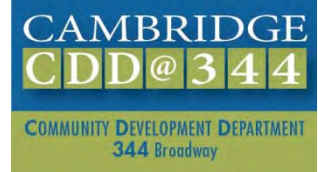




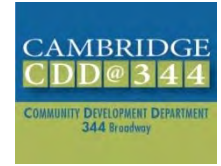
Volpe Working Group October 20, 2016



Community Development Department

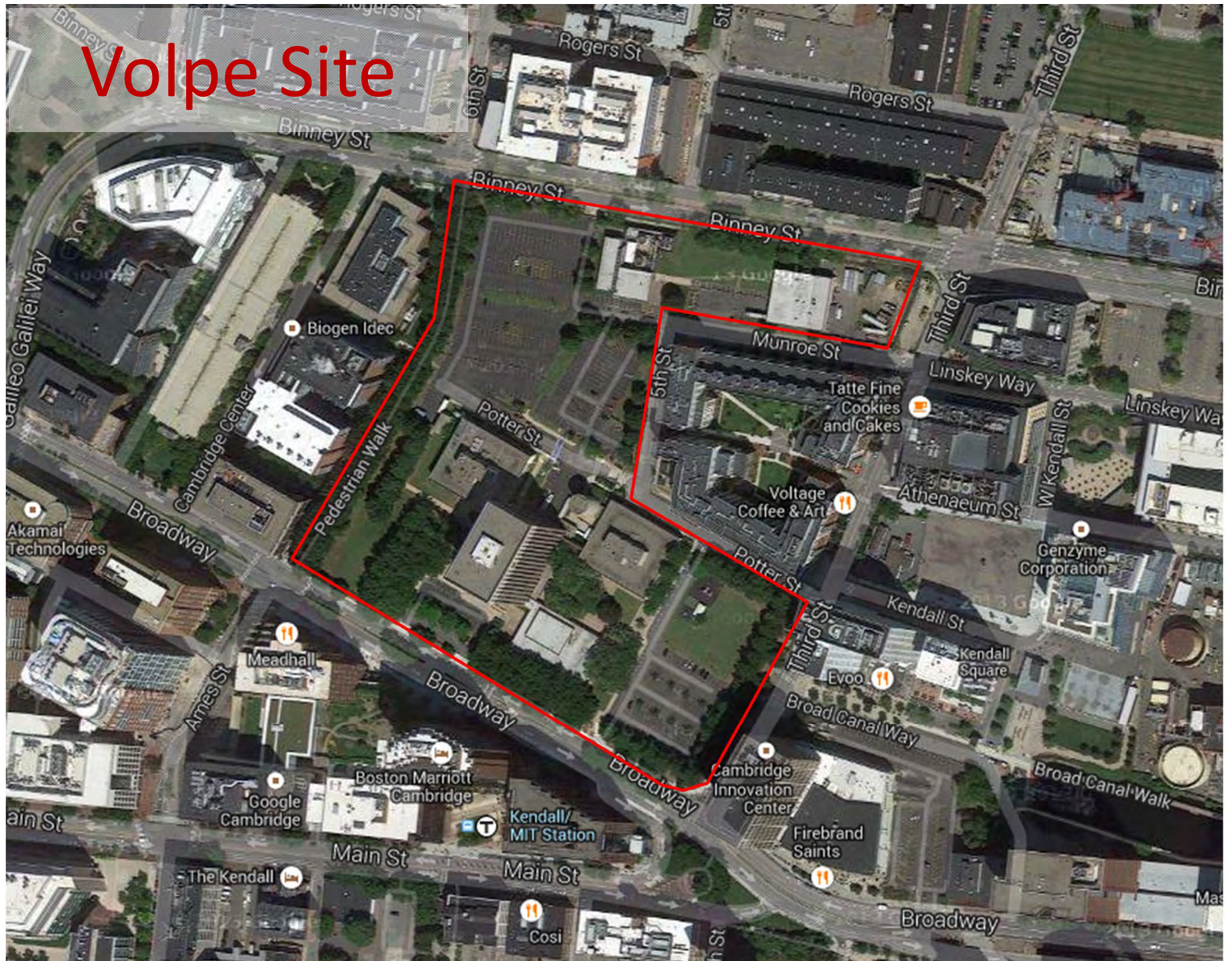


Volpe Working Group



PURPOSE: To discuss and develop an urban design framework and set of planning principles to provide guidance to potential developers about the City's priorities and expectations for the site.

Volpe Site



Volpe Center

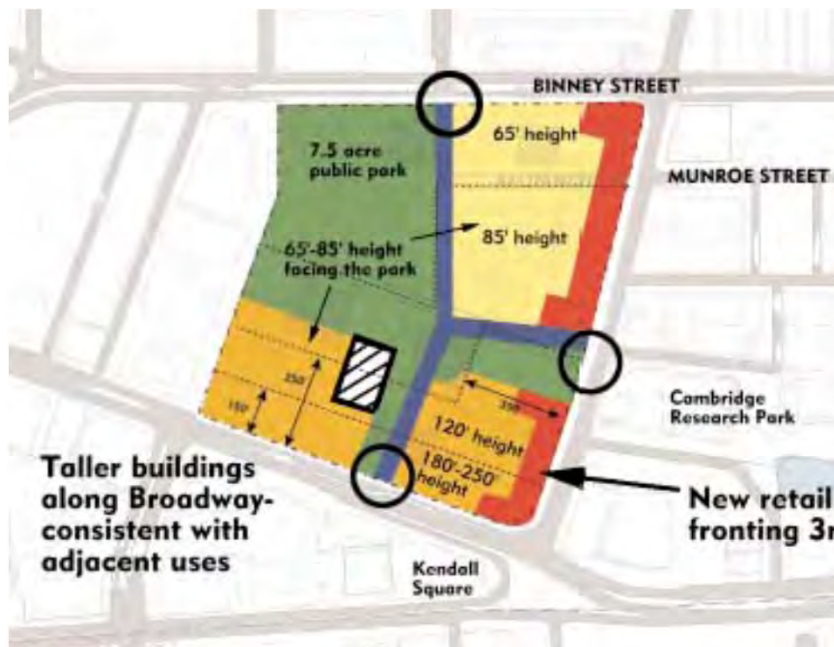
- Facilities built in 1960s for NASA (not completed)
- U.S. National Transportation Systems Center has occupied since 1970
- 14.2-acre site
- 1,200+ workers
- No major site improvements in ~~45-46~~ years



1978 Rezoning

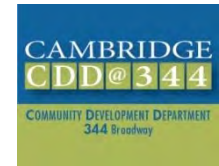
- Formerly Industry B (4.0 FAR, few use restrictions)
- Zoned to Office 3A (3.0 FAR, office/residential only)

ECaPS Rezoning (2001)



- Transition in land uses from Broadway to neighborhoods
- Lower heights closer to the neighborhoods, taller heights closer to Broadway.
- Create a strong residential presence in the area.
- Require a major new public park
- Encourage retail on Third Street and Broadway
- *3.0 FAR allowed only by PUD special permit*

Kendall Square (K2) Plan



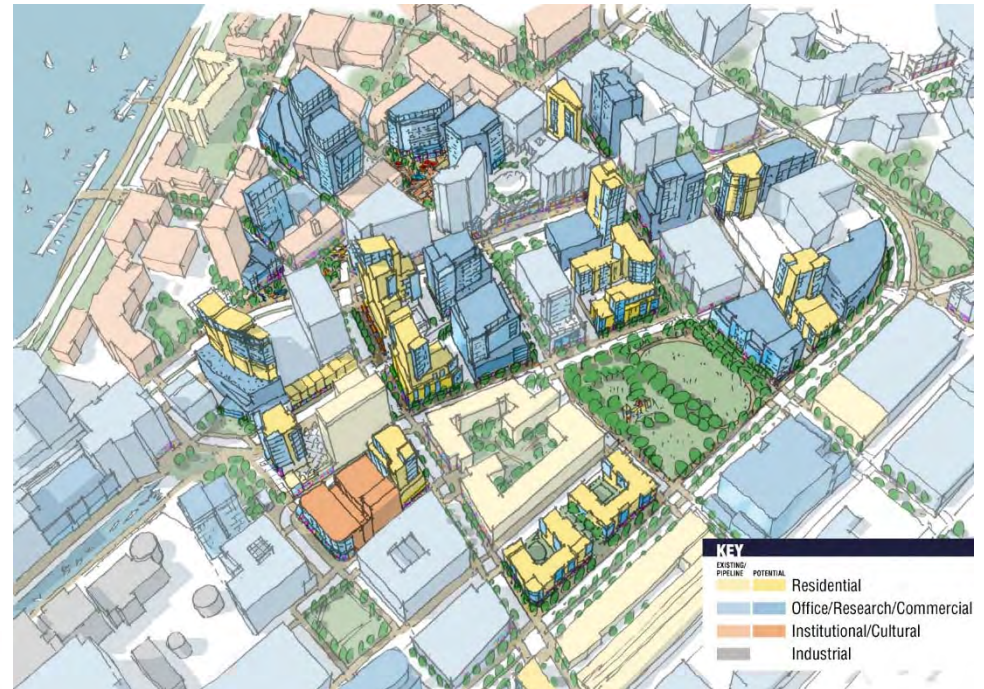
- April 2011 – June 2012
- 20-person **Advisory Committee** -- residents, businesses, property owners/developers, MIT, Kendall Square Association, Cambridge Redevelopment Authority
- Multidisciplinary consultant team led by **Goody Clancy**
- 18 **committee meetings**
- 2 **public meetings** + 2 hands-on **working sessions**
- Study area **walking tour**
- **City Council** roundtable + **Planning Board** discussions

Companion process: **neighborhood sponsored ECPT/CBT plan**



Vision for Kendall Square

“A dynamic **public realm** connecting diverse choices for **living, working, learning, and playing** to inspire continued success of Cambridge’s **sustainable, globally-significant** innovation community.”



K2 Planning Vision (Goody Clancy)



ECPT Planning Vision (CBT Architects + Planners)



K2 Recommendations: Housing

- Required along with commercial growth
- Affordable and Middle-Income units
- Diverse household types, including families with children
- Payments to Affordable Housing Trust for non-residential development (now \$12+ per square foot)



K2 Recommendations: Active Ground Floors



- **Active Uses:** food stores, convenience stores, shops, restaurants, cultural and community space (*not lobbies*)
- **Required:** 75% of frontage along major streets; encouraged on all public streets and open spaces
- **Small Retail:** Incentives for spaces 5,000 square feet or less

K2 Recommendations: Public Open Space

- **“Connect Kendall Square”** – integrated system of open space connecting residents, workers, businesses and the natural environment
- **Volpe Site** as an opportunity for major new civic space(s)



K2 Recommendations: Innovation Space

- Small companies & individuals on short-term leases
- Shared workspaces
- In new or existing buildings, or in partnership with other property owners
- Required for at least 5% of new office development
- Incentives to encourage more space than the minimum



K2 Recommendations: Sustainability



- LEED Gold, enhanced energy efficiency
- Stormwater control and urban heat island mitigation
- Encourage on-site energy systems and co-gen;
- Assess district steam potential for new buildings
- Energy use disclosure (BEUDO)
- Anticipate net-zero and climate resiliency goals

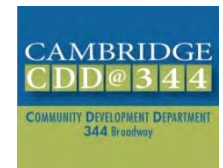
K2 Recommendations: Transportation

- **Parking:** Reduce, manage and share

Use	Auto Parking	
	Minimum	Maximum
R&D	Based on analysis	0.8 sp/1000 sq. ft.
Office		0.9 sp/1000 sq. ft.
Retail/consumer service		0.5 sp/1000 sq. ft.
Residential	0.5 sp/du	0.75 sp/du

- **PTDM** requirements and enhanced TDM
- **PUD process** includes review of street/circulation design, transportation impacts and mitigation
- Desired transit routes identified in K2 study

K2 Recommendations: Community Funds



- \$10 per square foot commercial development

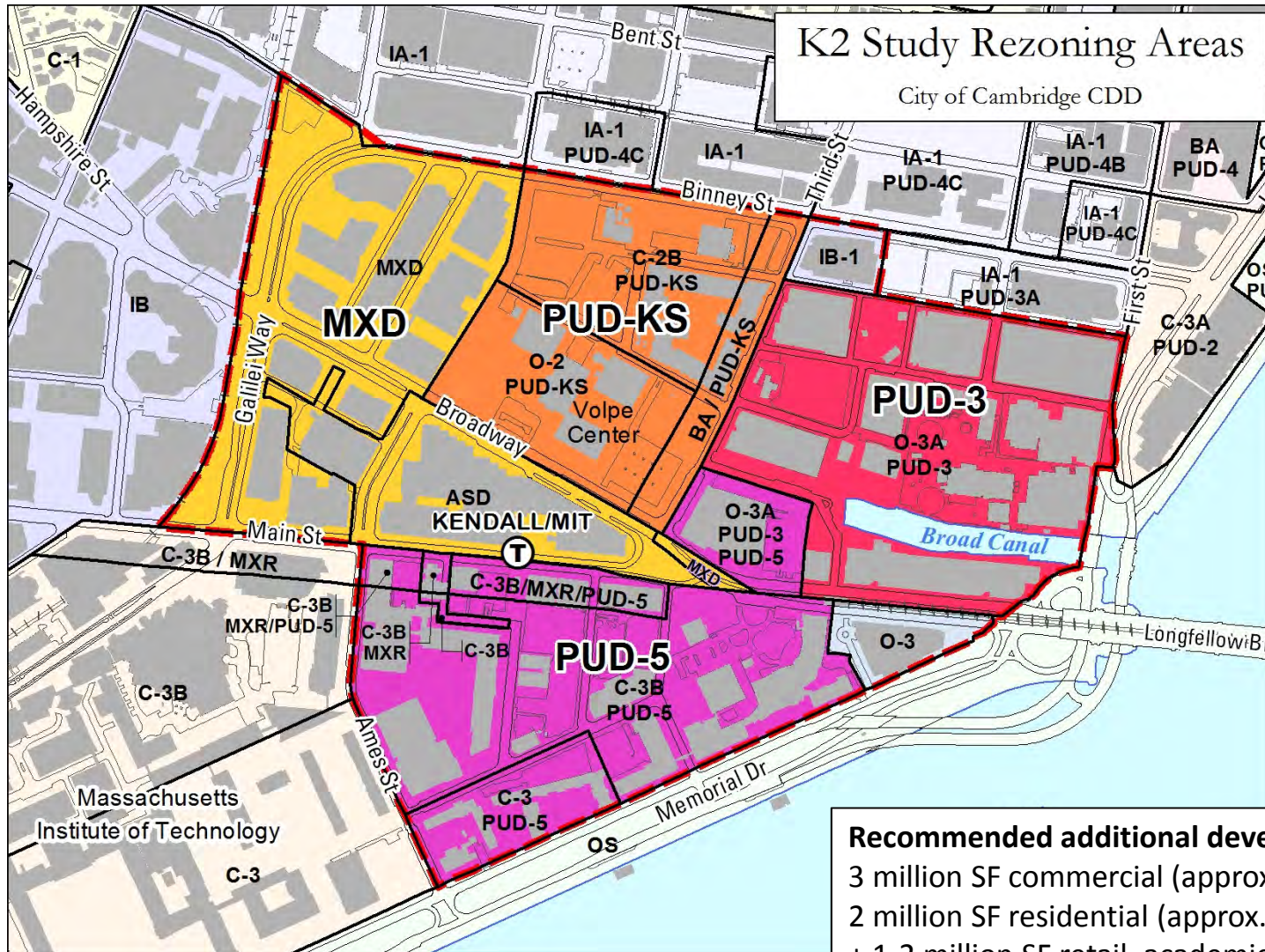
Open Space Programming

Transit Improvements

Workforce Readiness



K2 Zoning Recommendations

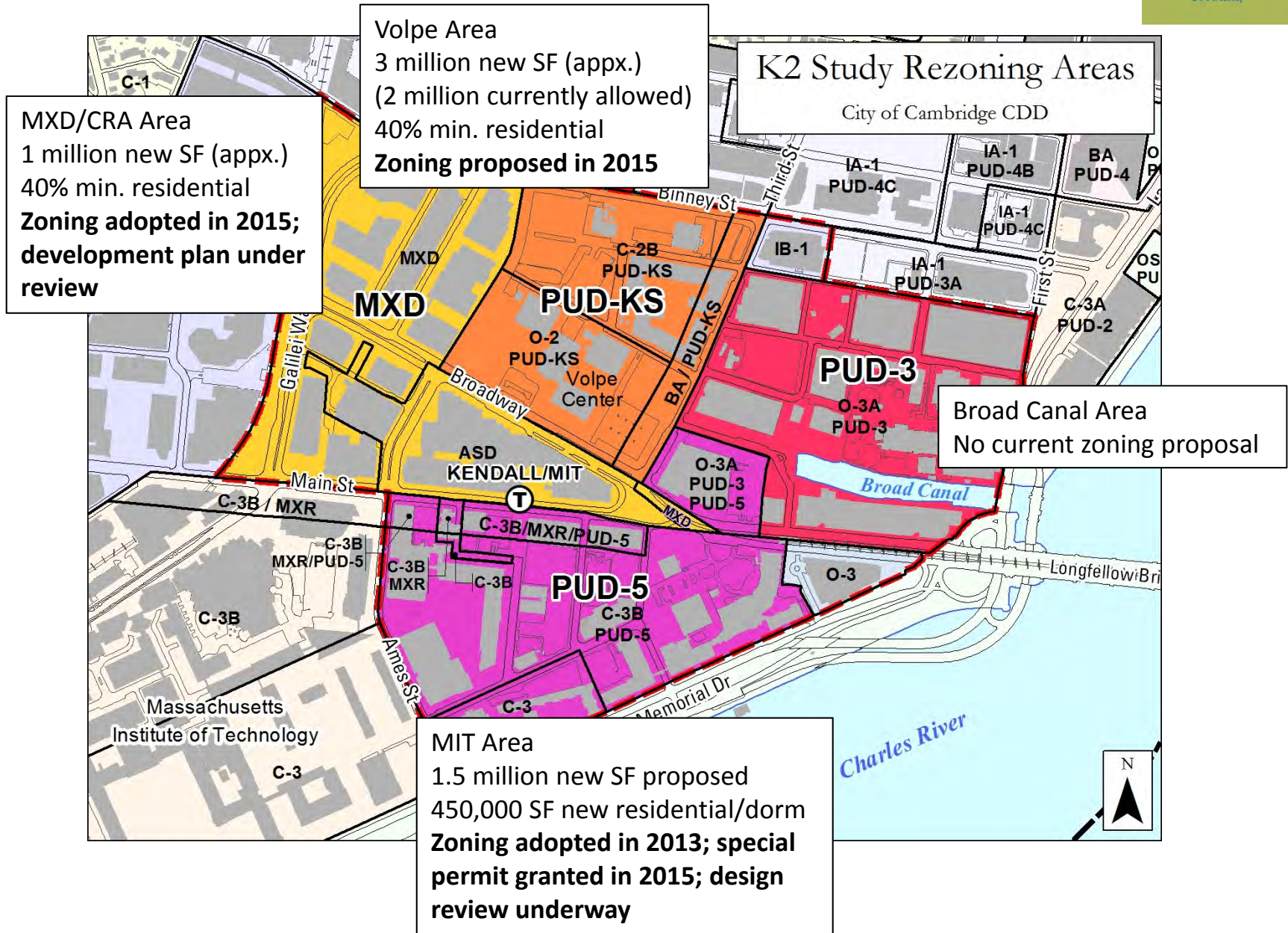


K2 Study Rezoning Areas

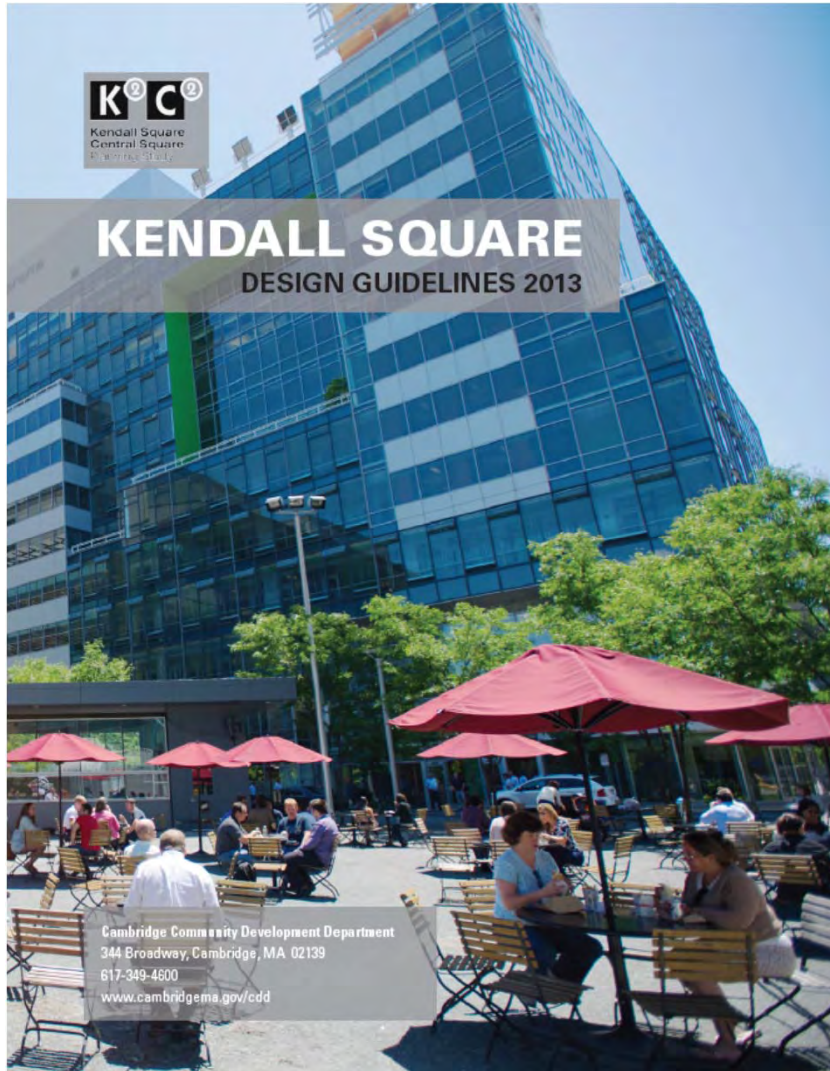
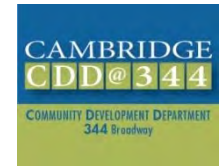
City of Cambridge CDD

Recommended additional development:
 3 million SF commercial (approx.)
 2 million SF residential (approx.)
 + 1-2 million SF retail, academic, other
Note: in addition to current zoning

K2 Zoning Recommendations: Current Status



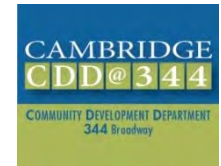
Urban Design



- Public review process for development plans
- Guidelines for public space and building design



Public Development Review Process



Zoning (City Council)

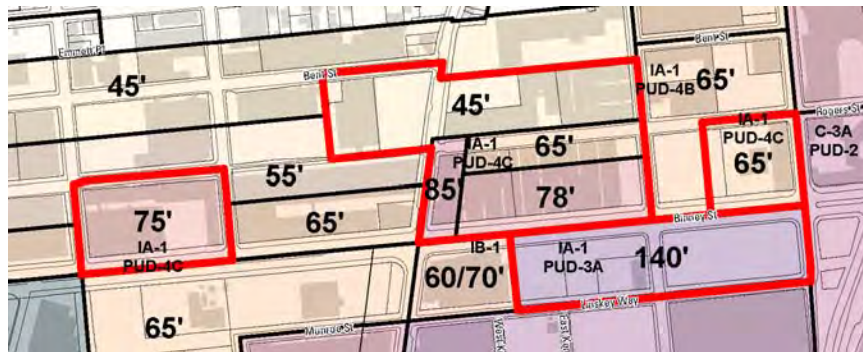
Development Controls:

- Maximum development (FAR)
- Maximum heights
- Minimum housing, affordable housing
- Minimum open space
- Parking requirements
- Sustainability requirements
- Other requirements/incentives

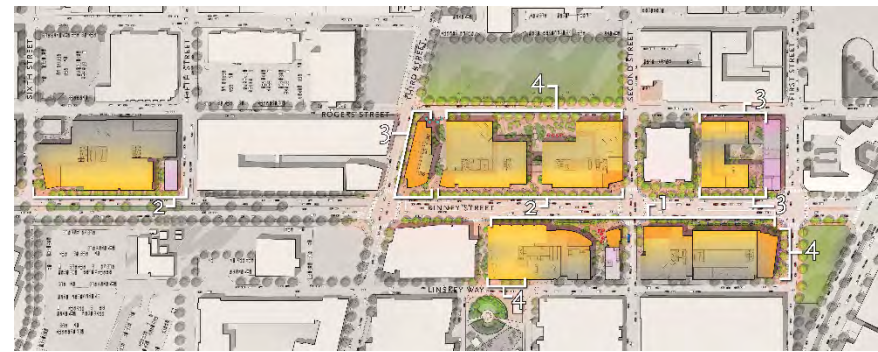
PUD Special Permit (Planning Board)

Development Plan Review:

- Site layout
- Building massing
- Open space design
- Retail plan
- Housing plan
- Project construction/phasing
- Design review (ongoing)



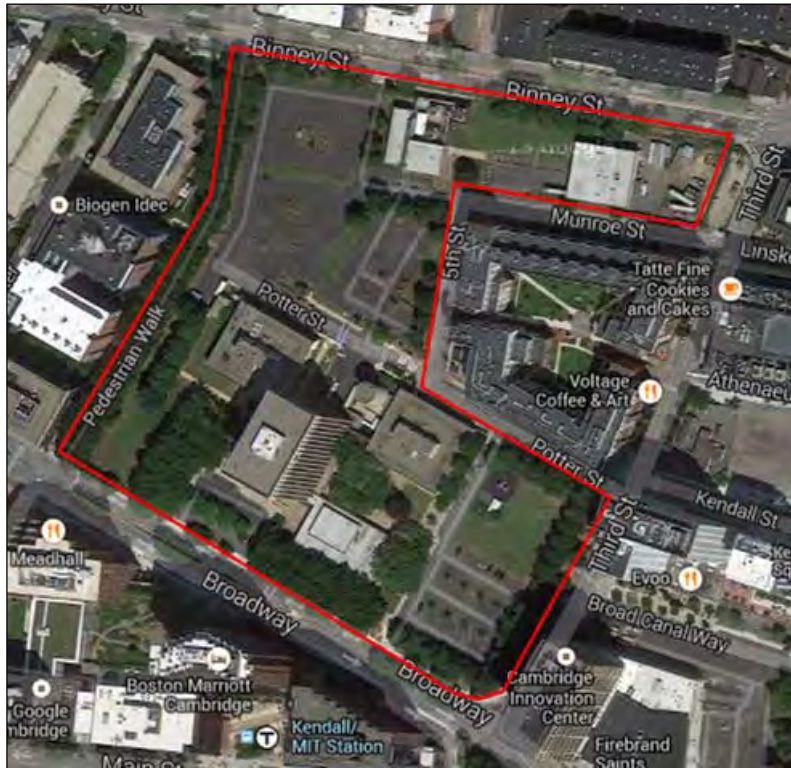
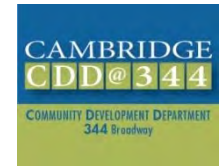
Example: Alexandria Zoning



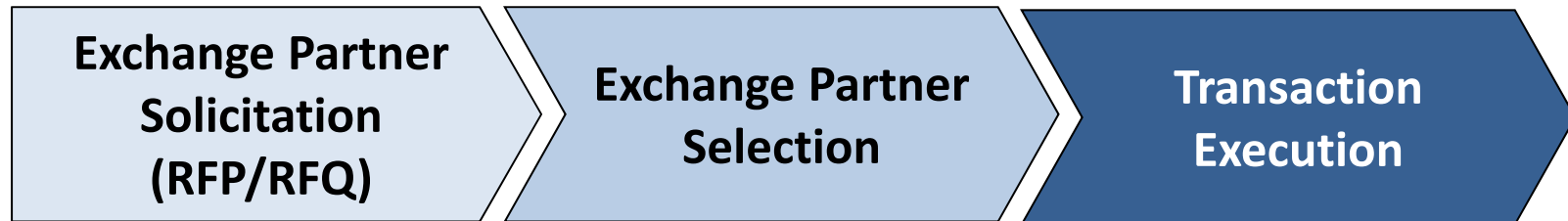
Alexandria PUD Development Plan

Public hearings at both phases

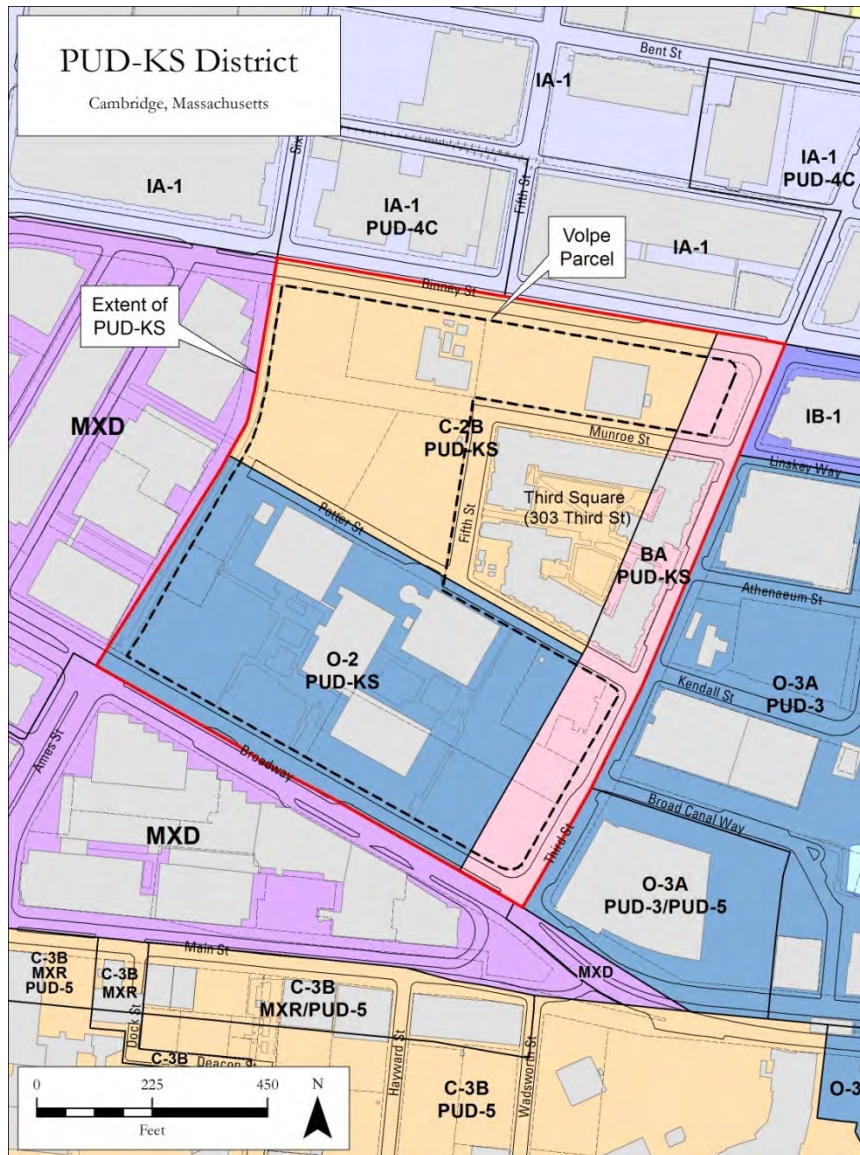
Volpe Site: Exchange Process (2014-present)



- Federal government will exchange most of the site for a new building
- Competitive process to select a development partner
- Government retains new Volpe site (approx. 3 acres)
- Remainder of site developed privately under City's zoning (approx. 11 acres)



PUD-KS Initial Zoning Proposal (2015)

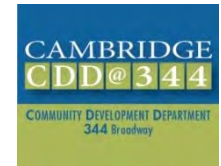


- CDD proposal based on K2 zoning recommendations
- Planning Board discussions January-May 2015
- City Council and Planning Board public hearings June-July 2015
- Community engagement summer-fall 2015
- Additional public hearings October-December 2015

PUD-KS Initial Zoning Proposal (June, 2015)

	Current Zoning	Proposed Zoning
Allowed “Base” FAR	3.0 / 3.36 (w/inclusionary bonus)	4.5 (no additional bonus)
Housing	40% minimum	40% minimum
Affordable Housing (as % of total housing)	11.5% low-moderate (effective after bonus)	10% low-moderate 5% middle income 15% total
Public Open Space (as % of parcel area)	42% / 53% (7.5 acres)	At least 25% (3.5+ acres)
Parking	Minimums	Maximums
Ground Floor Retail	Incentivized	Required (major streets)
Innovation Space	N/A	Min. 5% of office/lab
Sustainability/Environmental	LEED Silver	LEED Gold + other req’s
Community Funds	N/A	\$10/sq.ft. commercial
Government Facility	Flexibility allowed	Encouraged in PUD

Volpe Site: Initial Zoning Proposal (June, 2015)

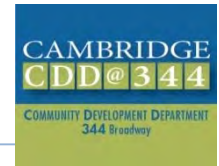


	Current Zoning	Proposed Zoning
Site Area	620,000	620,000
Residential	967,000 (min)	1,116,000 (min)
Office / Lab (not including Innovation Space)	1,086,000 (max)	1,632,000 (max)
Retail	50,000	140,000
Innovation Space (min)	0	84,000
Total Private Development	2,103,000	2,972,000

Figures in Square Feet of Gross Floor Area

ALL FIGURES APPROXIMATE

Council comments - Joint Hearing June 29, 2015



Housing

- Proportion of housing
- Affordable housing (low-mod, mid)
- Housing for families

Ground floor uses and activities

- Family-friendly restaurants
- Low-price supermarket
- Ground floor retail needs more specificity
- Affordable retail & locally-owned
- Retail to attract people
- Workforce development needs
- Incubator space
- Daycare

Other

- Cost and size of Volpe building & site
- FAR of 4.5 is dense
- Transportation – traffic impacts, red line
- Development feasibility
- Have community conversation

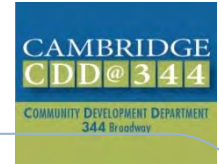
Open space & public realm

- Needs to be very special
- Building facades matter
- Need family-friendly open spaces
- Maximize sunlight & livability
- Contiguous - one primary, a secondary
- Visibility from different vantage points
- Programming
- No gates, needs to face streets
- Welcoming to the neighborhoods
- Engaging & educational indoor & outdoor
- Civic, not corporate space – medieval plaza
- Accessibility of federally-owned open space

Built form

- Composition of buildings respect each other, especially at the lower level
- Floor plate sizes important
- Don't wall off site
- 2 setbacks instead of just one
- Design guidelines need more detail

Planning Board comments– June 29 & July 14, 2015



Land use

- Supporting high-tech & innovation is most important goal for site
- Proportion of housing versus commercial/office space
- Affordable housing (low-mod, middle)
- Housing for families (3 beds)

Ground floor uses and activities

- Retail - where it is going to be located, and what sort of retail it is going to be
- Design guidelines can include retail

Other

- Need financial analysis
- FAR of 4.5 is a lot of sqf to assemble across the site
- Transit impacts

Open space and public realm

- Amount of open space
- Connections are the key for open space
- Connect Kendall shows how to make space function without 5-acre park – it's not the right location for such a large park
- Extend the canal and create more connections through the site

Built form & urban design

- Where taller buildings should be located & whether there's a limitation on that area in which they can be located
- Need human-scale
- Need vision for creating a great space
- Broadway & Third St intersection is important
- Variation in height
- Concentrate on people who live and work there & neighborhoods
- Allowing more height for the residential

Conceptual Massing Studies

CONCEPTUAL MASSING STUDY 1



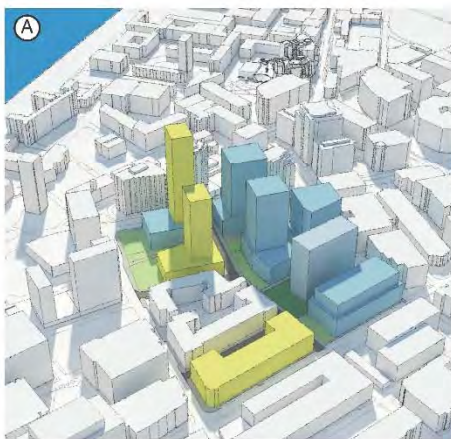
CONCEPTUAL MASSING STUDY 2



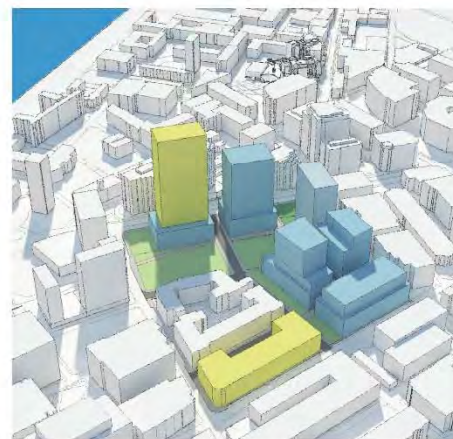
CONCEPTUAL MASSING STUDY 3



CONCEPTUAL MASSING STUDY 4



- Two slender residential towers (350' and 500')
- Two commercial towers at 350'



- One larger residential tower at 500'
- One commercial tower at 350'



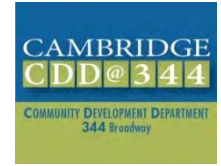
- Three large commercial towers (2 x 350', 1 x 500')



- One large commercial tower with a height of 1000'

Conceptual illustration only – not a development plan

Community outreach (2015)



Seven drop-in conversations

1. July 30th, 5-7pm at Clement Morgan Park
2. Aug 5th, 5-7pm at Rogers Street Park
3. Aug 12th, 11am-2pm at Lafayette Square
4. Aug 15th, 2-5 pm at Greene Rose Park
5. Aug 20th, 11am-2pm at Kendall Square Farmers' Market
6. Sept 12th, 11am-4pm at The Pride Day
7. Sept 18th, 9am-4pm at The Parking Day



Sit-down forum

Oct 17th, 10am – 12pm Kennedy-Longfellow School

Other meetings

Area 4, ECPT

COMMUNITY CONVERSATIONS WHAT IS MISSING / WHAT WOULD YOU LIKE TO SEE IN KENDALL SQUARE?



THE MOST NEEDED USE/SPACE IN THE AREA (VOTE FOR YOUR TOP 3 CHOICES)

- Clement Morgan Park (7/3)
- Rogers Street Park (8/5)
- Lafayette Square (8/12)
- Greene Rose Park (8/15)
- Kendall Sq Farmers' Market (8/20)

1. MAKER SPACE
● ● ● ● ●
 100% of respondents



2. WORKFORCE TRAINING SPACE
● ● ● ● ●
 100% of respondents



3. GROCERY STORE
● ● ● ● ●
 100% of respondents



4. COMMUNITY SPACE
 (e.g., Boston District Hall)
● ● ● ● ●
 100% of respondents



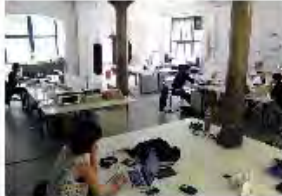
5. CONVENIENCE STORE / PHARMACY
● ● ● ● ●
 100% of respondents



6. FAMILY RESTAURANT
● ● ● ● ●
 100% of respondents



13. AFFORDABLE OFFICE SPACE
● ● ● ● ●
 100% of respondents



12. TAKE OUT FOOD STAND
● ● ● ● ●
 100% of respondents



11. PERFORMANCE/ CULTURAL SPACE
● ● ● ● ●
 100% of respondents

9. AFFORDABLE RETAIL
● ● ● ● ●
 100% of respondents

8. MUSEUM/GALLERY
● ● ● ● ●
 100% of respondents

7. DAYCARE
● ● ● ● ●
 100% of respondents

DIVERSITY OF FOOD TRUCKS
● ● ● ● ●
 100% of respondents

NIGHT LIFE ACTIVITY/VENUES
● ● ● ● ●
 100% of respondents

AFFORDABLE ACCOMMODATION/HOTEL
● ● ● ● ●
 100% of respondents

TURKEY FARM
● ● ● ● ●
 100% of respondents

COMMUNITY CONVERSATIONS WHAT IS MISSING / WHAT WOULD YOU LIKE TO SEE IN KENDALL SQUARE?



TYPES OF OPEN SPACE (VOTE FOR YOUR TOP 3 CHOICES)

1. SPORTS FIELDS

2. INNOVATIVE/ UNIQUE SEATING SPACE

3. URBAN WETLANDS

4. SCULPTURE / ART INSTALLATION

5. PICTURESQUE PARK

6. NATURE WALK

7. ROOFTOP GARDEN

8. PLAYGROUND

9. WATER FOUNTAIN

10. INDOOR/OUTDOOR PAVILION

11. TREE-COVERED LAWN

12. CANAL WALKWAY

13. COURTYARD

14. LARGE OPEN PLAZA

15. PEDESTRIANIZED STREET WITH ACTIVE EDGES

16. GRASS LAWN

17. LIVELY SQUARE

MINIATURE GOLF / BATTING CAGE

DOG PARK / DOG RUN

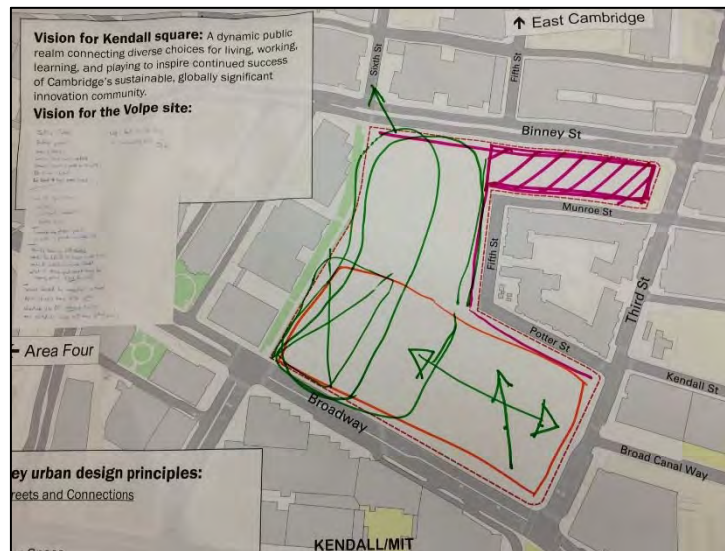
RESIDENT STREET PARKING

MORE BENCHES

A pavilion is a formal, open structure including chairs in lawn and plaza

Community forum (2015)

Site planning and design



Community forum (2015)

Built form



What we heard

Open Space

- Large, consolidated park vs. collection of smaller, more intimate spaces
- Active play – basketball, playground, water features
- Passive, natural setting to escape city
- More active, lively urban plaza
- Extend Broad Canal
- Indoor/outdoor market pavilion



Common themes

- Active & defined edges
- Sense of safety
- Public feel
- Visible from outside site
- Not overshadowed or overwhelmed by buildings
- Focus on outdoor spaces with some indoor opportunities
- Smaller open spaces need to be well-designed
- Streets to connect with open space
- Quality & character of the place is important

What we heard

Ground Floor Uses

- Grocery – fresh produce
- Family restaurant, incl. fast-order food, chains
- Pharmacy / Convenience Store
- More nightlife
- Affordable Daycare
- Workforce training space
- Connect Cambridge residents to new jobs
- Community & cultural spaces



Common themes

- Diverse & affordable retail
- Flexibility
- Smaller spaces
- Larger spaces to accommodate chains
- Not all needs can be met on the Volpe site
- Need to create destinations & retail attractors

What we heard

Streets & Connections

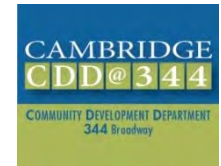
- 6th street walkway is important
- North-south connections for pedestrians & cyclists
- Don't forget connections to East Cambridge & Wellington-Harrington
- Connections though Third Square
- Need some cars so site is not isolated
- Narrow Binney Street
- Transit improvements



Common themes



What we heard



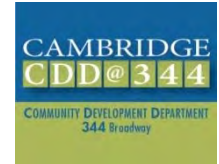
Built Form

- Recognition that this is the right location for density
- Create an urban environment with strong urban form
- Taller buildings distributed throughout site
- Taller buildings clustered towards the middle of the site
- Capitalize on the corner of Broadway & Third St
- Avoid tall buildings on Binney St
- Transition to sensitive uses
- Consider low buildings & strong edge on sixth street connector
- Access open space through buildings
- Buildings need to have Cambridge character

Common themes

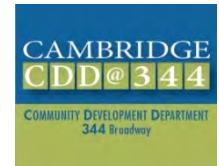
- Encourage human scale within an urban setting
- Don't want suburbs
- Start with an assemblage of places (not objects or buildings)
- Design buildings to frame public spaces
- Building height & massing, especially of taller buildings, should not overwhelm streets or open spaces
- Visual & physical permeability

Major Proposed Modifications



- **Affordable Housing Requirements**
15% low-moderate + 5% middle income minimum
- **Open Space**
Detailing desired open space functions
Limiting how much of the requirement can be met on a Federal site
- **Height**
More flexibility in arrangement, limiting bulk at taller elevations
- **Active Uses**
More desired ground floor uses including grocery stores, family-serving uses, small independent operators; limitations on banks
- **Urban Design**
Urban Design Framework to inform future development review

Modifications: Affordable Housing



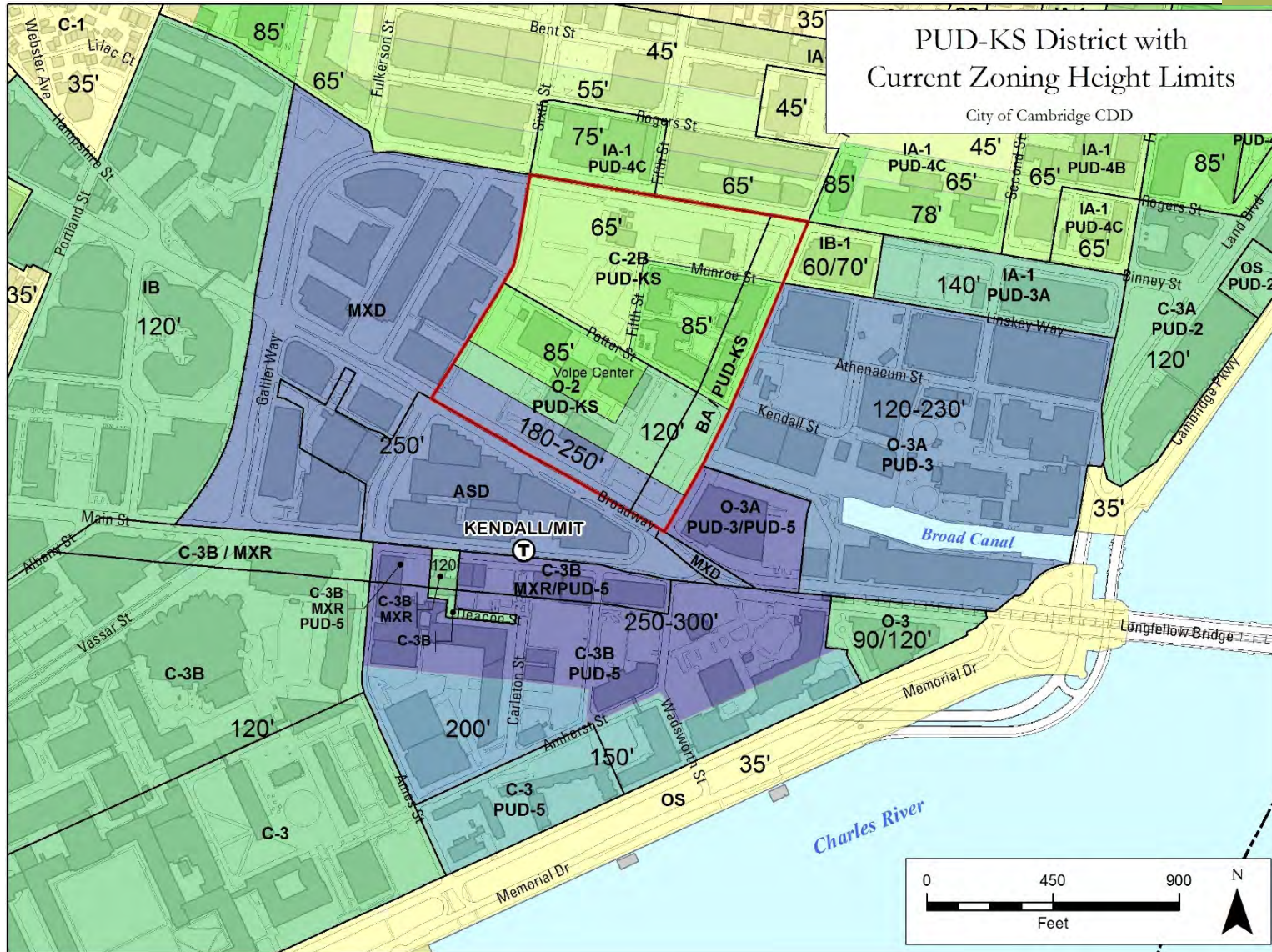
<i>APPROXIMATE</i>	Current Zoning	Initial Proposal	Modifications
Total Units	879	1,014	1,014
Low-Moderate Units	101	101	152
Middle Income Units	None required	51	51
Total Affordable Units	101	152	203

Modifications: Public Open Space

- **System:** All spaces must serve a public function, integrate with the area's open space network
- **Civic park or plaza:** Required element of the public open space system
- **Federal site:** Fulfills no more than half of requirement

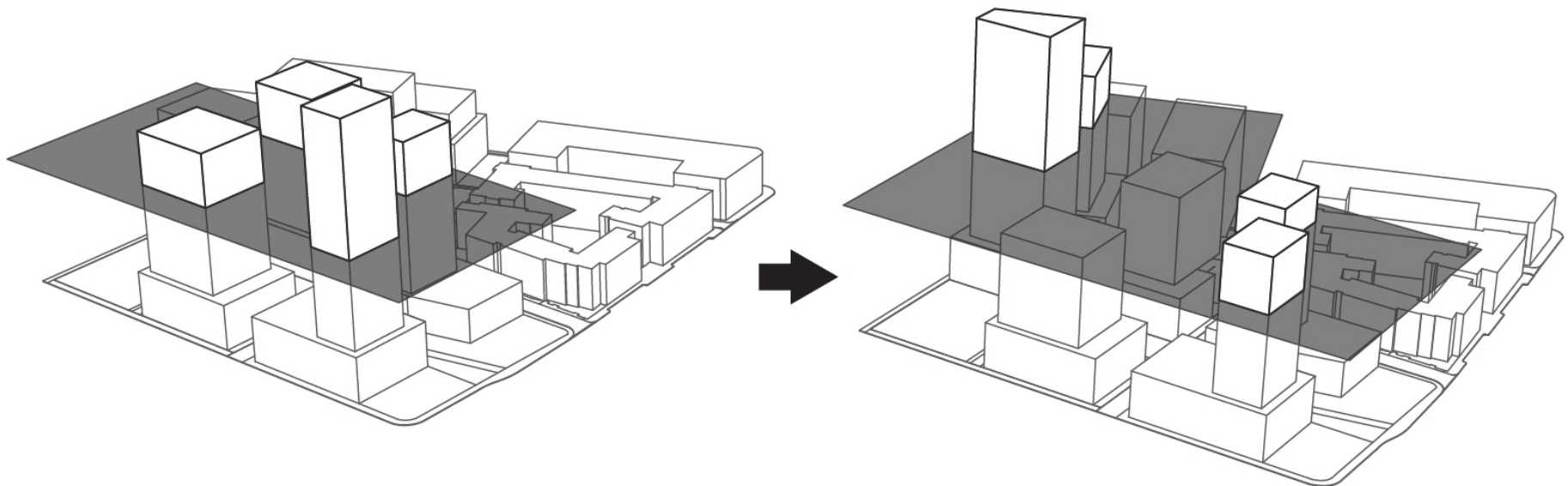


Height Limits: Current



Height Limits: **Proposed Modifications**

- **Above 250 feet:**
 - No more than 15,000 SF floor plate
 - No more than 10% of parcel area total (62,000 SF)
- **Above 350 feet:**
 - No more than one building as a distinctive landmark
 - Planning Board can reject a proposal if it does not provide the desired benefit, in favor of a plan with a 350-foot limit



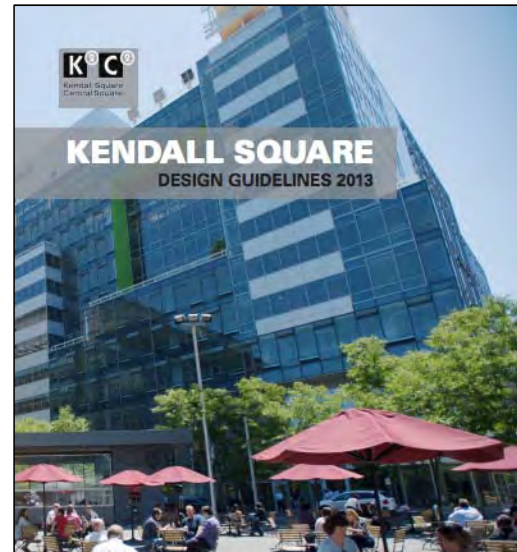
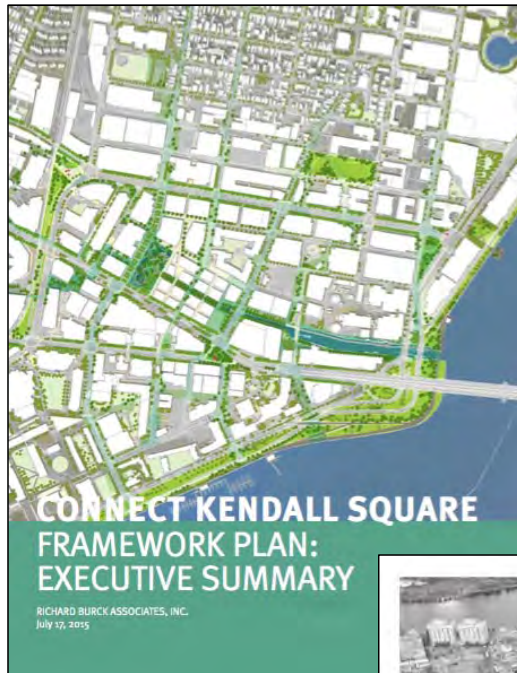
Modifications: Active Ground Floors



- **Required:** 75% of frontage along major streets
- **Incentivized:** spaces of 5,000 square feet or less
- **Active Uses Must Include:** grocery, market, general store space for small operators (2,500 square feet or less)
- **Active Uses May Include:** child care, recreation, education and cultural uses for families
- **Active Uses May Not Include:** banks, office lobbies

PUD-KS Urban Design Framework

Background materials

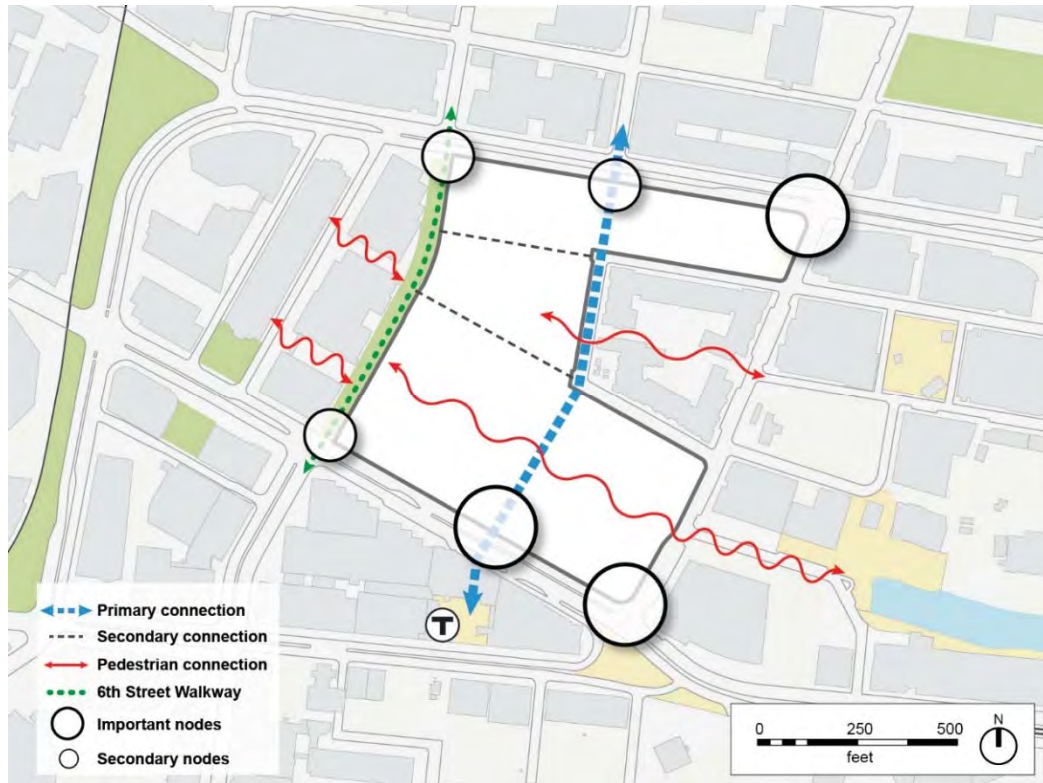


Purpose

1. Visually represent the City's and the community's key goals and aspirations for the site
2. Inform the City's review process for development projects
3. Identify key principles, concepts, and ideas

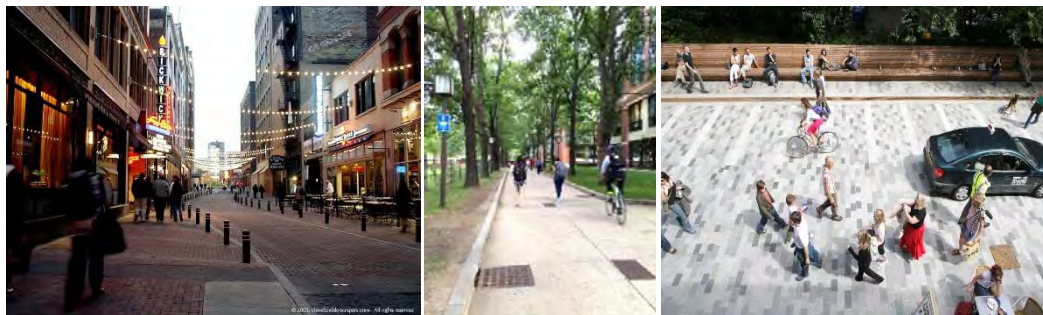
PUD-KS Urban Design Framework

Connections



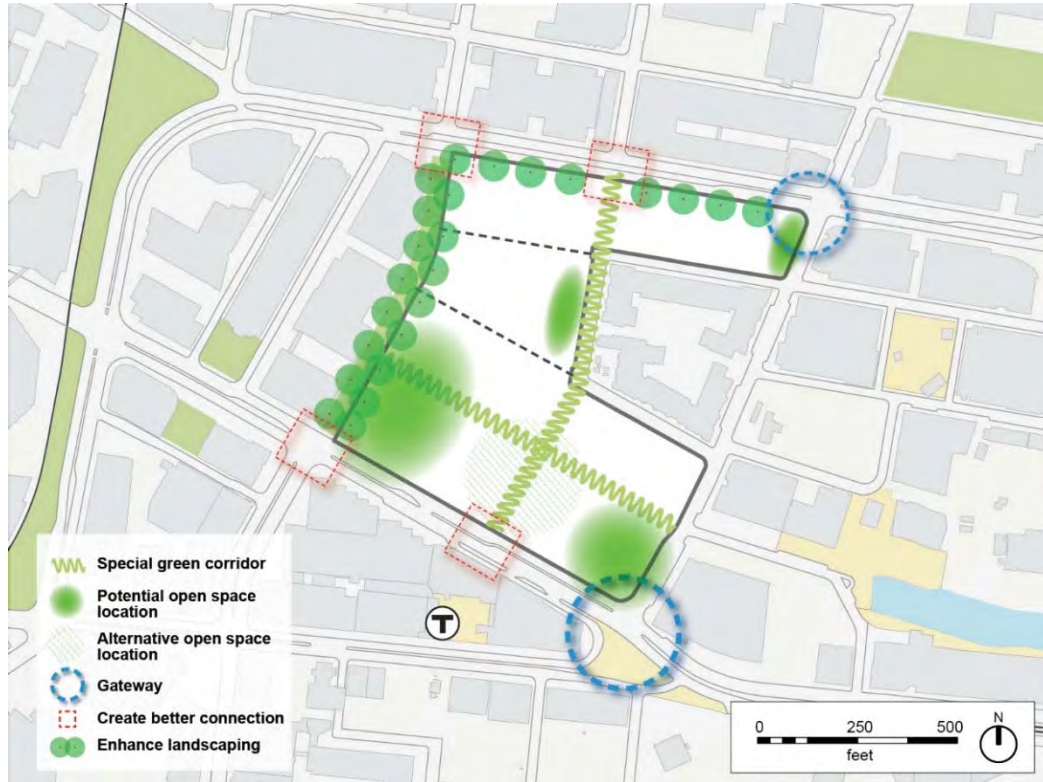
Main organizing features

1. Extend surrounding streets and connections into the site (e.g., Fifth Street and Broad Canal Way)
2. Enhancement of the Sixth Street Walkway
3. Provision of different types of connections (e.g., shared streets, multi-modal streets, bike lanes, mid-block connections, alleys etc.)



PUD-KS Urban Design Framework

Open space



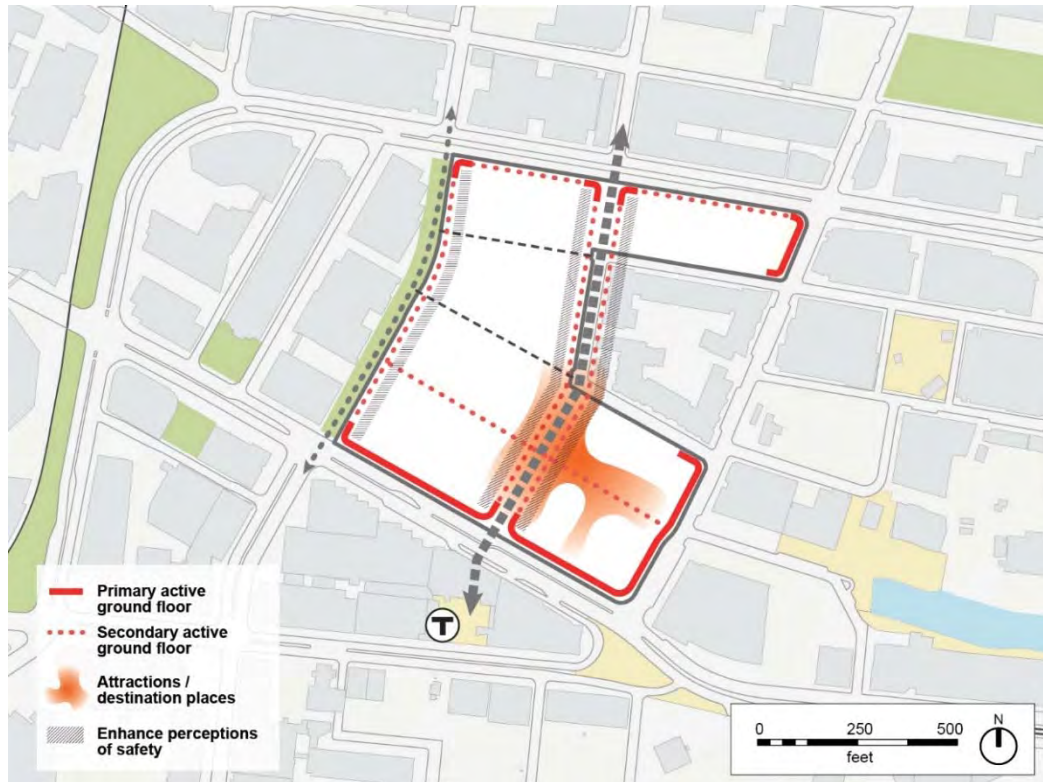
Main organizing features

1. Network of open space areas organized along the extension of Fifth Street and/or Broad Canal Way
2. The corner of Broadway and Third Street as a gateway
3. A balanced mix of lively gathering spaces and more naturalistic, passive parks



PUD-KS Urban Design Framework

Active ground floors



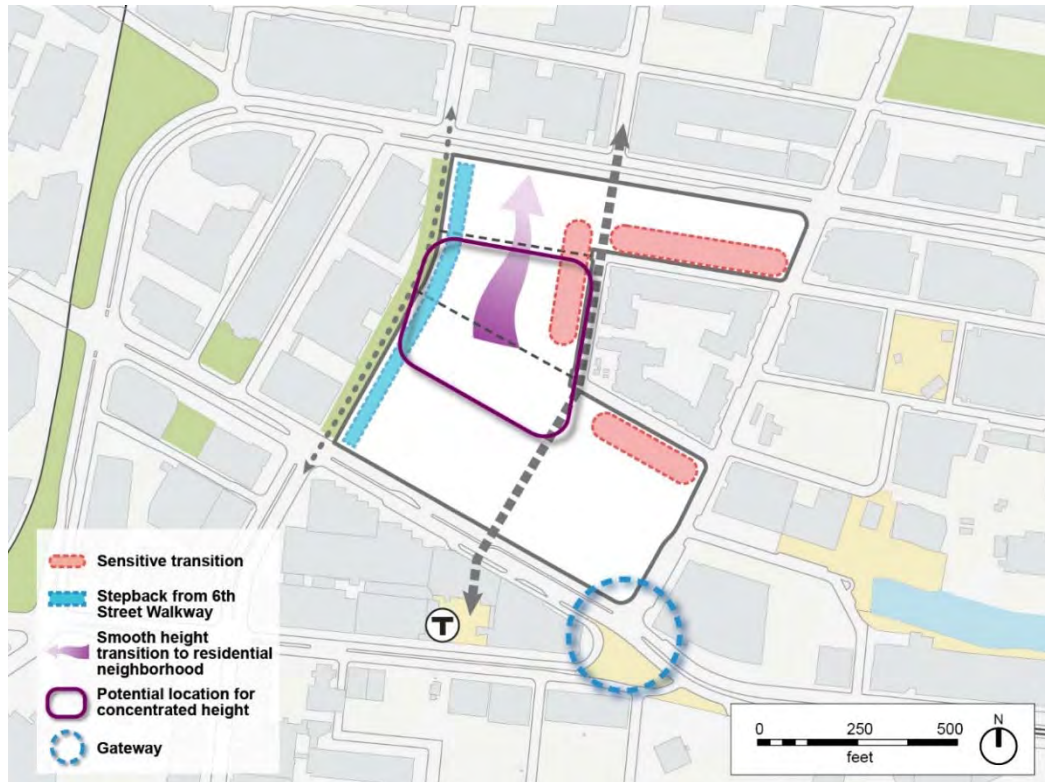
Main organizing features

1. Creating a hierarchy of streets with different activity levels
2. Concentration of destination type activities



PUD-KS Urban Design Framework

Built form



Main organizing features

1. areas and interfaces that require careful and sensitive transition to the surrounding environment

Also includes matters the Planning Board should consider when determining if a tall building is a “distinctive architectural landmark”

PUD-KS Urban Design Framework

Housing for families



1. Design objectives and guidelines to address key siting and design issues relating to housing for families with children.

PUD-KS Urban Design Framework



PUD-KS Urban Design Framework



Benefits of PUD-KS Zoning Proposal (as Modified)

Housing

- 1,000 units minimum (approx.)
 - 150 affordable, 50 middle-income (approx.)
 - \$20+ million in total incentive zoning payments
-

Active Ground Floors

- Continuous active use on Third Street, Broadway
 - Up to 140,000 SF ground-floor retail including grocery/market, small operators, family uses
-

Public Open Space

- At least 3.5+ acres Public Open Space
 - Connections to adjacent streets and spaces
 - At least one major civic plaza/park, other public functions
-

Innovation Space

- 84,000 SF (approx.) at full commercial buildout
-

Transportation

- Cap on total parking
-

Sustainability

- LEED Gold + energy, stormwater requirements
 - Additional requirements from Net Zero Plan
-

Community Funds

- \$16+ million total for open space programming, transit improvements, workforce readiness
-

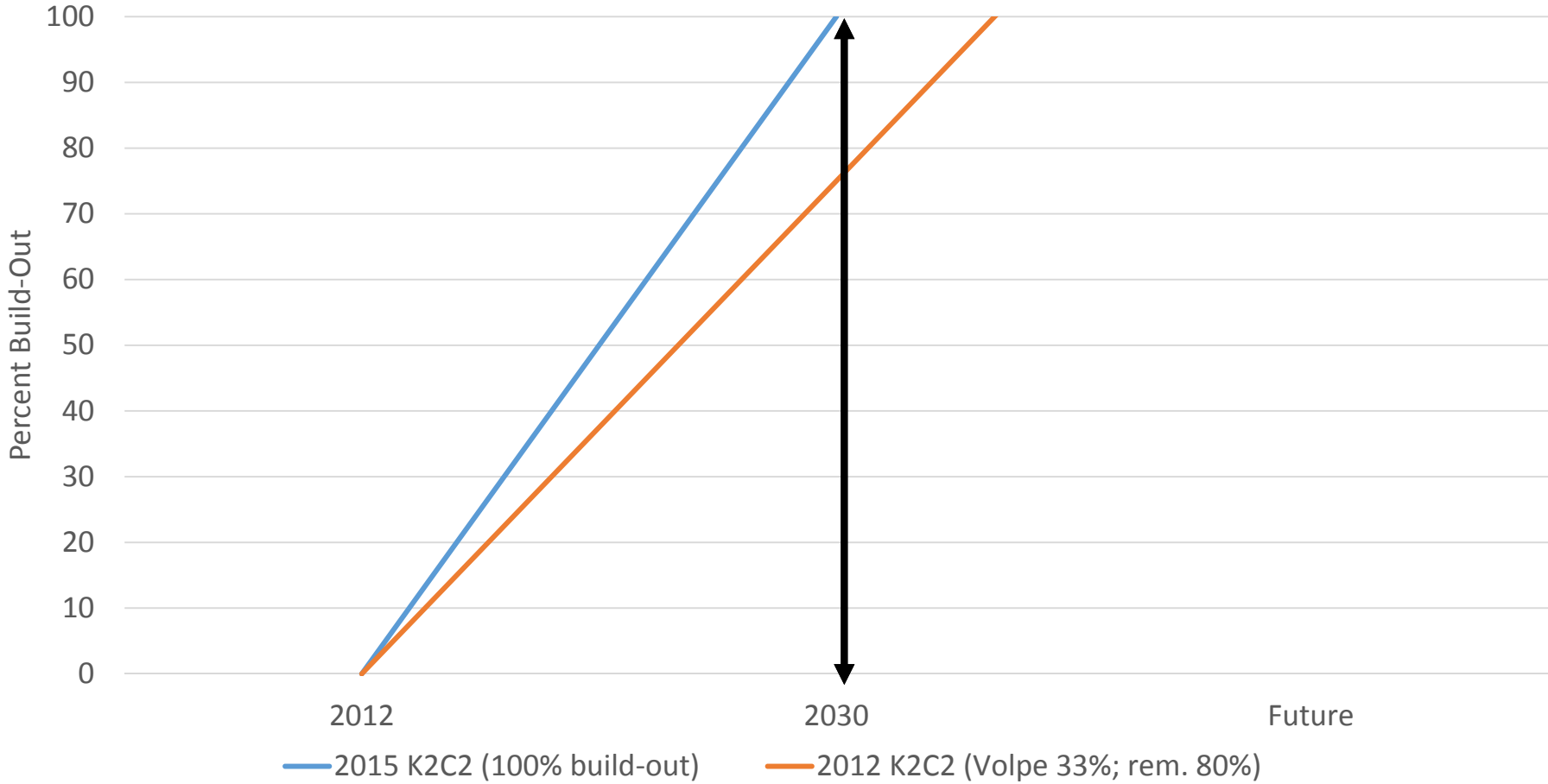
Urban Design

- General K2 Design Guidelines
 - Site-Specific PUD-KS Urban Design Framework
-

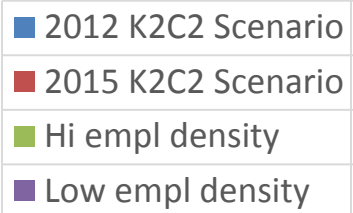
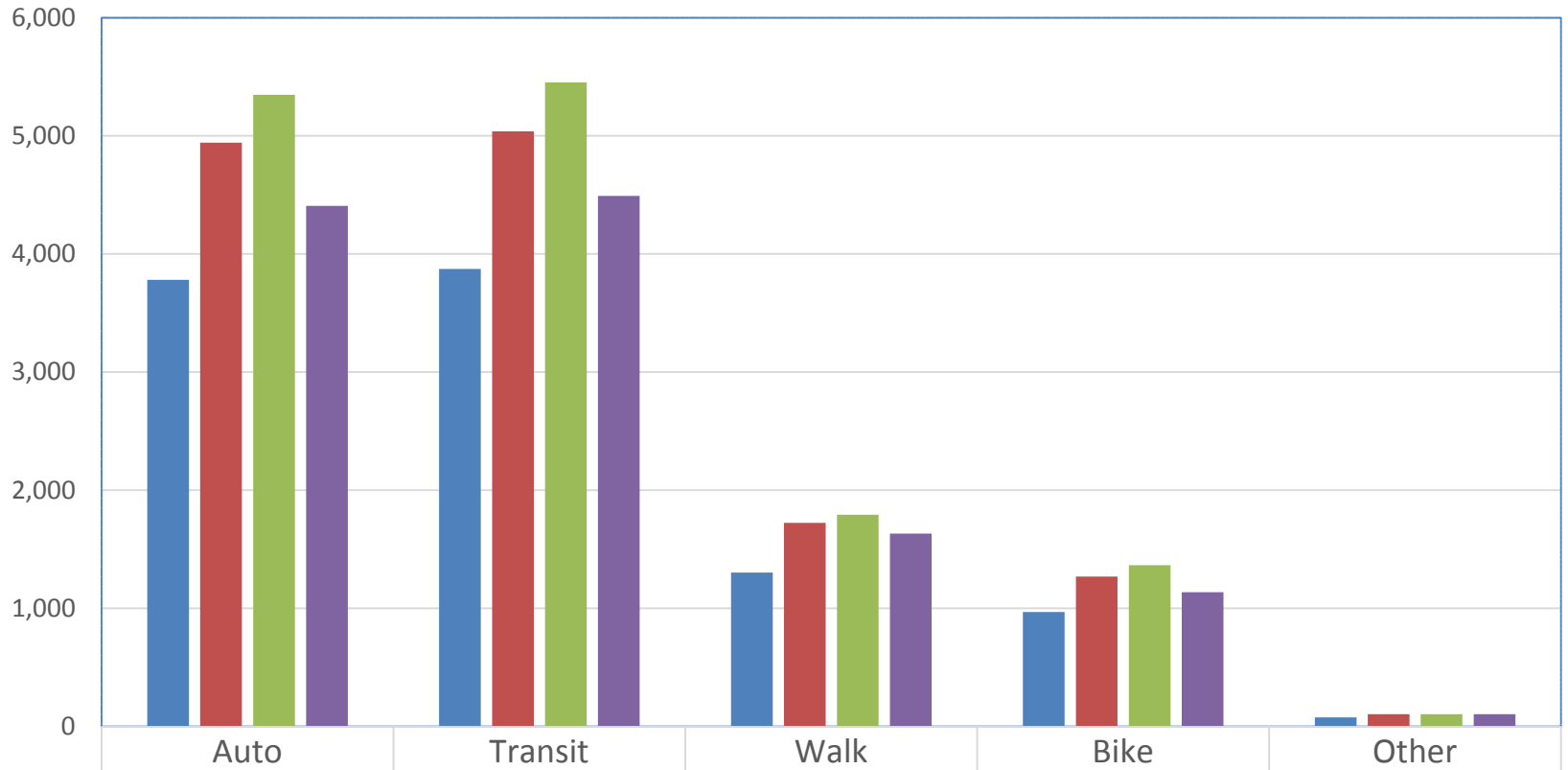


K2C2 Transportation Analysis

Pace of Development Scenarios



2030 Estimated Person Trips by Mode



Approach

- Current zoning requires traffic study and mitigation program
- Require transit analysis and mitigation
- Link to milestones, thresholds or performance standards
- Current proposal includes \$10 per square foot requirement (\$6.67 for open space and transit)
- Final Development Plan/Special Permit to include specific and detailed set of requirements



PUD-KS Preliminary Financial Analysis



December 01, 2015

Assumptions and Methodology

Capital Assumptions

Interest Rate (Total Project Costs)	6.00%
LTV (Total Project Costs)	60.00%

Affordable Housing Assumptions

65% AMI	15.00%
95% AMI	5.00%

Program	Total Proposed SF	Percent of Total
Residential	1,116,000	38%
Office	816,000	27%
Lab	816,000	27%
Retail	140,000	5%
Innovation	84,000	3%
Total	2,972,000	100%

Estimated Construction Costs (Hard & Soft)*

Residential	\$407 per GSF
Office	\$358 per GSF
Lab	\$413 per GSF
Retail	\$330 per GSF
Innovation	\$358 per GSF
Parking	\$100,000/space

*Projected construction costs are based on current projects being built in the Cambridge area and do not reflect any sensitivity to future design requirements, unusual ground or soil conditions, or other unique costs associated with redevelopment.

Source: HR&A Advisors, Inc.

Land Value Output

Costs Included in Program Analysis

Building construction

Soft costs

On site improvements

Inclusionary and Middle Income Housing

Commercial Linkage Payments

Community Fund @ \$10/gsf

Preliminary Results

Estimated Land Value	Per GSF	Total (1)
Residential (2)	\$58	\$65,000,000
Office	\$155	\$126,000,000
Lab	\$199	\$162,000,000
Retail	\$68	\$10,000,000
Innovation	\$129	\$11,000,000
Subtotal-Residual Land Value (3)	\$126	\$374,000,000
Financing and Other Costs (4)	-\$30	-\$91,000,000
Subtotal-Financing and Other Costs	-\$30	-\$91,000,000
Supportable Site and Volpe Replacement Costs	\$95	\$283,000,000

(1) Rounded to the nearest million.

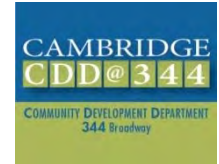
(2) The residual land values of the market-rate and affordable components are \$120 and -\$192, respectively.

(3) Based on proposed program SF.

(4) Includes incentive/linkage fees, debt, and equity costs.

Source: HR&A Advisors, Inc.

“Frequently Raised Issues”



- **Housing**
Amount, types
- **Open Space**
Size, configuration, character, activities
- **Built Form**
Key principles of scale, transition, building typology
- **Active Uses**
How to serve a wide range of community members, bring a more diverse community to Kendall Square?
- **Redevelopment Strategy**
What can be supported by future commercial development?

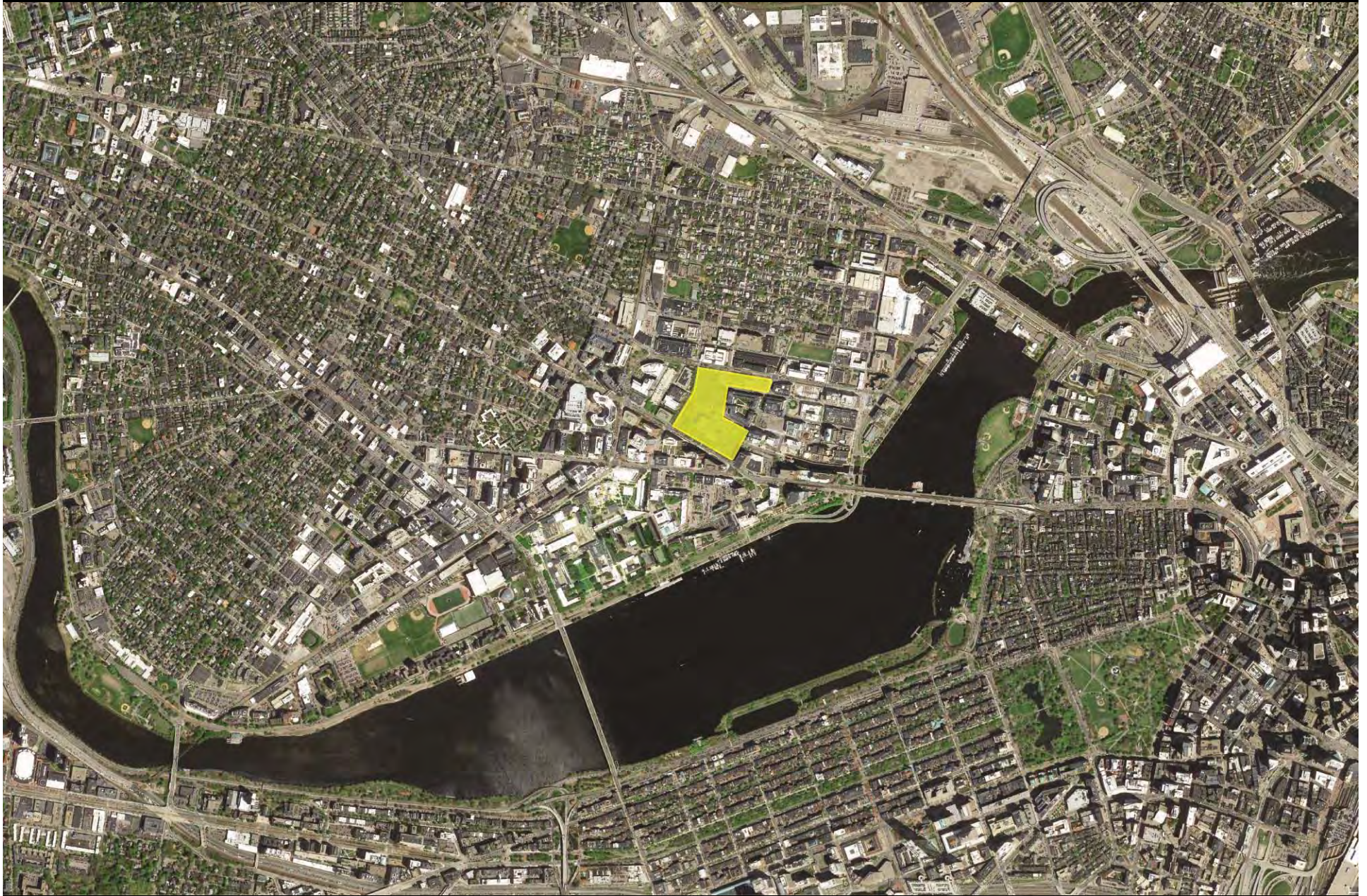




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Community Development Department
Michael Dennis & Associates

Volpe Site



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Volpe Building

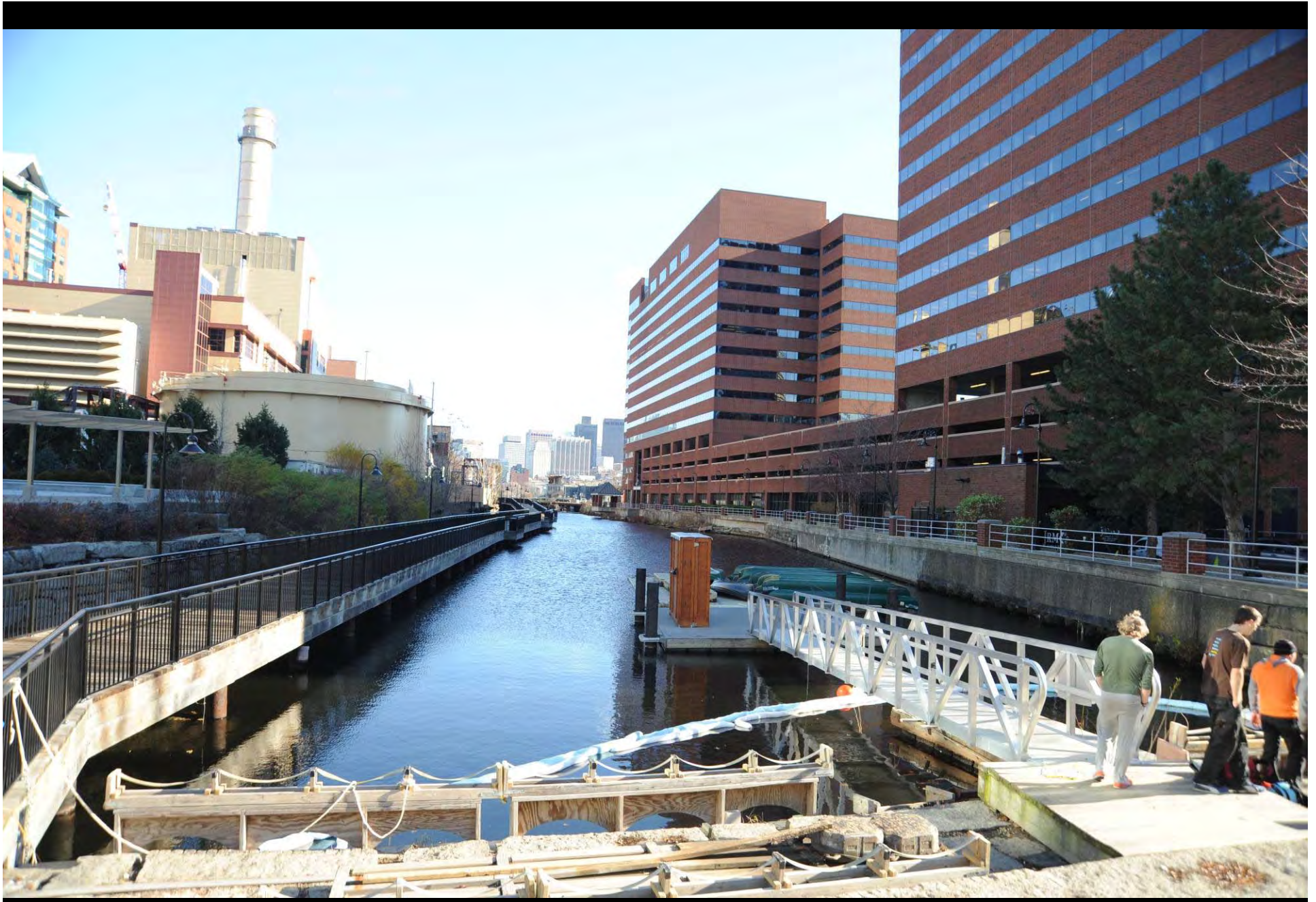




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Third Street and Broad Canal Way



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Broad Canal





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Loughrey Walkway

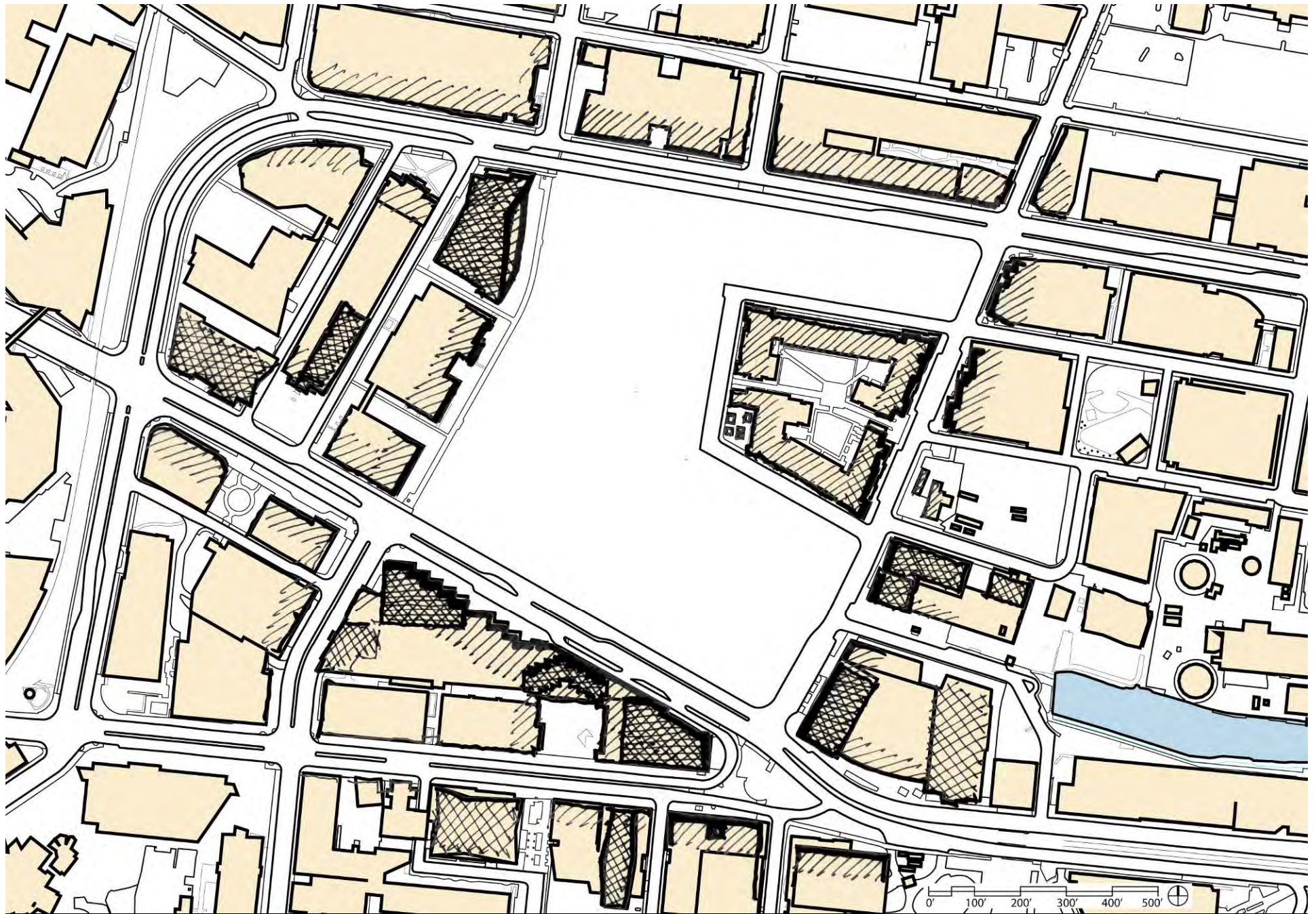


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Existing Site

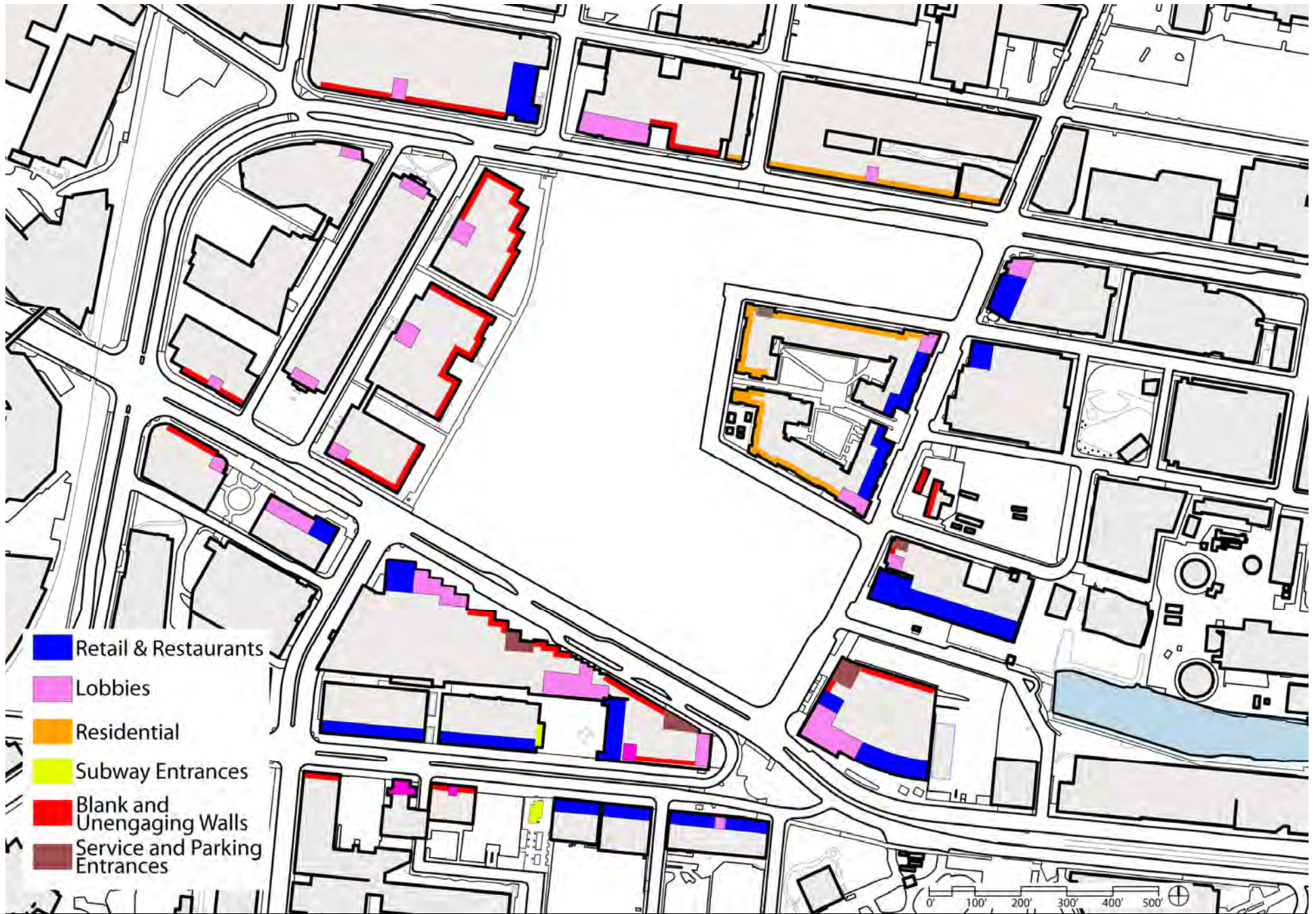




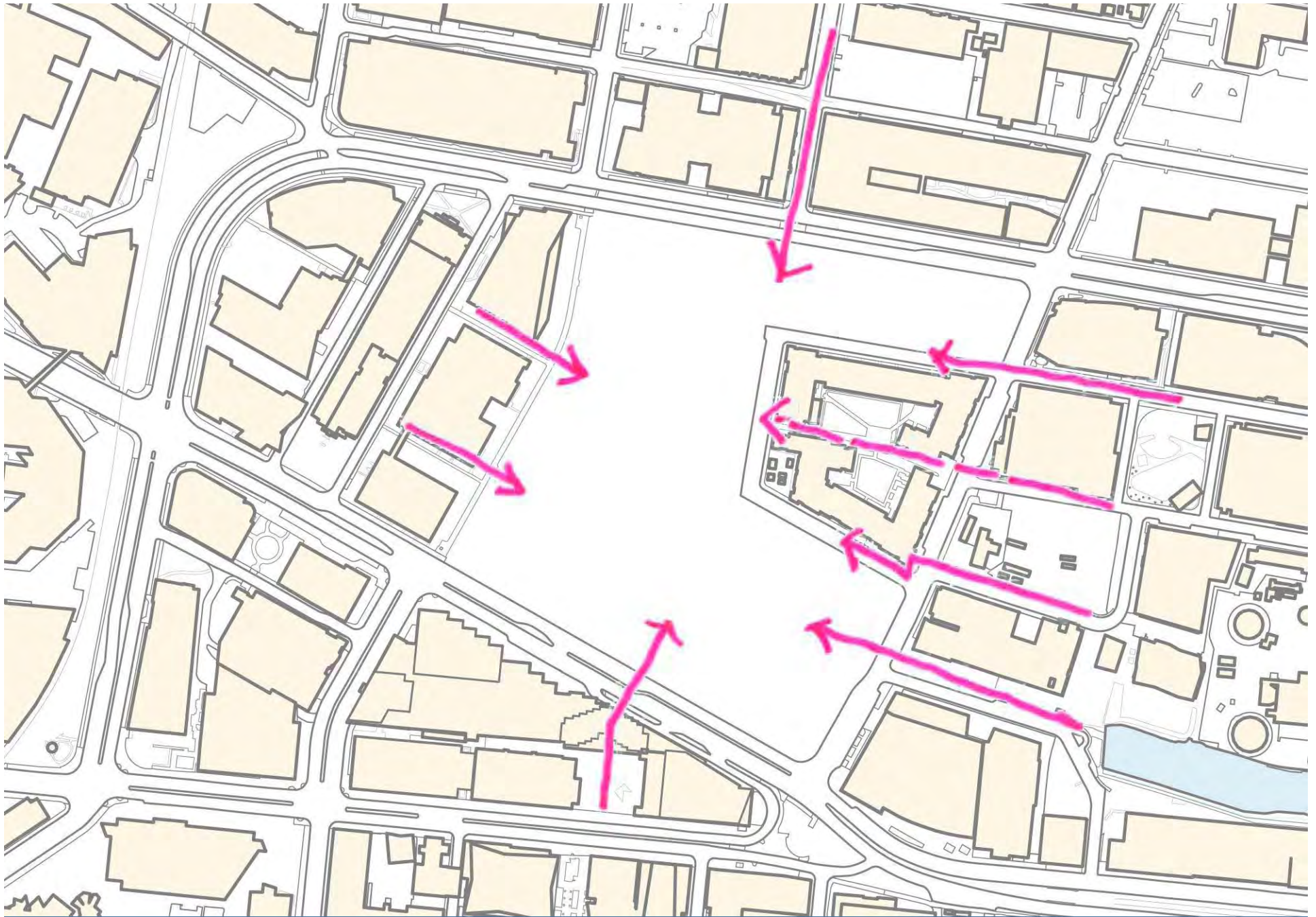
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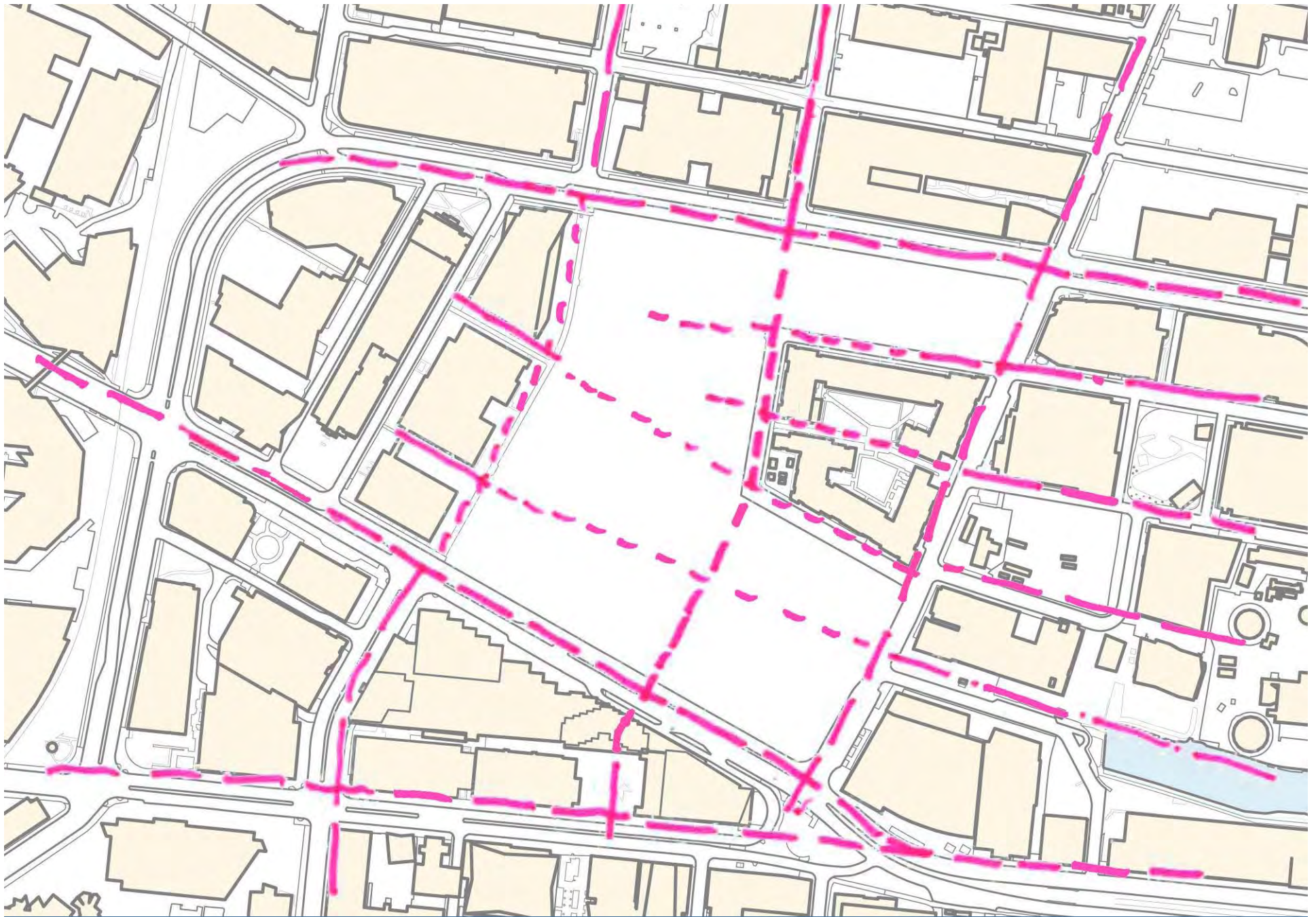
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Site Edges

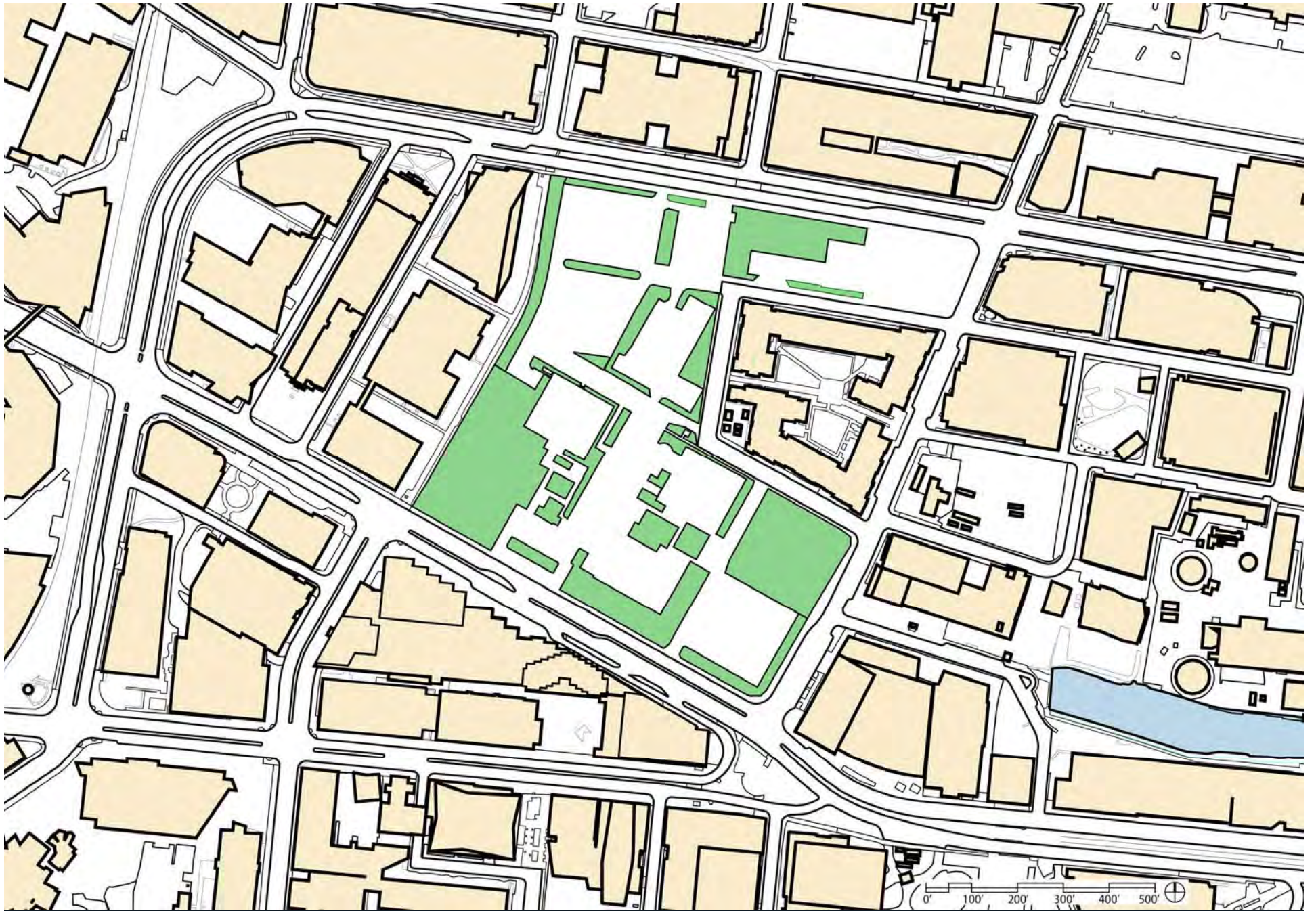




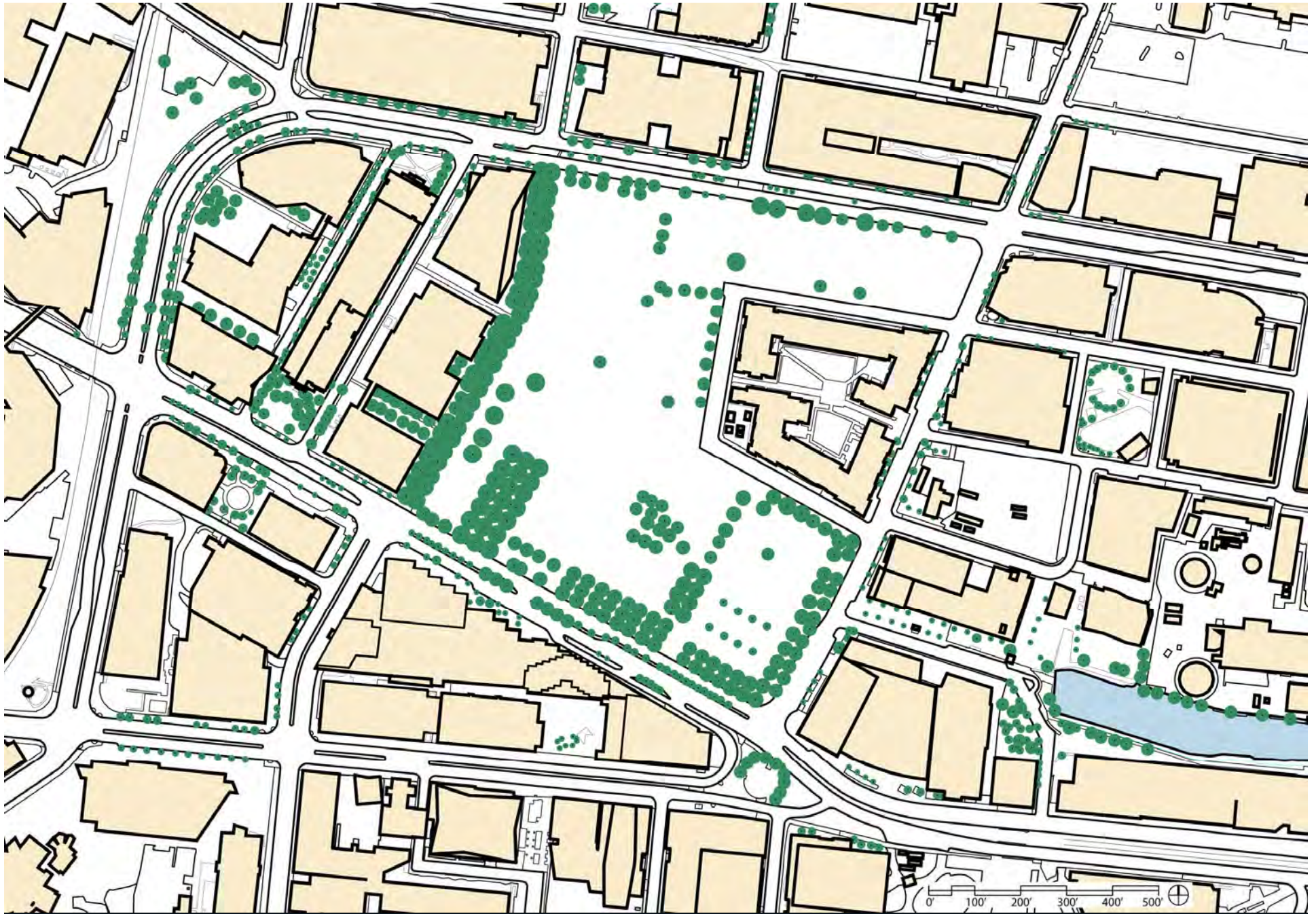






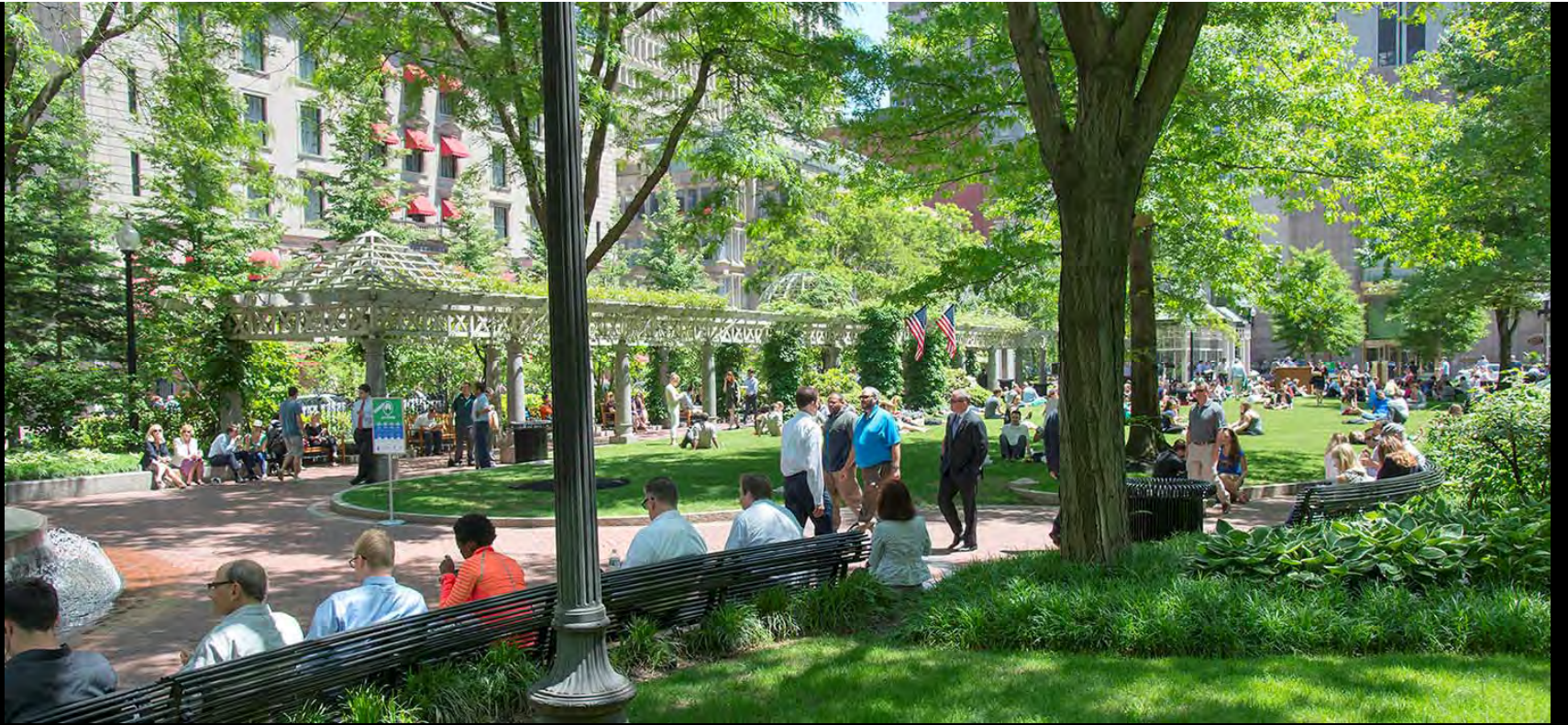








Green Space 1.7 acres



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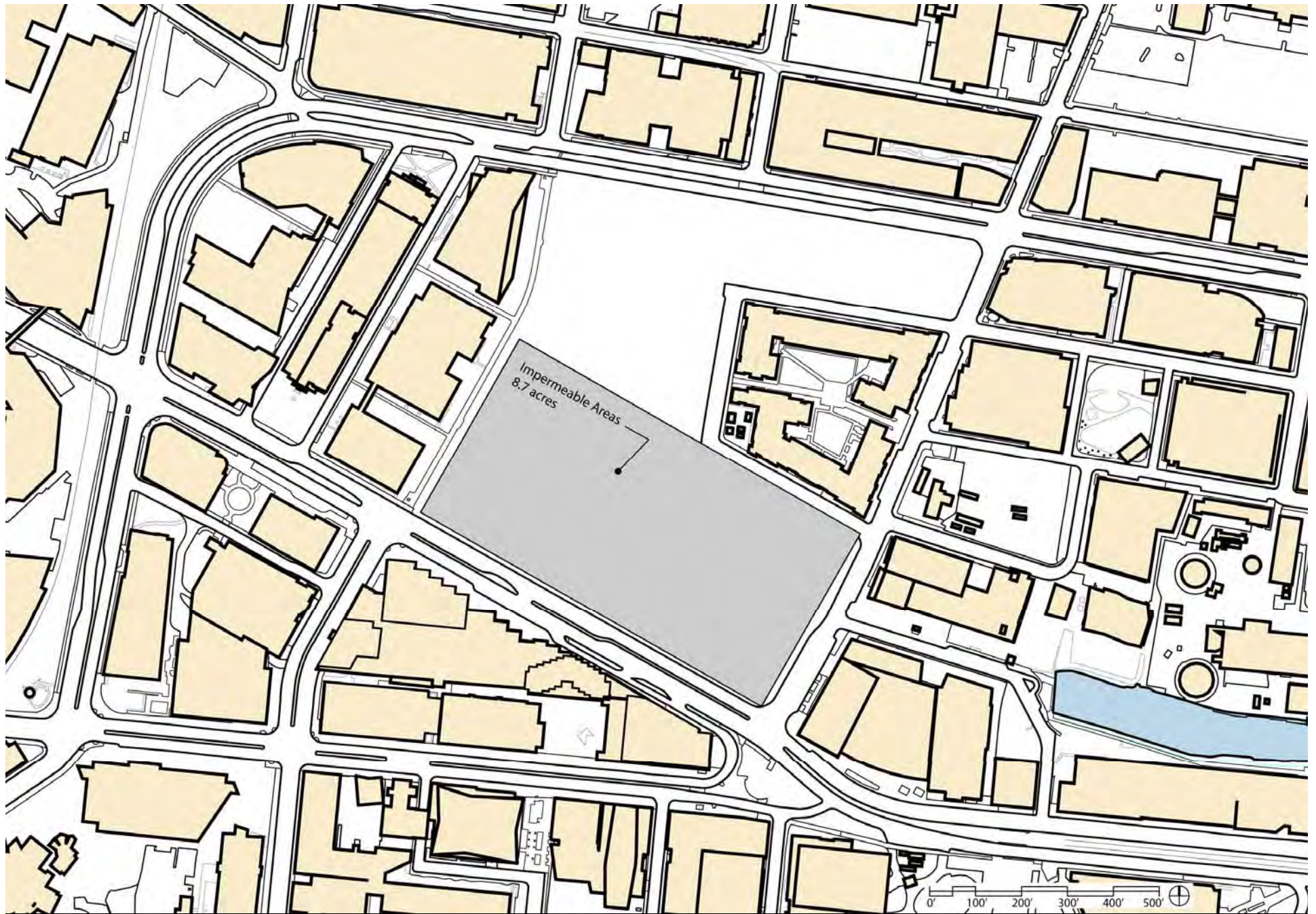
Comparable Open Space
Post Office Square, Boston



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Existing Impermeable Surface





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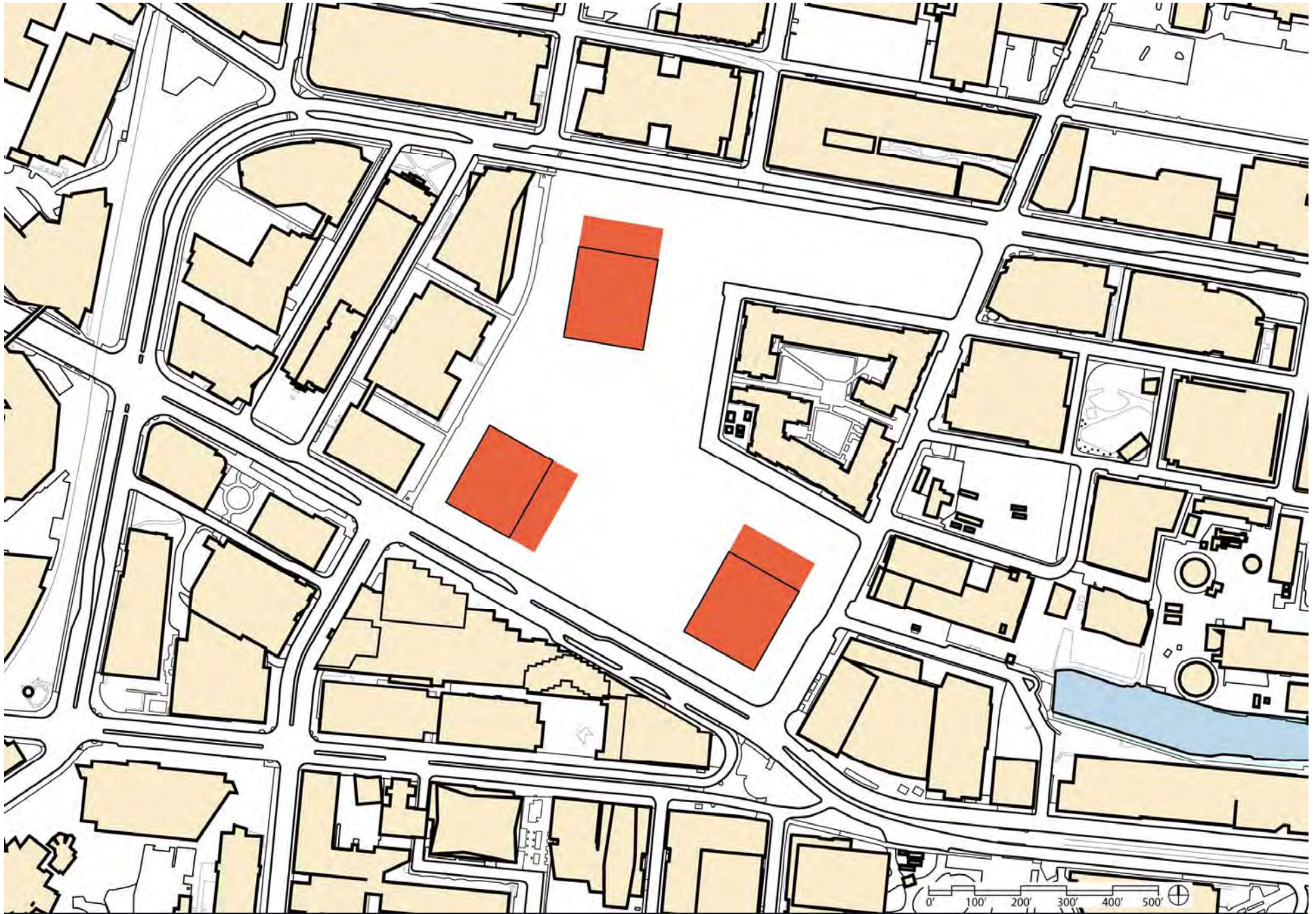
Existing Site



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New Volpe Building – Potential Sites



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New Volpe Building – Potential Sites