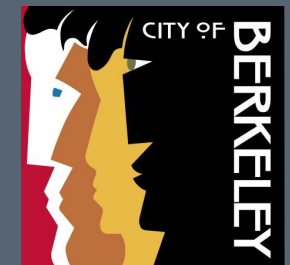




RESIDENTIAL OBJECTIVE STANDARDS
Middle Housing

June 1, 2022
PLANNING COMMISSION



Why are we creating Residential Objective Standards?

Recent State Law

- Housing Accountability Act (2017)
- SB 35 (2017) Streamlining for Affordable Development
- SB 330 (2019), SB 8 (2021) Housing Crisis Act
- 2021 Housing Bills, including SB 9, SB 478

City Council Referrals

- Housing Accountability Act (2017)
- Missing Middle Housing (2019)
- Eliminate Exclusionary Zoning (2021)

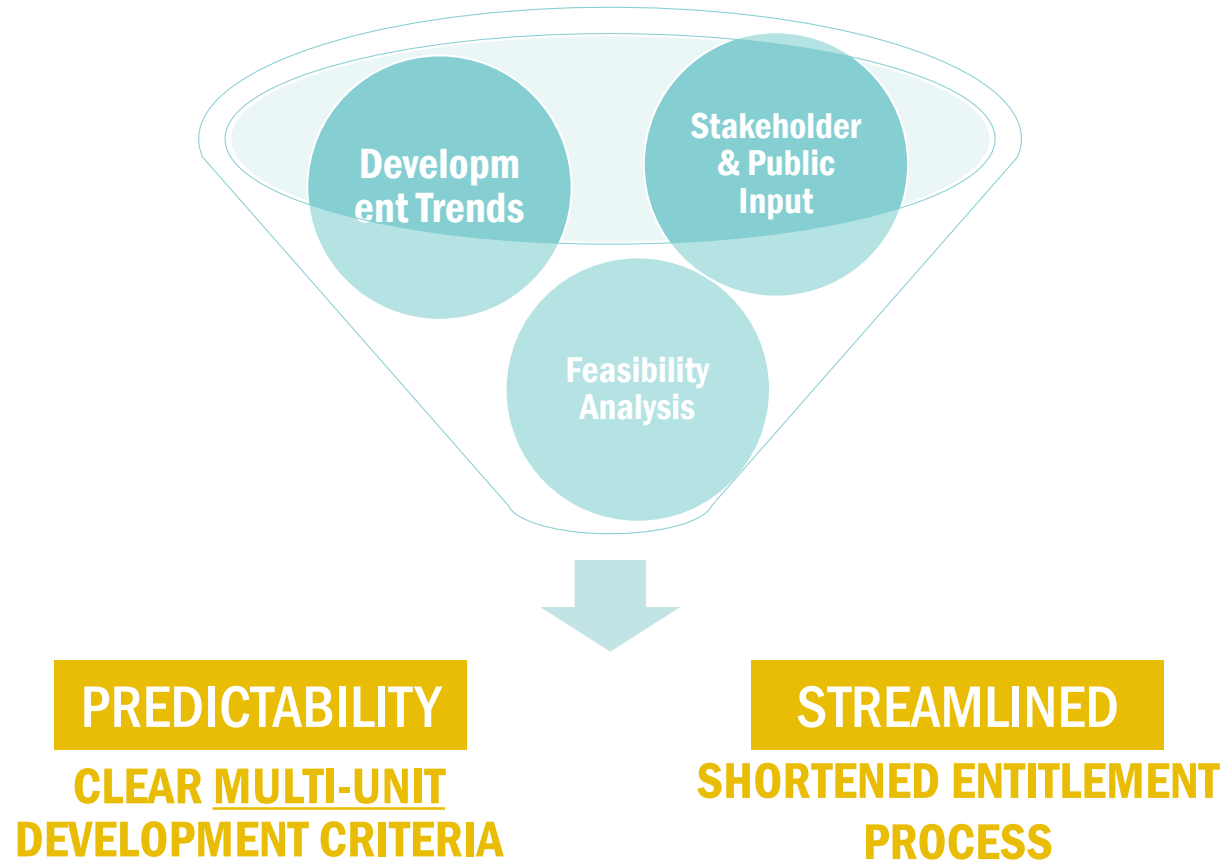
Housing Element

- Plan for 8,934 new units between 2023-2031
- Housing Program to encourage Middle Housing



ENCOURAGE HOUSING PRODUCTION

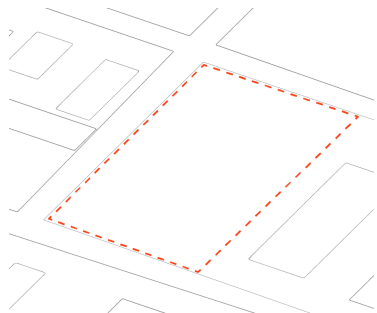
What is the goal of the project?



A Two-Part Process

PART 1 - OBJECTIVE DEVELOPMENT STANDARDS

WE ARE HERE (2021 to 2023)

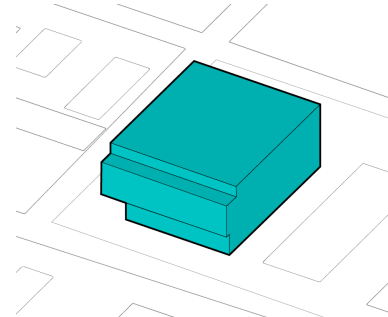


SITE

Lot Size

Coverage

Setbacks



FORM/MASSING

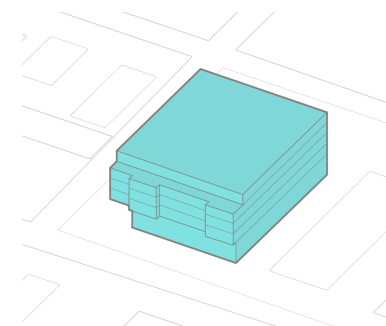
Density (units/acre)

Floor Area Ratio (FAR)

Height

PART 2 - OBJECTIVE DESIGN STANDARDS

2023 to 2025 



ARTICULATION



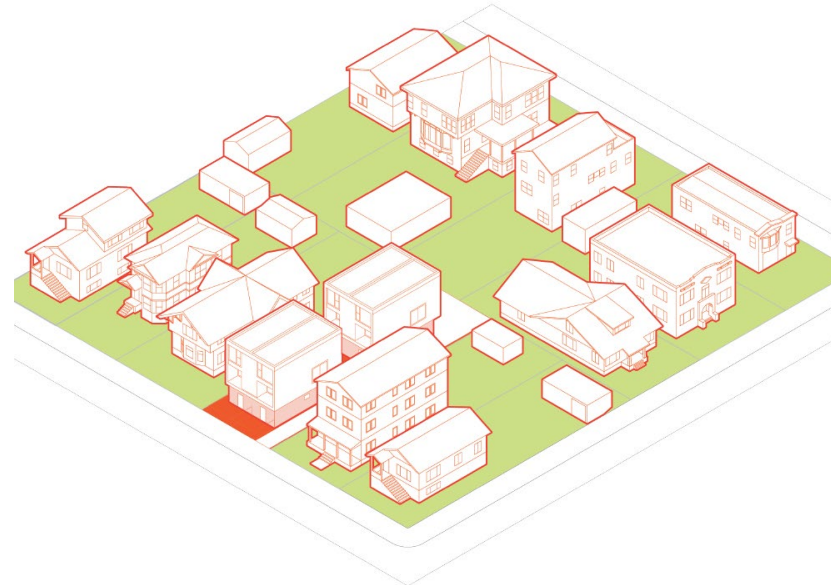
FACADE

Objective Standards Framework

HOUSING ELEMENT

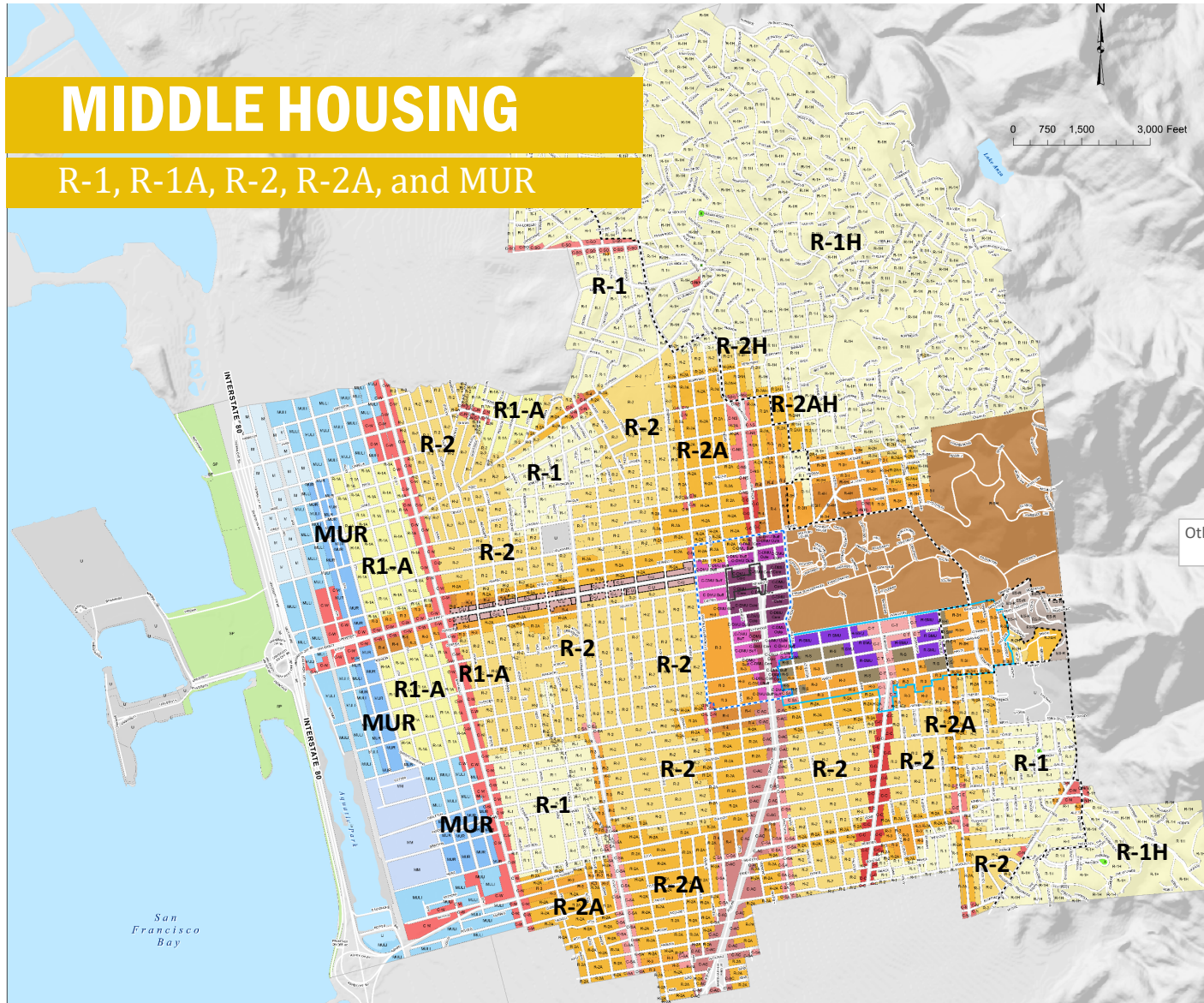
MIDDLE HOUSING

HIGHER DENSITY



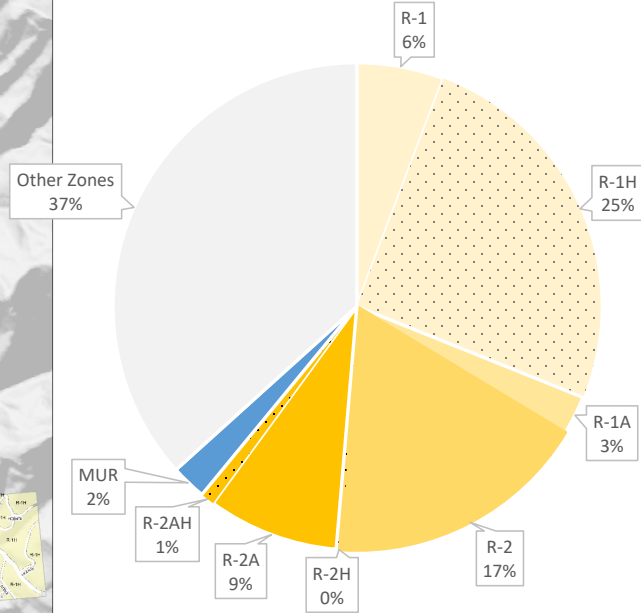
MIDDLE HOUSING

R-1, R-1A, R-2, R-2A, and MUR



ZONING DISTRICTS

R-1	Single Family Residential
R-1A	Limited Two-family Residential
R-2	Restricted Two-family Residential
R-2A	Restricted Multiple-family Residential
MUR	Mixed Use-Residential



Agenda – Middle Housing Development Standards

1. What We've Heard (Public Engagement, ZORP, and Council)
2. Recommended Standards
3. Solar Modeling
4. Discussion

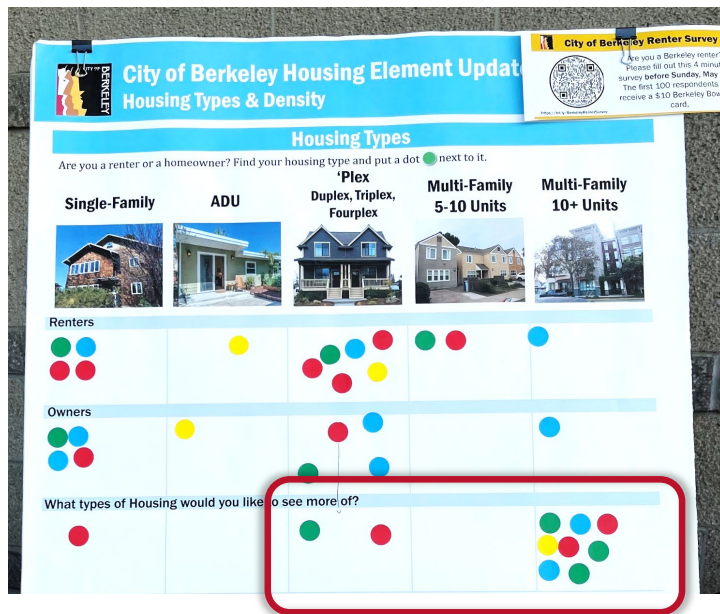
WHAT WE'VE HEARD

1. Community Engagement
2. Council and ZORP feedback

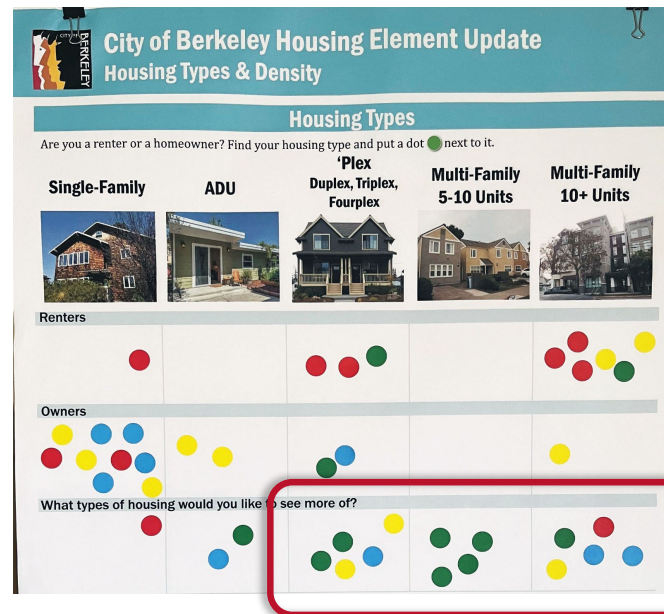


“What type of housing would you like to see more of?”

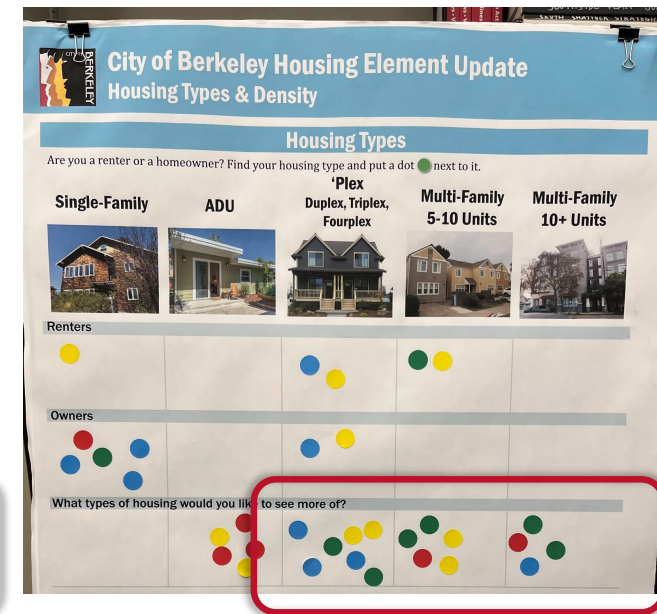
Berkeley Bowl 4/25/22



Roses in Bloom 5/14/22



Poppin Skate Party 5/19/22



Desire for a mix of housing types and higher density living

Council and ZORP feedback

ZORP Subcommittees (12/15 & 2/16)

Encourage smaller units that are “affordable by design”

Permitting more density while discouraging financial speculation

Balance protecting solar access and allowing higher densities

City Council (3/15)

Consider merging zoning districts

Permit higher density equitably throughout the City, including consideration of the Hillside Overlay

Incentive for adaptive reuse and smaller, more affordable units, allow more than four units

Embrace climate adaption, but solar access should not be a barrier to creating more housing

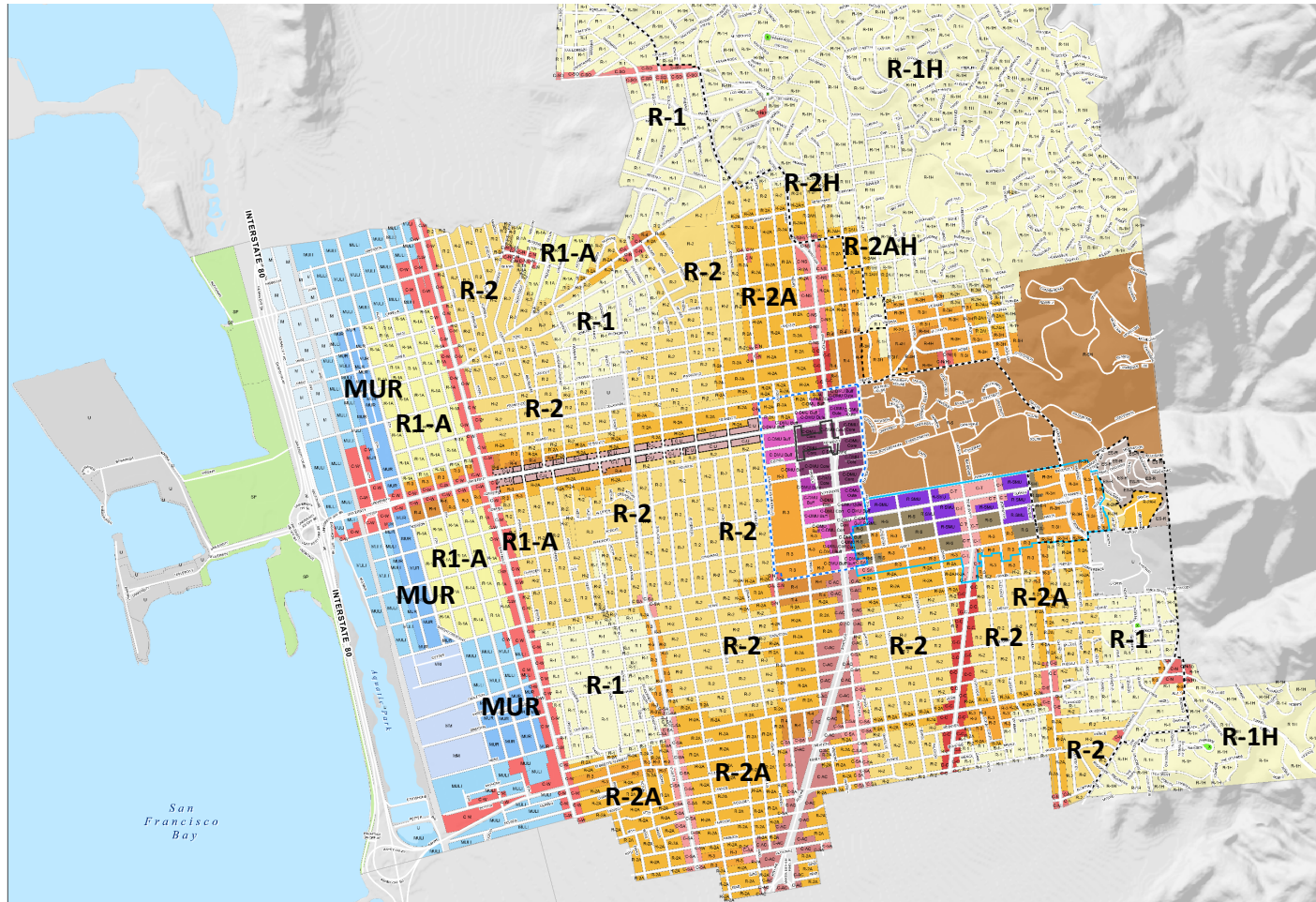
PRELIMINARY DEVELOPMENT STANDARDS

1. Merging Zoning Districts
2. Allowed Uses & Permits Required
3. Min and Max Density (Units per Acre)
4. Max Floor Area Ratio (FAR)
5. Min Open Space
6. Max Height
7. Min Lot Coverage & Setbacks
8. Min Separation

NOT A BLANK SLATE

- **Existing Standards**
- **Development Patterns**
- **City Council Referrals**
- **State Laws**
- **Environmental/Social/Economic/
Demographic Factors**

Consider Merging Zoning Districts



ZONING DISTRICTS

R-1	Single Family Residential
R-1A	Limited Two-family Residential
R-2	Restricted Two-family Residential
R-2A	Restricted Multiple-family Residential
MUR	Mixed Use-Residential

General Plan Land Use Classification	Compatible Zoning District
Low Density Residential	R-1, ES-R
Low Medium Density Residential	R-1A, R-2
Medium Density Residential	R-2A, R-3
High Density Residential	R-4, R-5, R-S, R-SMU
Neighborhood Commercial	C-N, C-E C-NS C-SA C-SO
Avenue Commercial	C-C C-U C-T C-W, C-AC
Downtown	C-DMU
Mixed Use-Residential	MU-R

Minimum & Maximum Density (Units per Acre)

	R-1	R-1H	R-1A	R-2	R-2H	R-2A	R-2AH	MU-R
Min. Density (du/ac)	10	No min.	10	No min.	20	No min.	20	
Max. Density (du/ac)	25	20	35	20	55	55	55	

Resulting units on a 5,000 sf lot...

Min. # Units	1	No min.	1	No min.	2	No min.	2
Max. # Units	3	2	4	2	6	6	6
Max ADUs	1 or 2*	1 or 2*	1 or 2*	1 or 2*	1 or 2*	1 or 2*	1 or 2*

*ADUs allowed per <https://berkeley.municipal.codes/BMC/23.306>

- More than 1 detached dwellings → max 1 ADU
- Duplex or attached multi-family dwellings → max 2 detached ADUs or 1 converted ADU

Note: Minimum densities would apply for new development on a vacant lot or redevelopment of a nonvacant lot.

Density - Examples



1911 Ninth Street



1028-1030 Grayson Street



1744-1756 10th Street

Maximum Floor Area Ratio (FAR)

	R-1	R-1H	R-1A	R-2	R-2H	R-2A	R-2AH	MU-R
1 unit or nonresidential	1.2			1.2		1.2		1.5
2 units	0.5			0.6		1.0		1.5
3-7 units	1.0			1.0		1.25		1.5
8 + units	1.25			1.25		1.5		1.75

Match State Law

SB 478 (2021, GOV §65913.11)
*Prohibits a local agency from imposing a FAR
 < 1.0 for project with 3 to 7 units
 < 1.25 for a project with 8 to 10 units*

Encourage smaller unit sizes

	R-1	R-1H	R-1A	R-2	R-2H	R-2A	R-2AH	MU-R
1 unit or nonresidential	1.2			1.2		1.2		1.5
2 units	0.5			0.6		1.0		1.5
3-7 units	1.0			1.0		1.25		1.5
8 + units	1.25			1.25		1.5		1.75

Resulting average floor area (sf) per unit on a 5,000 sf lot...

	1 unit, w/ UP	6,000 sf	6,000 sf	6,000 sf	7,500 sf
More Units	2 units	1,250 sf	1,500 sf	2,500 sf	3,750 sf
	3 units	1,667 sf	1,667 sf	2,083 sf	2,500 sf
	4 units	--	1,250 sf	1,563 sf	1,875 sf
	5 units	--	--	1,250 sf	1,500 sf
Smaller Unit Sizes	6 units	--	--	1,042 sf	1,250 sf

FAR - Examples



1911 Ninth Street

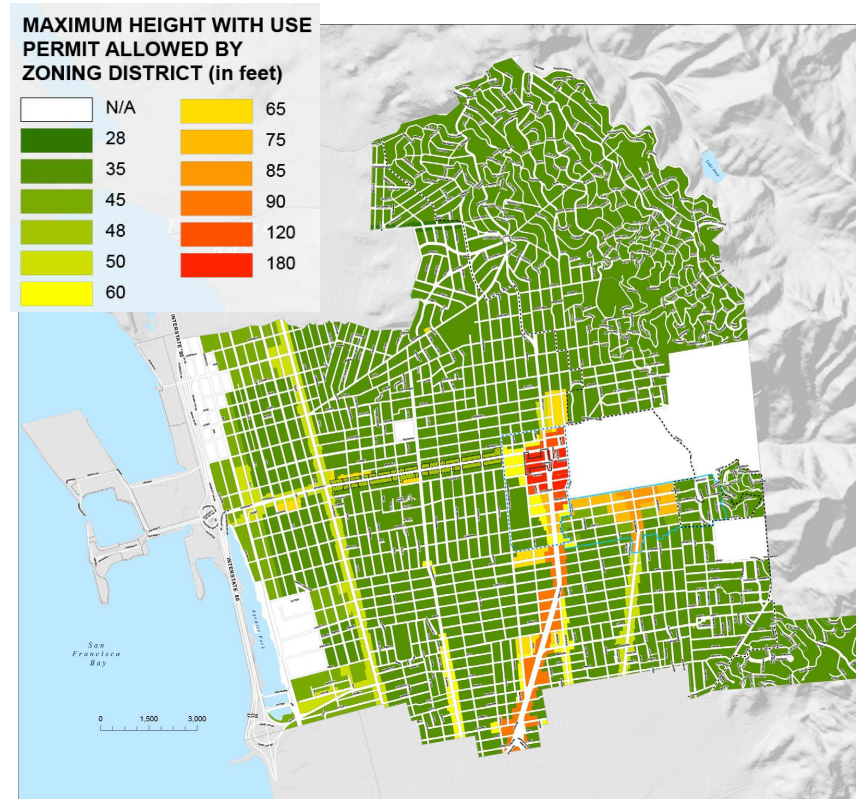


1028-1030 Grayson Street



1744-1756 10th Street

Building Height Standards



35 feet max average height

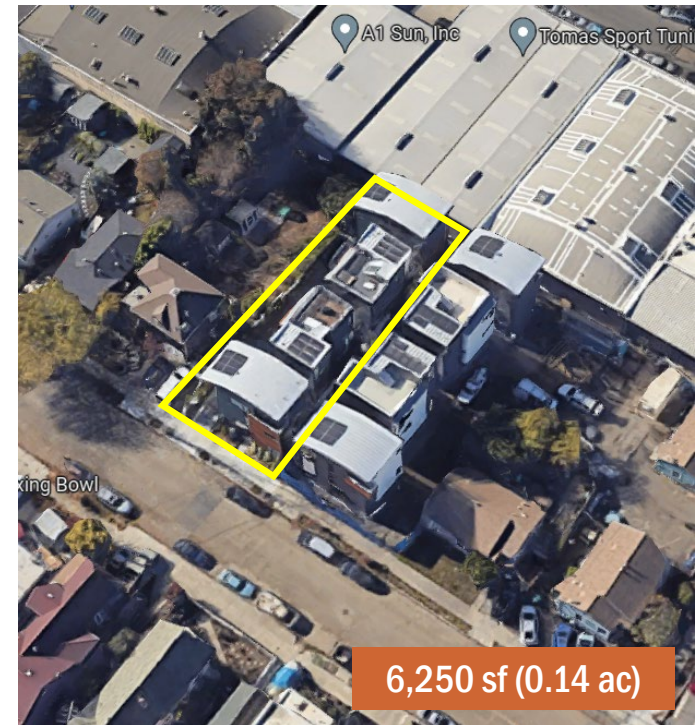
- *Reduce to 22 feet max height within rear 15 feet of lot*
- *Limit by height in feet; not # of stories*
- *Main buildings and additions treated the same*



35' top of roof

33.5' average height

1446 Fifth Street



6,250 sf (0.14 ac)



34'11" maximum height

29'6" average max height

25'3" eave

1911 Ninth



6,505 sf (0.15 ac)



25'2" average max height

32'3" average max height

Structure of Merit property

2411 Fifth Street



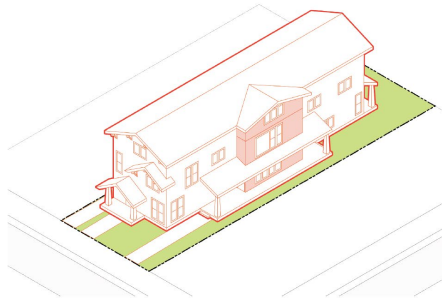
7,051 sf (0.16 ac)

Four Prototype Models & Neighborhood Context

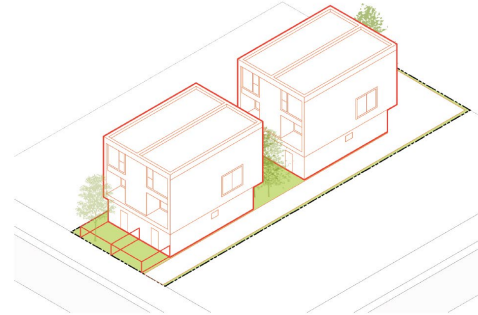
**New Detached Building
Behind Existing**



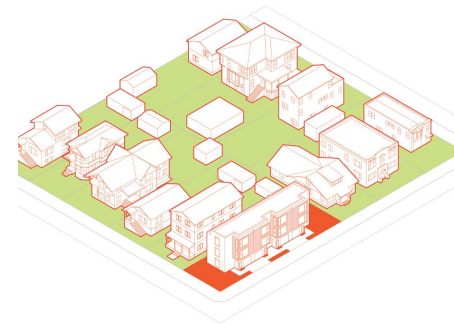
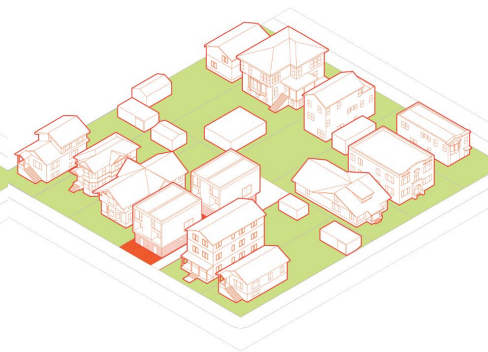
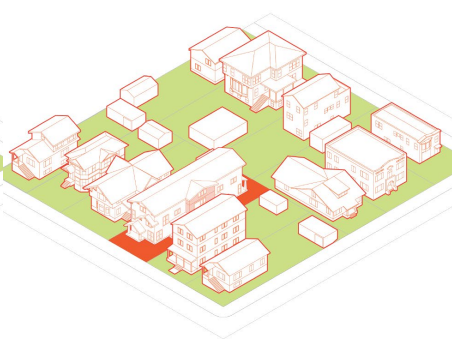
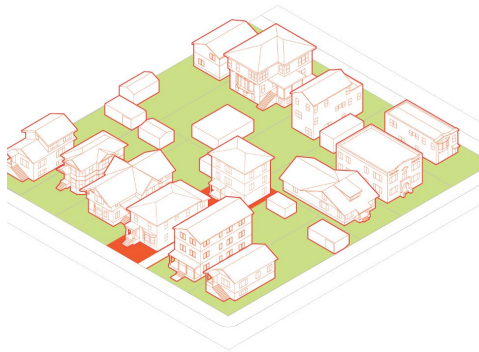
Attached Sidecourt



Detached Cluster



Attached Row Homes



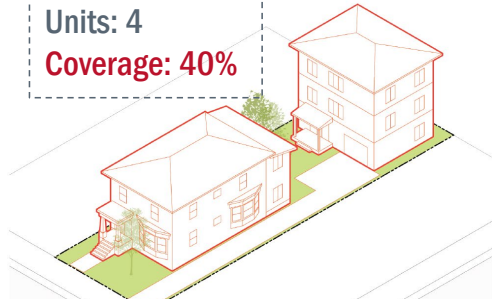
Four Prototype Models – Conflicts with Current Zoning

New Detached Building Behind Existing	Attached Sidecourt	Detached Cluster	Attached Row Homes
# of Units per Lot	# of Units per Lot	# of Units per Lot	# of Units per Lot
Lot Area per Unit	Lot Area per Unit	Lot Area per Unit	Lot Area per Unit
Lot Coverage	Lot Coverage	Lot Coverage	Lot Coverage
Usable Open Space	Usable Open Space	Usable Open Space	Usable Open Space
Building Height, Avg.	Building Height, Avg.	Building Height, Avg.	Building Height, Avg.
# of Stories	# of Stories	# of Stories	# of Stories
Front Setback	Front Setback	Front Setback	Front Setback
Rear Setback	Rear Setback	Rear Setback	Rear Setback
Side Setback	Side Setback	Side Setback	Side Setback
Bldg Separation	Bldg Separation	Bldg Separation	Bldg Separation

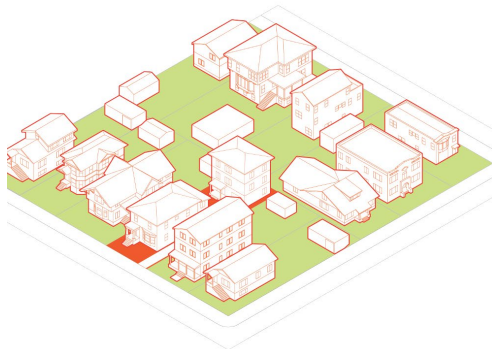
Lot Coverage

New Detached Building Behind Existing

Lot: 5,200 SF
 Units: 4
 Coverage: 40%

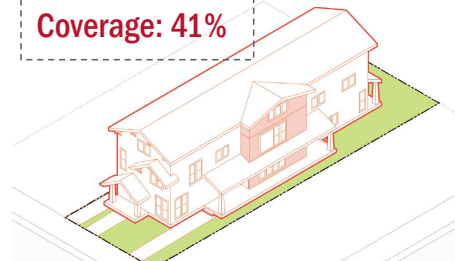


Max 35-40% in R-2, R-2A



Attached Sidecourt

Lot: 5,200 SF
 Units: 3
 Coverage: 41%



Max 35-40% in R-1, R-1A, R-2, R-2A



More Units



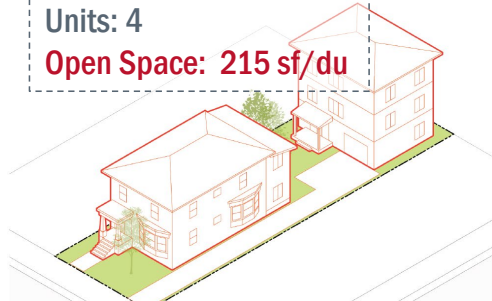
More Coverage

	R-1, R-1H	R-1A, R-2, R-2H	R-2A, R-2AH	MU-R
1-2 units or non-residential	40%	50%	50%	100%
3-7 units	50%	55%	55%	100%
8+ units	55%	55%	60%	100%

Open Space

New Detached Building Behind Existing

Lot: 5,200 SF
Units: 4
Open Space: 215 sf/du

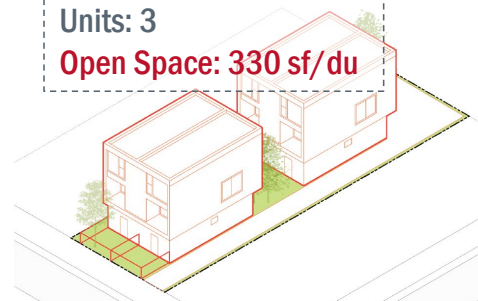


300-400 sf/du in R-1, R-1A, R-2, R-2A

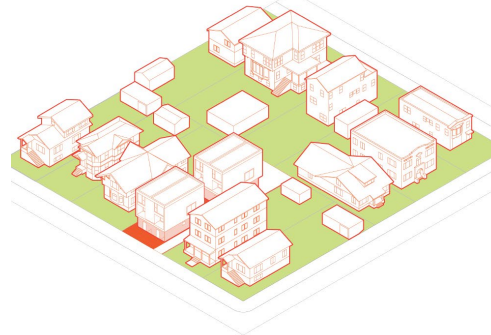


Detached Cluster

Lot: 5,200 SF
Units: 3
Open Space: 330 sf/du



400 sf/du in R-1, R-1A, R-2



150 sf *open space* per
1,000 sf *residential floor area*

- Units can vary widely in size
- Open Space linked to total residential floor area, rather than per unit
- Flexibility in configuration of open space for multiple units on a lot
- Maintain 10' x 10' min dimension (or 6' dimension for balconies)

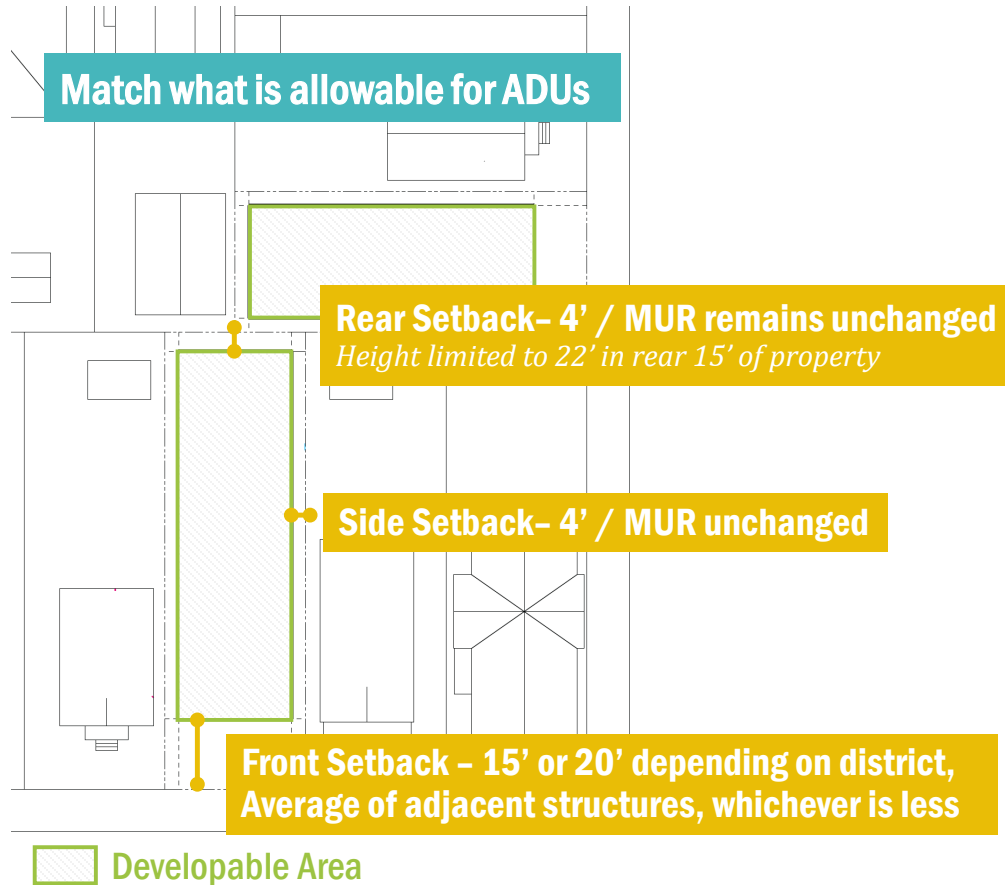
Example

- 5,000 sf total floor area
- → 750 sf required open space

Four Prototype Models – Conflicts with Current Zoning

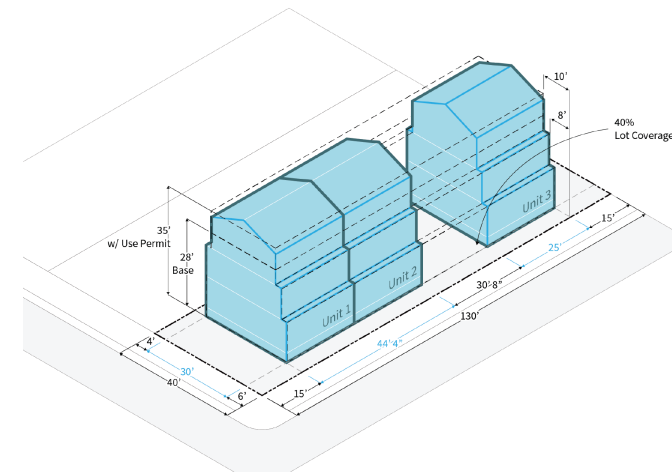
New Detached Building Behind Existing	Attached Sidecourt	Detached Cluster	Attached Row Homes
# of Units per Lot	# of Units per Lot	# of Units per Lot	# of Units per Lot
Lot Area per Unit	Lot Area per Unit	Lot Area per Unit	Lot Area per Unit
Lot Coverage	Lot Coverage	Lot Coverage	Lot Coverage
Usable Open Space	Usable Open Space	Usable Open Space	Usable Open Space
Building Height, Avg.	Building Height, Avg.	Building Height, Avg.	Building Height, Avg.
# of Stories	# of Stories	# of Stories	# of Stories
Front Setback	Front Setback	Front Setback	Front Setback
Rear Setback	Rear Setback	Rear Setback	Rear Setback
Side Setback	Side Setback	Side Setback	Side Setback
Bldg Separation	Bldg Separation	Bldg Separation	Bldg Separation

Consistent Setbacks & Building Separation



Consistent upper-story setbacks

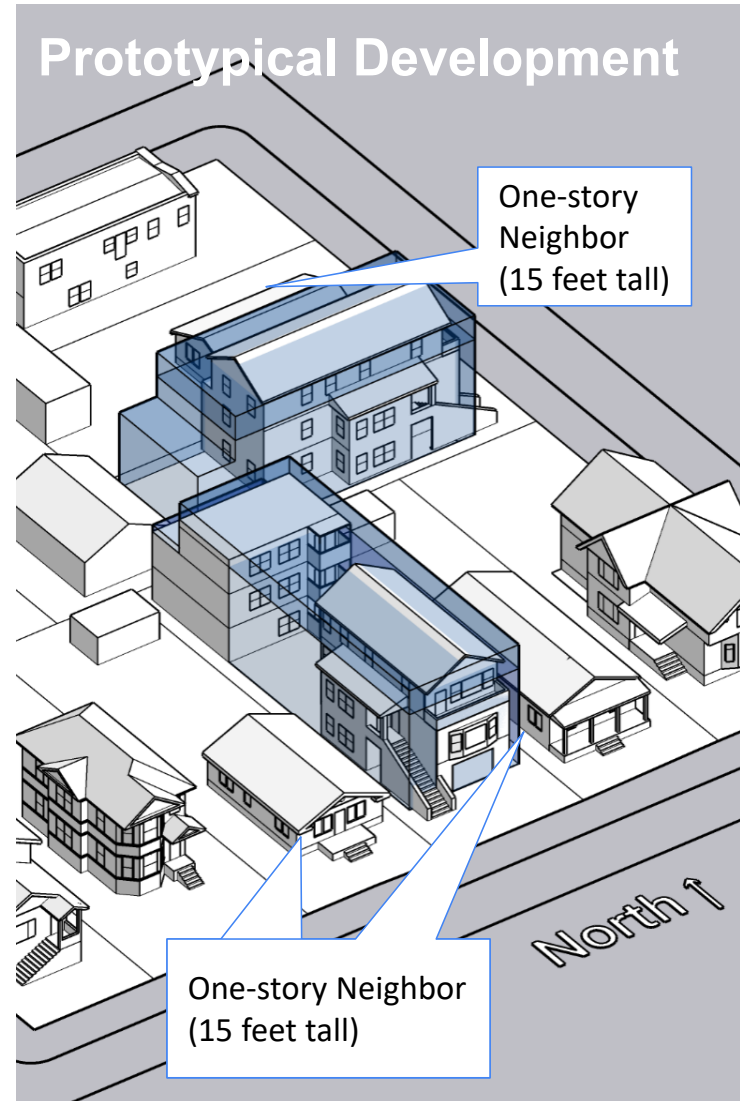
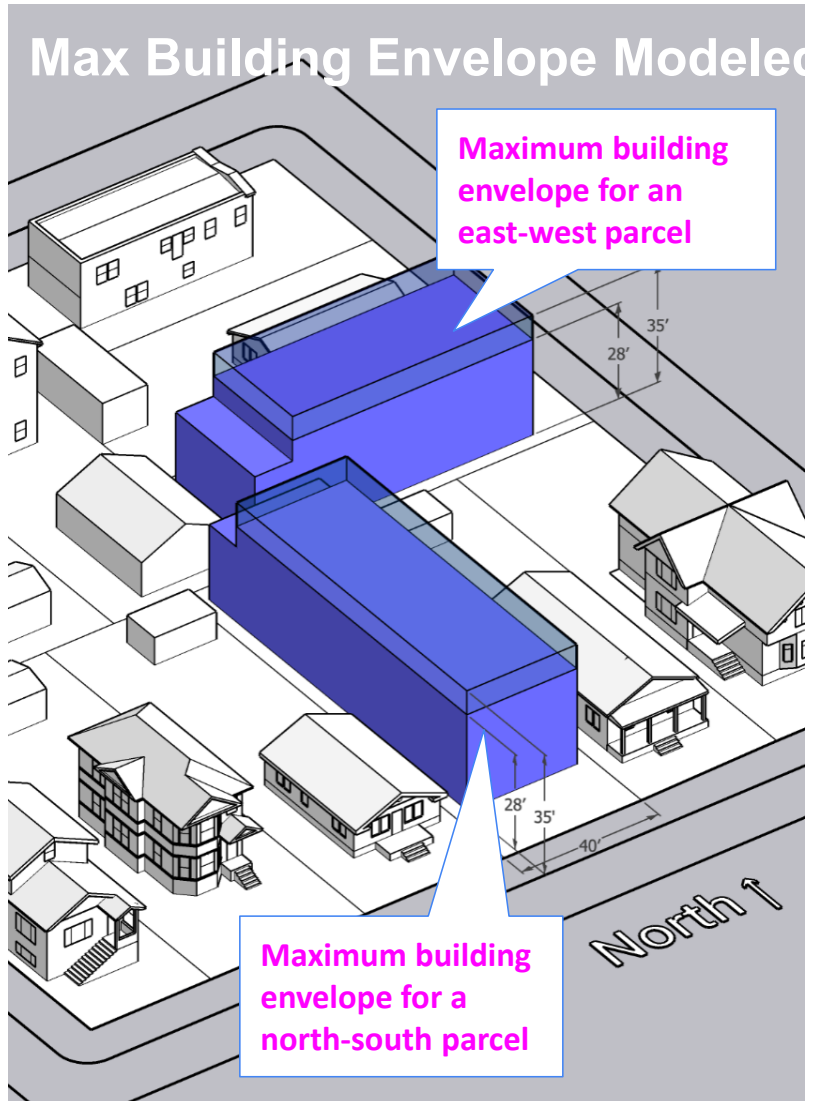
- Remove “wedding cake” design



No minimum building separation
Building and Fire Codes still apply!

SHADOW ANALYSIS

1. Purpose
2. Methodology
3. Results
4. Testing Options
5. Recommendations



The maximum building envelope defines the edges of what can be built and was modeled to cast shadows for the most impactful scenario.

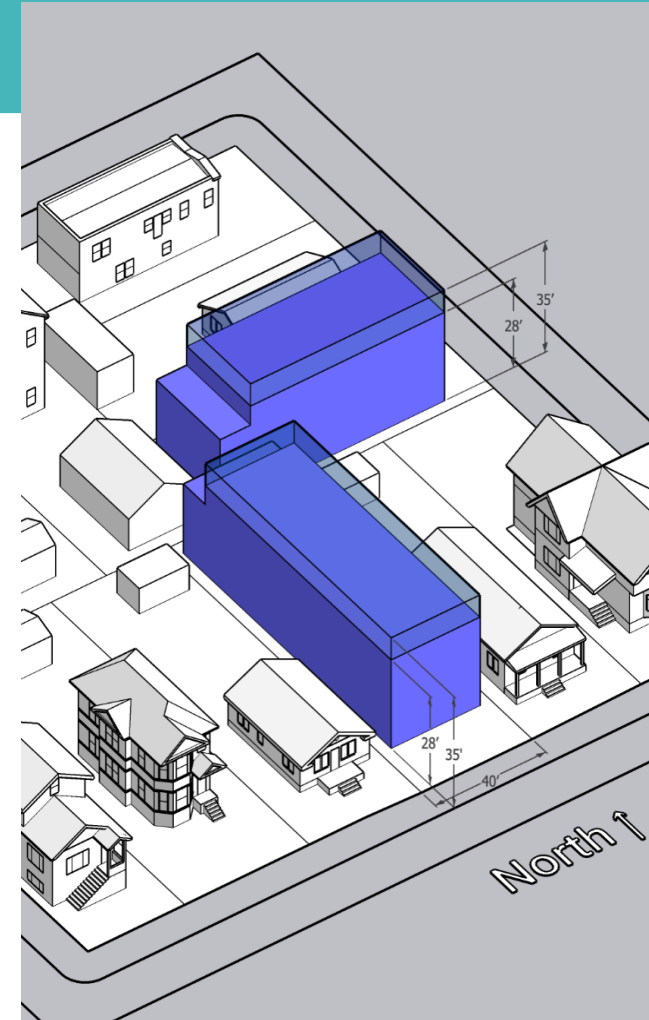
There are more standards define new prototypical development, such as lot coverage and FAR, that reduces the mass and bulk.

Not shown in the model:

- Shading from trees
- Sloping site
- Overcast skies
- Optimized solar panel locations

Model Methodology

- Built model in SketchUp
- Projected shadows from allowed building envelopes on the equinox (March or September 21)
- Calculated the percentage of adjacent rooftops shaded at 8am, 10am, noon, 2pm, and 4pm
- Compared calculations for 28' and 35' heights
- Created video to show how shadows change over the course of a day
- Tested increased upper story setbacks



URBAN FIELD
Berkeley Shadow Study
from Urban Field


[START VIDEO](#)

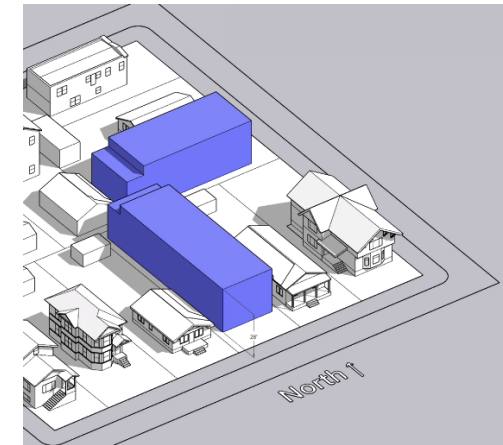
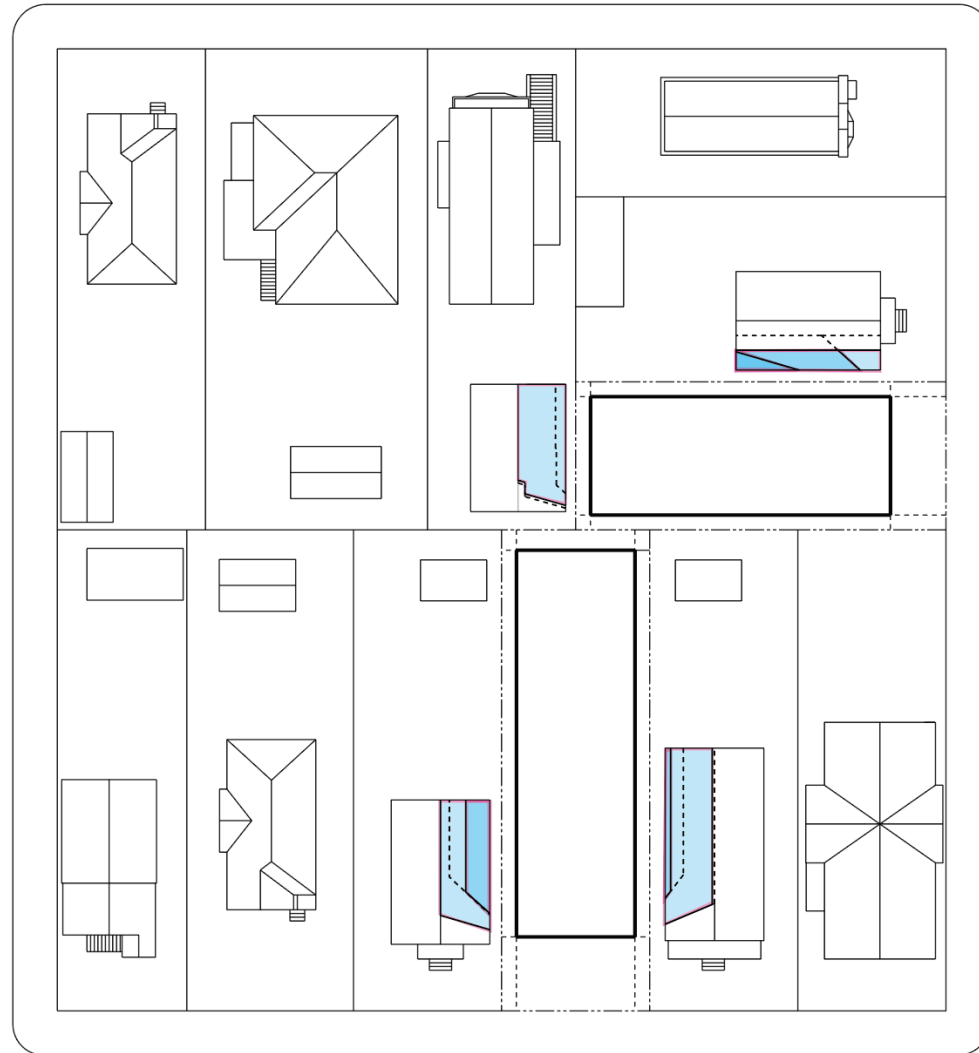
8:00 AM
12:00 PM
2:00 PM
4:00 PM

00:49

vimeo

**Proposed
Max Height
28 Feet**

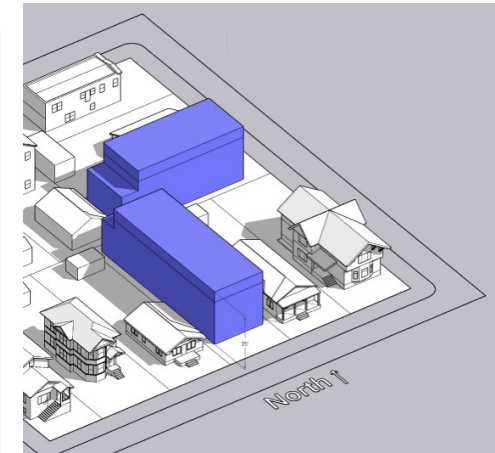
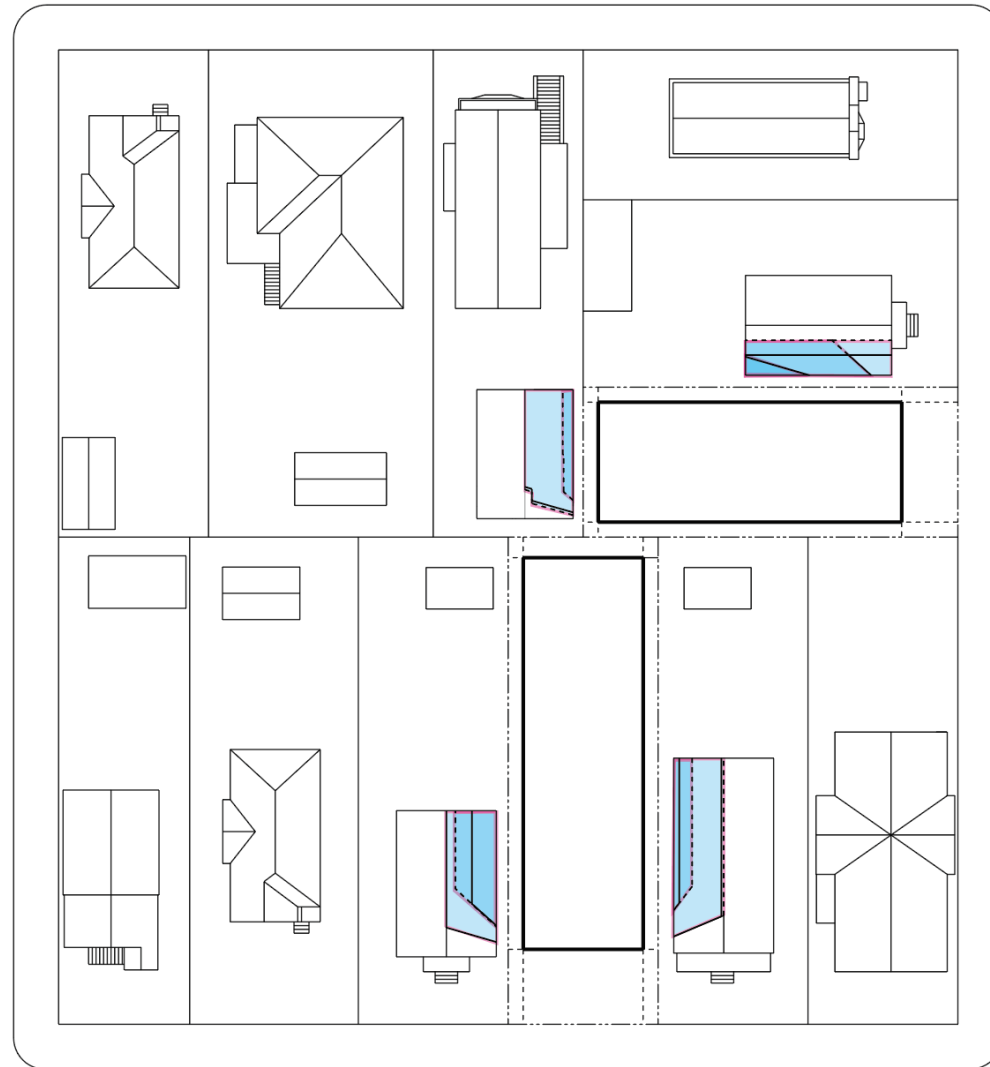
 **Shadow cast**
Darker blue = shadows at
more times during the day



Proposed Max Height 35 Feet

 Shadow cast

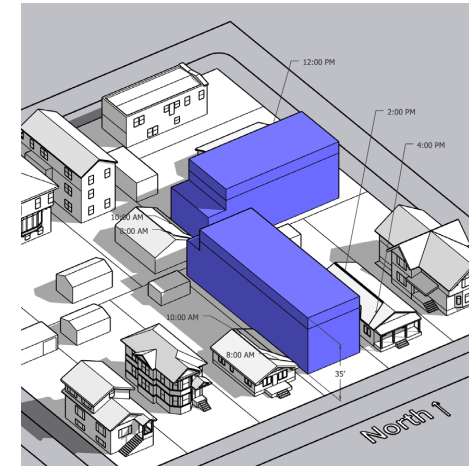
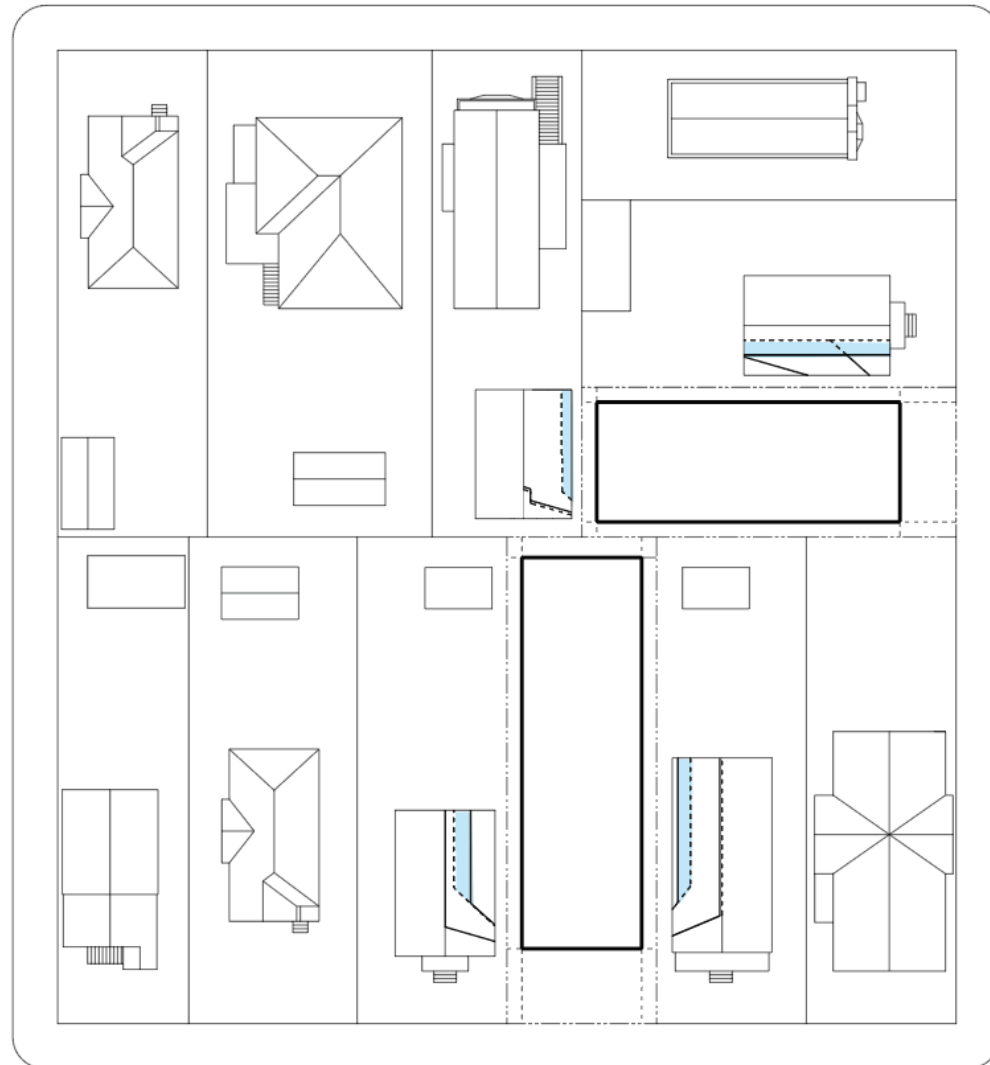
Darker blue = shadows at
more times during the day



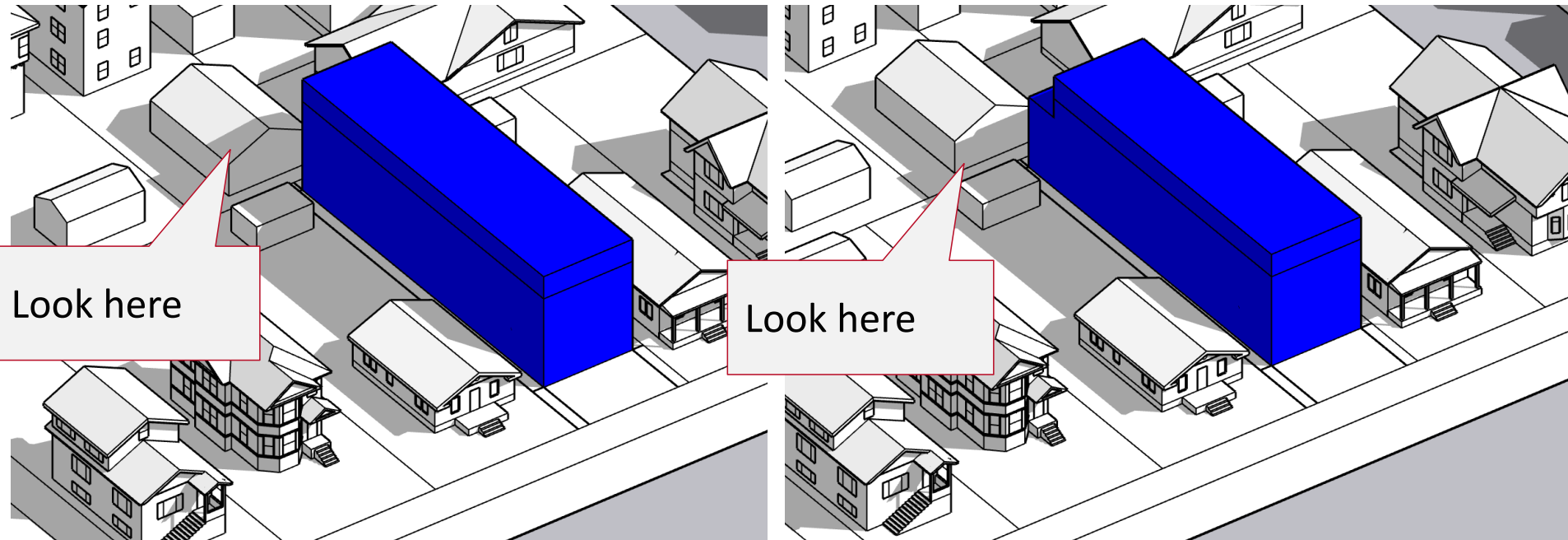
Difference

Less than a 10%
difference in
shadow impact
when building
envelope increases
from 28 to 35 feet

 Shadow at 35'
but not at 28'



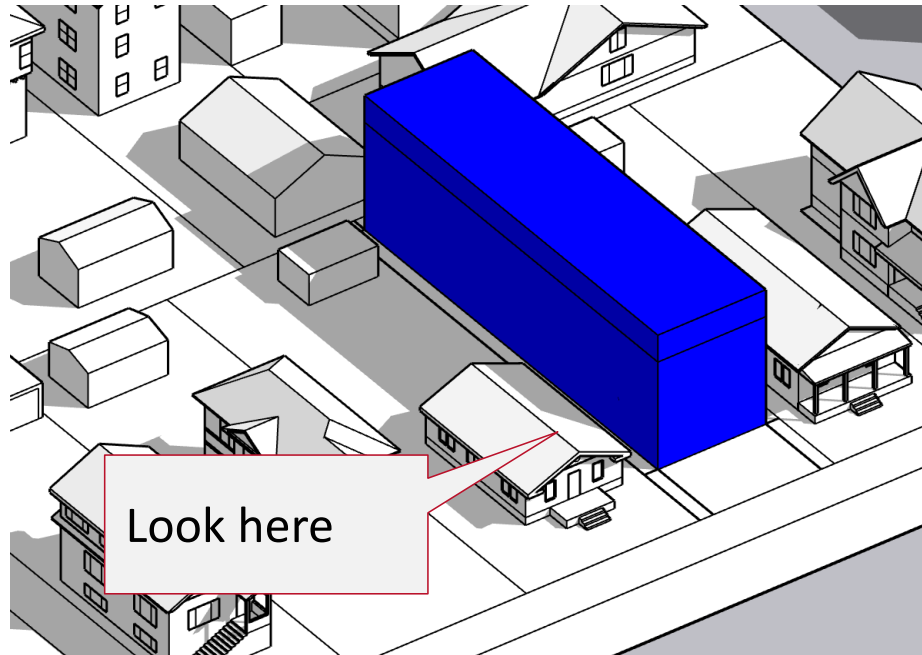
Testing Standards - Rear Height



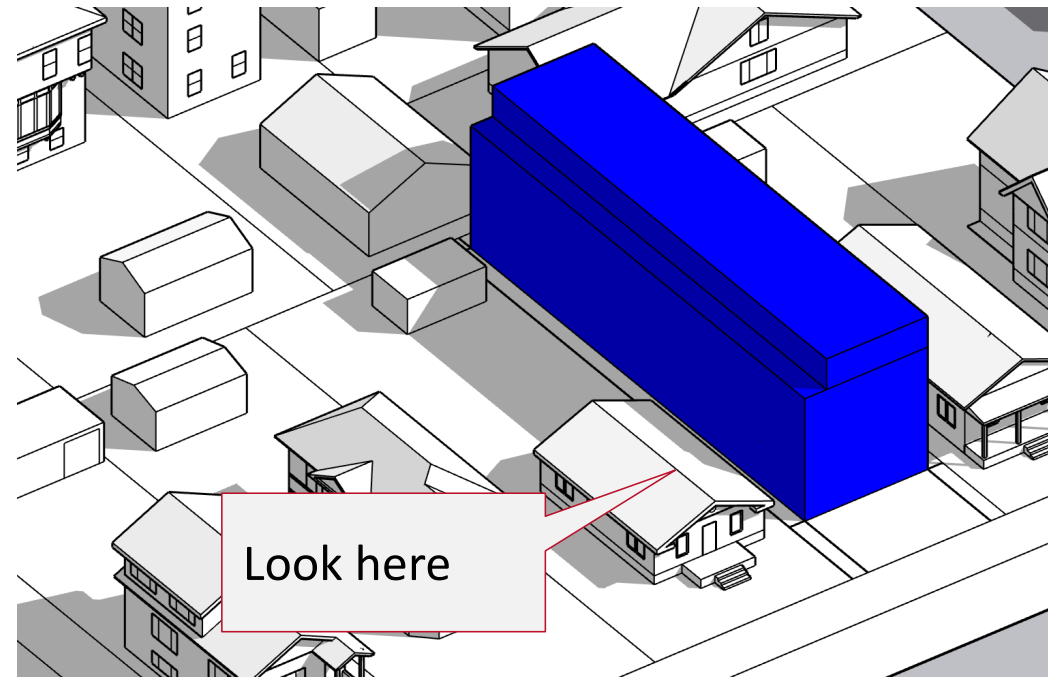
35' height 4' from rear property line

Proposed standard: 22' within 15 feet of rear property line

Testing Standards – Side Upper Story Setbacks

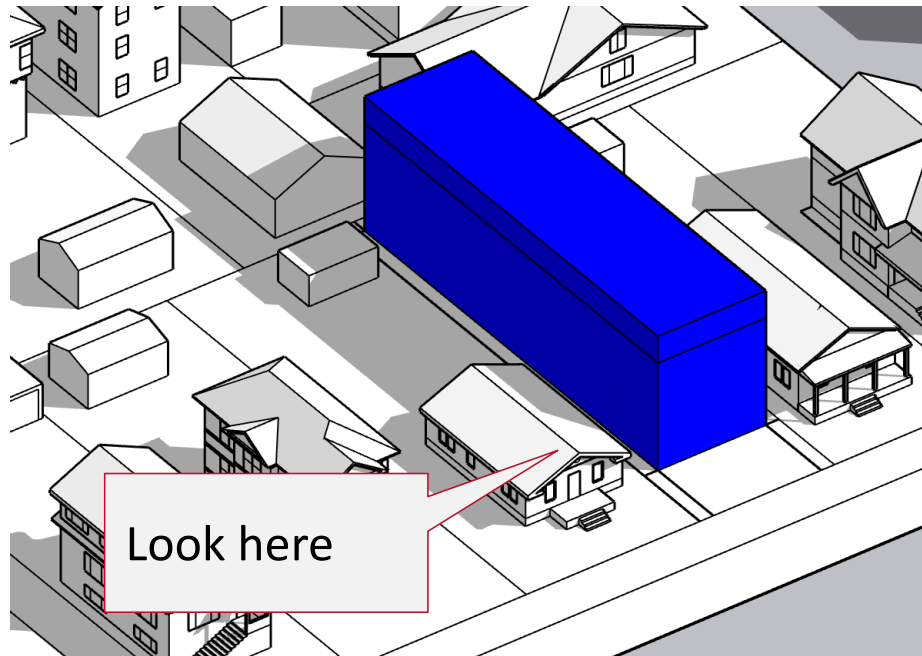


Proposed 4' Setbacks for all stories

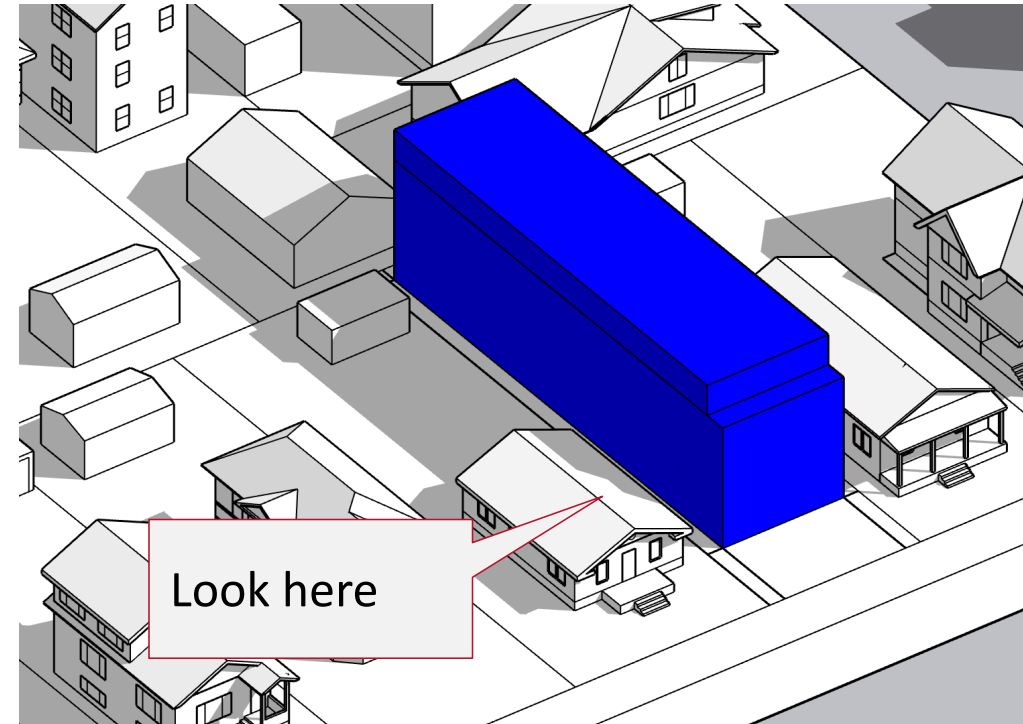


Additional 5' above 28 feet – not recommended

Testing Standards - Front Upper Story Step Back

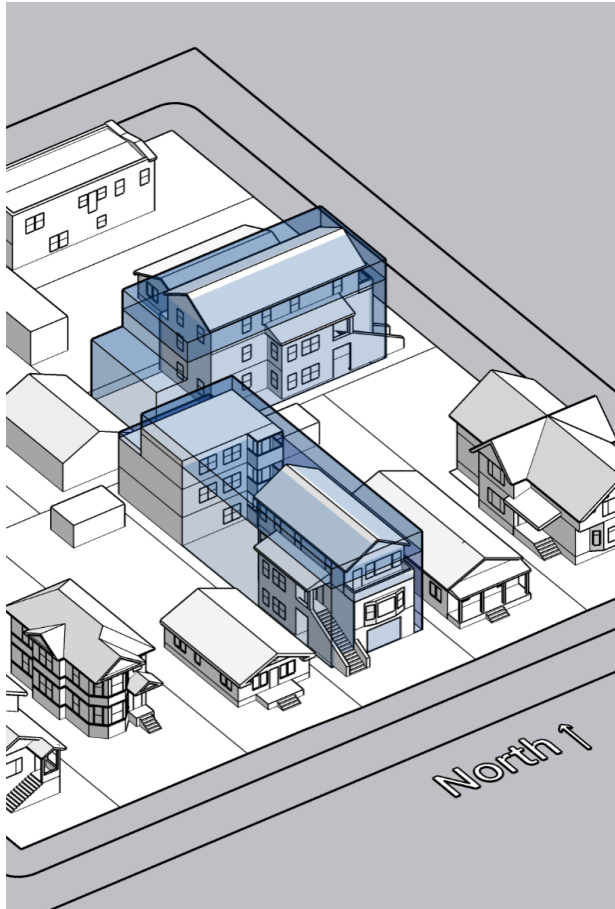


Proposed 20' front setback for all stories



Additional 5' above 28 feet – not recommended

Staff Recommendations Based on Model Results



- Proposed height and setbacks standards are sufficient to address rooftop solar impacts; additional standards are not needed
- Proposed middle housing standards, including lot coverage and FAR limitations, are sufficient to address privacy and aesthetic impacts on adjacent properties
- Homeowners may establish a solar easement to guarantee no future reduction in solar access

Allowed Uses & Permits Required

	R-1	R-1H	R-1A	R-2	R-2H	R-2A	R-2AH	MU-R
Multi-Unit Residential	ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC

 Include consideration of the Hillside Overlay

Discretionary permit still required for -

- *Structures of Historic Merit → Structural Alteration Permit*
- *Cortese List Hazardous Waste and Substances site*

Discussion

Meeting the Goals?

Do the proposed development standards achieve the goals of the City Council referrals, namely encouraging the development of middle housing in low-density residential districts?

Changes or Revisions?

Are there provisions of the proposed zoning standards that should be changed or revised?

Additional Considerations?

Are there additional considerations that remain unaddressed by the proposed development standards?

THANK YOU



Photo Credit Jessica Christian / The Chronicle [LINK](#)

CONTACT US

HousingElement@cityofberkeley.info