Sullivan Square Disposition Study
September 19, 2013

CROSBY | SCHLESSINGER | SMALLRIDGE LLC

Byrne McKinney & Associates, Inc.

Howard/Stein-Hudson Associates

MAPC
METROPOLITAN AREA PLANNING COUNCIL
Smart Growth & Regional Collaboration

Boston Redevelopment Authority

Overview: Study Purpose & Scope

- Mtg 1 – Study Overview & Preliminary Open Space Discussion – 5.16.13
- Mtg 2 – Visioning for Public Realm Framework – 6.25.13
- Mtg 3 – Visioning for Land Use Mix
- **Mtg 4 – Visioning for Urban Design: Heights/Massing**
- Mtg 5 – Visioning for Parcel Level Use & Development Guidelines
- Mtg 6 – Presentation & Discussion of Parcel Level Use and Development Guidelines for Disposition
- Advisory Group – consistent feedback and input throughout process and subsequent study phases

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Tonight's Agenda:
Visioning for TOD Land Use Mix and Parking

- Presentation
  - Public Health
  - Organizing Principles
  - Conceptual Plan
  - MBTA Parcel

- Discussion

- Summary & Next Steps

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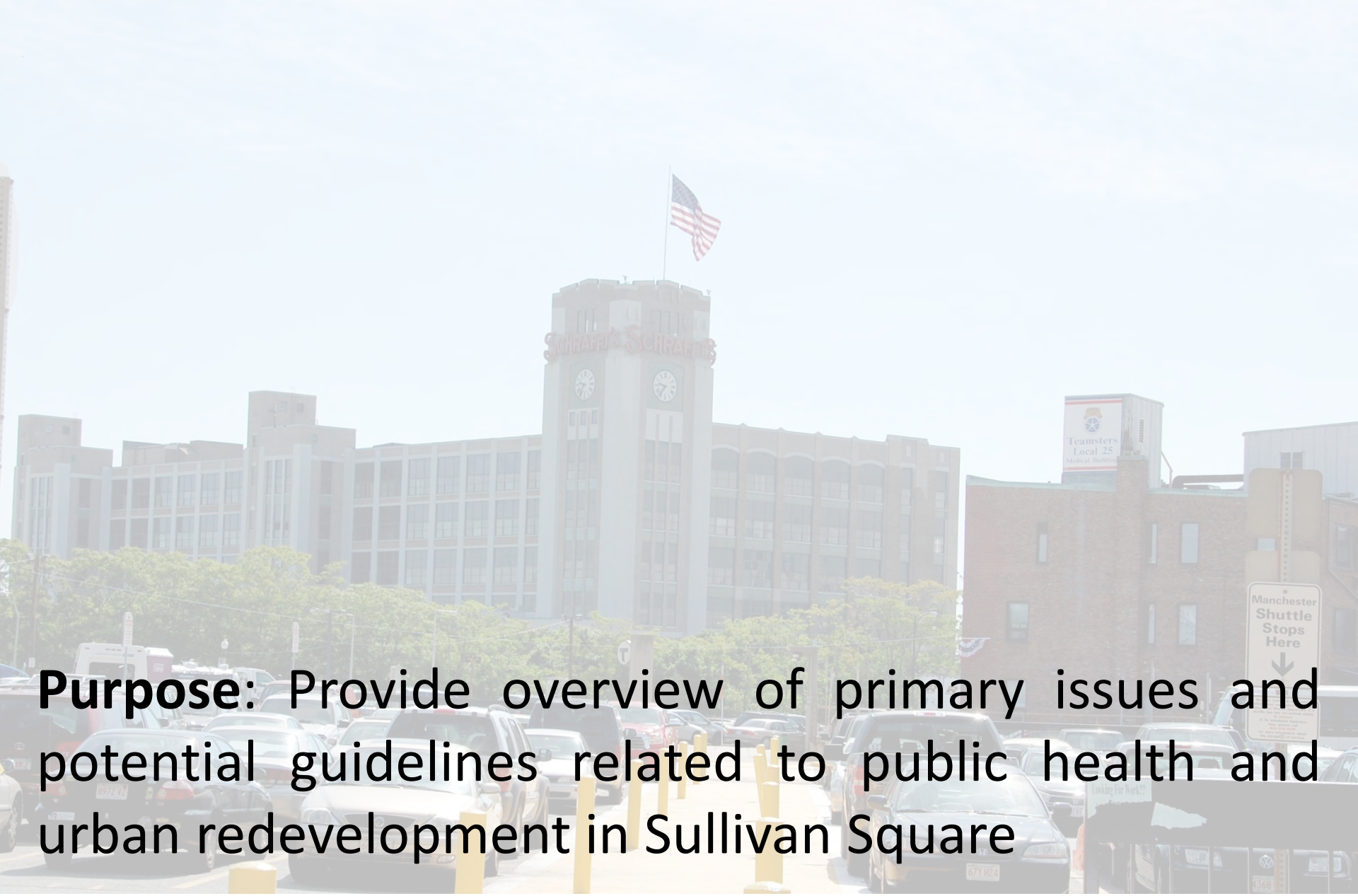
Sullivan Square Development
Public Health Considerations

MAPC

September 19, 2013



Purpose: Provide overview of primary issues and potential guidelines related to public health and urban redevelopment in Sullivan Square

How and where we build affect a community's health in several aspects

Air quality

Physical activity

Safety

Access to healthful, affordable food

Inclusion of affordable housing

Primary Focus

Secondary Focus

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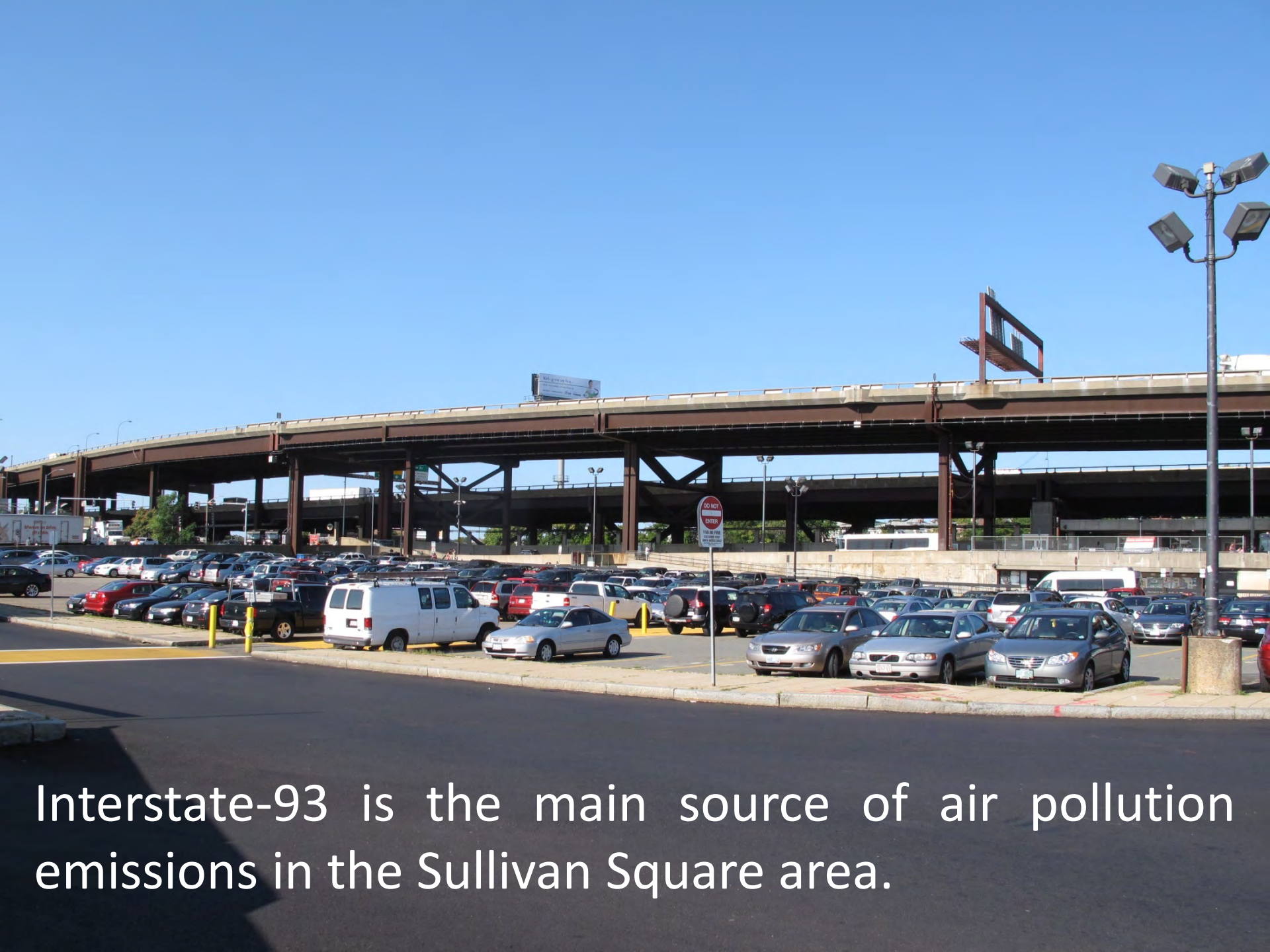


Interstate-93 is the main source of air pollution emissions in the Sullivan Square area.

Air pollution is not a single entity – it consists of distinct components, each with its own sources and effects.

Air Pollutant	Health Effects
Ozone (O_3)	• Eye irritation • Shortness of breath • Aggravates existing respiratory diseases
Carbon Monoxide (CO)	• High concentrations result in fatigue, impaired nervous system function, and chest pains
Particulate Matter (PM_{10}, $PM_{2.5}$, ultrafine particulates)	• Impaired lung function • Exacerbation of respiratory ailments • Hardening of arteries • Premature death
Nitrogen dioxide (NO_2)	• Increases risk of acute and chronic respiratory diseases
Sulfur dioxide (SO_2)	• Increases risk of acute and chronic respiratory diseases

- Some pollutants are found far from the source (e.g., ozone), while others concentrate near the source of emission (e.g., nitrogen dioxide).
- Air pollution does not affect everyone the same. Children and elderly are at a higher risk.

Various factors can alter pollution concentrations

- Distance to source
- Wind speed
- Wind direction
- Precipitation
- Temperature
- Humidity
- Topography
- Development patterns
- Types and efficiency of vehicles

Air Pollution Mitigation Strategies

4 basic strategies to address air pollution:

1. Prevention or reduction of emissions
2. Removal of pollutants from the air
3. Enhancement of air circulation
4. Protection of sensitive uses

Removal of pollutants from the air

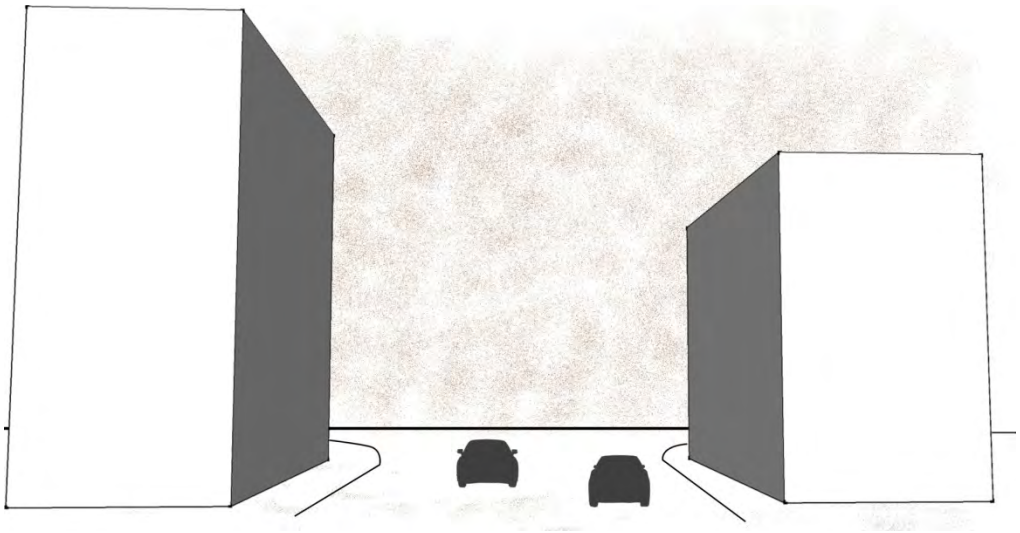
1) Air filtration systems

Install HVAC systems with high efficiency filters for particulates

- Location should be away from I-93
- Developer should be required to implement ongoing maintenance plan for filtration system

Removal of pollutants from the air

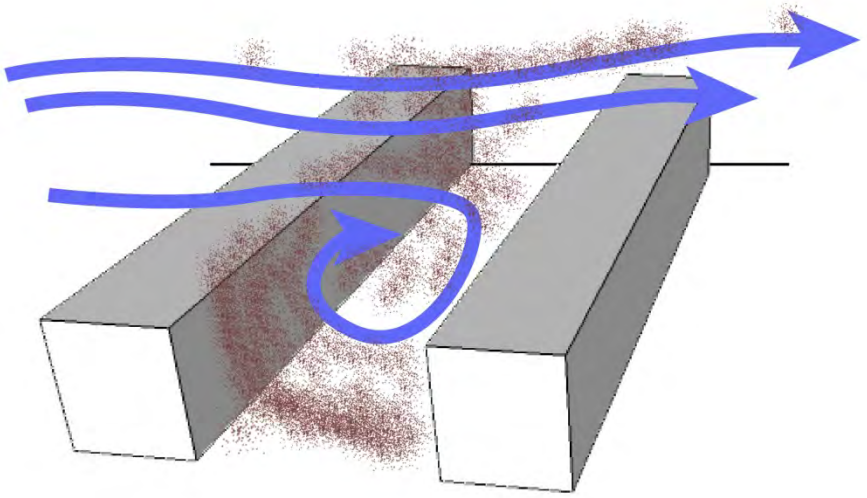
2) Trees and foliage to filter particulate matter



Area with no tree canopy is lacks a natural filter for particulate matter and dust.

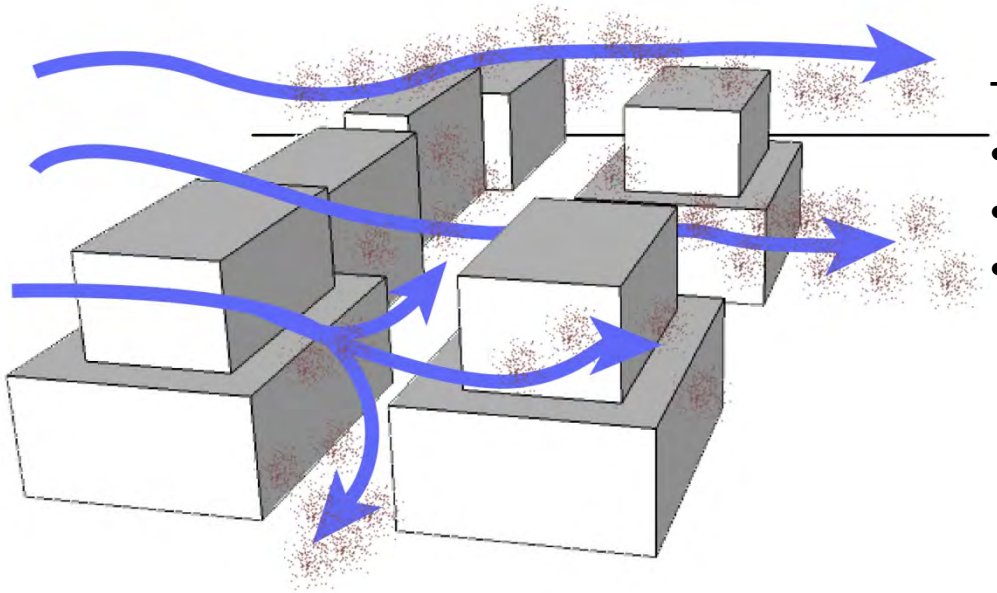
Evidence suggests that certain types of trees and foliage can help filter particulate matter.

Enhancement of air circulation



Particulate matter concentrated within development

Street canyons lined with buildings of similar height, oriented perpendicular to wind direction tend to have poorer air circulation



Particulate matter dispersed from development

To promote air circulation:

- Vary building size and shape
- Step buildings back
- Design open space to enhance air circulation

Location of sensitive uses

- **Locate sensitive uses away from main source of pollution**
  - Residential
  - Daycare facilities
  - Assisted living facilities

500’

- **Some studies and guidelines suggest locating sensitive uses 500’ from major roads**
  - Defined as urban roads with 100,000 vehicles/day
  - In urban areas, can balance recommended distance with other mitigation measures
  - However, no “magic distance”

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A lack of sufficient physical activity has been linked to:

- Heart disease
- Cancer
- Diabetes
- Stroke
- High blood pressure
- High cholesterol
- Obesity

The built environment may affect physical activity in several ways

Built environment aspect	Considerations
Land use	• Mixed use areas (e.g., locating residences near retail and/or offices) can encourage walking and biking • Conversely, single use areas (e.g., all offices) often rely more on automotive use
Transit access	• Locating development near transit (T and bus lines) can encourage walking/biking. • The entire Sullivan Square development site and a portion of Charlestown-proper is within a 10 minute walk to the T
Open space	• Well-located, well-designed open space with active and passive uses can encourage various forms of physical activity
Pedestrian/bicycle amenities	• Ensuring that streets are safe, accessible, and comfortable for pedestrians and cyclists can encourage greater use
Streetscape elements	• Well-designed streets can add to the comfort of pedestrians and cyclists, further encouraging physical activity

Physical activity as part of everyday life vs. planned workouts

- Planned workouts (e.g., the gym) requires a relatively large time commitment
- Studies show many people who join gyms lapse in attendance
- Conversely, routine walking/biking is an alternative way to engage in physical activity as a part of everyday life

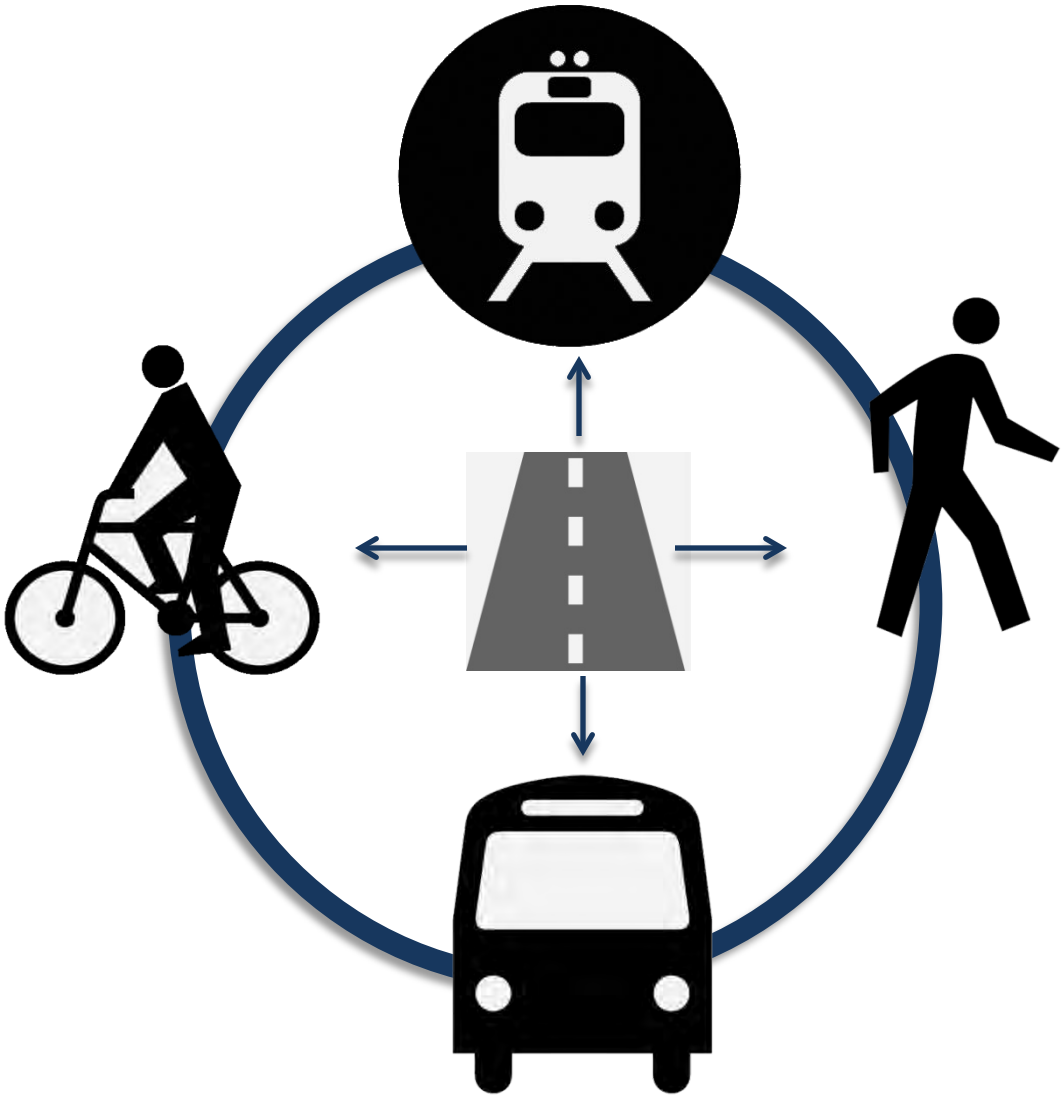
Strategies for increasing physical activity






A **mix of uses** – homes, offices, shops, restaurants, parks, playgrounds – and **access to the T** can encourage everyday physical activity.

Design elements can foster walking, bicycling, using transit



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Safety: Crime prevention through environmental design

- Well-lit, active spaces – compact neighborhoods with a mix of uses, well-used parks, etc. – can encourage “eyes on the street” and may deter crime
- Conversely , desolate parkland, large parking lots, empty neighborhoods – may reduce public safety and the *perception* of safety

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Additional land use considerations

1) Neighborhood design can influence **access to healthful food**, such as fresh produce, meat and dairy.

Key considerations:

- Flexible open space to support farmers markets
- Availability of retail space for small grocers

2) The **inclusion of affordable housing** provides health benefits to an underserved population through:

- Increased financial resources to spend on healthcare needs and nutrition
- Lowering adverse environmental exposures
- Decreasing stress and improving mental health
- Increased stability

Summary

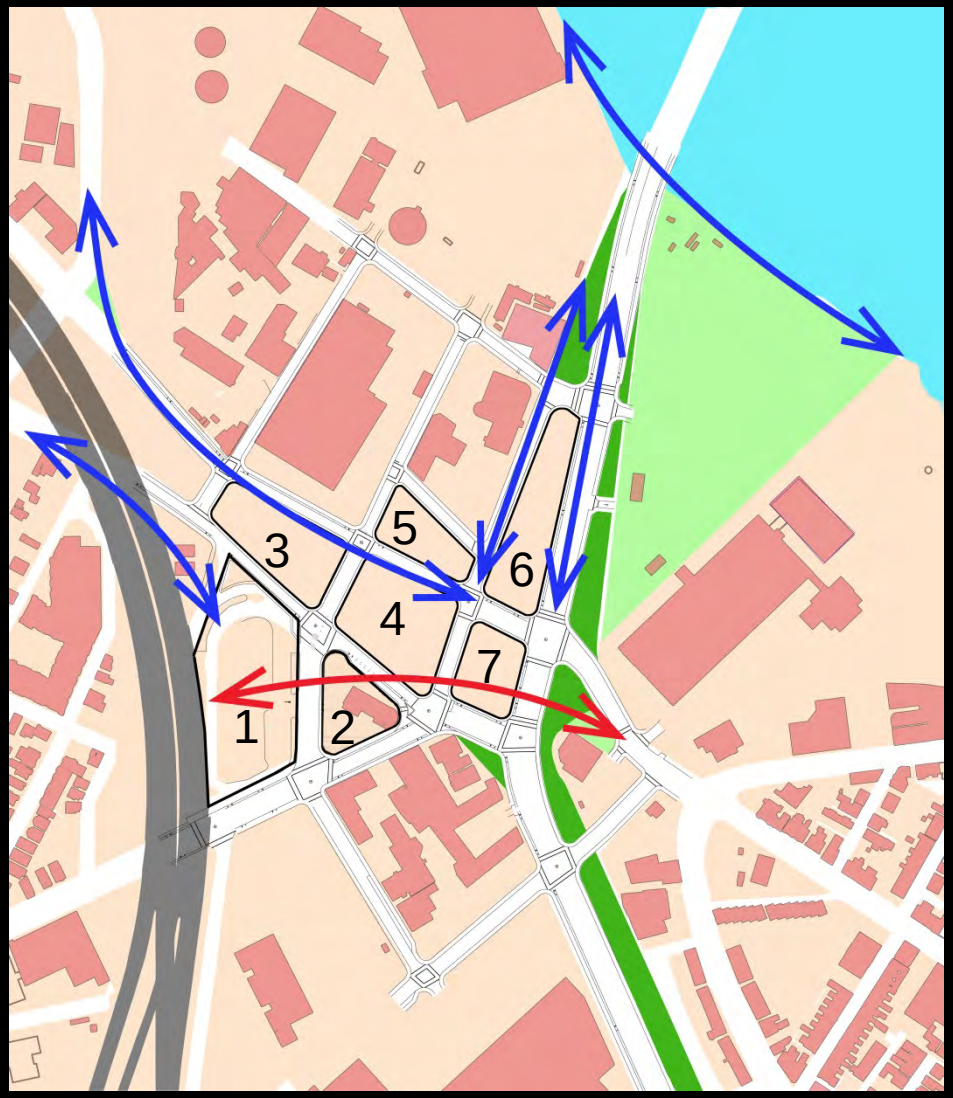
There are a number of considerations related to public health that can inform development guidelines

Public health aspect	Guideline consideration	Comments
Air quality	• Location of uses	• Locating "sensitive uses" (e.g.., residential, schools) away from source of emissions can reduce negative impacts
	• Building design and open space design	• Improving air circulation through varying building heights, requiring step-backs, and location of open space can disperse pollution
	• Air filter requirements • Trees and foliage	• Can mitigate effects of pollution by filtering particulate matter
Physical activity	• Mixed use neighborhood • Transit access	• Provides places to go, and thus a reason to walk and/or bicycle
	• Open space location and design	• Provides a place to go, as well as may encourage various forms of physical activity
	• Pedestrian/bicycle facilities • Streetscape elements	• Can improve safety, accessibility, and comfort, thus encouraging walking/biking
Safety (crime)	• Open space location and design	• Can affect whether a park is well-used and safe
	• Mixed use neighborhood	• Can encourage "eyes on the street"
	• Street lighting	• Can improve safety and perception of safety at night
Access to healthful food	• Flexible open space	• Can allow for temporary/seasonal produce markets
	• Retail space to accommodate small grocers	• Increases access to produce and other foods
Affordable housing	• Maximizing availability of affordable housing	• This can assist a greater number of a disadvantaged population

Organizing Principles from July 25, 2013 Meeting

- Linkages
- Open Space
- Land Use
- Density & Scale
- Sight Lines
- Parking Ratios
- Character
- Public Health

Linkages



Use building placement and streetscape amenities to enhance and/or create linkages to important destinations:

- Existing Neighborhood to Sullivan Square Station
- Mystic River Corridor
- Assembly Square
- Neighborhood West of I-93 to Sullivan Station

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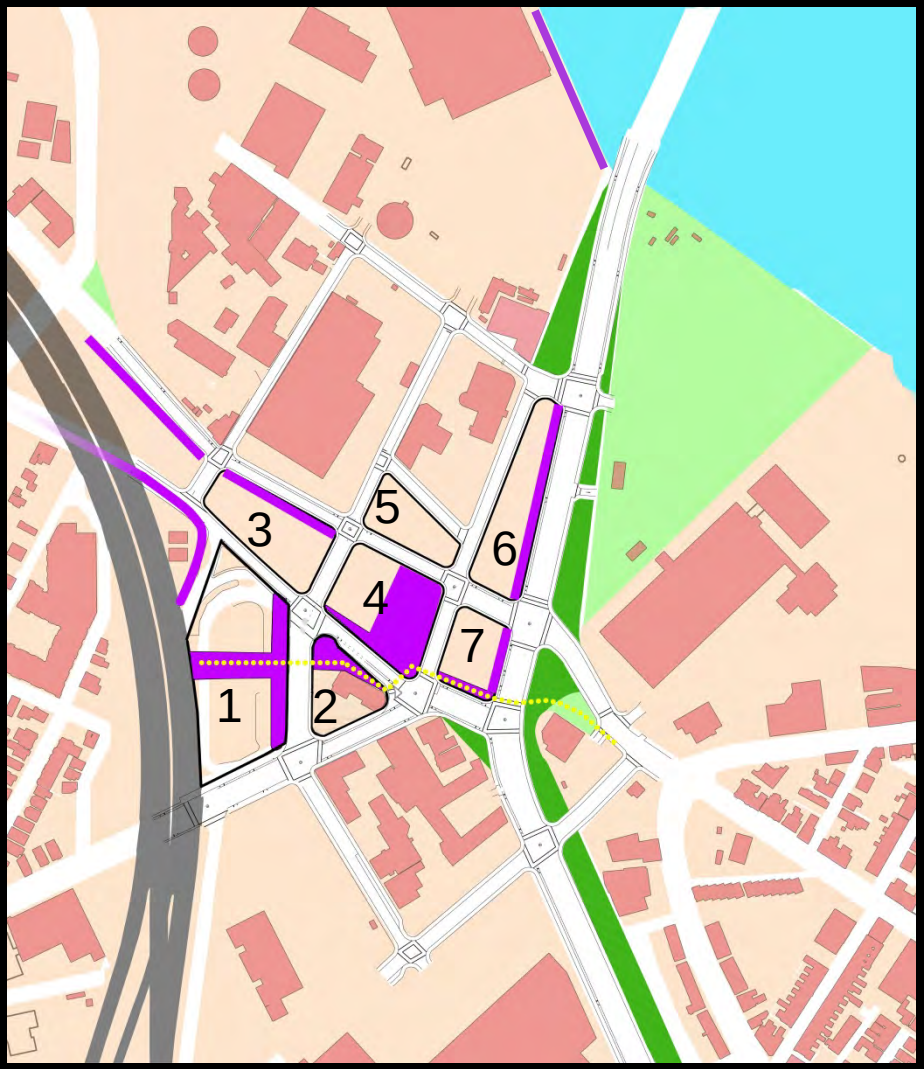
Open Space



Park with Linked Plazas Connecting Neighborhood to Sullivan Station

- Large park on Parcel 4
- Consideration of sun angles and wind impacts
- Some open space (pocket parks, plazas, wider sidewalks) in all parcels
- Link open space to requirements for developers

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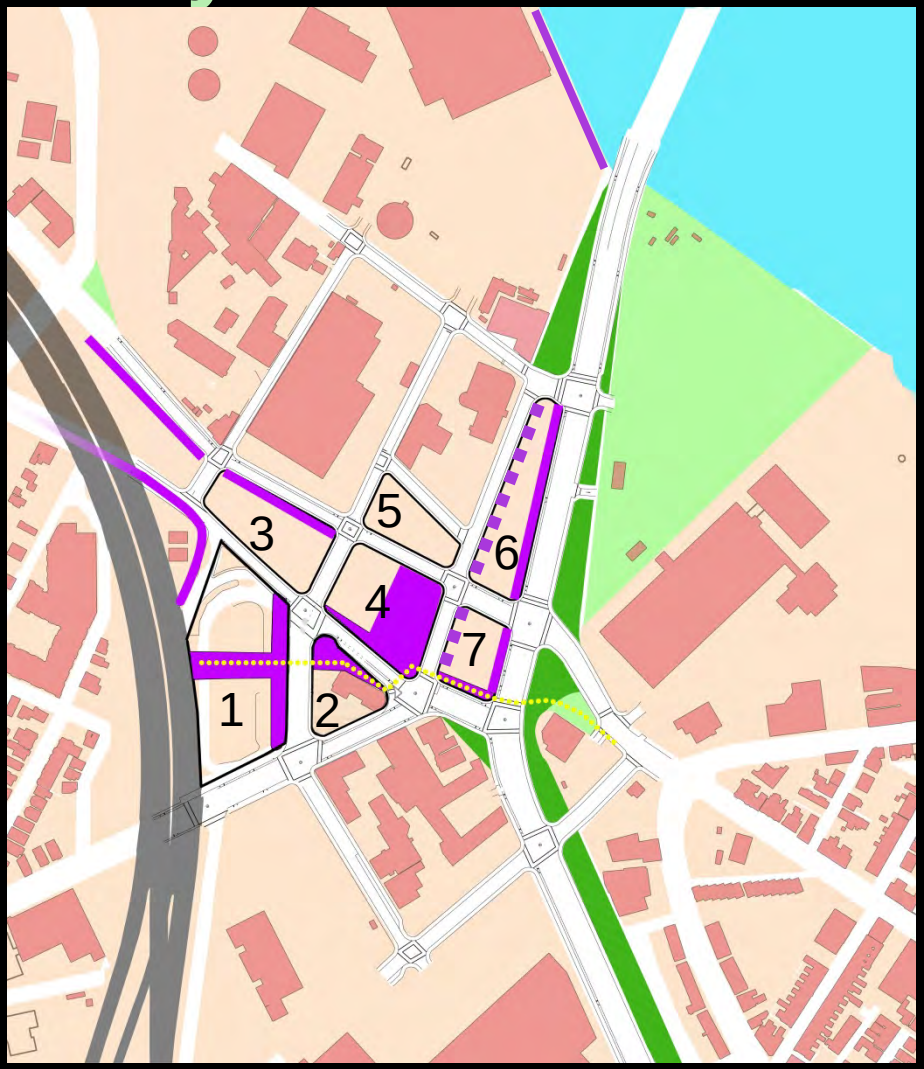
Open Space: Alternative/Additional Route to Mystic River



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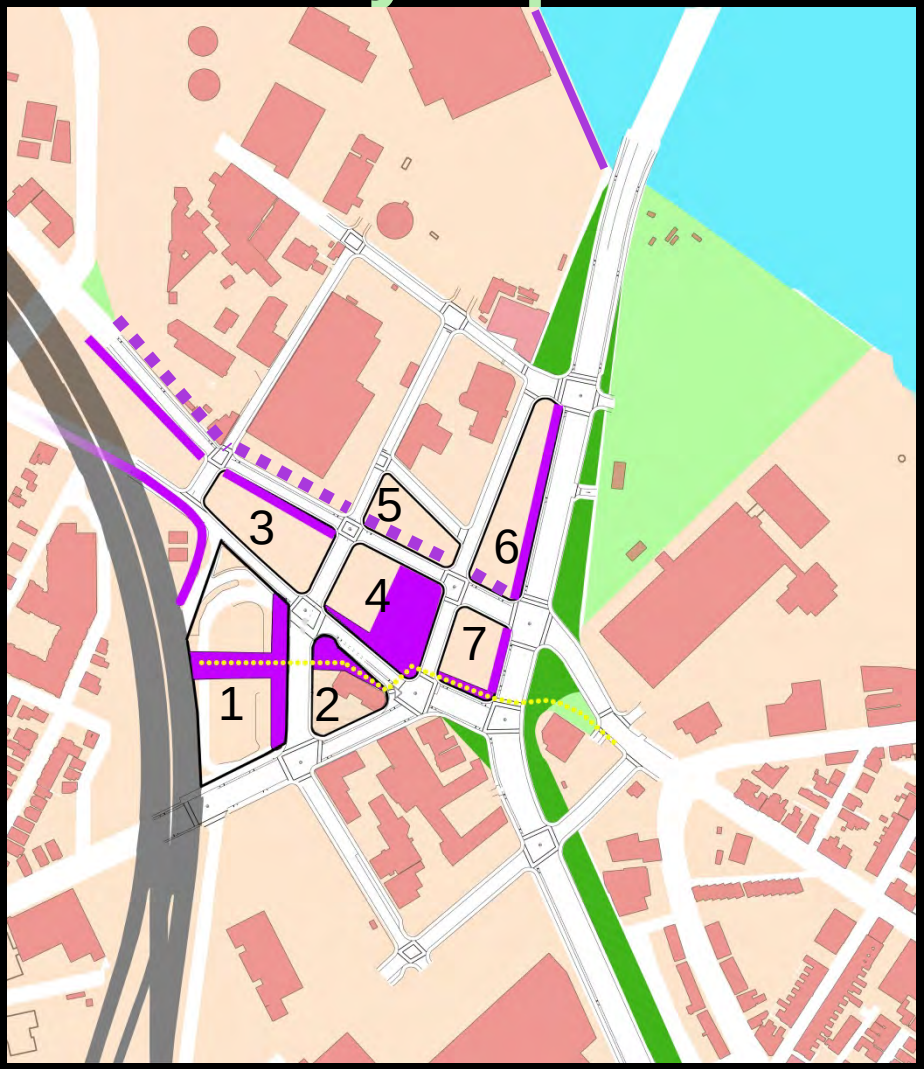
Open Space: Alternative Route to Assembly Square



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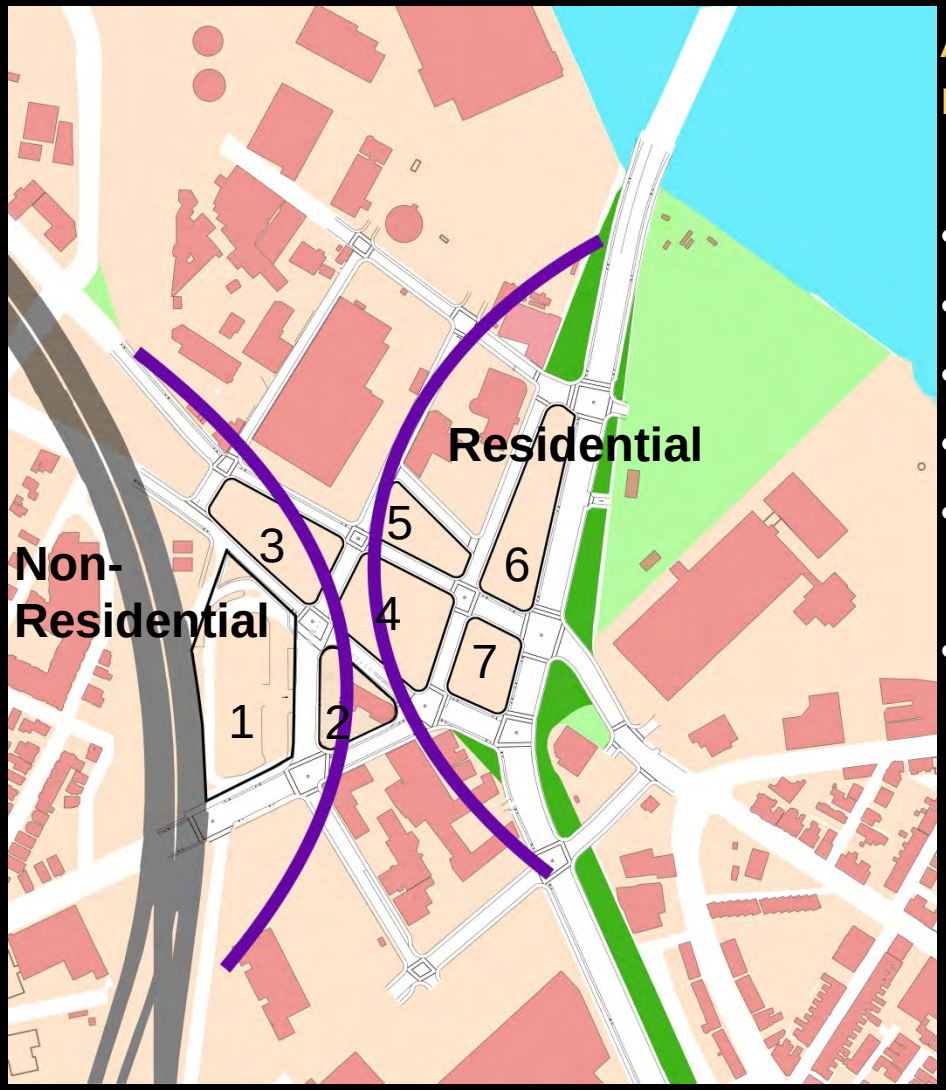
Land Use



A mix of uses to activate the neighborhood, including:

- Residential
- Retail
- Restaurant
- Office
- Hotel

- Continuation of light Industrial potential on parcels adjacent to Parcels 1 -7

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Land Use: Retail Corridor

A retail corridor connecting the existing neighborhood to the MBTA Station.

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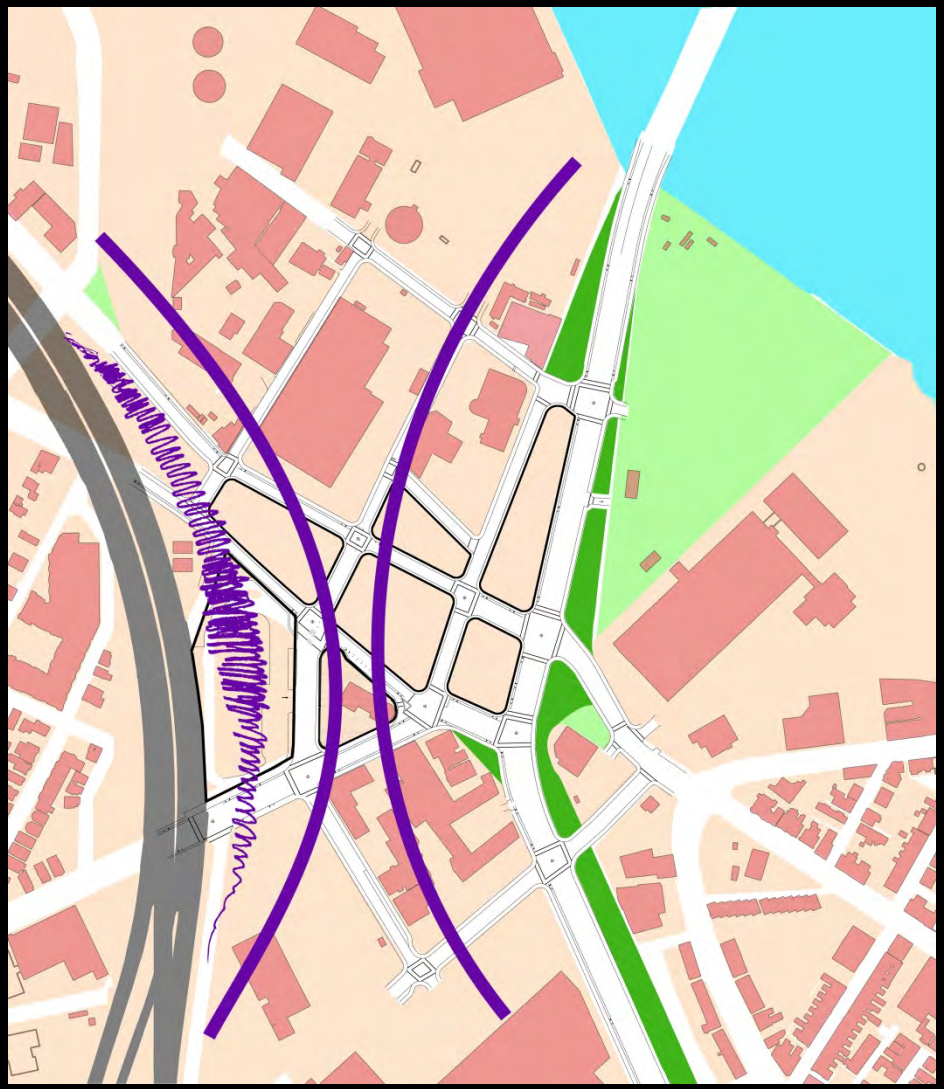
Height & Scale



Mid-rise (5-12 story) buildings at a variety of heights and scales:

- Taller buildings (8-12 stories) closer to the Station
- Lower buildings (5 stories) closer to the existing neighborhood
- Use of height to create buffer between I-93 and the community
- Finer grained development closer to neighborhood
- Activity – active, transparent ground floor uses - around major open space

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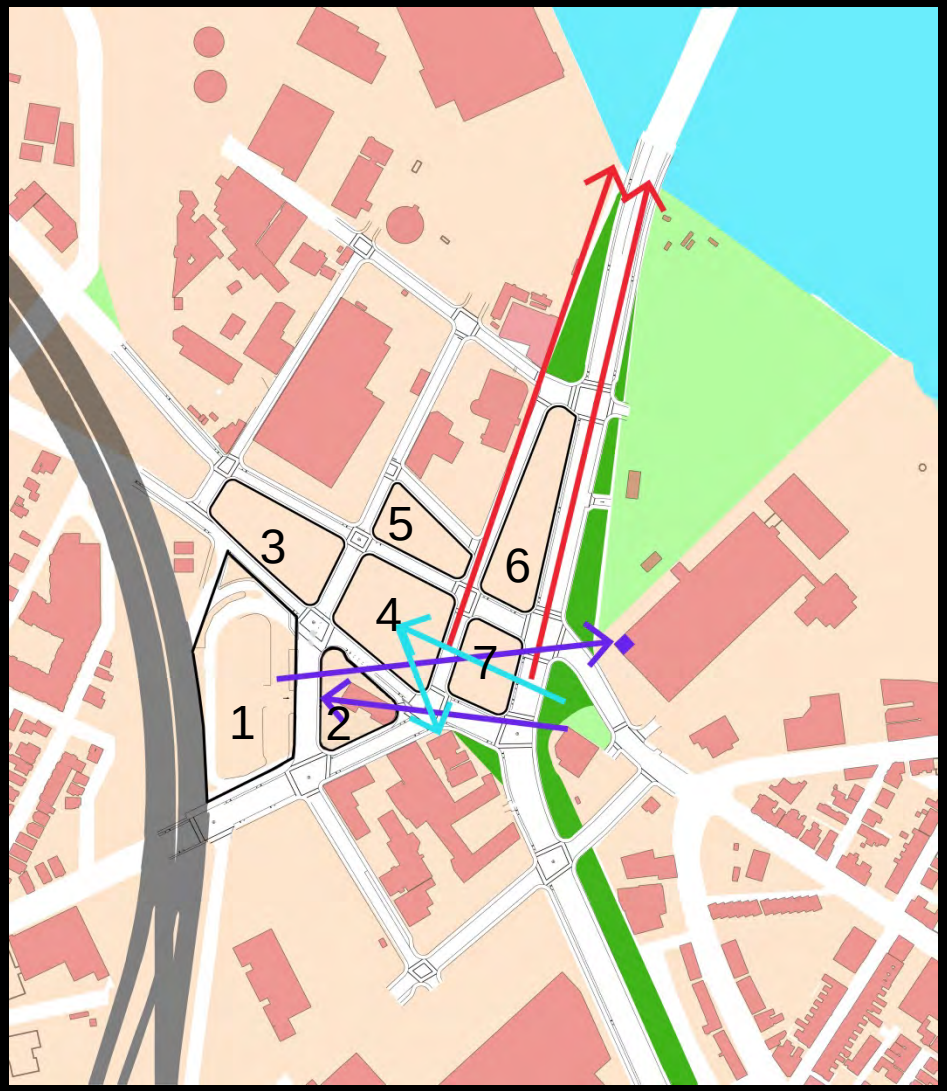
Sight Lines



Maintain important sight lines by open space placement/design and building massing & entrance location:

- T Station to the Schrafft's Building
- New neighborhood to Mystic River
- New Neighborhood to former Brazilian Church/Benjamin Tweed School

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Parking Ratios

Land Use	Maximum Allowable Parking Spaces
Residential (rental / condo)	0.5 / unit
Hotel	0.25 / key
Office	0.75 / 1,000 SF
R&D/Lab	0.75 / 1,000 SF
Retail / F&B / Entertainment	0.75 / 1,000 SF
Institutional	0.75 / 1,000 SF

Character

Create a lively mixed-use district, with active, pedestrian-friendly streets and open space

- Active ground floor uses with multiple entrances
- Mix of land uses
- Varied building heights, stepbacks, articulated facades
- Plazas and open spaces

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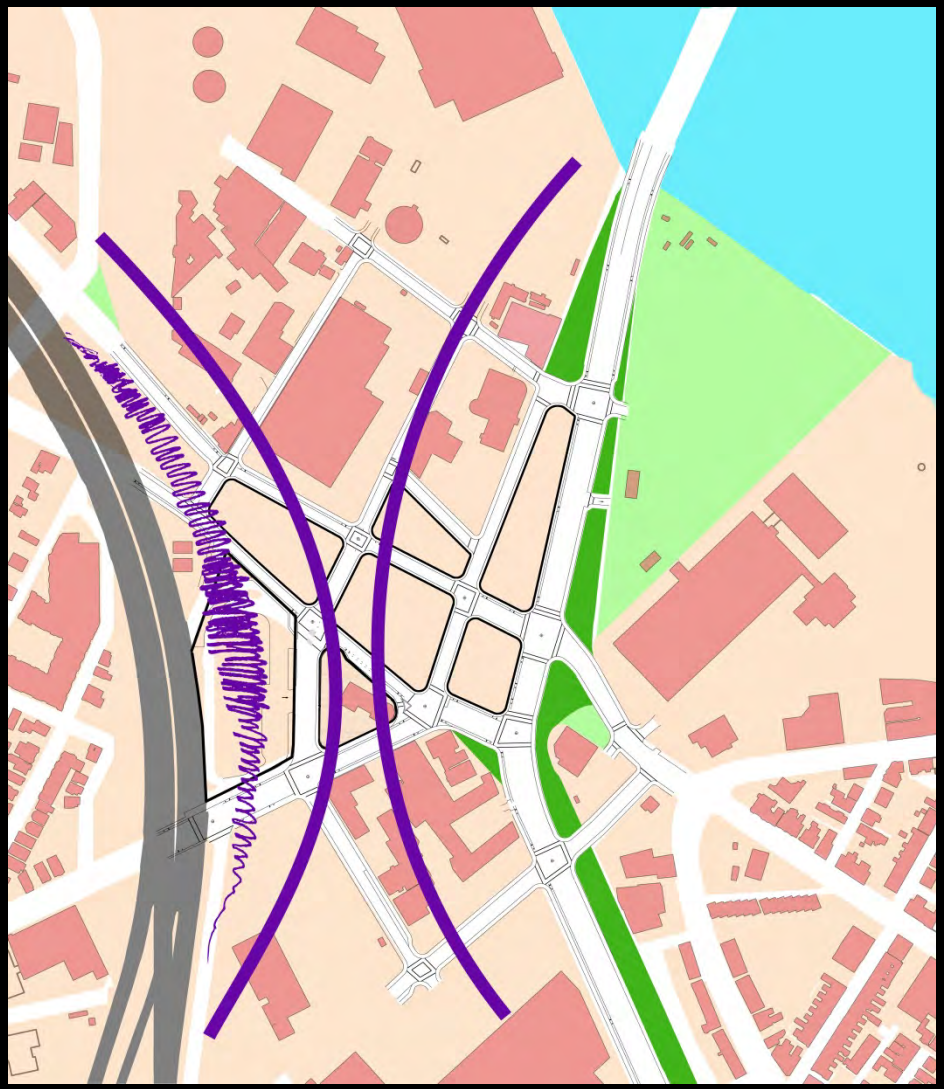
Public Health



Create a healthy environment that incorporates public health concepts:

- Air quality
- Physical activity
- Safety
- Access to healthful / affordable food
- Inclusion of affordable housing

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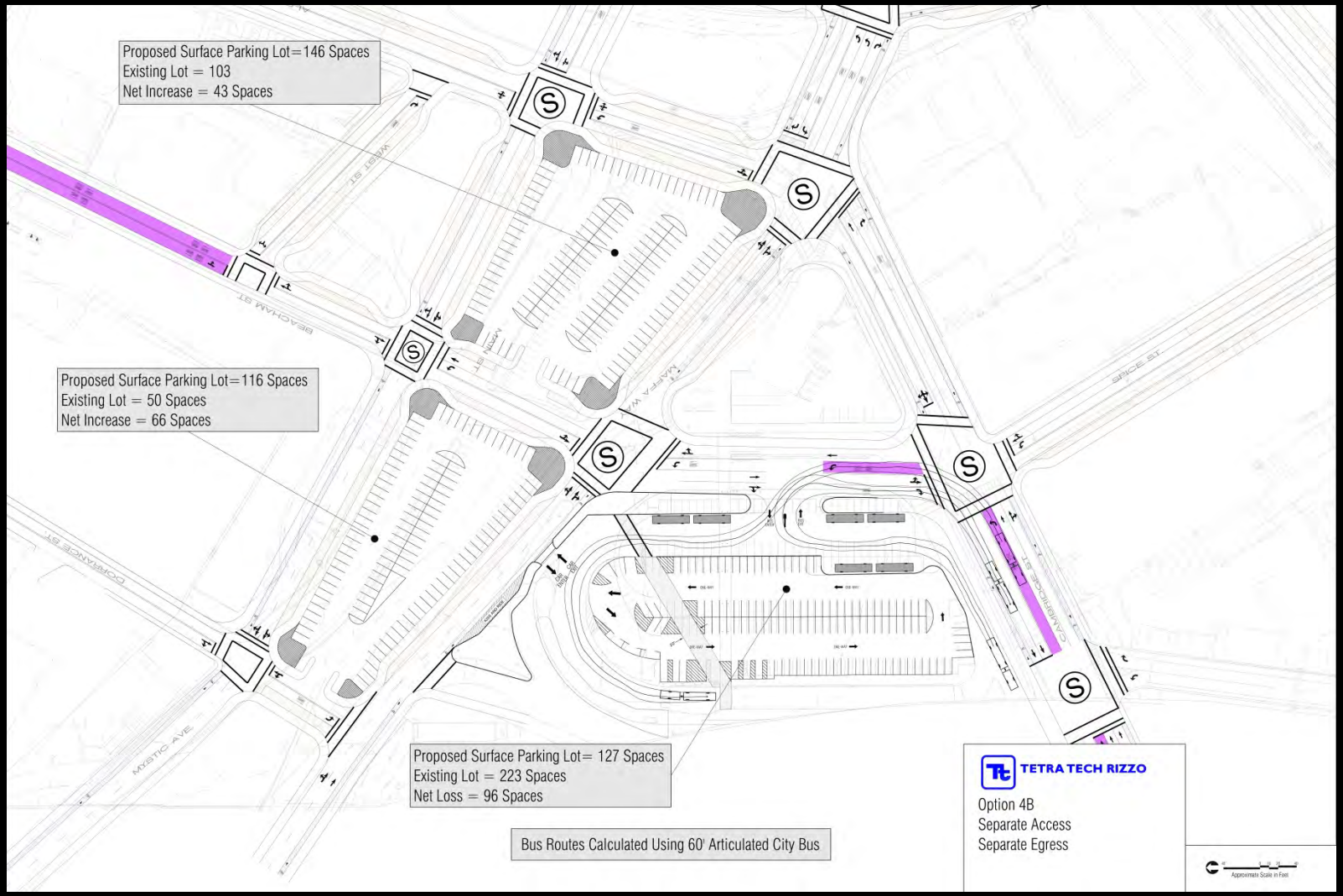
Current Preferred MBTA Layout



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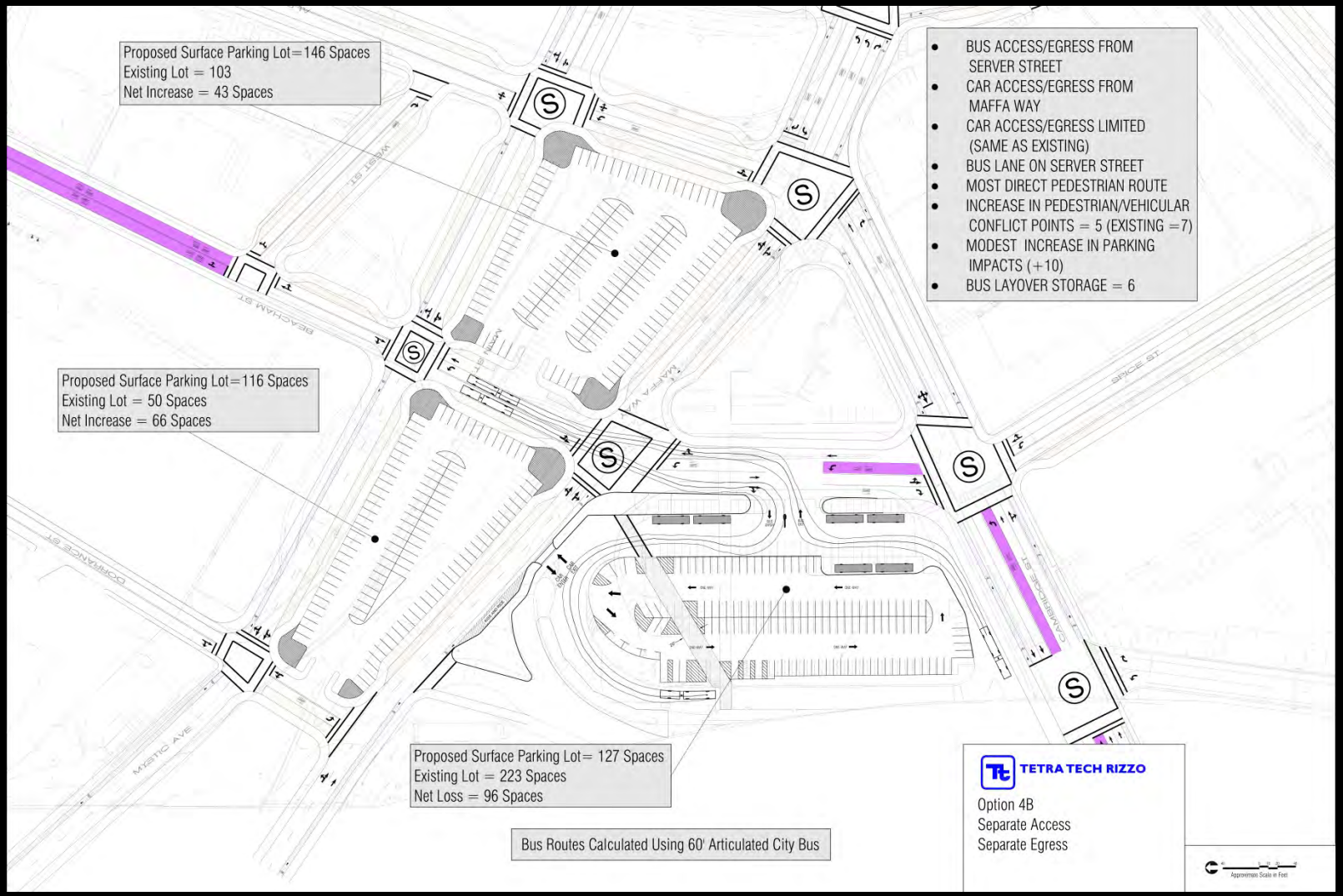

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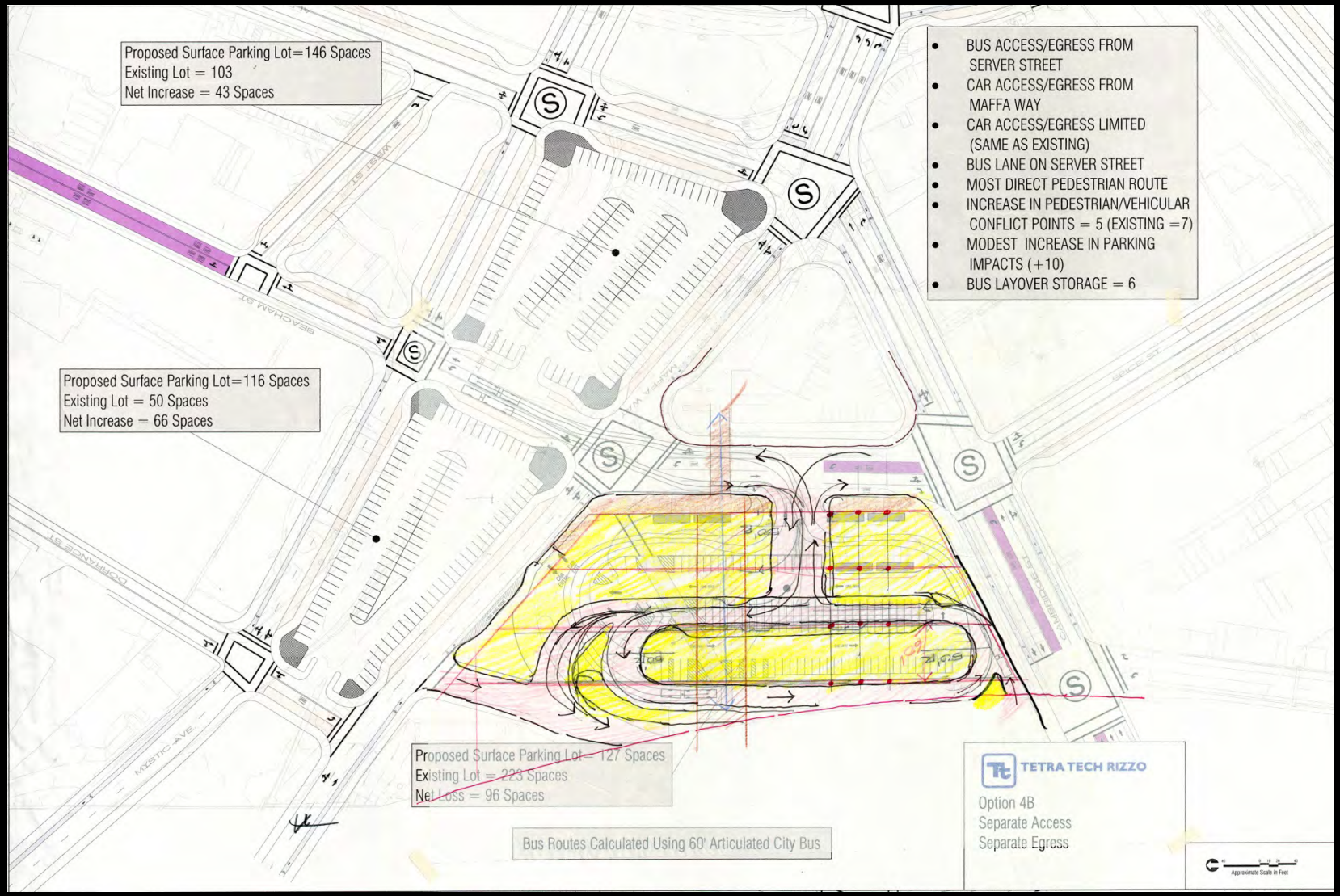
Proposed Surface Parking Lot=146 Spaces
Existing Lot = 103
Net Increase = 43 Spaces
BUS ACCESS/EGRESS FROM SERVER STREET
CAR ACCESS/EGRESS FROM MAFFA WAY
CAR ACCESS/EGRESS LIMITED (SAME AS EXISTING)
BUS LANE ON SERVER STREET
MOST DIRECT PEDESTRIAN ROUTE
INCREASE IN PEDESTRIAN/VEHICULAR CONFLICT POINTS = 5 (EXISTING =7)
MODEST INCREASE IN PARKING IMPACTS (+10)
BUS LAYOVER STORAGE = 6
Proposed Surface Parking Lot=116 Spaces
Existing Lot = 50 Spaces
Net Increase = 66 Spaces
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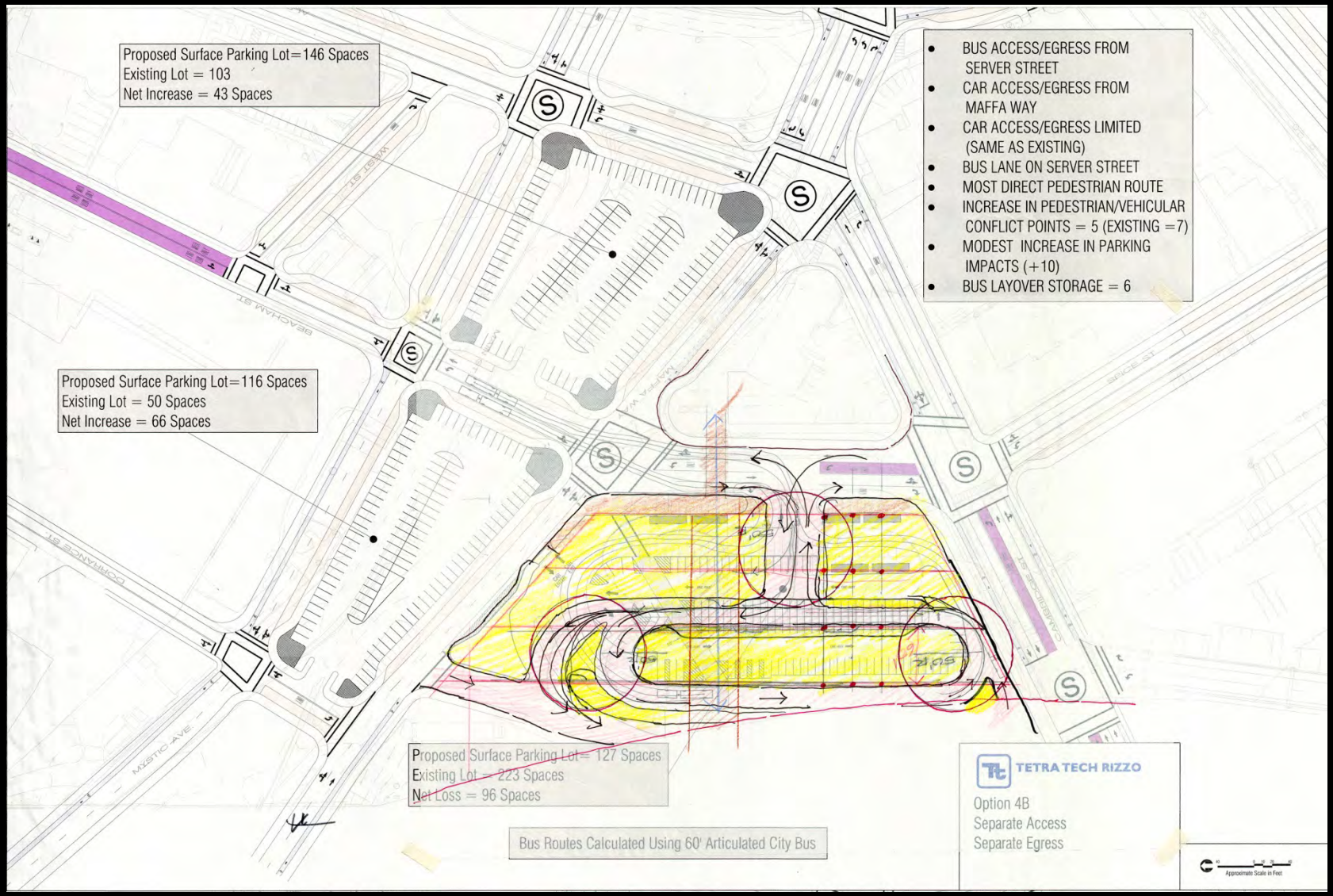
Bus Routes Calculated Using 60' Articulated City Bus
TETRA TECH RIZZO
Option 4B
Separate Access
Separate Egress
Approximate Scale in Feet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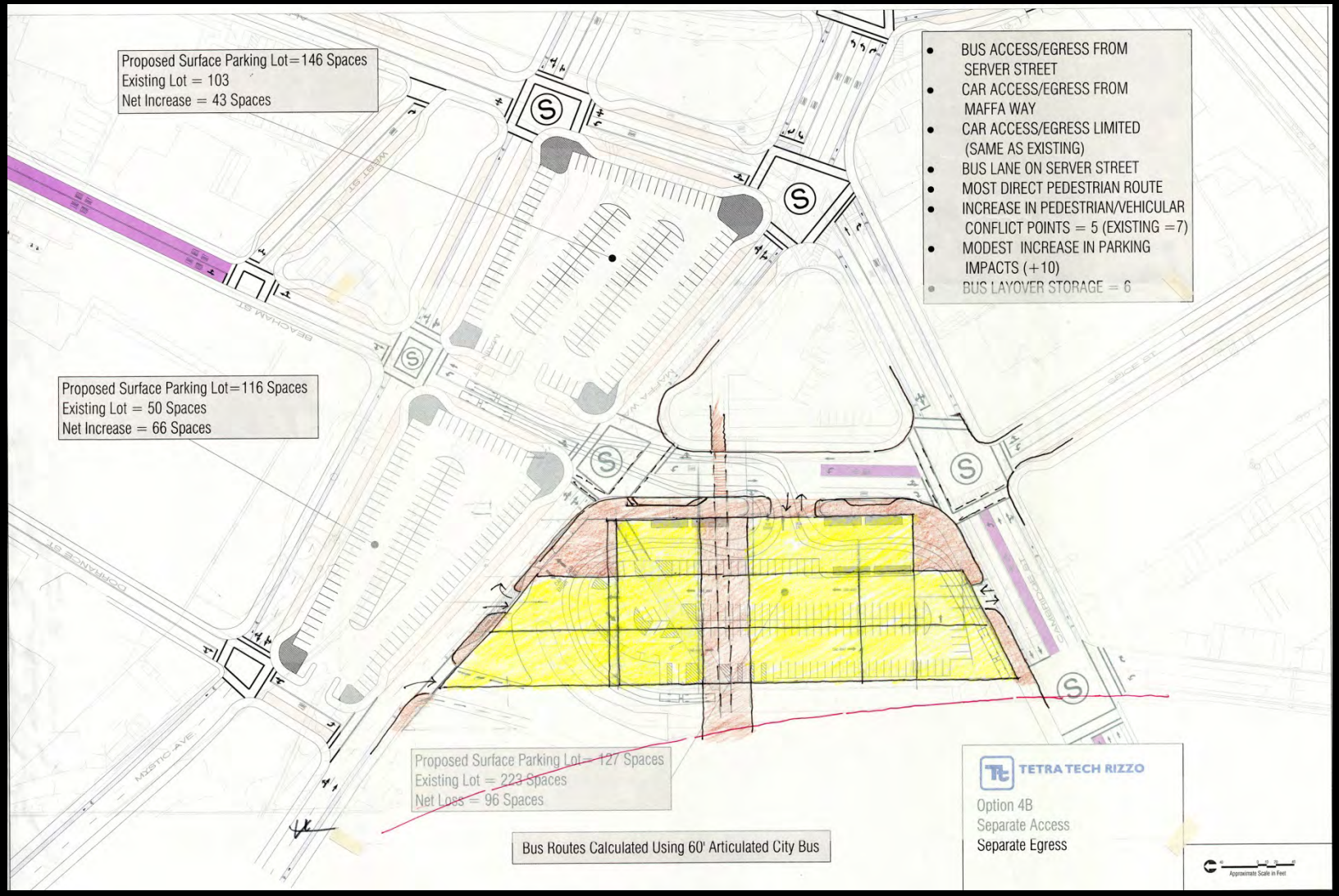
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Sky-lit Atrium at Alewife Station

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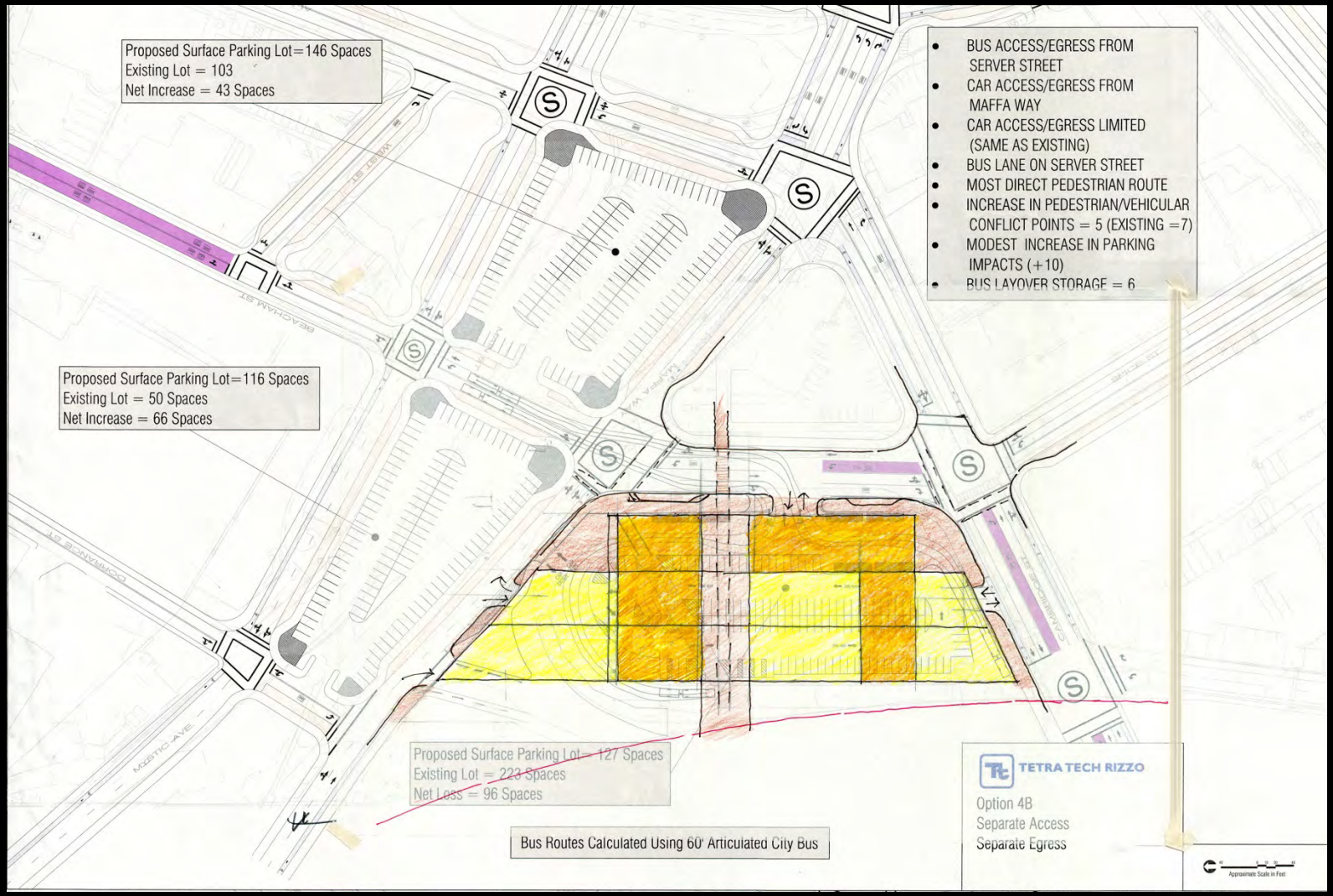
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View of Station with Garage Only

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View of Station with Hotel and Office

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View of Station with Hotel Tower and Office

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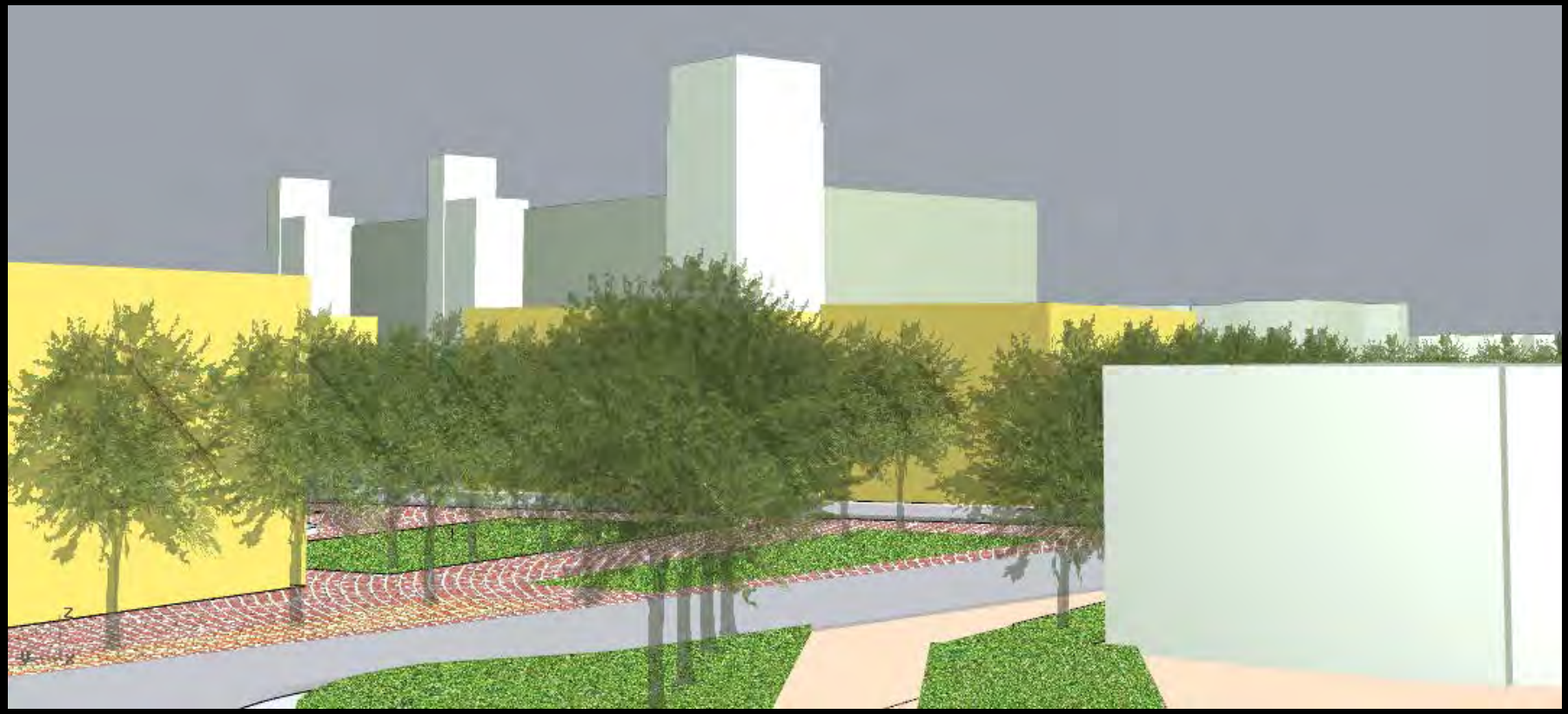
View from Station to Schrafft's Building



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Aerial View Looking NW On Maffa Way

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Aerial View Looking Northwest

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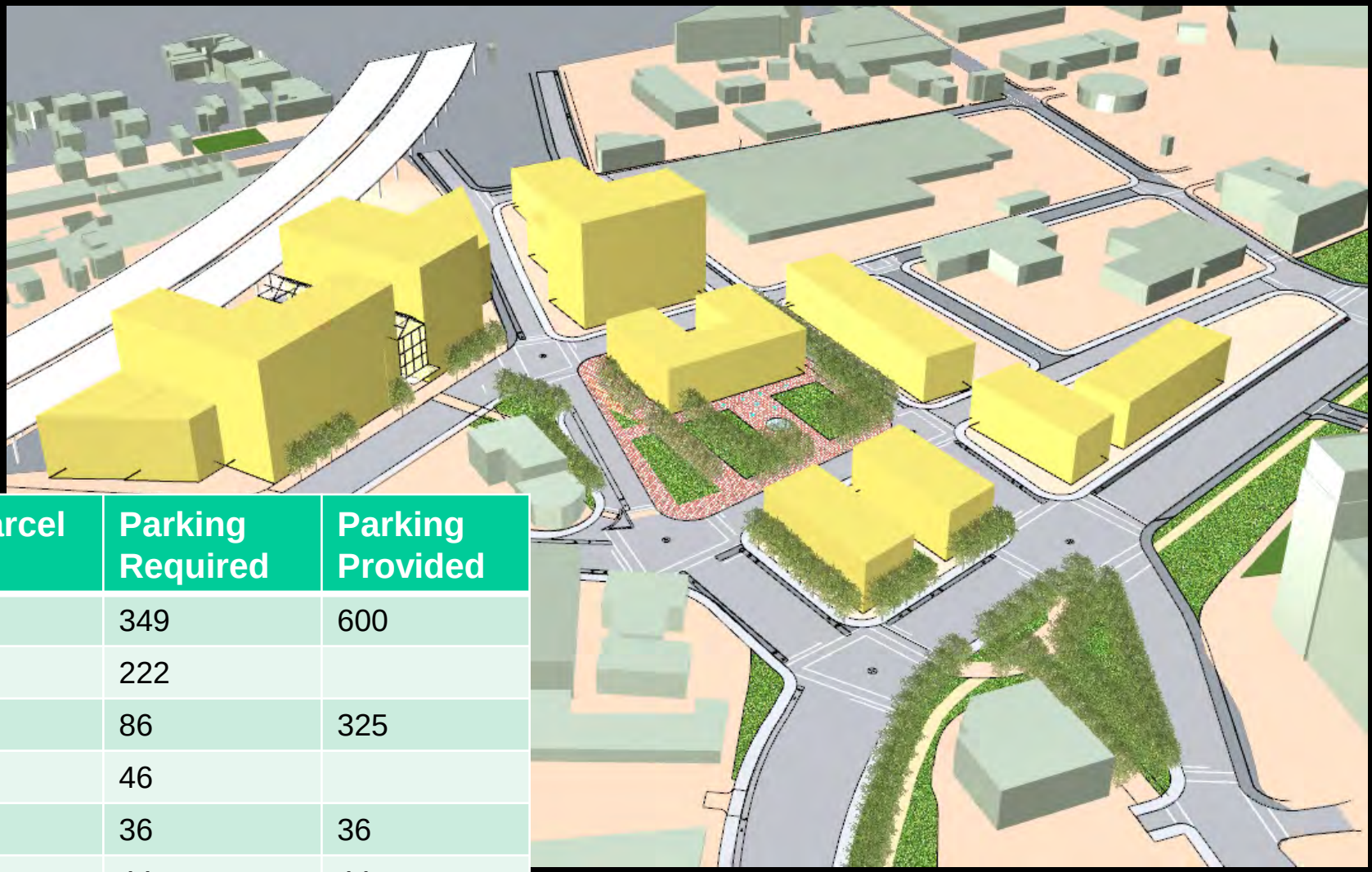
Aerial View Looking Northwest



Parcel	Parking Required	Parking Provided
1	349	600
2	222	
3	86	325
4	46	
5	36	36
6	44	44
7	42	
Total	826	1005

Aerial View over Rutherford Avenue

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Entry View from Rutherford Avenue

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Entry View from Alford Street

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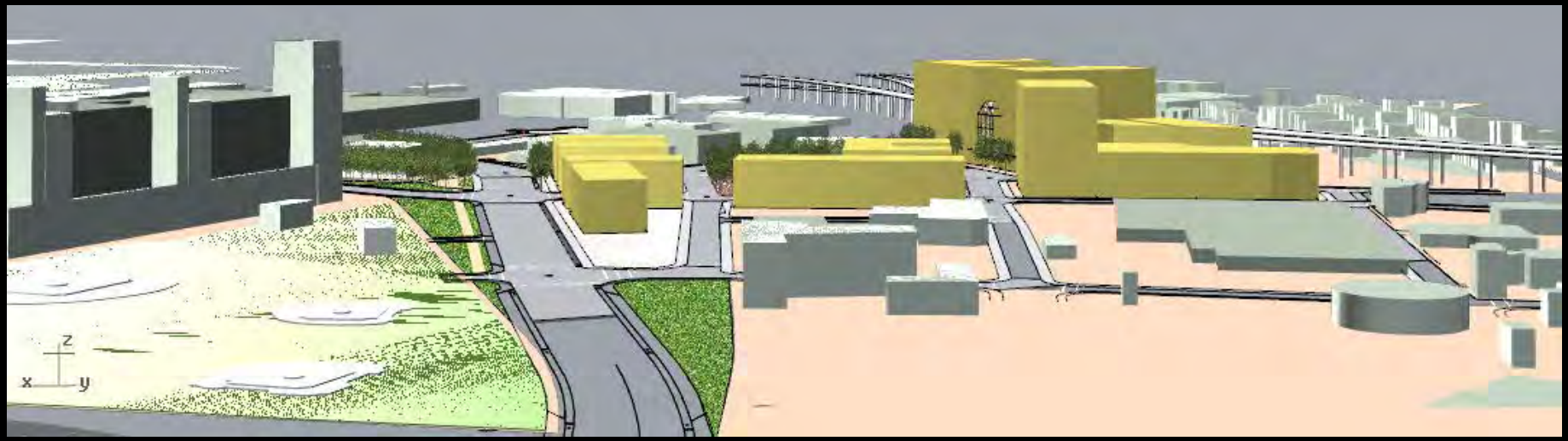
Eye Level View from Alford Street



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Aerial View Looking Northwest

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Eye Level View Up Main St./Mystic Ave.

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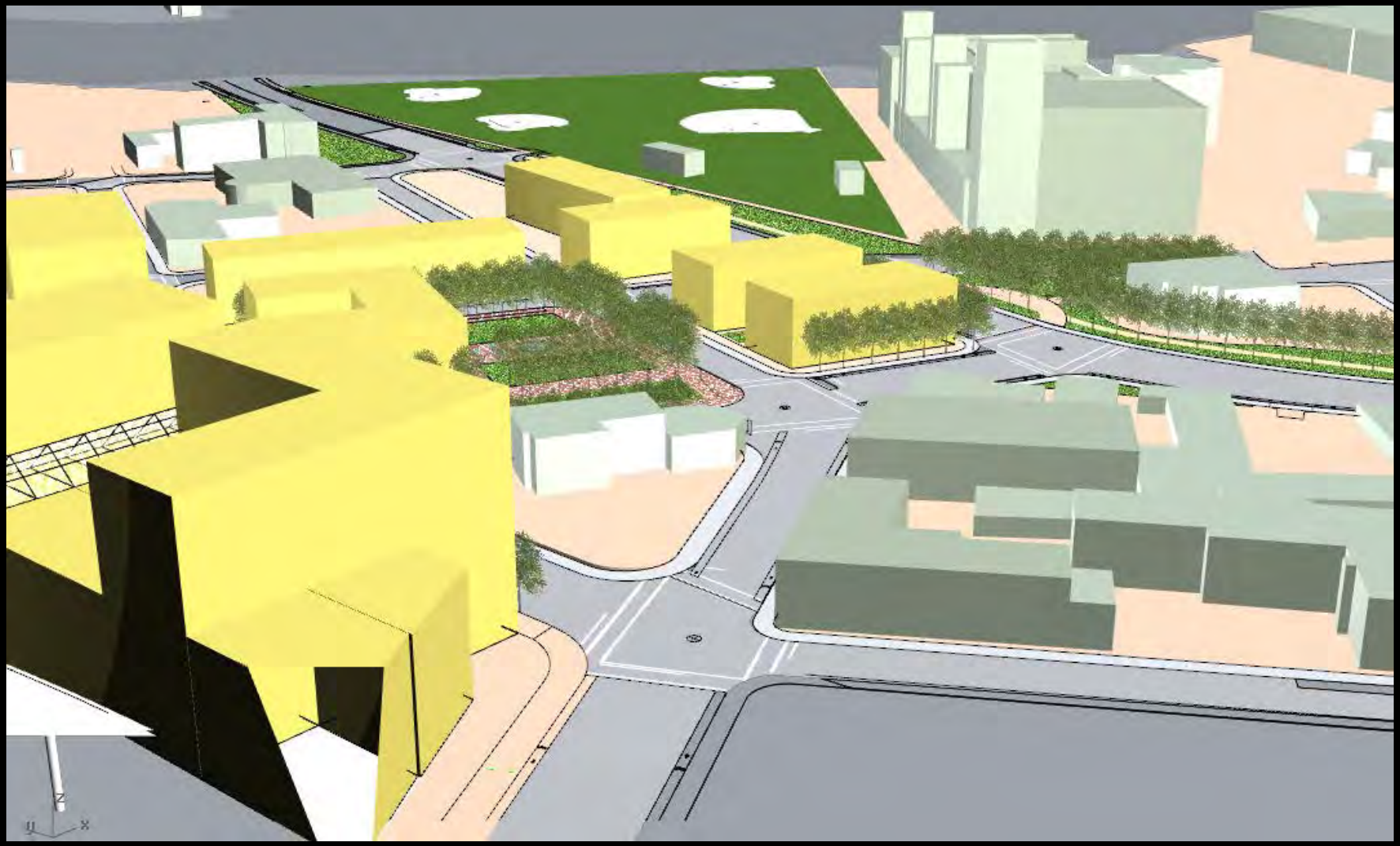
Entry from Cambridge Street



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View Up Maffa Way

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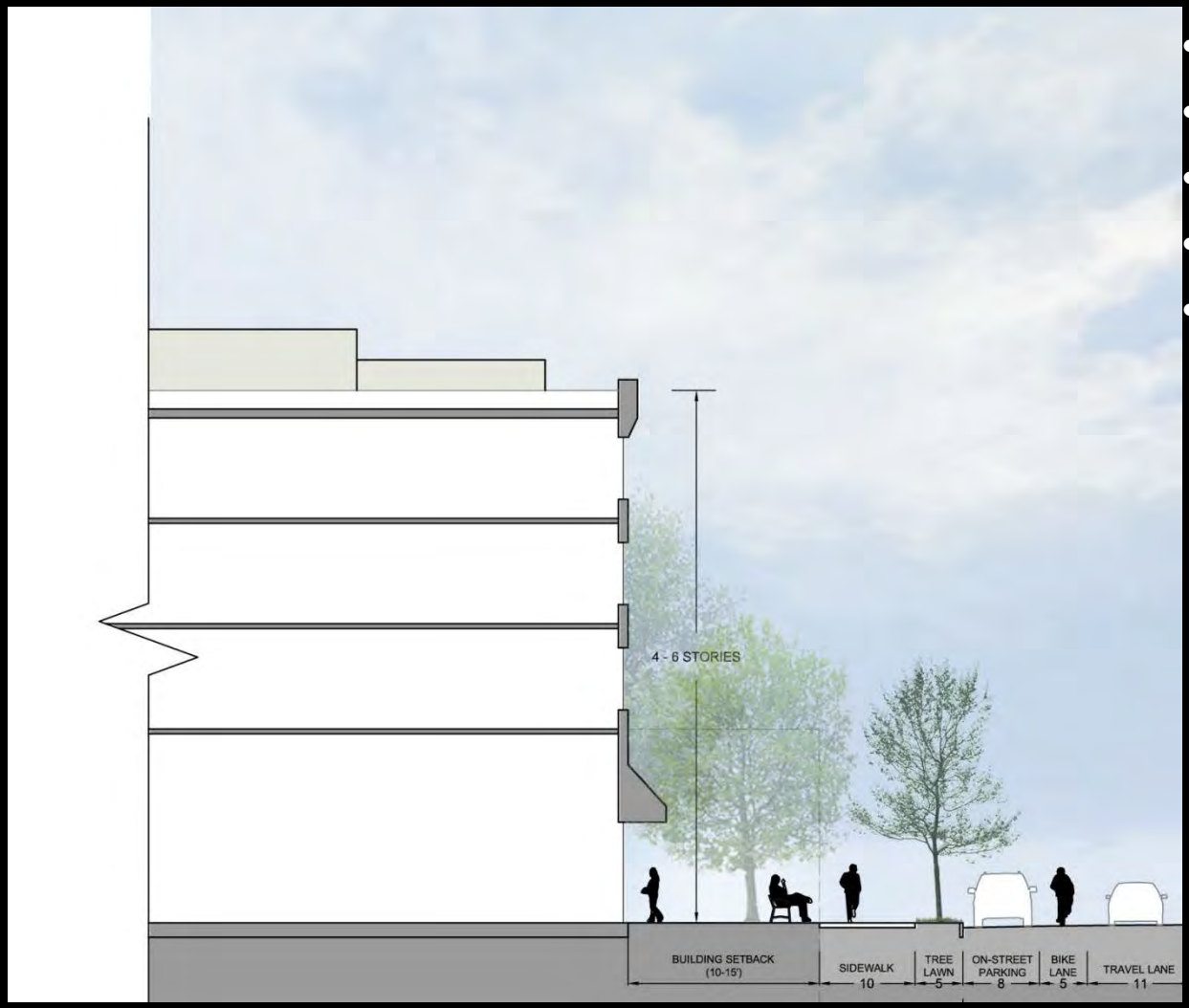
Street Section



- 10-15’ Building Setback
- 10’ Sidewalk
- 5’ Treelawn
- On-street Parking
- Bike Lane

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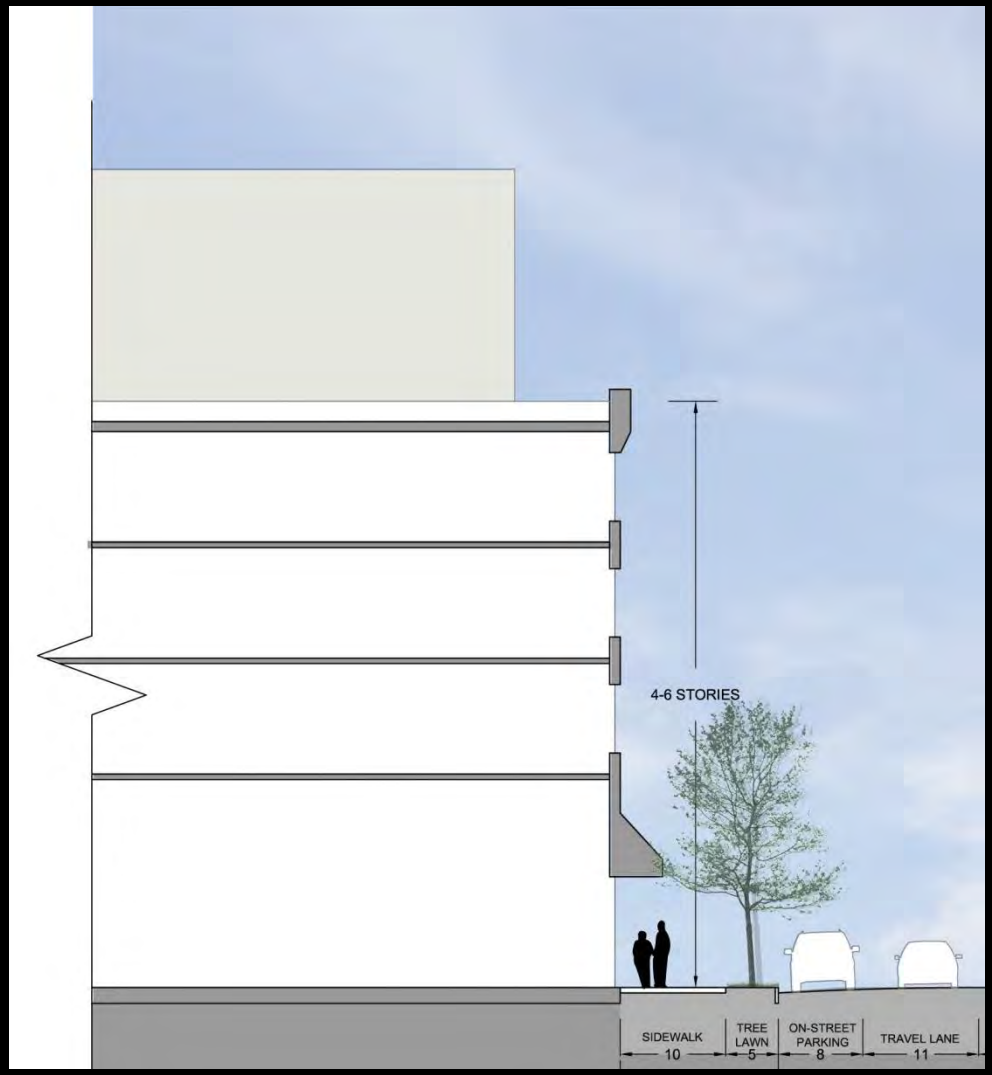

- 10’ Sidewalk
- 5’ Treelawn
- On-street Parking

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Aerial View Looking Northwest

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- Mtg 2 – Visioning for Public Realm Framework – 6.25.13
- Mtg 3 – Visioning for Land Use Mix
- **Mtg 4 – Visioning for Urban Design, Heights/Massing**
- Mtg 5 – Visioning for Parcel Level Use & Development Guidelines
- Mtg 6 – Presentation & Discussion of Parcel Level Use and Development Guidelines for Disposition
- Advisory Group – consistent feedback and input throughout process and subsequent study phases