010 2q	2,407	23,082,839	1,087,531	4.7%	52,378	2	125,700	3	74,600	$21.78
2010 1q	2,405	22,957,139	1,014,209	4.4%	80,505	1	5,731	5	200,300	$21.67
2009 4q	2,405	22,956,280	1,093,855	4.8%	32,679	0	0	4	133,631	$22.62

Office Market Background - Historical Rental Rates

Based on Full-Service Equivalent Rental Rates



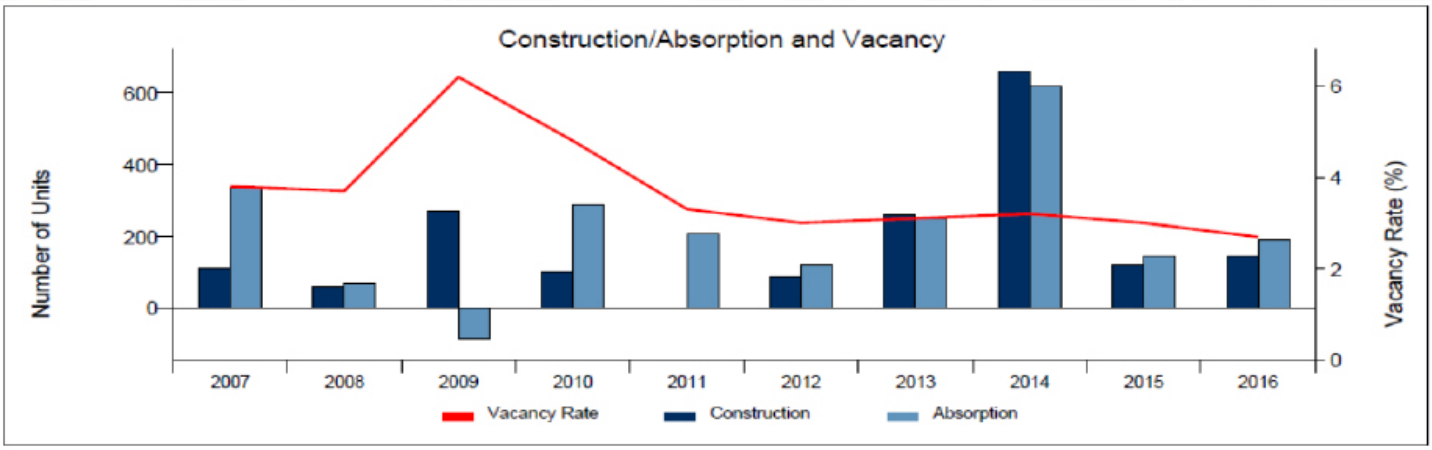
Light Industrial Market Background

Period	Existing Inventory		Vacancy		Net	Delivered Inventory		UC Inventory		Quoted
	# Bldgs	Total RBA	Vacant SF	Vacancy %	Absorption	# Bldgs	Total RBA	# Bldgs	Total RBA	Rates
2013 3q	742	26,857,878	2,633,155	9.8%	71,907	0	0	0	0	$9.09
2013 2q	742	26,857,878	2,705,062	10.1%	(31,047)	0	0	0	0	$9.30
2013 1q	743	27,063,275	2,879,412	10.6%	173,175	0	0	0	0	$9.00
2012 4q	744	27,074,020	3,063,332	11.3%	1,850	0	0	0	0	$8.65
2012 3q	745	27,089,020	3,080,182	11.4%	(150,340)	0	0	0	0	$8.94
2012 2q	745	27,089,020	2,929,842	10.8%	35,613	0	0	0	0	$9.22
2012 1q	745	27,089,020	2,965,455	10.9%	(180,167)	0	0	0	0	$9.09
2011 4q	746	27,190,270	2,886,538	10.6%	25,240	0	0	0	0	$9.06
2011 3q	749	27,369,690	3,091,198	11.3%	(287,072)	0	0	0	0	$9.36
2011 2q	750	27,446,082	2,880,518	10.5%	(42,118)	0	0	0	0	$9.43
2011 1q	751	27,498,582	2,890,900	10.5%	126,649	1	10,225	0	0	$9.25
2010 4q	753	27,738,835	3,257,802	11.7%	(291,763)	0	0	1	10,225	$9.45
2010 3q	754	27,853,033	3,080,237	11.1%	228,307	0	0	1	10,225	$8.49
2010 2q	754	27,853,033	3,308,544	11.9%	82,632	0	0	0	0	$8.55
2010 1q	754	27,853,033	3,391,176	12.2%	(53,838)	0	0	0	0	$8.66
2009 4q	754	27,853,033	3,337,338	12.0%	60,976	0	0	0	0	$8.55

Neighborhood Residential Positioning

Current Submarket Average Rents and Sizes				Asking Rent Growth					
	July			Quarterly			Annualized		
	Rent	Avg. SF	Avg. Rent PSF	2Q13	1Q13	YTD	1 Year	3 Year	5 Year
Studio/Efficiency	$1,043	444	$ 2.35	0.5%	3.7%	4.6%	0.4%	0.6%	1.8%
One Bedroom	$1,482	722	$ 2.05	1.1%	2.2%	3.7%	0.6%	2.6%	2.1%
Two Bedroom	$1,795	971	$ 1.85	- 0.4%	0.2%	0.2%	3.4%	3.0%	2.1%
Three Bedroom	$2,425	1193	$ 2.03	- 0.6%	2.4%	2.1%	5.1%	2.4%	2.2%
			Average over period ending:	06/30/13	03/31/13	06/30/13	12/31/12	12/31/12	12/31/12

Neighborhood Residential Positioning



Neighborhood Commercial and Industrial Positioning

Face Rent Analysis Report

	DIRECT SPACES				SUBLET SPACES				TOTAL
	# Spaces	Min	Avg	Max	# Spaces	Min	Avg	Max	Avg
Flex									
Modified Gross	2	$7.50	$7.50	$7.50	0	-	-	-	$7.50
Triple Net	5	$3.75	$5.57	$9.00	1	$13.00	$13.00	$13.00	$7.99
Industrial									
Full Service Gross	3	$5.00	$6.49	$10.20	0	-	-	-	$6.49
Modified Gross	3	$6.00	$6.28	$9.94	0	-	-	-	$6.28
Negotiable	19	-	-	-	0	-	-	-	-
Plus All Utilities	3	$9.00	$9.00	$9.00	0	-	-	-	$9.00
TBD	2	-	-	-	0	-	-	-	-
Triple Net	27	$1.99	$5.83	$15.00	1	$6.50	$6.50	$6.50	$5.87
Off/Med									
Modified Gross	4	$7.40	$16.25	$35.00	0	-	-	-	$16.25
Plus All Utilities	1	$28.00	$28.00	$28.00	0	-	-	-	$28.00
Triple Net	5	$15.00	$18.27	$39.00	0	-	-	-	$18.27
Off/Ret									
Modified Gross	1	$18.60	$18.60	$18.60	0	-	-	-	$18.60
Negotiable	5	$25.86	$26.19	$26.51	0	-	-	-	$26.19
Plus All Utilities	3	$10.00	$10.50	$11.69	0	-	-	-	$10.50
Plus Electric	1	$18.00	$18.00	$18.00	0	-	-	-	$18.00
Triple Net	6	$15.00	$18.27	$51.42	0	-	-	-	$18.27
Office									
Full Service Gross	7	$13.63	$15.59	$27.26	0	-	-	-	$15.59
Modified Gross	11	$12.85	$20.30	$29.90	0	-	-	-	$20.30
Negotiable	10	-	-	-	1	-	-	-	-
Plus All Utilities	4	$11.92	$17.76	$26.00	0	-	-	-	$17.76
Plus Electric	2	$15.43	$15.43	$15.43	0	-	-	-	$15.43
Triple Net	26	$3.60	$13.03	$27.43	0	-	-	-	$13.03
Retail									
Full Service Gross	3	$20.00	$20.00	$20.00	0	-	-	-	$20.00
Modified Gross	8	$16.00	$19.74	$24.00	0	-	-	-	$19.74
Negotiable	28	-	-	-	2	-	-	-	-
Net	1	$19.50	$19.50	$19.50	0	-	-	-	$19.50
Plus All Utilities	1	$18.00	$18.00	$18.00	0	-	-	-	$18.00
TBD	5	-	-	-	0	-	-	-	-
Triple Net	27	$5.40	$21.24	$45.00	0	-	-	-	$21.24
Utilities & Char	2	$29.53	$29.53	$29.53	0	-	-	-	$29.53

SUSTAINABILITY FRAMEWORK

FOR STATION AREA PLANNING

The concept of sustainability describes a condition where human consumption of natural resources is in balance with Nature's ability to replenish them. Sustainability planning aims to achieve the greatest good for all segments of our population, to protect the health of the environment, and to assure future generations the resources they will need to survive and progress.

Physical, social and economic patterns of human development are affecting sustainability at all levels and expanding the gap between human consumption of resources and Earth's capacity to supply those resources and reabsorb resulting waste. Sustainable planning guides development towards holistic and inclusive approaches. Our approach to sustainable design is based on the "three-legged stool": an understanding that each of the three legs – community, economy and environment – is of equal importance to support a healthy, sustainable community. In this way, the concept of sustainable development becomes an overarching framework to guide the planning process toward a holistic and inclusive view of the community; both the natural and human processes. The goals and attainable benefits to this approach are reduced environmental impacts, better health for residents, and greater economic opportunities.

The sustainability framework described below aims to operationalize these principles into guidelines and implementation actions for Fairmount Indigo station-area planning.

1 SUSTAINABILITY PROGRAMS, POLICIES, FRAMEWORKS

The Fairmount Indigo project occurs within the context of existing programs, policies and guidelines in the Boston region, as well as national frameworks and initiatives for sustainability. The Sustainability Framework synthesizes these existing programs, along with community values and priorities, into a planning guide that aims to achieve consistency with and satisfy multiple objectives of local, regional and national policies and programs.

LEED for Neighborhood Development (LEED-ND) serves as the foundation for the Sustainability Framework. The City of Boston requires all new construction over 50,000 SF to be designed and built to meet the LEED certifiable level, and all multiple-building developments to meet the LEED-ND certifiable level (Article 37 – Green Building Regulations of the Boston Zoning Code). Administered by the U.S. Green Building Council, LEED-ND provides a rating system that integrates the principles of smart growth, new urbanism, and green building into a national standard for neighborhood design. LEED-ND guidelines promote environmentally responsible buildings and infrastructure, mixed-use development, walkable streets, and open space.

To customize LEED-ND to the local context, several other programs were considered in creating this framework, including:

- Boston Complete Streets
- Boston Parks and Recreation Department Sustainable Design Guidelines
- Boston Water and Sewer Commission Stormwater BMP Guidance Document
- Boston Harbor Association "Preparing for a Rising Tide"
- A Climate of Progress: City of Boston Climate Action Plan Update 2011
- Massachusetts Climate Change Adaptation Report
- Fairmount Greenway Concept Plan

2 GOALS AND OBJECTIVES

The Sustainability Framework is informed by goals and objectives that are expressed – explicitly or implied – in the documents mentioned above. Table 1 summarizes the goals and objectives for station-area redevelopment and future growth.

TABLE 1

Table 1. Sustainability Goals and Objectives		
Category	**Goal**	**Objective**
Water	Restore pre-development hydrology	• Design for water efficiency in plumbing fixtures, landscaping, and operations. • Recycle graywater and rainwater on site • Minimize impervious cover • Utilize green stormwater infrastructure to slow, cleanse and infiltrate rainwater where it falls
Energy	Promote clean, renewable energy	• Design structures and operations for energy efficiency • Generate renewable energy on site • Minimize embodied energy of materials • Utilize vegetation and solar-reflective surfaces to reduce urban heat island and building heating/cooling energy needs • Orient buildings to maximize passive and active solar access
Climate	Minimize greenhouse gas emissions	• Utilize fuels with lower carbon footprint • Choose locally sourced materials with lower carbon footprint
	Foster resilience to climate change	• Utilize design standards that account for projected changes in sea level, precipitation, and temperature • Adopt climate adaptation strategies
Ecology	Support healthy soil, plant, and wildlife ecosystems	• Specify native vegetation in landscape design • Control invasive and nuisance species • Preserve existing mature trees • Preserve and create open (undeveloped) space • Minimize soil disturbance by using a phased approach to landscape construction, where one area will be begun and completed prior to starting the next site • Protect and restore wetlands
Community	Foster environmental stewardship in the community	• Engage community members in planning and design • Include public access, interpretive signage, and educational programming • Reflect community identity and values in design
	Create community amenities	• Design stormwater features to provide landscape amenities • Preserve and create open space with public access, recreational facilities, and ongoing maintenance and security
	Reduce burdens of legacy contaminants and ongoing pollution in the community	• Remediate brownfields • Reduce vehicular traffic • Install noise damping facilities • Limit light trespass
	Enhance access and connectivity	• Create accessible pedestrian and bike routes connecting stations, neighborhoods, open spaces, and commercial centers • Repair and upgrade existing pedestrian and bike corridors and facilities • Provide secure and covered bicycle storage • Design compact, mixed-use, walkable neighborhoods
	Expand access to and awareness of healthy, local food systems	• Dedicate space for urban agriculture and farmers markets • Locate markets and CSA drop-offs in central, visible, accessible places • Enhance/create signage for local farmers markets, community gardens, urban farms
	Ensure fairness in the distribution of project costs and benefits	• Involve environmental justice community in planning and design
Economy	Encourage growth of sustainable businesses	• Create “green business” incubators • Co-locate businesses that can share resources (i.e. eco-industrial facility) • Incentivize businesses to adopt sustainable practices (green building, bike-to-work facilities, energy conservation, etc.)
	Improve access to jobs and services by foot, bike or public transit.	• Promote infill
	Increase waste diversion among area businesses	• Composting • Recycling

3 BEST PRACTICES

The goals and objectives summarized above can be achieved by implementing a set of best practices, as described in the following sections. Under each broad category below, specific best practices are detailed in relation to station site design, neighborhood planning, and station-community connectivity. Overarching themes for each of these planning areas are as follows:

Green and Efficient Stations: Develop neighborhood specific, green, energy efficient stations that are safe, well managed and maintained and that elicit a sense of ownership from the community.

Healthy and Integrated Neighborhoods: Create community driven sustainable neighborhood development with a compact, walkable environment created with environmentally-friendly infrastructure and community connectivity to open space and healthy food systems.

Green Connections: Create a system of accessible pedestrian and bike friendly corridors connecting the neighborhood to the green and efficient stations and reinforce a sense of community and stewardship.

3.1 Green Stormwater Infrastructure

Green stormwater facilities capture, cleanse, and infiltrate rainwater where it falls, mimicking natural hydrologic conditions with small-scale facilities distributed throughout the drainage basin. Typical green stormwater facilities include rain gardens, vegetated swales, permeable pavement, green roofs, street trees, and stormwater wetlands. These facilities can be designed to infiltrate into underlying soils, discharge to the storm sewers, and/or provide treated rainwater for on-site storage and reuse.

Green stormwater infrastructure meets multiple sustainability objectives. It enables restoration of pre-development hydrology, allowing for groundwater recharge, improved stream baseflow, and reduced stream channel erosion. These facilities reduce peak runoff flows, thereby reducing demand on existing stormwater and combined sewer infrastructure and reducing the likelihood of localized flooding and combined sewer overflows during extreme events. Filtering and detaining stormwater runoff also improves the quality and temperature of runoff entering water bodies, thereby enhancing ecological, human health, and recreational conditions. If captured rainwater is subsequently reused, potable water can be conserved.

In terms of energy use, green stormwater facilities can provide shading and evapotranspiration to reduce the urban heat island effect and building energy needs. They also reduce the embodied energy of stormwater infrastructure (i.e. soil, stone, plant material versus concrete pipes). In green street applications, green infrastructure provides for traffic calming and improved pedestrian and bike safety. It also creates community green-space amenities, and allows for community engagement and education through planning, design and maintenance.

Green stormwater infrastructure is a common requirement in sustainability guidelines. LEED-ND provides credits for retaining and treating stormwater on-site, and encourages the use of green stormwater retention techniques. The Boston Sewer and Water Commission (BSWC) report, Stormwater Best Management Practices (BMP) Proposal and Guidance Document, identifies green stormwater BMPs for BSWC to consider during site plan review of development projects and when designing capital improvements in both public and private development.

3.1.1 Station Site Design

- Design the station to minimize impervious area, maximize vegetated area, and preserve existing trees.

- Surface-level parking areas: bioretention basins (a.k.a. rain gardens) on perimeter and within parking-

lot islands. Tree wells designed to receive flows from surrounding pavement. Permeable pavement.

• Courtyards, walkways: Bioretention basins receiving runoff from roofs and paved surfaces. Permeable pavement.

• Roof: Vegetated roof ("ecoroof") on portion of station roof. (Assume large portion is allocated for PV)

• Specify native species for vegetated stormwater facilities

• Allow for public access and educational signage and programs in low-security areas.

3.1.2 Neighborhood Planning

• Assess the condition of storm sewers, combined sewers and receiving waters to identify priority areas for improved stormwater management, along with target pollutants.

• Engage community members in identifying and prioritizing neighborhood sites for green stormwater facilities.

• Develop a protocol – and a policy requiring its use - for evaluating opportunities for green stormwater infrastructure within all redevelopment/improvement areas.

• Minimize creation of new impervious area (e.g. surface parking lots)

• Preserve existing trees

• Identify paved surfaces that could be revegetated

• Consider community de-paving parties such as those in Somerville

• Identify vacant lots or existing landscaped areas that could accommodate larger stormwater facilities (e.g. large bioretention basin or wetland basin) to receive runoff from several adjacent properties on which there is no space for green stormwater facilities.

• Specify native species for vegetated stormwater facilities

• Include educational signage.

3.1.3 Station-Community Connections

• Evaluate opportunities for installing "green street" facilities along pedestrian and bike routes. These may include tree-well filters, vegetated curb bulb-outs, rain gardens, and permeable sidewalks and bike lanes.

• Select one or two streets to pilot full conversion to green streets

• Specify native species for vegetated stormwater facilities

• Include educational signage.

3.2 Energy Efficiency and Generation

Energy efficiency and on-site energy generation are essential strategies for reducing pollution, greenhouse gases emissions, energy losses along transmission lines, and reliance on depleted non-renewal energy sources.

3.2.1 Station Site Design

• Orient buildings to maximize passive and active solar access

• Design buildings systems – including electrical, lighting, HVAC – for energy efficiency

• Install solar PV and micro wind turbines for on-site energy generation

• Utilize green roofs and solar-reflective roofing and paving materials to reduce urban heat island effect, and thereby reduce building heating/cooling energy needs.

• Capture and reuse waste heat (if applicable)

3.2.2 Neighborhood Planning

• Evaluate opportunities for district heating and cooling systems

3.2.3 Station-Community Connections

• Reduce vehicle miles traveled – and thereby fossil fuel consumption – by creating more accessible and affordable transit, pedestrian and bike connections to jobs, schools, services and recreation areas.

3.3 Water Conservation and Reuse

As with other sustainable strategies, water efficiency satisfies multiple sustainability objectives, including lower rates of water withdrawals from aquifers, streams and reservoirs; and reduced energy and chemical use for potable water treatment and conveyance.

Efficient indoor water use can be achieved by utilizing low-flow plumbing fixtures and equipment, and by using lower-quality recycled water for toilet flushing, air conditioning, and other industrial uses (e.g. bus or train wash-down). Outdoor water efficiency can likewise be improved by irrigating with recycled water, and through careful plant selection and landscape design (see landscape section below).

3.3.1 Station Site Design

• Design for water efficiency in plumbing fixtures, landscaping, and operations.

• Recycle graywater and rainwater on site

3.3.2 Neighborhood Planning

• Evaluate opportunities for neighborhood-scale decentralized wastewater treatment and reuse.

• Identify open areas, such a playing fields, where rainwater can be stored underground in engineered storage systems and used during droughts for landscape irrigation.

• Specify native and drought-resistant plants.

• Include educational signage.

3.3.3 Station-Community Connections

• Specify native and drought-resistant plants.

• Include educational signage.

3.4 Landscape Design

Sustainable landscape design incorporates the water efficiency practices described above. It also aims to support ecological health of soil and plant communities; prevent soil erosion; and create green-space community amenities. A sustainable landscape will consist of native, drought-tolerant, aesthetically pleasing vegetation that provides habitat value and other ecological services.

Thoughtful landscape design and plant specification not only enhance the value of green and open space; they also reduce the need for irrigation, fertilizer and pesticide application, and energy-intensive maintenance (e.g. mowing). Native plants have naturally evolved over time with adaptations for survival and reproduction within a specific ecosystem. These adaptations make them resilient to climate changes and less susceptible to insects and disease. Native plants also provide habitat value and forage for wildlife as well as erosion control, stability and aesthetic significance to surrounding human communities. Invasive plants, on the other hand, impair both ecological function and aesthetic appeal. Commonly found invasives in Massachusetts include Japanese knotweed (Polygonum cuspidatum), common reed (Phragmites communis), reed grass (Phragmites australis), and Japanese hop (Humulus japonicus).

3.4.1 Station Site Design

• Preserve existing tree canopy and native vegetation

• Specify native and drought-resistant vegetation in landscape design

• Control invasive and nuisance species

• Minimize soil disturbance by using a phased approach to landscape construction, where one area will be begun and completed prior to starting the next site

• Develop and implement an erosion control plan for the construction phase.

• During construction, protect open space and sensitive areas through the use of strict boundaries to reduce damage to site ecology.

• For open areas, select hardy grass species that are adapted to the conditions present

• Use taller grasses in areas where there is a desire to reduce energy and resource input further (less or no mowing) and also to restrict access by humans and or nuisance wildlife.

• Select native tree and shrub species for their tolerances to the environment, i.e. full sun, low water requirements etc. and place them where they are sure to succeed.

• Restrict access to certain areas completely, making them into butterfly or wildflower gardens that provide aesthetic interest but require no maintenance

3.4.2 Neighborhood Planning

• Inventory existing landscape conditions, including species composition, vegetative community health, percent cover of native species, percent dominance of invasive species and habitat characteristics.

• Prioritize areas for invasive and nuisance species removal and maintenance

• Preserve and enhance existing open space

• Evaluate parcels for open space creation, with a focus on both recreational and ecological services

• Protect and restore existing wetlands

• Coordinate public events such as interpretive walks or volunteer events to remove invasive species or to plant native species.

3.4.3 Station-Community Connections

• Invasive species are commonly found in disturbed, high-use areas and travel corridors. Bike and pedestrian corridors could be prioritized for the control of invasive species.

• Install kiosks and educational signage made of recycled or found materials where informative flyers and maps can go. This will draw public attention and inform them of environmental and sustainability goals and how they can help.

3.5 Materials

Sustainable material selection aims to reduce the energy and environmental consequences of material use and waste production. For example, reusing existing buildings reduces construction and demolition waste while conserving raw materials. Likewise, using materials with recycled content diverts materials from landfills and helps conserve raw materials.

3.5.1 Station Site Design

• Evaluate the embodied energy (i.e. energy used to extract, manufacture, and transport) when specifying materials.

• Reuse existing buildings

• Specify materials with recycled content

3.5.2 Neighborhood Planning

• Reuse existing buildings

• Specify paving materials with recycled content

3.5.3 Station-Community Connections

• Specify paving and sign materials with recycled content

3.6 Healthy Food Systems

Urban food systems aim to improve access to affordable, nutritious, locally-produced, fresh food within urban communities. Local agriculture offers myriad benefits, including health, education, food security, and economic benefits for local farmers and consumers alike. It also diminishes the environmental impacts of long-distance transport of food.

Access to fresh, locally-produced foods can be fostered using several tools, including:

• Small urban farms

• Community gardens

• School gardens

• Private/family gardens

• Farmers markets

• Community-supported agriculture (CSA) with local drop-offs

The City of Boston, in partnership with local organizations, has supported the expansion of urban agriculture. In August 2013, the Boston Redevelopment Authority issued draft Zoning Code Article 89, which establishes zoning regulations and standards for urban agriculture in Boston. Several organizations already operate urban farms in Boston: ReVision Urban Farm has two farms in Dorchester; The Food Project includes a 2-1/2-acre farm in Roxbury; and City Growers operates three small farms in Dorchester and one in Roxbury.

3.6.1 Station Site Design

• Install signage at or near station to increase awareness to local farmers' markets and urban farms/gardens.

• Dedicate permanent space at transit station for farmers' market, local-food kiosks, and/or CSA drop-off.

3.6.2 Neighborhood Planning

• Evaluate vacant lots and open spaces within a ½ mile walking distance of transit station for farmers market, community garden, urban farms and urban orchards

• Review local zoning codes or deed restrictions to ensure that growing food is not prohibited; if it is, work with officials to amend codes

• Ensure suitable soils for growing food, in compliance with Boston Public Health Commission's Soil Safety Protocol for Urban Farms

3.6.3 Station-Community Connections

• Create or enhance bike and pedestrian access to farmers' market, community gardens and/or urban farms.

3.7 Climate Resilience

The Fairmount Indigo corridor, as with Boston in general, can expect changes in precipitation, temperature, and flooding in the future as a result of climate change. Precipitation impacts will include more extreme rain events, greater occurrence of droughts, and more winter precipitation in the form of rain instead of snow (therefore more winter runoff and less spring snowmelt runoff). These changes, paired with sea level rise, will increase the likelihood of flooding along the Neponset River and its tributaries. In contrast, stream flows during the summer months are expected to decrease, leading to higher water temperatures and stress on fish populations. The number

of extreme-heat days will also increase, creating higher energy demand for cooling.

The City of Boston has introduced many climate mitigation and adaptation initiatives and policies. Boston Complete Streets and Grow Boston Greener promote green infrastructure throughout the City to reduce the urban heat island effect and mitigate flooding. The BRA requires all new large developments to complete a climate adaptation questionnaire as part of the Article 80 review process. The 2011 update to Boston's Climate Action Plan highlights many of the City's climate preparedness initiatives, and the 2014 update will focus on climate preparedness.

All of the sustainable strategies described in sections above will improve station-area climate resilience. Beyond those, the key recommendation for climate resilience will be to follow the City of Boston's guidelines in its upcoming 2014 Climate Action Plan. Several additional strategies, to be applied to all planning areas, are summarized below.

- Use design standards that are based on projected (not historic) flood elevations, precipitation, and temperatures
- Elevate key utilities (e.g. generators) above projected flood levels
- Seal lower levels or install flood walls; OR allow free passage of water through lower levels
- Relocate key infrastructure away from or above flood zones
- Mitigate the urban heat island effect using shading, green spaces, reflective roofs/pavement
- Design for system redundancy
- Design pedestrian/bike corridors along waterways to serve as flood buffers

FAIRMOUNT INDIGO CORRIDOR

CITY OF BOSTON
Martin J. Walsh
Mayor

Boston
Redevelopment
Authority

BLUE HILL AVENUE/CUMMINS HIGHWAY
STATION AREA PLAN
SEPTEMBER 2014

FAIRMOUNT INDIGO PLANNING INITIATIVE
WWW.FAIRMOUNTINDIGOPLANNING.ORG