

City of Berkeley Missing Middle Illustrations

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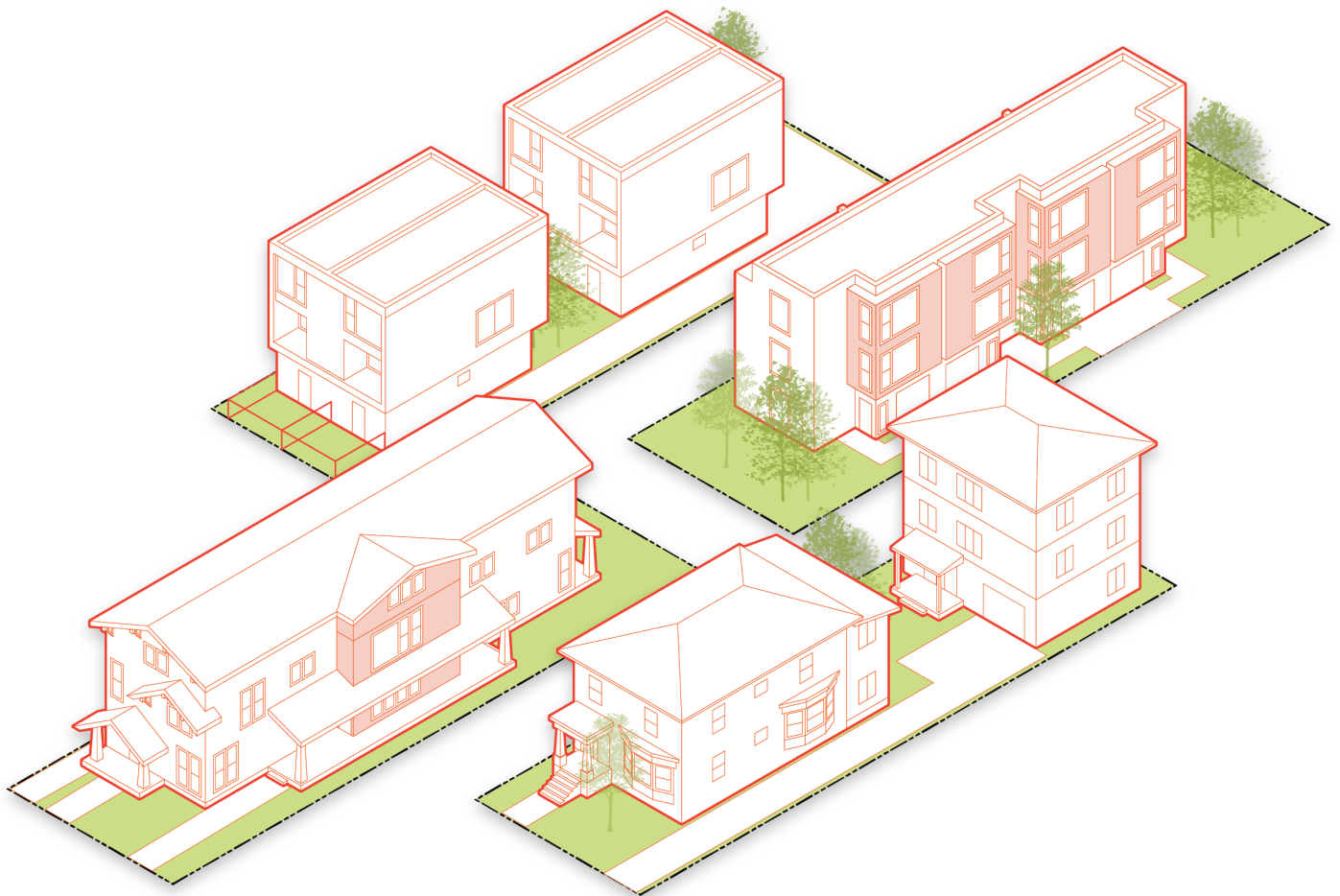


Table of Contents

Introduction	3
Part 1: Existing Standards Illustrated	4
R-1 Existing Standards	4
Model 1: R-1 Single Building on Internal Lot	5
R-1A Existing Prototypes	6
Model 2: R-1A Single Building on Corner Lot	6
R-2 Existing Standards	7
Model 3: R-2 Two Buildings on an Internal Lot	8
Model 4: R-2 Two Buildings on Internal Lot	9
Model 5: R-2 Two Buildings on Corner Lot	10
R-2A Existing Standards	11
Model 6: R-2A Two Buildings on a Corner Lot	12
Model 7: R-2A Two Buildings on Internal Lot	13
MU-R Existing Standards	14
Model 8: MU-R Four Buildings on Corner Lot	15
Model 9: MU-R Two Buildings on Internal Lot	16
SB 9	17
Model 10: R-1 Two Buildings with Split Lot (SB 9)	17
Summary of Part 1	18
Part 2: Missing Middle Models of 2-4 units	19
Prototype 1: New Detached Building behind Existing	20
Comparison Table for Prototype 1	21
Prototype 2: Attached Sidecourt	22
Comparison Table for Prototype 2	23
Prototype 3: Detached Cluster	24
Comparison Table for Prototype 3	25
Prototype 4: Attached Row homes	26
Comparison Table for Prototype 4	27
Summary of Part 2	28

Introduction

Project Overview

Illustrations of the existing Zoning Ordinance were produced to identify existing content that may require revisions to achieve the goals of the Objective Standards project. Existing zoning standards may require revisions to allow 2-4 units in R1, R-1A, R-2, R-2A, and MU-R zoning districts. This will be the first of two studies, the following study will feature revisions to allow 5+ units.

The revisions may include allowed land uses, permit requirements, Use Permit findings, and development standards to facilitate the City Council's referrals for Missing Middle Development¹ and to End Exclusionary Zoning². Areas of subjectivity particularly in relation to standards that can be modified with discretionary permits will be studied separately as well. This report compares the existing standards (Part 1) with prototypes of missing middle housing (Part 2) to illustrate desired forms of 2-4 unit housing and to highlight considerations for amendments of existing development standards.

Part 1: Illustrated Existing Standards

An analysis and comparison of existing development standards and methods of measurement for zoning districts appropriate for 2-4 units were studied. The illustrations do not demonstrate design, but show how a standard lot (measuring 40' by 130' and 5,200 sf) can sustain up to four units. In Part 1, the existing developable envelope is shown with a dashed line that illustrates setbacks, lot coverage, open space, and average building height. Furthermore, the habitable floor area and building envelope are also limited by stepbacks and FAR requirements. The resulting developable volume is illustrated with a blue volume to highlight the maximum allowable building massing allowed by existing standards. These illustrations visually explain the standards and provide context as we contemplate the scale and size of the units that are already allowed, or could be allowed in zones that allow 2-4 units. Generally, no parking is required, though parking is shown selectively where space allows. A summary table is provided at the end of the section to summarize the models.

Part 2: Development Feasibility Studies for 2-4 units

Prototypes of missing middle housing were developed to show how 2-4 units reasonably fit on a typical lot to guide discussion and development of the Objective Standards. A comparison is drawn between what existing zoning allows and what is shown in the prototypes to spur discussion about adjustments needed for any of the zoning districts, the compatibility with neighboring buildings, and other aspects of design.

1. https://www.cityofberkeley.info/Clerk/City_Council/2019/04_Apr/Documents/2019-04-23_Item_32_Missing_Middle_Report.aspx

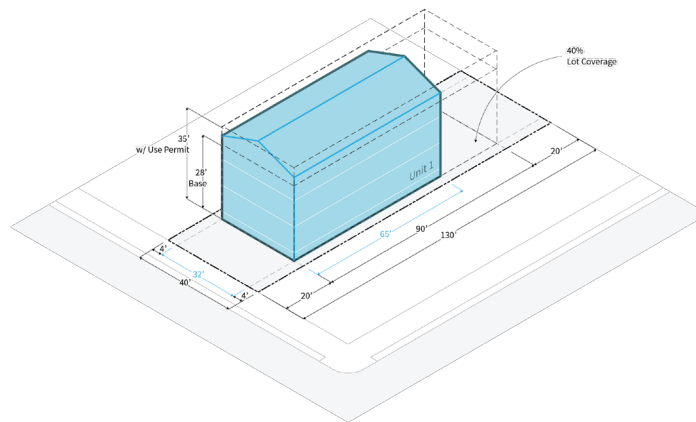
2. https://www.cityofberkeley.info/Clerk/City_Council/2021/02_Feb/Documents/2021-02-23_Item_29_Resolution_to_End_Exclusionary.aspx

Part 1: Existing Standards Illustrated

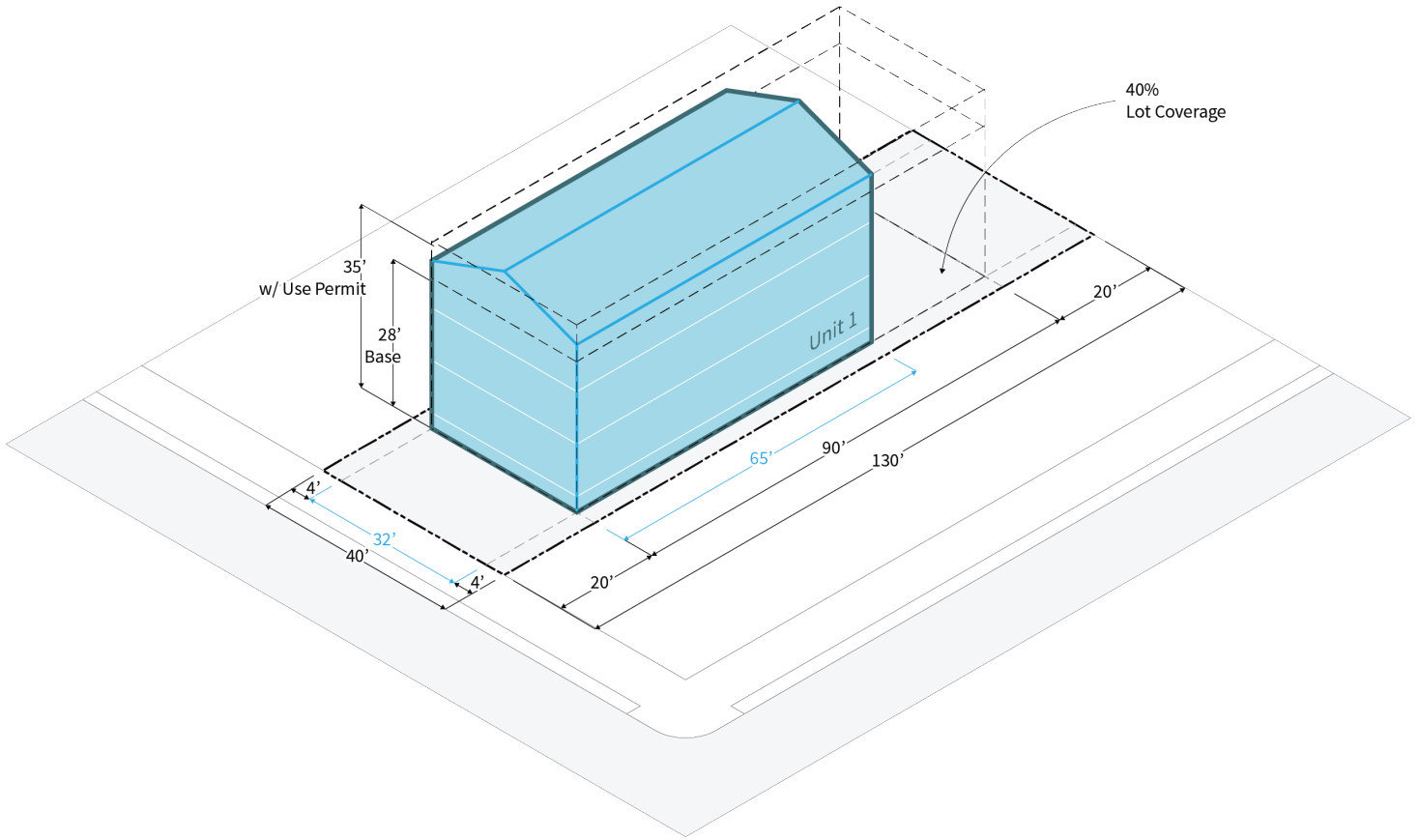
R-1 Existing Standards

Model 1 shows how the existing development standards apply to the typical R-1 lot. The R-1 district allows single-family dwellings, but not two-family or multifamily dwellings except as provided for under SB 9.

Model 1



Model 1: R-1 Single Building on Internal Lot

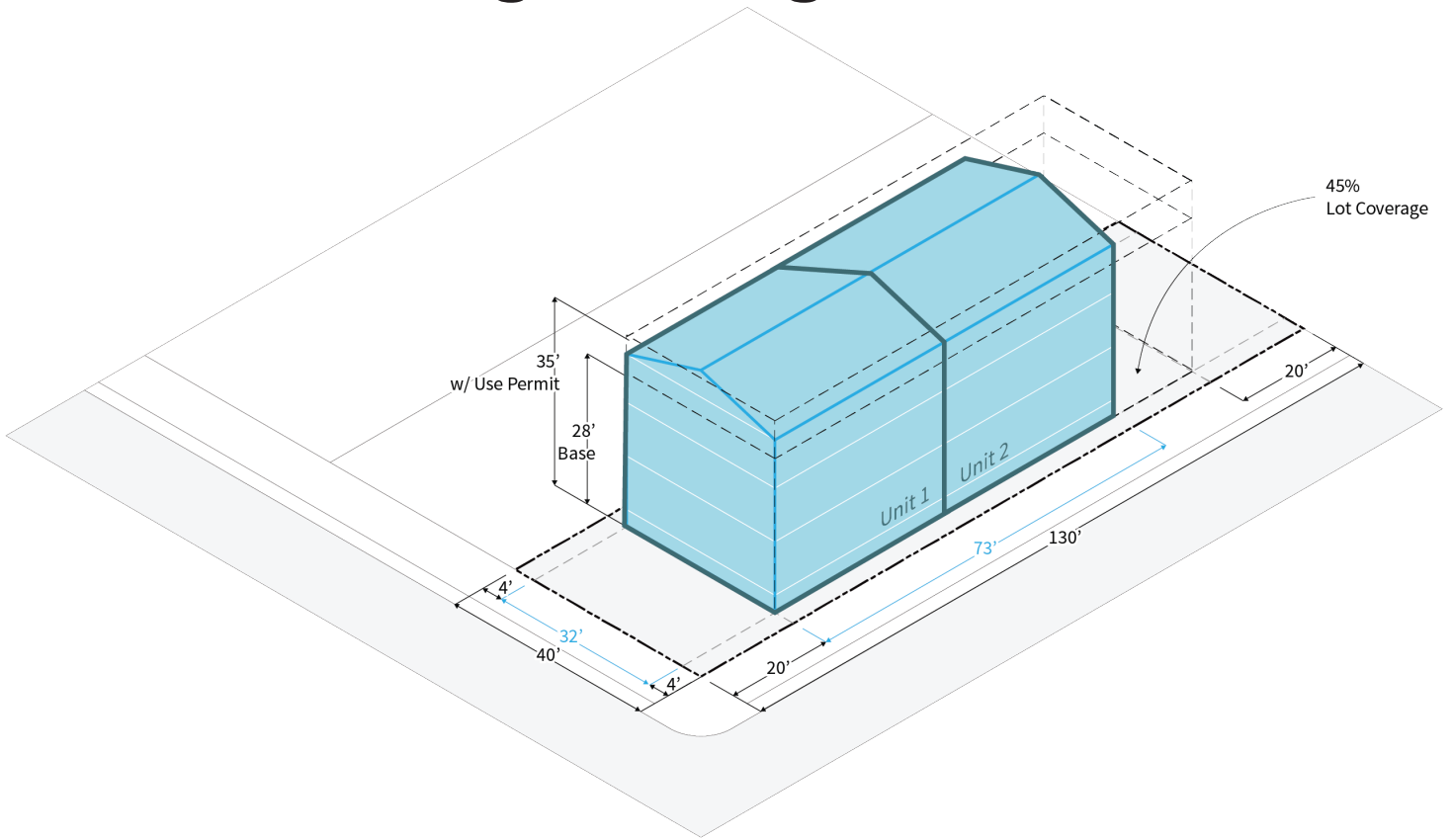


This first model shows the typical maximum building envelope on a standard R-1 lot for one unit only. This is the prevailing typical single-family housing typology for residential zoning. As shown in this model, **lot coverage is a limiting standard in the R-1 district** that prevents the blue building volume from occupying the entire developable envelope shown by the dashed line.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	1	1	Lot Area	5,000 sf min	5,200 sf
Average Height	28', 35' w AUP	35**	Lot Area per Dwelling Unit	No minimum	Meets standard
Stories	3	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	40% max	40%	Outputs		
Setbacks			Total Footprint	Not limited	2,080 sf
Front	20' min	20'	Total Floor Area	6,000 sf	6,240 sf
Rear	20' min	20'	FAR	Not limited	1.2
Side	4' min	4'	Density	1 unit per lot	8.4 du/ac
Street Side	4' min	N/A	Usable Open Space	400 sf/du	Meets standard
Building Separation	N/A	N/A			

* This requires an AUP ** May be reduced with an AUP

Model 2: R-1A Single Building on Corner Lot



The R-1A district allows up to two primary dwellings on one lot. Model 2 shows how a single building can be divided into two units. This scenario could apply to the renovation of an existing building dividing either horizontally (floor by floor) or vertically (front from back) or to new construction. As shown in this model, **lot coverage is a limiting standard in the R-1A district** that prevents the blue building volume from occupying the entire developable envelope shown by the dashed lines.

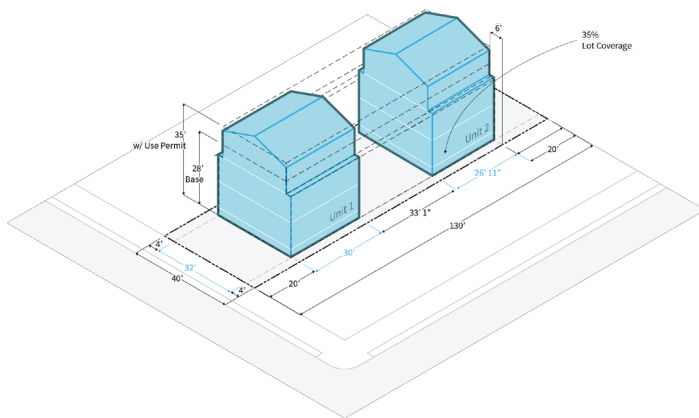
Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	2	2	Lot Area	5,000 sf min 4,500 sf for 2 units	5,200 sf
Average Height	28'; Additions: 14', 22' for rear, 35' w AUP	35**	Lot Area per Dwelling Unit	2,250 sf min (2 units max)	2,600 sf
Stories	3, 2 for a rear building	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	45% max on corner lot	45%	Outputs		
Setbacks			Total Footprint	Not limited	2,336 sf
Front	20'	20'	Total Floor Area	6,750 sf	7,008 sf
Rear	20 min **	20'	FAR	Not limited	1.3
Side	4' min	4'	Density	Max 2 units per lot	16.75 du/ac
Street Side	4' min	N/A	Usable Open Space	400 sf/du	Meets standard
Building Separation	8' min for 1 story, 12' for 2 stories, 16' for 3 stories**	N/A			

* This requires an AUP ** May be reduced with an AUP

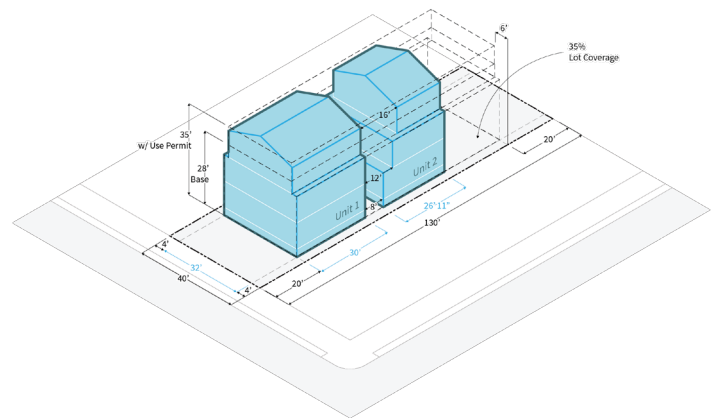
R-2 Existing Standards

The R-2 district allows single-family, two-family, and multifamily dwellings subject to minimum lot size requirements. Model 3, 4, and 5 show the existing development standards for R-2 which allows each to have two units on a 5,200sf lot. Models 3 and 4 show internal R-2 lots and Model 5 shows a corner lot condition. Model 3 shows how two units are located at the property edges, which is typical construction because it maximizes the open space between units. Model 4 illustrates the minimum separation requirements between two buildings for R-2. Model 5 illustrates the setbacks applicable to a corner lot and minimum separation requirements between units.

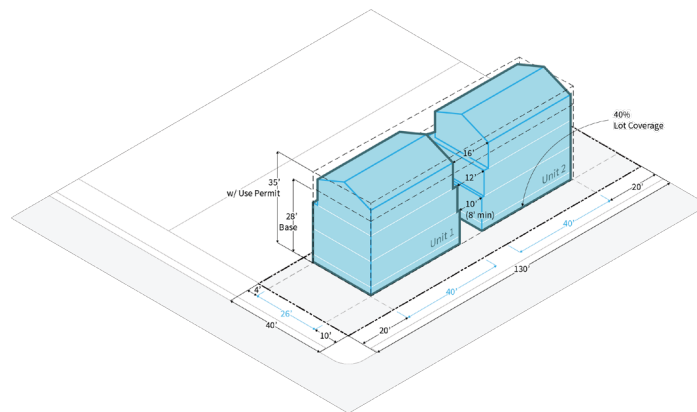
Model 3 (Interior Lot)



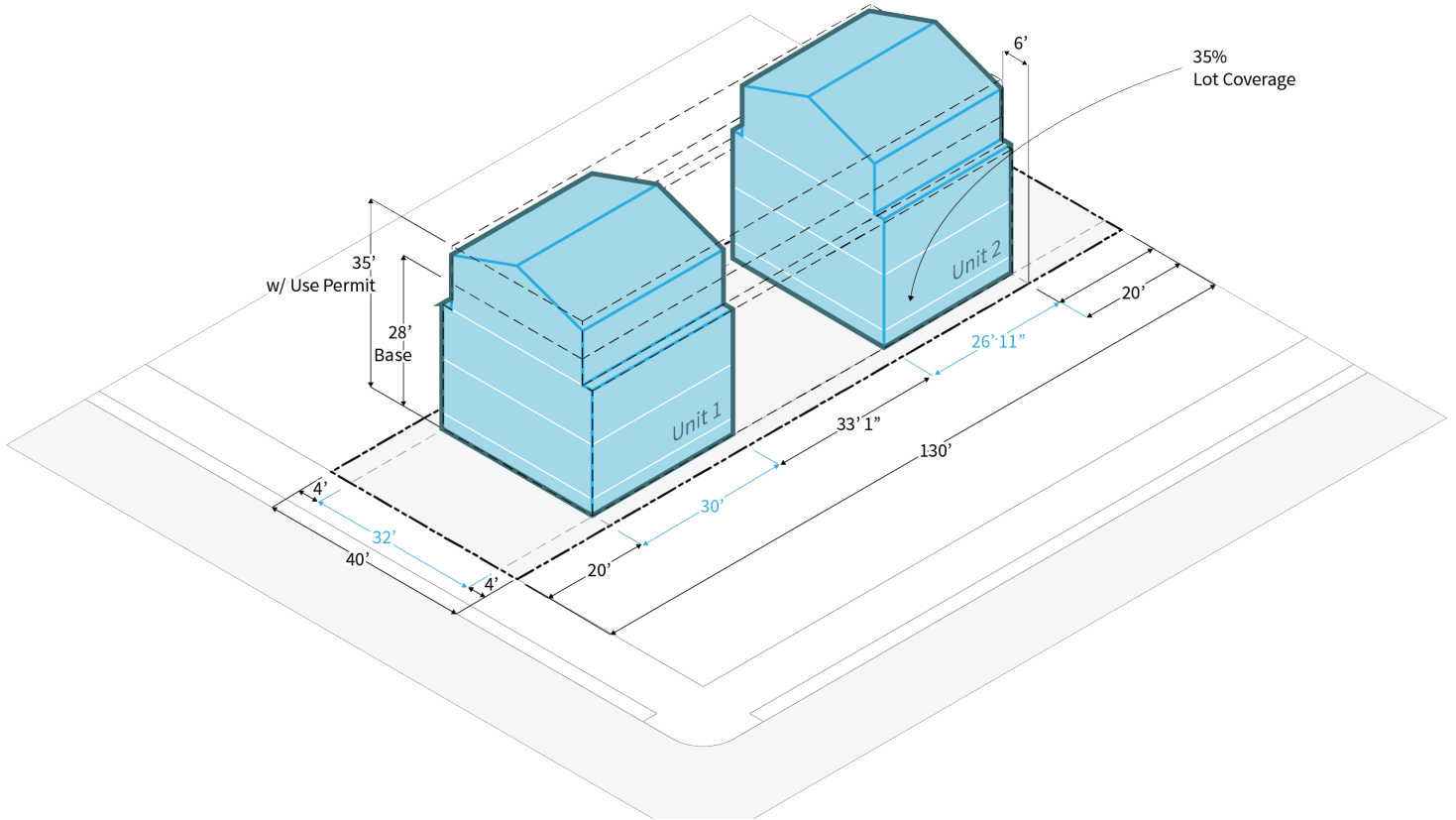
Model 4 (Interior Lot)



Model 5 (Corner Lot)



Model 3: R-2 Two Buildings on an Internal Lot

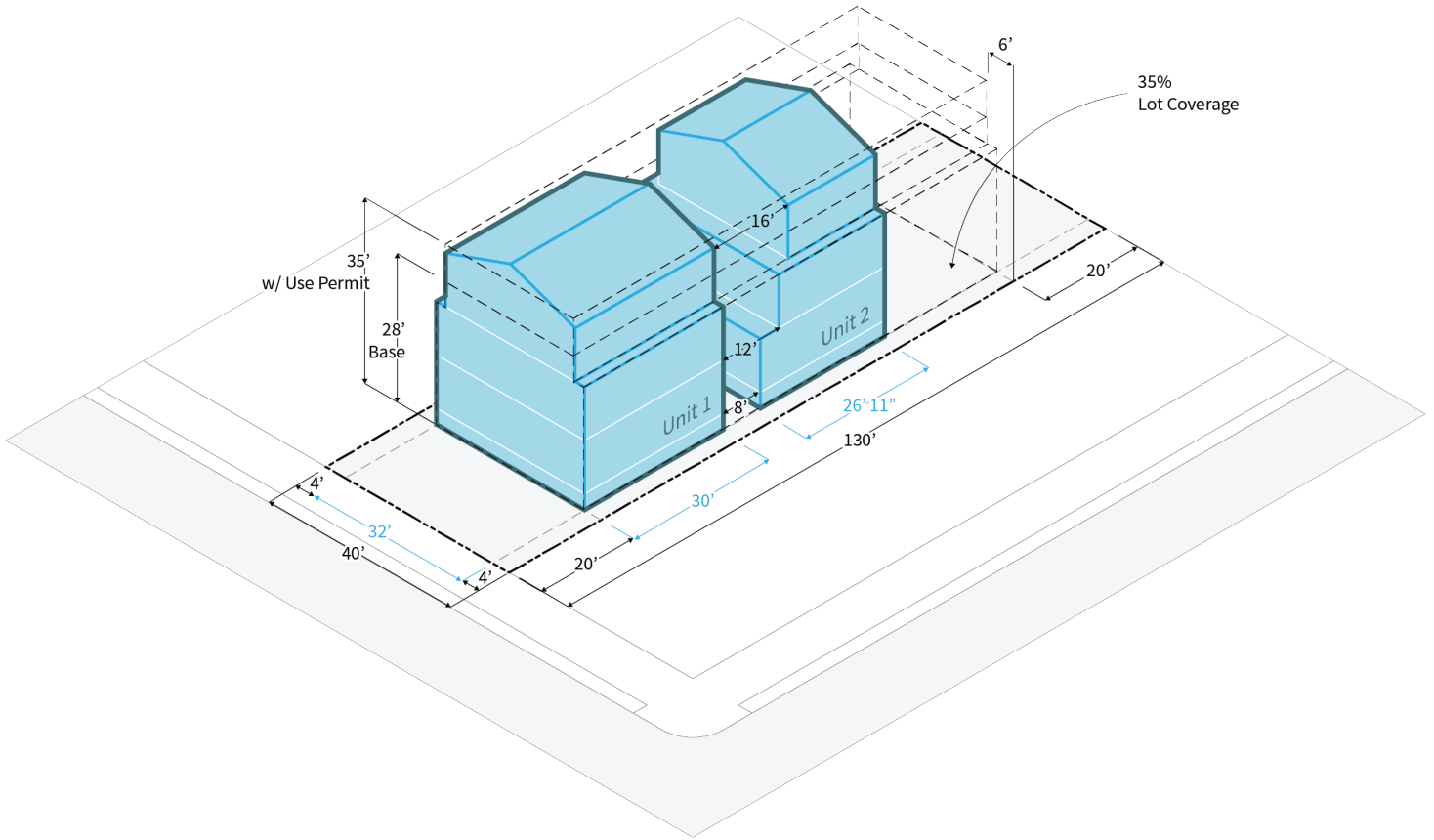


Model 3 shows two buildings, a larger one at the street frontage and a smaller one at the back. This could illustrate an existing building with a new additional dwelling unit added behind, or new construction of two buildings. Upper level stepbacks are illustrated which require a two foot stepback at the third floor. This model exceeds minimums for building separation to maximize the open space between both units. **In the R-2 district lot coverage and third-story stepbacks are limiting standards** that prevent the blue building volume from occupying the entire developable envelope shown by the dashed line.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	2	2	Lot Area	5,000 sf min	5,200 sf
Average Height	28'; Additions: 14', 35' w AUP	35**	Lot Area per Dwelling Unit	2,500 sf	2,600 sf
Stories	3	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	35% for 3 story building on interior lot	35%	Outputs		
Setbacks			Total Footprint	Not limited	1,820
Front	20' min	20'	Total Floor Area	Not limited	5,229
Rear	20' min **	20'	FAR	Not limited	1.0
Side	4' for first two stories, 6' for third story	4' /6'	Density	3+ units per lot	16.75 du/ac
Street Side	10'	N/A	Usable Open Space	400 sf/du	Meets standard
Building Separation	8' min for 1st story, 12' for 2nd story, 16' for 3rd story**	Meets standard			

* This requires an AUP ** May be reduced with an AUP

Model 4: R-2 Two Buildings on Internal Lot

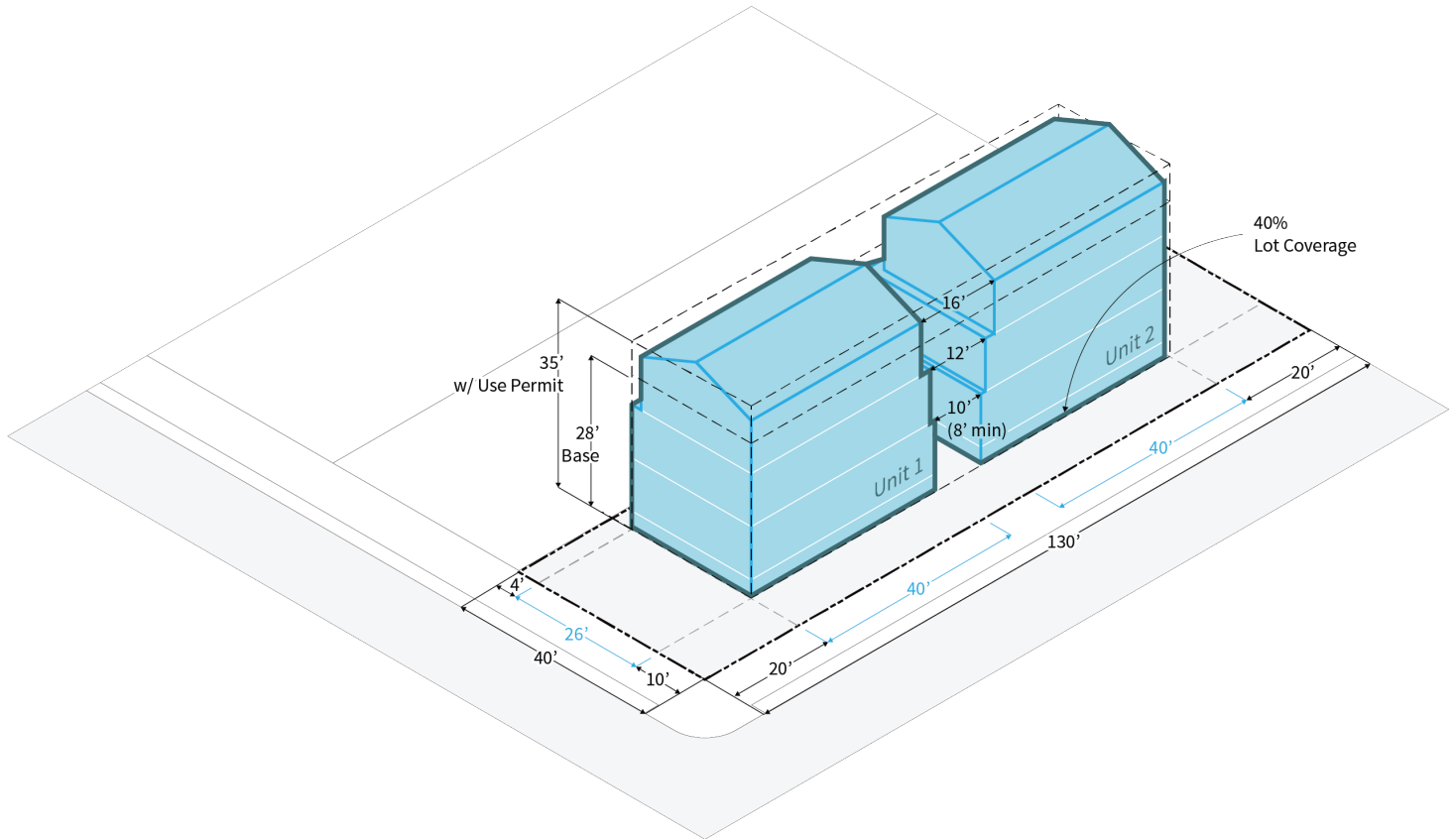


Model 4 shows the developable volume of two units based on stepback and building separation standards that vary by story. Between Model 2 and 4, the FAR drops from 1.0 to 0.9 because of building separation standards. In this model, **building separation as well as lot coverage and third-story stepbacks are limiting standards** that prevent the blue building volume from occupying the entire developable envelope shown by the dashed line.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	2	2	Lot Area	5,000 sf min	5,200 sf
Average Height	28'; Additions: 14', 35' w AUP	35'	Lot Area per Dwelling Unit	2,500 sf	2,600 sf
Stories	3	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	35% max for 3 story building on interior lot	35%	Outputs		
Setbacks			Total Footprint	Not limited	1,820 sf
Front	20' min	20'	Total Floor Area	Not limited	4,881 sf
Rear	20' min	20'***	FAR	Not limited***	0.9
Side	4' for first two stories, 6' for third story	4' / 6'	Density	3+ units per lot	16.75 du/ac
Street Side	10'	N/A	Usable Open Space	400 sf/du	Meets standard
Building Separation	8' min for 1st story, 12' for 2nd story, 16' for 3rd story**	Meets standard			

* This requires an AUP ** May be reduced with an AUP *** SB 478 prohibits a floor area ratio standard of less than 1.0

Model 5: R-2 Two Buildings on Corner Lot



Model 5 shows two separate units built on a corner lot in the R-2 zone. Setbacks are bigger for a corner lot in comparison to an internal lot. This shows how the building separation increases by story, however the ground floor is shown at 10 feet because this is the resulting distance between two buildings on the lot given the configuration of setbacks and lot coverage. It exceeds the 8-foot building separation at the ground floor. On a corner lot, **the street side setback and building separation are limiting standards** which further constrains the developable envelope compared to interior lots.

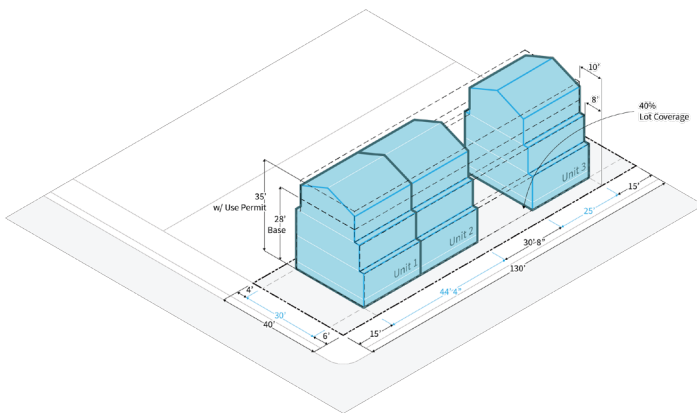
Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	2 max	2	Lot Area	5,000 sf min	5,200 sf
Average Height	28'; Additions: 14', 35' w AUP	35'	Lot Area per Dwelling Unit	2,500 sf min	2,600 sf
Stories	3 max	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	40% max for 3 story building on corner lot	40%	Outputs		
Setbacks			Total Footprint	Not limited	2,080
Front	20' min	20'	Total Floor Area	Not limited	5,884
Rear	20' min	20'	FAR	Not limited	1.1
Side	4' for first two stories, 6' for third story	4'	Density	3+ units per lot	16.75 du/ac
Street Side	10' min	10'	Usable Open Space	400 sf/du min	Meets standard
Building Separation	8' min for 1st story, 12' for 2nd story, 16' for 3rd story**	Meets standard			

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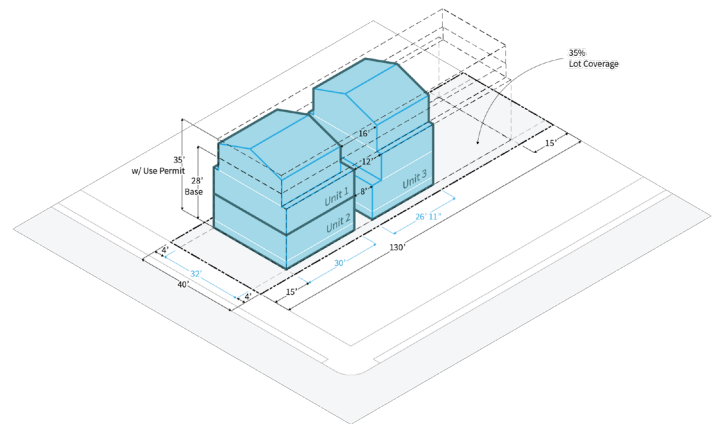
R-2A Existing Standards

The R-2A district allows single-family, two-family, and multifamily dwellings subject to minimum lot size requirements. Model 6 and 7 show the existing development standards for R-2A which allows three units on a 5,200sf lot. Model 6 shows the three units on a corner lot. Model 7 shows the three units on an interior lot. Corner lots (40%) and interior lots (35%) have different lot coverage requirements for three-story buildings. Models 6 and 7 illustrate the stepback requirements that vary by story. Model 7 also illustrates the building separation requirements that vary by story.

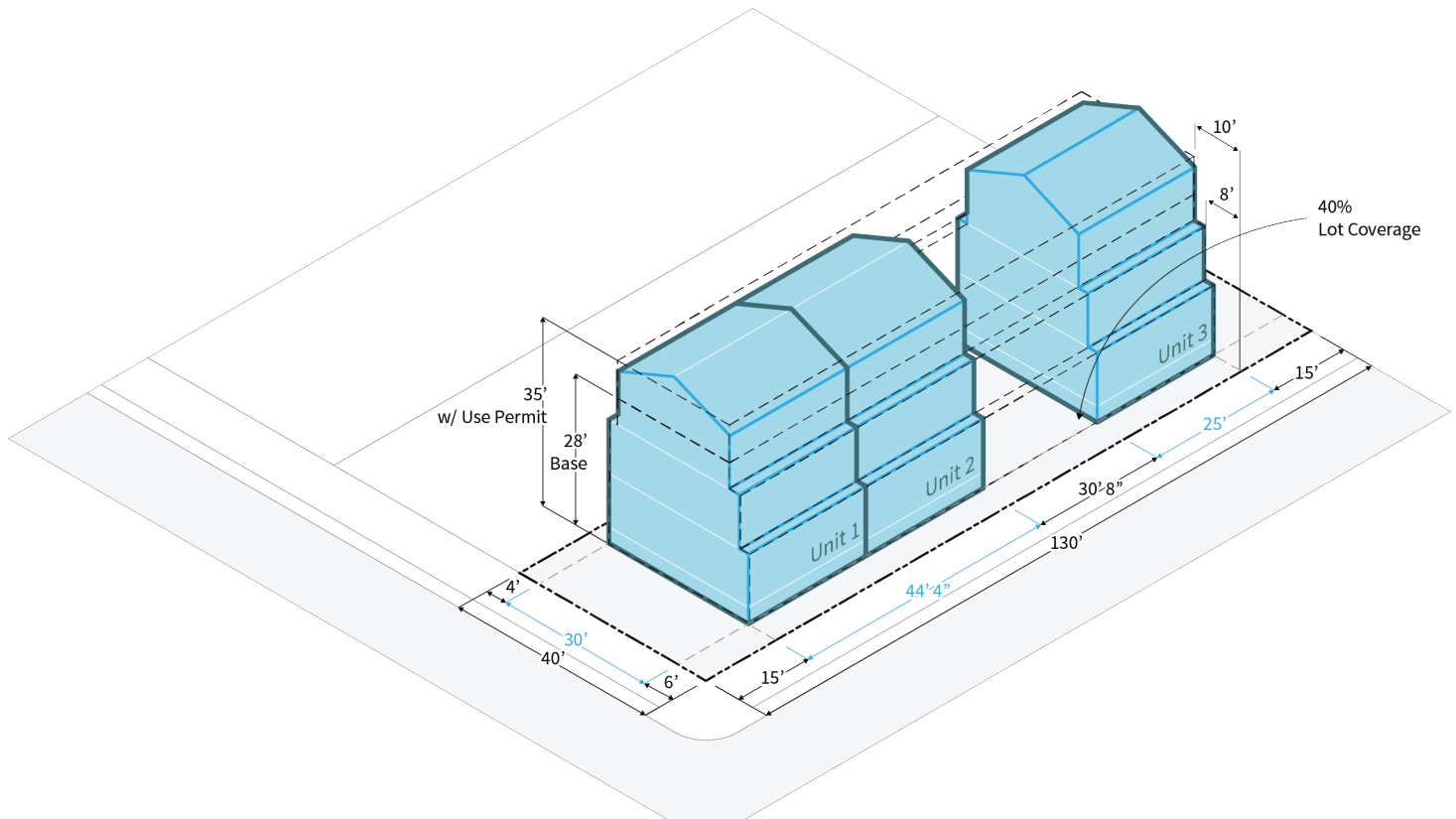
Model 6 (Corner Lot)



Model 7 (Interior Lot)



Model 6: R-2A Two Buildings on a Corner Lot

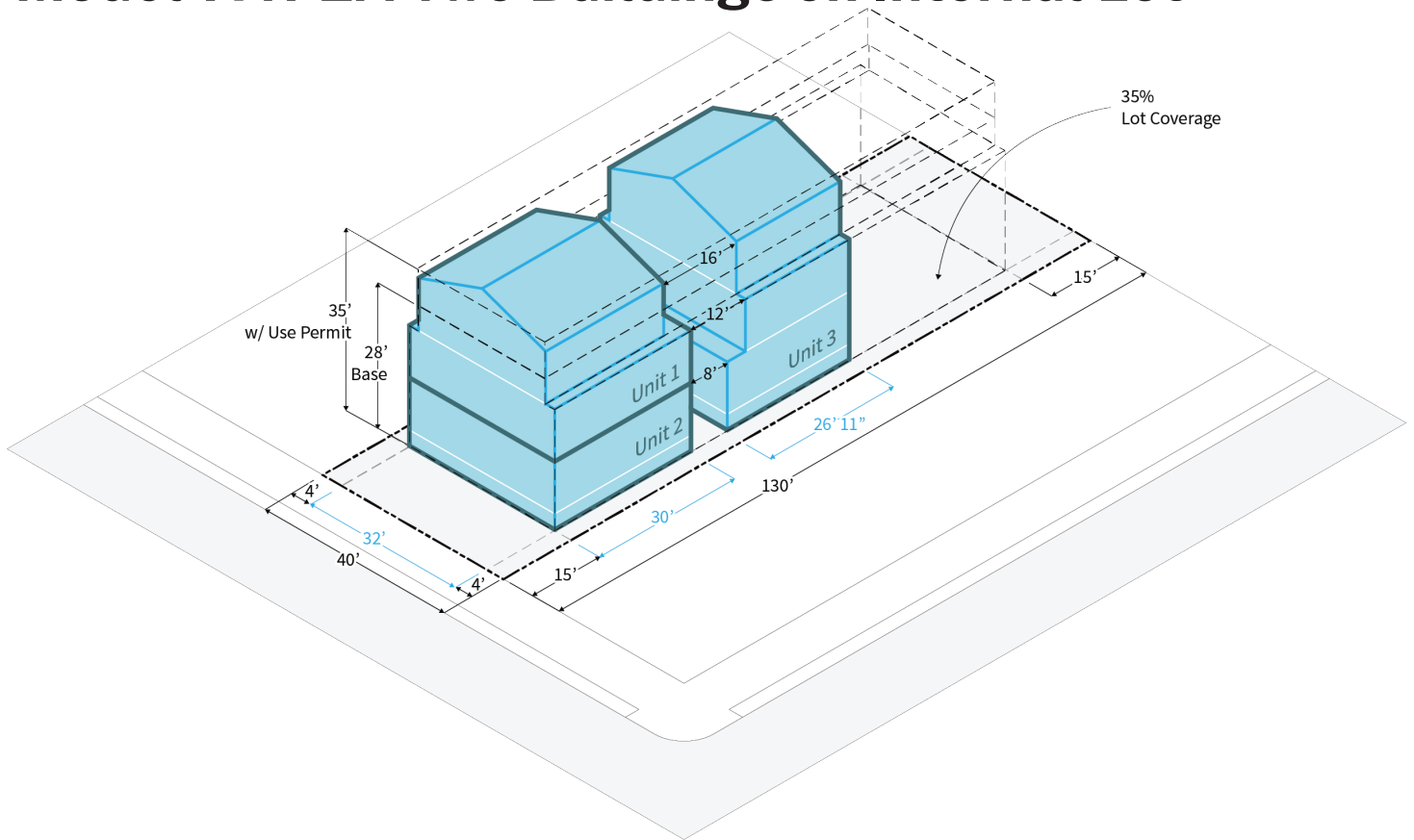


Models 6 and 7 compare R-2A conditions with Model 6 on a corner lot and Model 7 for an internal lot. The larger of the two buildings shown in Model 6 is split into two units to make three units total on the lot. This model shows that **lot coverage is a limiting standard** that prevents the blue building volume from occupying the entire developable envelope shown by the dashed line. The developable envelope is also **further limited by increased side setbacks for second and third stories**.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	3 max	3	Lot Area	5,000 sf min	5,200 sf
Average Height	28' max, Additions: 14', 35' w/ AUP	35'*	Lot Area per Dwelling Unit	1,650 sf min	1,733 sf
Stories	3 max	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	40% for 3 story building on corner lot	40%	Outputs		
Setbacks			Total Footprint	Not limited	2,080
Front	15' min	20'	Total Floor Area	Not limited	6,212
Rear	15' min	20'***	FAR	Not limited	1.2
Side	4' min for first two stories, 6' for 3rd story	Meets standard	Density	3+ units per lot	25.1 du/ac
Street Side	6' min for 1st story, 8' for 2nd story, 10' for 3rd story	Meets standard	Usable Open Space	300 sf/du min	Meets standard
Building Separation	8' min for 1st story, 12' for 2nd story, 16' for 3rd story**	N/A			

* This requires an AUP ** May be reduced with an AUP

Model 7: R-2A Two Buildings on Internal Lot



Model 7 shows two buildings on an internal lot with the bigger one split into two units (on separate levels) to make three units total on the lot. Stepbacks differ from the R-2 Zone. This shows how the building separation varies between 8-16 feet at each story. This model shows that **lot coverage is a limiting standard** on an interior lot and reduces that possible building volume below what is allowed on a corner lot.

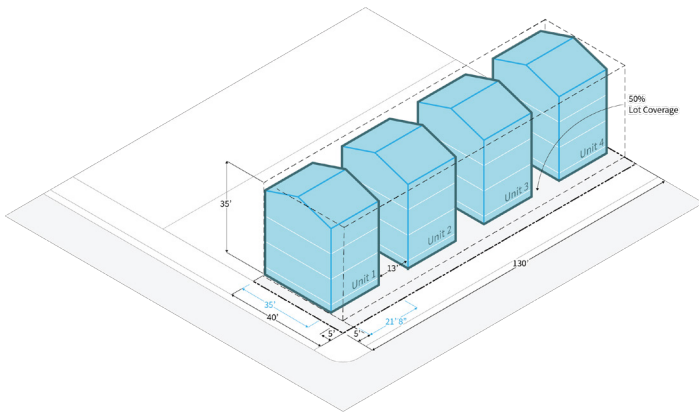
Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	3 max	3	Lot Area	5,000 sf min	5,200 sf
Average Height	28' max, Additions: 14', 35' w AUP	35'	Lot Area per Dwelling Unit	1,650 sf min	1,733 sf
Stories	3 max	3	Lot Dimension	Not limited	40' x 130'
Lot Coverage	35% max for 3-story interior lot building	35%	Outputs		
Setbacks			Total Footprint	Not limited	1,820 sf
Front	15' min	15'	Total Floor Area	Not limited	4,881 sf
Rear	15' min	15 ^{***}	FAR	Not limited ^{***}	0.9
Side	4' min for first two stories, 6' for 3rd story	Meets standard	Density	3+ units per lot	25.1 du/ac
Street Side	6' min for 1st story, 8' for 2nd story, 10' for 3rd story	N/A	Usable Open Space	300 sf/du	Meets standard
Building Separation	8' for 1st story, 12' for 2nd story, 16' for 3rd story ^{**}	Meets standard			

* This requires an AUP **May be reduced with an AUP *** SB 478 prohibits a floor area ratio standard of less than 1.0

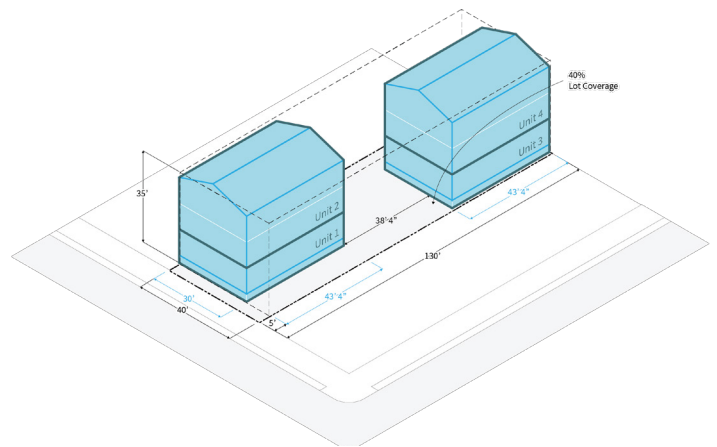
MU-R Existing Standards

The MU-R district allows single-family, two-family, and multifamily dwellings. Model 8 and 9 show the existing development standards for MU-R which allow four units on a 5,200 sf lot with minimal setbacks but a 1.5 FAR maximum. Model 8 shows the four units on a corner lot. Model 9 shows the four units separated into two buildings on an interior lot.

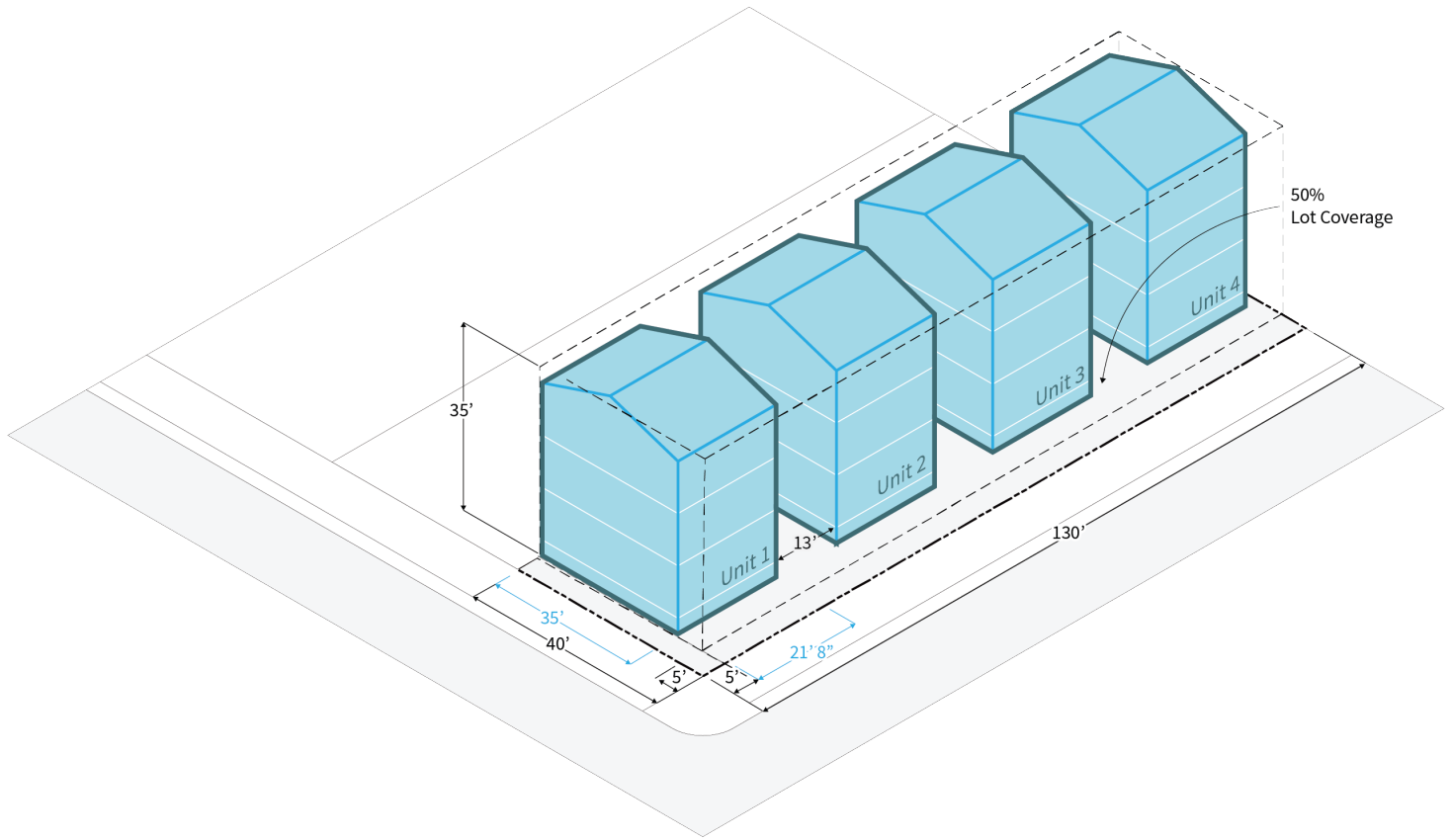
Model 8 (Corner Lot)



Model 9 (Interior Lot)



Model 8: MU-R Four Buildings on Corner Lot

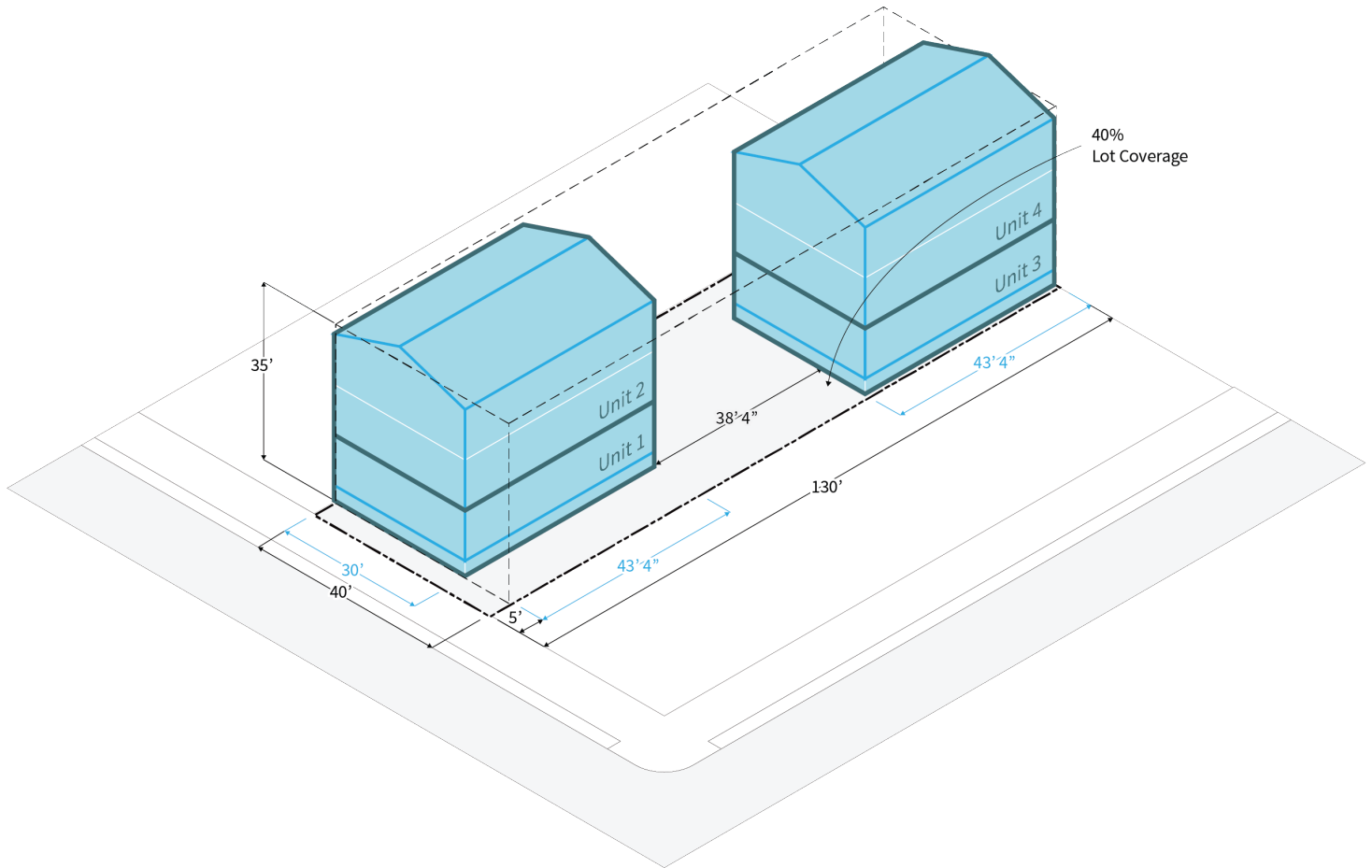


Model 8 shows four units as detached single-unit homes on a corner lot. Access to tuck-under parking can be provided along the long side of the lot and patios are associated with each home. The distribution of the building area that 1.5 FAR results in is equal across the lot and not restricted by building separation standards. As shown in this model, **floor area ratio (FAR) is the limiting standard in the MU-R district** that prevents the blue building volume from occupying the entire developable envelope shown by the dashed line.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	4 max	4	Lot Area	Not limited	5,200 sf
Average Height	35' max	35'	Lot Area per Dwelling Unit	1,250 sf min	1,300 sf
Stories	3 max	3	Lot Dimension	40' min width	40' x 130'
Lot Coverage	100% max	50%	Outputs		
Setbacks			Total Footprint	Not limited	2,600 sf
Front	5' min	5'	Total Floor Area	7,800 sf	7,800 sf
Rear	No min	0'	FAR	1.5 max	1.5
Side	No min	0'	Density	3+ units per lot	33.5 du/ac
Street Side	5' min	5' min.	Usable Open Space	150 sf per du	Meets standard
Building Separation	No min				

* This requires an AUP ** May be reduced with an AUP

Model 9: MU-R Two Buildings on Internal Lot

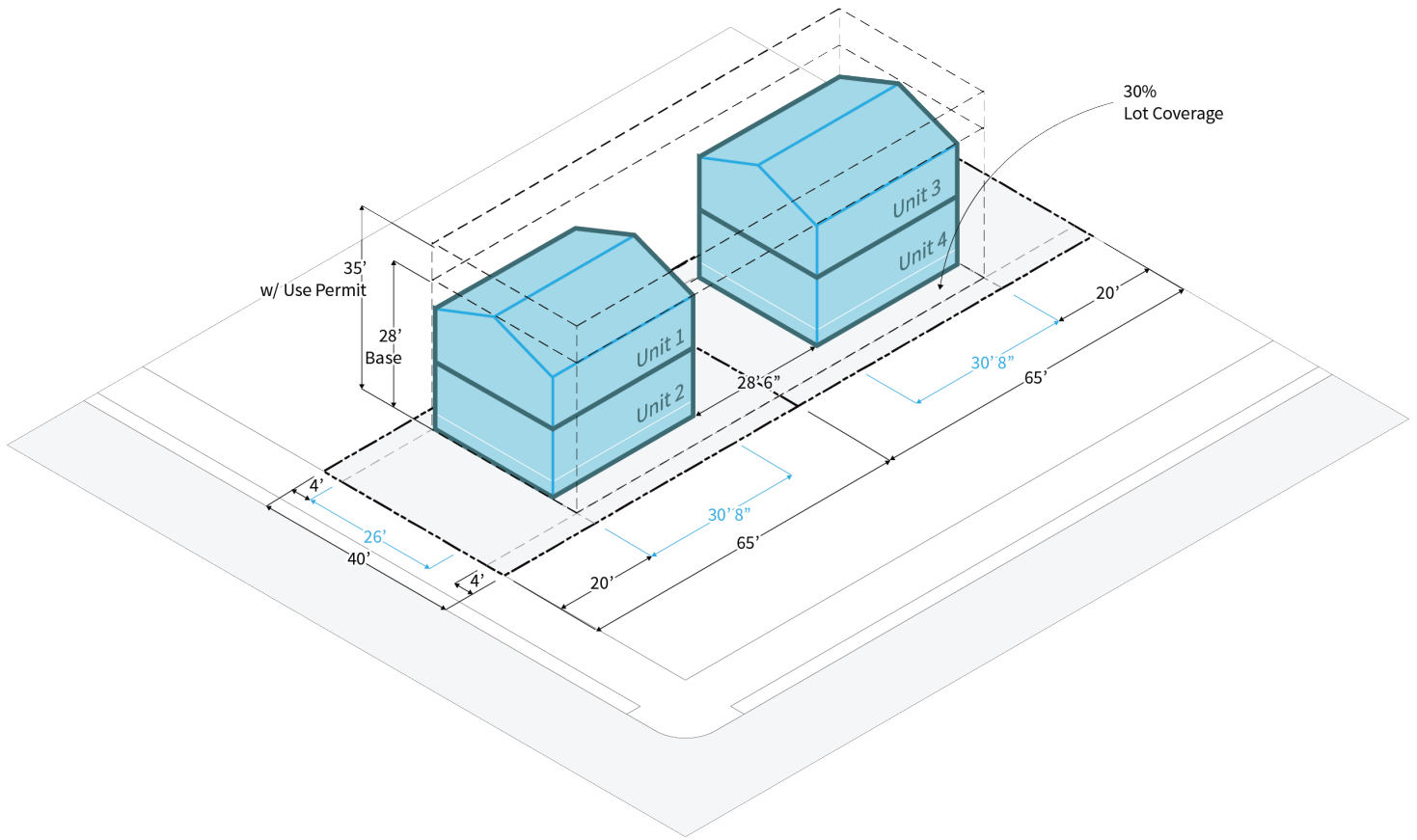


Model 9 shows two stacked flat duplexes on an internal lot and the maximum FAR of 1.5. **Maximum FAR is the limiting standard** that prevents the blue building volume from occupying the entire developable envelope shown by the dashed line.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	4 max	4	Lot Area	Not limited	5,200 sf
Average Height	35' max	35'	Lot Area per Dwelling Unit	1,250 sf	1,300 sf
Stories	3 max	3	Lot Dimension	40' min width	40' x 130'
Lot Coverage	100%	40%	Outputs		
Setbacks			Total Footprint	Not limited	2,600 sf
Front	5' min	5'	Total Floor Area	7,800 sf	7,800 sf
Rear	No min	0'	FAR	1.5 max	1.5
Side	No min	0'	Density	3+ units per lot	33.5 du/ac
Street Side	5' min	N/A	Usable Open Space	150 sf per du	Meets standard
Building Separation	No min	38' 4"			

* This requires an AUP ** May be reduced with an AUP

Model 10: R-1 Two Buildings with Split Lot (SB 9)



SB 10 allows an existing R-1 lot to be split into two lots. This example shows the potential for SB 9 lot split with two units on each resulting lot, sized at 800 sf per unit and stacked on top of each other. It does not illustrate the maximum lot coverage, because this design assumes each unit is a single story. The model shows building stories and coverage less than the R-1 standard due to the minimum 800 square-foot unit size under SB 9.

Standards	Existing Standard	Illustrated Volume	Assumptions	Existing Standard	Illustrated Volume
Primary Dwelling Units	4*	4	Lot Area	1,200 sf min for lot split*	2,600 sf
Average Height	28', 35' w AUP	35'	Lot Area per Dwelling Unit	600 sf min*	1,300 sf
Stories	1	2	Lot Dimension	Not limited	40' x 65'
Lot Coverage	40% max	30%	Outputs		
Setbacks			Total Footprint	1,040 sf max	1,040 sf
Front	20' min	20'	Total Floor Area	Not Limited	2,400 sf
Rear	4' min*	20'	FAR	1 unit per lot	0.9
Side	4' min	4'	Density	Not Limited	33.5 du/ac
Street Side	4' min	N/A	Usable Open Space	400 sf/du	Meets standard
Building Separation	Only as required by building code	Meets standard	Unit Size	800 sf*	800 sf

* Must be allowed under SB 9

Summary of Part 1

The FAR and densities from all models are provided here to gain a sense of maximum development intensity allowed under existing standards. Theoretically, the resulting development should result in the same maximum floor area with the same development standards, but what the illustrations show is that **there is a difference due to whether or not units are attached and whether they are on corner lots or internal lots.**

The “limiting factors” column identifies the standards that limit the achievable floor area within the developable envelope defined by height and setback standards.

	Units	Floor Area	FAR	Density	Limiting Factors
R-1					
Model 1: Single Building on Internal Lot	1	6,240 sf	1.2	8.4 du/ac	Lot coverage
R-1A					
Model 2: Single Building on Corner Lot	2	7,008 sf	1.3	16.9 du/ac	Lot coverage
R-2					
Model 3: Two Buildings on Internal Lot	2	5,229 sf	1.0	16.9 du/ac	Corner lot building separation, upper story setbacks, and lot coverage
Model 4: Two Buildings on Internal Lot	2	4,881 sf	0.9	16.9 du/ac	
Model 5: Two Buildings on Corner Lot	2	5,884 sf	1.1	16.9 du/ac	
R-2A					
Model 6: Two Buildings on a Corner Lot	3	6,212 sf	1.2	25.1 du/ac	Corner lot setbacks and lot coverage
Model 7: Two Buildings on Internal Lot	3	4,881 sf	0.9	25.1 du/ac	
MU-R					
Model 8: Two Buildings on Internal Lot	4	7,800 sf	1.5	33.5 du/ac	FAR
Model 9: Four Buildings on Corner Lot	4	7,800 sf	1.5	33.5 du/ac	
SB 9					
Model 10: Two Buildings with Split Lot (SB9)	4	2,400 sf	0.9	33.5 du/ac	SB 9 allows 800 sf min per unit

Observations

- **Lot Coverage.** Maximum lot coverage is a limiting standard in all R districts. Lot coverage standards on interior lots further reduces building volumes compared to corner lots. Lot coverage standards that vary by number of stories are complicated.
- **Height and Stories.** For some buildings it may be possible to incorporate four stories into a 35-foot average building height.
- **Upper-Floor Side Stepbacks.** Setbacks in R-2 and R-2A vary per floor, which provides an odd wedding-cake shape to three story buildings. A uniform side setbacks requirement for all floor would be easier to construct.
- **Building Separation.** Building separation standards that vary by floor also force odd design and may not be needed or desirable for buildings sharing a single lot.
- **FAR.** In the case of MU-R, FAR is the limiting standard that constrains the building volume from occupying the developable area.

Part 2: Missing Middle Models of 2-4 units

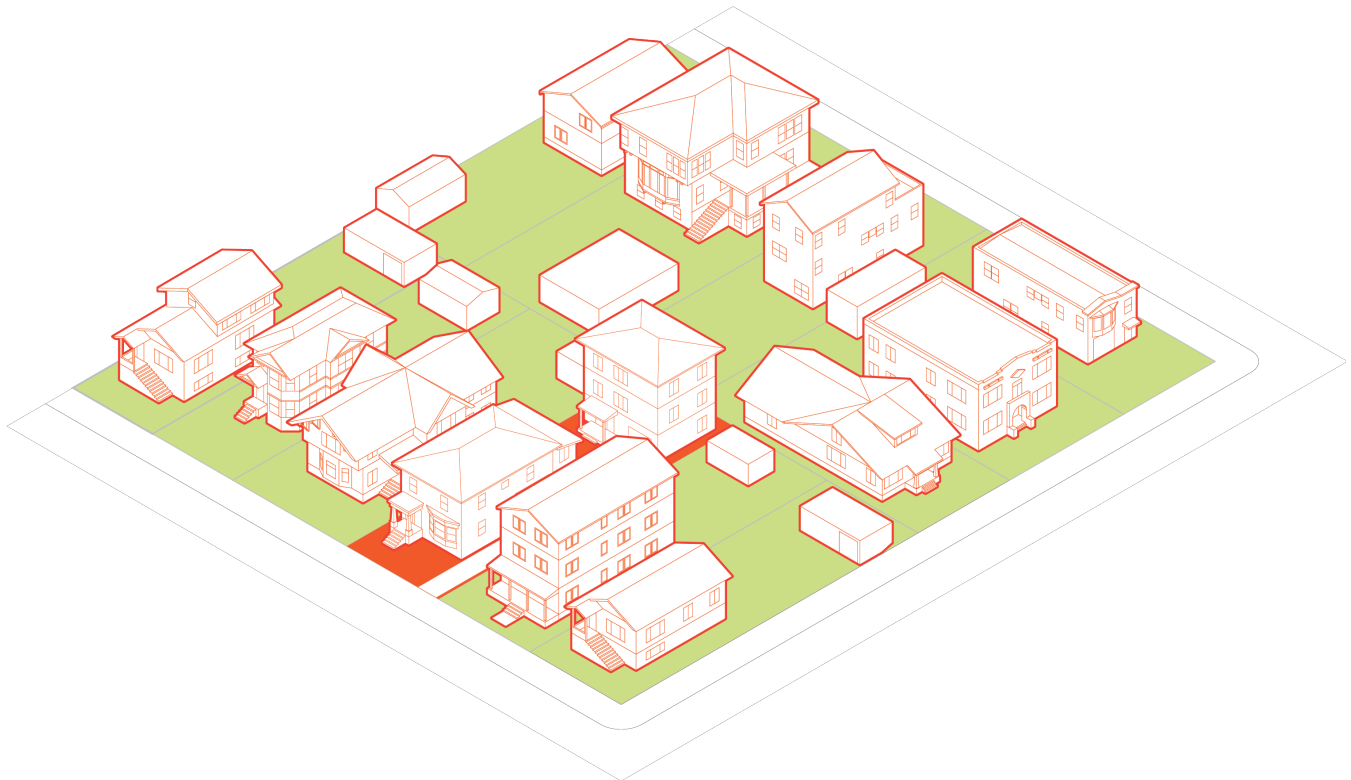
This exercise references the existing standards illustrated in Part 1, but does not follow them. The intent of providing prototypes of missing middle housing is to explore how lots could be developed based on observation of typical design and precedents in the area and identify where existing standards are in conflict. The prototypes explore a range of possible development configurations. **For that reason, some common configurations, such as three or four new detached single-family homes on one lot, were not selected for modeling.**

Four prototypes were chosen to demonstrate how lots may densify. The prototypes include:

- Prototype 1: An existing building with a separate new building behind
- Prototype 2: Detached cluster of two duplexes
- Prototype 3: Attached sidecourt building
- Prototype 4: Attached row homes

Prototype 1: New Detached Building behind Existing

Prototype 1 shows an existing building split into two units with a new three-story, two unit building built in the backyard. This version shows on-site parking for the rear building. This example is for four units on an interior lot of a block. The context within the neighborhood block is provided below.



Comparison Table for Prototype 1

Model Info		Complies with Existing Standards?				
		R-1	R-1A	R-2	R-2A	MU-R
Number of Units	4	No	No	Yes	Yes	Yes
Lot Area Per Unit	1,300 sf	No	No	No	No	Yes
Total Footprint	2,100 sf	Yes	Yes	Yes	Yes	Yes
Total Floor Area	5,000 sf	Yes	Yes	Yes	Yes	Yes
Lot Area	5,200 sf	Yes	Yes	Yes	Yes	Yes
Lot Coverage	40%	Yes	Yes	No	No	Yes
Lot Width	40'	Yes	Yes	Yes	Yes	Yes
Lot Depth	130'	Yes	Yes	Yes	Yes	Yes
Usable Open Space Per Dwelling Unit	≈ 215 sf	No	No	No	No	Yes
Floor Area Ratio	1.0	Yes	Yes	Yes	Yes	Yes
Building Height, Average	27-32'	Yes*	Yes*	Yes*	Yes*	Yes
Stories	2-3	Yes	Yes	Yes	Yes	Yes
Setbacks						
Front	20'	Yes	Yes	Yes	Yes	Yes
Rear	5'	No	No	Yes*	Yes*	Yes
Side	4'	Yes	Yes	Yes	Yes	Yes
Street Side	n/a	n/a	n/a	n/a	n/a	n/a
Building Separation	30 ft.	Yes	Yes	Yes	Yes	Yes

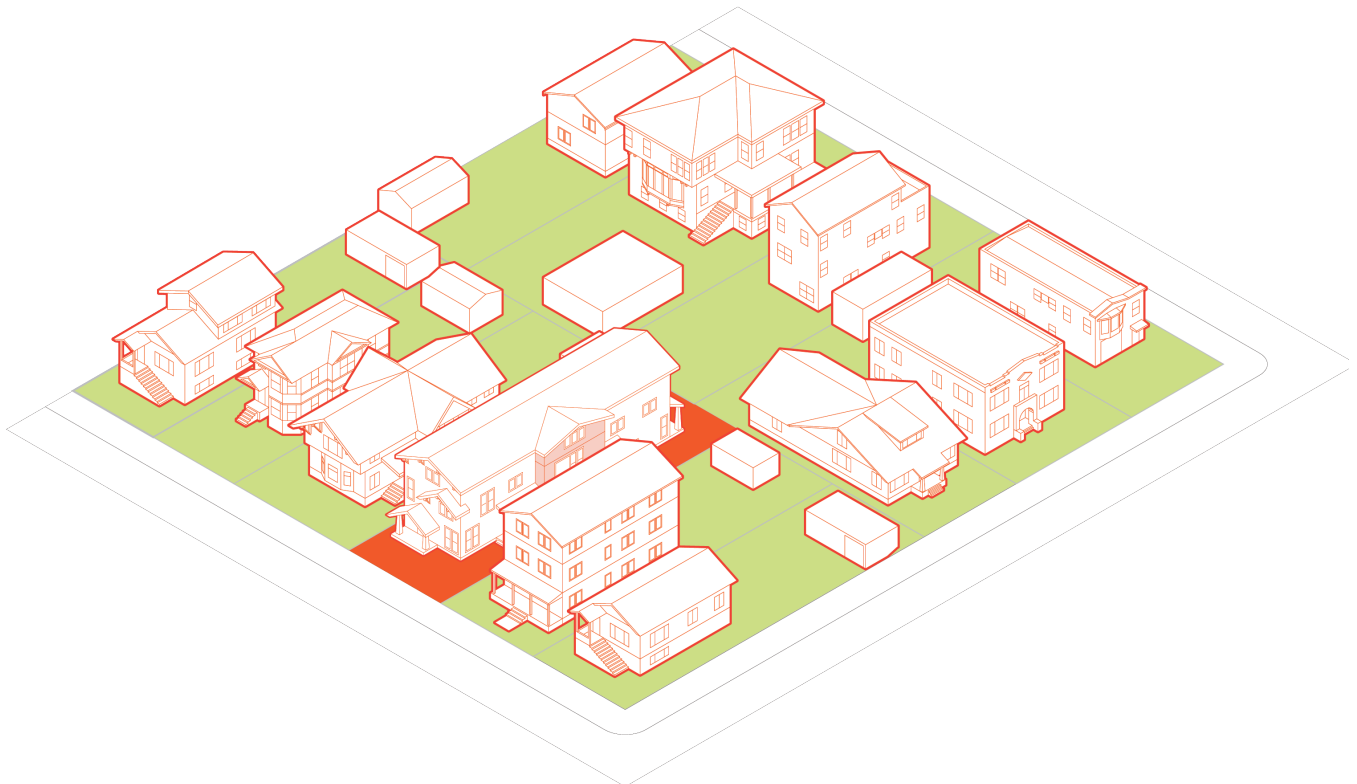
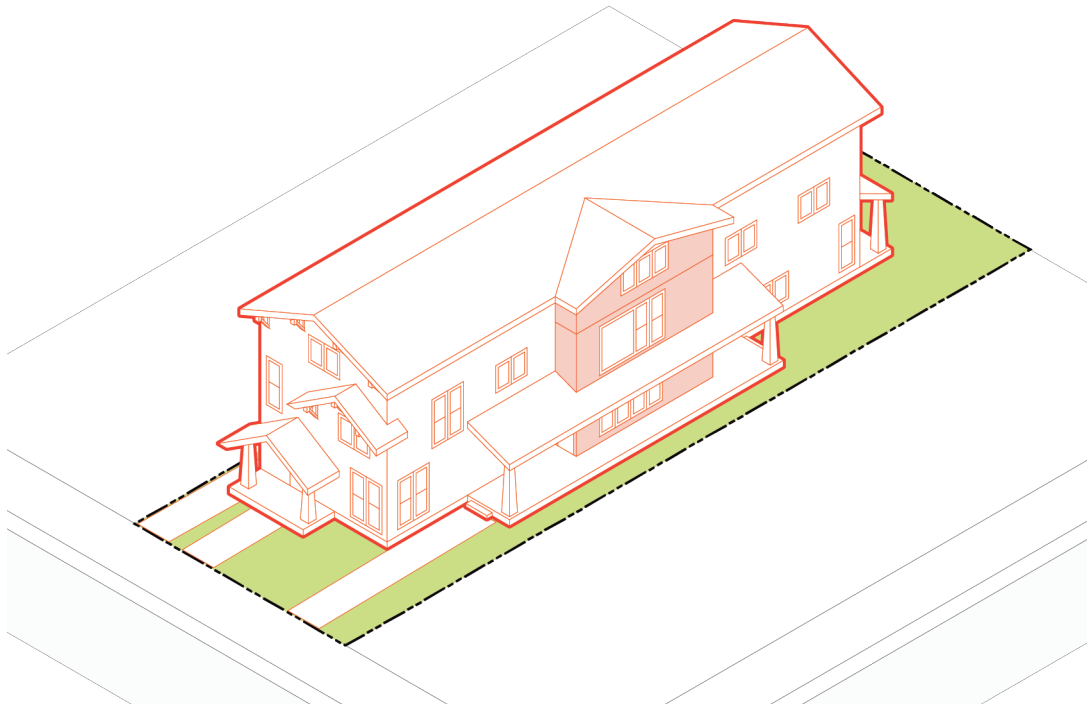
* AUP required

Key Takeaways:

- **Minimum Lot Area Per Unit.** On a typical 5,200 sq. ft. lot, a four-unit project does not meet the minimum lot area per unit requirement in all of the R districts.
- **Rear Setback.** The new building in the rear yard conflicts with the rear setback standard in the R-1 and R-1A district. In the R-2 and R-2A districts the building is allowed in the rear setback with an AUP.
- **Lot Coverage.** In the R-2 and R-2 A districts, the prototype conflicts with the lot coverage standard because it is a three-story building on an interior lot. If it were on a corner lot or two stories or less, the prototype would conform with the lot coverage standard in these districts.
- **Usable Open Space.** This prototype conflicts with the usable open space standard in all R districts.
- **MU-R District.** This prototype conforms with all existing standards in the MU-R district.

Prototype 2: Attached Sidecourt

Prototype 2 shows a new or remodeled building split into three units with entries in the front, rear and side, on an interior lot of a block. The context within the neighborhood block is provided below.



Comparison Table for Prototype 2

Model Info		Complies with Existing Standards?				
		R-1	R-1A	R-2	R-2A	MU-R
Number of Units	3	No	No	Yes	Yes	Yes
Lot Area Per Unit	1,733 sf	No	No	No	Yes	Yes
Total Footprint	2,160 sf	Yes	Yes	Yes	Yes	Yes
Total Floor Area	6,480 sf	Yes	Yes	Yes	Yes	Yes
Lot Area	5,200 sf	Yes	Yes	Yes	Yes	Yes
Lot Coverage	41%	No	No	No	No	Yes
Lot Width	40'	Yes	Yes	Yes	Yes	Yes
Lot Depth	130'	Yes	Yes	Yes	Yes	Yes
Usable Open Space Per Dwelling Unit ²	≈ 400 sf	Yes	Yes	Yes	Yes	Yes
Floor Area Ratio	1.2	Yes	Yes	Yes	Yes	Yes
Building Height, Average	30"	Yes*	Yes*	Yes*	Yes*	Yes
Stories	3	Yes	Yes	Yes	Yes	Yes
Setbacks						
Front	20'	Yes	Yes	Yes	Yes	Yes
Rear	20'	No	No	Yes*	Yes*	Yes
Side	4'	Yes	Yes	No	No	Yes
Street Side	n/a	n/a	n/a	n/a	n/a	n/a
Building Separation	n/a	Yes	Yes	Yes	Yes	Yes

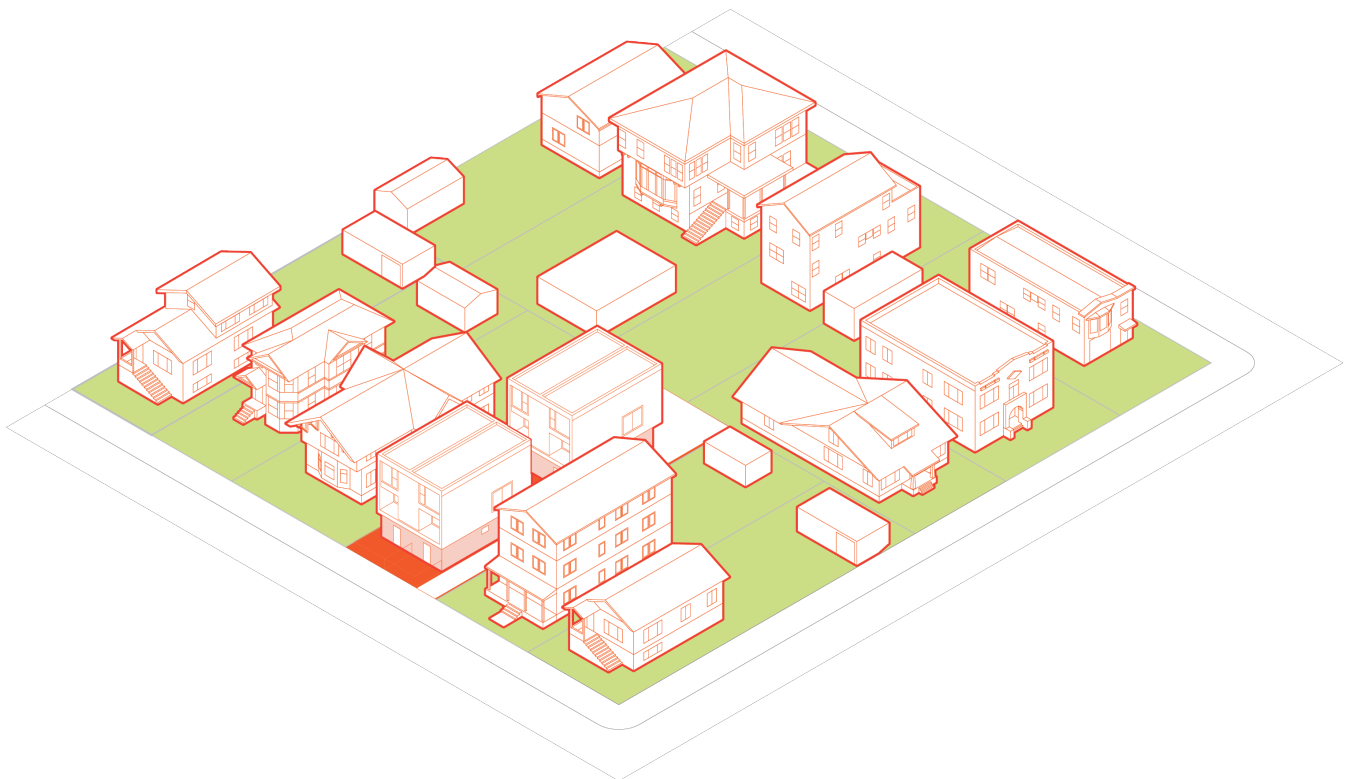
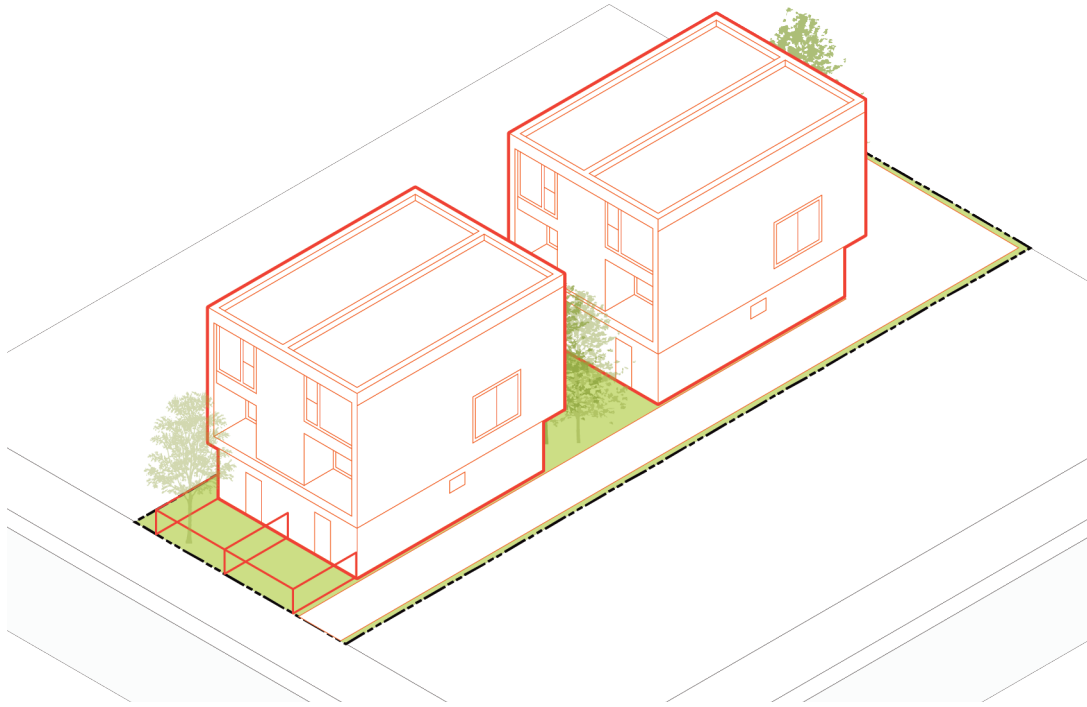
* AUP required

Key Takeaways:

- **Rear Setback.** The building extending into the rear yard conflicts with the rear setback standard in the R-1 and R-1A district. In the R-2 and R-2A districts the building is allowed in the rear setback with an AUP.
- **Lot Coverage.** The prototype conflicts with the lot coverage standard in all R districts.
- **Interior Side Setback.** The R-2 and R-2A districts require increased 6-foot interior side setbacks for three-story buildings. This prototype conflicts with this standard.
- **Lot Area Per Unit.** On a typical 5,200 sq. ft. lot, a three-unit prototype does not meet the minimum lot area per unit requirement in the R-1, R-1A, and R-2 districts.
- **MU-R District.** This prototype conforms with all existing standards in the MU-R district.

Prototype 3: Detached Cluster

This model shows two new three-story duplexes (two units each). This version shows on-site parking. This example is for four units on an interior lot block, the context is provided below.



Comparison Table for Prototype 3

Model Info		Complies with Existing Standards?				
		R-1	R-1A	R-2	R-2A	MU-R
Number of Units	4	No	No	Yes	Yes	Yes
Lot Area Per Unit	1,300 sf	No	No	No	No	Yes
Total Footprint	1,820 sf	Yes	Yes	Yes	Yes	Yes
Total Floor Area	3,640 sf	Yes	Yes	Yes	Yes	Yes
Lot Area	5,200 sf	Yes	Yes	Yes	Yes	Yes
Lot Coverage	35%	Yes	Yes	Yes	Yes	Yes
Lot Width	40'	Yes	Yes	Yes	Yes	Yes
Lot Depth	130'	Yes	Yes	Yes	Yes	Yes
Usable Open Space Per Dwelling Unit	≈ 330 sf	No	No	No	Yes	Yes
Floor Area Ratio	0.7	Yes	Yes	Yes	Yes	Yes
Building Height, Average	32'	Yes*	Yes*	Yes*	Yes*	Yes
Stories	3	Yes	Yes	Yes	Yes	Yes
Setbacks						
Front	12'	No	No	No	No	Yes
Rear	26'	Yes	Yes	Yes	Yes	Yes
Side	4' & 10'	Yes	Yes	No	No	Yes
Street Side	n/a	n/a	n/a	n/a	n/a	n/a
Building Separation	21'	Yes	Yes	Yes	Yes	Yes

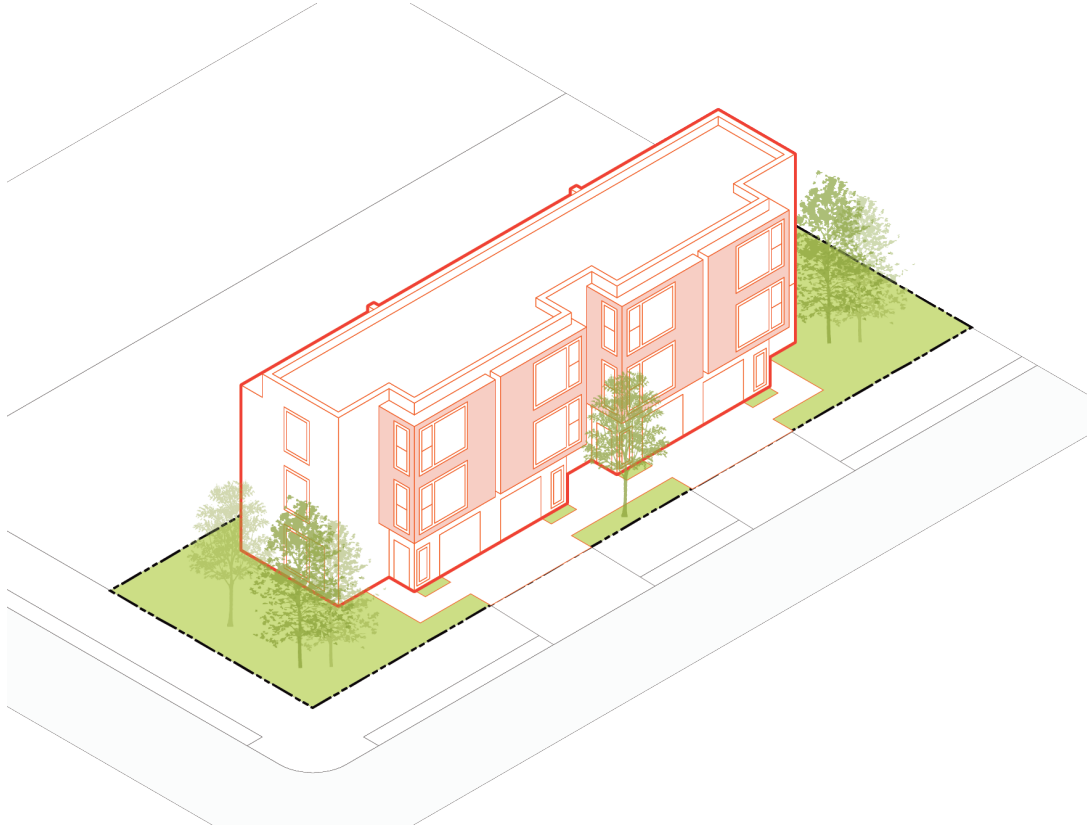
* AUP required

Key Takeaways:

- **Front Setbacks.** With a 12-foot front setback, this prototype conflicts with front setback standards in the R-1, R-1A, R-2, and R-2A districts.
- **Usable Open Space.** With approximately 330 square feet of usable open space, this prototype meets the usable open space standard in the R-2A and MU-R districts but conflicts with the standard in the R-1, R-1A, and R-2 districts.
- **Interior Side Setback.** The R-2 and R-2A districts require increased 6-foot interior side setbacks for three-story buildings. This prototype conflicts with this standard.
- **Lot Area Per Unit.** On a typical 5,200 sq. ft. lot, a four-unit prototype does not meet the minimum lot area per unit requirement in the R districts.
- **MU-R District.** This prototype conforms with all existing standards in the MU-R district.

Prototype 4: Attached Row homes

This model shows a new building split into four three-story row homes. This version shows on-site parking.



Comparison Table for Prototype 4

Model Info		Complies with Existing Standards?				
		R-1	R-1A	R-2	R-2A	MU-R
Number of Units	4	No	No	Yes	Yes	Yes
Lot Area Per Unit	1,300 sf	No	No	No	No	Yes
Total Footprint	2,130 sf	Yes	Yes	Yes	Yes	Yes
Total Floor Area	6,390 sf	Yes	Yes	Yes	Yes	Yes
Lot Area	5,200 sf	Yes	Yes	Yes	Yes	Yes
Lot Coverage	40%	Yes	Yes	Yes	Yes	Yes
Lot Width	40'	Yes	Yes	Yes	Yes	Yes
Lot Depth	130'	Yes	Yes	Yes	Yes	Yes
Usable Open Space Per Dwelling Unit	≈ 490 sf	Yes	Yes	Yes	Yes	Yes
Floor Area Ratio	1.2	Yes	Yes	Yes	Yes	Yes
Building Height, Average	32'	Yes*	Yes*	Yes*	Yes*	Yes
Stories	3	Yes	Yes	Yes	Yes	Yes
Setbacks						
Front	20'	Yes	Yes	Yes	Yes	Yes
Rear	20'	Yes	Yes	Yes	Yes	Yes
Side	4'	Yes	Yes	No	No	Yes
Street Side	10'	Yes	Yes	Yes	Yes	Yes
Building Separation	0'	Yes	Yes	Yes	Yes	Yes

* AUP required

Key Takeaways:

- **Lot Area Per Unit.** On a typical 5,200 square foot lot, this prototype with four units conflicts with the minimum lot area per unit standard in the R districts.
- **Interior Side Setback.** The R-2 and R-2A districts require increased 6-foot interior side setbacks for three-story buildings. This prototype conflicts with this standard.
- **MU-R District.** This prototype conforms with all existing standards in the MU-R district.

Summary of Part 2

The tables show that the following limit the prototypes shown in Part 2:

- Lot area per unit
- Lot coverage
- Front setbacks
- Rear setbacks
- Side setbacks
- Usable open space per dwelling unit

The City may wish to consider the following changes to existing standards to accommodate 2-4 unit development in the R-1, R-1A, R-2, R-2A, and MUR districts:

- Simplify “wedding cake” upper story side setbacks and building separation requirements. Requiring a singular 4’ side setback and eliminating building separation requirements would allow projects to be more easily constructed.
- Simplify lot coverage regulations by applying a single standard for each zoning district that does not vary by number of stories. Also, consider increasing allowed lot coverage as the number of units increase (max 50%) to incentivize housing producing and accommodate a broader range of development types.
- Reduce rear setbacks to 4 feet setbacks to allow for more capacity on site.