

FAIRMOUNT INDIGO PLANNING INITIATIVE

# UPHAM'S CORNER STATION AREA PLAN

## APPENDICES



CITY OF BOSTON  
Martin J. Walsh  
*Mayor*



Boston  
Redevelopment  
Authority

FAIRMOUNT INDIGO PLANNING INITIATIVE

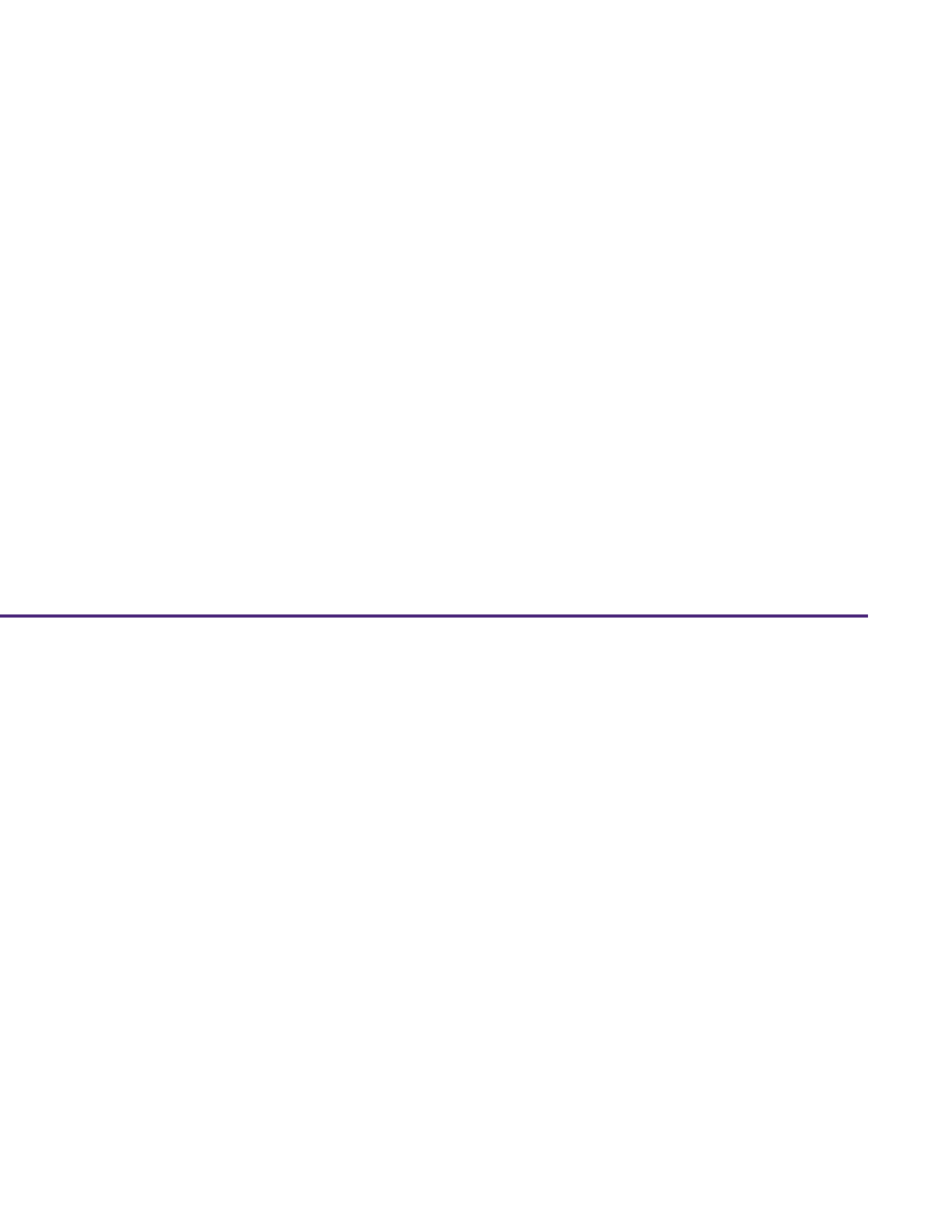
# UPHAM'S CORNER STATION AREA PLAN

## *Appendices Contents*

- 1 Process and Meetings
- 2 Existing Conditions Analysis
- 3 Proforma Feasibility Tests
- 4 Sustainability Framework

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# 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 with Upham's Corner the first to be completed. The Upham's Corner Station Area Plan is the result of a community process that focused on the neighborhoods, residents and businesses around the Upham's Corner MBTA Rail Station.

The City of Boston appointed members of an Upham's Corner Working Advisory Group (WAG) to be a consistent voice of the community through the process. The WAG Members dedicated over 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**

August 8, 2012

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

### **Working Advisory Group Meeting**

September 26, 2012

1. Meeting Introduction
2. Planning Context
3. Existing Conditions Presentation
4. Discussion of Existing Conditions
5. Next Steps

### **Working Advisory Group Meeting**

October 24, 2012

1. Welcome and Introductions
2. Infrastructure Improvements Update
3. Review WAG Meeting #2
4. Project for Public Spaces Presentation
5. Community Forum
6. Upham's Corner Community Visioning Discussion
7. Next Steps

### **Working Advisory Group Meeting**

December 5, 2012

1. Welcome and Introductions
2. Infrastructure Improvements Update
3. Community Forum Review - Upham's Perspective
4. Proposed Upham's Corner Visioning Forum
5. Youth Outreach
6. Next Steps

### **Working Advisory Group Meeting**

January 23, 2013

1. Welcome and General Items
2. Update on Corridor Context - Upham's Perspective
3. Overview of Visioning Forum Agenda/Logistics
4. Visioning Forum Discussion Topics
5. Upham's Visioning Forum Outreach
6. Real Estate Analysis Introduction
7. Next Steps

### **Upham's Corner Visioning Forum**

February 2, 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**

February 27, 2013

1. Welcome and General Items
2. Summary of Visioning Forum
3. Upham's Corner Shared Themes
4. Methodology and Suggestion for Target Sites
5. Public Realm and Transit Improvement Introduction
6. Next Steps

### **Working Advisory Group Meeting**

March 27, 2013

1. Welcome and General Update
2. Additional Community Visioning Results
3. Key Sites
4. Real Estate Context for Key Sites
5. Design and Sustainability Guidelines
6. Next Steps

### **Working Advisory Group Meeting**

April 24, 2013

1. Updates
2. Development Scenarios at (5) Key Sites
3. Public Realm Improvement Preview
4. Next Steps

### **Working Advisory Group Meeting**

May 22, 2013

1. Welcome and Introductions
2. Public Realm Improvements
3. Multi-modal Transportation Improvements
4. Open Space Improvements
5. Next Steps

### **Working Advisory Group Meeting**

June 19, 2013

1. Welcome and Introductions
2. Public Realm Improvements

3. Open Space Improvements
4. Sustainability
5. Next Steps

### **Working Advisory Group Meeting**

July 24, 2013

1. Welcome and Introductions
2. Columbia Road Improvements
3. Urban Design
4. Development Scenarios
5. Zoning
6. Design Studio for Social Intervention
7. Next Steps

### **Working Advisory Group Meeting**

September 25, 2013

1. Welcome and Introductions
2. Maxwell Property Update
3. Hubway Update
4. Urban Design
5. Zoning
6. Corridor-wide Executive Summary
7. Next Steps

### **Working Advisory Group Meeting**

November 18, 2013

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

### **Upham's Corner Community Open House**

February 26, 2014

### **Working Advisory Group Meeting**

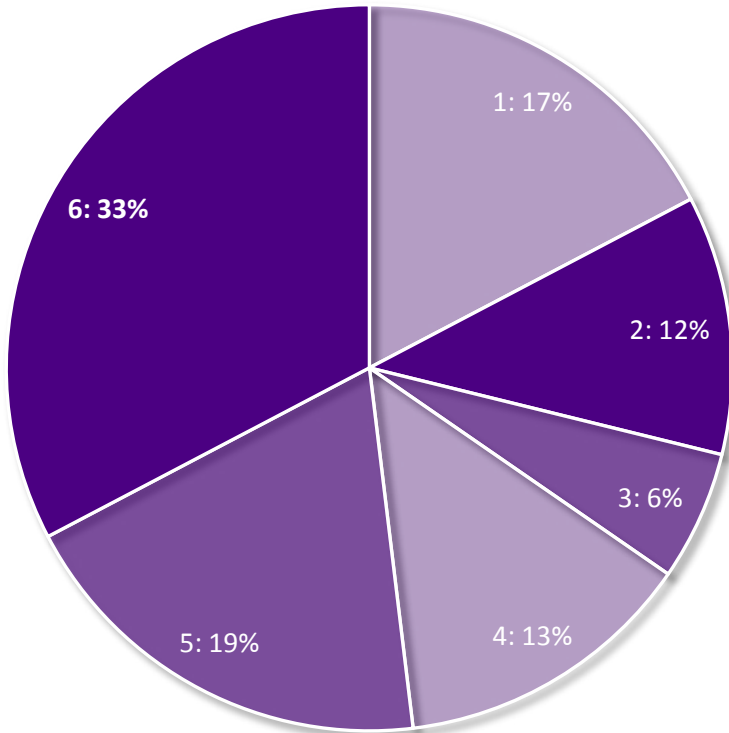
March 24, 2014

Final Station Area Plan Review

# UPHAM'S CORNER STATION AREA PLAN

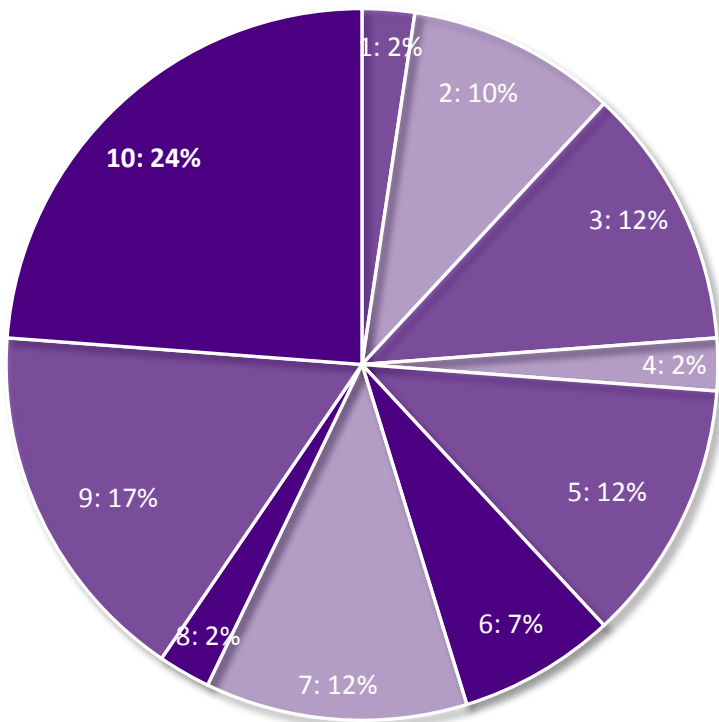
## COMMUNITY OPEN HOUSE RESULTS

*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 February 26th, 2014. The open house included over 100 participants of interested residents, business owners and local advocates. The online survey received just fewer than 50 responses. The percentages reflect the results of responses from participants asked to prioritize the most important next step found under each topic.*



### Vision Statement

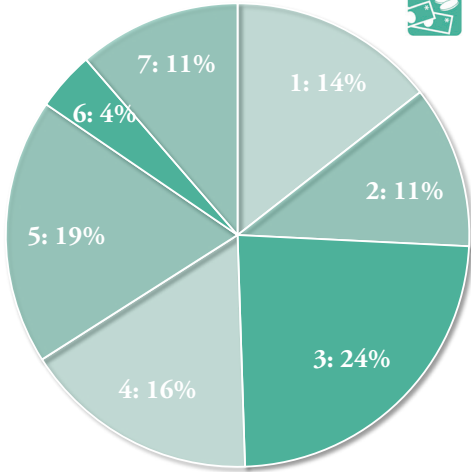
- 1: Strengthen Business
- 2: Provide New Housing
- 3: Reinforce Direct Rail Connection
- 4: Reinforce Walkable Neighborhood
- 5: Protect Existing Community Assets
- 6: **Minimize Displacement**



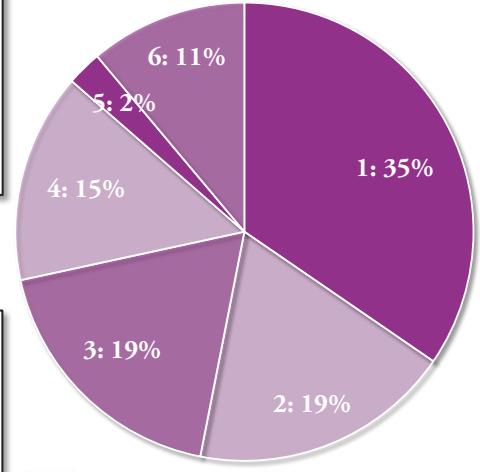
### Implementation Actions

- 1: Attract Redevelopment
- 2: Modify Zoning
- 3: Leverage Publicly Owned Land
- 4: Reinforce the Main Street District
- 5: Enhance Walkability and Mobility
- 6: Invest in Streetscape Improvements
- 7: Promote Main Street Economy
- 8: Share and Manage Parking
- 9: Leverage the Strand Theatre
- 10: **Expand Public Arts Programs**

### Prosperity

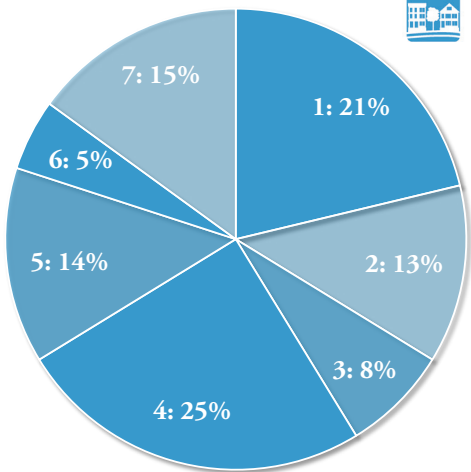


- 1: Identifiable and Attractive
- 2: Mixed Use Activity
- 3: **Cultural Components**
- 4: Local Serving Businesses
- 5: Training and Connection
- 6: None of the Above
- 7: Other



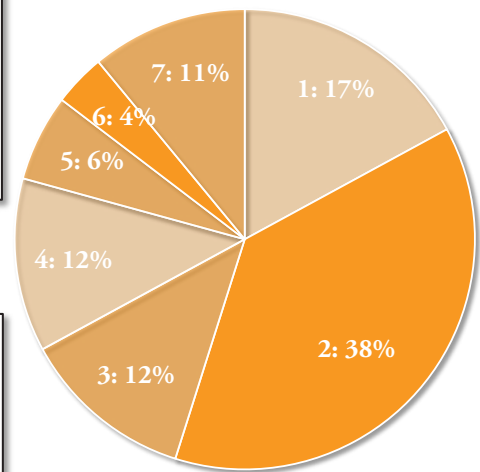
### Getting Around

- 1: **Dudley Street Gateway**
- 2: Mobility Hub
- 3: Walkable Neighborhoods
- 4: Managed Parking
- 5: None of the Above
- 6: Other



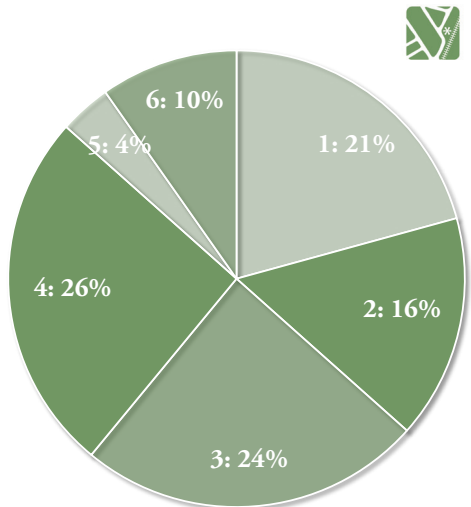
- 1: Transit Oriented
- 2: Mixed Use Activity
- 3: Multi-family Models
- 4: **Mixed Income**
- 5: Neighborhood Infill
- 6: None of the Above
- 7: Other

### Home



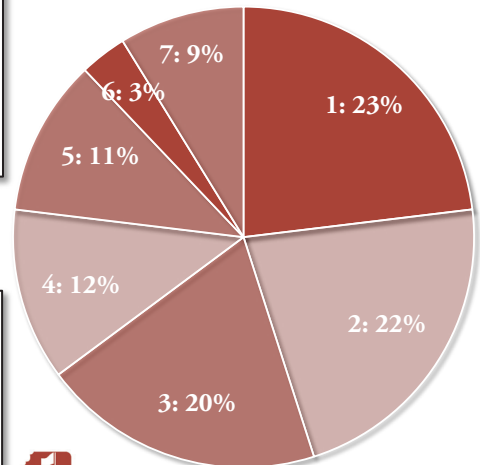
### Parks/Public Space

- 1: Publicly Accessible
- 2: **Convert Vacant Parcels**
- 3: Development Requirements
- 4: Right-of-way Users
- 5: Open Space Networks
- 6: None of the Above
- 7: Other



- 1: Main Street Gateways
- 2: Highlight Historic Assets
- 3: Vitality at the Station
- 4: **Active Ground Floor**
- 5: None of the Above
- 6: Other

### Place



### Quality of Life

- 1: **Arts and Culture**
- 2: Public Safety
- 3: Traffic and Parking
- 4: Community Amenities
- 5: Sustainability
- 6: None of the Above
- 7: Other



## Upham’s Corner 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 the online survey and community open house held on February 26th, 2014. The open house included over 100 participants of interested residents, business owners and local advocates. The online survey received just fewer than 50 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 is was written for the open house and online survey is included below for reference. The online survey was available for approximately one month from the middle of January to the middle of February 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 Upham’s Corner. The numerical tally shows the open house results, the preceding pie charts show both the open house and survey results.

### Vision Statement

Upham’s Corner is a revitalized commercial, cultural and community center that is a celebration of diversity and an arts and cultural anchor of the Fairmount Indigo Corridor.

- 9** • Strengthen businesses and activity to revitalize and support the commercial and cultural center.
- 6** • Provide new housing opportunities near the station and Main Streets District to support vitality
- 3** • Reinforce a direct connection between the center of activity and the rail station

- 7** • Reinforce a walkable neighborhood orientation through public realm and open space improvements to enhance station area quality of life
- 10** • Protect existing community assets found in the current residents, businesses, and historic sites and buildings of Upham’s Corner
- 17** • Minimize displacement of current residents and businesses to preserve diversity

### Comments:

- The last four Mayors have made commitments to strengthen business/economic viability of Upham’s Corner. Time to put up or shut up.
- Available land is now a premium in Boston – already realtors and developers are seeking to make it into this area, forcing people out.
- It’s now or never, vision is important, engagement is crucial, but making it real with money and focus is what is needed. If developer in front of TD Garden can get 1.7 million a derelict lot, what do we get?
- Safer neighborhood – effective outreach to all the ethnic groups in Upham’s Corner – especially ECC!
- Development without displacement is critical! Our neighborhood is changing—we have to develop approaches to keeping those who worked hard to get improvements, be able to stay and enjoy those improvements.
- Gentrify from within – invest in families, education, jobs, local ownership, and wealth creation!

- Whatever is done should include concern to minimize displacement and not encourage gentrification.
- Unity from the beginning to the end – residents need their voice heard!



## Prosperity

Strengthen business activity to revitalize and support Upham’s Corner as a commercial and cultural anchor

### *Priorities with Number of Responses*

#### **What would create more employment and economic opportunities in Upham’s Corner?**

- 14** • Identifiable and Attractive – Make Upham’s Corner a more identifiable and attractive commercial district
- 11** • Mixed Use Activity – Add new residential units above ground floor retail uses to support a vibrant commercial district through targeted redevelopment
- 23** • Cultural Components – Strengthen the Strand Theatre as a cultural amenity and destination and complement with new and existing businesses
- 16** • Local-Serving Businesses – Promote and encourage businesses that serve and fill needs of local residents – local residents drive local spending
- 18** • Training & Connection – Focus on education, training and partnerships to prepare residents and businesses for new opportunities
- 4** • None of the Above

**11** • Other:

#### **Comments:**

- Actively push for a new library site. ATCO site? Bank of America? Central Library admin needs to be pushed.
- Wealth creation, local ownership, entrepreneurship, builds a local economy!
- Small successful businesses – whether retail or professional will not success unless they have real access to capital. Current loaning practices are close to the redlining of old. And can own their space, it’s a land trust model – absentee owners have waited to cash in on their property to the detriment of the neighborhood – e.g. Leon Building. Should not be rewarded for these abuses of neighborhood.
- Crime reduction
- Rebrand Upham’s Corner. Its not known as a business district in that sense. It has businesses but mainly “junk” businesses (dollar stores, and other cheap shopping). We need to rebrand to bring in more money and make it more diverse in terms of income levels.
- Related to the Strand - Stop St. Kevin’s and return that property to the vision that was identified in 2008 by Upham’s Corner Residents - an intergenerational program space especially in support of the arts and the strand as well as some market rate housing
- Private business development
- Light manufacturing uses as zoned. Connect with commercial activity in Newmarket
- Viable & safe transportation link
- Will local workers be hired for development?

- Hire minorities/locals! Have minority workers to help with local unemployment.
- Connect resident and local development – listen to us.



## Home

Provide new mixed-income housing opportunities near the station and Main Streets District to support vitality and prosperity

### *Priorities with Number of Responses*

- 17** • Transit Oriented – Focus large-scale housing development with higher density on underutilized properties directly adjacent to the rail station
- 10** • Mixed Use Activity – Add new residential units above ground floor retail uses to support a vibrant commercial district through targeted redevelopment
- 6** • Multi-family Models – Encourage mid-scale (4-6 story) multi-family housing development throughout Upham’s Corner near the rail station and Main Street district
- 20** • Mixed Income – New housing opportunities for different income levels including market rate and affordable workforce units
- 11** • Neighborhood Infill – Promote development of vacant and underutilized properties (“missing teeth”) with new housing
- 4** • None of the Above
- 12** • Other:

### **Comments:**

- Whatever is done should include affordable options to preserve neighborhood diversity which is one of Upham’s Corners best assets
- Affordable options – I agree. I think the City should implement policy before housing is developed to prevent displacement. Some sort of transit-oriented rent stabilization? (look at the Feb 2014 MAPC report on transit expansion-related displacement)
- Increase the level of affordable housing in mixed use developments to 45% (not 33%)
- High density near stations
- There is too much housing proposed! Too much rental housing! Need more ownership opportunities
- Proposed 80 units housing at St. Kevin – may be too dense, need more coordination with the neighborhood
- Micro units/apts - because there is a lack of middle income single residents in the neighborhood
- We need lofts, ones not designated as artist workspaces.
- Identify open space for parks; add a community center where meetings can be held - there is ABSOLUTELY no place to hold a meeting in Upham’s Corner; create a learning campus
- People wish to live within close distance of transit points but no directly on railway track. Housing directly adjacent to railroad tracks has historically been of lower value to buyers and there is little reason to think that housing directly on railway track, given the deafening noise of Fairmount line trains will attract the upscale young professionals that everyone is talking about. Current housing at Upham’s Corner is predominantly



low-income. We need market rate housing to attract an economically diverse population.

- I'm interested in more cooperatively owned housing.
- Recreational areas, parks community activities etc



## Place

The physical environment of the station area should express the distinctiveness and vitality of the heart of Upham's Corner and provide visual cues for attractive and stable neighborhoods. A direct connection needs to be reinforced between the Upham's Corner Main Streets District and the rail station

### *Priorities with Number of Responses*

What will help to define a sense of place in Upham's Corner?

17

• Main Street Gateways – Highlight entry points into Upham's Corner through redevelopment and streetscape improvements along primary street connections and at the rail station

13

• Highlight Historic Assets – Enhance the uniqueness of Upham's Corner by preserving but also actively reusing historic buildings and sites. New development should respect the historic scale of approximately 5-story buildings

20

• Vitality at the Station – Allow larger buildings next to the Upham's Corner MBTA station to transform the sense of arrival and enliven the station area

21

• Active Ground Floor – Encourage active pedestrian level uses (i.e. Restaurants, retail, food stores, etc.) with transparency and entries at the street

3

• None of the Above

8

• Other:

### **Comments:**

• Expand the core Upham's Corner services to what it was when it had sustainable business – basically from JFK T Stop to Blue Hill Ave – See 1977 BRA Report

• Keep residents involved – more engagement

• Ensure community benefit from larger scale development and that those benefits are targeted to low/moderate income people (30%-80% Boston median income)

• Connect – stations with main streets – lots of ground level activity

• Foster interactive structures and activities on the streets near the station to attract pedestrian activity

• Open space; parks; ability for community to form spontaneously without having to have permits up the ying-yang

• Upham's Corner Main Street stops at Monadnock and Dudley Street per its by-laws. Biggest disadvantage to railroad station is that it is an unmanned station above the street; people on platform cannot be seen from street level which is very dangerous at off-peak hours. Regardless of improved lighting, someone could easily be murdered on the platform and body not discovered for hours. Historic assets and historic properties should be maintained and their historic significance marked.

• Vitality is what I would be looking for. To that end, I would want the commercial district to extend to the T station. The large storage building and the empty lot.



Allowing larger buildings around the T station might be okay. Probably needed to help grow ridership on the Fairmount line. I think we have a lot of mixed use housing in Upham’s Corner and it would okay with me if this development focused on market rate residential.

- More bus service to the Upham’s Corner destination



## Getting Around

Connections to the rail station and the public street network can be improved for all modes of transportation to emphasize a sense of place, reinforce walkability, increase bike and vehicle safety and reduce congestion for buses.

### *Priorities with Number of Responses*

**Which of the following transportation recommendations is the most important to you for Upham’s Corner?**

- 28** • Dudley Street Gateway – Extend improvements to Dudley Street, similar to improvements coming to Columbia Road such as new roadways, bike lanes, sidewalks, and lighting, improving the business district and connection to the rail station
- 15** • Mobility Hub – Create a central point for transportation options such as Hubway, bus routes, taxi cab and car parking at Upham’s Corner MBTA rail station area
- 15** • Walkable Neighborhoods – Ensure the station area, Main Street business district and all surrounding neighborhoods have continuous and safe sidewalks and crosswalks

- 12** • Managed Parking – Coordinate and implement public and private parking strategies such as shared parking incentives, on-street parking regulations, resident parking and new signage to improve convenience and reduce congestion

- 2** • None of the Above

- 9** • Other:

### **Comments:**

- 2 hour limit in lots – many needs to allow longer tie for events, etc.
- Need rear entrance to buildings to connect to parking lots
- What is Hubway? Show photo, etc.
- Balance local parking needs
- We need much-increased publicity about the Indigo Line. For example, I want to see a big sign on both sides of the Dudley Street rail overpass that says “10 min. to South Station - \$2.00.” (If Harvard Square can have a sign like that, why can’t we?). Same on billboards around the various station areas, and any other creative ideas for spreading the word
- Need taxi cab stand (one was removed on Dudley Street)
- Need lighting for walkable neighborhoods
- Gentrification concerns
- Bike safety education – rules of the road

- 2 churches – Pilgrim (open), St. Kevin’s (closed) – what are the plans? Men’s shelter – security concerns, children’s center – conflicts/safety

- Improved crosswalk near Kroc Center and Station
- Redirect bike lane – too many accidents with bikes
- Coordinate transit service with Strand Theatre events (ex: Somerville Theatre/Red line)
- Increased programming for Strand – encourage use, dark many weekends and underused
- Columbia/Dudley – pedestrian safety issue “walk” signal conflicts with left turns
- Weekend services
- Expand hours of operation and frequency of trains
- All efforts should be taken to discourage people driving into Upham’s Corner to catch the train. Resident-only parking would be problematic for any resident wishing to occasionally entertain a non-Dorchester guest. Better enforcement of existing parking regulations highly desirable. Existing Upham’s Corner Parking Lot should be better marked
- Biking in opposite direction (safety 1st)



### Parks and Public Space

A deficiency of publicly accessible open space around the station area (relative to other neighborhood averages) should be addressed through public realm and private or public open space improvements.

#### *Priorities with Number of Responses*

#### Which of the following parks and public space recommendations is the most important to you for Upham’s Corner?

- 14** • Publicly Accessible – Improve openness of existing public or private open spaces, including activity along the edges and street frontages of the North Burying Ground (Columbia Rd & Stoughton St.)
- 31** • Convert Vacant Parcels – Convert vacant land/properties into amenities such as playgrounds, parks or community gardens
- 10** • Development Requirements – Provide incentives for new public open space to be included in new large development projects
- 10** • Right-of-way Users – Expand sidewalks for uses such as public art/space, trees and outdoor seating
- 5** • Open Space Networks – Enhance the Boston bike network to connect to nearby open space resources (like Franklin Park)
- 3** • None of the Above
- 9** • Other:

#### Comments:

- D = might increase foot traffic for businesses!
- B = having less vacant lots makes it seem more safe and gives a sense of community
- Along Columbia Road sidewalk paving is in poor condition

- Side streets are neglected too narrow and non-existent
- Would like to see more community gardens rather than parks/playgrounds
- A – get Dorchester North BG opened as a green park!
- The City-owned parcel at the far end of Nonquit Street needs to be open to the public on a regular, frequent basis.
- Community centers that can benefit residents, educationally, socially, economically, etc.
- B? The parcel Magnolia Street entertainment for Summer gather such as talent show, movies, concerts
- Hannon Park – the field is underutilized and not well maintained possible safety hazard maintain the use of the recreational field to keep it a public field unlike the private field across the street.
- The cemetery should be open everyday
- Vacant lot at Stoughton and Pleasant Street
- Would like to see rooftop gardens
- Concerned about rodents and vacant parcels
- Add a water feature to Hannon Park (sprinklers)
- As a start have them matches with residents, businesses who will take care of them, the cemetery as well as other sites deserves to be on the “Freedom Trail” The history of Boston is not defined by where it is.
- I like having parks and open space in the area. But who is going to maintain these spaces. For example the playground on Belden Street was needed but it mainly used as a home for drug addicts and homeless. So I don't

want to see this happen in the new spaces we create. Plus the rodent issue is a problem

- More publicly accessible open space highly desirable but not North Dorchester Burying Ground except for manned hours.
- I don't see parks and even public spaces as key to Upham's Corner becoming more vibrant.
- We need animal parks



## Quality of Life

The Station Area is anchored by the unique cultural asset of the Strand Theatre and a vital collection of community and health centers, historic buildings and residences that provide strong anchors.

### *Priorities with Number of Responses*

#### **Which recommendations would best improve the quality of life for residents and businesses in Upham's Corner?**

- 21** • Art & Culture – Capitalize on the unique opportunity to showcase public art, artists and performance and highlight the Strand Theatre
- 20** • Public Safety – Address resident and visitor safety concerns through active and thriving ground floor uses, well-lit pedestrian-oriented streets and a renewed sense of pride in place
- 18** • Traffic & Parking – Reduce Congestion on Dudley Street and Columbia Road with turn lane improvements, relocated bus stops, and parking management
- 11** • Community Amenities – Reinforce events and programs at community centers, health centers

and training centers through a coordinated network of information and displays

**10** • Sustainability – Reinforce Upham’s Corner as an example of healthy neighborhoods socially, economically and environmentally

**3** • None of the Above

**8** • Other:

**Comments:**

- Maintaining the diversity is extremely essential to having community.
- Environmentally sound. Development is good for quality of life – using native plants, designing for minimal energy use, etc.
- Too many accidents! Pedestrian safety is overlooked!
- Need to foster street level and outdoor activity to bring people together – the institutions should find ways to spill out to the street – need City cooperation
- Quality of life depends on the area being active – inviting and offering what people need at a fair price
- This survey is poorly designed. I cannot select more than one option. That is ridiculous!!
- Public safety through enforcement of existing noise laws
- More learning and training facilities to create more business and advancement opportunities

**Next Steps/Actions**

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

**Priorities with Number of Responses**

**1** • Attract Redevelopment

**4** • Modify Zoning

**5** • Leverage Publicly Owned Land

**1** • Reinforce the Main Street District

**5** • Enhance Walkability and Mobility

**3** • Invest in Streetscape Improvements

**5** • Promote Main Street Economy

**1** • Share and Manage Parking

**7** • Leverage the Strand Theatre

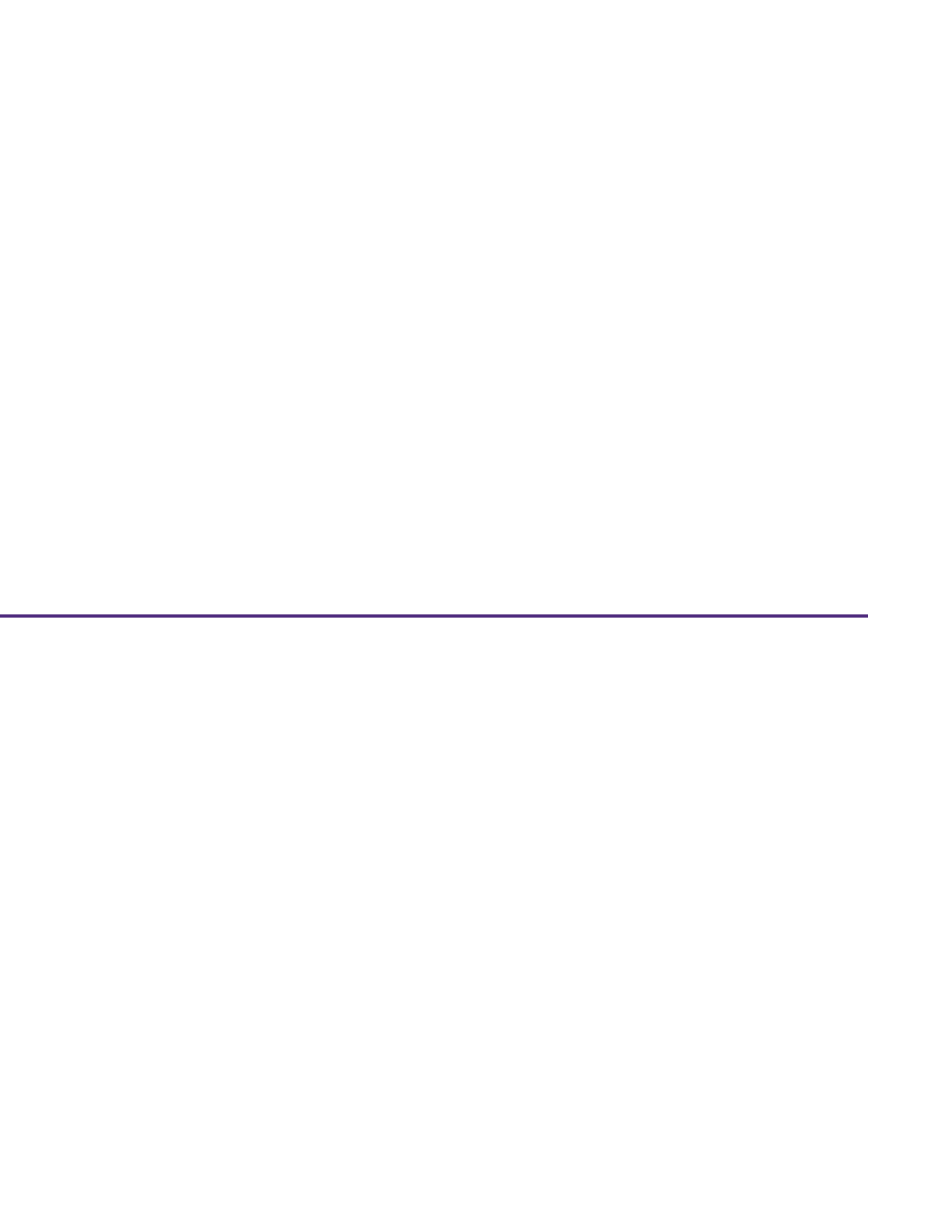
**10** • Expand Public Arts Programs

**Comments:**

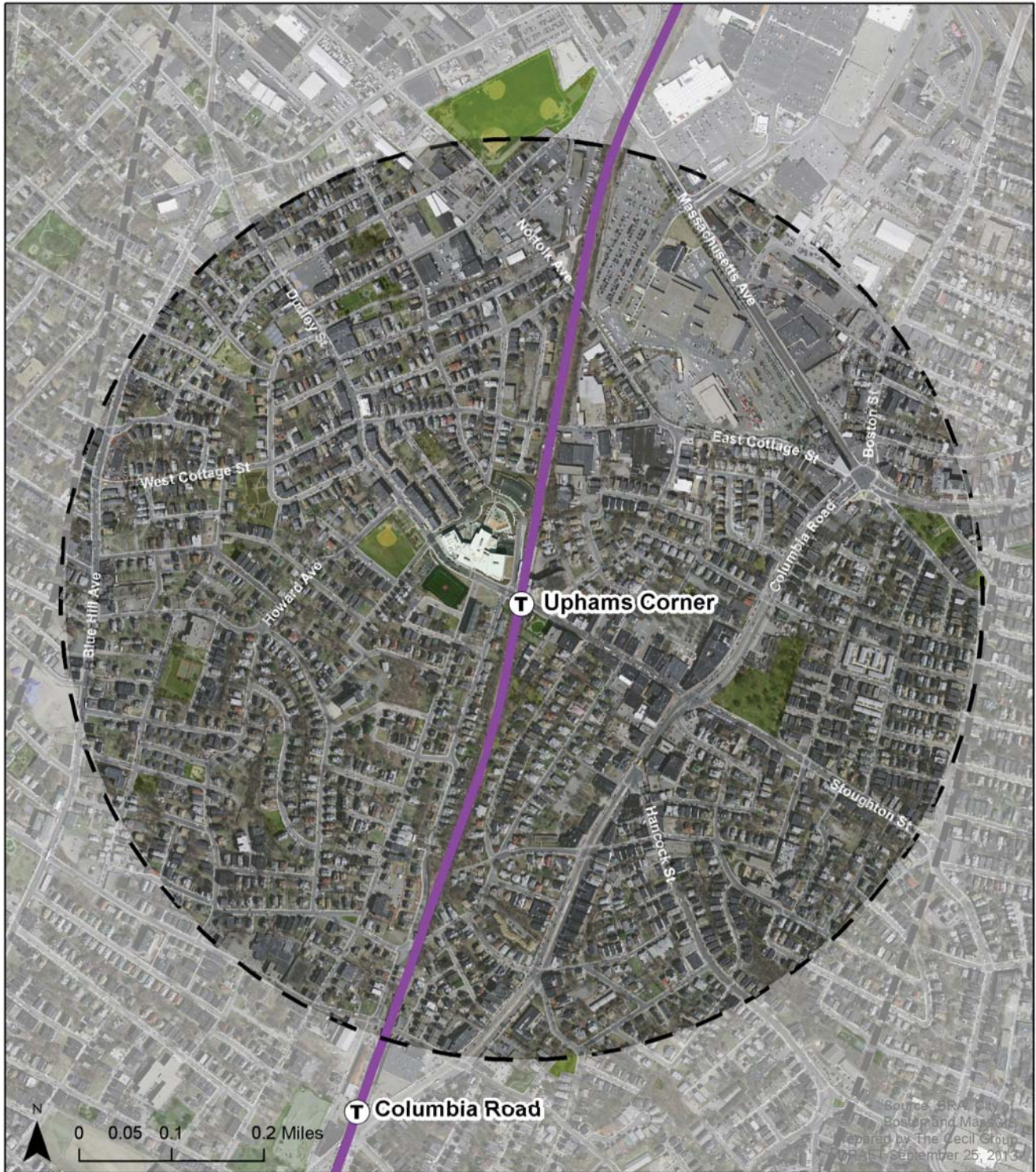
- Implement intentional anti-displacement strategies as our neighborhoods become more attractive due to new amenities.
- Create an enterprise zone with incentives for businesses to locate along the corridor to hire locally.
- Adjust light signals at the Columbia Road intersection
- How do we make sure that there is development without displacement?
- Make use of empty lots! (playgrounds/community centers)
- Invest in people

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# EXISTING CONDITIONS ANALYSIS

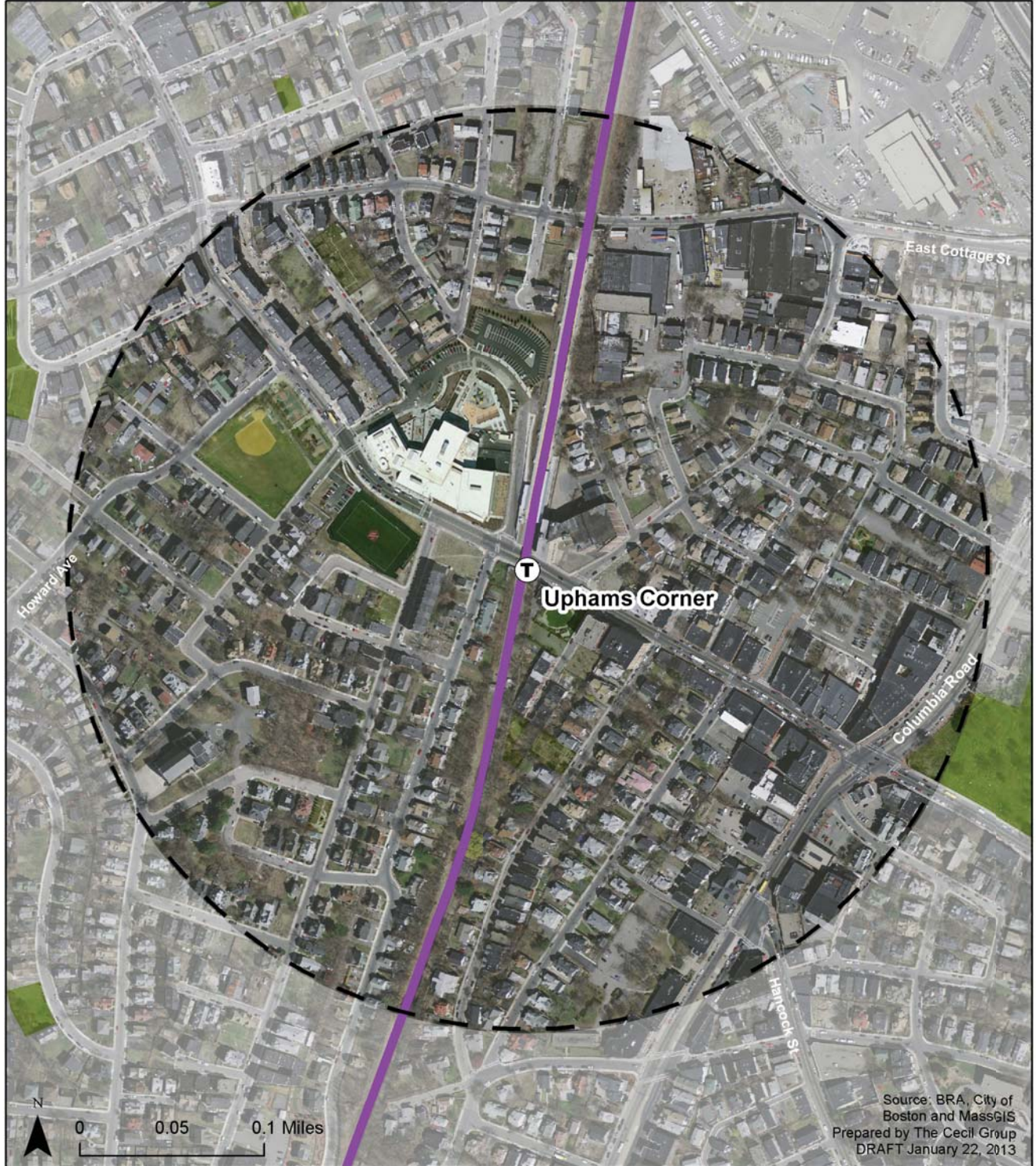






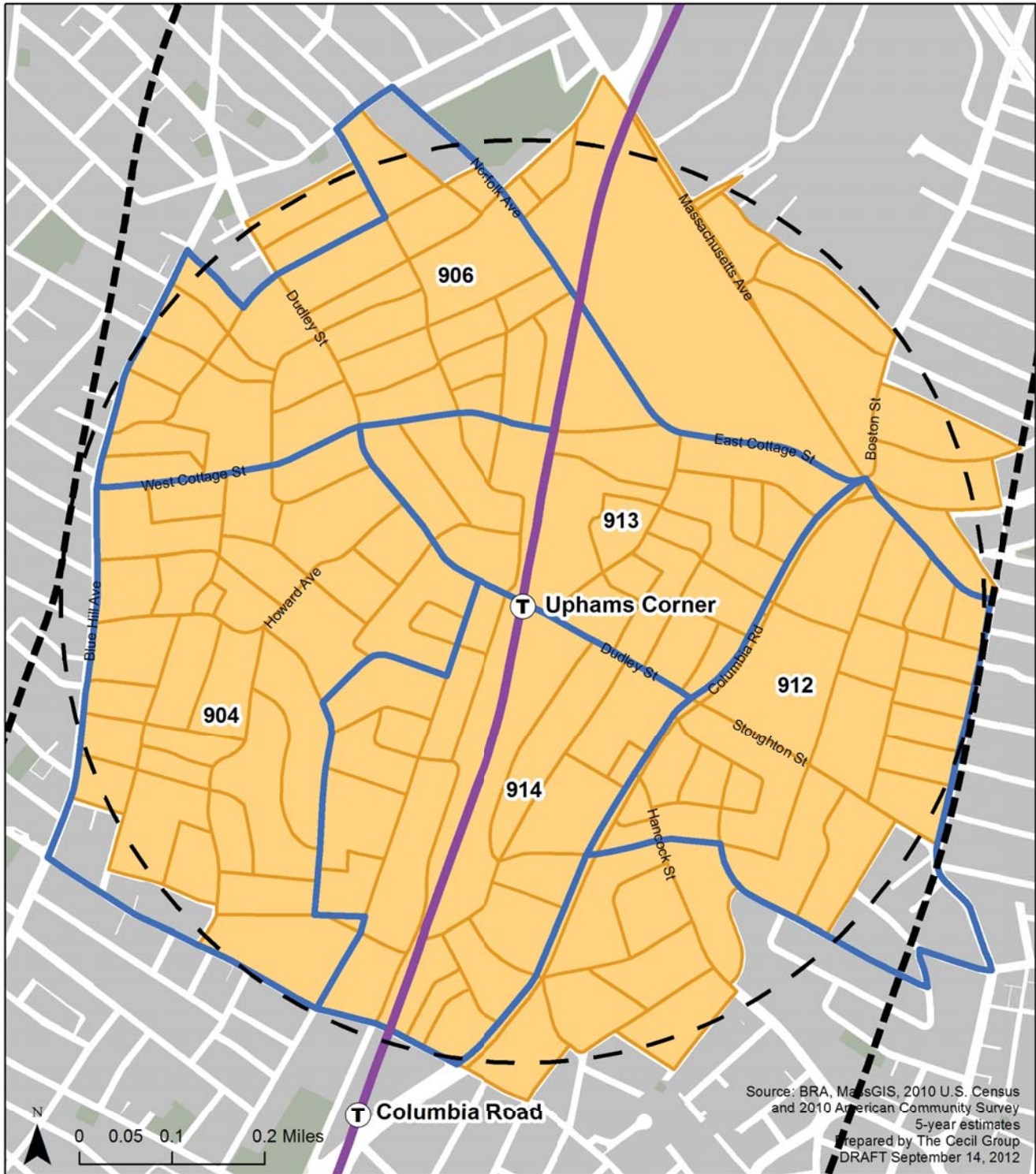
# Upham's Corner Station Area Aerial





# Upham's Corner Station Area Aerial

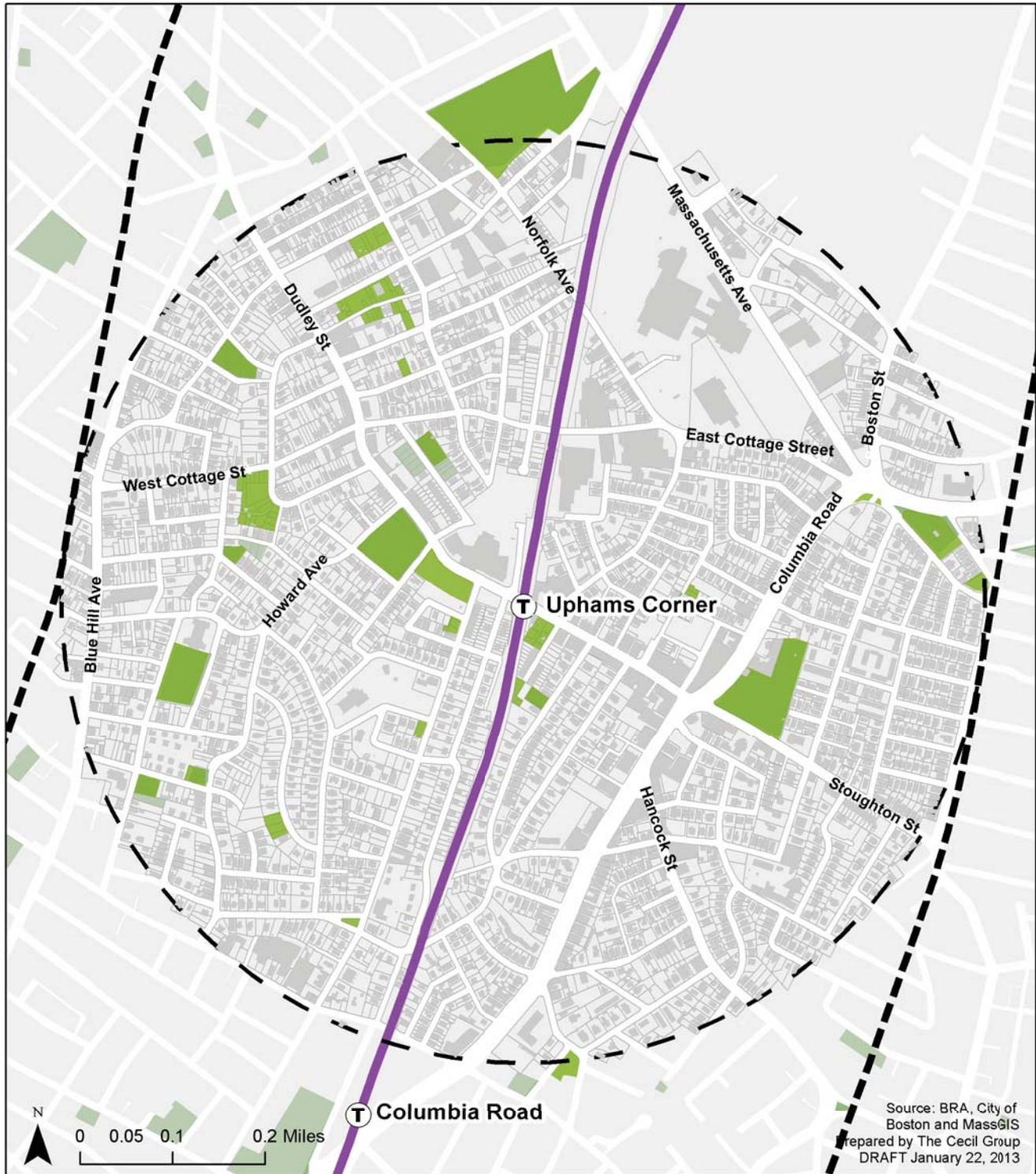




# Census Tracts and Blocks

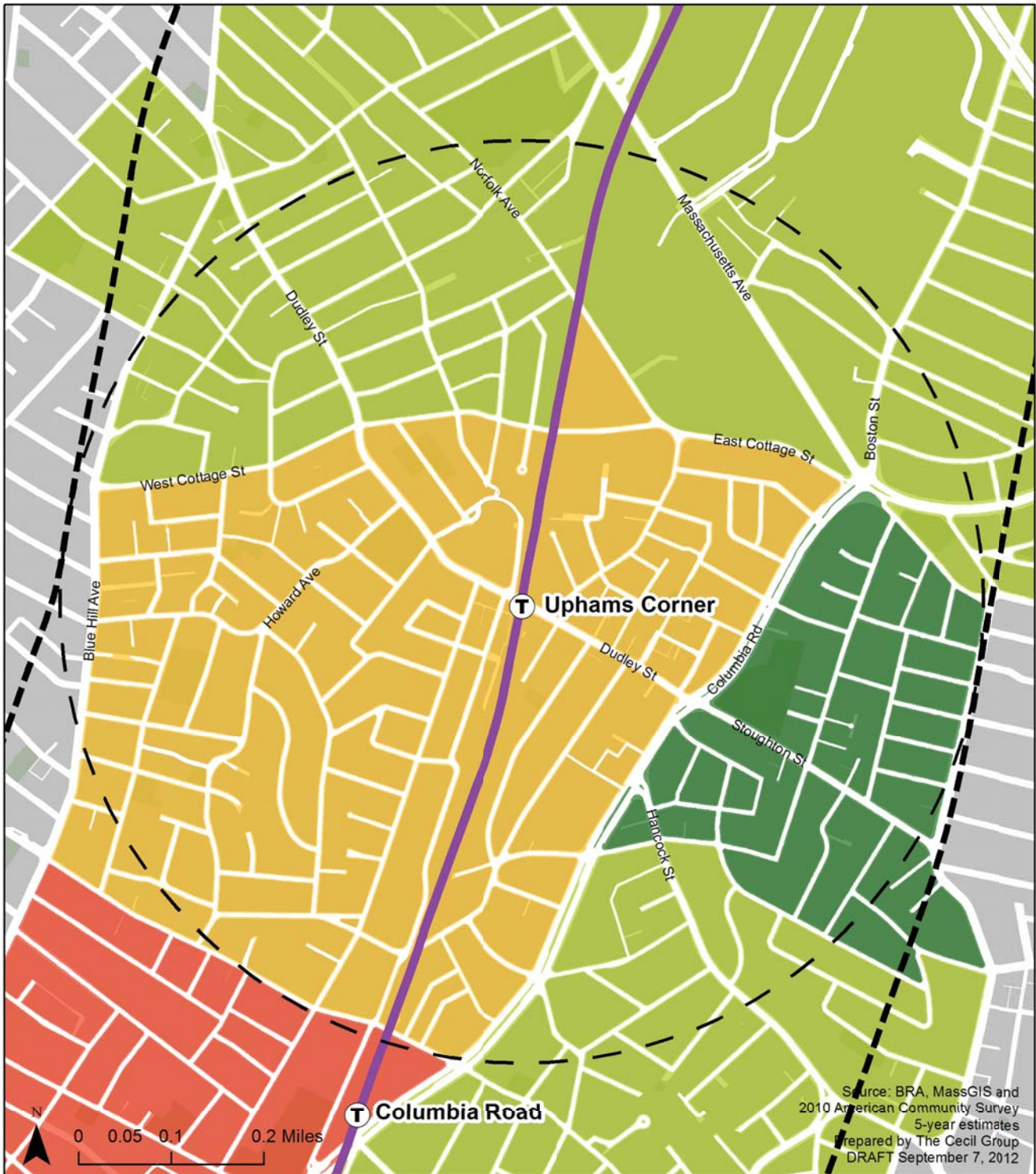
Census 2010 Tracts  
 Census 2010 Blocks

Fairmount Indigo Line  
 Half Mile Uphams Corner  
 Half Mile Fairmount Corridor



# Upham's Corner Station Area Aerial





# Median Household Income

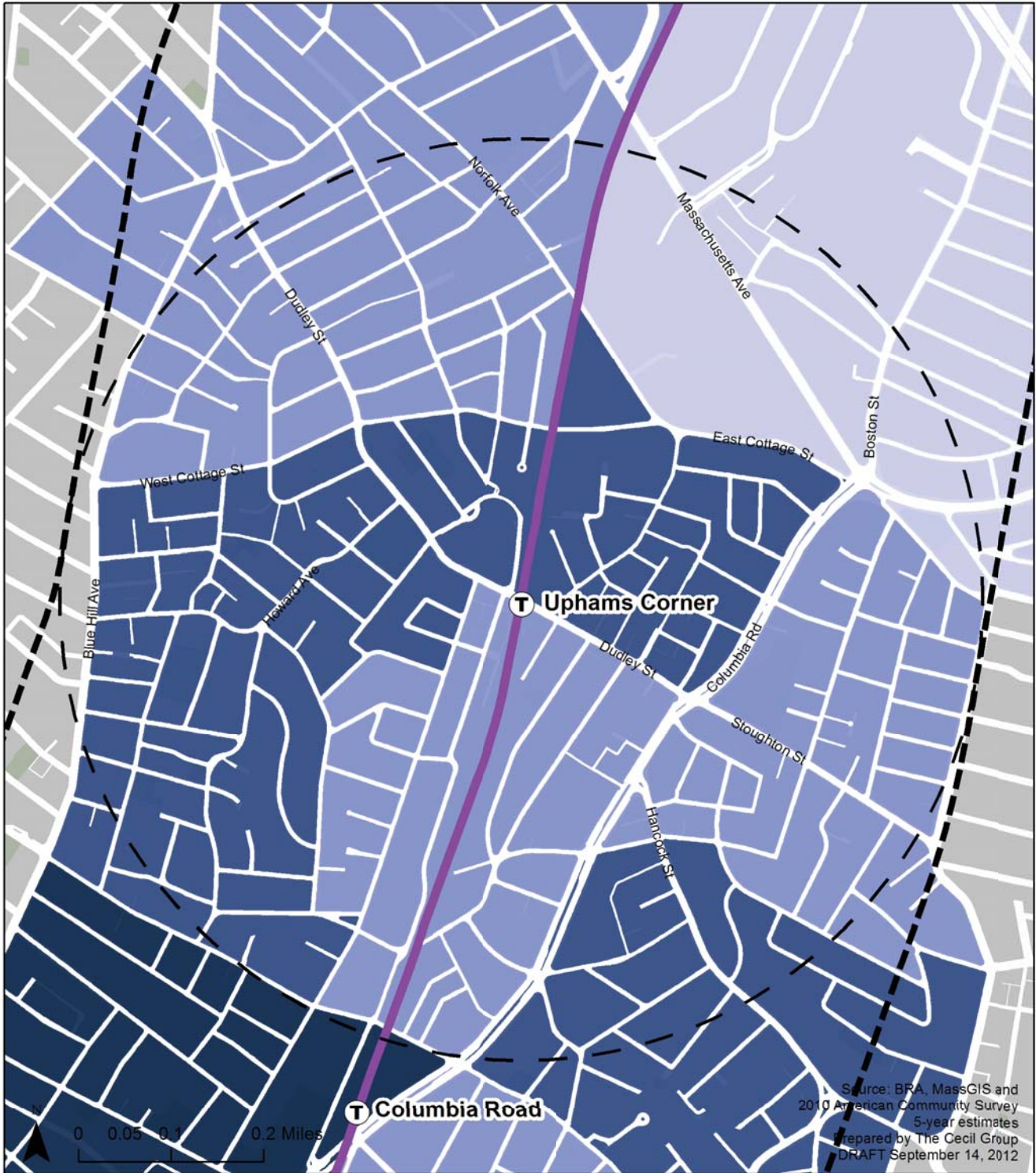
By Past 12 Months By Census Tract  
 UPHAM'S CORNER STATION AREA PLAN

## Median Household Income

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

- Fairmount Indigo Line
  - Half Mile Uphams Corner
  - Half Mile Fairmount Corridor
- BOSTON: \$50,684 median household income

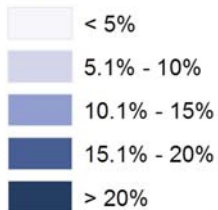




# Unemployment

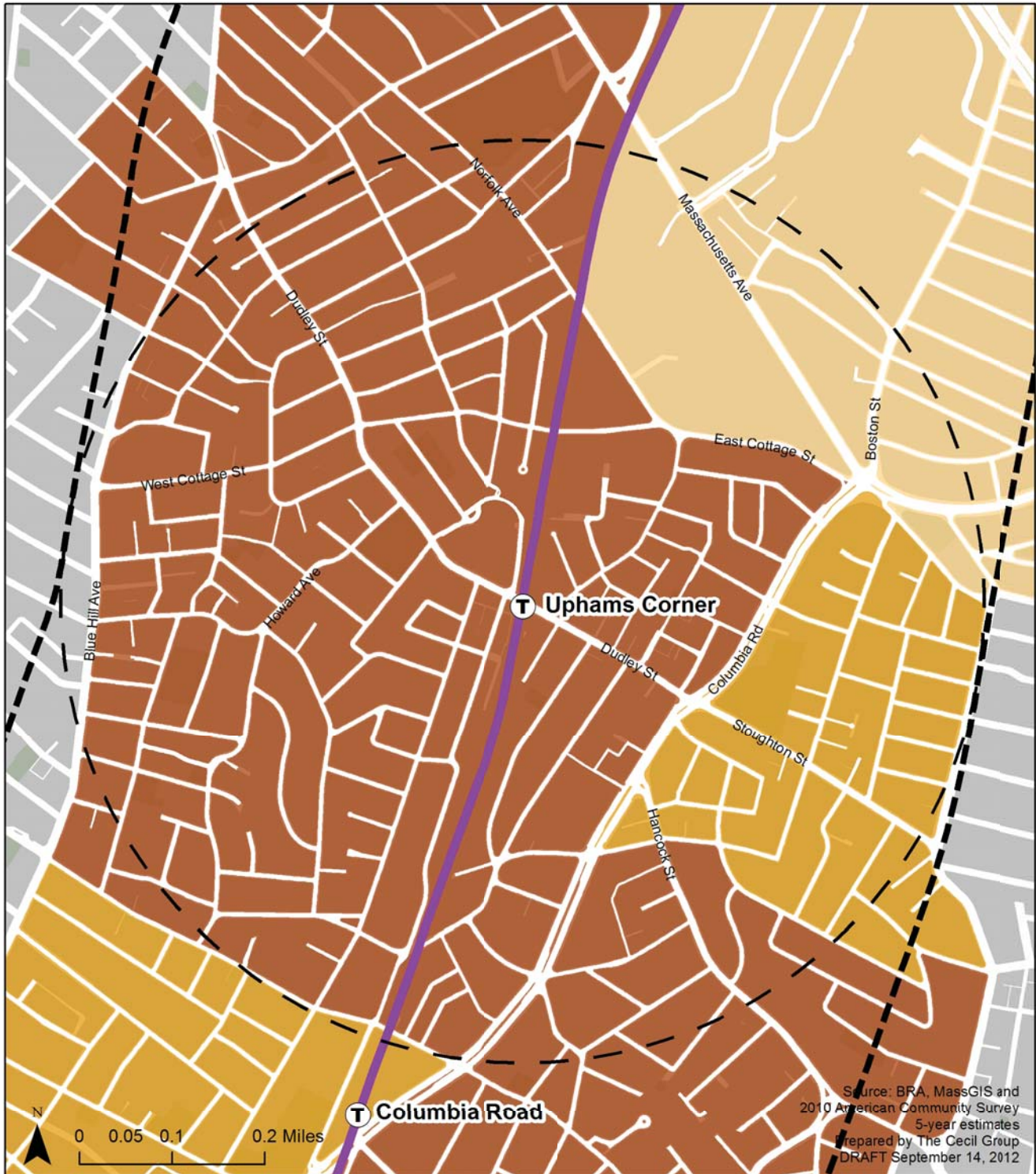
By Census Tract

% pop. age 16+ unemployed



BOSTON: 9.3% unemployment

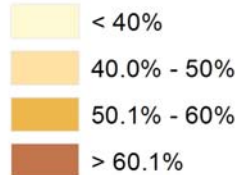




# Education

By Census Tract

% of pop. age 25+ with no more than a high school diploma



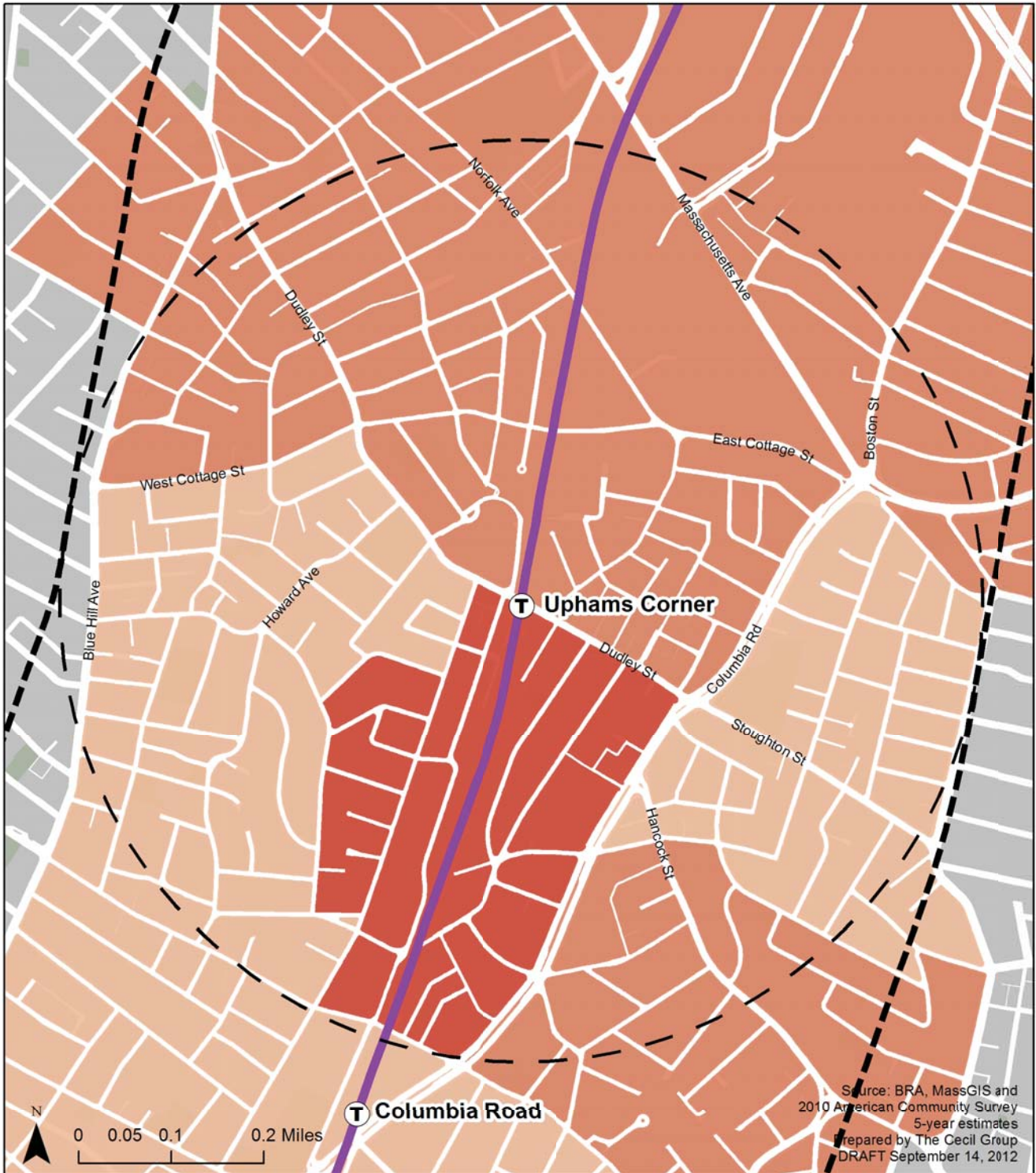
Fairmount Indigo Line

Half Mile Uphams Corner

Half Mile Fairmount Corridor

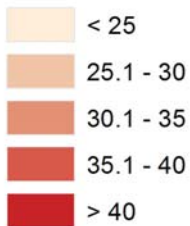
BOSTON: 39.3% with no more than a high school diploma





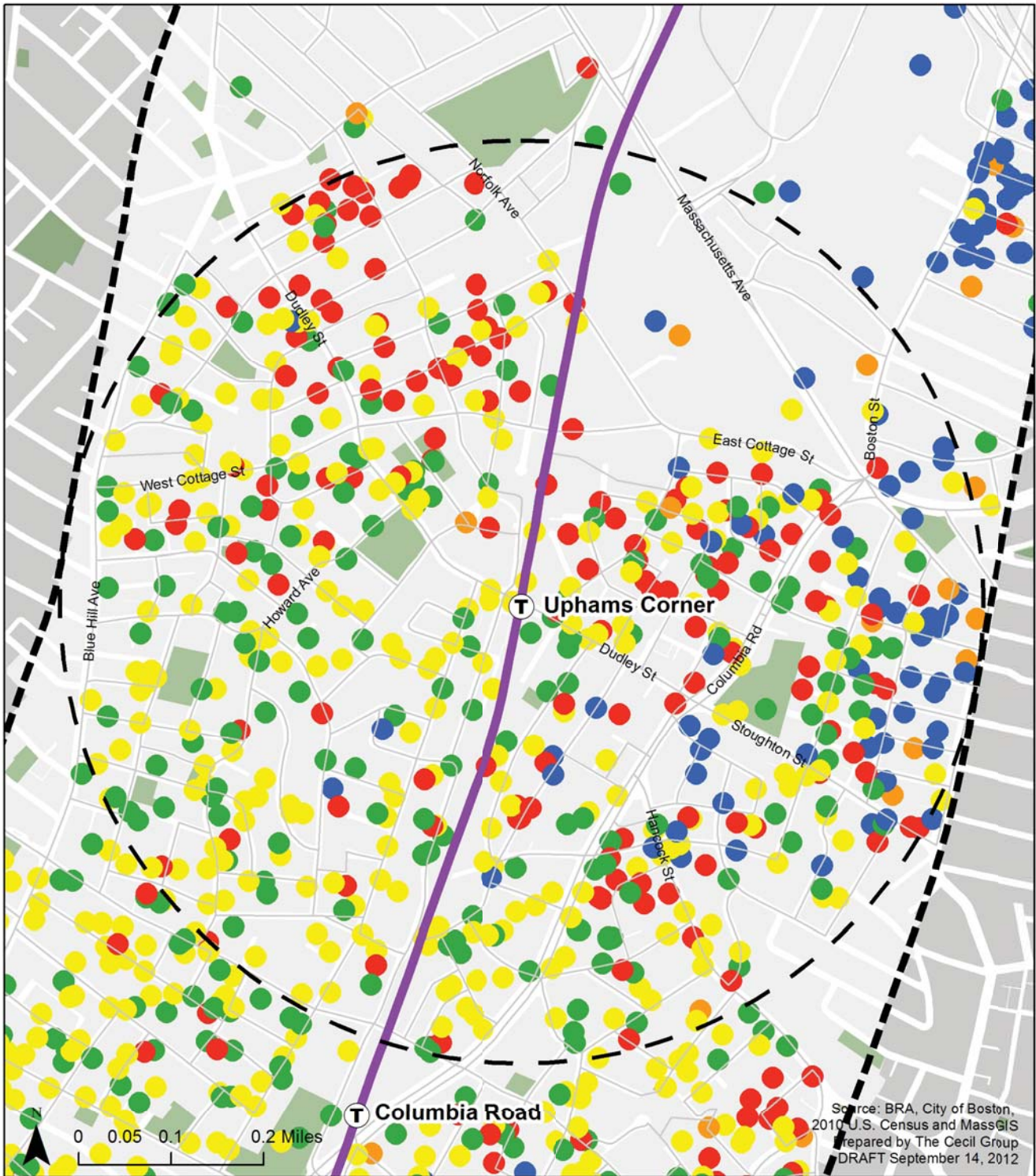
# Median Age

By Census Tract



BOSTON: 30.9 median age





# Race and Ethnicity

By Census Block

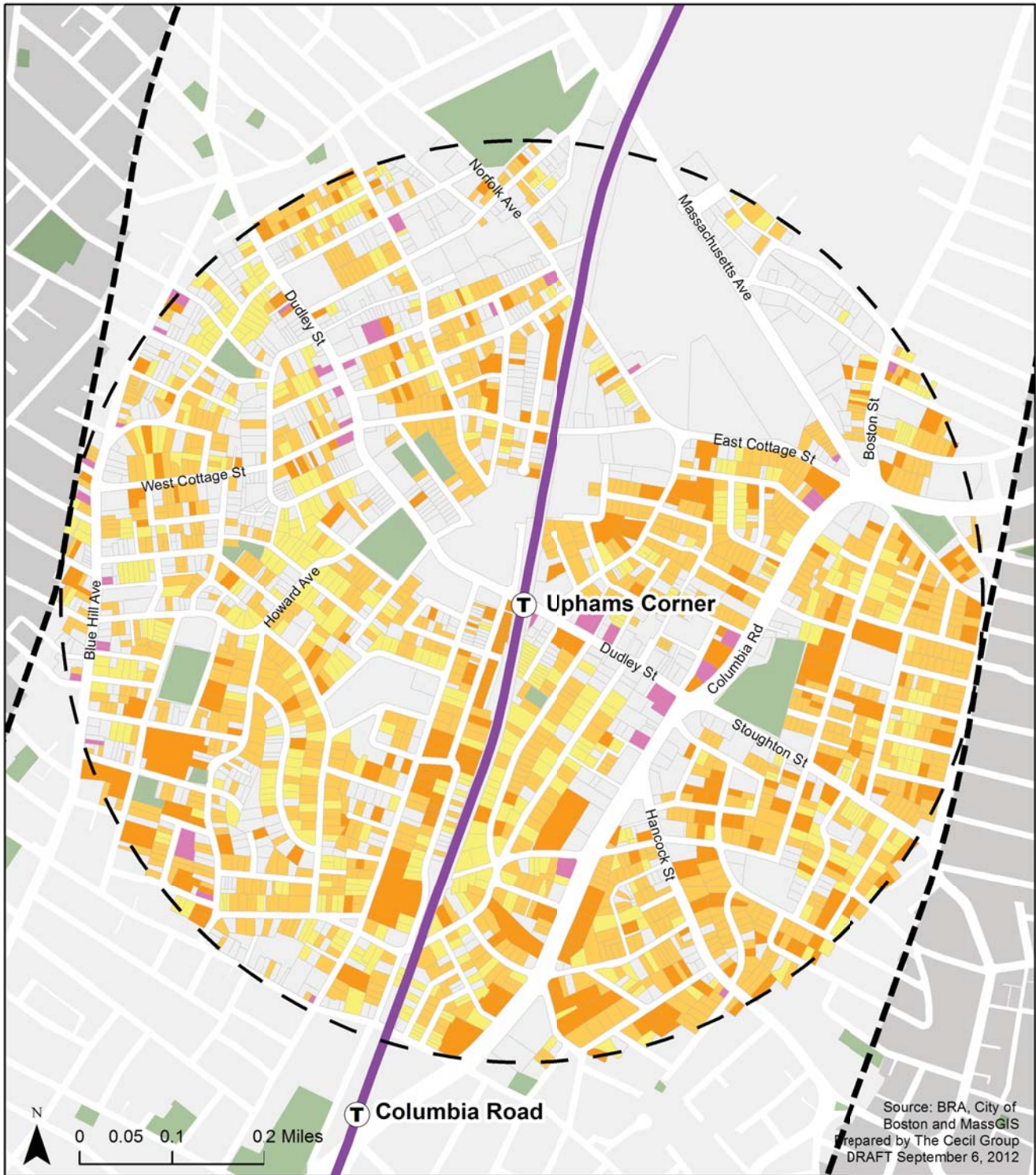
- 1 Dot = 25
- White
- Hispanic or Latino
- Black
- Asian
- Other

- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor

BOSTON:

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





Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT September 6, 2012

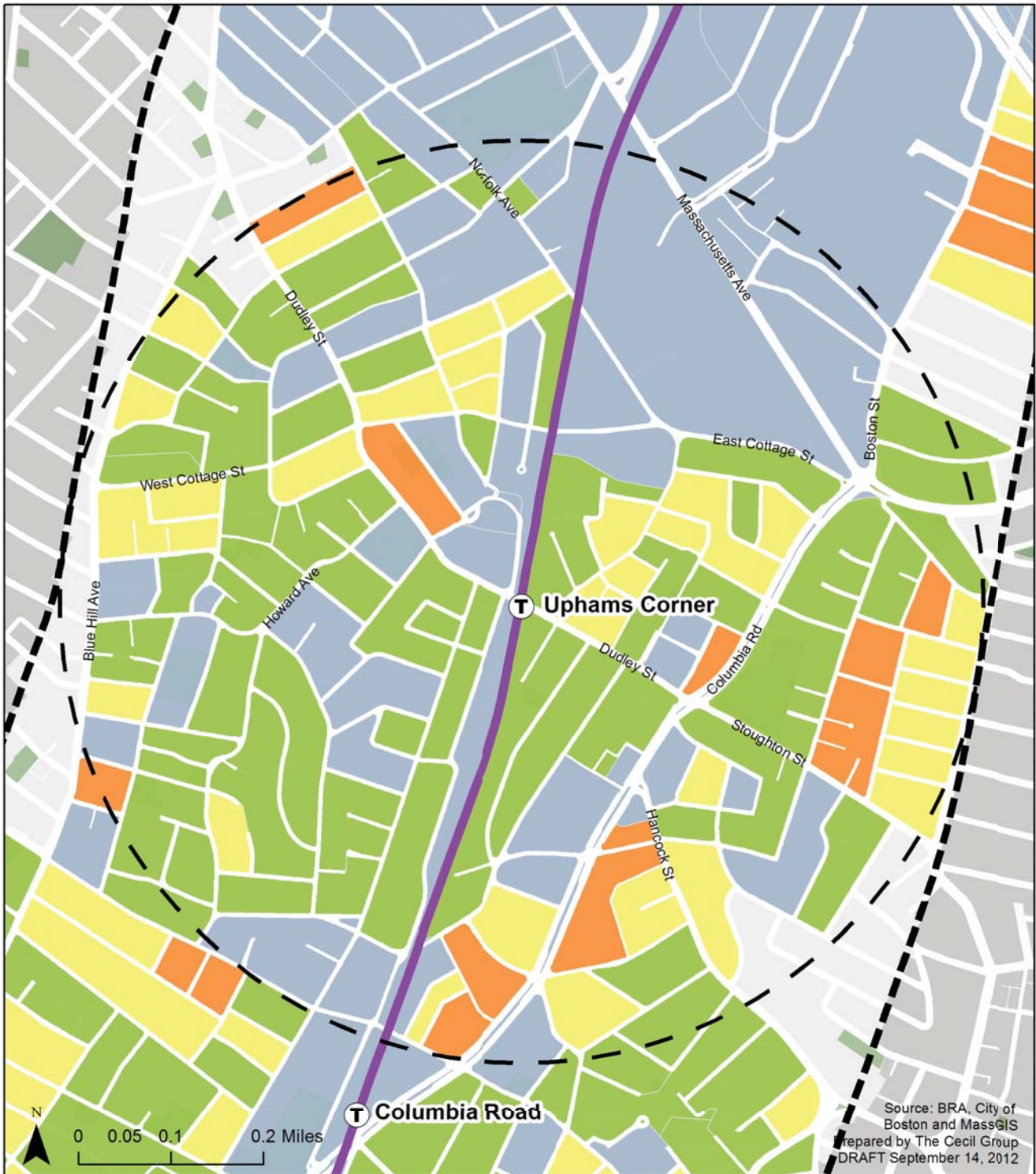
# Housing Type

By Parcel

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

- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor





# Housing Density

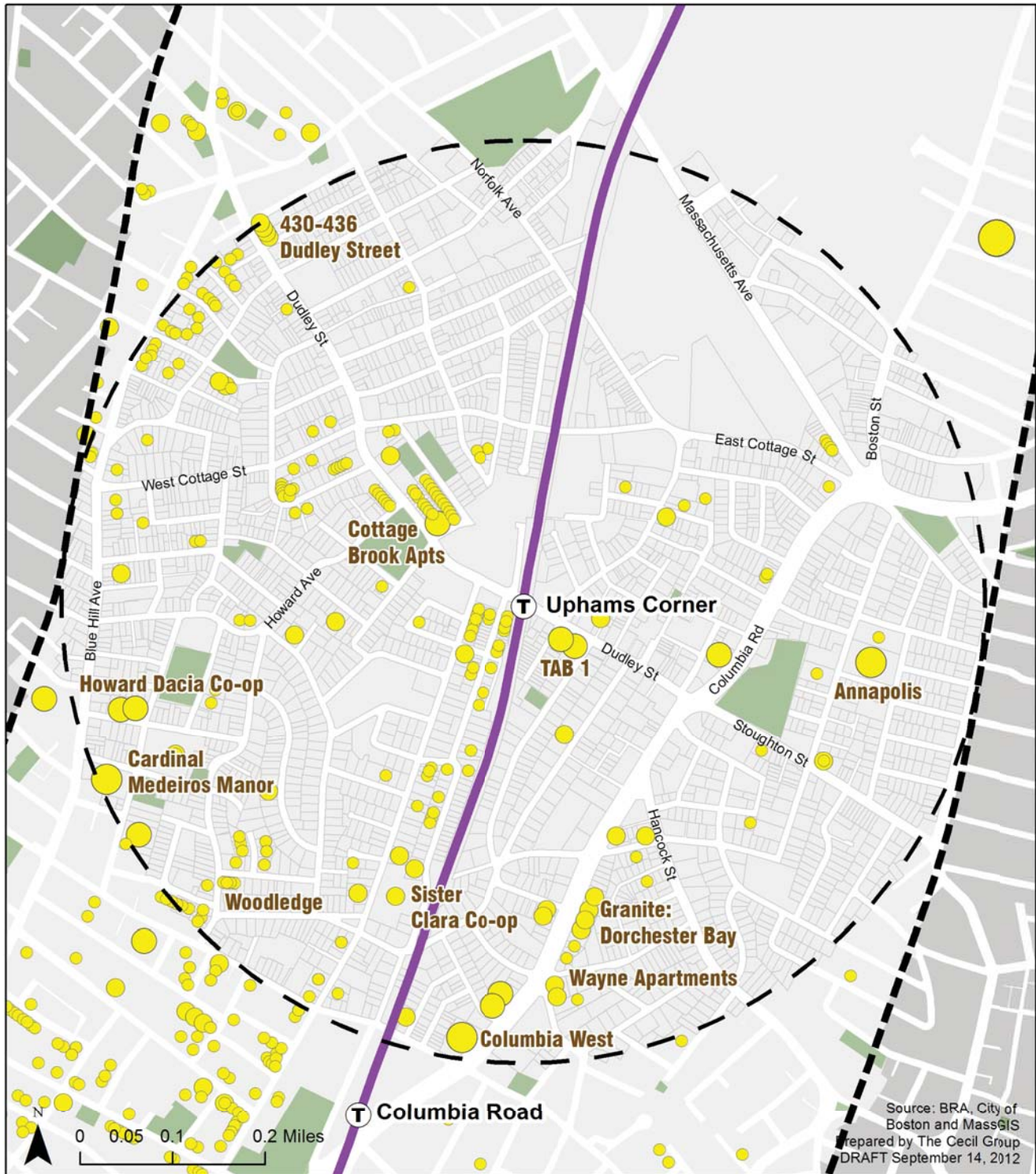
By Census Block

## Housing Units / Acre

- < 8 (1-family)
- 9 - 16 (2-family)
- 17 - 24 (3-family)
- 25 - 49 (multifamily)
- 50 - 100 (multifamily)

- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor

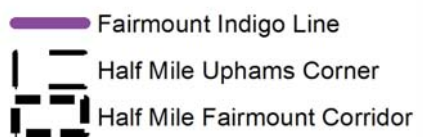
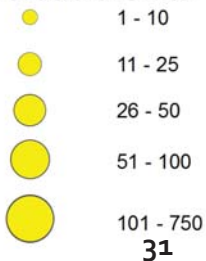


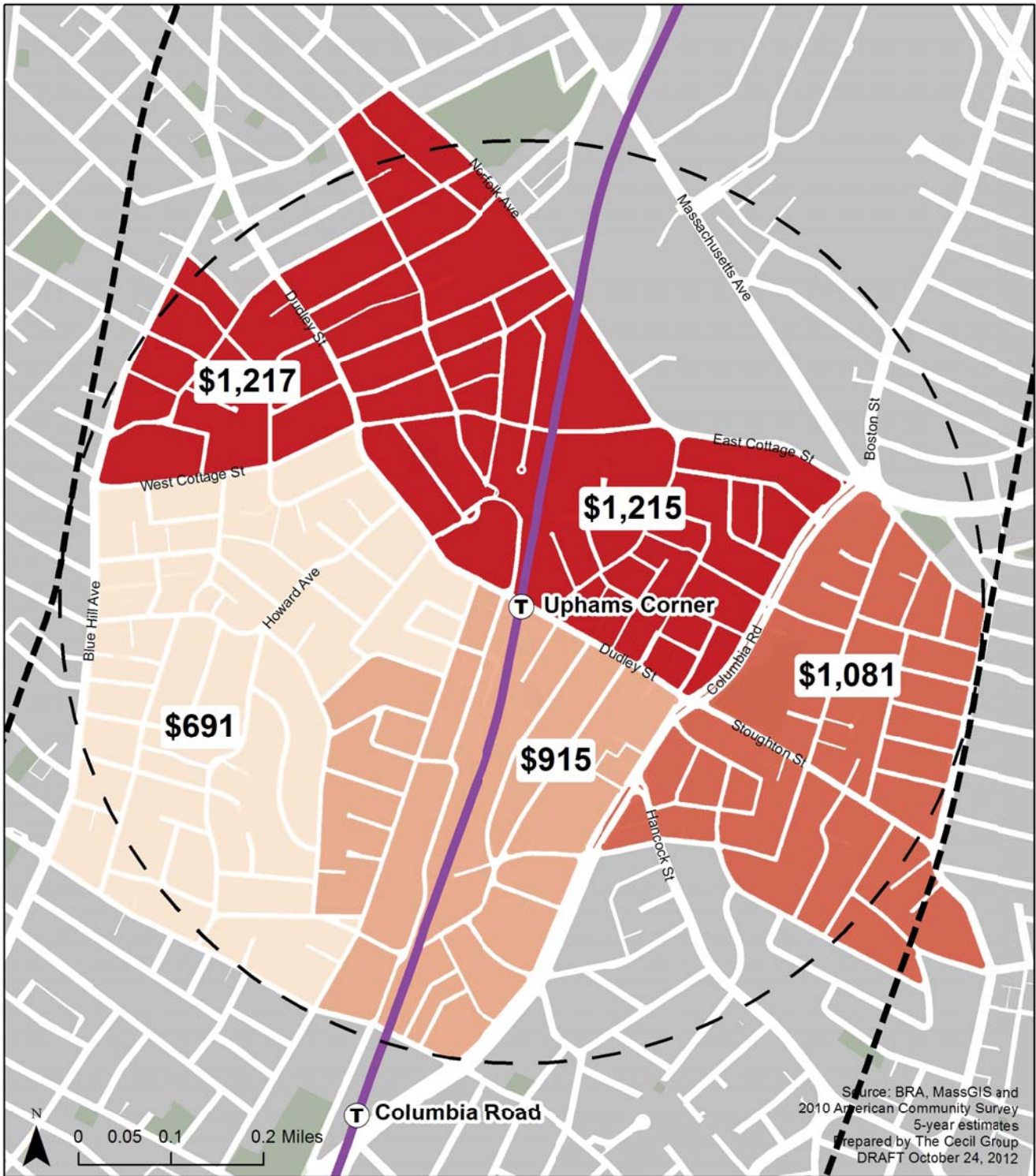


# Affordable Housing

By Development

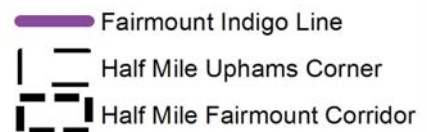
## Affordable Units





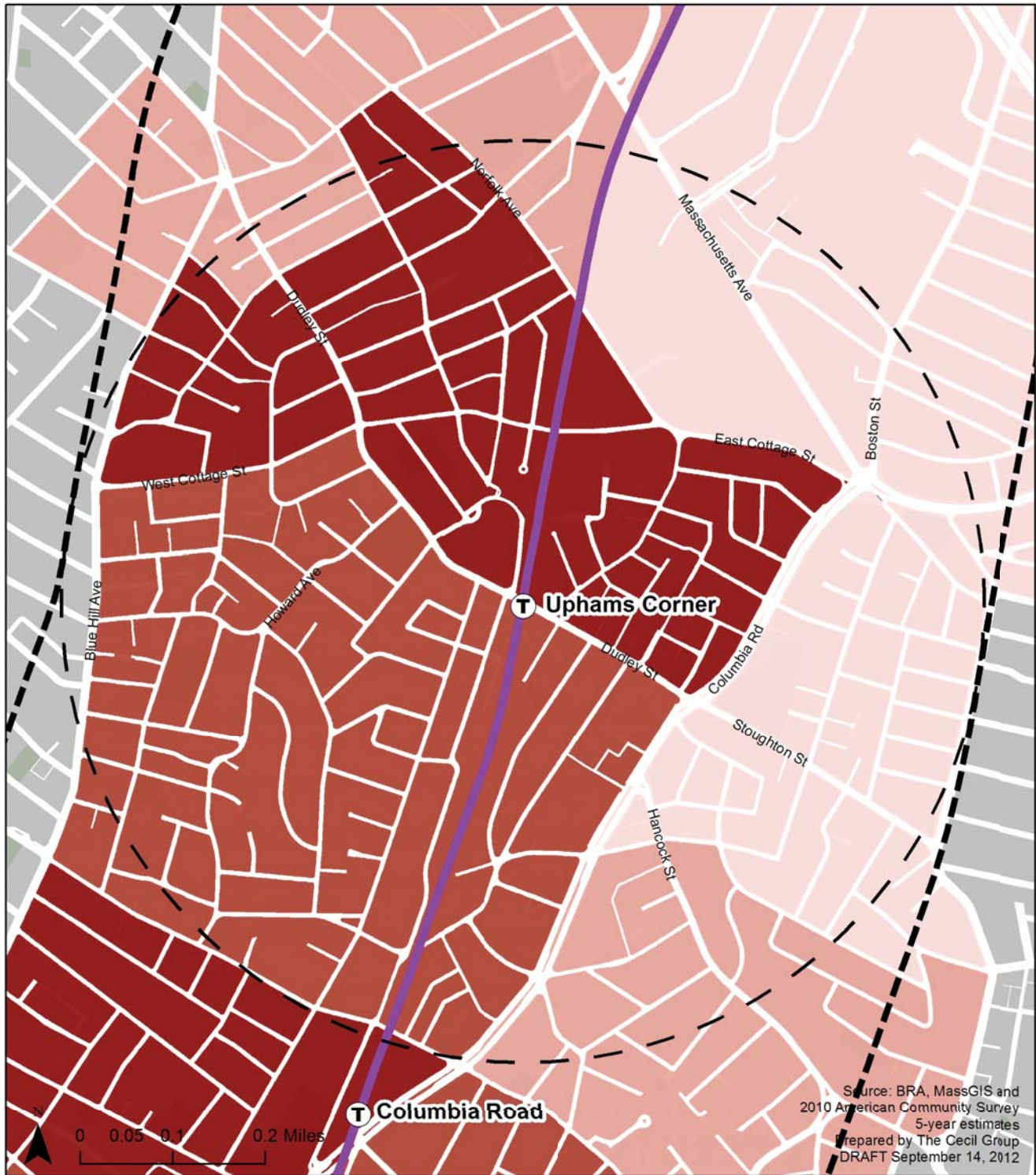
# Median Gross Rent

By Census Tract



BOSTON: \$1,199 median gross rent





Source: BRA, MassGIS and 2010 American Community Survey 5-year estimates  
 Prepared by The Cecil Group  
 DRAFT September 14, 2012

# Severely Rent Burdened

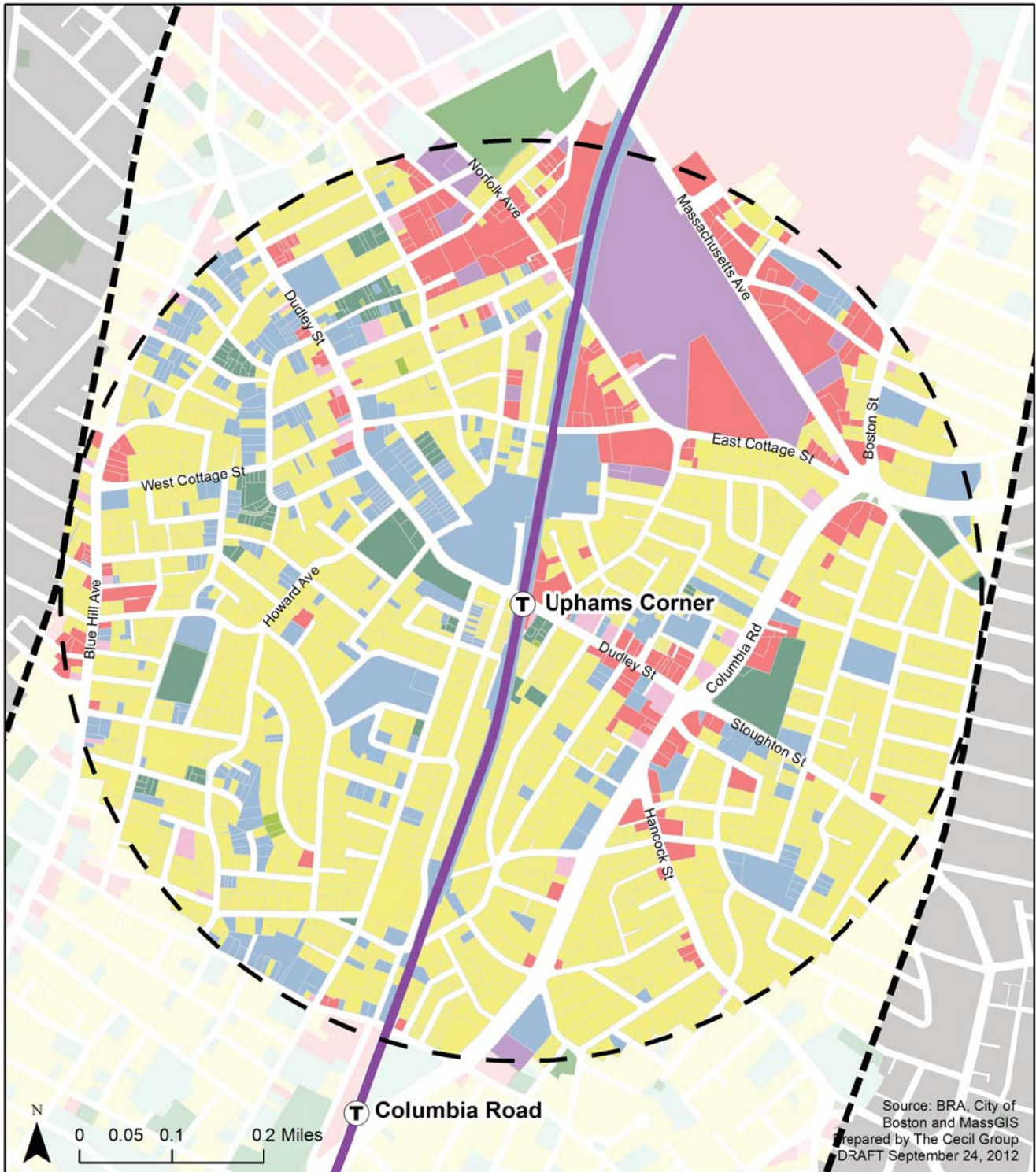
By Census Tract  
 FAIRMOUNTINDIGOPLANNING.ORG

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



BOSTON: 27% severely rent burdened





Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT September 24, 2012

# Land Use

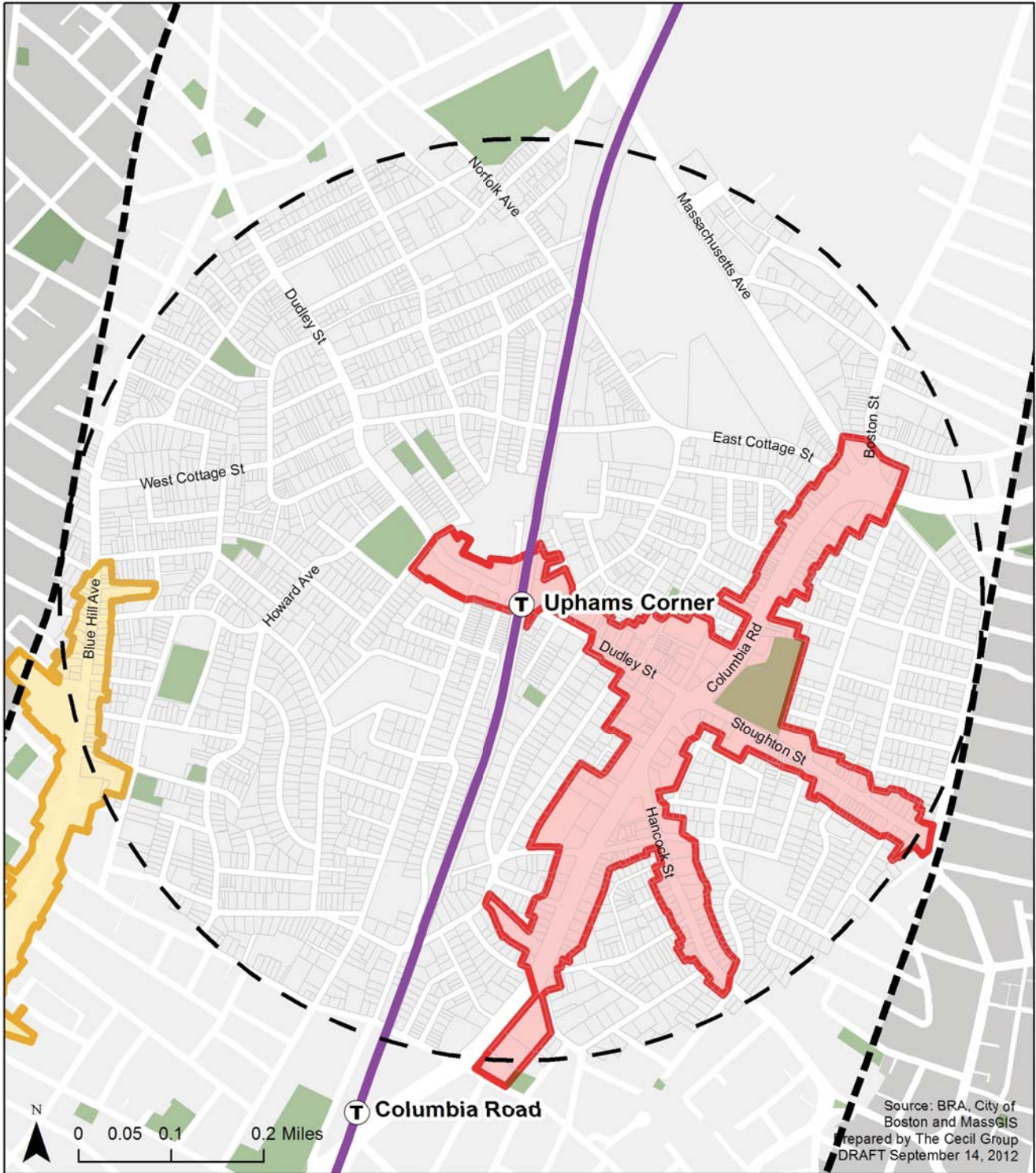
By Parcel

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

- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor

**BOSTON:**  
 36% Residential  
 9% Commercial  
 4% Industrial  
 51% Tax Exempt





Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT September 14, 2012

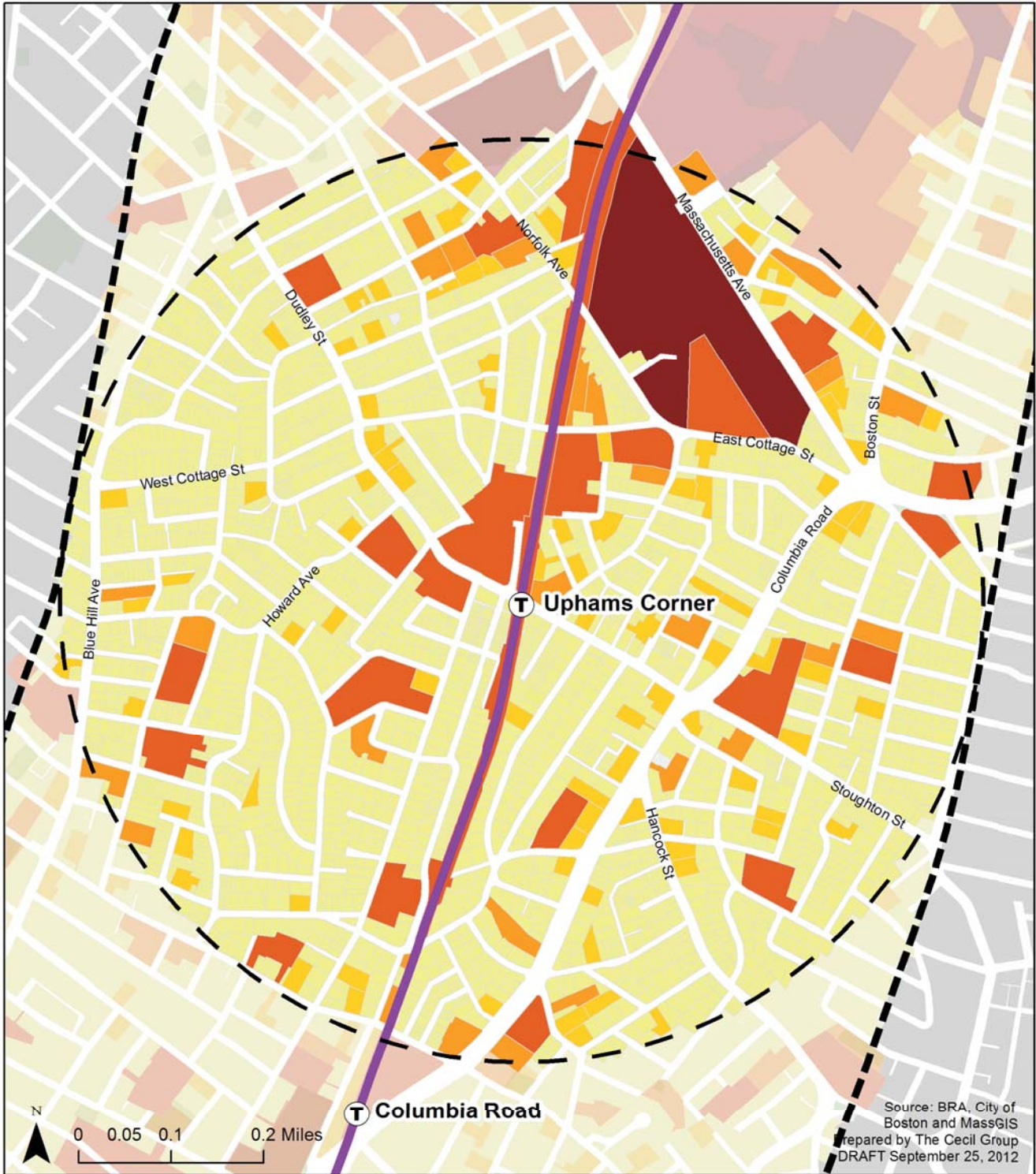
# Main Street Districts

By Parcel

- Upham's Corner
- Greater Grove Hall

- Fairmount Indigo Line
- Half Mile Upham's Corner
- Half Mile Fairmount Corridor



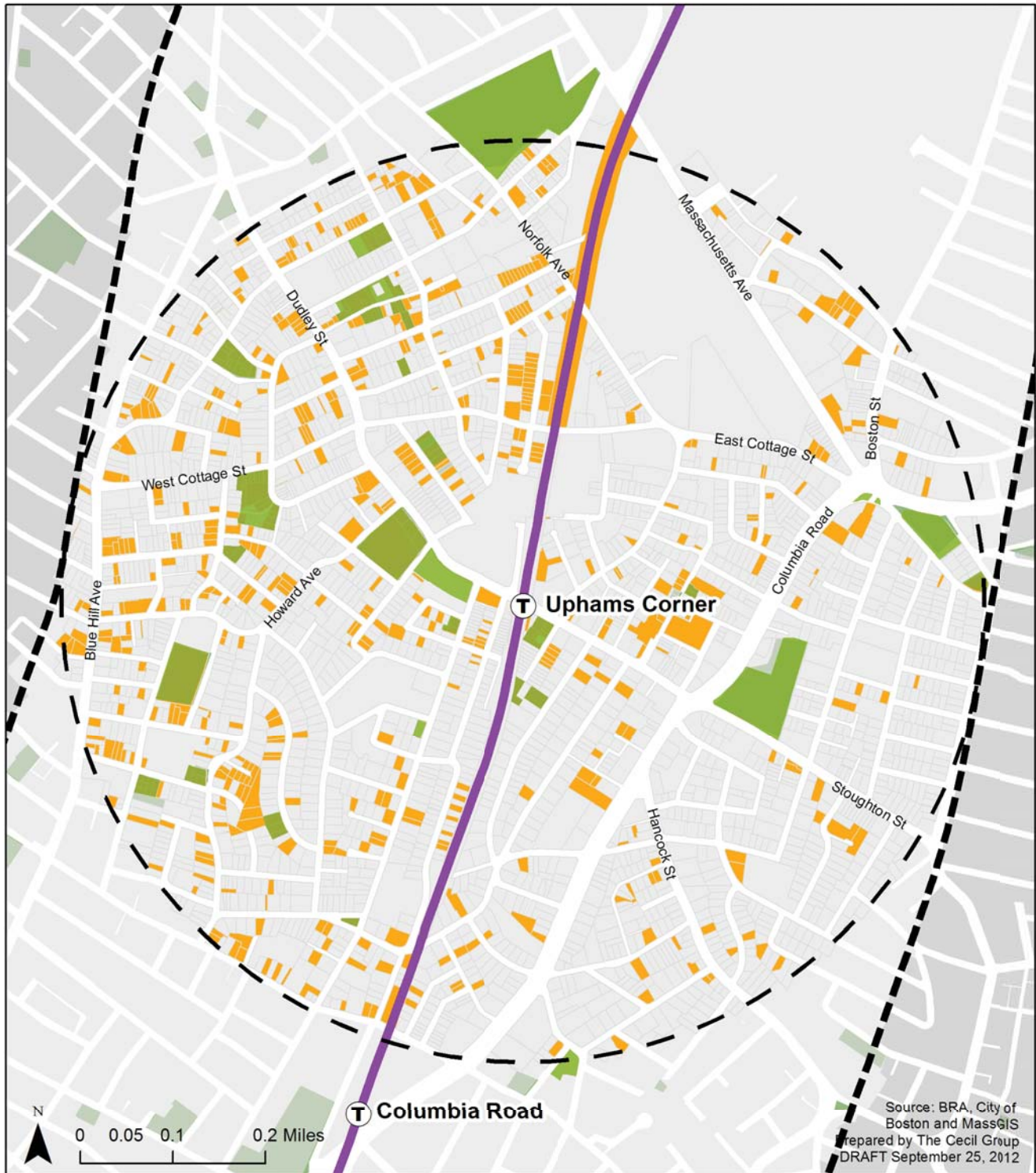


# Parcel Size

- < 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 Uphams Corner
- Half Mile Fairmount Corridor






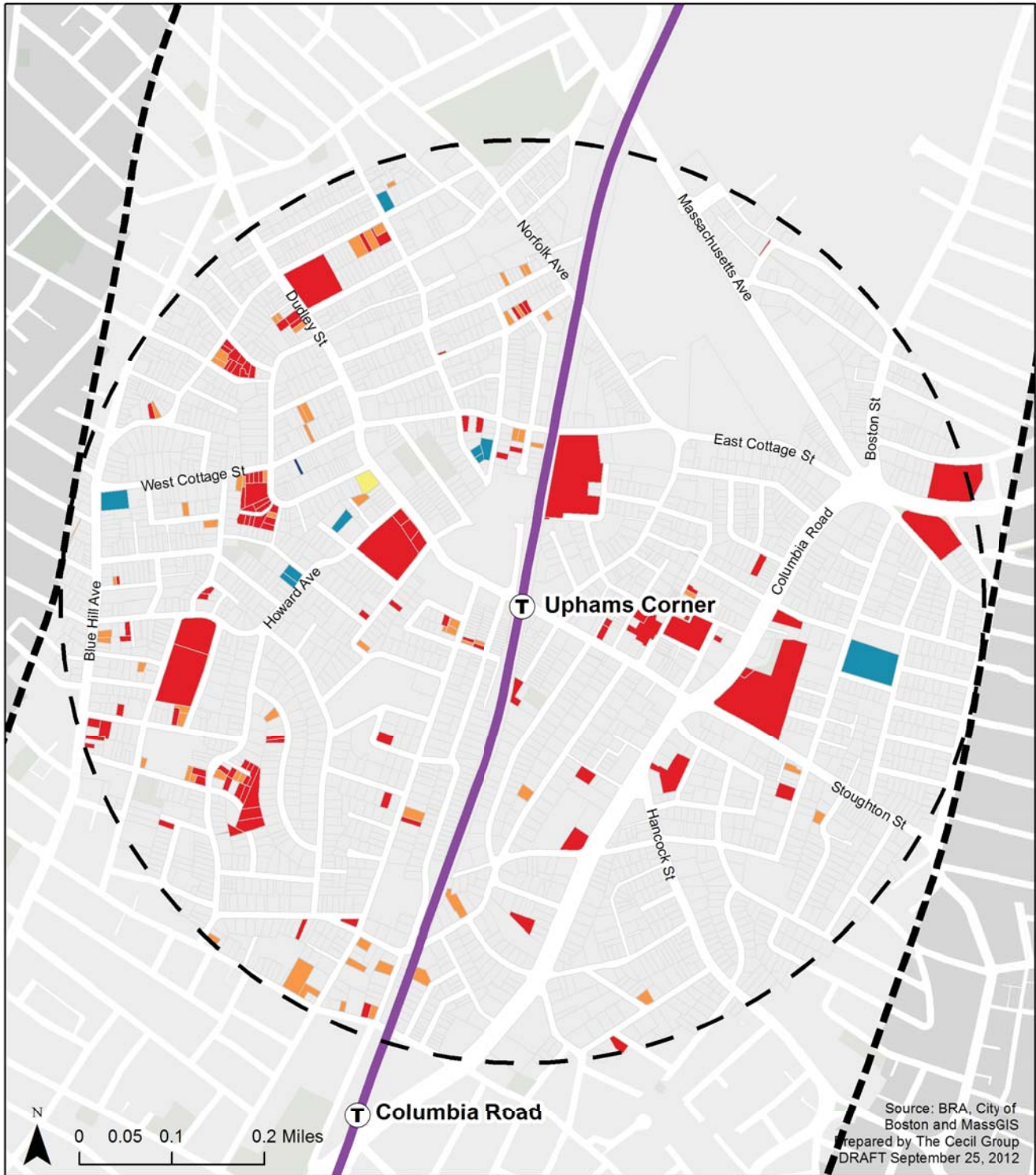
Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT September 25, 2012

# Vacant Property

 Vacant Property

 Fairmount Indigo Line  
 Half Mile Uphams Corner  
 Half Mile Fairmount Corridor

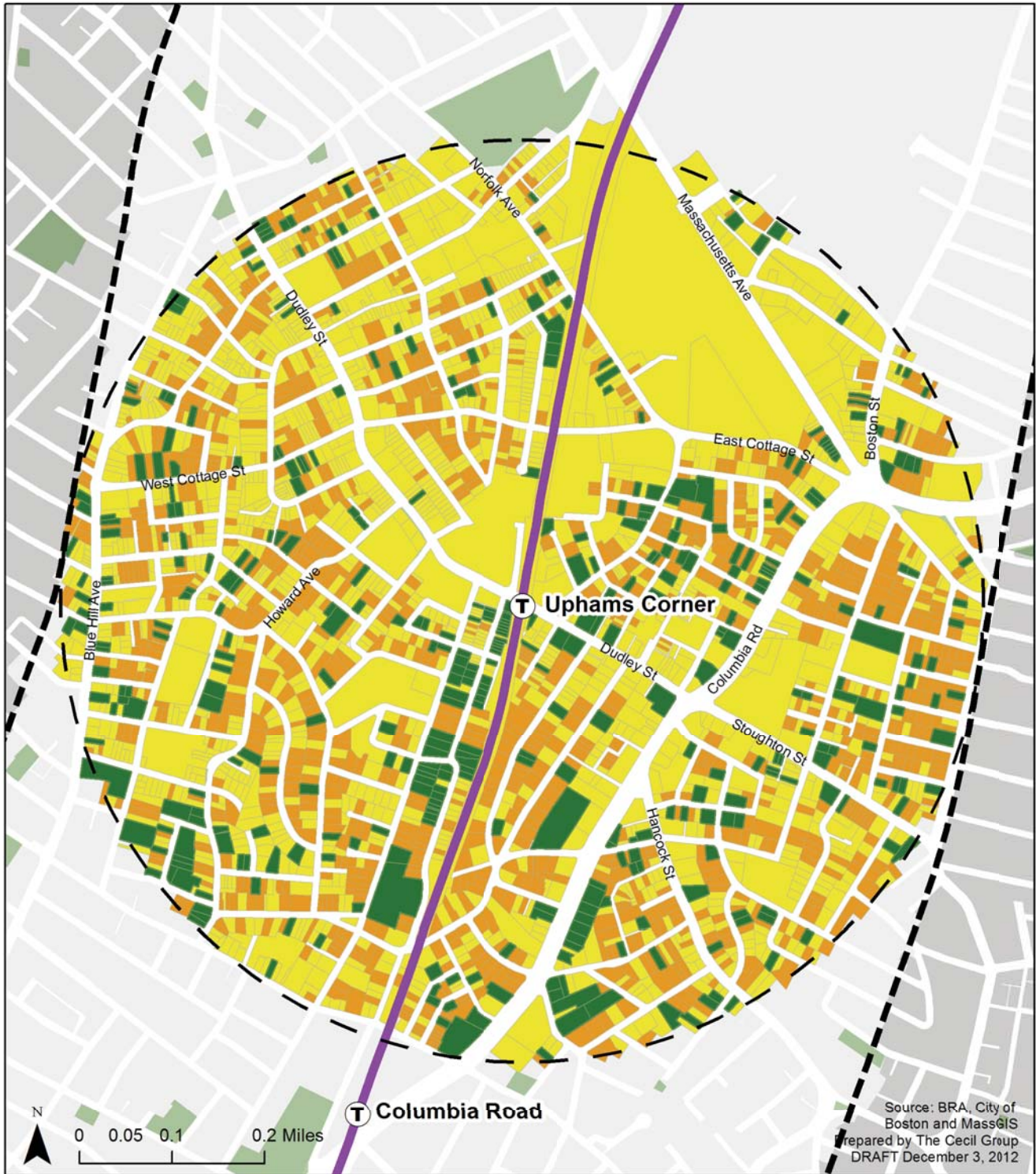




# City-owned Property

- City of Boston
- City of Boston by Foreclosure
- City of Boston Trust
- Boston Housing Authority
- Boston Redevelopment Authority
- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor





Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT December 3, 2012

# Absentee Landlords

By Parcel

- Absentee Landlord
- Owner-Occupancy Residential Exemption Yes
- Owner-Occupancy Residential Exemption No

- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor

Upham's Corner is the junction of Columbia Road, Dudley Street, and Stoughton Street, and is an important crossroads for Dorchester and the City of Boston. The neighborhood's transportation network has evolved over the years with shifting emphasis on different modes of transportation. Historically, it was a key transfer point for many of the city's streetcar lines, while today it remains one of Dorchester's main shopping districts and accommodates a variety of transportation modes, including cars, trucks, MBTA buses, the Fairmount Indigo Commuter Rail line, pedestrians, and bicyclists.

The MBTA's Fairmount Indigo Line provides limited commuter rail service via the Upham's Corner Station, which has existing connections to the surrounding transportation network. The study area is focused on Dudley Street, including the immediate vicinity of the Upham's Corner Commuter Rail Station and the stretch of Dudley Street east to its intersection with Columbia Road. This corridor already exhibits many characteristics of a "complete street," i.e., one that is supportive of safe access for all modes and for users of all ages and abilities. It currently contains some key transportation elements that can be strengthened to support a Transit Oriented District (TOD) characterized by:

- Transit access
- Strong pedestrian and bicycle connections
- Lower automobile ownership
- Parking management

An important aspect of this project is not only balancing the needs of multiple transportation uses, but facilitating connections between transportation modes. A person in Upham's Corner should be able to seamlessly use multiple modes of travel for a single trip. For example, a commuter rail passenger destined to Upham's Corner Station is ultimately a transit rider, but that person could also be a cyclist riding to the station, and a pedestrian as he travels from bicycle parking to the commuter rail platform.

## Transit Services

Upham's Corner is served by several MBTA bus routes in addition to existing commuter rail service at Upham's Corner Station.

As indicated in the summary of existing conditions for the corridor-wide community planning process, the Fairmount Line, traveling 9.2 miles between South Station and Readville, serves Upham's Corner Station with weekday AM inbound and PM outbound service (four trains during each peak). During off-peak periods, the station has flag stop service only (twenty off-peak trains throughout the day). There were 154 average daily inbound boardings at Upham's Corner Station (MBTA Ridership Statistics, 2009), 100% of which accessed the station by walking. There is no service on weekends.

With the addition of four new stations on the Fairmount Line and the MBTA's announcement in July 2013 for schedule changes and a reduction in fares, commuter rail ridership is expected to increase. This has the potential to shift transit riders from MBTA buses that are often near capacity during periods of peak demand. The project goal of improving connections to major crossroads in the Fairmount Station areas will become increasingly important.

Four MBTA bus routes serve the study area, as depicted in Figure 1.

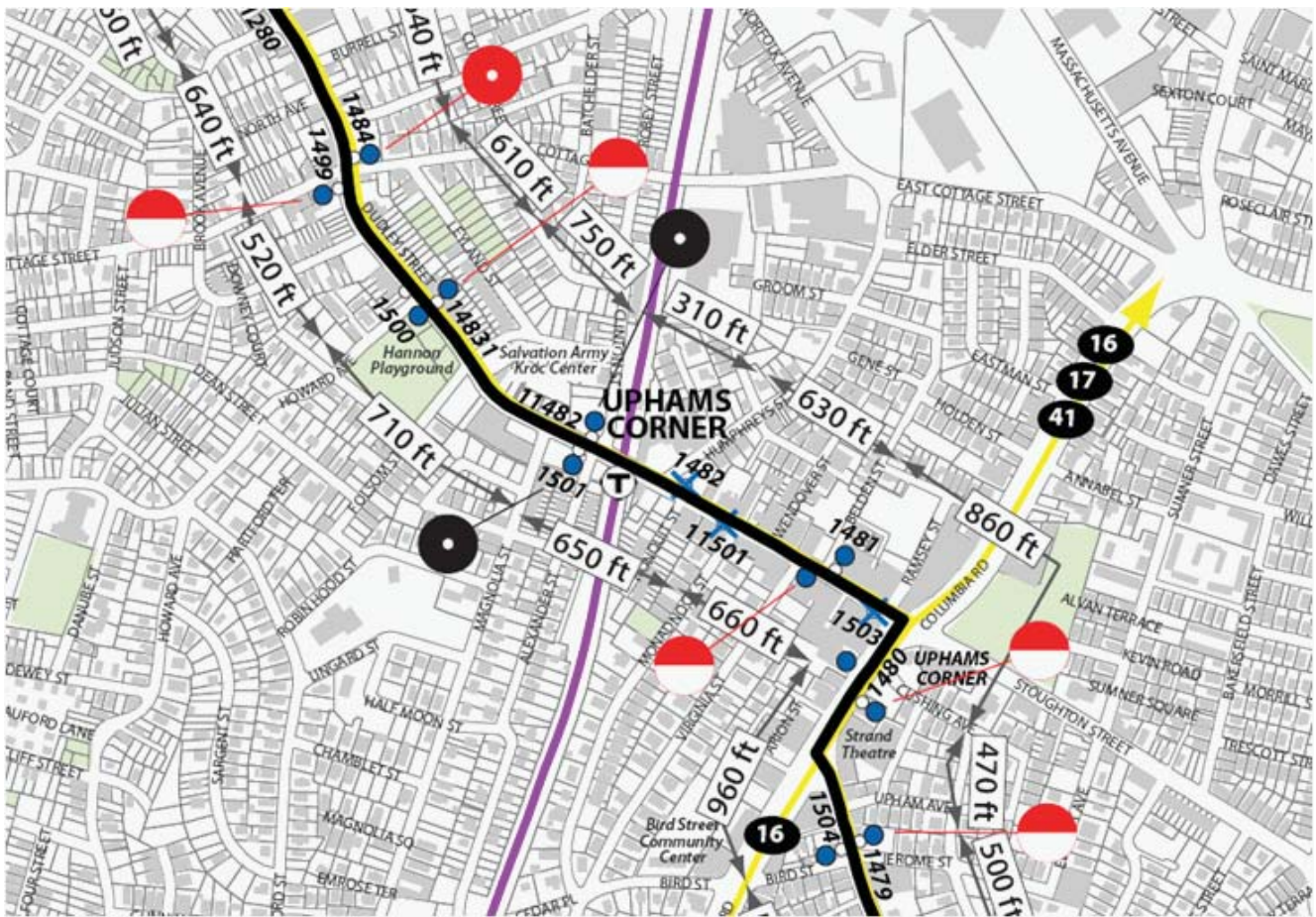
- Routes 15 and 41 travel along Dudley Street, serving stops adjacent to Upham's Corner Station.
- Routes 15 and 41 connect to the Silver Line at Dudley Station, approximately 10 minutes travel via bus.
- Route 15, one of MBTA's Key Bus Routes with high ridership and frequent headways, provides service between Ruggles Station and Kane Square/Fields Corner.





- Route 41 provides service between Centre and Eliot Streets in Jamaica Plain and JFK/UMass Station for MBTA Red Line and commuter rail service. JFK/UMass Station is approximately 9 minutes away from Upham's Corner.
- Routes 16 and 17 offer less direct access; they travel along Columbia Road, serving stops just north of the intersection of Dudley Street and Columbia Road (inbound and outbound stops approximately 0.25 mile walk from Upham's Corner Station).
- Route 16 provides service between Forest Hills Station and Andrew Station
- Route 17 provides service between Fields Corner and Andrew Station. Route 16 provides service to the South Bay Center, about 9 minutes travel time from Upham's Corner.

Routes 15, 16, and 17 are in service beginning at 5:00 AM on weekdays and 6:30 AM on weekends, and end service at 1:00 AM. Some Route 15 inbound buses begin service as early as 4:00 AM. Route 41 operates on weekdays between 5:00 AM and 9:00 PM, Saturdays from 8:00 AM to 8:00 PM, and Sundays from 10:00 AM to 7:00 PM. Table 1 summarizes headways and average weekday ridership for each route. Route 15 is MBTA's 11th busiest bus route according to average weekday ridership. Based on stop-level rider counts,



approximately one-quarter of Route 15 riders get on or off the bus within the study area.

Route 15 is included in the MBTA's Key Bus Route Improvement Program, a federally funded program intended to improve overall quality of service for riders by reducing trip times; enhancing customer comfort, convenience, and safety; and making the bus service more reliable and cost-effective. Elements of the program include improvements to bus stop locations to provide better spacing and/or bus operation; accessibility enhancements; and bus stop amenities, including shelters, benches, and trash receptacles.

The planning and community involvement phase for Route 15 was completed in summer 2012, and improvements are scheduled for construction by the end of 2013. Figure 3 illustrates planned improvements within the study area, summarized below:

- The inbound and outbound bus stops at Upham's Corner Station, both with existing shelters, will be maintained.

- The inbound (toward Ruggles) stop at Humphreys street is to be removed to improve stop spacing.
- The outbound stops on Dudley Street at Monadnock and at Columbia Road are to be consolidated, with a new stop and shelter at the farside of Virginia Street. This change improves stop spacing and improves bus and general traffic operation at the intersection of Dudley Street and Columbia Road.
- A new outbound stop is proposed on Columbia Road in front of Citizens Bank, to provide a stop within the retail district.

Existing bus transit provides service to a variety of destinations, including connections to the MBTA rapid transit system. Both the inbound and outbound stops served by Routes 15 and 41 on Dudley Street are easily accessible to Upham's Corner Station, within 200 feet. The bus stops on Columbia Road serving Route 16 and 17 are nearly 0.25 mile walk distance from the station, which is the upper limit of a practical connection.







However, the route traverses a highly walkable commercial district which may make it more feasible to some riders. Additionally, the Route 15 or 41 could be used to make the short connection.

## Pedestrian Network

The study area is heavily populated with foot traffic, consistent with a mixed use neighborhood district. Sidewalks, crosswalks, and pedestrian traffic controls are the key infrastructure elements of the pedestrian network. The quality and character of these elements vary throughout the study area. Figure 5 illustrates the presence of crosswalks roughly every 200-300 feet throughout the study area, with locations where additional crossings are needed circled.

Sidewalks west of the station are constructed of concrete, approximately nine feet wide, and relatively new. ADA compliant curb ramps are available at all crossings, and crosswalks are provided at each intersection, except across Dudley Street on both the inbound and outbound sides of the rail station. To the east of the station, sidewalks are constructed of concrete up to Monadnock Street and also approximately nine feet wide. Curb ramps are provided, but not all have ADA tactile warning strips. From Monadnock to Columbia Road, sidewalk material is brick and in poor condition at some locations. Sidewalk width is about nine feet, somewhat narrow for the retail land uses and high pedestrian volumes in this corridor. Crosswalks are provided across all side streets, and across Dudley Street at all intersections with the exception of Belden Street.

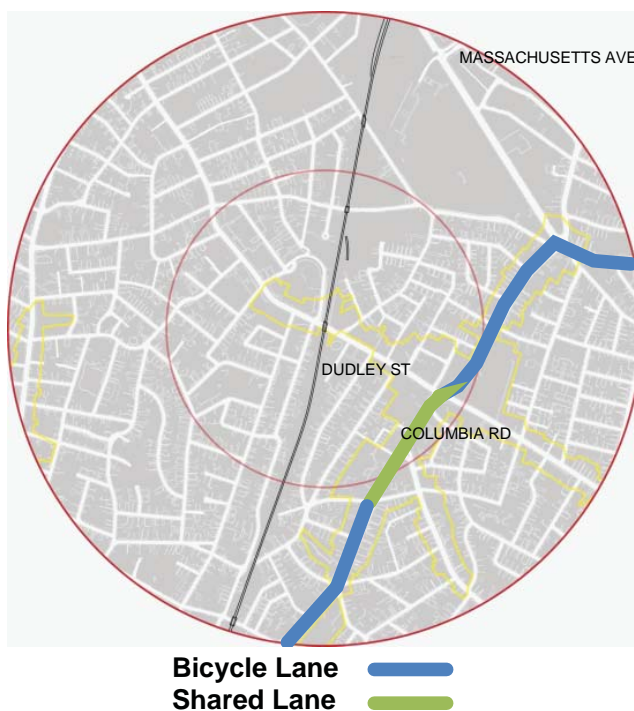
At the intersection of Dudley Street and Columbia Road, a potential conflict exists between pedestrians crossing Columbia Road and vehicles turning right from Dudley Street. Existing signage warns vehicles to yield to pedestrians, and warns pedestrians to watch for turning vehicles. The feasibility of “No Turn On Red” could be explored to improve pedestrian safety and comfort at this intersection.

## Accommodations for Cyclists

Bicycles can be observed travelling on Dudley Street and Columbia Road. As shown in Figure 6, bicycle accommodations are not provided on Dudley Street, which has one travel lane in each direction and on-street parking on both sides of the street. Columbia Road has shared lane markings for bicycles in both directions.

Based on observed traffic levels on Dudley Street, some type of bicycle accommodations would be beneficial. However, there is not sufficient curb-to-curb width to provide bicycle lanes without removing some on-street parking. Shared lane markings would contribute to bicycle safety and comfort by indicating to bicycles their advised alignment within the travel lane, and enhancing the awareness of automobile drivers.

There is limited bicycle parking provided at the bus stops nearest to Upham’s Corner and to the station itself. As noted previously, current commuter rail riders accessed the station by walking, indicating that bicycle



access could be facilitated by providing suitable bicycle facilities. A combination of short-term bicycle parking, covered or not, and longer-term secure bicycle parking (i.e. lockers, bicycle cage) would facilitate bicycle access and connections to Upham’s Corner Station. In addition, the station is a desirable location for a Hubway station in the future.







## Vehicular Roadway Network

Within the study area, Dudley Street is approximately 38-foot wide (curb-to-curb), carrying two 11-foot travel lanes and 8-foot parking lanes in each direction.

Side streets intersecting Dudley Street within the study area are stop controlled and are generally neighborhood-serving streets. There are no other traffic controls for Dudley Street except for the intersection with Columbia Road. This four-legged intersection is signalized for vehicles and pedestrians. Queuing is observable at the intersection with Columbia Road throughout the day. Average daily traffic (ADT) volume on Columbia Road, north of Dudley Street was 21,200 in 2007 (source: CTPS data). Figure 7 shows vehicle turning movements

at the intersection of Dudley Street and Columbia Road. The high volume of right turns from eastbound Dudley Street suggest that a new exclusive right-turn lane could alleviate the long queues observed forming on Dudley Street eastbound.

The Department of Public Works has initiated a project to improve Columbia Road from Dudley Street to Hancock Street (approximately 600 feet of Columbia Road, including the two intersections). A \$3 million grant has been secured for design and construction. As part of the roadway reconstruction, the project also seeks to enhance bicycle network connections and intends to continue public realm improvements that will be developed on Dudley Street as part of this project.





The parking supply within the study area is comprised of off-street public and private lots (Figure 7) and on-street parking along Dudley Street (Figure 8).

There are two off-street public parking lots located north of Dudley Street, accessible from Belden Street. The Salvation Army Kroc Community Center, just to the west of Upham’s Corner Station, also has a publicly accessible lot. Nearby on Columbia Road, off-street parking lots exist adjacent to Citizens Bank, Sovereign Bank, and Bank of America.

On-street parking is available on both sides of Dudley Street, with the exception of bus stops. Unmetered parking with two-hour limit is available throughout the commercial corridor from Columbia Road to Monadnock Street. Parking on most side streets is also two-hour limit. From Monadnock Street to Upham’s Corner Station, and west to the Kroc Center and the residential areas beyond, parking is unregulated.





### Public Off-Street Parking

- A** Belden Square (East) -- free
- B** Belden Street (West) -- free

### Private Off-Street Parking

- C** Salvation Army Kroc Center
- D** Citizens Bank
- E** Bank of America
- F** Sovereign Bank
- P** Additional Private Lots



## Public Realm

As noted previously, the condition of sidewalks varies within the study area. The presence and condition of street trees and lighting vary as well. A preliminary evaluation of the streetscape conditions has been completed for segments of the study area, and is summarized below.

### *Howard Ave to Magnolia Street*

This section consists of some higher density residential buildings with wide concrete sidewalks accommodating street trees and furniture. Street lights are overhead “cobra” style.



### *Magnolia Street to Upham's Corner Station*

The Salvation Army Kroc Community Center is located on the north side of Dudley Street, while underutilized green space and single-family residential are on the south side. Bus stop shelters exist on both sides of the street, with wide concrete sidewalks in good condition. Pendant-style street lamps are provided adjacent to the Kroc Center, with “cobra head” street lighting across the street.





*Upham’s Corner Station to Monadnock Street*

This segment of the study area includes vacant warehouse buildings and concrete barriers on the north side of the street, and apartment buildings on the south side of the street. Streetscape elements include “cobra head” street lighting and concrete sidewalks.

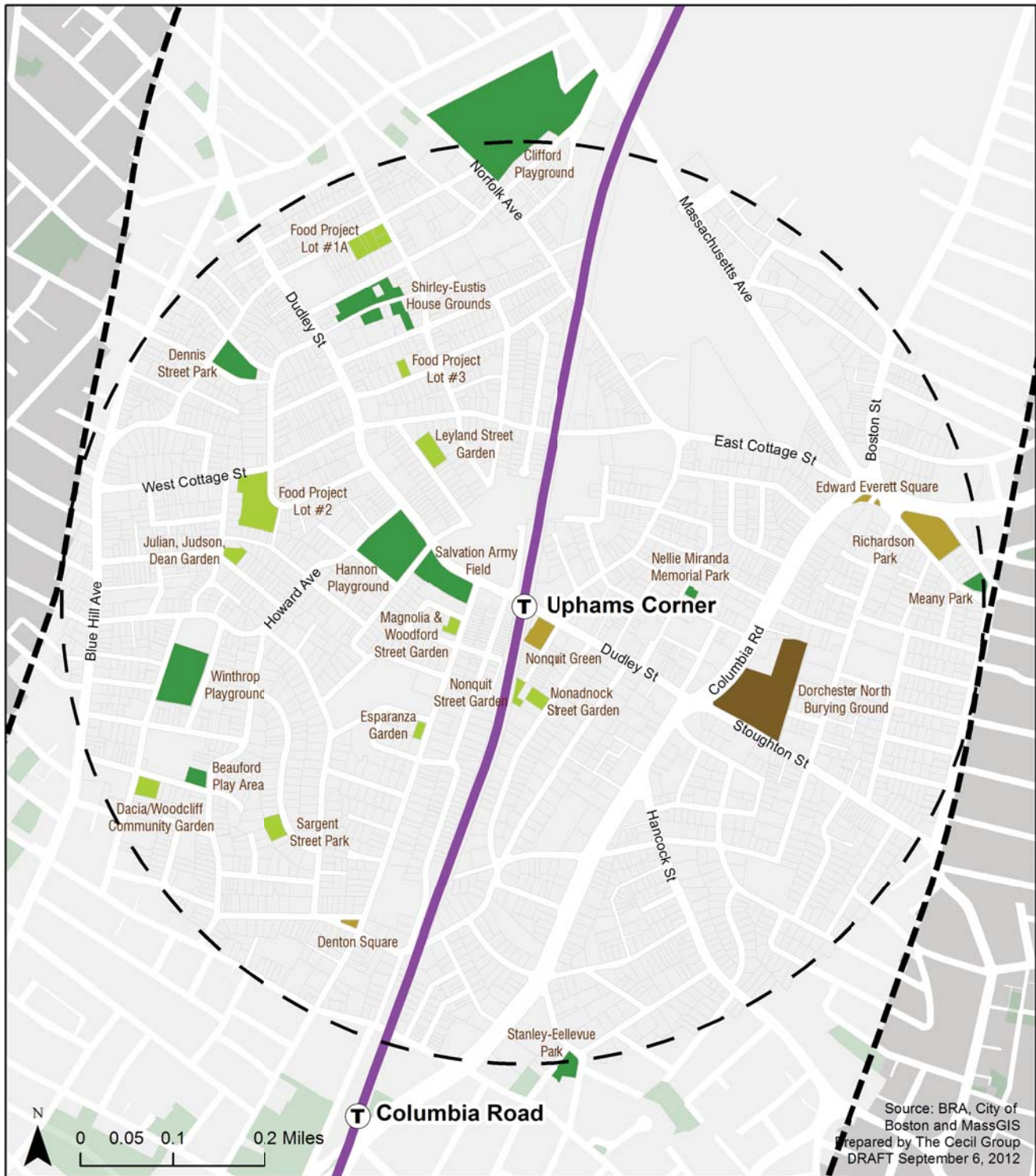


*Monadnock Street to Columbia Road*

This segment of the study area consists primarily of commercial buildings, with numerous storefronts and restaurants. The brick sidewalks are in poor condition in some places. Street trees exist along both sides of the street, as well as pedestrian scale street lamps.





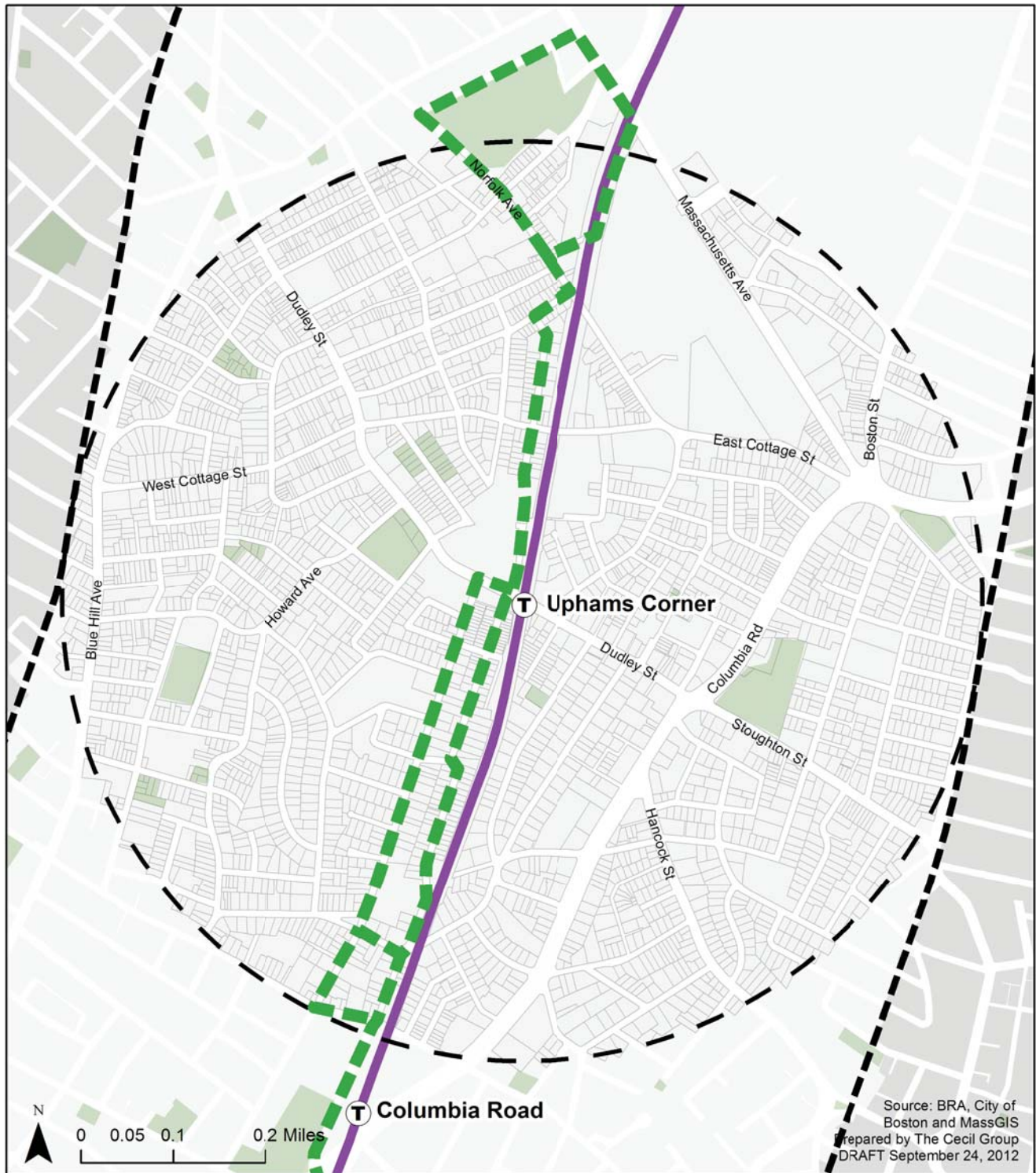


# Open Space


By Parcel


- Community Gardens
- Parks, Playgrounds & Fields
- Malls, Squares & Plazas
- Cemeteries & Burying Grounds
- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor





# Proposed Fairmount Greenway

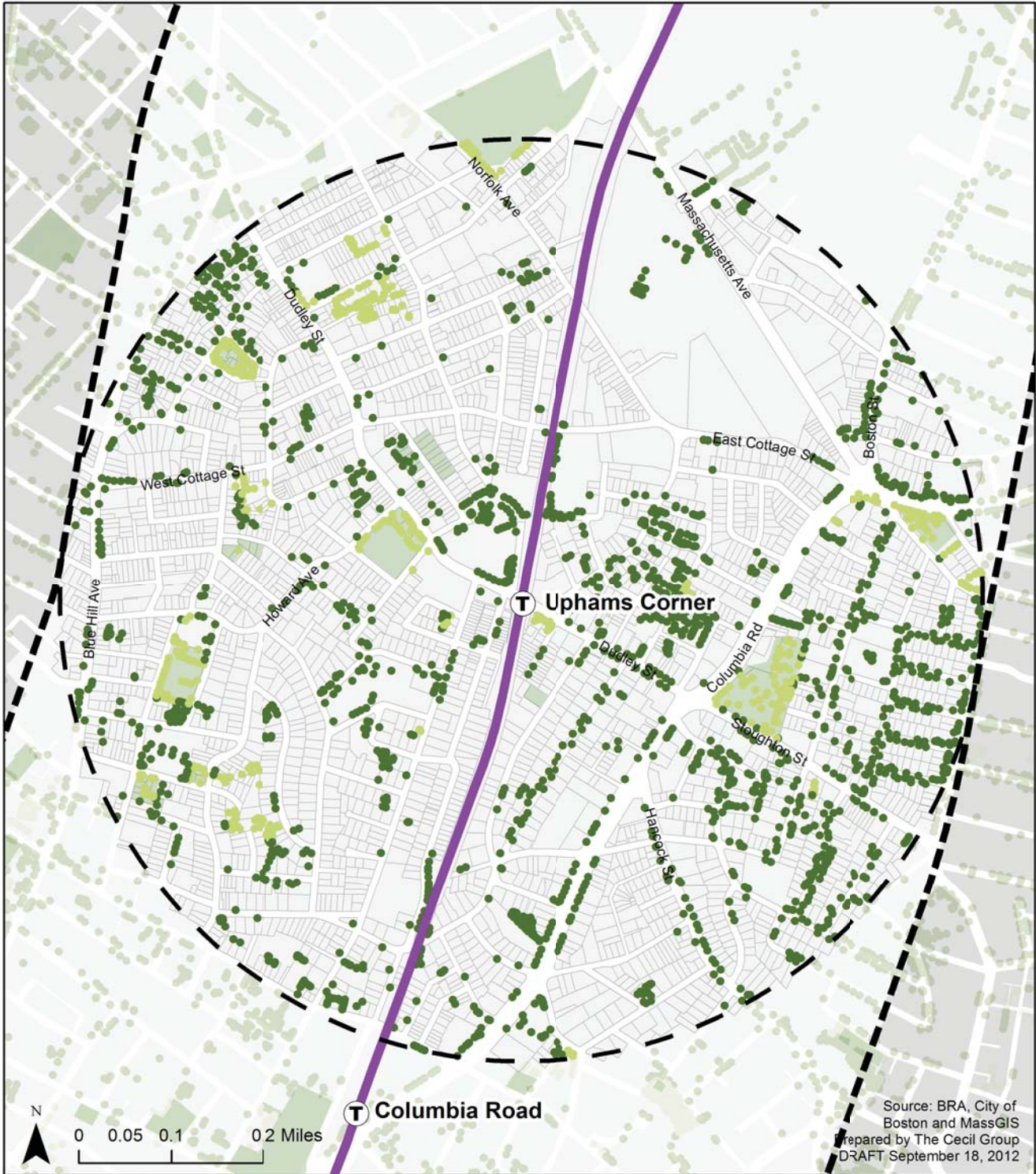
 Proposed Greenway

 Fairmount Indigo Line

 Half Mile Uphams Corner

 Half Mile Fairmount Corridor

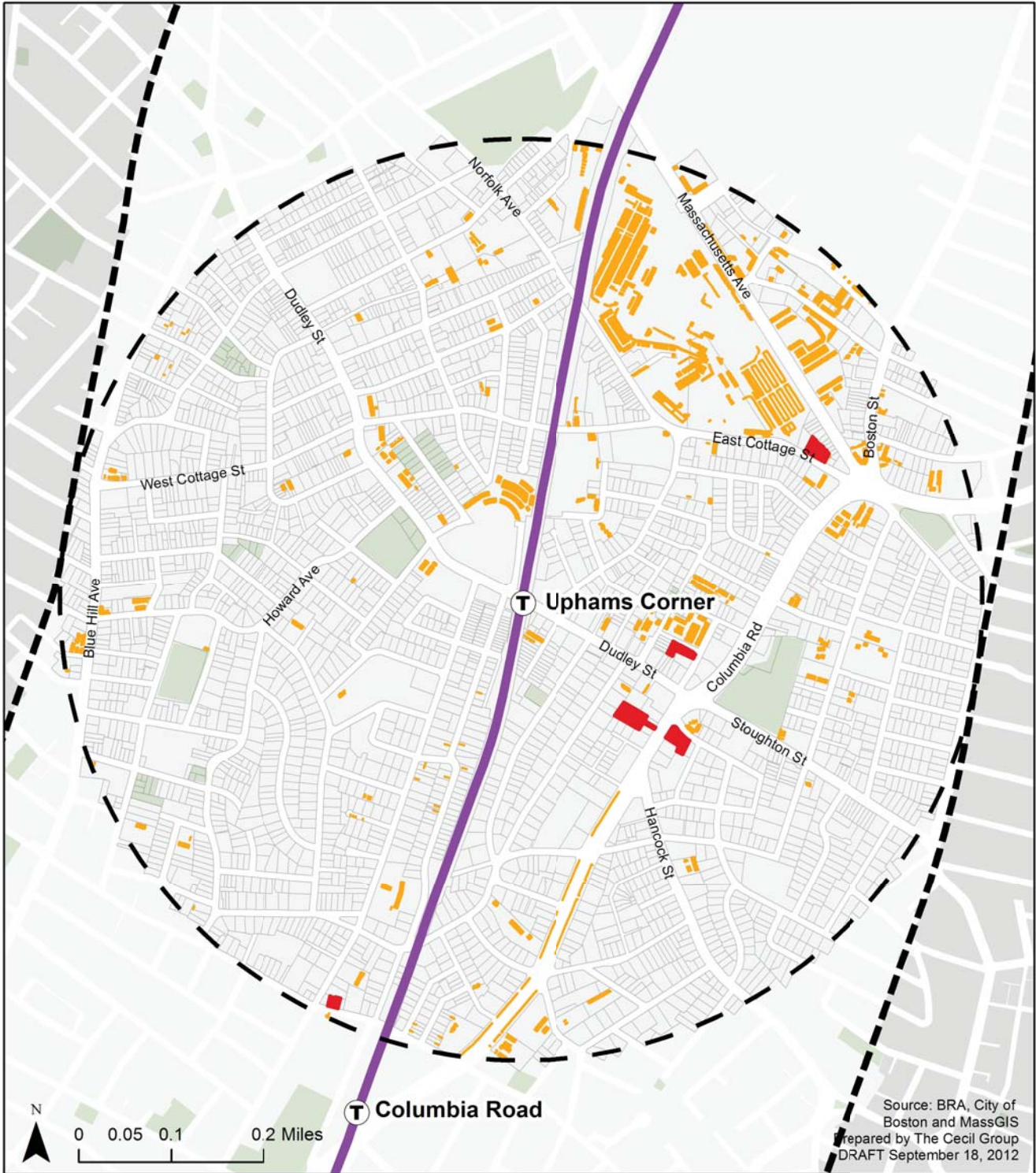




# Trees

- Street Tree
- Park Tree
- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor

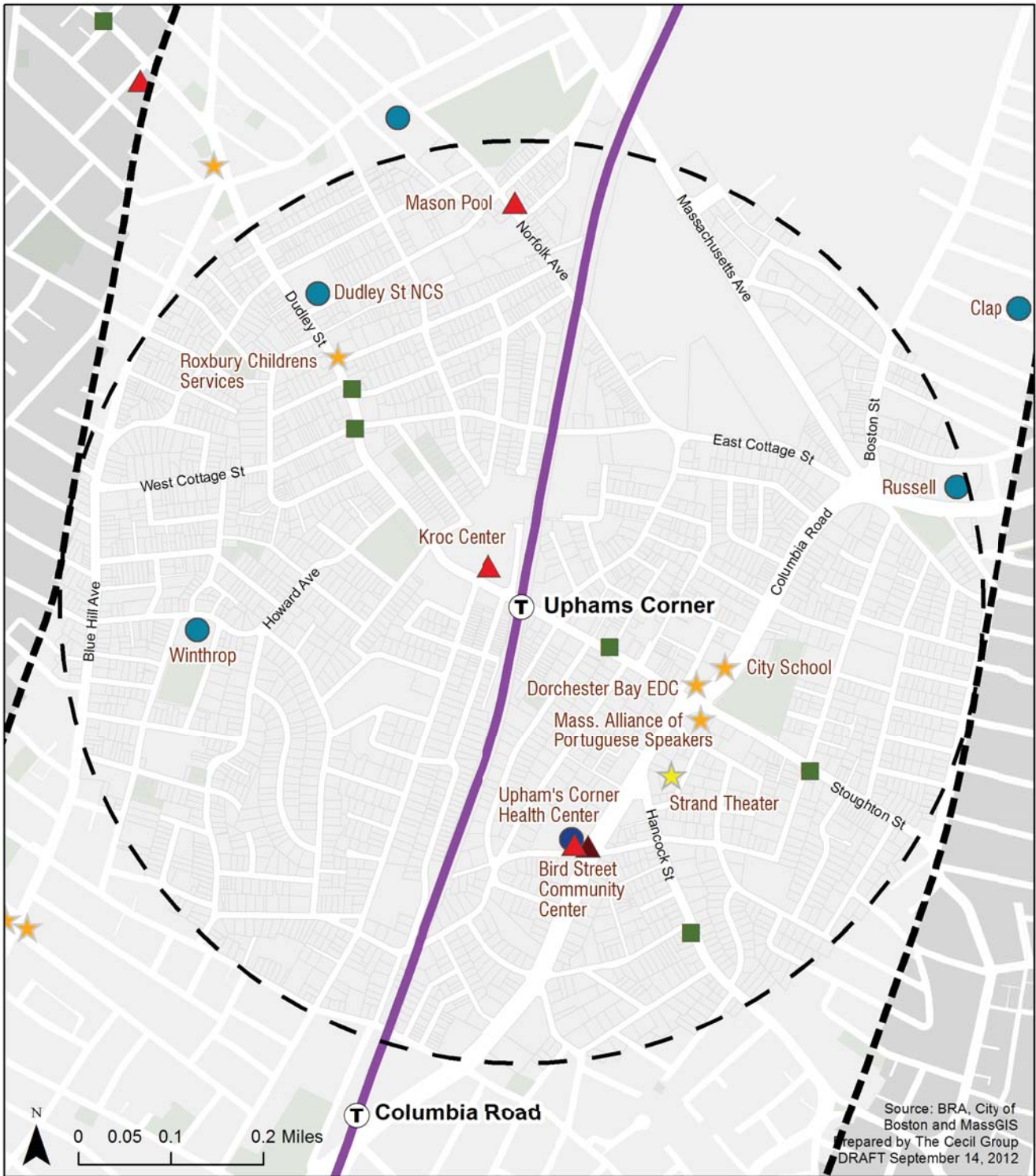




Source: BRA, City of Boston and MassGIS  
 Prepared by The Cecil Group  
 DRAFT September 18, 2012

# Parking

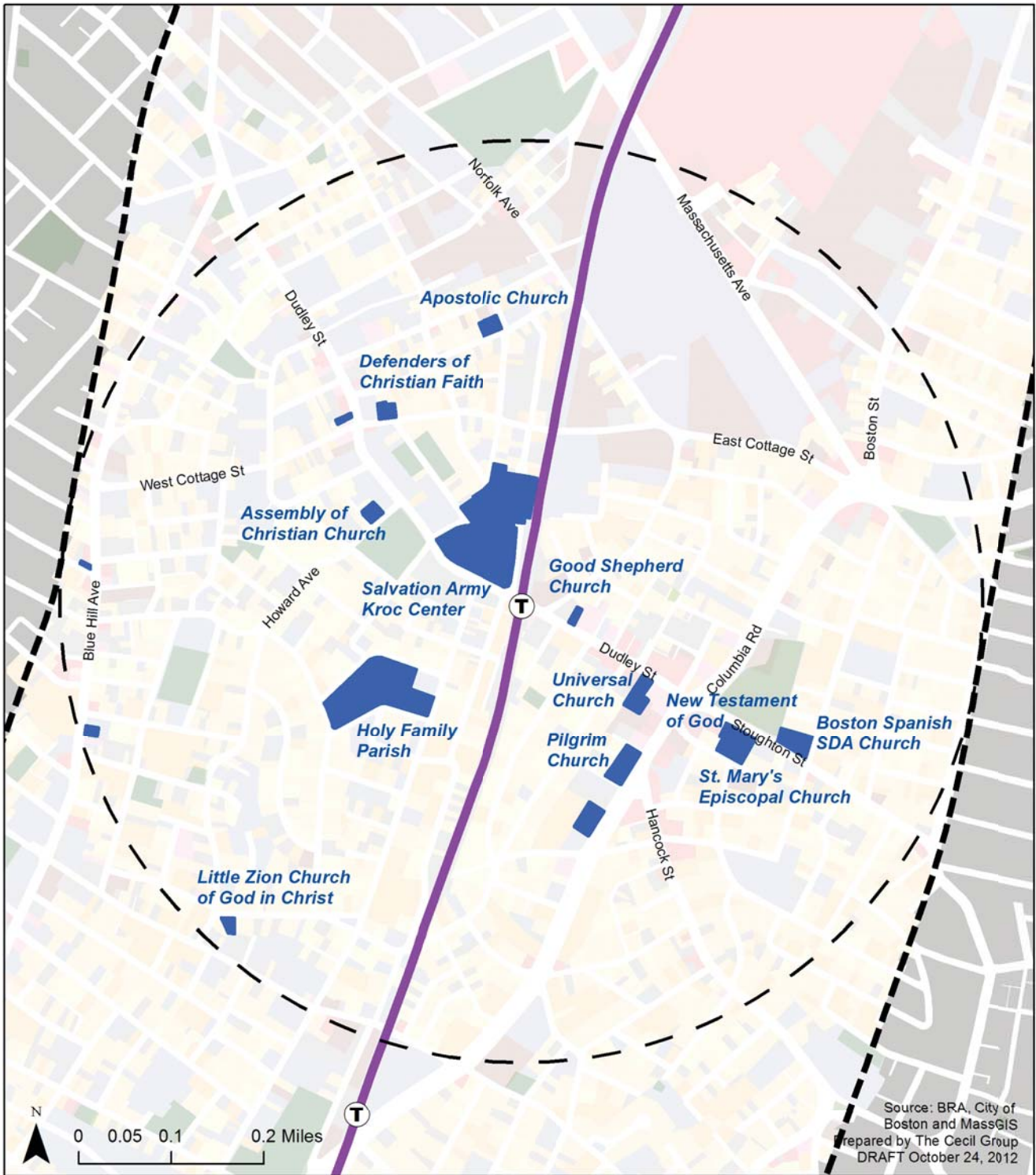
- Parking (pavement marking)
- Parking Lot or Garage
- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor



# Points of Interest




- ★ Strand Theater
- ★ Community Organizations
- ▲ Community Centers
- ▲ Health Centers
- Grocery Store/Supermarket
- Fairmount Indigo Line
- Half Mile Uphams Corner
- Half Mile Fairmount Corridor
- Public Schools
- Public Libraries





# Houses of Worship

By Parcel

-  Fairmount Indigo Line
-  Half Mile Uphams Corner
-  Half Mile Fairmount Corridor

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# PROFORMA FEASIBILITY TESTS



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A conceptual redevelopment proforma was evaluated as part of the feasibility testing of the five sites selected by the Working Advisory Group that represent a critical future redevelopment opportunity for Upham's Corner. 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 designed.

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 Upham's Corner for the residential, office, light industrial and retail markets.

# 1 Maxwell Property

65 East Cottage Street

50,000+ SF  
Jobs producing uses  
100+ Housing units

5-story height  
FAR of 1.3



Maxwell Box		Scenario Definition:			Apartment
<b>Feasibility Tests</b>					
<b>Gross Potential Income</b>					
Revenues - Private	<b>Units</b>	<b>RSF</b>	<b>Monthly Rent</b>	<b>Rent/SF</b>	<b>Annual Rent</b>
Apartment	101	80,800	\$1,800	\$2.25	\$2,181,600
Parking Spaces	51		\$0	\$0	\$0
Subtotal	101	80,800		\$27.00	\$2,181,600
GSF		97,349			
<b>Vacancy &amp; Collection Losses</b>				3.0%	(\$65,448)
<b>Effective Gross Income</b>					\$2,116,152
<b>Non-Reimbursable Expenses</b>					
Operating			\$10,000 Per Unit		(\$1,010,000)
Reserves			\$350 Per Unit		(\$35,350)
Other			\$0.00 per RSF		\$0
Subtotal					(\$1,045,350)
<b>Net Operating Income</b>					\$1,070,802
<b>Capitalized Value of Residential On Completion-At Stabilization</b>					
Capitalization Rate			5.00% Overall Rate		\$21,416,040
			Rounded		\$21,400,000
			Per Residential RSF		\$265
			Per Unit		\$211,881
<b>Development Cost</b>					
Land	Based on City Assessment		\$0 Per Land SF		\$0
Demolition	42,269 SF		\$10.00 per GSF		\$400,000
Hard Cost			\$165.00 per GSF		\$16,100,000
Parking			\$15,000 per space		\$800,000
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$3,400,000
			Rounded		\$20,700,000
			Per RSF		\$256
			Per Unit		\$204,950
<b>Feasibility Surplus/(Gap)</b>				Rounded	\$716,040
				% Surplus/(Gap)	3.3%



# 1 Maxwell Property

65 East Cottage Street

50,000+ SF  
Jobs producing uses  
100+ Housing units

5-story height  
FAR of 1.3



Maxwell Box		Scenario Definition:		Light Industrial	
<b>Feasibility Tests</b>					
<b>Gross Potential Income</b>					
Revenues - Private	RSF	Rate/SF	Exp. Base	NNN Rent	Annual Rent
Space A	54,000	\$15.00	\$0.00	\$15.00	\$810,000
Space B	0	\$0.00	\$0.00	\$0.00	\$0
Parking	54	\$0.00	\$0.00	\$0.00	\$0
Subtotal	54,054			\$14.99	\$810,000
GSF	60,060	0			
<b>Vacancy &amp; Collection Losses</b>				15.0%	(\$121,500)
<b>Effective Gross Income</b>					\$688,500
<b>Non-Reimbursable Expenses</b>					
Management			3.0% of EGI		(\$20,655)
Reserves			1.0% of EGI		(\$6,885)
Other			\$0.00 per RSF		\$0
Subtotal					(\$27,540)
<b>Net Operating Income</b>					\$660,960
<b>Capitalized Value On Completion-At Stabilization</b>					
Capitalization Rate			8.0% Overall Rate		\$8,262,000
			Rounded		\$8,300,000
			Per RSF		\$154
			Per GSF		\$138
<b>Development Cost</b>					
Net:Gross SF Efficiency			90%		
Land	Based on City Assessment		\$0.00 Per Land SF		\$0
Demolition	42,269 SF		\$10.00 per GSF		\$400,000
Hard Cost			\$100.00 per GSF		\$6,700,000
Parking			\$15,000 per space		\$810,000
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$1,300,000
			Rounded		\$9,210,000
			Per RSF		\$170
			Per GSF		\$153
<b>Feasibility Surplus/(Gap)</b>				Rounded	(\$910,000)
				% Surplus/(Gap)	-11.0%

## 2 Leon Electric Building

Corners of Dudley Street and Humphreys Street

25,000+ SF  
Active retail uses  
200+ Housing units

10-story height  
FAR of 3.9



Leon Electric		Scenario Definition:			Apartment	
<b>Feasibility Tests</b>						
<b>Gross Potential Income</b>						
Revenues - Private	<b>Units</b>	<b>RSF</b>	<b>Monthly Rent</b>	<b>Rent/SF</b>	<b>Annual Rent</b>	
Apartment	200	160,000	\$1,800	\$2.25	\$4,320,000	
Parking Spaces	124		\$0	\$0	\$0	
Subtotal	200	160,000		\$27.00	\$4,320,000	
GSF		192,771				
<b>Vacancy &amp; Collection Losses</b>				3.0%	(\$129,600)	
<b>Effective Gross Income</b>					\$4,190,400	
<b>Non-Reimbursable Expenses</b>						
Operating			\$10,000 Per Unit		(\$2,000,000)	
Reserves			\$350 Per Unit		(\$70,000)	
Other			\$0.00 per RSF		\$0	
Subtotal					(\$2,070,000)	
<b>Net Operating Income</b>					\$2,120,400	
<b>Capitalized Value of Residential On Completion-At Stabilization</b>						
Capitalization Rate			5.00% Overall Rate		\$42,408,000	
				Rounded	\$42,400,000	
				Per Residential RSF	\$265	
				Per Unit	\$212,000	
<b>Development Cost</b>						
Land	Based on City Assessment		\$22.23 Per Land SF		\$1,350,000	
Demolition	128,814 SF		\$15.00 per GSF		\$1,900,000	
Hard Cost			\$185.00 per GSF		\$35,700,000	
Parking			\$15,000 per space		\$1,900,000	
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$7,500,000	
				Rounded	\$48,400,000	
				Per RSF	\$303	
				Per Unit	\$242,000	
<b>Feasibility Surplus/(Gap)</b>					Rounded (\$6,000,000)	
				% Surplus/(Gap)	-14.2%	



## 2 Leon Electric Building

*Corners of Dudley Street and Humphreys Street*

25,000+ SF  
Active retail uses  
200+ Housing units

10-story height  
FAR of 3.9



Leon Electric		Scenario Definition:			Office/Retail	
<b>Feasibility Tests</b>						
<b>Gross Potential Income</b>						
Revenues - Private	RSF	Rate/SF	Exp. Base	NNN Rent	Annual Rent	
Office	14,761	\$15.00	\$0.00	\$15.00	\$221,415	
Retail	20,874	\$25.00	\$0.00	\$25.00	\$521,850	
Parking	15	\$0.00	\$0.00	\$0.00	\$0	
Subtotal	35,635			\$20.86	\$743,265	
GSF	39,594	0				
<b>Vacancy &amp; Collection Losses</b>				15.0%	(\$111,490)	
<b>Effective Gross Income</b>					\$631,775	
<b>Non-Reimbursable Expenses</b>						
Management			3.0% of EGI		(\$18,953)	
Reserves			1.0% of EGI		(\$6,318)	
Other			\$0.00 per RSF		\$0	
Subtotal					(\$25,271)	
<b>Net Operating Income</b>					\$606,504	
<b>Capitalized Value On Completion-At Stabilization</b>						
Capitalization Rate			8.0% Overall Rate		\$7,581,303	
			Rounded		\$7,600,000	
			Per RSF		\$213	
			Per GSF		\$192	
<b>Development Cost</b>						
Net:Gross SF Efficiency			90%			
Land	Based on City Assessment		\$2.47 Per Land SF		\$150,000	
Demolition	14,313 SF		\$15.00 per GSF		\$200,000	
Hard Cost			\$120.00 per GSF		\$5,300,000	
Parking			\$2,500 per space		\$37,500	
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$1,100,000	
				Rounded	\$6,787,500	
				Per RSF	\$190	
				Per GSF	\$171	
<b>Feasibility Surplus/(Gap)</b>					Rounded	\$812,500
					% Surplus/(Gap)	10.7%

### 3 ATCO Supply Parcels

#### Columbia Rd Adjacent to North Burying Ground

11,000+ SF  
Active retail uses  
80+ Housing units

5-story height  
FAR of 2.3



ATCO Supply		Scenario Definition:			Apartment	
<b>Feasibility Tests</b>						
<b>Gross Potential Income</b>						
Revenues - Private	<b>Units</b>	<b>RSF</b>	<b>Monthly Rent</b>	<b>Rent/SF</b>	<b>Annual Rent</b>	
Apartment	83	66,400	\$1,800	\$2.25	\$1,792,800	
Parking Spaces	51		\$0	\$0	\$0	
Subtotal	83	66,400		\$27.00	\$1,792,800	
GSF		80,000				
<b>Vacancy &amp; Collection Losses</b>				3.0%	(\$53,784)	
<b>Effective Gross Income</b>					\$1,739,016	
<b>Non-Reimbursable Expenses</b>						
Operating			\$10,000 Per Unit		(\$830,000)	
Reserves			\$350 Per Unit		(\$29,050)	
Other			\$0.00 per RSF		\$0	
Subtotal					(\$859,050)	
<b>Net Operating Income</b>					\$879,966	
<b>Capitalized Value of Residential On Completion-At Stabilization</b>						
Capitalization Rate			5.00% Overall Rate		\$17,599,320	
				Rounded	\$17,600,000	
				Per Residential RSF	\$265	
				Per Unit	\$212,048	
<b>Development Cost</b>						
Land	Based on City Assessment		\$13.92 Per Land SF		\$845,458	
Demolition	20,779 SF		\$10.00 per GSF		\$200,000	
Hard Cost			\$165.00 per GSF		\$13,200,000	
Parking			\$2,500 per space		\$100,000	
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$2,700,000	
				Rounded	\$17,000,000	
				Per RSF	\$256	
				Per Unit	\$204,819	
<b>Feasibility Surplus/(Gap)</b>					Rounded	\$600,000
				% Surplus/(Gap)	3.4%	



## 4 Upham's Center Parcels

### Columbia Road and Cushing Avenue Corners

14,000+ SF  
Active retail uses  
40+ Housing units

5-story height  
FAR of 2.6



Upham's Center Feasibility Tests		Scenario Definition:			Apartment
<b>Gross Potential Income</b>					
Revenues - Private	<b>Units</b>	<b>RSF</b>	<b>Monthly Rent</b>	<b>Rent/SF</b>	<b>Annual Rent</b>
Apartment	40	32,000	\$1,800	\$2.25	\$864,000
Parking Spaces	31		\$0	\$0	\$0
Subtotal	40	32,000		\$27.00	\$864,000
GSF		38,554			
<b>Vacancy &amp; Collection Losses</b>				3.0%	(\$25,920)
<b>Effective Gross Income</b>					\$838,080
<b>Non-Reimbursable Expenses</b>					
Operating			\$10,000 Per Unit		(\$400,000)
Reserves			\$350 Per Unit		(\$14,000)
Other			\$0.00 per RSF		\$0
Subtotal					(\$414,000)
<b>Net Operating Income</b>					\$424,080
<b>Capitalized Value of Residential On Completion-At Stabilization</b>					
Capitalization Rate			5.00% Overall Rate		\$8,481,600
				Rounded	\$8,500,000
				Per Residential RSF	\$266
				Per Unit	\$212,500
<b>Development Cost</b>					
Land	Based on City Assessment		\$49.04 Per Land SF		\$541,089
Demolition	5,416 SF		\$10.00 per GSF		\$100,000
Hard Cost			\$165.00 per GSF		\$6,400,000
Parking			\$15,000 per space		\$500,000
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$1,400,000
				Rounded	\$8,900,000
				Per RSF	\$278
				Per Unit	\$222,500
<b>Feasibility Surplus/(Gap)</b>					Rounded (\$400,000)
					% Surplus/(Gap) -4.7%

## 4 Upham's Center Parcels

### Columbia Road and Cushing Avenue Corners

14,000+ SF  
Active retail uses  
40+ Housing units

5-story height  
FAR of 2.6



Upham's Center		Scenario Definition:			Office/Retail	
Feasibility Tests						
<b>Gross Potential Income</b>						
Revenues - Private	RSF	Rate/SF	Exp. Base	NNN Rent	Annual Rent	
Office	7,623	\$20.00	\$0.00	\$20.00	\$152,460	
Retail	6,791	\$35.00	\$0.00	\$35.00	\$237,685	
Parking	31	\$0.00	\$0.00	\$0.00	\$0	
Subtotal	14,414			\$27.07	\$390,145	
GSF	15,173					
<b>Vacancy &amp; Collection Losses</b>				15.0%	(\$58,522)	
<b>Effective Gross Income</b>					\$331,623	
<b>Non-Reimbursable Expenses</b>						
Management			3.0% of EGI		(\$9,949)	
Reserves			1.0% of EGI		(\$3,316)	
Other			\$0.00 per RSF		\$0	
Subtotal					(\$13,265)	
<b>Net Operating Income</b>					\$318,358	
<b>Capitalized Value On Completion-At Stabilization</b>						
Capitalization Rate			7.0% Overall Rate		\$4,547,976	
				Rounded	\$4,500,000	
				Per RSF	\$312	
				Per GSF	\$297	
<b>Development Cost</b>						
Net:Gross SF Efficiency			95%			
Land	Based on City Assessment		\$49.04 Per Land SF		\$541,089	
Demolition	14,313 SF		\$15.00 per GSF		\$200,000	
Hard Cost			\$165.00 per GSF		\$2,600,000	
Parking			\$2,500 per space		\$77,500	
Soft Costs (includes financing, fee etc.)			20% of Hard Cost		\$500,000	
				Rounded	\$3,918,589	
				Per RSF	\$272	
				Per GSF	\$258	
<b>Feasibility Surplus/(Gap)</b>					Rounded	\$581,412
				% Surplus/(Gap)	12.9%	

## 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	48	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	13,962	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%

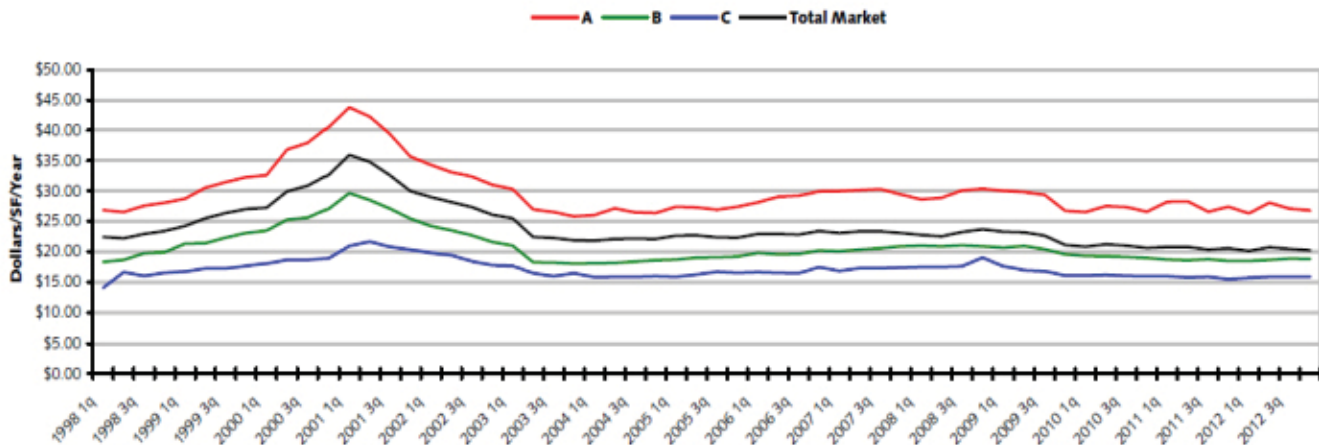
## Retail Market Background

Period	Existing Inventory		Vacancy		Net Absorption	Delivered Inventory		UC Inventory		Quoted Rates
	# Bldgs	Total RBA	Vacant SF	Vacancy %		# Bldgs	Total RBA	# Bldgs	Total RBA	
2012 4q	2,440	28,381,149	644,696	2.3%	56,512	1	33,000	4	172,017	\$25.00
2012 3q	2,439	28,348,149	668,208	2.4%	35,468	0	0	5	205,017	\$24.60
2012 2q	2,439	28,348,149	703,676	2.5%	(8,101)	0	0	2	50,000	\$25.67
2012 1q	2,439	28,348,149	695,575	2.5%	144,616	1	4,373	2	50,000	\$19.33
2011 4q	2,438	28,343,776	835,818	2.9%	479	0	0	2	37,373	\$19.75
2011 3q	2,440	28,360,927	853,448	3.0%	13,200	0	0	1	4,373	\$22.40
2011 2q	2,441	28,367,941	873,662	3.1%	159,033	3	41,000	0	0	\$21.49
2011 1q	2,440	28,334,486	999,240	3.5%	91,909	1	2,905	3	41,000	\$22.42
2010 4q	2,440	28,334,490	1,091,153	3.9%	154,801	1	46,400	4	43,905	\$22.85
2010 3q	2,440	28,304,560	1,216,024	4.3%	(29,566)	1	2,200	4	80,305	\$23.77
2010 2q	2,439	28,302,360	1,184,258	4.2%	60,478	2	125,700	3	74,600	\$23.69
2010 1q	2,437	28,176,660	1,119,036	4.0%	74,373	1	5,731	5	200,300	\$23.92
2009 4q	2,437	28,175,801	1,192,550	4.2%	50,032	0	0	4	133,631	\$24.00
2009 3q	2,437	28,175,801	1,242,582	4.4%	35,008	1	16,105	3	131,431	\$23.76
2009 2q	2,437	28,164,808	1,266,597	4.5%	8,217	1	14,700	1	16,105	\$22.72
2009 1q	2,436	28,150,108	1,260,114	4.5%	(74,840)	2	46,426	2	30,805	\$22.23



# Office Market Background - Historical Rental Rates

Based on Full-Service Equivalent Rental Rates



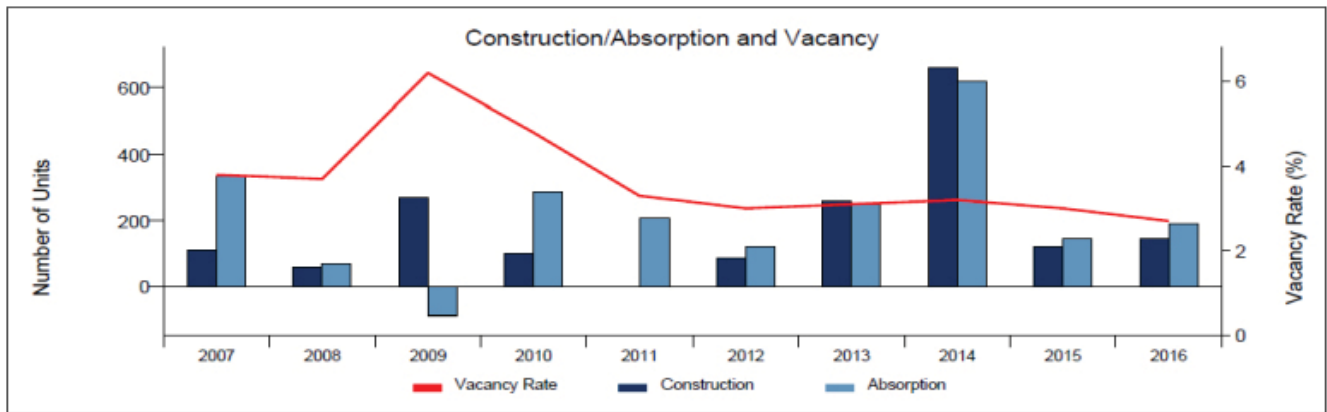
# Light Industrial Market Background

Period	Existing Inventory		Vacancy		Net Absorption	Delivered Inventory		UC Inventory		Quoted Rates
	# Bldgs	Total RBA	Vacant SF	Vacancy %		# Bldgs	Total RBA	# Bldgs	Total RBA	
2012 4q	749	28,431,214	3,271,348	11.5%	185,745	0	0	0	0	\$8.66
2012 3q	750	28,446,214	3,472,093	12.2%	(129,750)	0	0	0	0	\$8.96
2012 2q	750	28,446,214	3,342,343	11.7%	15,305	0	0	0	0	\$9.23
2012 1q	750	28,446,214	3,357,648	11.8%	(184,067)	0	0	0	0	\$9.14
2011 4q	751	28,547,464	3,274,831	11.5%	169,360	0	0	0	0	\$8.97
2011 3q	754	28,726,884	3,623,611	12.6%	(439,404)	0	0	0	0	\$9.41
2011 2q	755	28,803,276	3,260,599	11.3%	(40,618)	0	0	0	0	\$9.49
2011 1q	755	28,803,276	3,219,981	11.2%	181,381	1	10,225	0	0	\$9.32
2010 4q	754	28,793,051	3,391,137	11.8%	(42,585)	0	0	1	10,225	\$9.51
2010 3q	755	28,907,249	3,462,750	12.0%	223,307	0	0	1	10,225	\$8.72
2010 2q	755	28,907,249	3,686,057	12.8%	(16,868)	0	0	0	0	\$8.78
2010 1q	755	28,907,249	3,669,189	12.7%	(54,698)	0	0	0	0	\$8.92
2009 4q	755	28,907,249	3,614,491	12.5%	53,698	0	0	0	0	\$8.70
2009 3q	755	28,907,249	3,668,189	12.7%	188,779	0	0	0	0	\$8.89
2009 2q	755	28,907,249	3,856,968	13.3%	(187,293)	0	0	0	0	\$9.06
2009 1q	755	28,907,249	3,669,675	12.7%	(260,488)	0	0	0	0	\$8.95

# Upham's Corner Residential Positioning

Current Submarket Average Rents and Sizes				Asking Rent Growth					
	3Q 2012			Quarterly			Annualized		
	Rent	Avg. SF	Avg. Rent PSF	3Q12	2Q12	YTD	1 Year	3 Year	5 Year
Studio/Efficiency	\$1,003	440	\$ 2.28	0.7%	0.2%	0.6%	1.8%	1.7%	2.7%
One Bedroom	\$1,449	722	\$ 2.01	0.4%	2.1%	2.2%	3.2%	1.4%	1.6%
Two Bedroom	\$1,763	968	\$ 1.82	1.0%	0.3%	1.7%	1.4%	0.0%	1.1%
Three Bedroom	\$2,402	1193	\$ 2.01	3.4%	1.7%	6.3%	7.0%	-0.4%	1.5%
Average over period ending:				09/30/12	06/30/12	09/30/12	12/31/11	12/31/11	12/31/11

## Upham's Corner Residential Positioning



## Upham's Corner and Newmarket Commercial and Industrial Positioning

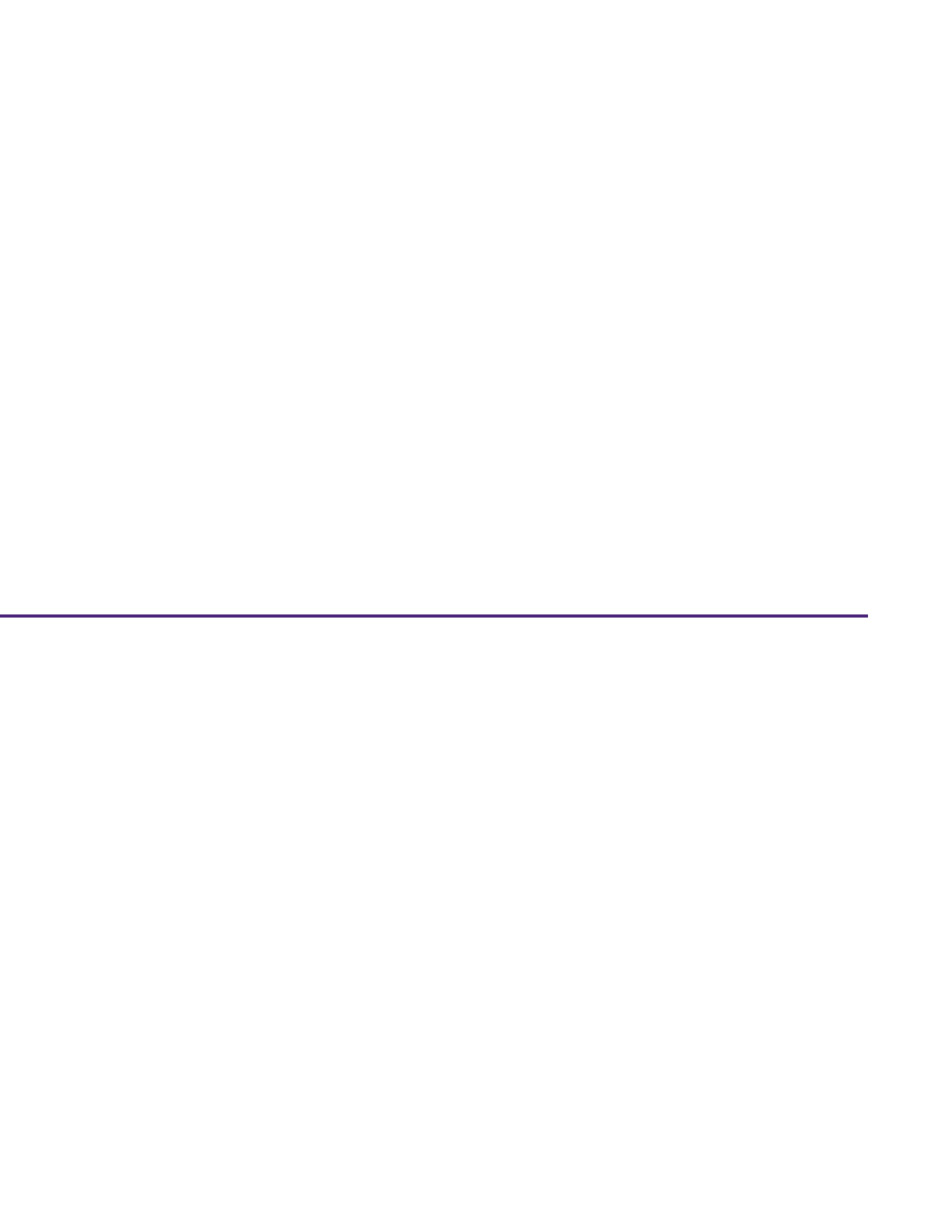
### Face Rent Analysis Report

	DIRECT SPACES				SUBLET SPACES				TOTAL
	# Spaces	Min	Avg	Max	# Spaces	Min	Avg	Max	Avg
<b>Flex</b>									
Full Service Gross	1	\$17.60	\$17.60	\$17.60	0	-	-	-	\$17.60
Negotiable	1	-	-	-	0	-	-	-	-
Triple Net	0	-	-	-	1	\$13.00	\$13.00	\$13.00	\$13.00
<b>Off/Ret</b>									
Full Service Gross	1	\$14.22	\$14.22	\$14.22	0	-	-	-	\$14.22
Modified Gross	1	\$14.12	\$14.12	\$14.12	0	-	-	-	\$14.12
Negotiable	2	-	-	-	0	-	-	-	-
Plus All Utilities	1	\$11.69	\$11.69	\$11.69	0	-	-	-	\$11.69
Triple Net	7	\$7.00	\$9.74	\$19.00	0	-	-	-	\$9.74
<b>Office</b>									
Full Service Gross	1	\$14.22	\$14.22	\$14.22	0	-	-	-	\$14.22
Modified Gross	5	\$18.00	\$26.00	\$30.00	0	-	-	-	\$26.00
Negotiable	9	-	-	-	0	-	-	-	-
Plus All Utilities	10	\$15.00	\$15.46	\$18.00	0	-	-	-	\$15.46
Plus Electric	1	\$18.00	\$18.00	\$18.00	0	-	-	-	\$18.00
Triple Net	15	\$5.00	\$10.70	\$13.50	0	-	-	-	\$10.70
<b>Retail</b>									
Full Service Gross	2	\$25.00	\$27.50	\$30.00	0	-	-	-	\$27.50
Modified Gross	2	\$14.11	\$21.70	\$33.84	0	-	-	-	\$21.70
Negotiable	16	-	-	-	0	-	-	-	-
TBD	2	-	-	-	0	-	-	-	-
Triple Net	22	\$5.29	\$15.49	\$35.00	0	-	-	-	\$15.49
<b>Warehouse</b>									
Full Service Gross	1	\$5.00	\$5.00	\$5.00	0	-	-	-	\$5.00
Modified Gross	3	\$9.00	\$10.33	\$14.40	0	-	-	-	\$10.33
Negotiable	9	-	-	-	0	-	-	-	-
Triple Net	34	\$7.95	\$10.01	\$17.76	2	\$8.50	\$9.70	\$11.00	\$10.00

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# **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	<ul style="list-style-type: none"> <li>Design for water efficiency in plumbing fixtures, landscaping, and operations.</li> <li>Recycle graywater and rainwater on site</li> <li>Minimize impervious cover</li> <li>Utilize green stormwater infrastructure to slow, cleanse and infiltrate rainwater where it falls</li> </ul>
Energy	Promote clean, renewable energy	<ul style="list-style-type: none"> <li>Design structures and operations for energy efficiency</li> <li>Generate renewable energy on site</li> <li>Minimize embodied energy of materials</li> <li>Utilize vegetation and solar-reflective surfaces to reduce urban heat island and building heating/cooling energy needs</li> <li>Orient buildings to maximize passive and active solar access</li> </ul>
Climate	Minimize greenhouse gas emissions	<ul style="list-style-type: none"> <li>Utilize fuels with lower carbon footprint</li> <li>Choose locally sourced materials with lower carbon footprint</li> </ul>
	Foster resilience to climate change	<ul style="list-style-type: none"> <li>Utilize design standards that account for projected changes in sea level, precipitation, and temperature</li> <li>Adopt climate adaptation strategies</li> </ul>
Ecology	Support healthy soil, plant, and wildlife ecosystems	<ul style="list-style-type: none"> <li>Specify native vegetation in landscape design</li> <li>Control invasive and nuisance species</li> <li>Preserve existing mature trees</li> <li>Preserve and create open (undeveloped) space</li> <li>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</li> <li>Protect and restore wetlands</li> </ul>
Community	Foster environmental stewardship in the community	<ul style="list-style-type: none"> <li>Engage community members in planning and design</li> <li>Include public access, interpretive signage, and educational programming</li> <li>Reflect community identity and values in design</li> </ul>
	Create community amenities	<ul style="list-style-type: none"> <li>Design stormwater features to provide landscape amenities</li> <li>Preserve and create open space with public access, recreational facilities, and ongoing maintenance and security</li> </ul>
	Reduce burdens of legacy contaminants and ongoing pollution in the community	<ul style="list-style-type: none"> <li>Remediate brownfields</li> <li>Reduce vehicular traffic</li> <li>Install noise damping facilities</li> <li>Limit light trespass</li> </ul>
	Enhance access and connectivity	<ul style="list-style-type: none"> <li>Create accessible pedestrian and bike routes connecting stations, neighborhoods, open spaces, and commercial centers</li> <li>Repair and upgrade existing pedestrian and bike corridors and facilities</li> <li>Provide secure and covered bicycle storage</li> <li>Design compact, mixed-use, walkable neighborhoods</li> </ul>
	Expand access to and awareness of healthy, local food systems	<ul style="list-style-type: none"> <li>Dedicate space for urban agriculture and farmers markets</li> <li>Locate markets and CSA drop-offs in central, visible, accessible places</li> <li>Enhance/create signage for local farmers markets, community gardens, urban farms</li> </ul>
	Ensure fairness in the distribution of project costs and benefits	<ul style="list-style-type: none"> <li>Involve environmental justice community in planning and design</li> </ul>
Economy	Encourage growth of sustainable businesses	<ul style="list-style-type: none"> <li>Create “green business” incubators</li> <li>Co-locate businesses that can share resources (i.e. eco-industrial facility)</li> <li>Incentivize businesses to adopt sustainable practices (green building, bike-to-work facilities, energy conservation, etc.)</li> </ul>
	Improve access to jobs and services by foot, bike or public transit.	<ul style="list-style-type: none"> <li>Promote infill</li> </ul>
	Increase waste diversion among area businesses	<ul style="list-style-type: none"> <li>Composting</li> <li>Recycling</li> </ul>



### 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 (“ecorooft”) 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





CITY OF BOSTON  
Martin J. Walsh  
*Mayor*



Boston  
Redevelopment  
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UPHAM'S CORNER  
STATION AREA PLAN  
APRIL 2014

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A horizontal banner image showing a street scene with buildings and a sign that says "Coming Soon".

## FAIRMOUNT INDIGO CORRIDOR