

MBTA Communities Housing Law Urban Design Study

Introduction



*Funding from a
Northeastern Impact Engine Grant*

Team & Project Introduction

Project Team



Tim Love, FAIA

[Principal Researcher](#)
[Director](#)

- + Utile
- + Northeastern SoA
- + Harvard GSD



Amy Dain

[Senior Researcher](#)
[Project Manager](#)

- + Dain Research



Sam Naylor, AIA

[Senior Researcher](#)
[Lead Designer](#)

- + Utile
- + Harvard Joint Center
for Housing Studies

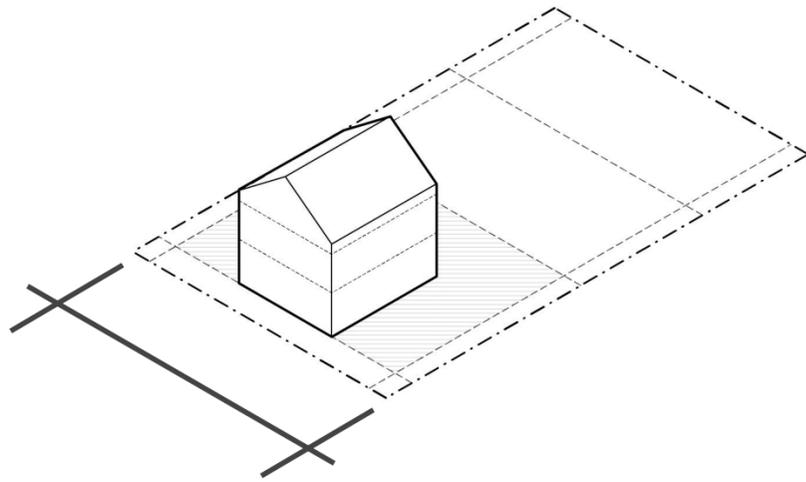


Camille Wimpe

[Research Assistant](#)
[Designer & Planner](#)

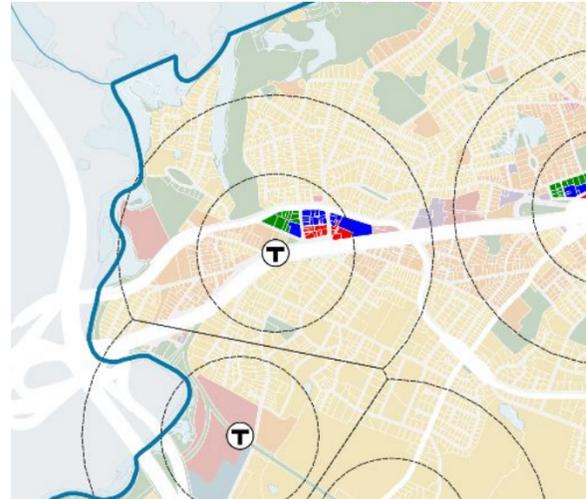
- + Northeastern SoA

Research Goals



1. Articulate Physical Challenges & Opportunities

- + Draw existing constraints
- + Explore a diverse range of typologies
- + Investigate specific local urban, cultural, & environmental concerns



2. Study Alternate Zoning Recommendations

- + A form-based “light” approach
- + Mimized metrics, maximized benefits
- + Attuned to economic & architectural realities



3. Illustrate Housing Possibilities

- + Demystify development inevitabilities
- + Test zoning flexibility through test-fit outcomes
- + Map overall impact on town density & form

Communities



Framingham

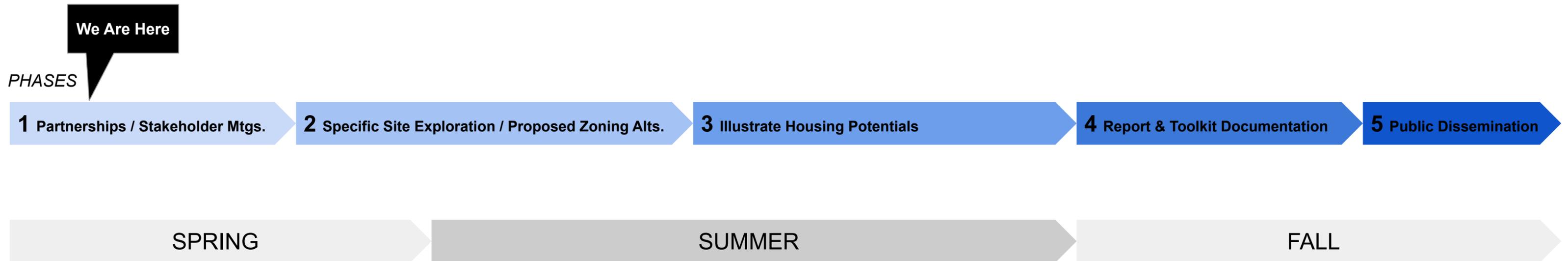


Canton



Ipswich

Research Timeline



Zoning Approach

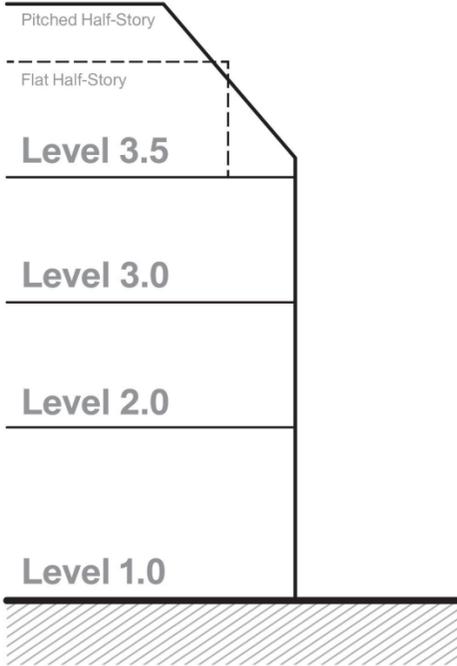
Form-based “Light” Model

Form Based “Light” Zoning Approach

We propose a zoning code that regulates urban form through the following principal mechanisms:

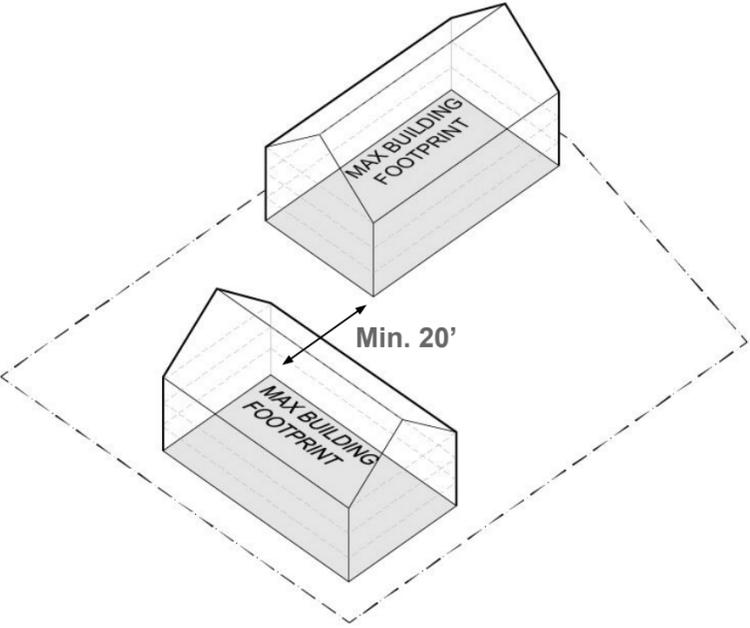
1 Building Height

Sets the maximum height in stories & feet



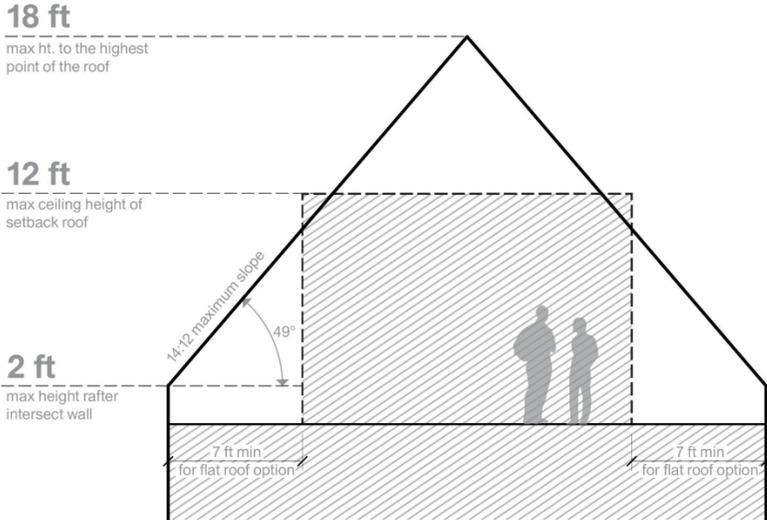
2 Building Footprint

Similar to DU/acre or FAR, this can more effectively control density outcomes



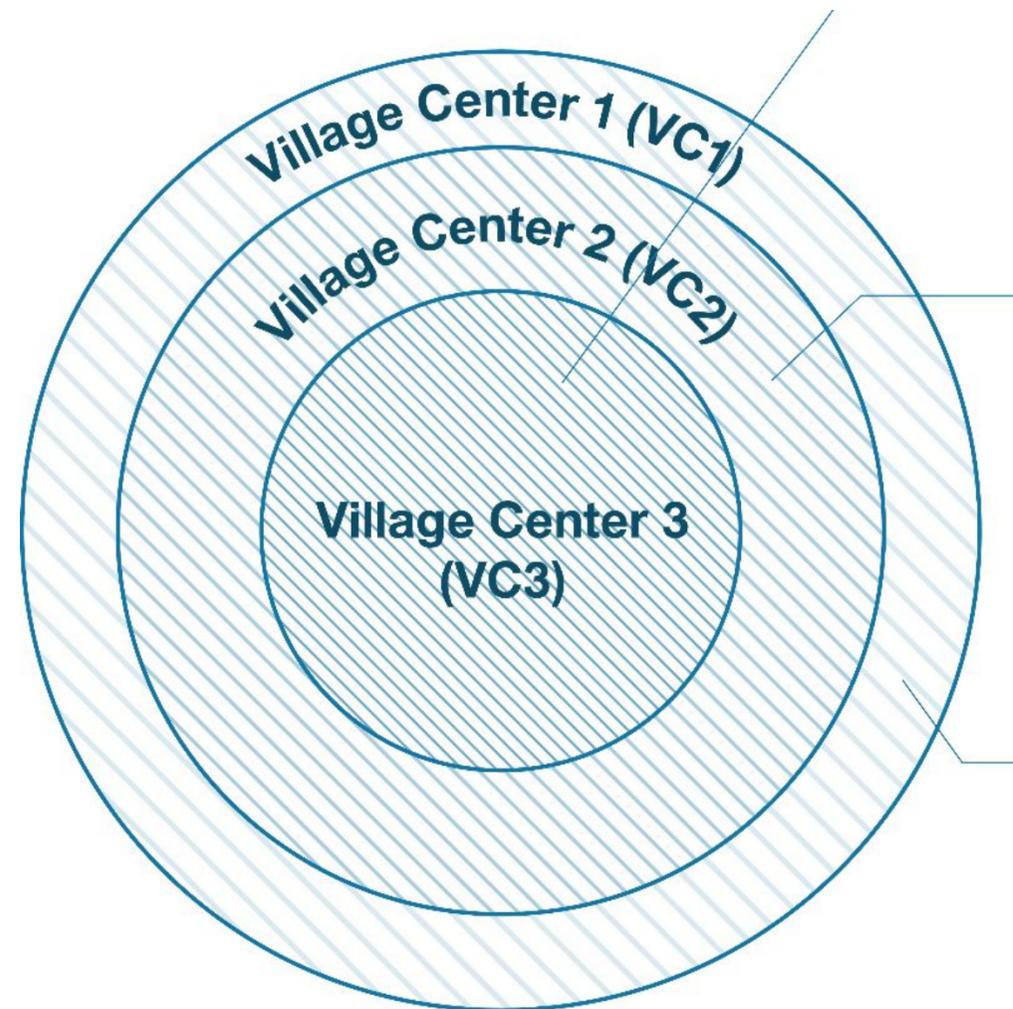
3 Roof Form

Provides options for a flat or pitched roof half-story



Form Based Approach

Newton "Village Center" Zoning



VC3:
4.5 stories



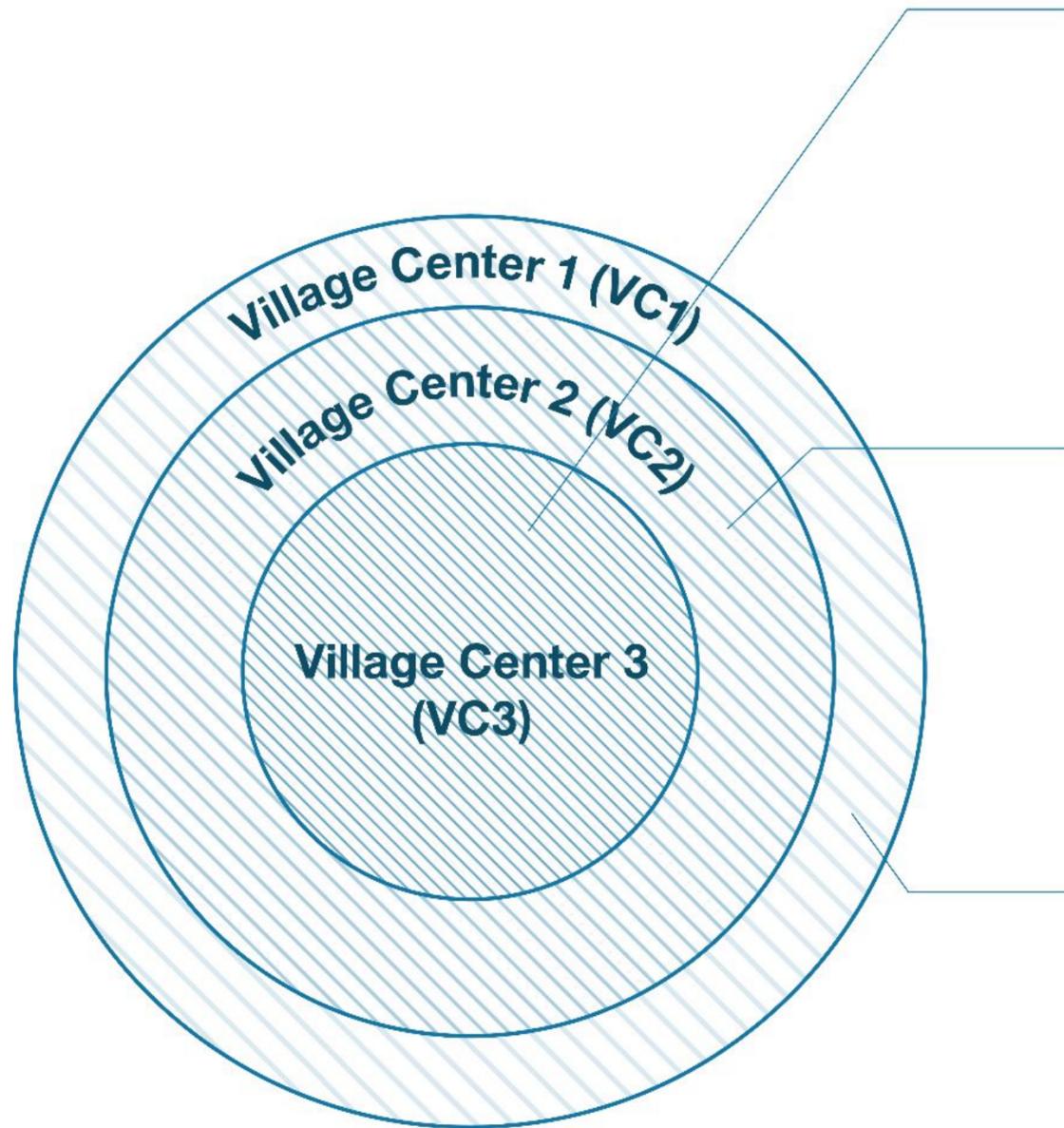
VC2:
3.5 stories



VC1:
2.5 stories

Form Based Approach

Newton “Village Center” Zoning



	<u>Existing Zoning</u>	<u>Proposed Zoning</u>
Center	MU4 (Special Permit)	VC3 (By-Right / Special Permit)
FAR	2.50	--
Height, max	5 stories; 60'	4.5 stories / --*; 75' / --*
Lot area per unit	--	--
Bldg Footprint, max	--	15,000 sf
Parking Ratio		
Retail	1 per 300 sf	Exempt for ground floor commercial
Office	1 per 250 sf	1 per 700 sf
Multi-family	1.25 per unit	1 per unit
Allowed Uses	Multi-family, Retail, Office	Multi-family, Retail, Office
Periphery	BU3 (Special Permit)	VC2 (By-Right / Special Permit)
FAR	2.00	--
Height, max	4 stories; 48'	3.5 stories / --*; 62' / --*
Lot area per unit	1,200 sf	--
Bldg Footprint, max	--	10,000 sf
Parking Ratio		
Retail	1 per 300 sf	Exempt for ground floor commercial
Office	1 per 250 sf	1 per 700 sf
Multi-family	1.25 per unit	1 per unit
Allowed Uses	Retail, Office	Multi-family, Retail, Office
Edge	BU2 (Special Permit)	VC1 (By-Right / Special Permit)
FAR	2.00	--
Height, max	4 stories; 48'	2.5 stories / --*; 48' / --*
Lot area per unit	1,200 sf	--
Bldg Footprint, max	--	4,000 sf
Parking Ratio		
Retail	1 per 300 sf	Exempt for ground floor commercial
Office	1 per 250 sf	1 per 700 sf
Multi-family	1.25 per unit	1 per unit
Allowed Uses	Retail, Office	Multi-family / Potential Limited Commercial

Form Based Approach

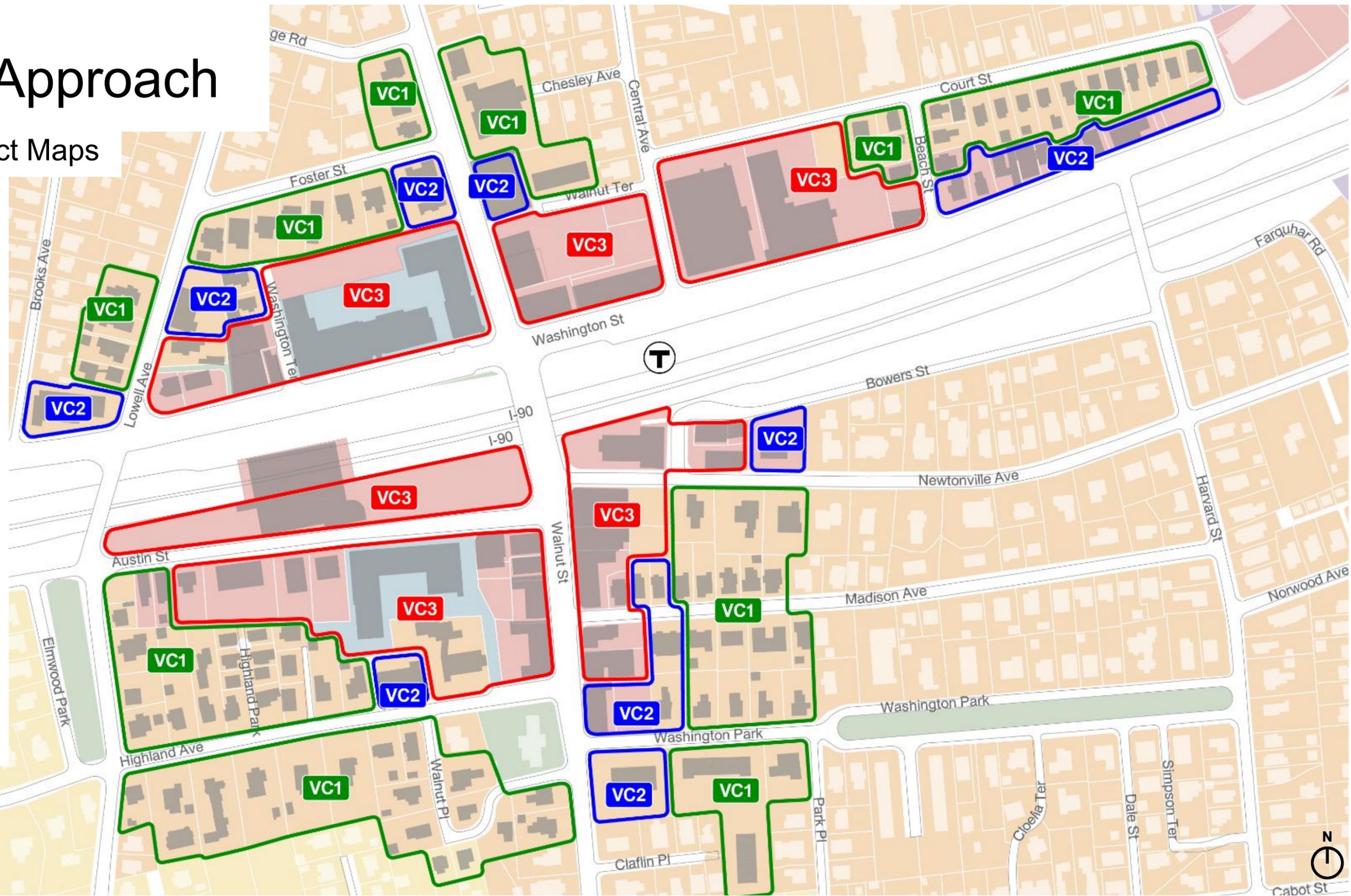
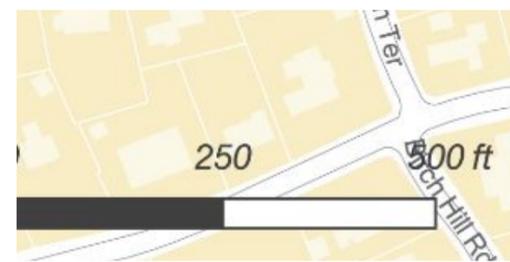
Newtonville: Draft District Maps

Existing Zoning

- Business (BU)
- Manufacturing (LM, M)
- Multi-Residence (MR)
- Single Residence (SR)
- Mixed Use (MU)
- Public Use & Open Space (PU, OS/R)

Proposed Zoning

- Village Center 3 (VC3)**
 Category: By-Right / Special Permit
 Footprint, max: 15,000 sf / 17,500 sf
 Height, max: 4.5 stories / 5.5 stories
 Use: Residential, Commercial, Mixed-Use
- Village Center 2 (VC2)**
 Category: By-Right / Special Permit
 Footprint, max: 10,000 sf / 12,500 sf
 Height, max: 3.5 stories / 4.5 stories
 Use: Residential, Commercial, Mixed-Use
- Village Center 1 (VC1)**
 Category: By-Right / Special Permit
 Footprint, max: 5,000 sf / 7,500 sf
 Height, max: 2.5 stories / 3.5 stories
 Use: Residential / Commercial, Mixed-Use



Form Based Approach

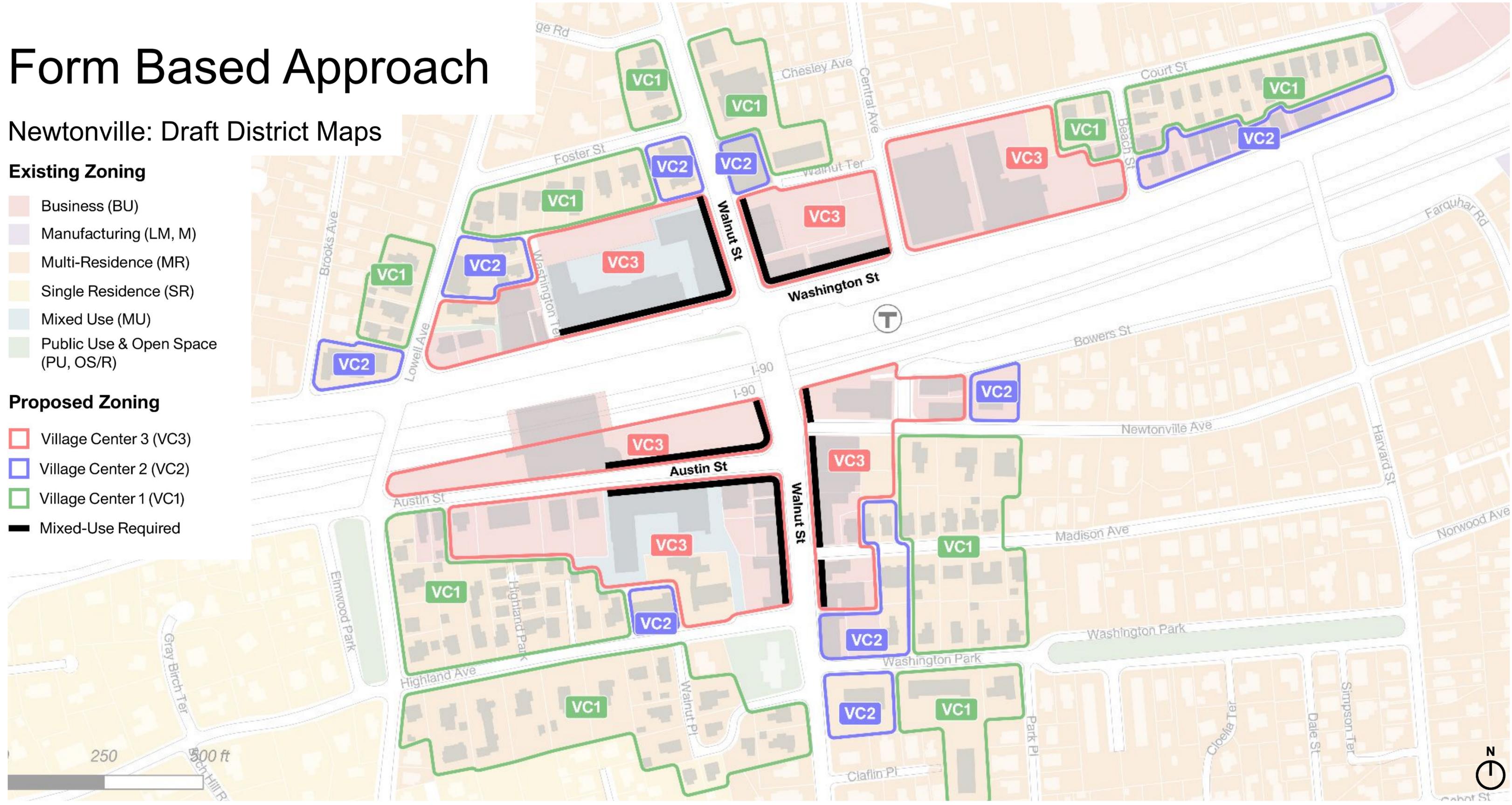
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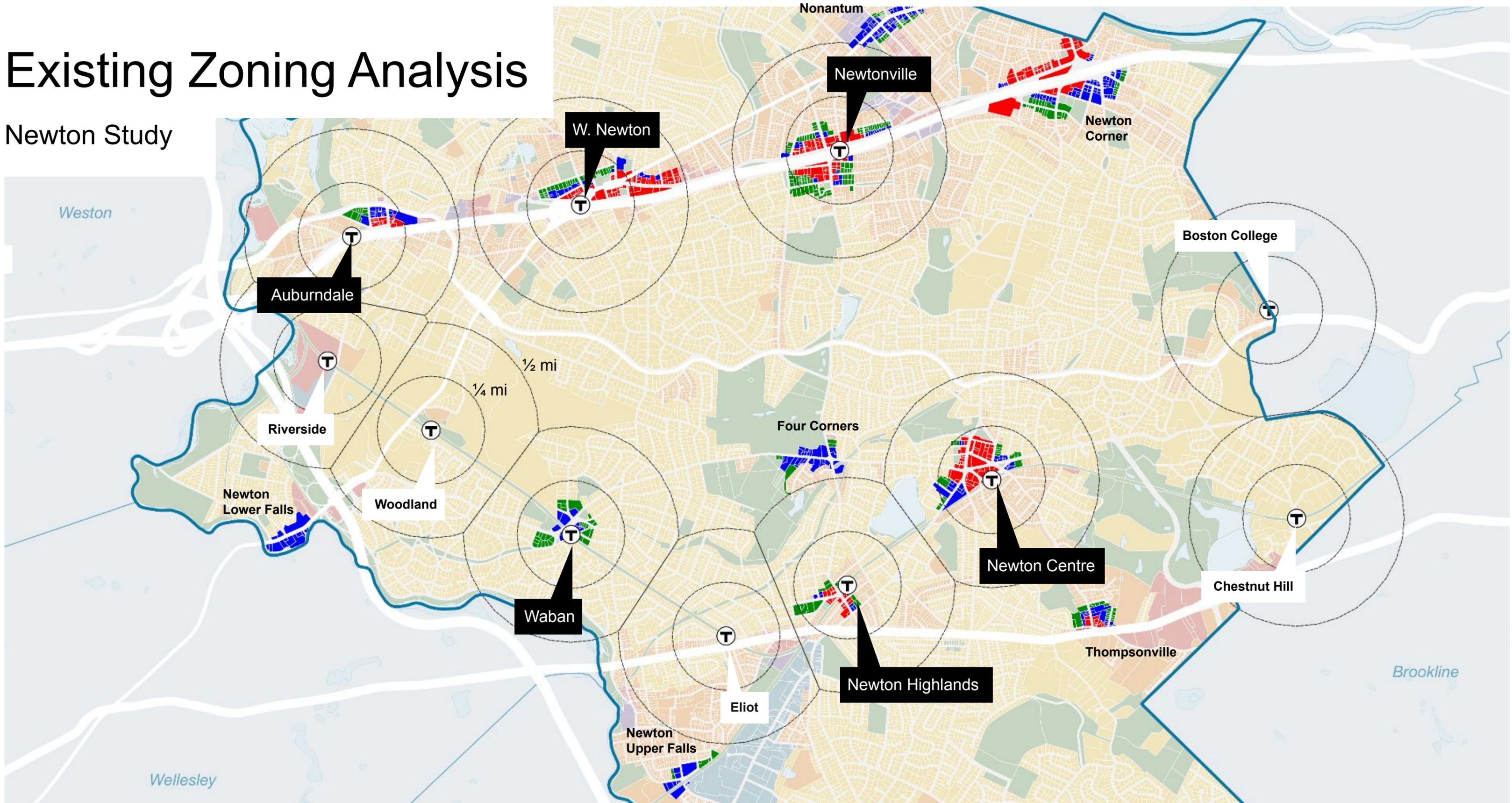
Proposed Zoning

- Village Center 3 (VC3)
- Village Center 2 (VC2)
- Village Center 1 (VC1)
- Mixed-Use Required



Existing Zoning Analysis

Newton Study

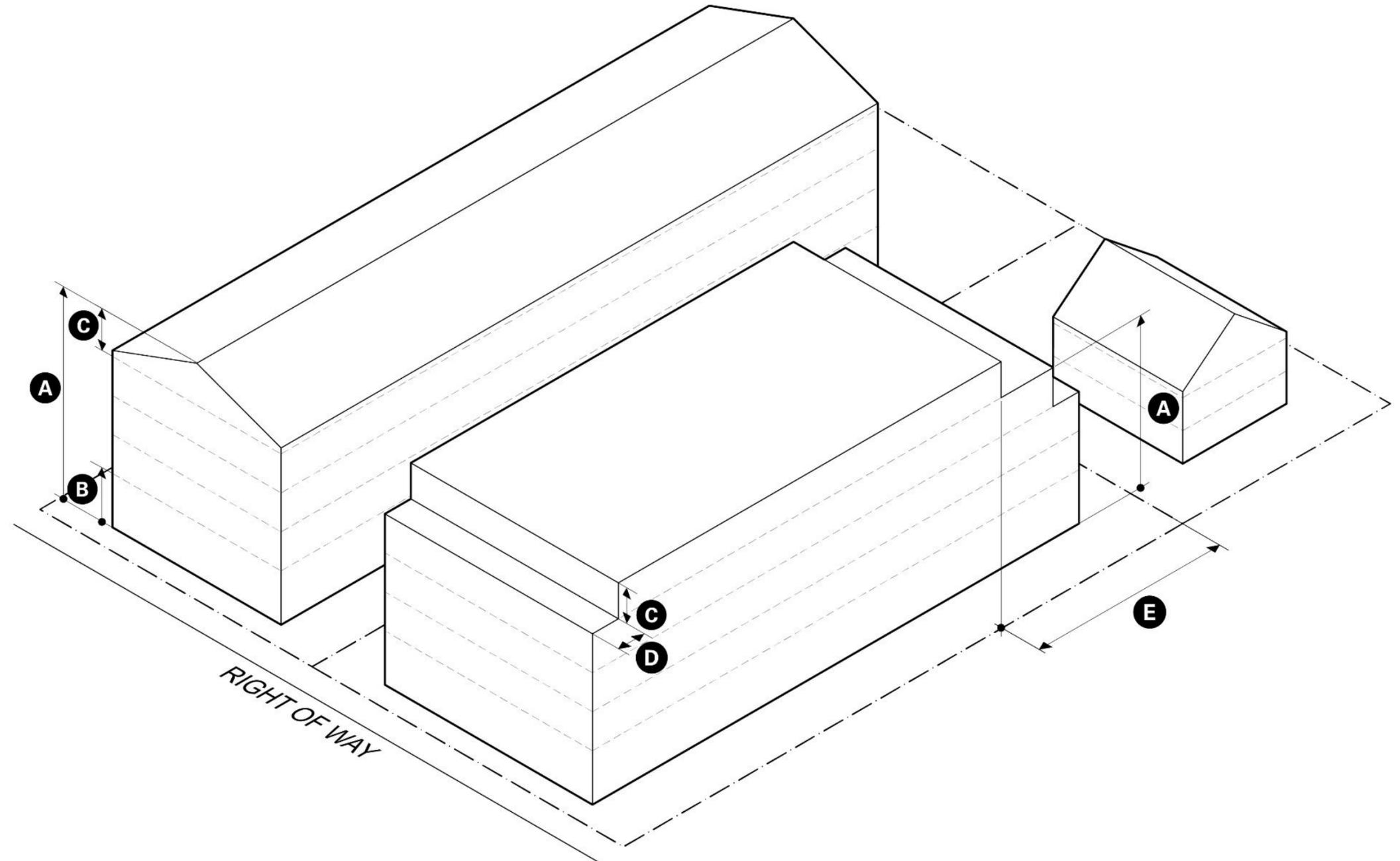


Building/Story Height

Design Standards

Standards include:

- **Maximum building height in feet and stories**, with separate standards for pitched and flat roof buildings
- **Minimum ground story height**, with separate standards for lots on mixed-use required streets and lots on all other streets.
- **Transition to R-districts**, with maximum building height limited to 3+ stories within a certain distance of one and two-family residential districts.



Facade Articulation

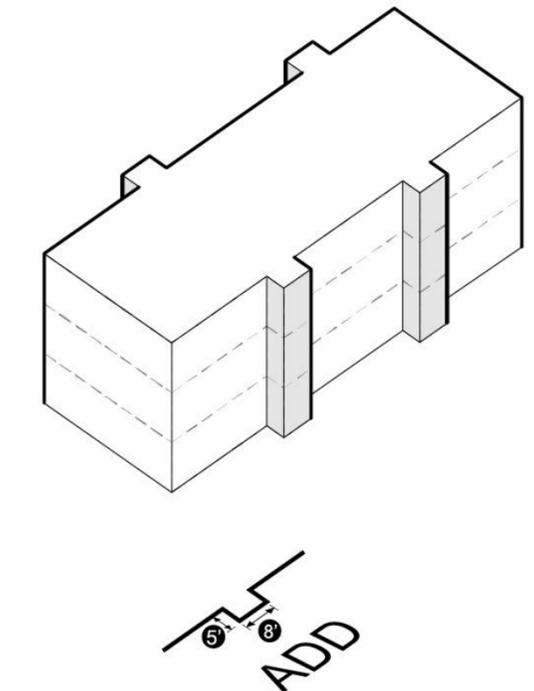
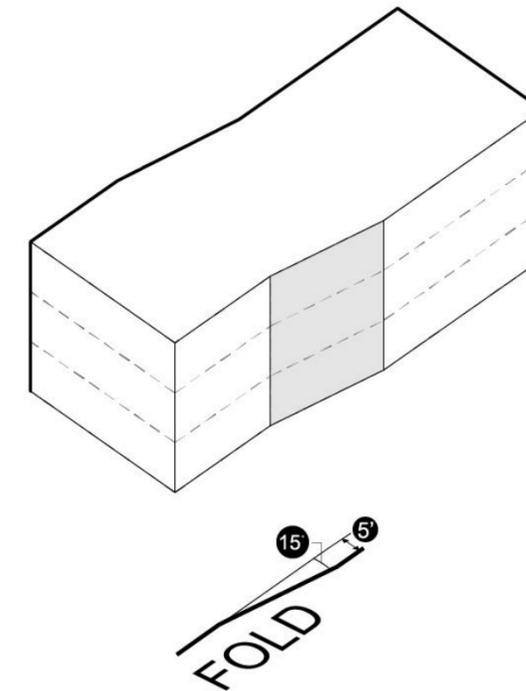
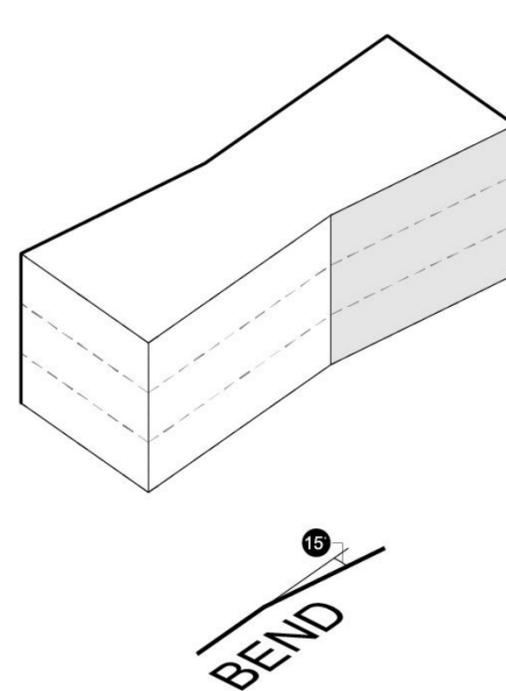
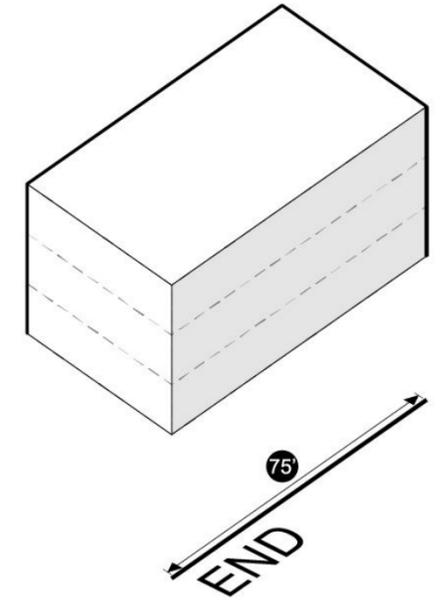
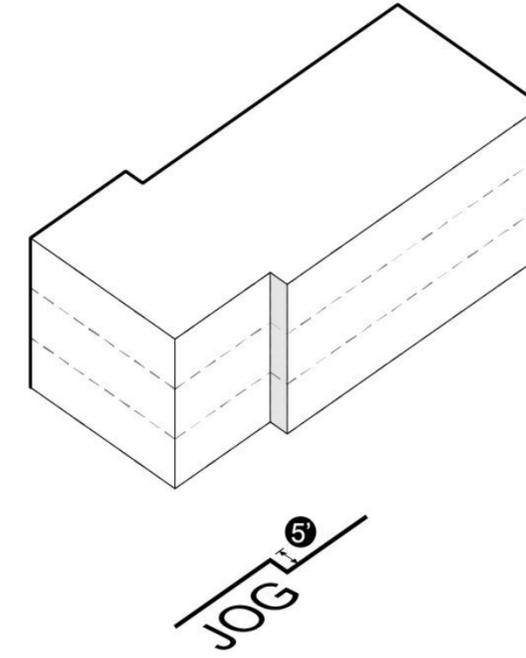
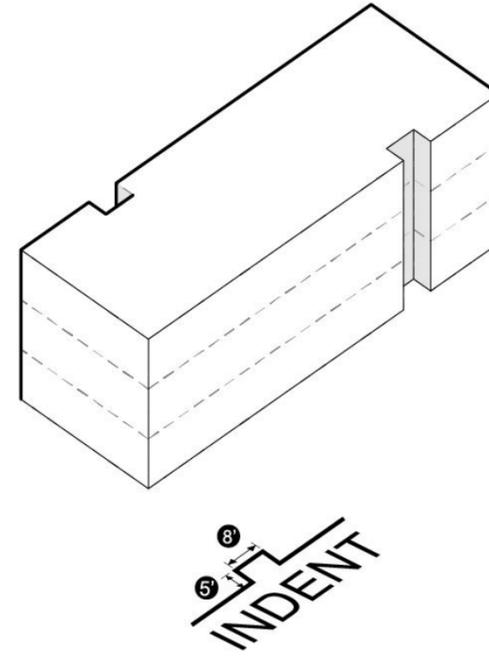
Design Standards

Maximum Facade Length
75 feet

Minimum Break
5 feet x 8 feet

Standards might include:

- Dimensional requirements for facade breaks
- Preventative measures to stop too many facade breaks or materials



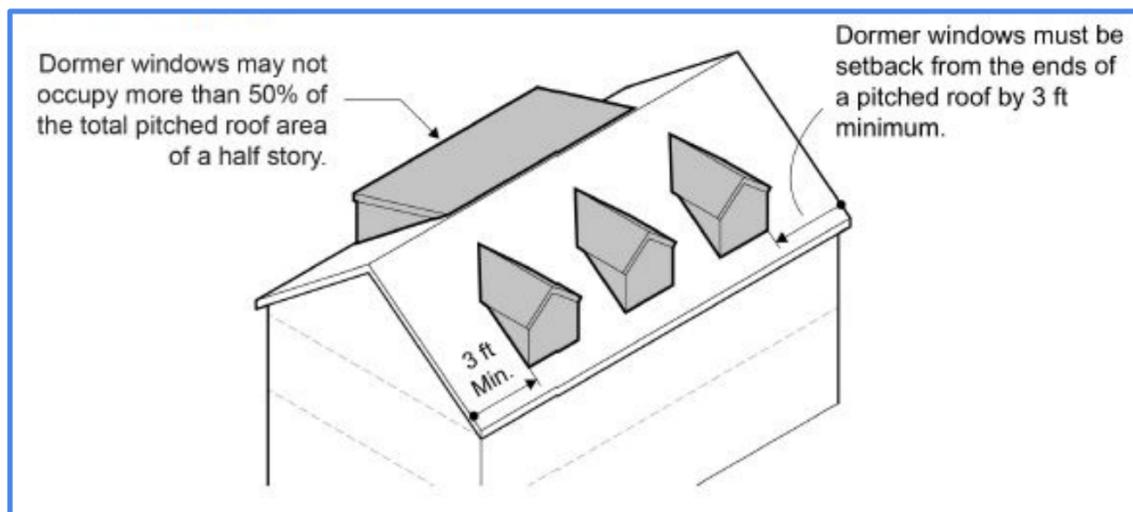
Roof Form

Design Standards

Development in any of the districts can have either a pitched roof or a flat roof.

Standards include:

- **Pitched Roof:**
 - Maximum slope for roof pitch
 - Maximum height for the knee wall
 - Dormer requirements
- **Flat Roof:**
 - Minimum step-back for top floor



Dormer Rules

18 ft

Pitched Roof: Max height to the top of highest roof beam above

12 ft

Flat Roof: Max height to the top of highest roof beam above

2 ft

max height rafter intersect wall

0 ft

Floor Level

14:12 maximum slope

49°

7 ft min
for flat roof option

7 ft min
for flat roof option

Parking Requirements

Design Standards

Parking Minimum

(can be reduced by Special Permit):

1.0 spaces / residential unit

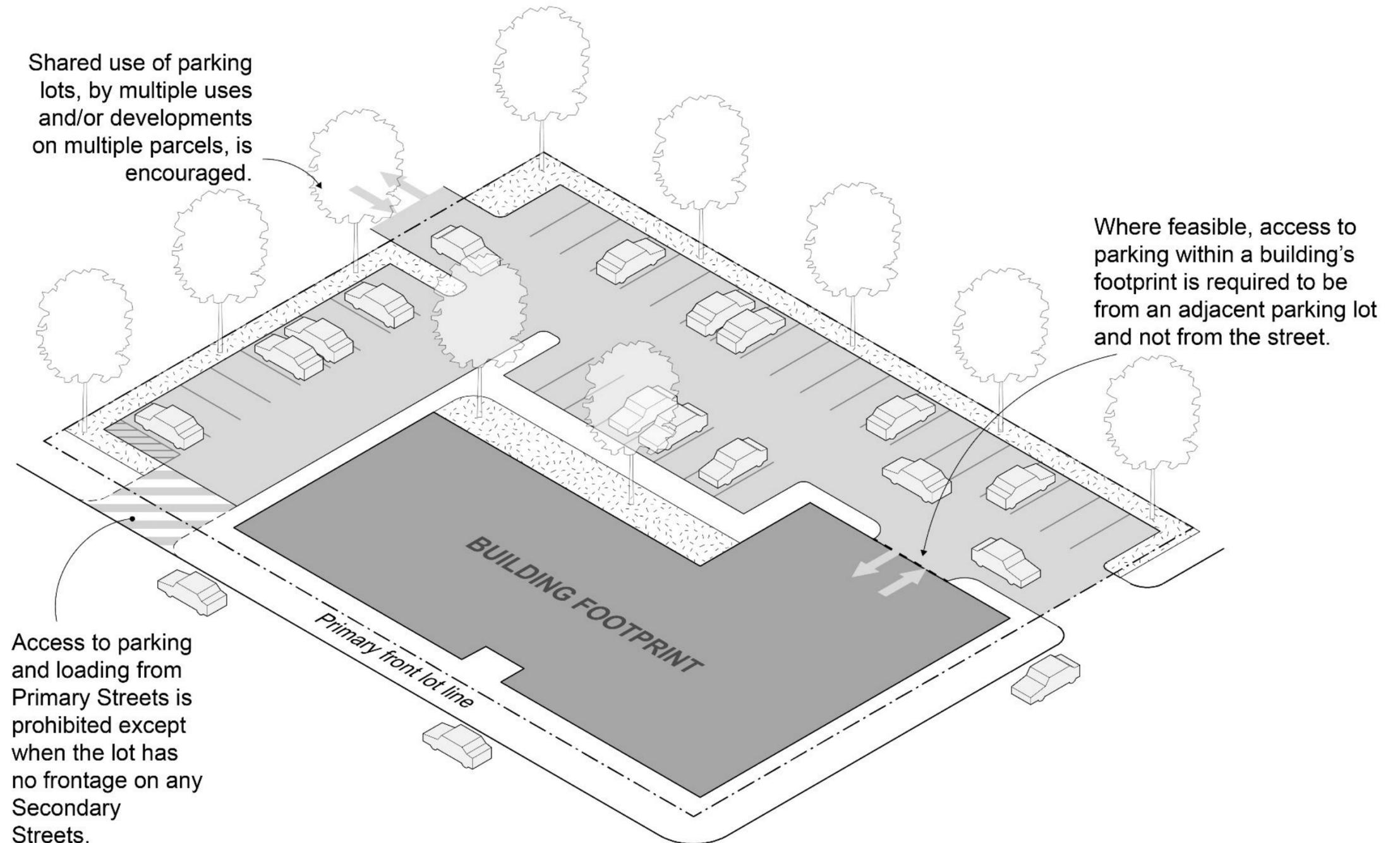
Parking Maximum

(can be increased for developments providing public/shared parking):

2.0 spaces / residential unit

Standards include:

- Parking access location requirements
- Curb cut dimensions and location requirements
- Parking placement and screening requirements
- Bicycle parking requirements



Testfits & Visualizations

Based upon real sites

Parcel Selection / Soft Sites Study

Central
35,900 sf

Address: 22-28 Langley Rd
Parcel Size: L
Zone: BU1
Owner: Private
Land Use: 1-story drug store, vacant



Peripheral
10,000 sf

Address: 1296-1298 Centre St
Parcel Size: M
Zone: BU1
Owner: Private
Land Use: 1-story toy store and gym



Edge
6,700 sf

Address: 1359 Centre St
Parcel Size: S
Zone: BU2
Owner: Private
Land Use: 1-2 story insurance office



Peripheral
18,000 sf

Address: 1296-1298 Centre St & Cypress St
Parcel Size: M
Zone: BU1
Owner: Private and Public
Land Use: 1-story retail and parking lot



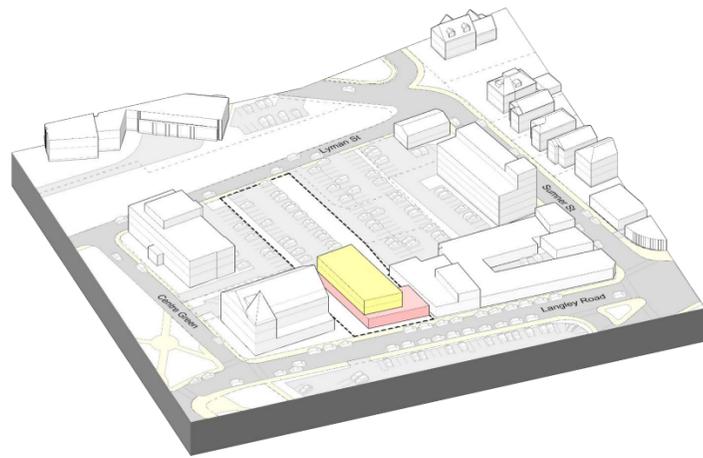
Edge
17,700 sf

Address: 1359 Centre St & 1365 Centre St
Parcel Size: M
Zone: BU2
Owner: Private
Land Use: 1-2 story gas station and offices

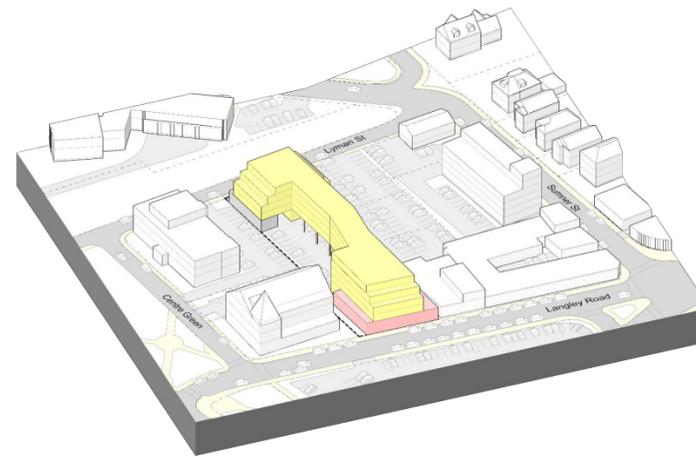


Soft Sites Study

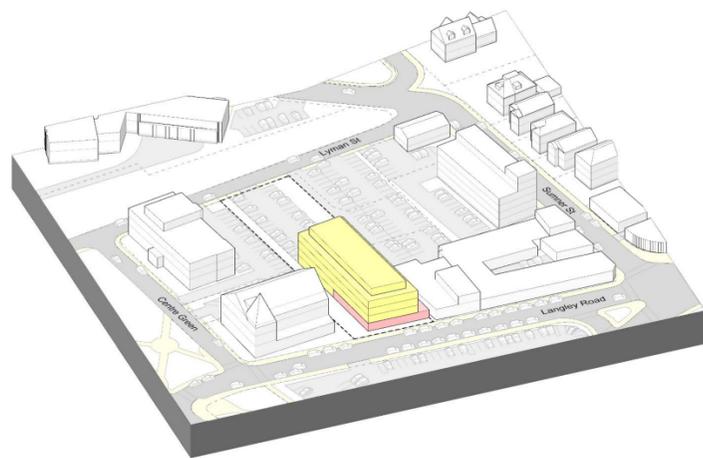
Existing As-of-Right



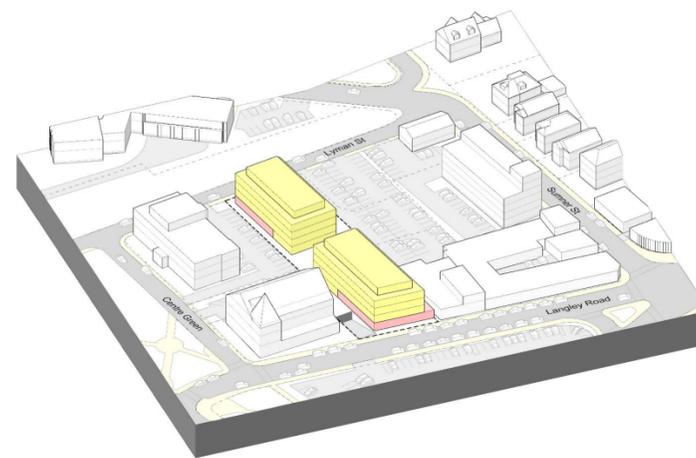
Existing Special Permit



Proposed Zoning w/ Surface Parking



Proposed Zoning w/ Underground Parking



Regulations	VC3	Test Fit Count
FAR (max)	2.5	1.36
Height (max)	4.5 stories; 69'	4.5 stories; 56'
Building footprint (max)	15,000 sf	12,950 sf
Lot area (max)	¾ acre (32,670 sf)	35,000 sf
Number of units		34
Area Retail		7,370 sf
Lot Frontage (min)	75%	77%
Setback: Front	0' -10'	10'
Setback: Side (min)	0' if abutting bldg with party wall. 15' if abutting residential. Otherwise 10'.	0' - 24'
Setback: Rear (min)	15' if abutting residential. Otherwise 10'.	163'
Parking: Retail	Exempt for ground floor commercial	none
Parking: Multi-family	1 per unit	34

Retail
 Residential

Form Based Approach

The figures below represent proposed by-right zoning allowances for new construction

MRT*

2.5 Stories

40 Feet tall, max.

1,500 SF, max. Footprint

Residential development allowed



VC1

2.5 Stories

45 Feet tall, max.

4,000 SF, max. footprint

Residential & Limited Retail development allowed



VC2

3.5 Stories

62 Feet tall, max.

10,000 SF, max. footprint

Mixed Use/Commercial, & Residential development allowed



VC3

4.5 Stories

75 Feet tall, max.

15,000 SF, max. footprint

Mixed Use/Commercial, & Residential development allowed



* MRT metrics may be revised based on financial feasibility and urban form studies

Street Level Illustrations



Existing Street View

Existing Context

Uses: single-story small retail; two-story bank; three-story function hall with ground story retail



Street Level Illustrations

Design Standards

1. Building Placement:

When development occurs on any lot abutting a sidewalk that is <12' in total width, inclusive of the Furnishing Zone, buildings must be set back an additional distance such that a paved area meeting City sidewalk standards of at least 12' width is provided, inclusive of the Furnishing Zone.

2. Building Entrances:

Principal entrances must either be recessed from the plane of the facade, or have a projecting Awning or Canopy, to signal building entry and provide adequate protection from the elements.

3. Architectural Features: Canopy

A wall-mounted structure that provides shade and weather protection over a storefront or building entrance.

4. Fenestration:

For ground story fenestration, glazing must have a min. 60% Visible Light Transmittance (VLT) and no more than 15% Visible Light Reflectance (VLR) as indicated by the manufacturer.

5. Number of Stories:

A pitched roof may be composed of roof planes with different slopes. The slope of any pitch must not be greater than 14:12 (49 degrees). The roof rafters must intersect the wall plate or top of wall frame of the exterior walls at a height no more than 2' above the finished floor of the half-story.

6. Half-Story Step-Back:

A required distance that certain upper stories of a building must be recessed from the plane of the facade of the stories below.

7. Parking Lot Access:

Access to parking lots and structures parallel to the Front Elevation is prohibited when access along another lot line is available.



Student Work

Northeastern University
Student Proposal by
Gabi and Ellie

Northeastern University Framingham MBTA Communities Zoning Proposal

Gabi Danitz + Ellie Garner

Walkshed

- 0.25 mile
- 0.5 mile
- Traffic Lights



Downtown Framingham

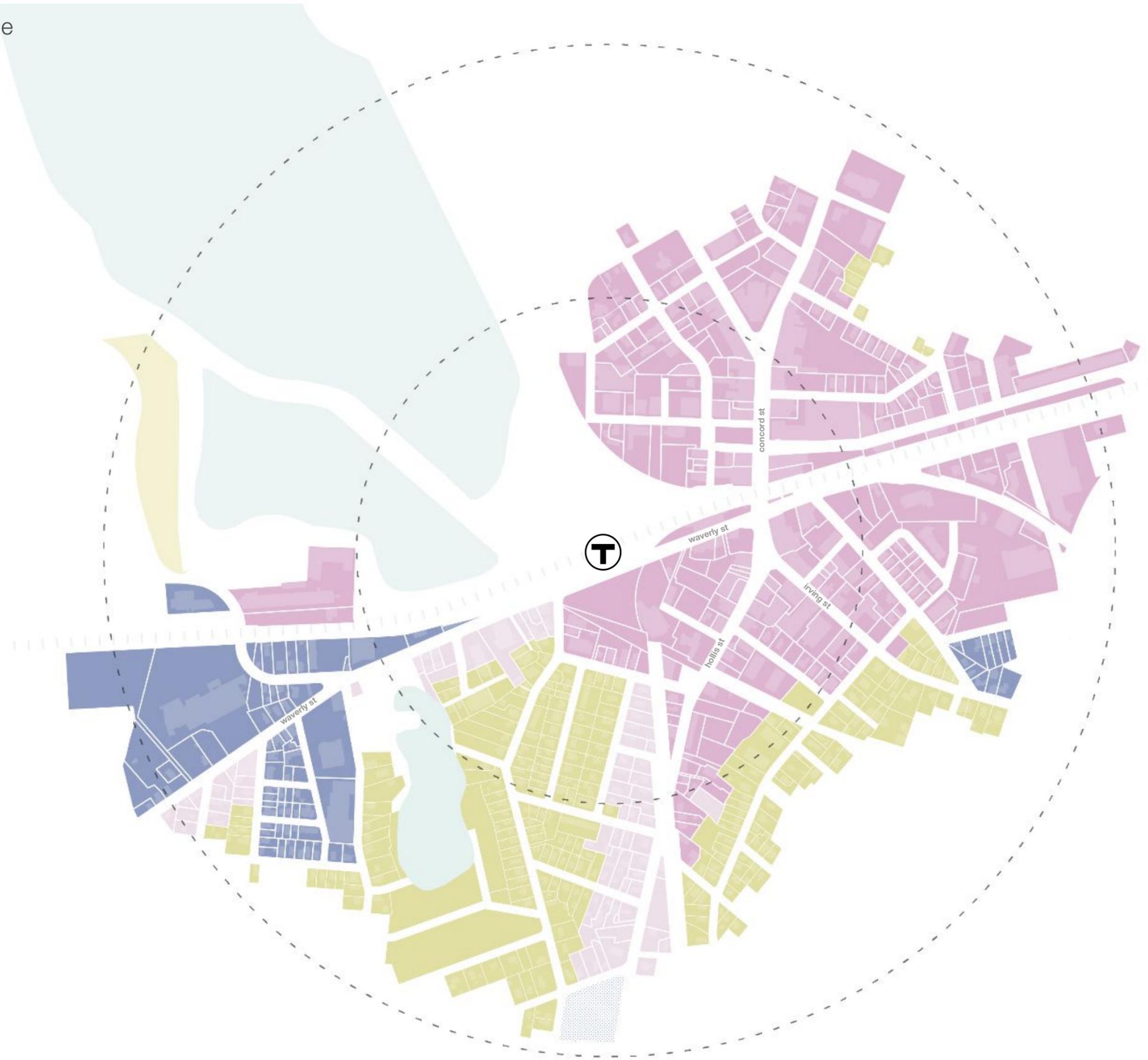


Stepping Up



Existing Zoning in Walkshed

- CB** - Central Business
- B** - Business
- M** - Manufacturing
- G** - General Residential



Central Business District Existing Zoning

(Parcels >20,000 SF)

	residential	other/mixed use
front setback	10	10
rear/side setback	0	0
min lot area	20,000	20,000
min frontage	0	0
landscaped open space surface ratio	20%	5%
min height	25	-
min stories	2	-
max height	70	70
max stories	6	6
max lot coverage	80%	80%
max FAR	3	3

- Density is driven by parking + height
- FAR and lot coverage are impossible to hit

Parking Ratios:

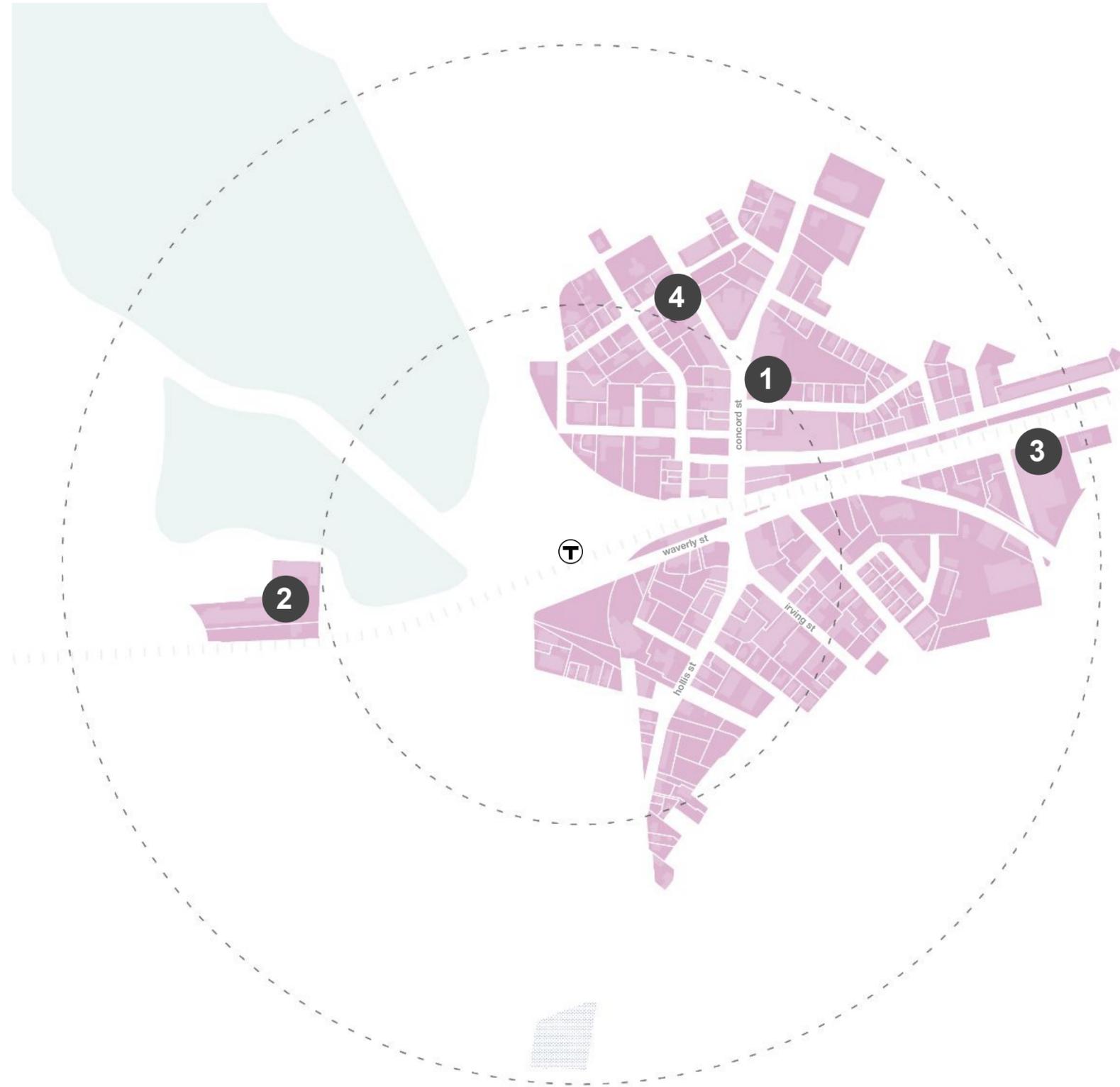
1 per DU for Studio/1 bed

2 per DU for 2 bed+

CB Developments

Framingham's zoning already allows for dense multi-family housing

Zoning revisions should continue enabling this density while encouraging developments with better urban scales, open spaces, etc.



1. 55 concord st - 197 units



2. 59 Fountain st - 258 units

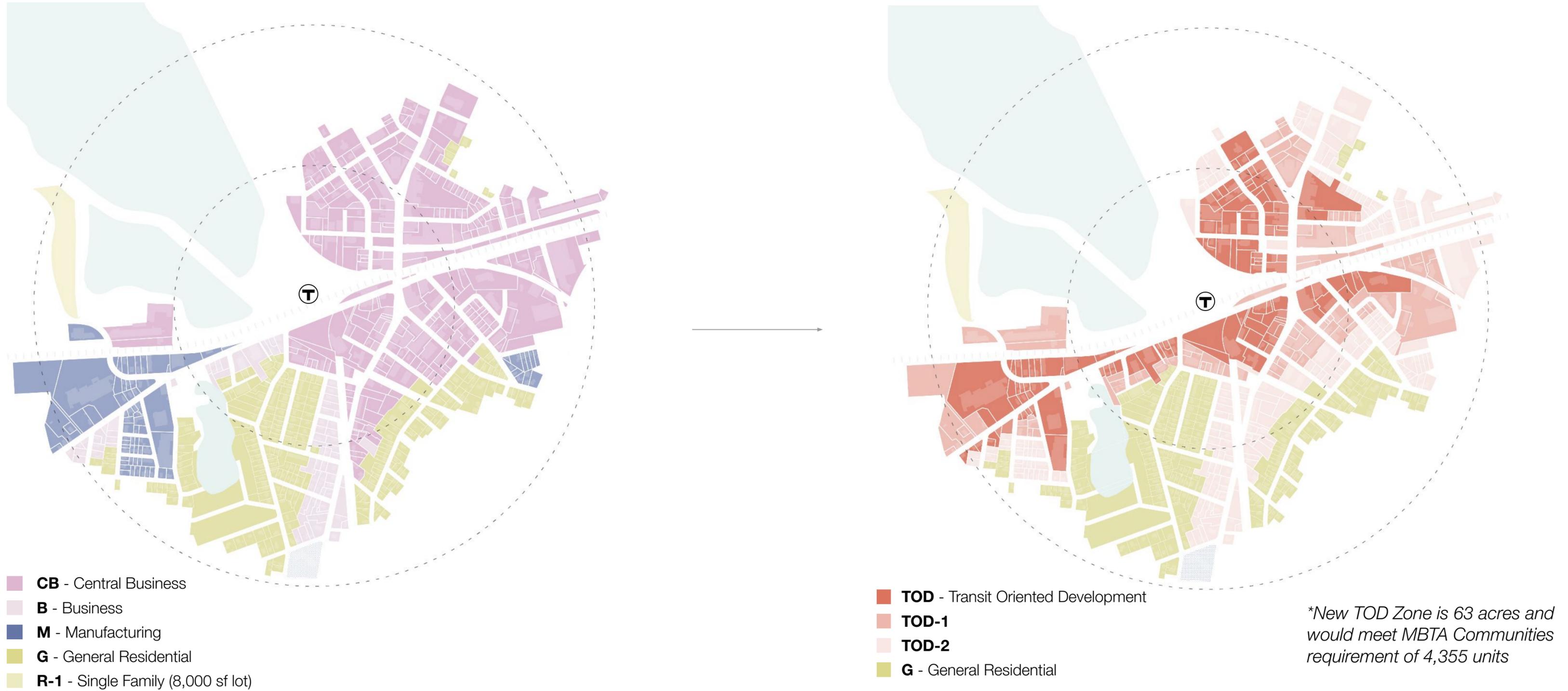


3. 266 Waverly st - 270 units



4. 54 Union ave - 75 units

Conceptual New MBTA Zone + Adjustments



Encouraging Development Along Waverly St



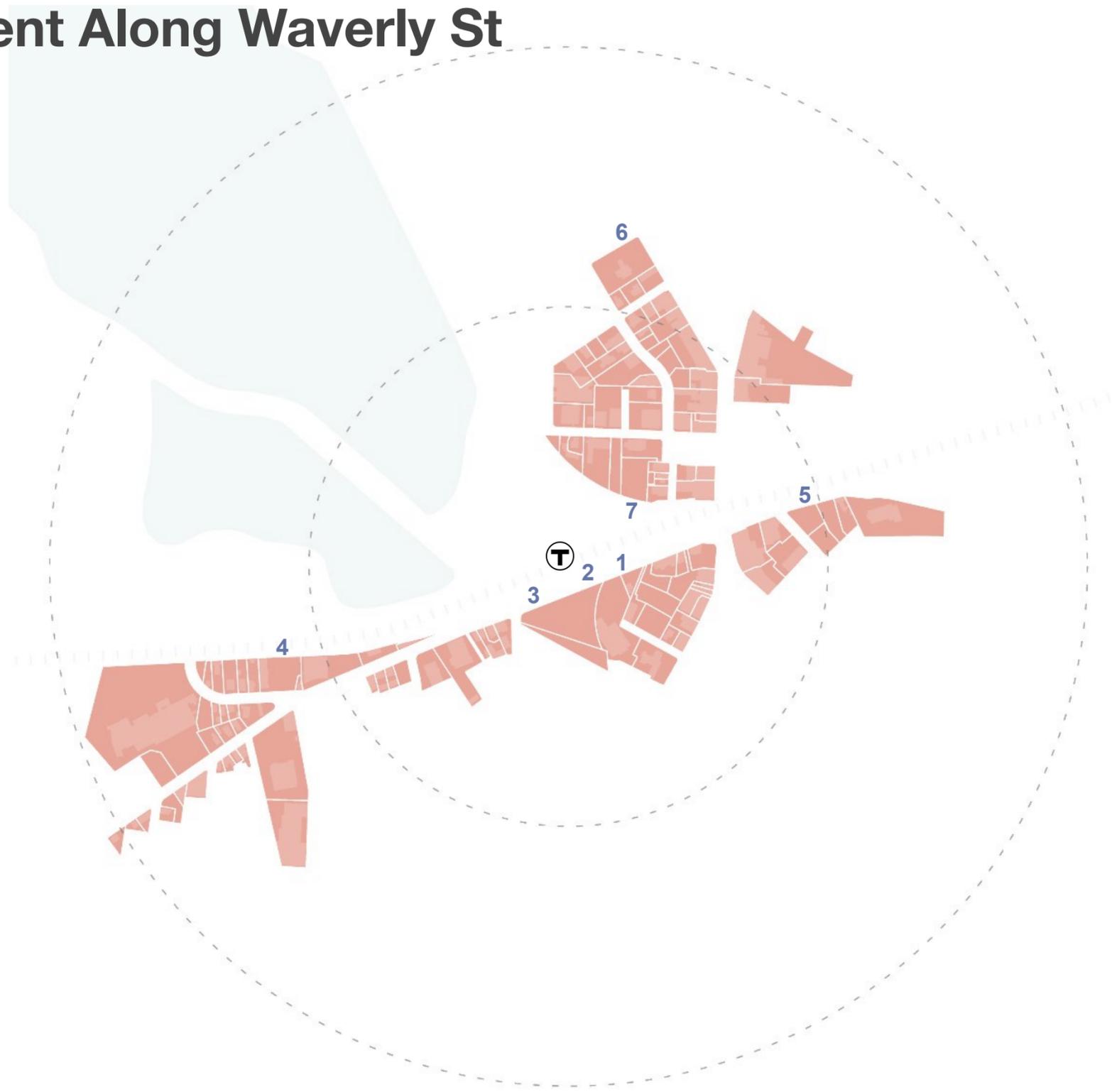
1



2



3



4



5



6



7



Draft New Zoning

2 Requiring Usable Public Open Space

1 Breaking Up Massing

3 Encouraging Interesting Building Forms

4 Pushing Density Where Appropriate

FRAMINGHAM ZONING REGULATIONS
New Transit Oriented Development District

SETBACKS

- **SIDE/REAR:** 10 ft
 - Parking can be located 5' from side/rear lot lines
 - 5' parking setback must be a landscaped buffer with shade trees planted every 30'
- **FRONT:** 10 ft
 - Front setback should include a minimum 5' landscaped buffer strip with shade trees planted every 30' or a total of 1 shade tree per 150 sf.
 - Commercial ground floors should be set back 15 ft from the lot line. Upper residential floors may be set back 10' from lot line and extend 5' out over ground floor, creating retail threshold zone.
 - Parking may not be placed in front setback.

OPEN SPACE

- For parcels with frontage 215 ft or more* along one street,
 - 5+ story buildings must have a 50ft open space
 - 4 story buildings must have a 40ft open space
 - 3 story or lower buildings must have a 30ft open space
- All open spaces must be at least 30' deep from the front setback
 - This requirement also applies to parcels with multiple frontages and a primary frontage of 200 ft of more (considering that driveway access can be located on a secondary frontage)
 - The open space must be located centrally between building masses, and may not be located along the side setback
 - The purpose of this rule is to require, for large developments, the creation of a usable open space that is connected to the public realm
 - A drive aisle may occupy a portion of the open space if parking and loading areas cannot be accessed from the side or rear lot lines
- For parcels with frontage less than 215 ft along one street (200 ft if multiple frontages), either 20 ft or 20% of the frontage length must be devoted to open space
- The open spaces must be at minimum 80% pervious landscaped surface and include at minimum 1 shade tree per 150sf
- Consideration: Increasing greenspace beyond minimum requirement could result in a height bonus or reduction in parking requirements

DENSITY

- Maximum allowable lot coverage: 35%
- Minimum required Landscaped Open Space: 30%
- Maximum allowable single building footprint: 20,000 SF
 - For any building levels that exceed 6 stories / 70 ft, the maximum footprint must shrink to no larger than 10,000 SF
- Multiple primary massings may be developed on an individual parcel, as long as lot coverage does not exceed 35%
 - At all times, building massings and building wings must be located at a minimum distance apart depending on building height

- 4 stories and above: 40'
- 3 stories: 30'
- 2 stories: 20'
- 1 story: 10'

FACADES

- For every 100 ft of facade length, there must be either a minimum 10x10 jog in the plane or a minimum 10' recess or offset.
- For every 175' of linear facade length (INCLUDING jogs, recesses, and offsets) the building massing must either terminate or have a turn minimum of 30 degrees.

HEIGHT

- Residential allowable floor to floor: 10' - 12'
- Commercial allowable floor to floor: 12' - 16'
- Maximum allowable height: 5.5 stories (6 stories with top floor stepback) / 65'
 - For large parcels, height may extend to 12 stories or 135' if the entirety of the floorplates that exceed 6 stories are located at least 75 ft from the lot line
- Parcels that are located within 300' of a residential zone must abide with special height requirements:
 - Within 50' of residential zone → 50'
 - Within 50' - 200' of residential zone → 60'
 - Within 200' - 300' of residential zone → 70'

ROOF FORM

- For buildings above 3 stories, the highest floor must be either stepback 7' from the floor below or have a pitched roof that begins at a maximum of 2' above the floorplate.
 - 7' stepback allows for private terraces for top-floor units
- For buildings 3 stories and below, the maximum allowable height may be increased by 5' if a pitched roof and/or dormers are utilized

PARKING

- Residential Parking ratio: 0.75
 - Parking must have a permeable, vegetated buffer zone of 2' between aisles and 5' along lot lines
 - Vegetated buffer zones must include 1 tree per 30' of length
- Residential Bike parking ratio: 1.0
- Ground floor commercial parking ratio: 1 space per 1000 sf of commercial space
- Parking garages may not be located within 100' of frontage

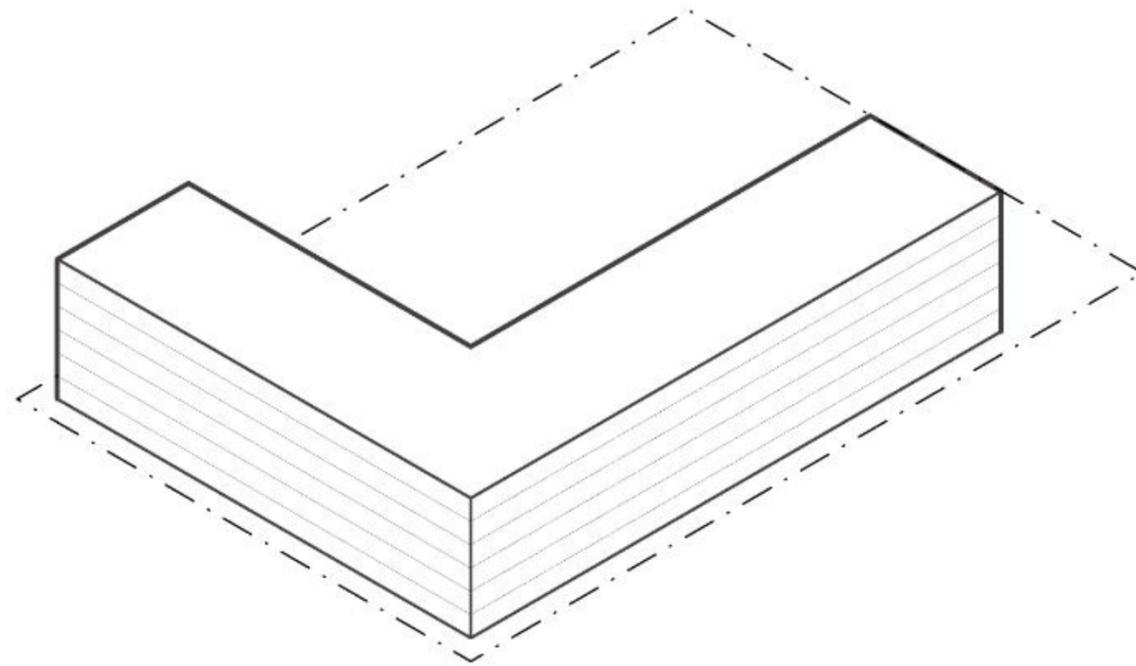
PRIVATE OPEN SPACE

- All units must have at least 36 sf (6x6) of open space and may extend into setbacks
- Ground floor units: 10' deep x length of unit private terrace

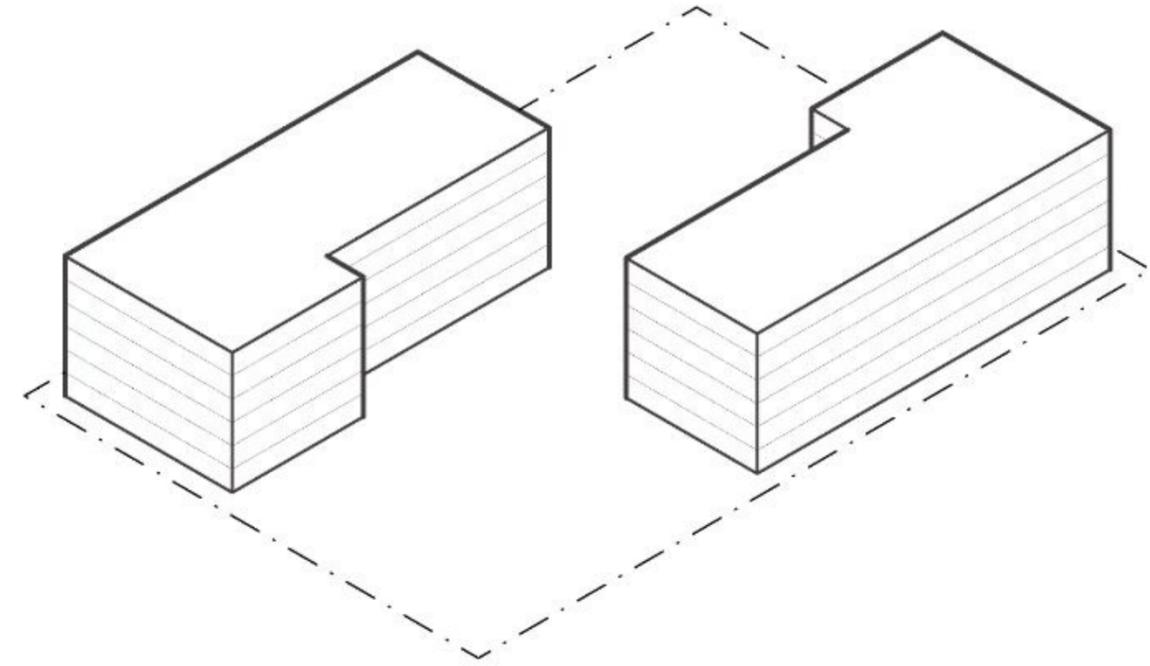
BAY WINDOWS

- Bay windows may extend 3' into setbacks and do not contribute to the allowable floor area

- 1 Max **floorplate of 20,000 SF** with **multiple primary massings** allowed (up to 35% lot coverage)



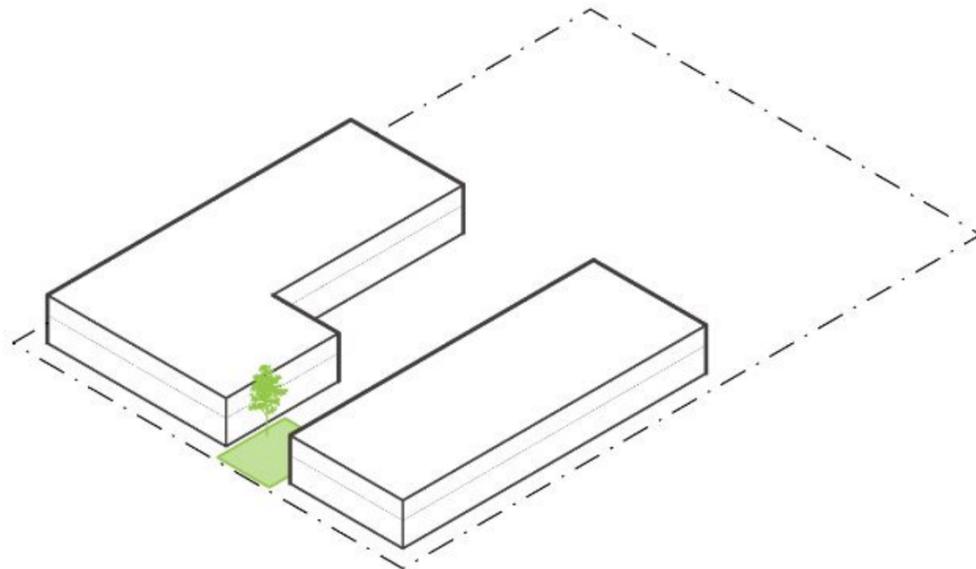
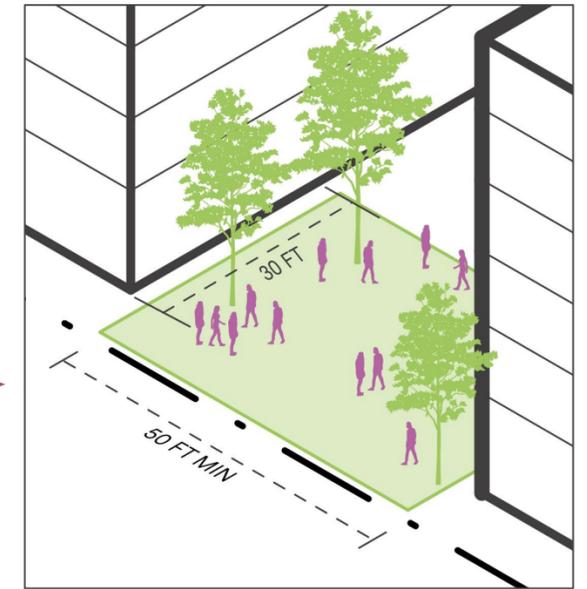
26,000 sf
35% lot coverage



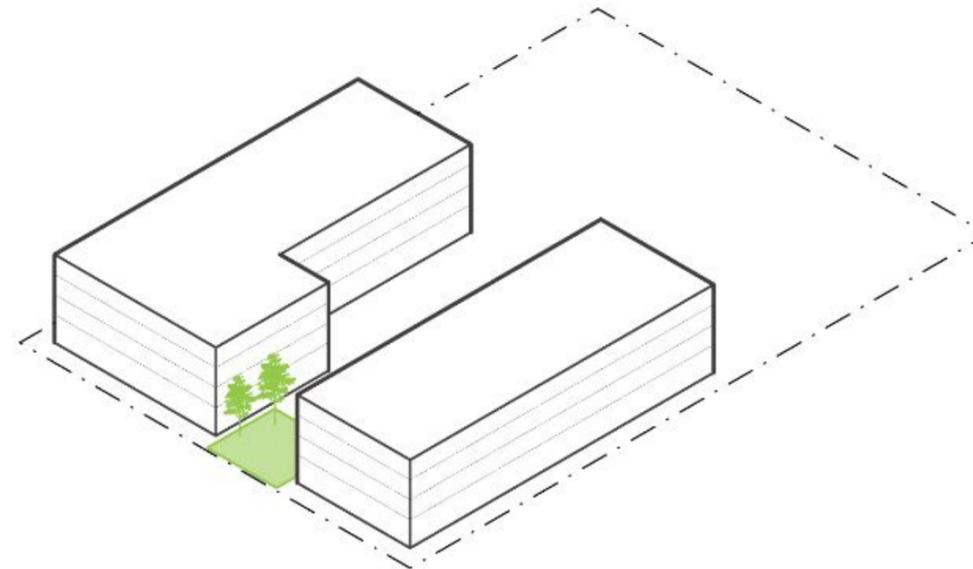
13,000 sf + 13,000 sf
35% lot coverage

2 Required **central open space** along primary frontage (determined by building height)

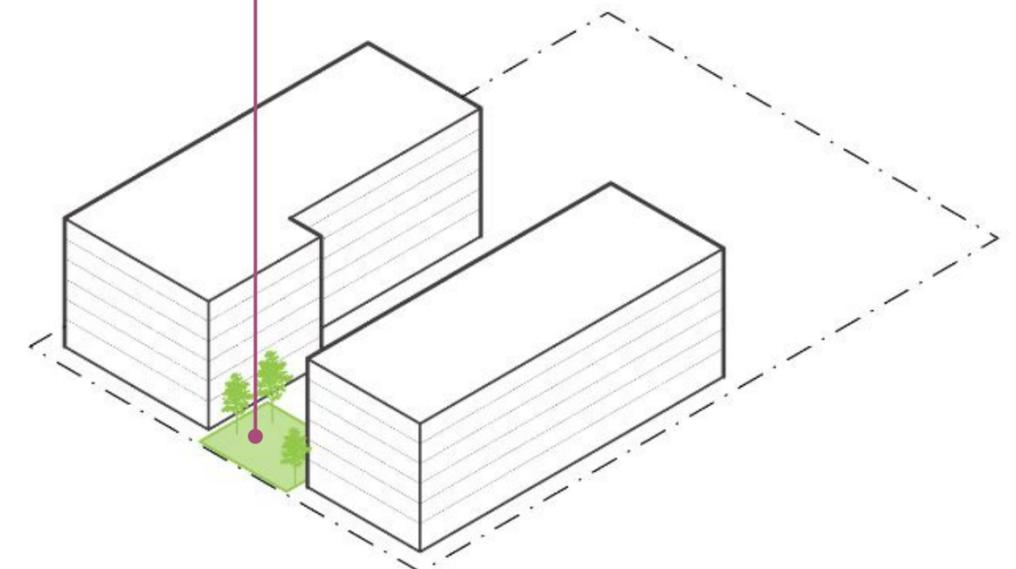
- *min 30' deep from front setback
- *for parcels with min frontage of 215' (200' if multiple frontages)



1-3 Stories
30' min



4 Stories
40' min

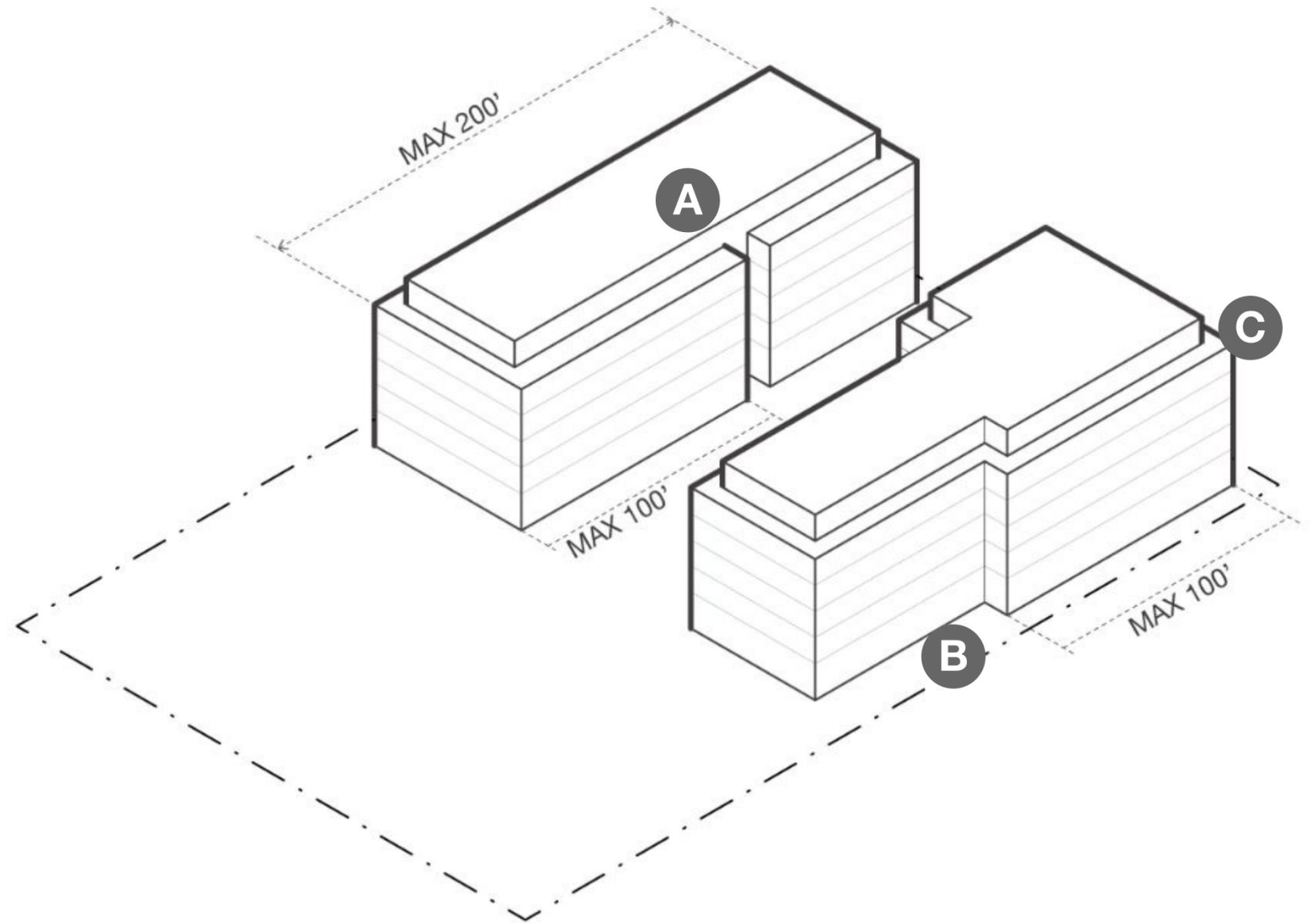


5+ Stories
50' min

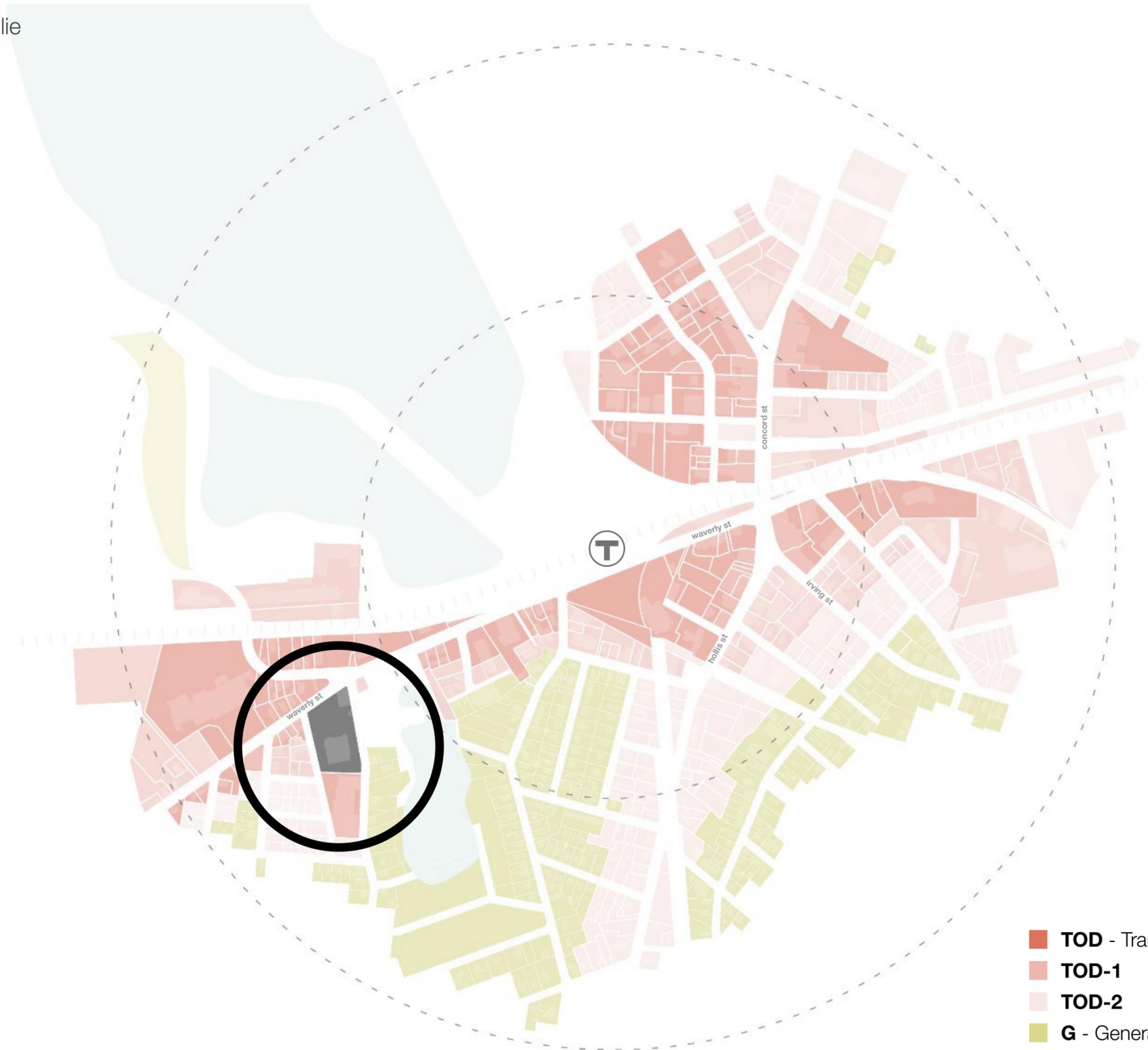
3 Facades must **jog every 100'** and **turn or terminate every 200'**

*Top floor must also be setback 7' or pitched starting 2' above floorplate

- A** **JOG**
in plane, min. 7' x 10'
- B** **RECESS OR OFFSET**
of plane, min. 7'
- C** **FULL TURN**
of building mass, min. 30°



624 Waverly



Allowable Development Under Existing CB Zoning

Parcel Size

2.12 acre

Lot Coverage

35%

GFA

118,742 sf

FAR

1.48

Units

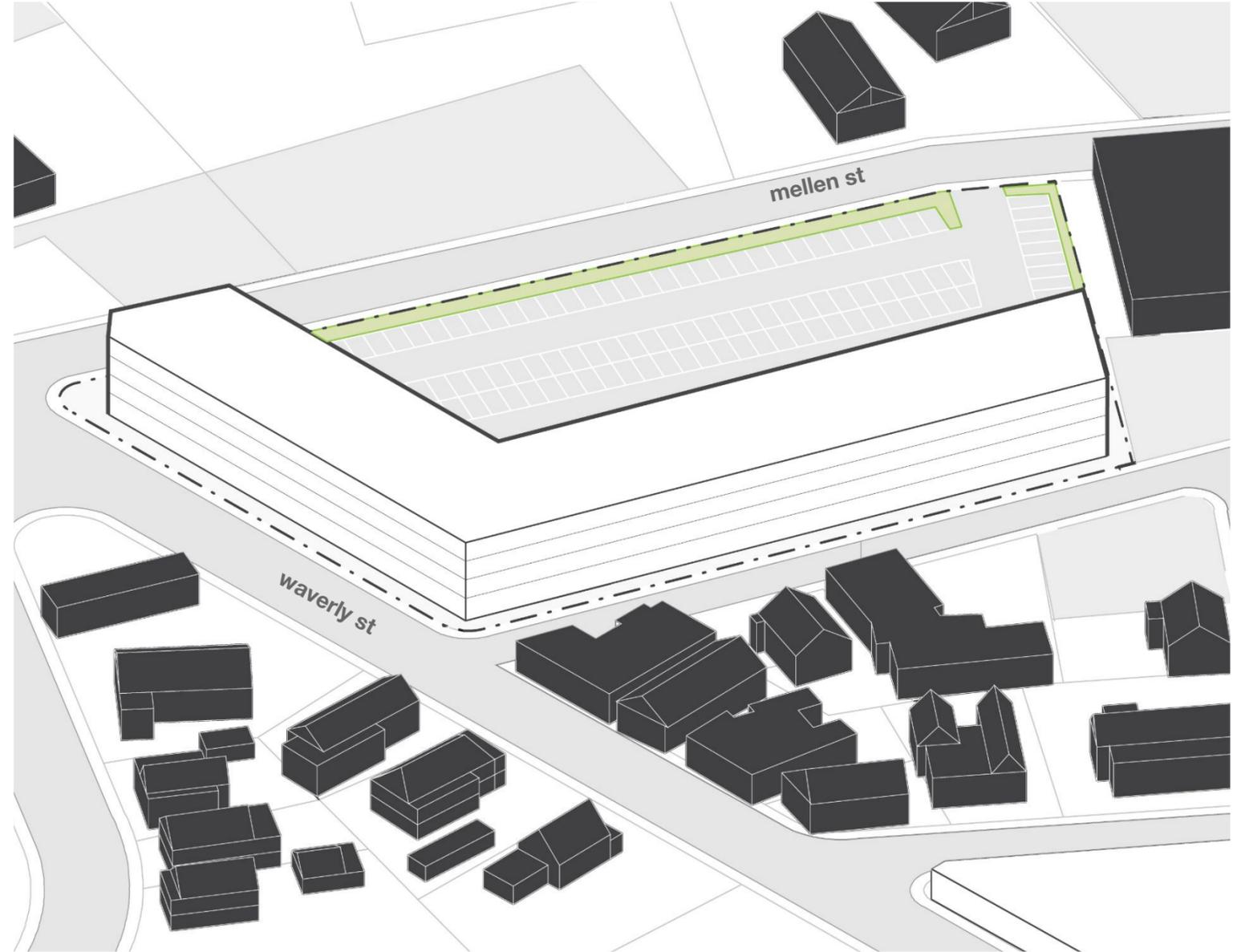
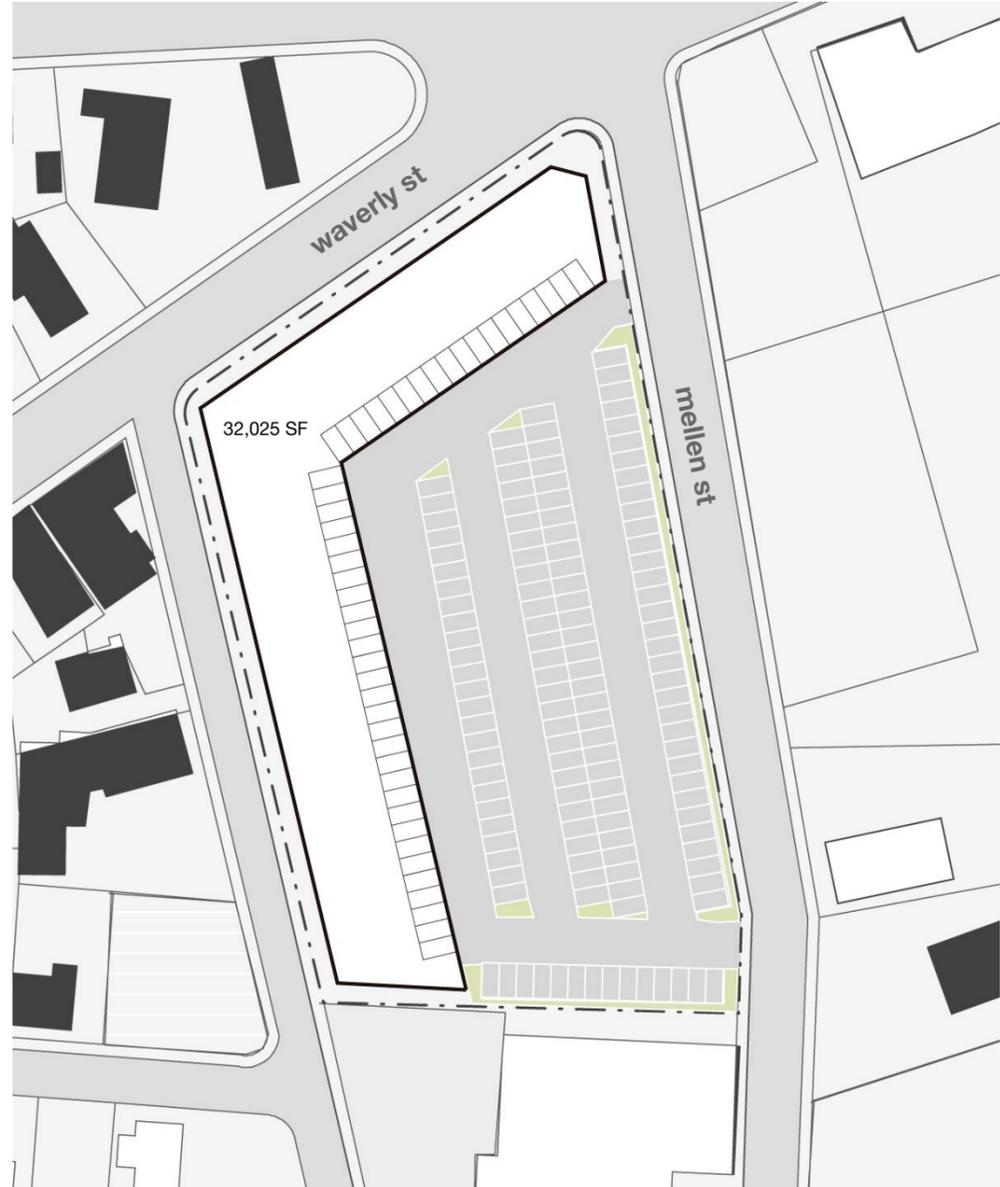
108

DU/Acre

53

Parking Spaces

161



Conceptual New Zoning

Parcel Size

2.12 acre

Lot Coverage

35%

GFA

148,034 sf

FAR

1.60

Units

128

DU/Acre

60

Parking Spaces

111

(96 residential + 15 commercial)



Total footprint: 32,820 SF



Thank You!

