

# Form-Based Zoning for Infill and Corridors

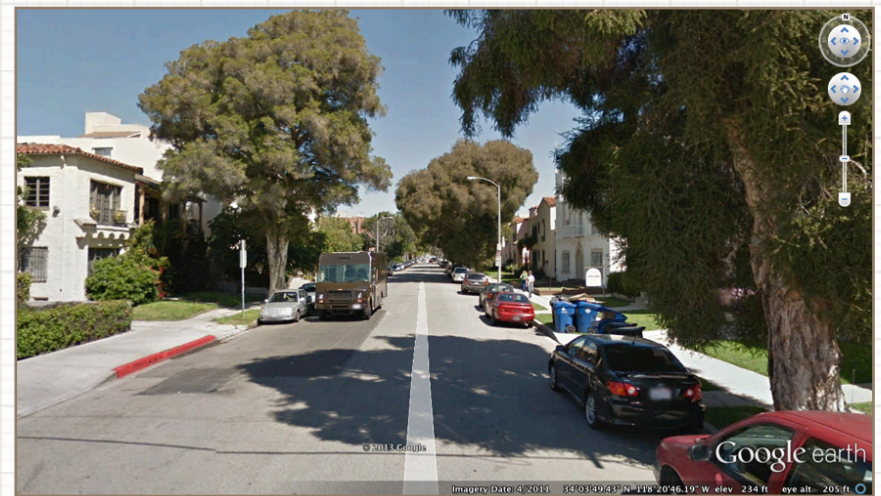
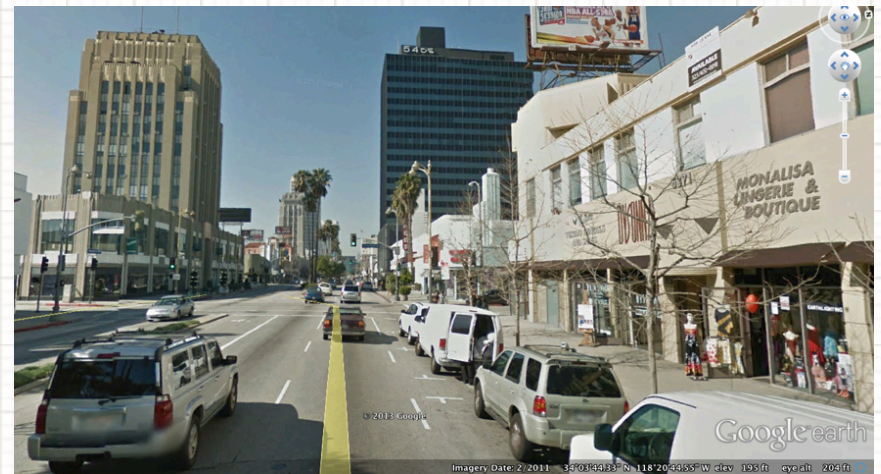


2013 San Diego APA,  
November 1, 2013

Tony Perez

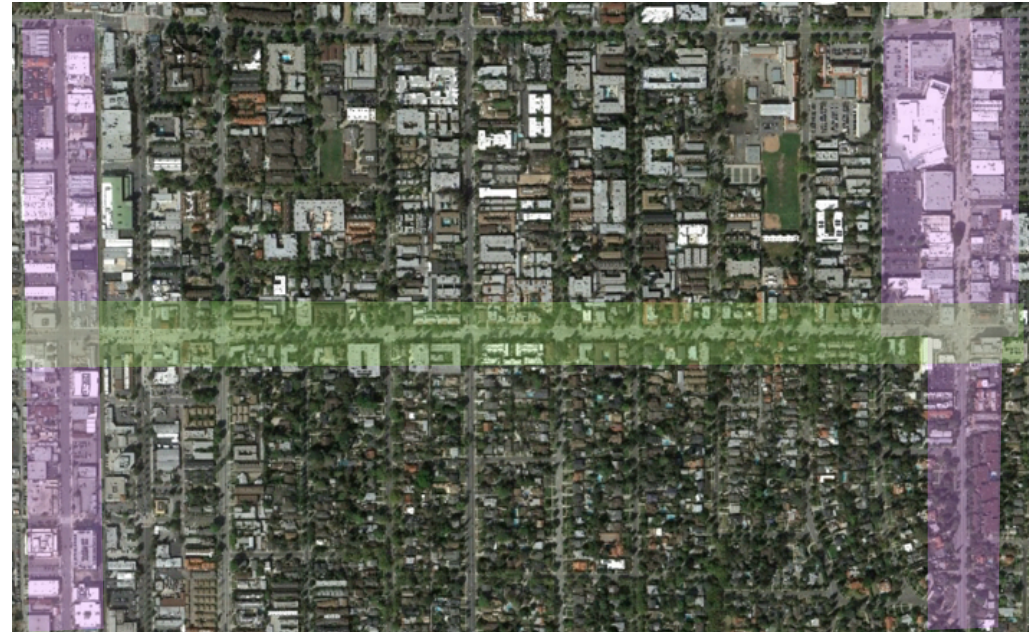
Director of Form-Based Codes,  
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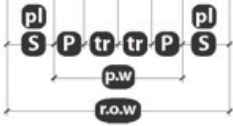
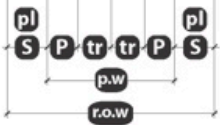
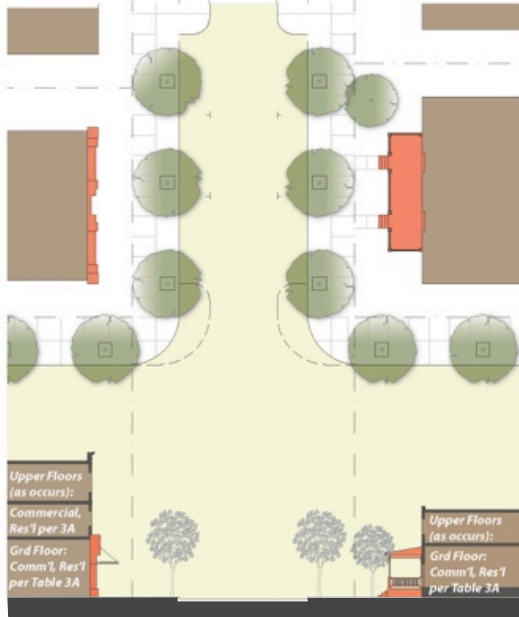
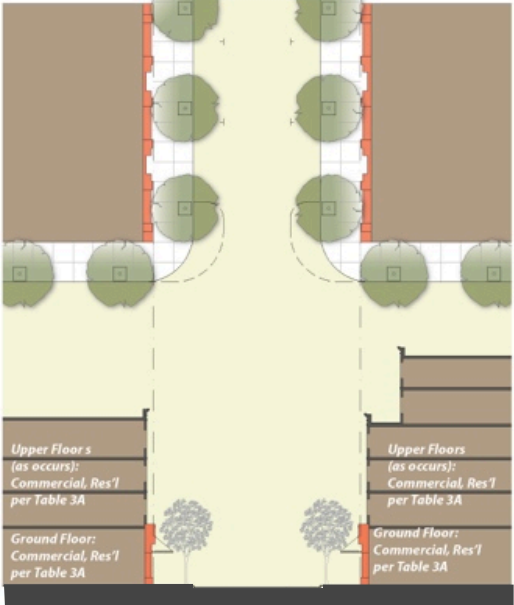
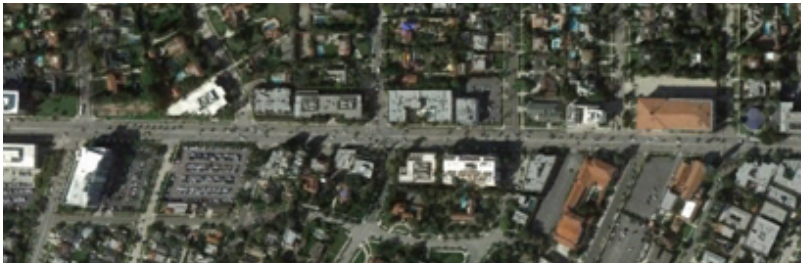


# Corridors are environments along edges of neighds/districts





# Coordinate street side with street segments





But that's not how they're typically planned





# Zoning for the corridor and zoning for the neighborhood





# Zoning for the neighborhood



© 2013 INEGI  
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Imagery Date: 3/2011 34°03'58.76" N 118°23'11.76" W elev 168 ft

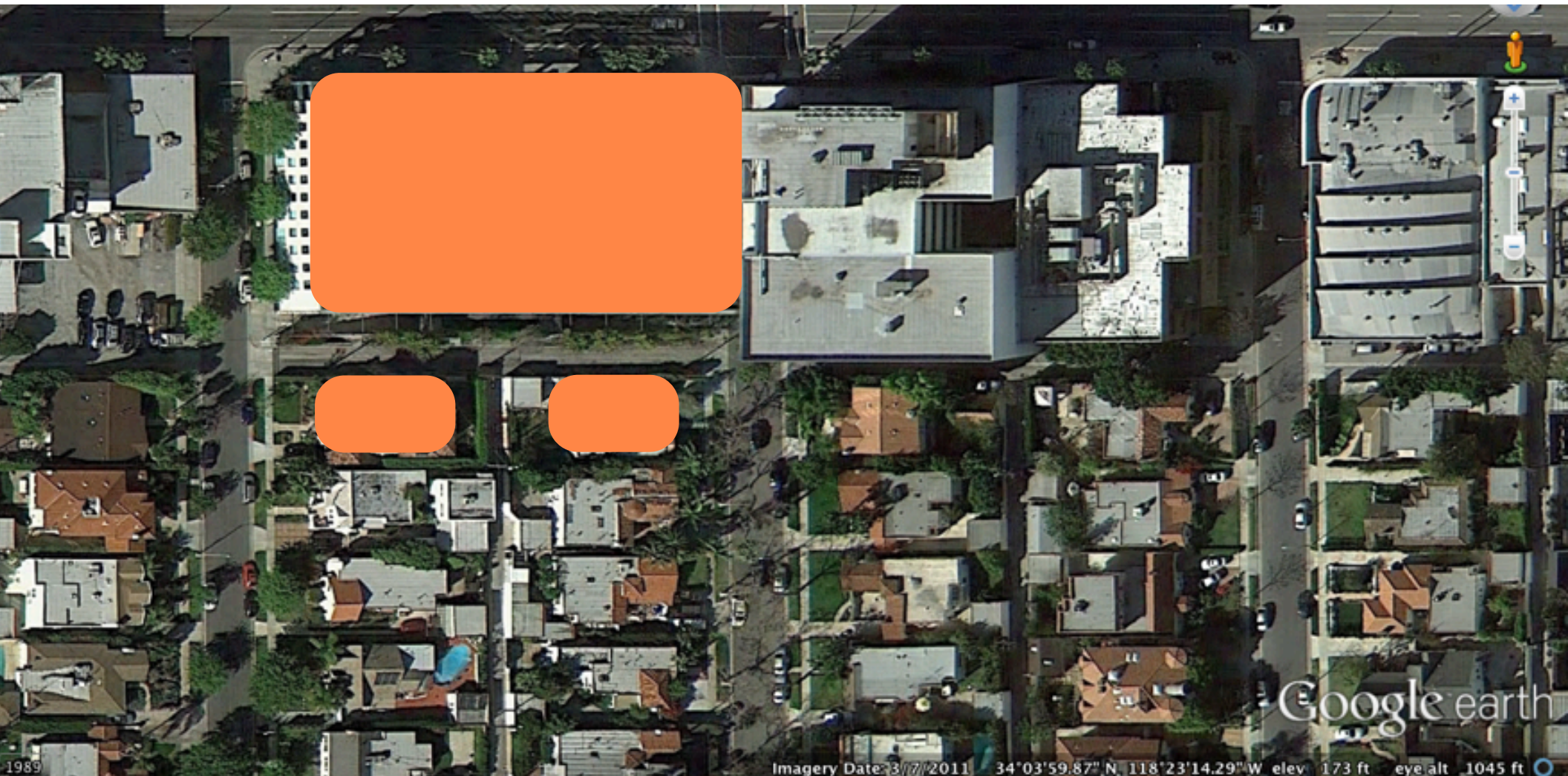


# Zoning for the corridor





# Two different, adjacent environments that affect each other





# Summary of Issue I

## Intense Corridor Devt backs up to Neighborhoods

- Corridor sites have two important sides:
    - **Corridor Side**
    - **Neighborhood Side**
  - What do those two very different sides need?
- 

1



# Density, Setbacks and Height: Compliant





# Compliance needs to include the Pattern as a factor





# What's in common?





# Conventional zoning says they're the same



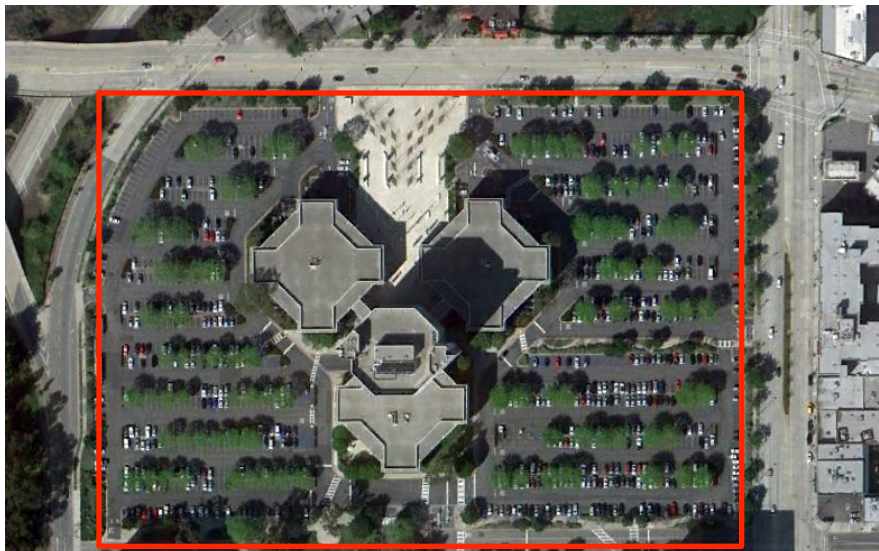
0.60 FAR



0.60 FAR



# They couldn't be more different!



**3 at 3 stories and 1 at 12 stories**

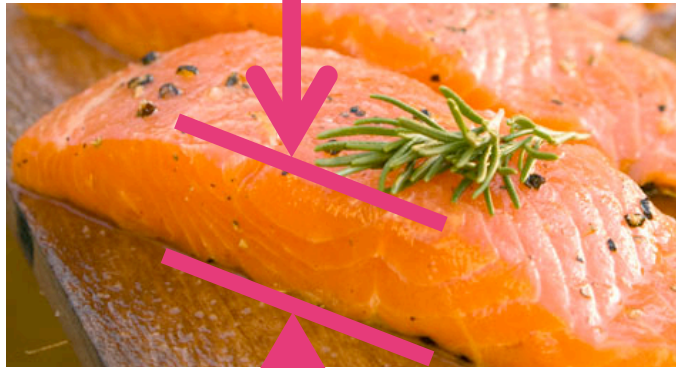


**2 story building on 2/3 of site**



# Would you describe other things this way?

max .75 inches tall

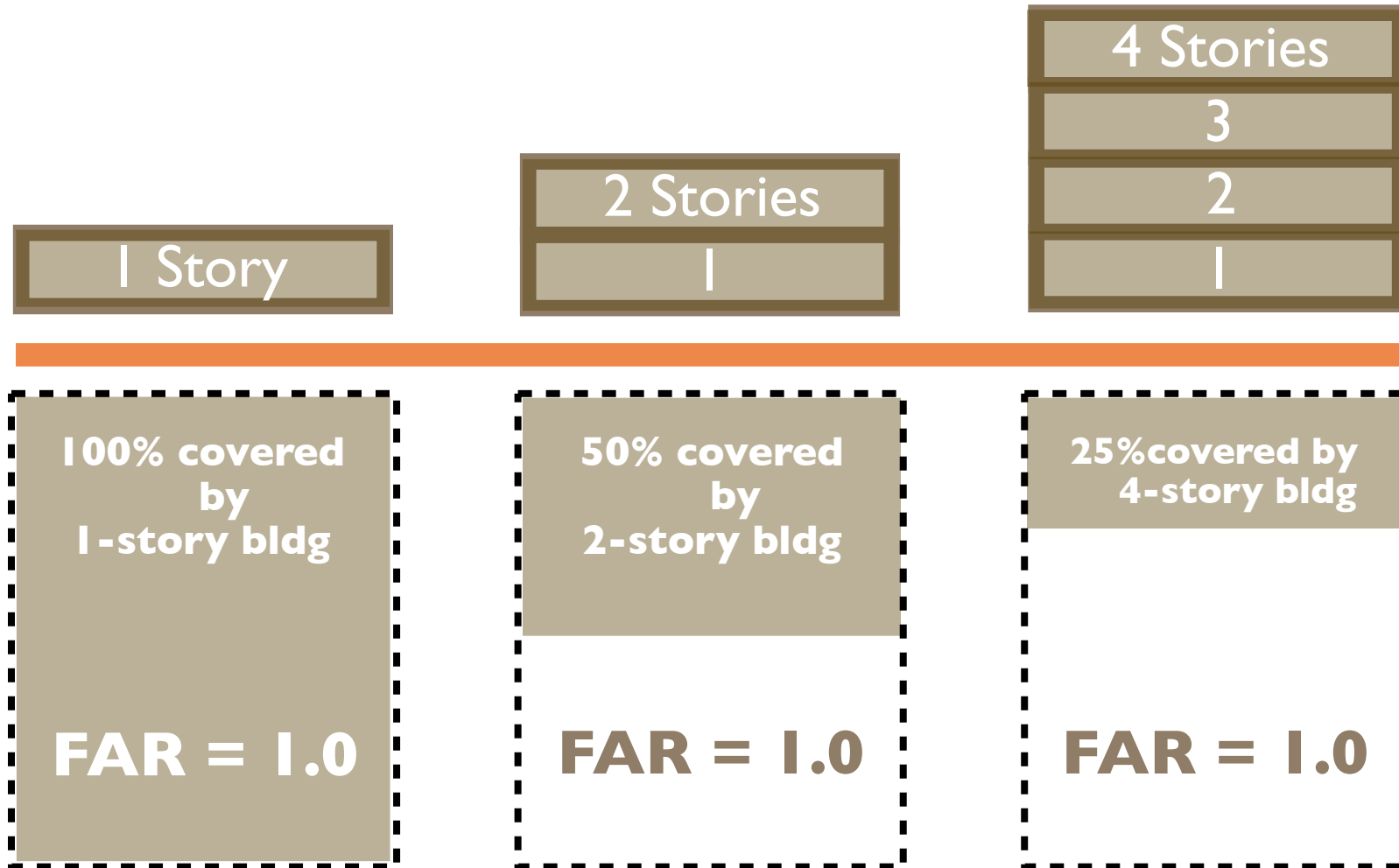


oops!





# F.A.R. a measuring tool



**FAR is a great and fast measuring tool but should not be used to drive design or decision-making: best as a resultant factor**



# Density: another measuring tool

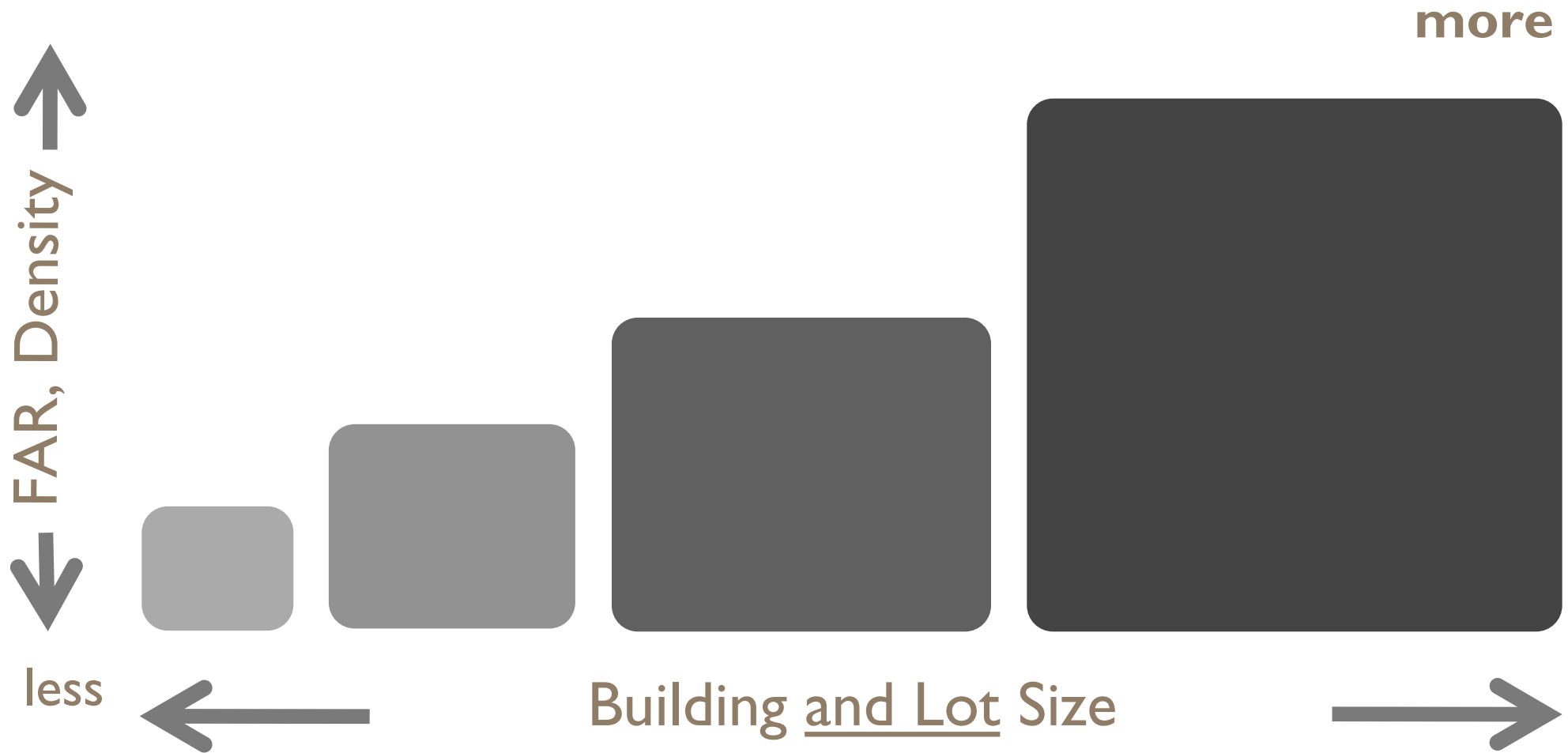
Low

Medium

High



# Realities of FAR and Density



## Summary Issue 2

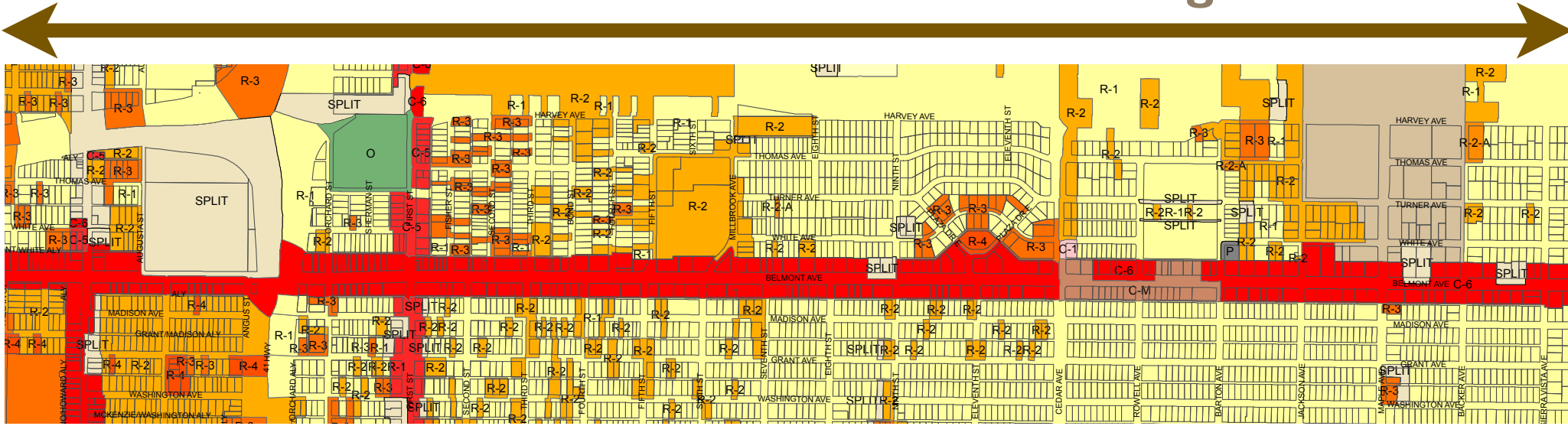
**Standards often unaware of outcomes, not aimed at full compatibility with neighbors**

2

- Avoid FAR, Density as inputs: use only as resultants
  - Identify what you want more of and those factors
-

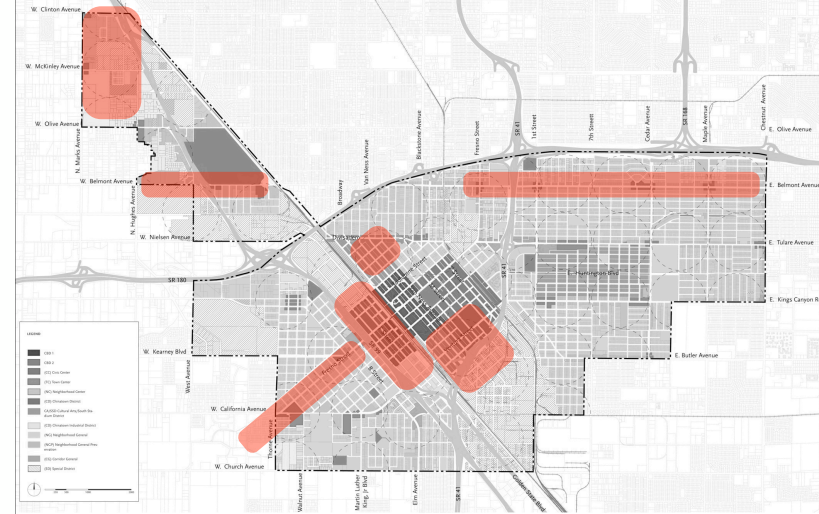
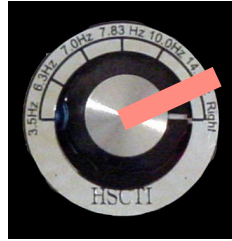


over 2 miles of commercial zoning

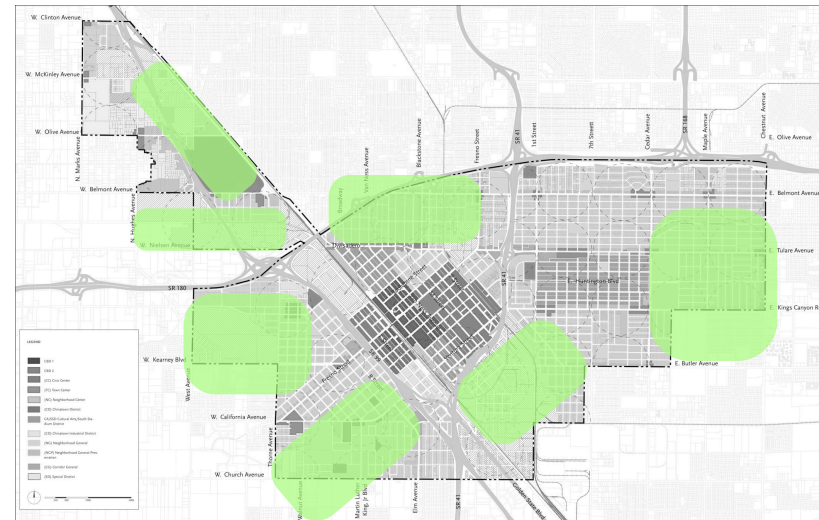


Mapping form-based zones: Hierarchy of places

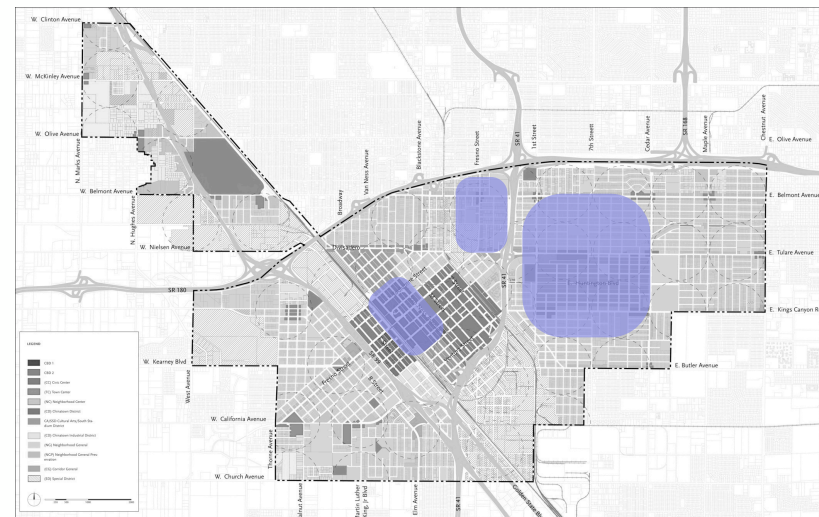
# Regeneration



# Targeted Infill



# Preservation





# Zoning That Sees the Community



# Zoning That Sees the Community





# Zoning That Sees the Community



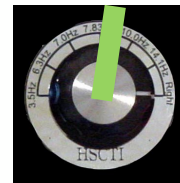




# Dialing in on the range of expectations

Example FBC Approaches and Scenarios				
Degree of Change	Greenfield Neighborhood	Infill Neighborhood	Regeneration Corridor	Preservation Corridor
Level of Expectations	Basic	Moderate	Moderate	High
Regulating Plan	X	X	X	X
Block Standards	X		X	X
Street Standards	X		X	X
Streetscape Standards	X	X	X	X
Civic Space Standards	X			X
Building Placement Standards	X	X	X	X
Parking Placement Standards	X	X	X	X
Building Height Standards	X	X	X	X
Adjacency / Massing Standards		X	X	X
Building Type Standards		X		X
Frontage Type Standards	X	X	X	X
Land Use Standards	X	X	X	X
Architectural Style Standards				X
Signage Standards	X		X	X
Public Art Standards				X
Other Standards identified by you	?	?	?	?
Sustainability is addressed within each relevant code topic				

Components



## Summary Issue 3

### Over-zoned and dissipated development

- Translate policy direction into centers and segments:
    - **Corridor General:** mostly housing, w retail, auto-oriented services
    - **Local centers:** mostly neighd retail, office, w housing
    - **Community-level Centers:** mostly intense retail, office, w housing
  - **Select Code Components in response to policy direction**
- 

3



# The built environment: Repeating Patterns





# Intrinsic Residential Densities by Type

In Dwelling Units Per Acre (D.U.A.)

< 10

10 - 12

20 - 35

35 - 50

50 - 100

100 - 200+

Estate

House

Duplex to  
Quadplex

Mansion  
Apartment

Bungalow  
Court

House Form  
Courtyard

Rowhouse

Flex Shed  
Small

Flex  
Building

Flex Shed  
Large

Lined  
Building

Tower

Block Form

A Range of American Building Types

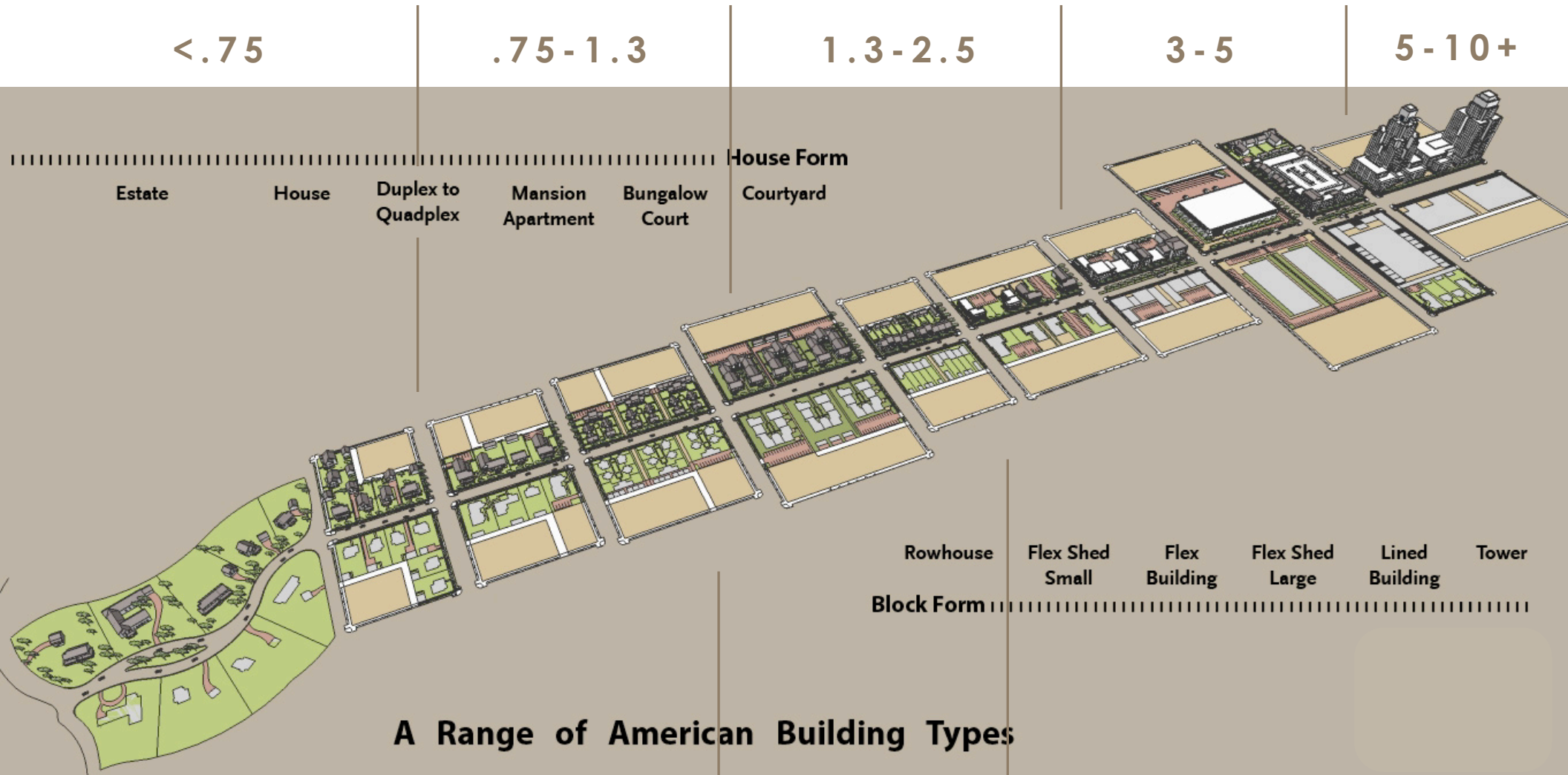
HOUSE FORM

TRANSITIONAL

BLOCK FORM



# Intrinsic Floor Area Ratio by Type



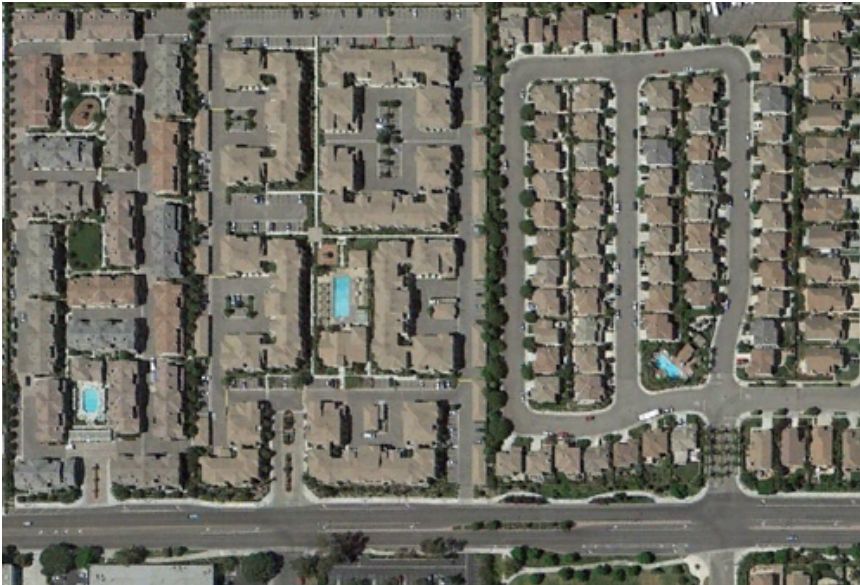
**HOUSE FORM**

TRANSITIONAL

**BLOCK FORM**

# Compatibility through Building Types

## Chunky Infill



- **Difficult to find large sites**
- **Transitions are larger/bulkier**
- **Less walkable services**
- **Resistance tends to be higher**

## Fine-Grained Infill



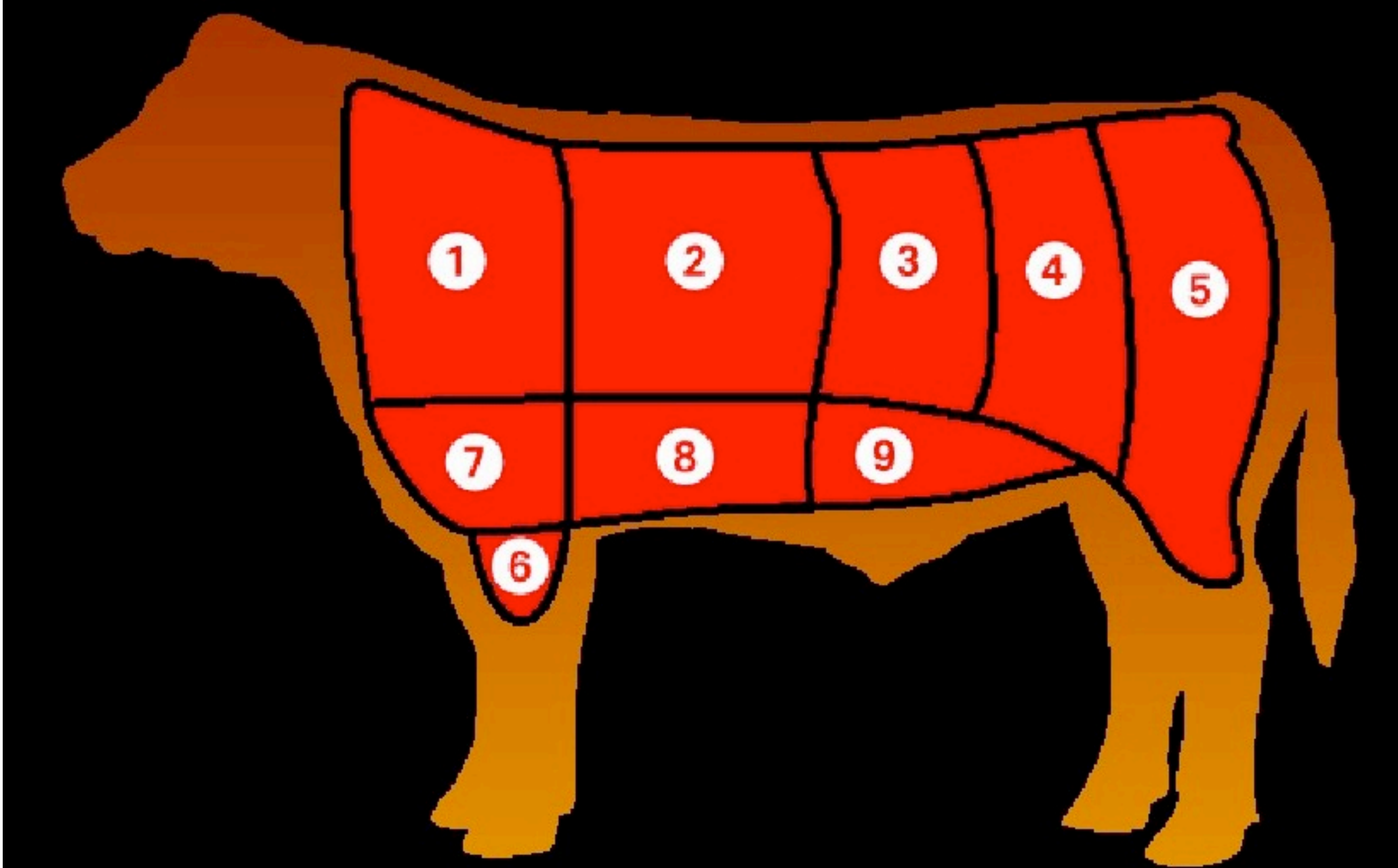
- **Easier to find smaller sites**
- **Transitions are within context**
- **More walkable services**
- **Resistance tends to be lower**



# FAR and Density Approach: Quantity-Focused



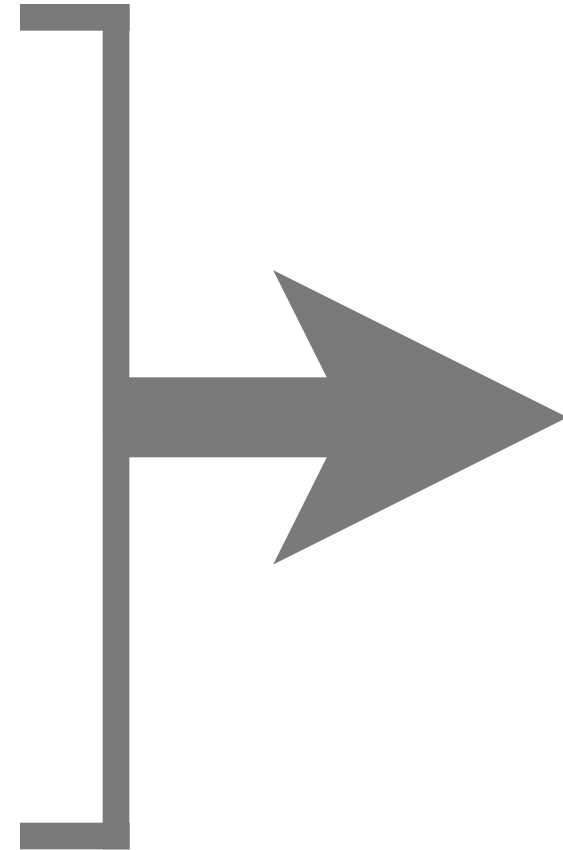
# Form-Based Zoning: Variety and Compatibility Focused





# Key Characteristics of each Type

- 1. Lot Size:** Min Needed / Max Compatible
- 2. On-site open space?** Min size to be useful
- 3. Building Size:** Min Needed/Max Compatible
- 4. Parking location/Access:** to support context
- 5. Tenant access:** to make livable
- 6. Frontage options:** Flexible w/in context



# Building Standards

## 5.10 STANDARDS SPECIFIC TO BUILDINGS

## STANDARDS SPECIFIC TO BUILDINGS 5.10

### 5.10.120 COURTYARD BUILDING STANDARDS

### COURTYARD BUILDING STANDARDS 5.10.120

#### A. Description and Intent

1. Description. A building comprised of attached units arranged to share one or more courtyards with pedestrian access to the building's entrances from the courtyard and/or fronting street. The building is designed to give the appearance of a large house. The courtyard is intended to be an outdoor room that is an extension of the public realm. Parking is located at the rear of the site and may occur along the street-access driveways. Courtyard buildings may accommodate non-residential uses in either a live-work configuration or as solely commercial/retail space facing the primary street as allowed by the zone.

Resultant Density: 20 to 42

2. Examples of Intended Physical Character. The following examples are illustrative of the range of physical character for the Courtyard Building type in the zones allowed by this Code.



Above: Courtyard Building with front yard frontage designed to appear as a large single-family house. Entry to the courtyard is through the zaguan in center of photo.



Above: Courtyard building with stoop frontage leading to central entry to courtyard through zaguan in center of photo. Street facing units are entered from the street and from the courtyard.



Above and right: Courtyards may be landscape or hardscape and may feature outdoor furniture. Courtyards are shaped by ground floors with direct access and views of the courtyard.



#### B. Design Standards



KEY	
RT	Rear Yard Transition
CY	Courtyard
PE	Parking entry from street
AL	Alley (as occurs)



REQUIREMENTS				
Courtyard type buildings are subject to the following as applicable.				
	IN ALZONES/WED		MIN (FT)	MAX (FT)
A	Building Site Width	T3, T4, T4.5 T5, SD-2.1	120 115	200 250
B	Building Site Depth	T3, T4, T4.5 T5, SD-2.1	200 175	200 250
C	Building Length	T3, T4, T4.5, T5 SD-2.1	no min	80 (H) 125 (H)
D	Front Yard	T5 T4.5, T4, SD-2.1 T3	0 or 10 12 25	15 15 35
E	Street Side Yard	T5 T4.5, T4, SD-2.1 T3	0 or 10 10 15	15 15 25
F	Side Yard	T5 T4.5, T4, SD-2.1 T3	0 10 7	10 no max 12
G	Rear Yard/Parking		45	100
H		Facades exceeding 80 feet shall be designed with a vertical setback from the base of the building to the roof line, at least 18" wide and 18" deep, giving the building an appearance of multiple attached buildings. Facades shall be composed of increments of 25 ft or less. Increments shall be created through projecting or recessing wall surfaces, changes in roofline and/or placement of piers and pilasters.		
I		Buildings on corner building sites shall be designed with two facades of equal architectural expression.		
J		Facades along frontage lines shall apply frontage types per Section C.3 of the zone standards.		
K		Where ground floor residential is allowed, first floor living areas rather than sleeping or service rooms shall be oriented toward the street. Where the zone allows non-residential activity, retail or office space rather than service rooms shall be oriented toward the street.		
L		Building entries shall be at grade along the adjacent sidewalk or courtyard, as applicable. Units along the side street may have a second entry from the courtyard. Where ramps are required, their design shall be per the ADA requirements and per Section C.3 of the zone standards.		
M		Parking spaces and access driveways shall be provided and located per Section C.2 of the zone.		
N		One or more separated or interconnected courtyards shall be provided, with a total area equal to at least 15 percent of the building site area at least 30 ft wide. Courtyards shall not exceed 100 linear feet.		
O		Units along side streets may enclose private open space only through the Walled Yard type (5.20.100).		



## Summary Issue 4

### Use Building Types to articulate potential

- Identify compatible building types and adjust to your realities: shallow lots?
  - Standards for corridor side and neighborhood side
  - Fully test each type for realistic/useful standards
- 

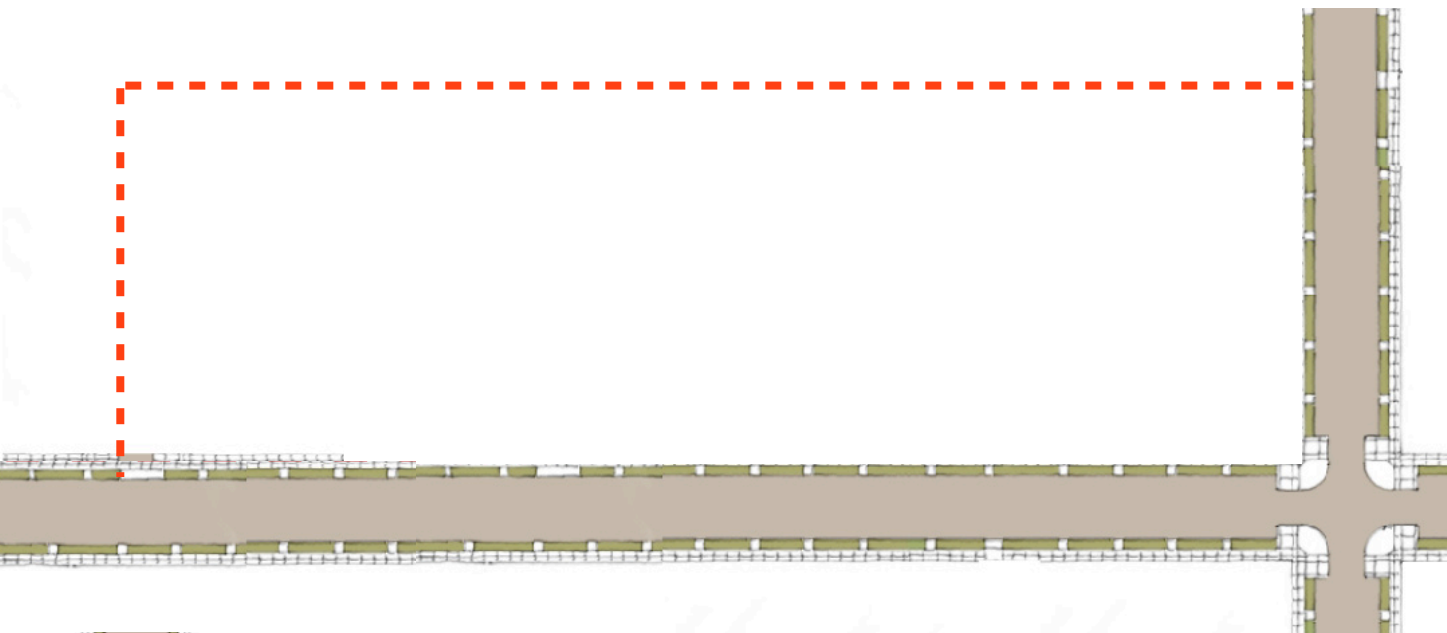
4

# Articulating, Blending Densities through Building Types

**Shallow Site:  
busy corridor,  
houses behind**

475 X 110  
= 52,250 SQ FT

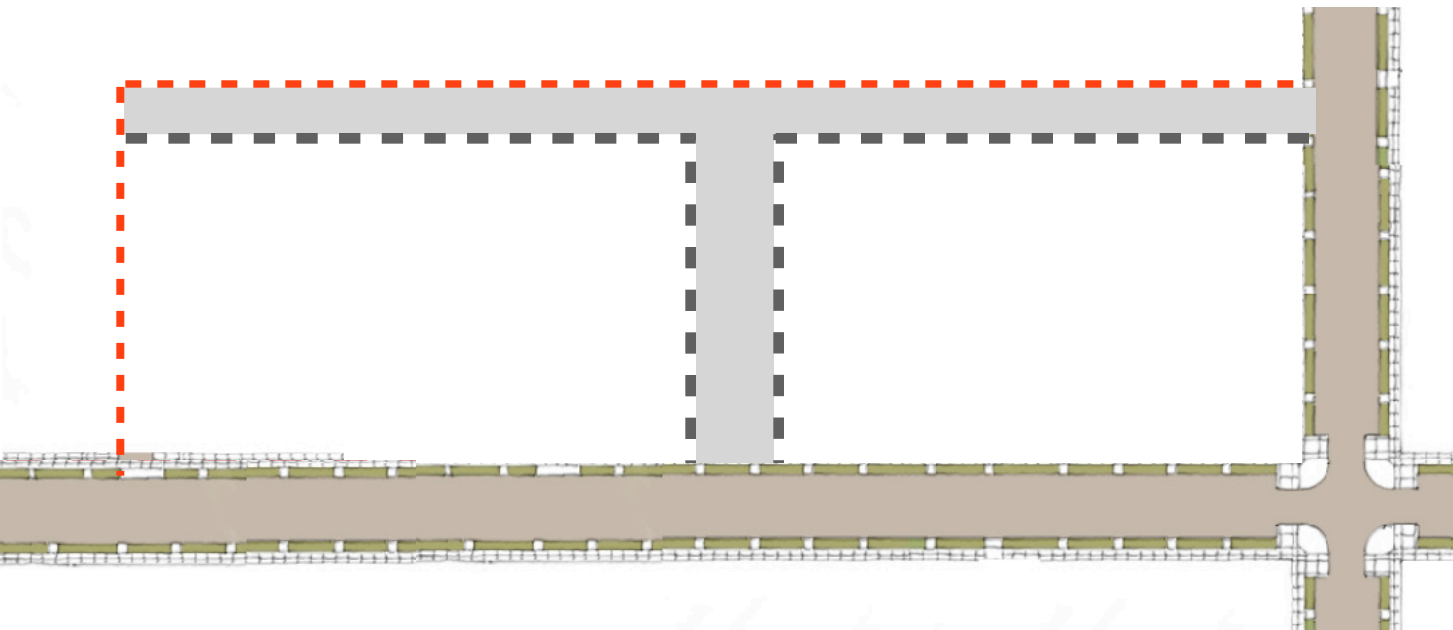
**1.20 ACRES**





# Articulating, Blending Densities through Building Types

## Make Blocks

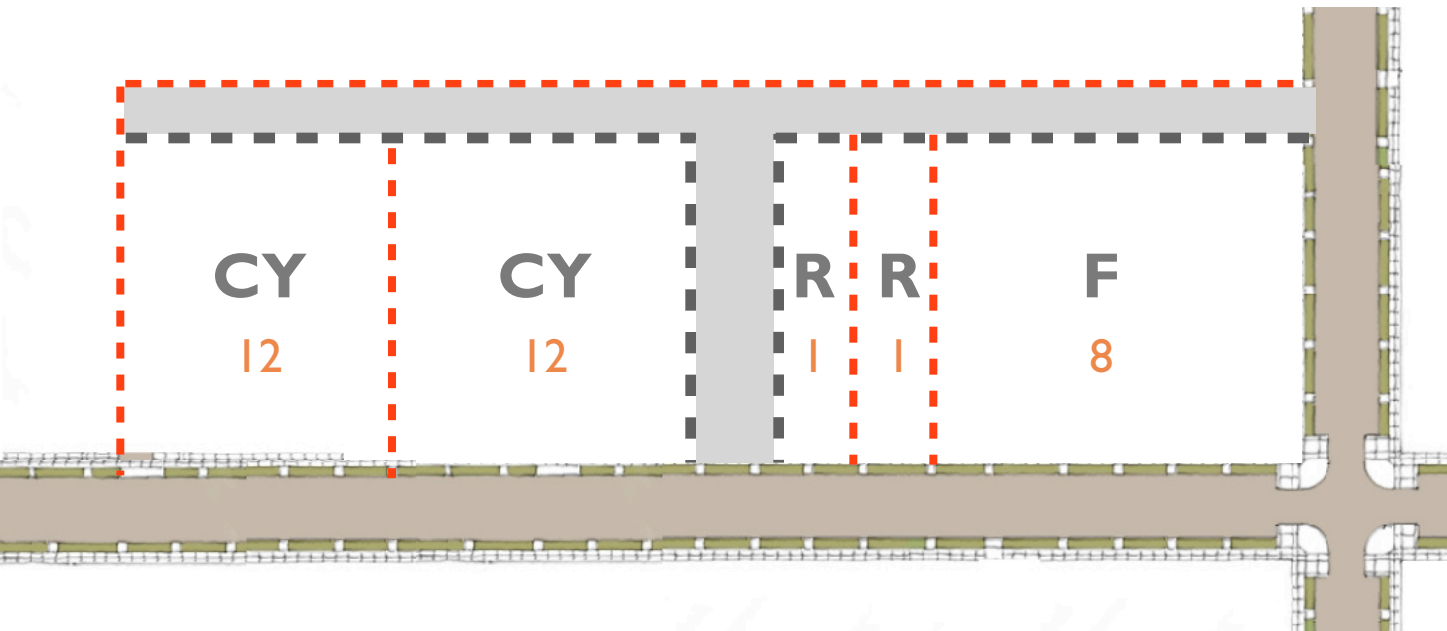


# Articulating, Blending Densities through Building Types

Select types and  
Lot the blocks

**=34 UNITS**

32 DUA AGGREGATE





# Articulating, Blending Densities through Building Types

**24** COURTYARD  
PODIUM UNITS

**2**  
ROWHOUSE  
UNITS

**8** UPPER  
STORY  
UNITS +  
7,000 SF GR  
FLR SPACE

**Add Types**

**=34 UNITS**

32 DUA AGGREGATE



# Articulating, Blending Densities through Building Types

**6**  
MANSION  
APT  
UNITS

**8** ROWHOUSE UNITS

**8** UPPER  
STORY  
UNITS +  
7,000 SF GR  
FLR SPACE

**or, all surface  
parking  
approach**

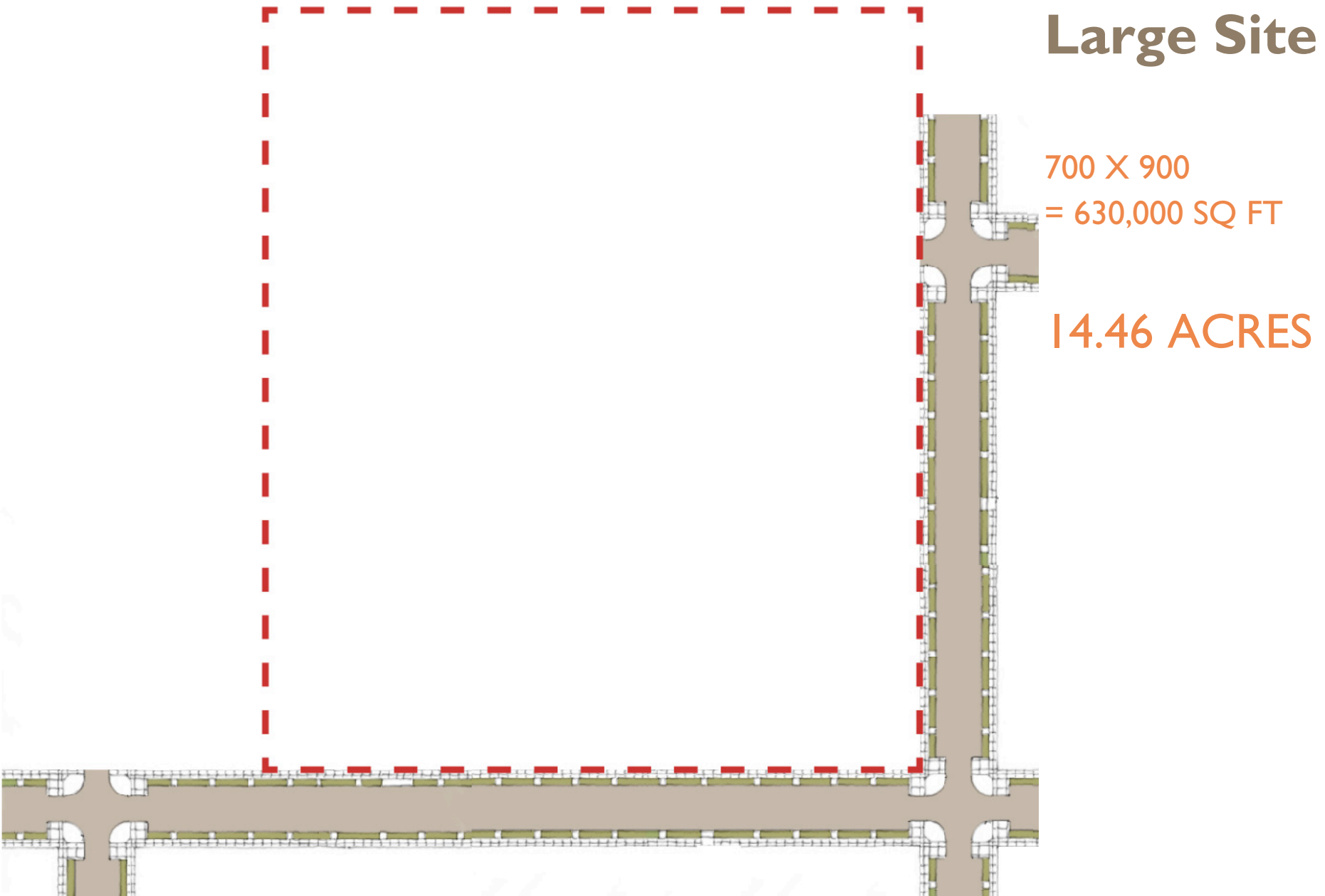
**=22 UNITS**

**18.3 DUA AGGREGATE**



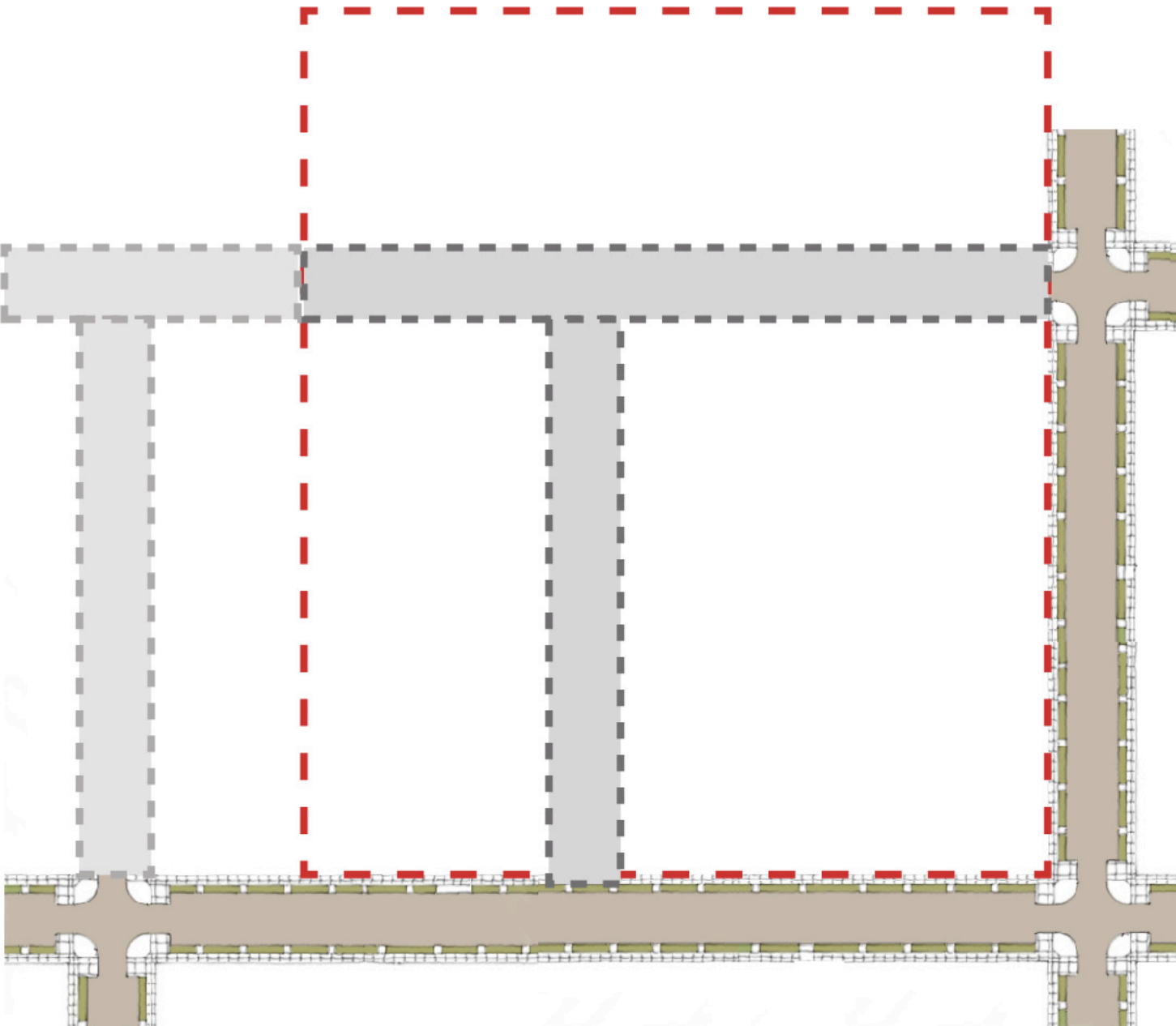


# Articulating, Blending Densities through Building Types



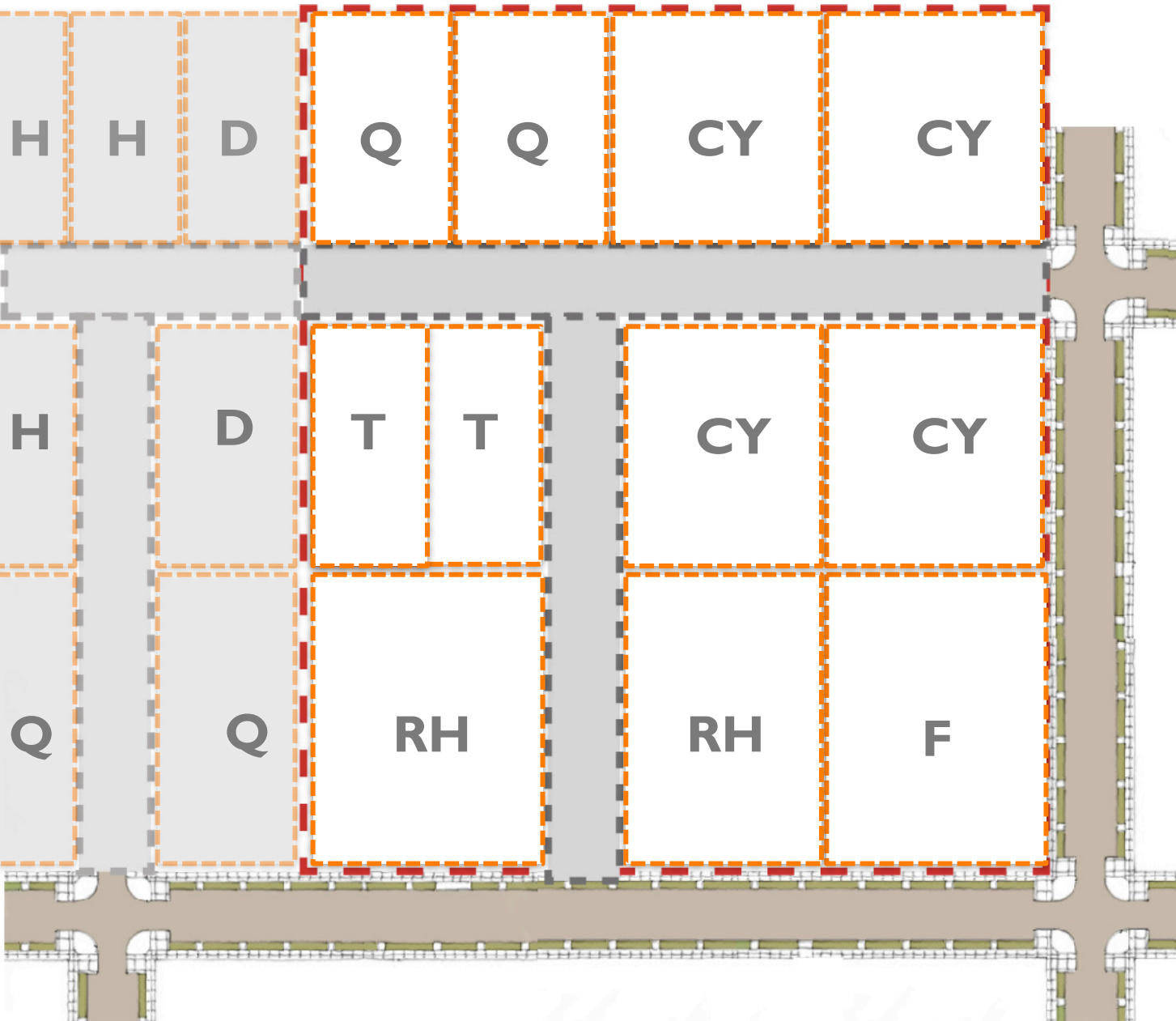
# Articulating, Blending Densities through Building Types

## Make Blocks





# Articulating, Blending Densities through Building Types

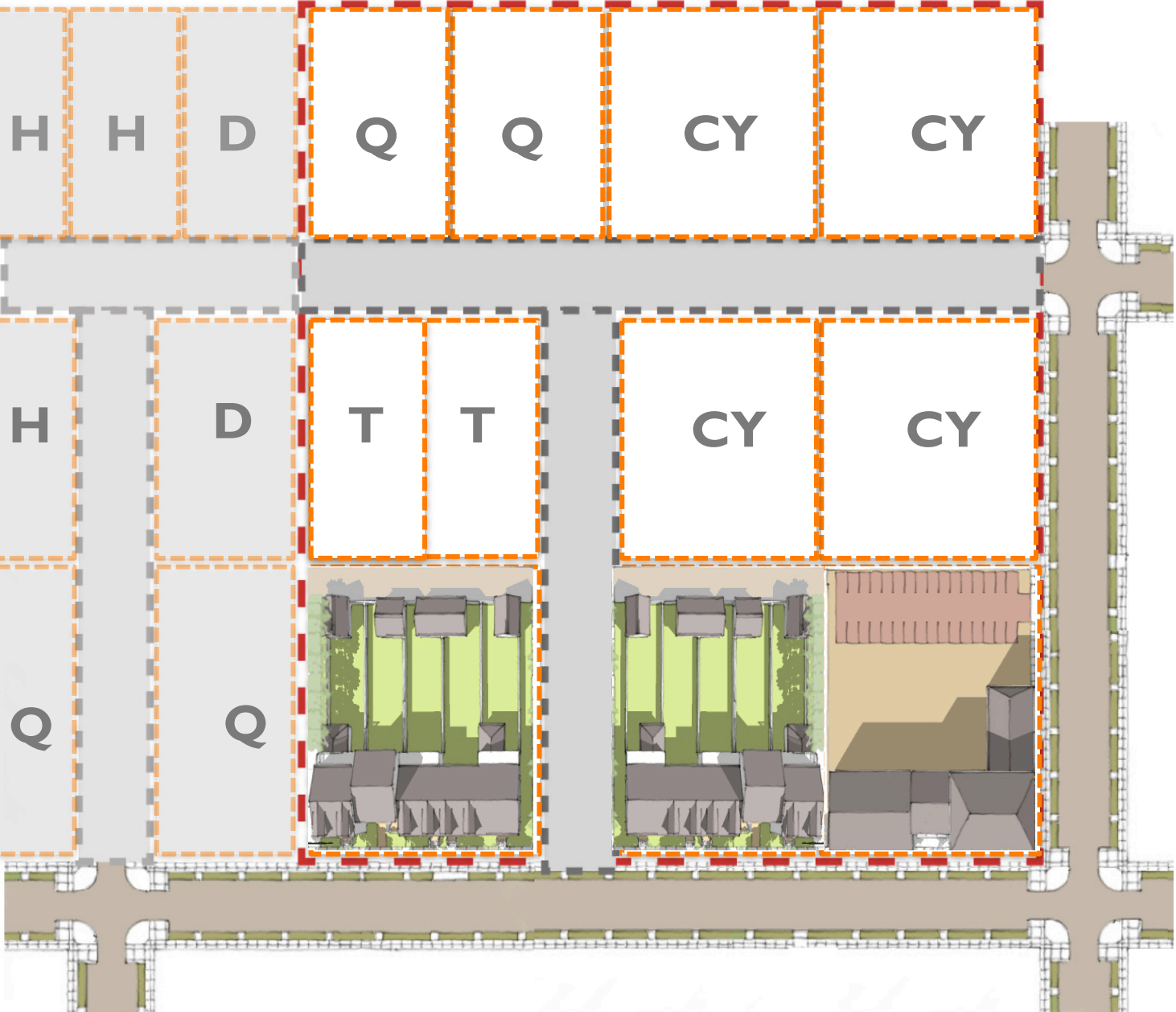


Select types and lot each block

**=121 UNITS**

8.36 DUA AGGREGATE

# Articulating, Blending Densities through Building Types



**Add**

**+1 Flex Bldg**  
**+2 Rowhouse Bldgs**



# Articulating, Blending Densities through Building Types



**Add**

- +1 Flex Bldg
- +2 Rowhouse Bldgs
- +2 Courtyard Bldgs
- +2 Triplexes

# Articulating, Blending Densities through Building Types



## Add

- +1 Flex Bldg
- +2 Rowhouse Bldgs
- +2 Courtyard Bldgs
- +2 Triplexes
- +2 Courtyard Bldgs
- +2 Quadplexes



# Articulating, Blending Densities through Building Types



## LARGE SITE

700 X 900

= 630,000 SQ FT

14.46 ACRES

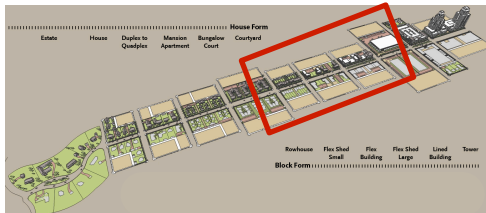
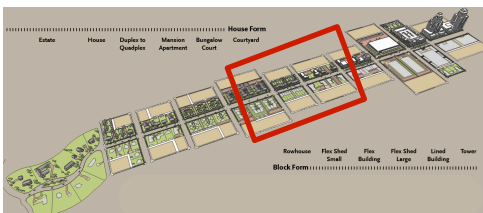
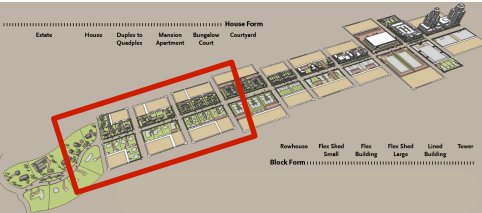
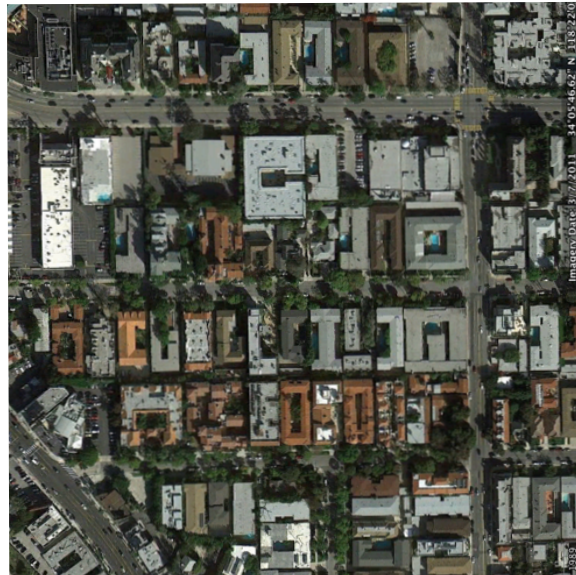
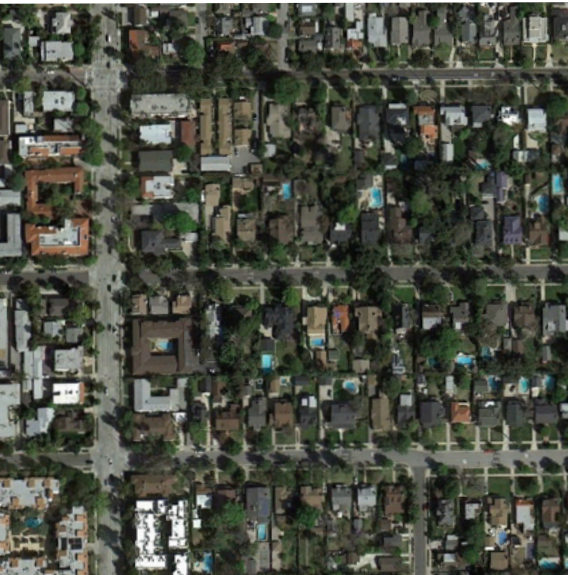
121 units

5 Bldg Types

8.36 DUA AGGREGATE

Neighborhood  
Compatible

# Articulated Neighds and Corridors: Appealing and Sustainable



## Suburban

## Urban

## City Center

- House Bldgs
- Duplex-Quadplex Bldgs
- Courtyard Bldgs

- Mansion Apt Bldgs
- Duplex-Quadplex Bldgs
- Courtyard Bldgs
- House Bldgs

- Courtyard Bldgs
- Mansion Apt Bldgs
- Flex Bldgs
- Duplex-Quadplex Bldgs

Streets respond to varying contexts



## Summary of Issue 5

### **Identify/Adjust Building types to fit your community**

- Distill most important needs/issues into standards
  - Preferences through clear examples not guidelines
  - Provide Admin Procedures for Flexibility
- 

5

# Density Bonus

## Conventional Method

- Max density allowed by zone + max 35%

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New Max

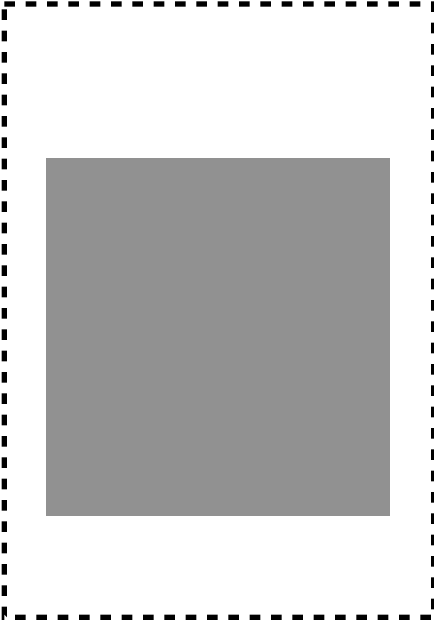
$= 14 \text{ du/ac} \times 0.26 \text{ acres} = 3.6 \text{ (4) units}$ 

---

 $+ 35\% = 1.3 = \mathbf{5 \text{ units total (18 du/ac)}}$

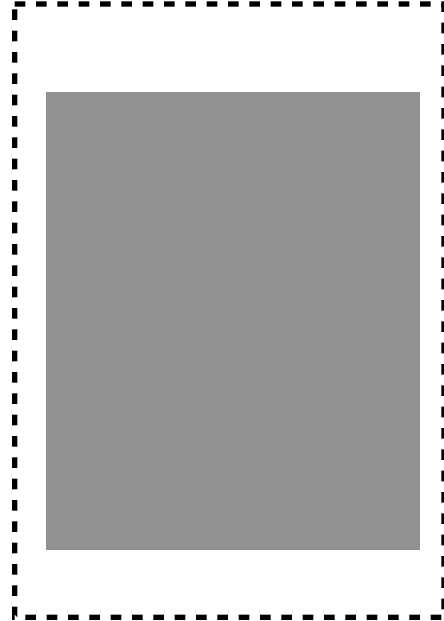
Site: 75 x 150  
= 11,250 sq ft (0.26 acres)

**MAX**  
**14/AC**



4 units

**W BONUS**  
**18/AC**



5 units

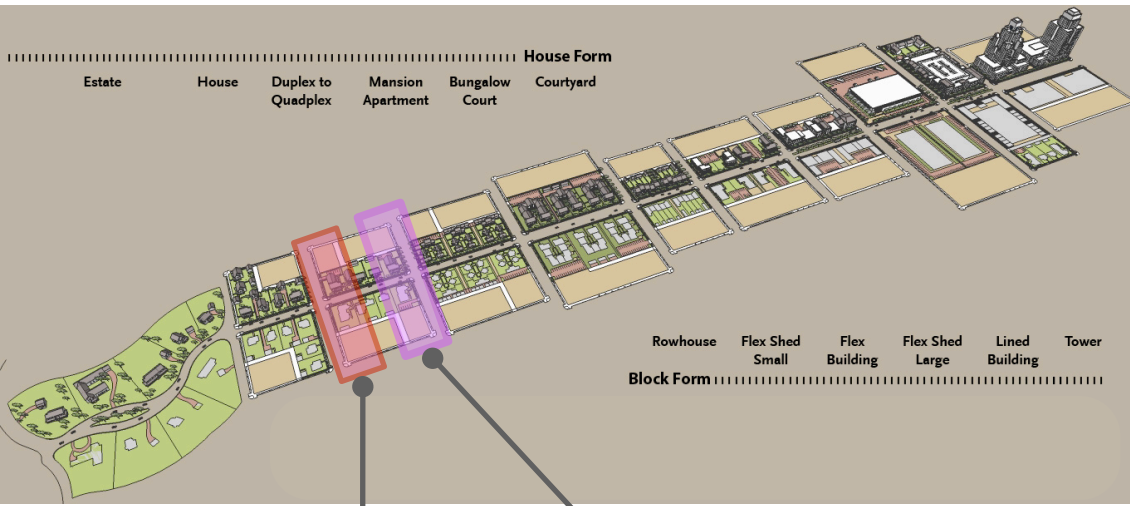




# Density Bonus

## Form-Based Method

- Select Bldg Type with preferred density
- For more density, select next compatible Bldg Type = New Max



Quadplex 9-14/ac

Mansion Apt 20-31/ac

Site: 75 x 150  
= 11,250 sq ft (0.26 acres)

**MAX**  
Quadplex

**W BONUS**  
Mansion Apt



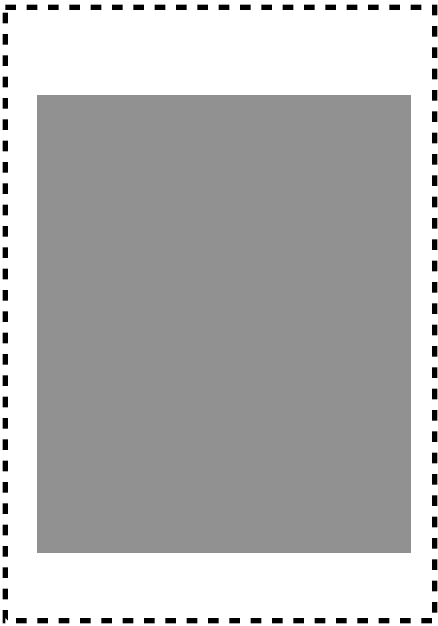
6 du

8 du

# Density Bonus

## Conventional Method

W BONUS  
18/AC



5 units

Site: 75 x 150  
= 11,250 sq ft (0.26 acres)

## Form-Based Method

3 1/2 AC

Mansion Apt



8 du

# Last, Misperceptions about Form-Based Zoning

Dictates Architecture

Has to be applied throughout town

Isn't zoning

Is all about graphics

Improves your golf score

A template that makes you fit your town to it

Only for greenfield development

Makes you insert high density residential

Doesn't address Land Use

Compels mixed-use of everything, everywhere

Requires all components even if you don't want them all

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7



# Classifying and Clarifying Different Approaches

	Typical Approaches to Zoning Urban Form (from least to most effective)	What Should this Approach be Called?	Organizing Principle	New Components Created and Included	Is the Overall Code Reorganized for Usability?	Likely Cost Range	Considerations for this Approach
LESS COMPREHENSIVE & EFFECTIVE	1. Adding graphics to a Euclidean, use-based code	Graphics-Based Code	Use	Primarily additional graphics and tables, content has minor changes only	Not in this example	Low; Primarily because it is a graphic design-usability exercise only	This is completely ineffective and should be avoided. This is what you will often get if your budget is too low for a true FBC: Will look good, but will not produce predictable results. Does not address obstacles for good development or process-related issues inherent in most zoning codes.
	2. Adding design guidelines/site planning guidelines to a Euclidean, use-based code	Design Guidelines or Design Standards	Use	Components similar to FBC components may be created, but they do not replace the code so they do not need to be as carefully vetted and many times create conflicts within the zoning code	No	Low; Primarily because it does not address the problems with underlying zoning	Mostly ineffective due to typical issue inherent in existing code that are not addressed and may even contradict zoning. Adding another layer of regulations that confuses intent and negatively impacts usability and administration
	3. Adding mixed use zones to a Euclidean, use-based code	Targeted Mixed Use Zone Application	Use typically, sometimes form	New base zones and zone standards only	No	Low; Primarily because this approach entails creating only new base zones	Effectiveness depends highly on quality and clarity of existing code and development review process. If administration and the code document structure is good, and detailed visioning is completed, and the mixed use zones are not over-simplified this can begin to show good results. Existing parking, use tables, landscape standards, etc. must be vetted
	4. Adding graphics, reorganizing code, cleaning up administration, and minor changes to development standards	Code Clean Up and Reorganization	Use	Mostly just translating existing information into tables and creating drawings to support existing code information	Yes	Medium to high depending on scale of city or county	Addresses many of the issues above, but ultimately still has use as an organizing principle, which limits the effectiveness of the code and stops it short of being an FBC. Does not typically complete documentation and analysis of place to extract the DNA that becomes the basis for the code but rather uses existing zone standards as starting point and makes changes to those
MORE COMPREHENSIVE & EFFECTIVE	5. Optional Form-Based Code overlay	Form-Based Code Overlay	Form	All typical FBC elements included, process rethought for FBC application	No	Low to Medium, depending primarily on extent of visioning completed	Administration, parking, landscape, and all other elements within code must be vetted and coordinated with intent of the FBC and potentially included in the FBC and replaced when the overlay is triggered
	6. Integrating a complete Form-Based Code within a pre-existing zoning code	Parallel Form-Based Code	Form for FBC section, use for the rest of the pre-existing code	All typical FBC elements included, process and all general standards (parking, landscaping, etc.) rethought for FBC application	Sometimes	Medium; Primarily due to the fact that a complete, parallel code is being created to replace the existing code in targeted areas	Administration, parking, landscape, and all other elements within code must be vetted and coordinated with intent of the FBC Division.  If you are doing a complete code rewrite and you choose this approach, you are writing two complete, parallel code documents which is not a good use of resources. This approach is still sending a message that the default is drivable suburban development and that FBCs are the exception
	7. Using Form as an organizing principle for the entire zoning code and using Form-Based Code components as the driver for your Table of Contents	Citywide Form-Based Code	Form	All typical FBC elements included, process and all general standards (parking, landscaping, etc.) rethought for FBC application, admin and procedures, variances, etc. are all rethought to support the FBC	Yes	High; Slightly higher than #4. Due to charrettes for FBC Focus Areas, and extensive documentation and analysis phase completed, and that all standards are carefully vetted	In this approach, the structure of the entire zoning code is completely rethought, a new operating system is established, and thus the entire table of contents of code document is structured with a form-first philosophy. Every last bit of content from the pre-existing code is vetted for its applicability to the form-first operating system before it is transferred so that it does not compromise the intent. This approach is perfect for a city that has made a strong commitment in its city policies to promote smarter, more sustainable growth. Let Euclidean zoning regulate drivable suburban contexts, and the FBC regulate walkable urban contexts. It is called citywide Form-Based Code not because the entire city has Form-Based Coding applied, but rather the entire city has been assessed, FBC applied to where it make sense, and the FBC application can easily spread

Dan Parolek article in *Zoning Practice* May 2013

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**Form-Based Zoning for Infill Sites and Corridors**

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