

EXHIBIT E



Zoning for Missing Middle Housing Guidebook

Association of Bay Area Governments
November 2021



Introduction + Table of Contents



This guidebook is intended to provide advice and insights on the key barriers across the U.S. to Missing Middle Housing as well as tips on best practices.

The content is organized into four sections and a Resources page.

Thank you to David Driskell and EcoNorthwest for their input and advice in preparing this content.

Section		Page
1	Selecting the MMH types that best serve your community This section provides yield and dimensional information for the 8 MMH types to help you to evaluate each in terms of your existing lot sizes and community needs.	3
2	Where MMH can work in your community This section provides guidance on five prototypical scenarios seen in communities for how to apply some or all of the MMH types.	13
3	Addressing policy and/or regulatory barriers This section highlights the key barriers that limit or prevent MMH and offers advice on how to address each barrier	21
4	Implementation This section provides a menu of key strategies coordinates each strategy to the five prototypical scenarios from Section 2.	42
5	Resources	48



Zoning for Missing Middle Housing

Selecting the MMH types that best serve your community

SECTION

1

While there are many variations of the building types that comprise the palette of Missing Middle Housing types, there are eight types that stand out as distinct in their organization and typical program or number of units. There are also regional names for each type. For the purposes of this guidebook, we have attempted to use the most common name.

What is Missing Middle Housing?



House-scale buildings with multiple units
in walkable neighborhoods

Key Barriers



It's essential to understand the current and potential barriers to realizing Missing Middle Housing in your community. The following are key among the typical barriers and issues. In addition, we have provided a few questions for you to consider:

1. Density

MMH types need more numerical density than allowed by most zoning codes. Is there support to change the maximum allowed density where you expect MMH?

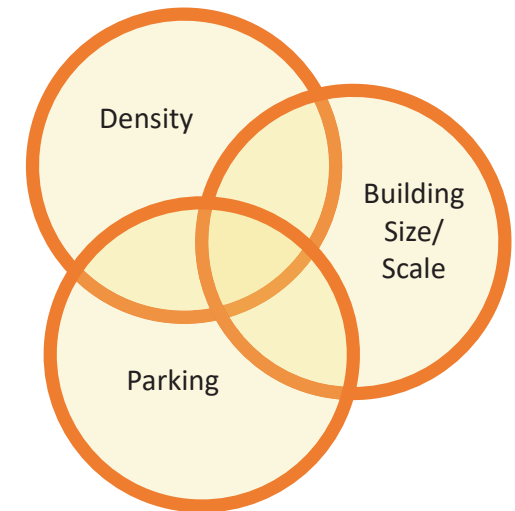
2. Building size and scale

What is currently allowed for single-unit houses and is that causing any issues? In many communities, single-unit houses are raising concerns about building size. What standards are in place to ensure that new multi-unit housing and single-unit houses will fit well within existing neighborhoods?

3. Parking

Is there support to consider less parking per unit if new MMH units are within short walking or biking distance of amenities?

We find that if these three issues are not addressed, the result is often that Missing Middle Housing will not be enabled and/or that it will not fit well within existing neighborhoods. We recommend looking into what these issues mean for your community related to Missing Middle Housing, understanding that changes to existing policy and/or regulations are likely.



Priorities



Local jurisdictions have many priorities to balance. When it comes to housing, we find three key priorities that should be considered to inform a jurisdiction's approach and choices:

1. Compatibility with the neighborhood

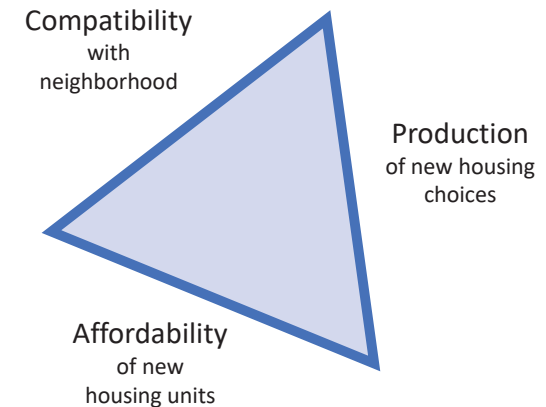
Is there general understanding about what compatibility looks like (building scale, height, massing, architectural design), or is that yet to be established? Are existing regulations contributing to achieving compatibility of new buildings with the existing physical character of the neighborhood? If not, how much additional regulation is needed?

2. Production of new housing choices

How much new housing is acceptable where you expect MMH? How does that align with the maximum zoning envelope in those areas? What about specific housing choices that are in low supply or don't yet exist in your community?

3. Affordability of new housing units

Is your primary goal for allowing middle housing to achieve affordable / attainable price points? What resources, incentives, or support are or could be available to support affordability for middle housing?

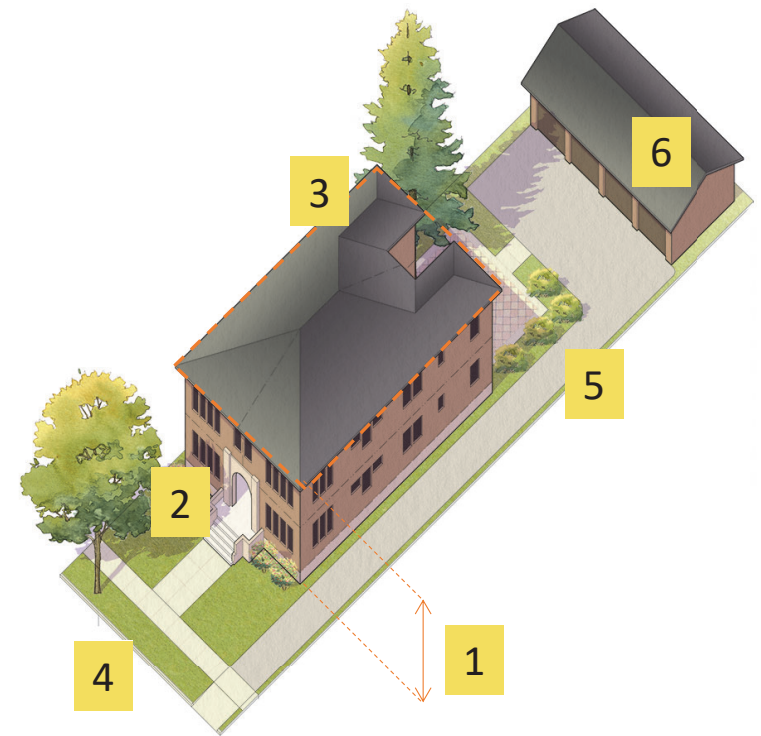


What is “House-Scale”?



Key Characteristics:

- 1 Height.** 2 to 2.5-story max (Upper MMH includes 3 to 4-story versions – see pages 38, 40, and 41 for best practices)
- 2 Multiple Units per Building.**
- 3 Footprint.** Typical main body width of 50 feet up 75 feet overall, including secondary volumes (wings; not shown). Side setbacks are typically 5 feet.
- 4 On-street Parking.** Counts towards required parking.
- 5 Driveway (if any).** To the side; single-lane parking in driveway and/or away from the front.
- 6 On-site Parking.** 1 space per unit or less; max parking to fit on a lot that is characteristic of the lots in the neighborhood.



House-Scale buildings and key size strategies



Building Size Strategies					
MMH Types	Max. Stories ¹	Max. Footprint Width along Street	Max. Footprint Length along Side	Massing Break in Façade	Upper Story Setback
Duplex Side-by-Side	1.5 (2.5 if overall building footprint within House-Scale size)	•	•	Unnecessary, due to small form House-Scale footprint	
Duplex Stacked	2.5	•	•		
Cottage Court (3-10 units)	1.5 (rear building up to 2.5 stories)	•	•		
Triplex/Fourplex	2.5	•	•		
Multiplex Small (6-12 units)	2.5	•	•		
Multiplex Large (7-18 units)	2.5 (3 to 4 if Upper MMH)	•	•	•	Unnecessary
Courtyard Building (6-20 units)	2.5 (portion of building up to 3 stories)	•	•	•	Only for 3-story portion
Townhouse (up to 4 units side-by-side)	2.5 (up to 3 if at least 2 units per townhouse)	•	•		Unnecessary, due to small form House-Scale footprint

¹ Housing allowed within volume of pitched roof (this potential is expressed as “.5”)

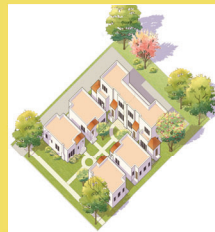
The palette of Missing Middle Housing types



Duplex Side-by-Side



Duplex Stacked



Cottage Court



Triplex/Fourplex



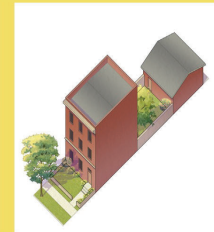
Multiplex Small



Multiplex Large



Courtyard Building



Townhouse

Typical Characteristics

2 units
Density: 11-17.4 du/a

1.5 to 2.5-stories
Detached
Arranged side-by-side

Entry from the street

Includes a rear yard

2 units
Density: 13-25 du/a

2 to 2.5-stories
Detached
Arranged one above the other

Entry from the street

Includes a rear yard

Fits on narrower lots than the side-by-side duplex

3-10 units
Density: 15-19 du/a

1 to 1.5-stories¹
Detached
Arranged around a shared court visible from the street.

Entry from the shared court

¹ Rear-most building up to 2 stories with 2 to 4 units

3-4 units
Density: 24-29 du/a

2 to 2.5-stories
Detached

Lobby entry or individual entries from the street

Includes a rear yard

5-10 units
Density: 33.2-44 du/a

2 to 3-stories²
Detached
Arranged side-by-side and/or stacked

Shared entry from the street

Does not include a rear yard

² 3-story versions are referred to as Block-Scale and use the Upper MMH approach

7-18 units
Density: 37-55.3 du/a

2 to 3-stories²
Detached
Arranged side-by-side and/or stacked

Shared entry from the street

Does not include a rear yard

² 3-story versions are referred to as Block-Scale and use the Upper MMH approach

6-20 units
Density: 18-46.5 du/a

1.5 to 3-stories³
Detached
Multiple side-by-side and/or stacked

Entry from the courtyard

³ A portion of the building may accommodate a 3rd story

1 unit
Density: 16-29.8 du/a

2 to 3 stories²
Attached
Side-by-side in groups of up to 4 (House-scale)⁴

Entries from the street or courtyard; avoid garages on facade

² 3-story versions are referred to as Block-Scale and use the Upper MMH approach

⁴ Groups of 5 or more are referred to as Block-Scale and use the Upper MMH approach

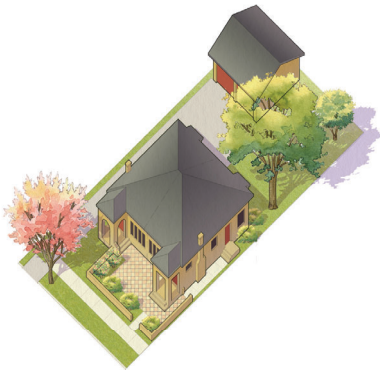
Missing Middle types



Duplex: Side-by-Side 2 units

Typical Lot Size	Density
55' x 150'	10.6 du/acre
55' x 100'	16 du/acre
50' x 100'	17.4 du/acre

Density Yield:
11 to 17.4 per acre



Duplex: Stacked 2 units

Typical Lot Size	Density
50' x 130'	13 du/acre
50' x 100'	17.4 du/acre
35' x 100' (w/alley)	25 du/acre

Density Yield:
13 to 25 per acre



Cottage Court 3-10 units

Typical Lot Size	Density
110 x 205 (8 cottages)	15 du/acre
110 x 205 (10 cottages)	19 du/acre

Density Yield:
15 to 19 per acre



Density Yield: The density number that results from observing a desired outcome and dividing the lot area by the number of units in the building/lot.

Missing Middle types



Triplex/Fourplex 3-4 units

Typical Lot Size	Density
60' x 110' (4 units)	24 du/acre
50' x 140' (4 units)	25 du/acre
50' x 120' (4 units)	29 du/acre

Density Yield:
24 to 29 per acre



Multiplex Small 5-10 units

Typical Lot Size	Density
70' x 150' (8 units)	33.2 du/acre
75' x 125' (8 units)	37.2 du/acre
75' x 110' (10 Units)	44.6 du/acre

Density Yield:
33.2 to 44.6 per acre



Multiplex Large 7-18 units

Typical Lot Size	Density	Stories
105' x 135' (12 units)	37 du/acre	2
95' x 115' (12 units w/alley)	48 du/acre	2
105' x 135' (18 units)	55.3 du/acre	3

Density Yield:
37 to 55.3 per acre



Density Yield: The density number that results from observing a desired outcome and dividing the lot area by the number of units in the building/lot.

Missing Middle types



Courtyard Building (Neighborhood) 6-20 units

Typical Lot Size	Density
125' x 150' (8 units)	18 du/acre
125' x 150' (12 units)	28 du/acre
100' x 110' (8 units)	31.7 du/acre
125' x 150' (20 units)	46.5 du/acre

Density Yield:
18 to 46.5 per acre

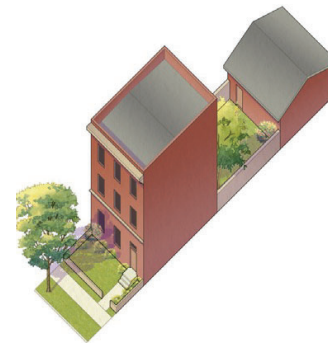


Townhouse (Small) Up to 4 side-by-side

Typical Lot Size	Density
80' x 100' (3 townhouses)	16 du/acre
100' x 100' (4 townhouses)	17.5 du/acre

In some situations, the Townhouse type accommodates live-work occupancy.

Density Yield:
16 to 17.5 per acre



Townhouse (Large) 5 or more side-by-side, and up to 3 stories

Typical Lot Size	Density
125' x 105' (5 townhouse)	18.6 du/acre
160' x 105' (8 townhouses)	29.8 du/acre

Density Yield:
18.6 to 29.8 per acre

Parking Access

Both types can be accessed via an alley; but typically, the Townhouse is accessed from a shared drive from the street that leads to rear access, making it comparable to alley-accessed types.

Density Yield: The density number that results from observing a desired outcome and dividing the lot area by the number of units in the building/lot.

Where MMH can work in your community

2



Example of Fourplex and Duplex mixed in single-unit neighborhood.

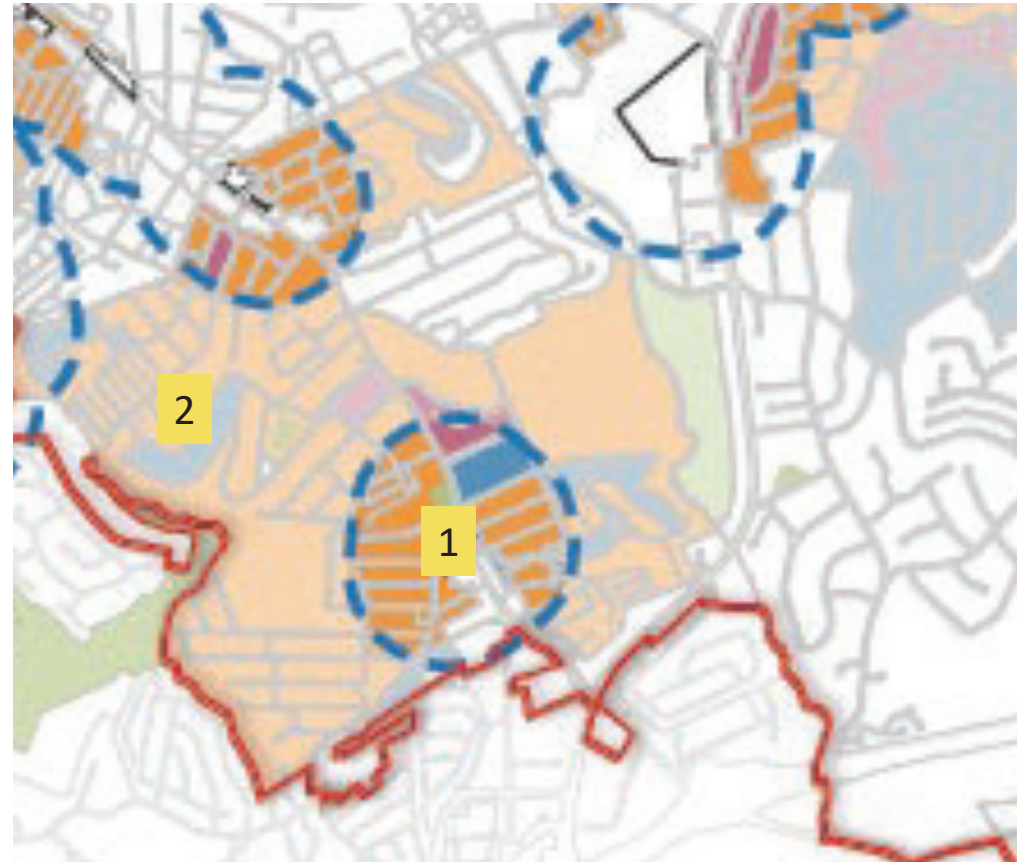
It works best in **walkable** neighborhoods



Missing Middle Ready Contexts:

- 1 Ideally, the parcels within short walking/biking distance of services, food, shopping, or transit
- 2 Alternatively, areas within short walking/biking distance of other amenities: parks and schools

A key benefit of focusing on walkable neighborhoods is that these contexts support lower parking requirements.



Typical Scenarios of MMH



1) Infill in Neighborhood



2) Infill along Neighborhood Corridor



3) Infill along Neighborhood Main Street



4) Transform Car-oriented Commercial Corridor



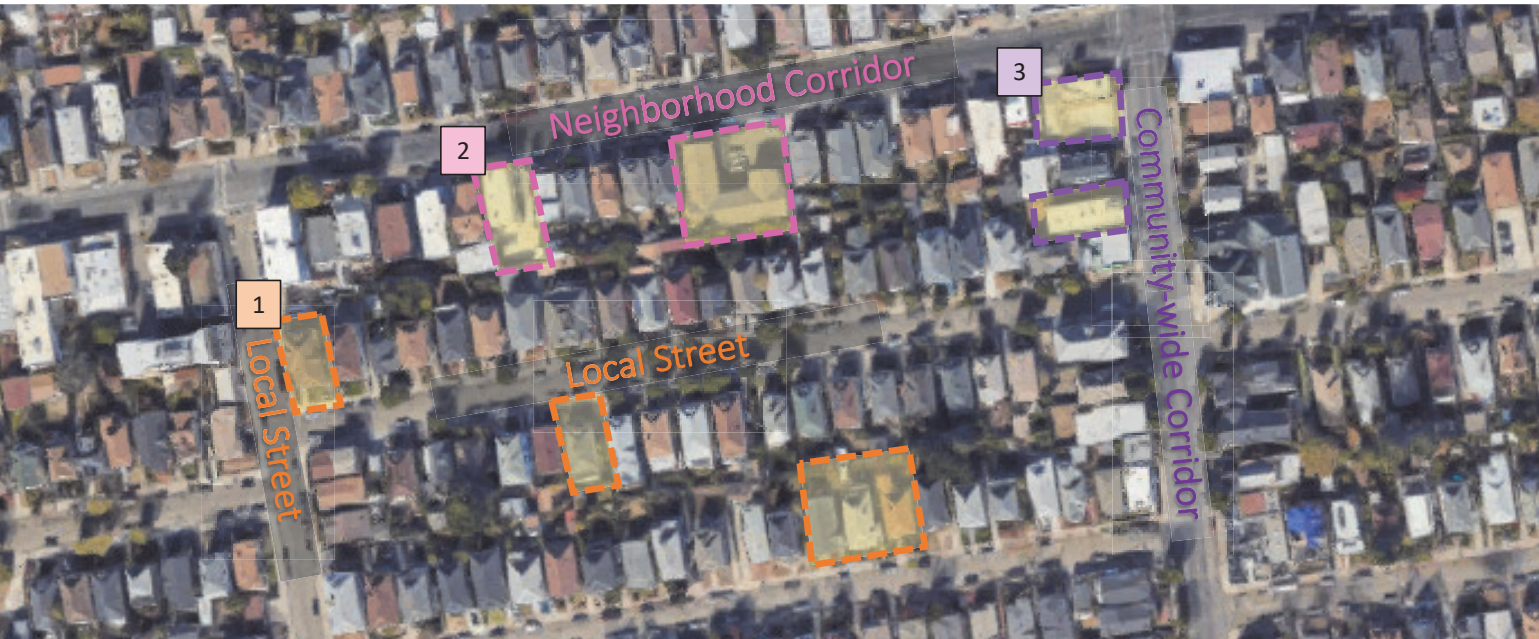
5) Transform Shopping Center Site(s)



The five scenarios are intended as prototypical for guidance on applying MMH types.

There are of course many variables: existing lot sizes, existing zoning, and comprehensive plan direction. The following guidance recognizes these factors and provides advice about the scenario and approach in general, realizing that your situation will be unique and require tailoring for the ultimate approach.

1 - Infill in Neighborhood



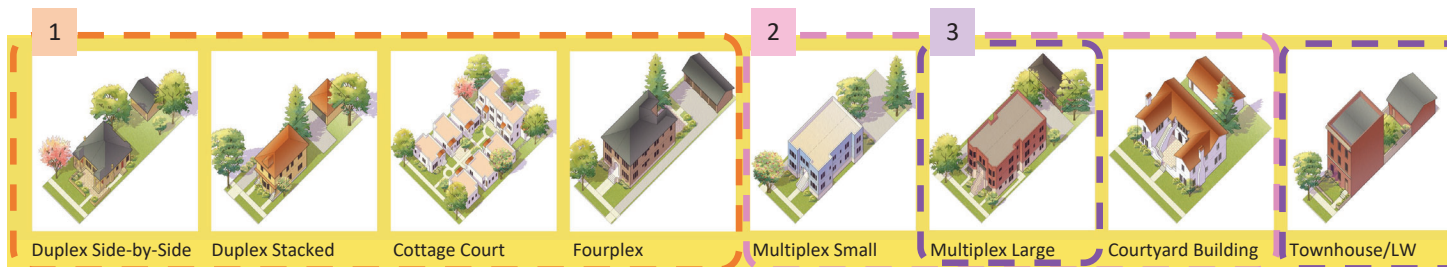
The possibilities for applying MMH types in existing neighborhoods depend first on the intended physical character. Is it staying relatively the same? Is it changing entirely? Or something in between?

The other key factor is location.

There are three general approaches. Each is organized by the type of neighborhood street that fronts your site(s):

1. Local Street
2. Neighborhood Corridor
3. Community-wide Corridor

Depending on your objectives, one or all of the recommended approaches can suit your needs.



- 1 Local Street
- 2 Neighborhood Corridor
- 3 Community-wide Corridor

2 - Infill along Neighborhood Corridor



In these areas, lots tend to be shallower than desired. This may be due to long-term effects of road widening.

If the lots do not have alley access, and are at least 100 to 115 feet deep, the Multiplex Small and the Townhouse types can work. If there's more lot depth than that, many of the other types could work here. If that's the case, we recommend the upper end of the MMH spectrum, enabling the core of the adjacent neighborhood to remain less intense if that's how it already exists.



3 - Infill along Neighborhood Main Street



In these areas, it's important to first understand if there's too much commercial zoning that's resulting in low-performing commercial uses and/or vacant lots.

If so, it's advisable to:

1. Concentrate the commercial zoning at key intersections and allow the segments in between to accommodate the upper end of the MMH spectrum, including Upper MMH.
2. But, it's important to transition back into the neighborhood with the less intense end of the MMH spectrum.

Allow Live-Work (LW) types in these areas. Also, allow but don't require the ground floor unit(s) of these buildings to have commercial uses.



- 1 Main Street Infill
- 2 Transition into Neighborhood

4 - Transformation of Car-oriented Commercial Corridor



In these areas, it's also about concentrating the overall commercial footprint but on larger sites than on the Neighborhood Main Street.

1. Here, the upper end of the MMH spectrum and Upper MMH fit well and can provide much housing.
2. However, because of the size of the sites, a physical transition in scale is needed around the corner along the side streets into the neighborhood. In these areas, the Multiplex Small or Fourplex are recommended.



- 1 Along Corridor
- 2 Around the corner from Corridor

5 - Transformation of Shopping Center Site



In these areas, the general intent is to repair the street and block network while providing new interconnected blocks for new housing and some civic space. Depending on your objectives, MMH can work on some or all of the site as a transition in scale between new, larger buildings and the adjacent neighborhoods.

These areas need a local planning effort to arrive at the design with the neighbors and community.

In general, because these areas have several different adjacencies, most to all of the MMH spectrum of types can work but it's recommended to start with the fourplex as the least intense type.



- 1 Larger and more intense development (4 or more stories)
- 2 Between larger buildings and House-Scale Neighborhoods
- 3 House-Scale Neighborhood



Zoning for Missing Middle Housing

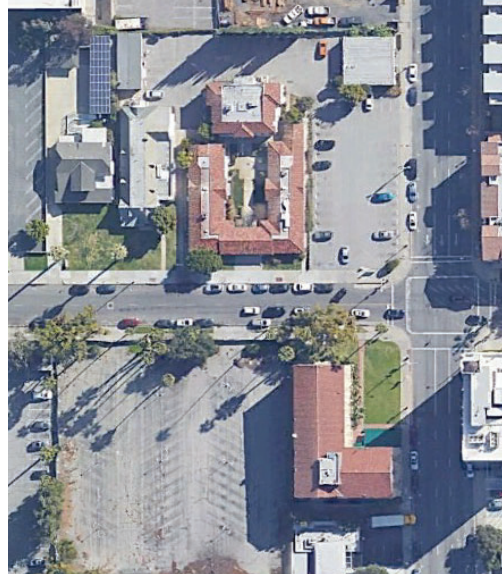


Addressing policy and/or regulatory barriers

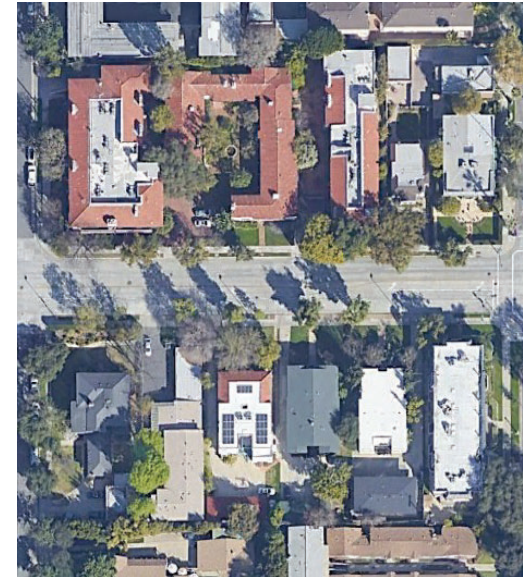
SECTION

3

On-site parking requirements: a key barrier



Neighboring lot added to meet parking requirement



Required parking fits on same lot as building

Zoning-Related Barriers to Missing Middle Housing



Your community might have some, none, or other barriers, than those identified here. In any case, it's important to understand and address the barriers that exist in your policy and/or regulations. The following are the top barriers we see in most Comprehensive Plans and Zoning Codes:

1. Maximum residential density becomes the focus, but it does not contribute to predictability of the built form
2. Multifamily zoning standards that aren't coordinated with existing infill lots
3. Existing zoning systems assume high density = very big buildings
4. Minimum lot area too high for existing infill lots
5. Parking requirements on infill lots that aren't coordinated with existing lot sizes



Barrier 1: Max residential density becomes the focus, but does not contribute to predictability of the built form



49 units; Block-Scale building

Density = **30** units per acre



5 units; House-Scale building

29 units per acre

Tips:

Density is an unpredictable factor that depends on several variables.

For example, the two photos are completely different in height, width, scale, and total dwellings. Yet, their density is nearly the same.

If necessary to include the residential density in your regulations, first identify the types of outcomes on the actual sizes of lots where those outcomes are expected. Then calculate the “density yield” and use that number, or range.

The numerical density should reflect your community’s desired outcomes and form instead of driving and limiting them. For example, if the community sees the 30 per acre example and decides “nothing over 25”, they leave out options such as the 5-unit building on the right.

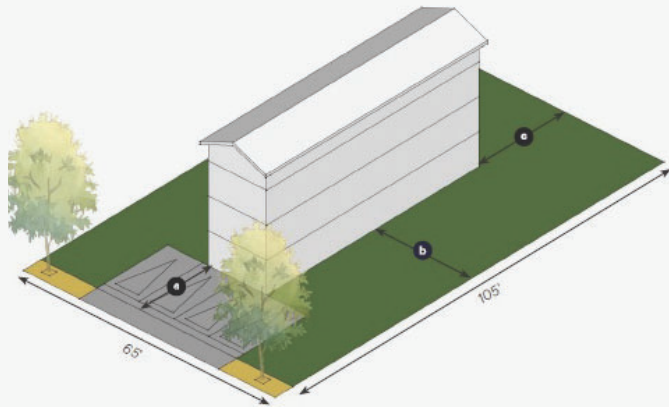
Barrier 2: Multifamily zoning standards that are not coordinated with existing infill lots

Example:

Max. Density allows 18 units per acre

Yield: 0 units

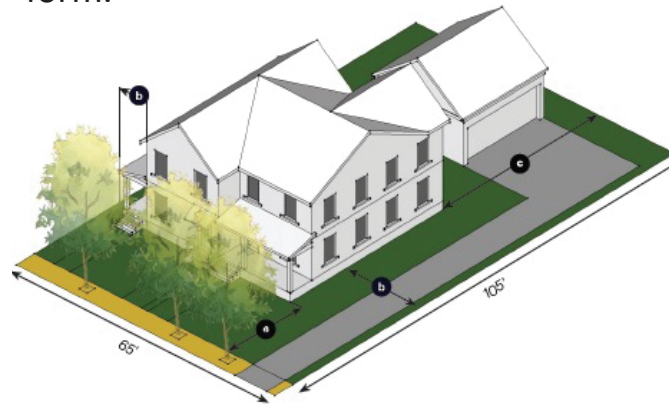
Reason: 25' wide side buffer requirement for multifamily results in 10 feet available for buildings on this infill lot



Missing Middle Option

Approach: House-scale building with similar building footprint and same setbacks as rest of neighborhood.

Yield: 3 units (20/acre); slightly above max allowed 18 units per acre but similar form.



Tips:

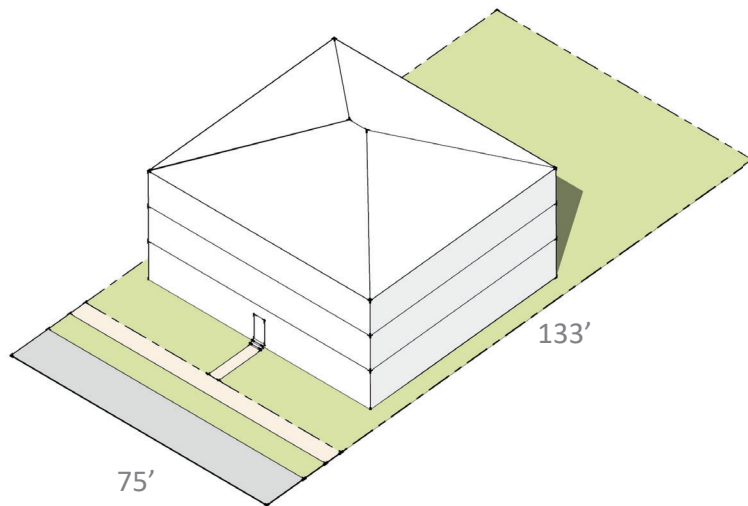
1. Check your current multi-family development standards on infill lots to see if there are any disconnects between the standards and the lots they regulate. Often, standards that make sense on larger sites are applied to smaller infill sites. This causes implementation issues and usually results in significantly limiting housing yield.
2. Remove buffer requirements. MMH types are house-scale and don't present the need for buffers.
3. Use the same setbacks as for houses in the area.
4. Remove on-site open space requirements. Use the side and rear yards.
5. For lots up to 100 feet wide and up to 200 feet deep, treat vehicle access for MMH the same as for houses.

Barrier 3: Existing zoning systems assume high density = very big building

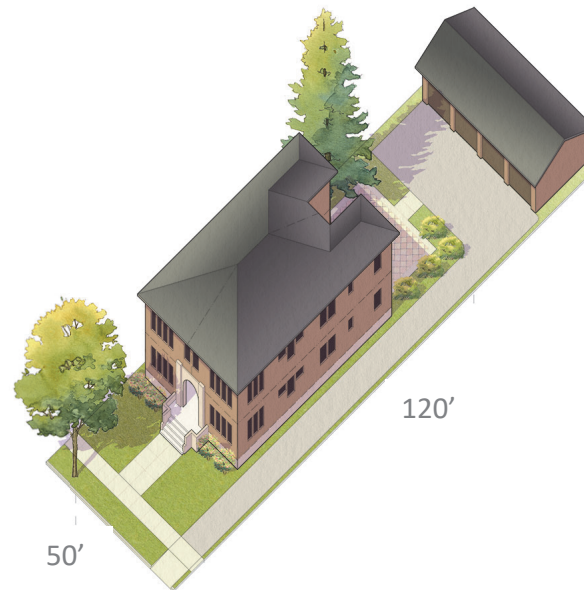


918 26th Avenue, Sacramento, CA
Lot: 80' x 80'
Height: 2 stories
Units: 16 units
Parking: 0 per unit
Resultant Density: 109 du/acre

Barrier 4: Minimum lot area too high for existing infill lots



Typical Scenario: Min. 10,000 sq. ft.
Min. lot size larger than needed
by several MMH types



MMH Scenario: 6,000 sq. ft.
Triplex/Fourplex works on far less width and
less total area than the typical requirements
for multifamily development

Tips:

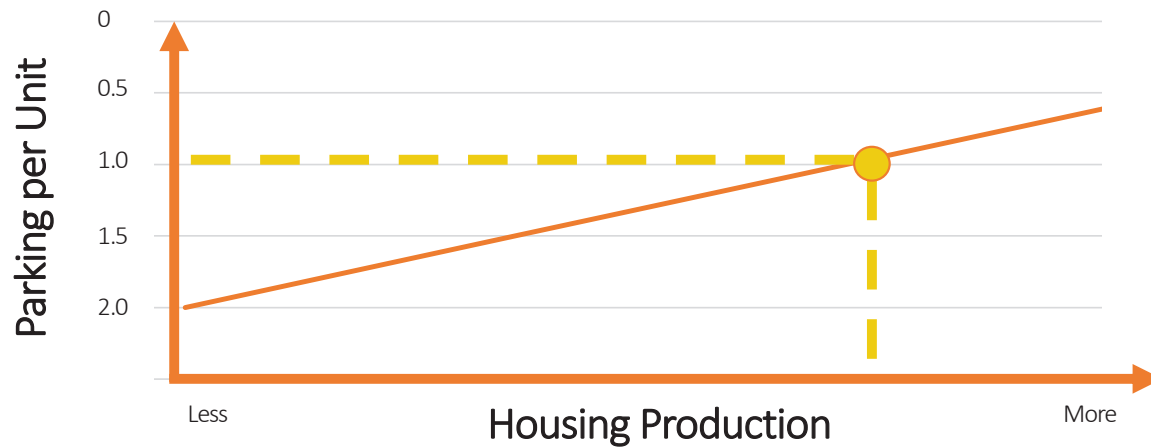
Many multi-family development standards were prepared from the perspective of addressing issues on large sites. In addition, many were prepared to keep 'intense' projects out of neighborhoods. These two factors contribute to many multi-family development standards requiring minimum lot sizes that are more than what MMH types need.

The example at far left shows a typical standard of 10,000 square feet and a typical minimum width of 75 feet.

The Triplex/Fourplex example shows how it fits on a lot only 50 feet wide and with only 6,000 square feet of lot area. Also, lot width is more important than lot area in controlling building size within existing neighborhoods.

Allow a 8' to 12' driveway on MMH lots up to 100 feet wide and 200 feet deep.

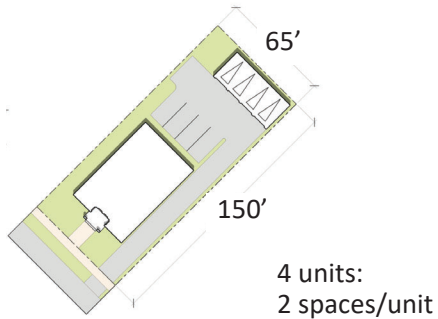
Barrier 5: Parking requirements on infill lots that are not coordinated with existing lot sizes



Tips:

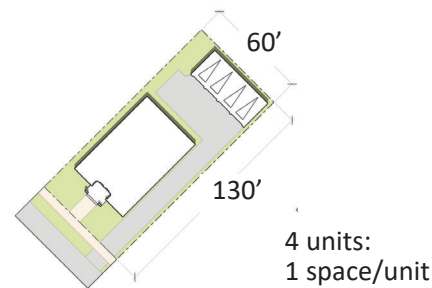
The amount of required on-site parking is a major influence on physical character and housing yield. Consider how much progress has been made on demonstrating that on-site parking is needed less on sites within short walking distance of amenities. With that in mind, locate MMH in these types of areas.

Further, because MMH works with the existing lot sizes in neighborhoods, it is also critical that parking expectations be coordinated with the existing lot sizes. Otherwise, the result can be that it's necessary to demolish the adjacent development to satisfy the parking requirement and disrupt the neighborhood pattern and trust in the process. Contributing to this issue are the typical requirements for "multifamily" driveways that don't often distinguish between an infill lot (MMH) and a large site.



Example:

Requiring 1 additional space per unit requires 7.6% more land area. It's unlikely that someone will sell 7.6% of their lot to make the neighboring project work, which puts the applicant in the unrealistic position of needing to purchase the entire adjacent lot.



Best Practices for Missing Middle



1. Identify priority areas for MMH
2. Update your standards to recognize “House-Scale” buildings
3. Regulate maximum building size and allow any number of units within that building size
4. Increase the allowed building size only as number of units increases
5. If using density, align standards with desired housing types and existing lot sizes
6. Allow multiple buildings on one lot
7. Regulate maximum building size, not just setbacks and lot coverage
8. Avoid the very large Duplex
9. Use an attic story to increase housing
10. Allow 3 stories (Upper MMH) with House-Scale form standards
11. Apply transition techniques to 3-story buildings when near smaller buildings
12. Identify different locations for MMH and Upper MMH

Best Practice 1: Identify priority areas for MMH

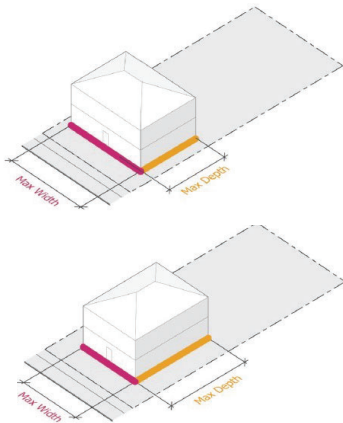


- 1 In Neighborhoods within a 5-minute walk of a Neighborhood Center
- 2 In Neighborhoods within a 10-minute walk or a 5-minute bike ride of a Neighborhood Center
- 3 Along Corridors and in adjacent Neighborhoods served by frequent-service transit

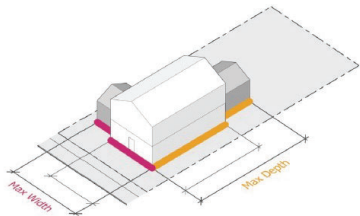


Best Practice 2: Update your standards to recognize “House-Scale” buildings

Main body



Main body + side and rear wings



Example: House-Scale Fourplex

Tips:

It is important to define what ‘house-scale’ means in your community. The term refers to buildings that are the size of houses, from the smallest to the largest in your community. When defining the term, it is not necessary to use the very largest that exists in your community.

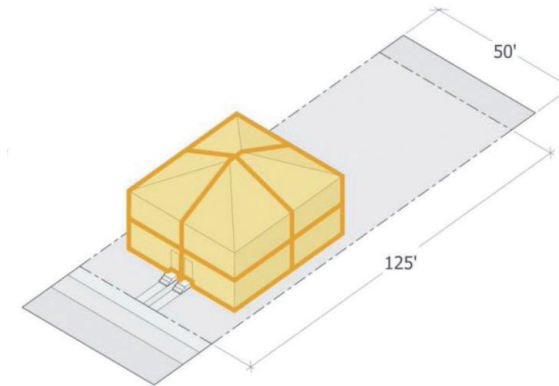
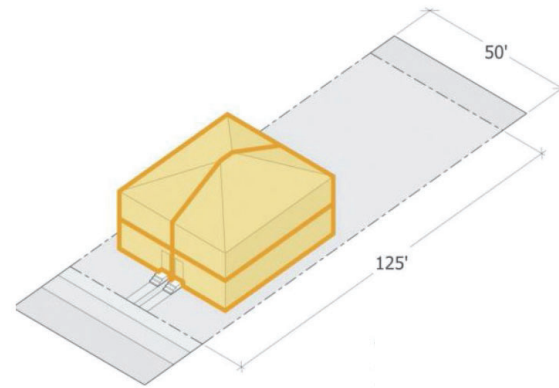
It is also important to specify that the maximum footprint is a combination of a main body that has a maximum size (e.g., 36 feet by 48 feet) and wings that extend from the main body up to the minimum building setbacks for an overall distance from end to end of 75 feet.

As important as it is to ensure that MMH buildings fit with the scale and physical character of single-unit houses, it is also important to apply the same approach to the standards for single-unit houses.

Best Practice 3: Regulate maximum building size and allow any number of units within that building size



Example of a multi-unit building



Units	Density Yield	Max. Building Footprint	Unit Size
2	13.9	2,400	2,400
3	20.9	2,400	1,600
4	27.9	2,400	1,200
8	55.8	2,400	600

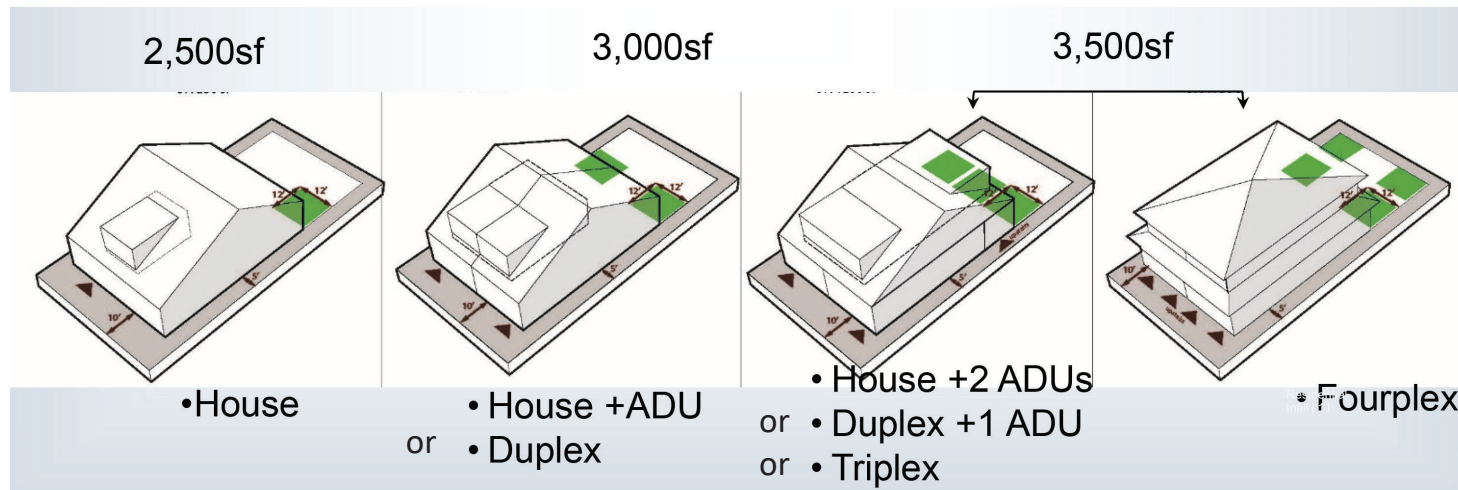
Tips:

Upon identifying the desired forms in your community, regulate what it takes to make sure that those forms are generated by the standards.

Then, allow as many dwellings within those forms as are allowed by other factors (on-site parking, building code, etc.). A key factor to keep in mind is to require less parking of smaller units (.e.g., per bedroom) and more of larger units.

The table at left illustrates an approach for incentivizing more units while maintaining the maximum building footprint.

Best Practice 4: Increase the allowed building size only as the number of units increases



Source: Portland Bureau of Planning and Sustainability

Tips:

Portland, Oregon developed an approach where the building size grows only if dwellings are added.

For example, if only one dwelling is proposed, the maximum building size is small. If two units are proposed, the building is allowed to be larger. If three units are proposed, the building can be larger, and so forth, up to a maximum for a particular lot size.

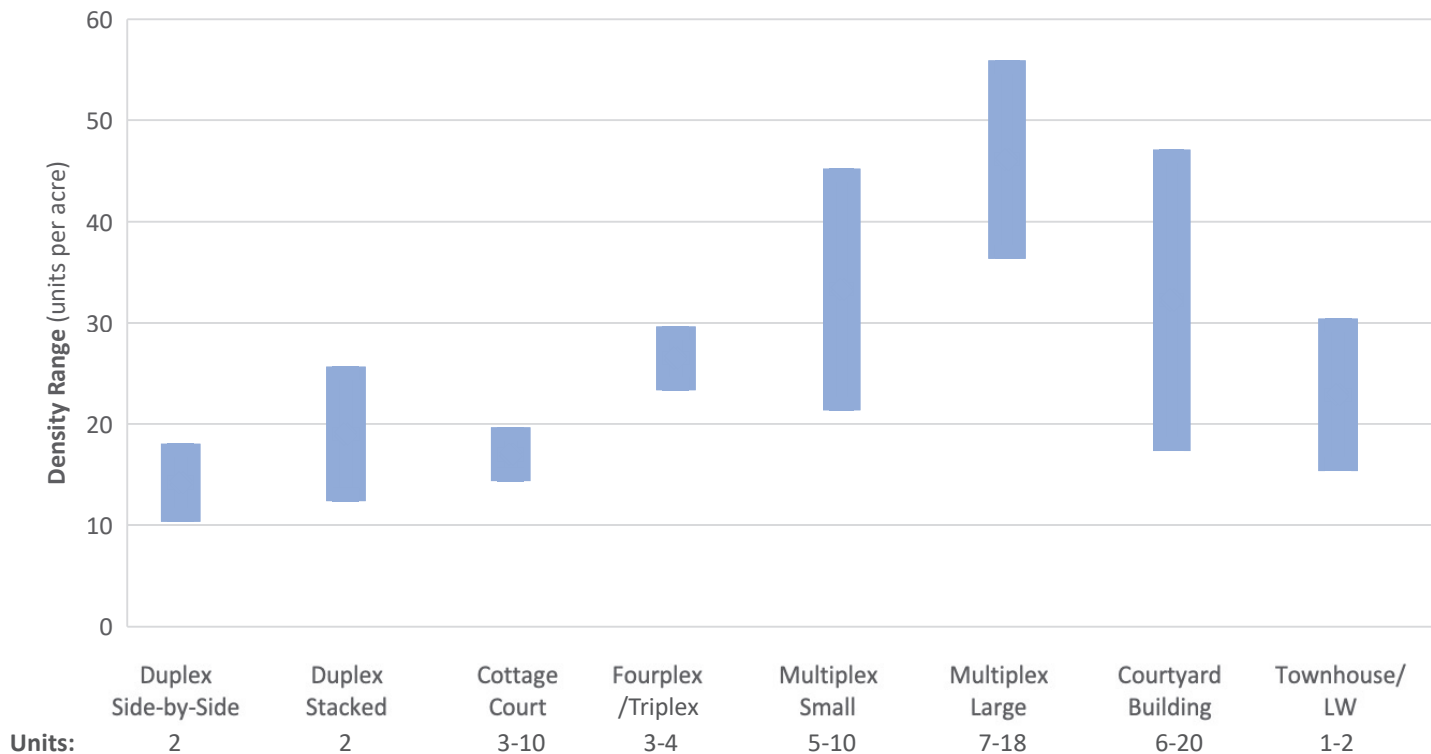
This approach addresses the issue of large single-unit houses using land for what could otherwise be multi-unit buildings by controlling building size for both single-unit houses and multi-unit buildings. This approach is flexible on the number of units and the size of the building while incentivizing more units to be built.



Best Practice 5: If using density, align standards with desired housing types and existing lot sizes

Typical Density Ranges of Missing Middle Types

(Vehicle Access from street; based on the characteristics on page 9)



Tips:

It is often thought that simply increasing the maximum density beyond current comfort levels will yield more housing. This tends to work on large sites but not on infill lots with less acreage. Avoid making the MMH types fit arbitrary density limitations. Instead, check your current multi-family density requirements against the range of density needed for each MMH type. Then review the dimensions of the existing lots where MMH is being considered to understand the actual density numbers needed to support MMH in your community.

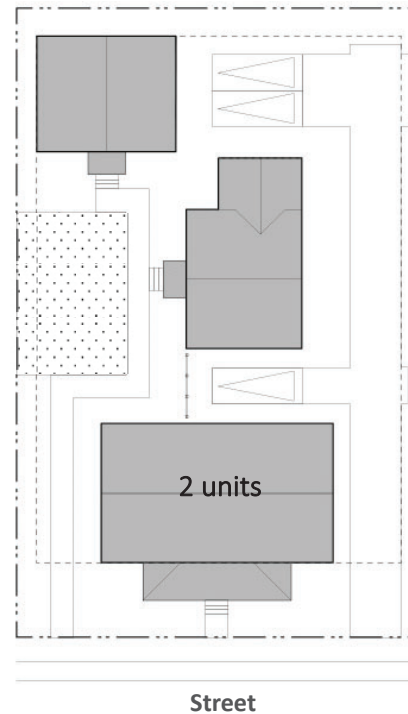
The table at left shows the typical range of density needed¹ by each MMH type.

¹ Based on the minimum to maximum lot size it needs to function and generate its range of units.

Best Practice 6: Allow multiple buildings on one lot



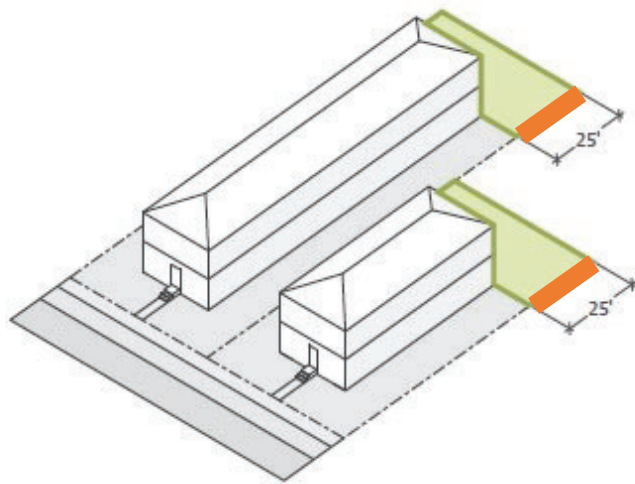
The intent behind this approach is for lots that are deeper than is practical for one building to efficiently make use of the lot. This depth tends to be deeper than 100 feet.



Tips:

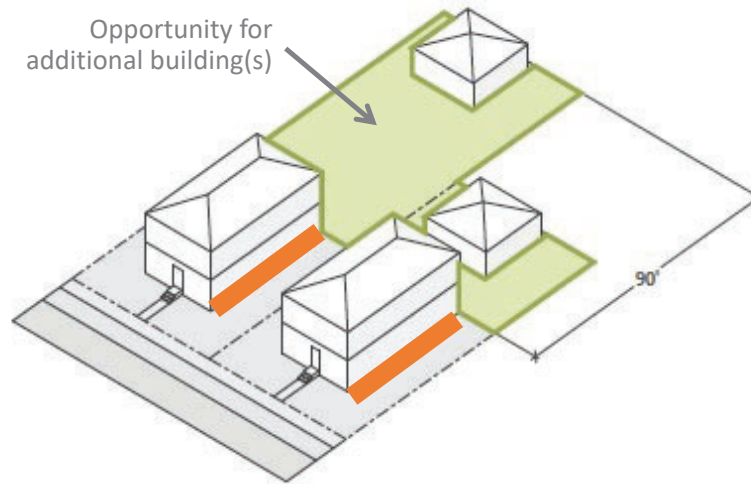
1. Require a 'front' address to the buildings and units along the street and along the side of the lot by extending the public realm into the lot to a shared space. This can be a simple walkway with landscaping, but it is along this edge and not the drive-aisle that the units should have their address.
2. Only allow this approach for the House, Duplex Side-by-Side, Duplex Stacked, Cottage Court, and Triplex/Fourplex types.
3. When this is 2 or more lots wide, use the "Pocket Neighborhood" approach to the site.
4. OK to distribute parking spaces.

Best Practice 7: Regulate maximum building size, not just setbacks and lot coverage



Having the same rear setback

Does not ensure that buildings will be the appropriate size for the area.



Having the same max. building depth

Results in buildings that are in scale with adjacent buildings

Tips:

Development standards are very specific about height and lot coverage but don't often address a building's size down the side of the lot. This makes it possible for buildings to comply with the height and lot coverage standards, but still look too big and have units looking into the neighbors' private yards.

1. Identify the prevalent depth of existing or intended buildings in each neighborhood. Use that to regulate building depth.
2. If the prevalent pattern is rear yards and up to 2-story buildings, keep that pattern. Alternatively, to allow buildings in the rear of lots, limit to 2 stories and require to face a shared space and sidewalk extending from the public sidewalk. Require buildings in the rear of lots to be individual buildings for good scale and ownership options.

Best Practice 8: Avoid the very large Duplex



A growing trend is to increase housing choices by allowing duplexes. That sounds like part of a good strategy but how that's built out matters. Often, the result is two large houses attached at a common lot line (example above). In addition to the result not really being what is intended by a side-by-side duplex (at right), the result often causes concern among neighbors and skeptics of multi-unit housing.



Tips:

It's important to regulate the maximum building size for each MMH type, or categories of MMH types, to avoid getting the oversized duplex in your community.

1. Identify max. width and depth for the side-by-side duplex type (e.g., 48 ft wide by 40 ft deep).
2. Allow 2 units only if they're on the same lot and within the overall House-Scale building footprint.
3. Require the 2 units to be within one overall massing that looks like one house.
4. Do not allow parking to be along the front façade.
5. Require that parking be located in driveway along one side or behind the building.
6. Limit driveway width to 10 feet max. to minimize paved area dominating across the front.
7. Require the same of single-unit houses (except #2).

Best Practice 9: Use an attic story to increase housing



2 stories
with 3rd story within the
volume of the pitched roof




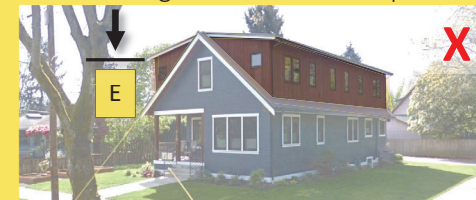
3 stories

Right: This example was proposed as a dormer on a 1-story building, but when measuring to the highest eave, the “dormer” is actually a second story.

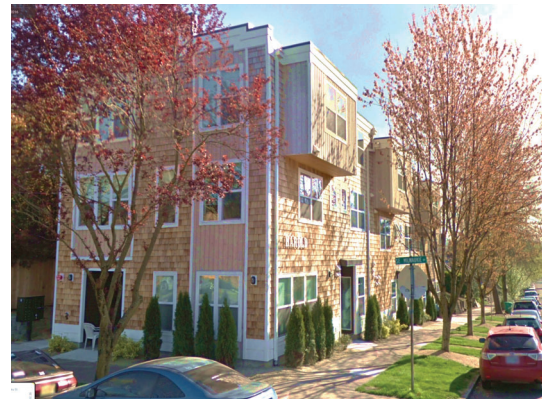
Tips:

An attic story is entirely within the volume of the pitched roof and adds habitable space to the building without adding another story as seen from the street.

1. Clarify your standards to not count the volume under the pitched roof of a 2-story building as a third story.
2.  Measure height to the highest eave and specify the max stories to this height so that the volume under the roof is not perceived from the street as an additional story as in the example below. (not including dormers).
3. Apply the above to single-unit buildings where MMH is expected.



Best Practice 10: Allow 3 stories (Upper MMH) with House-Scale form standards



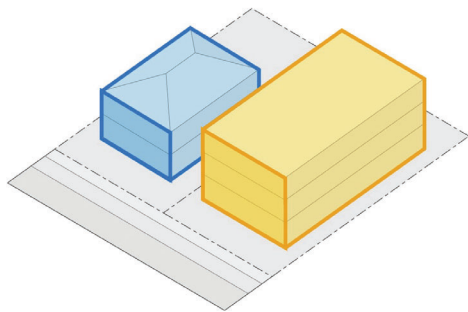
Tips:

MMH is primarily 2 stories tall, including the volume under the pitched roof. But there are areas in neighborhoods where 3 or 4 stories (Upper MMH) can work well.

In order for 3-4 story buildings to fit well with smaller buildings, it's critical to regulate the maximum width and depth of the building (building footprint) to be similar to the width and depth of the houses in the neighborhood.

It's also helpful to make transitions from 2 to 3 stories at mid-block. For example, the half of one block that faces one street might already be 1 and 2 stories while the other half of the block facing another street could have some or all 3-4 story buildings facing other 3-4 story buildings.

Best Practice 11: Apply transition techniques to 3-story buildings when near smaller buildings



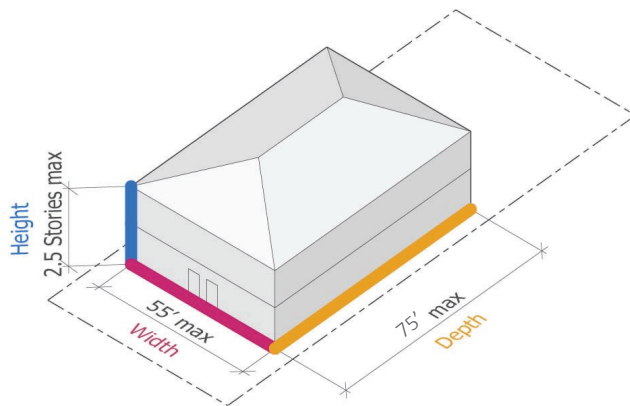
Tips:

Although in the example at left the 2-story and 3-story buildings are well designed, there is an abrupt change from 2 to 3 stories. If it is necessary to consider Upper MMH 3-story buildings immediately adjacent to 2-story buildings, apply transition techniques in addition to other standards controlling building size.

For example, require that the street-facing façade match the adjacent 2-story building in height while pushing the 3rd story to be set back and not be visible from the street.

Or, require that along the street-facing façade, the 3rd story must be in the volume under a pitched roof that matches the adjacent roofs. Further into the lot, consider allowing the 3rd story to be expressed as a full 3rd story.

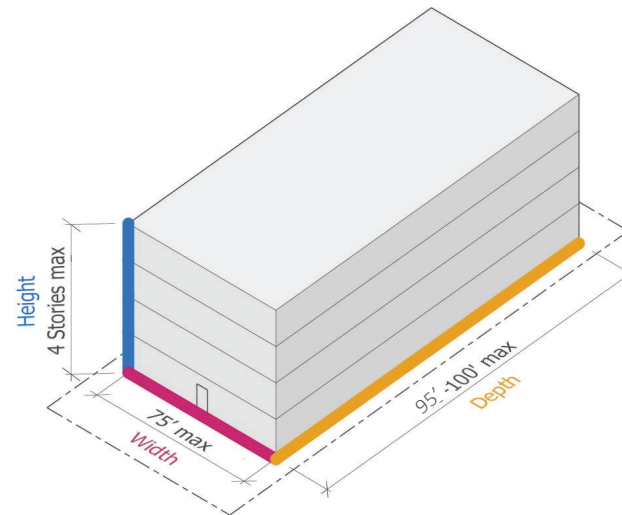
Best Practice 12: Identify different locations for MMH and Upper MMH



Missing Middle (MMH)

within and along edges of low-to-moderate intensity neighborhoods

Note: Wings not shown but allowed



Upper Missing Middle (Upper MMH)

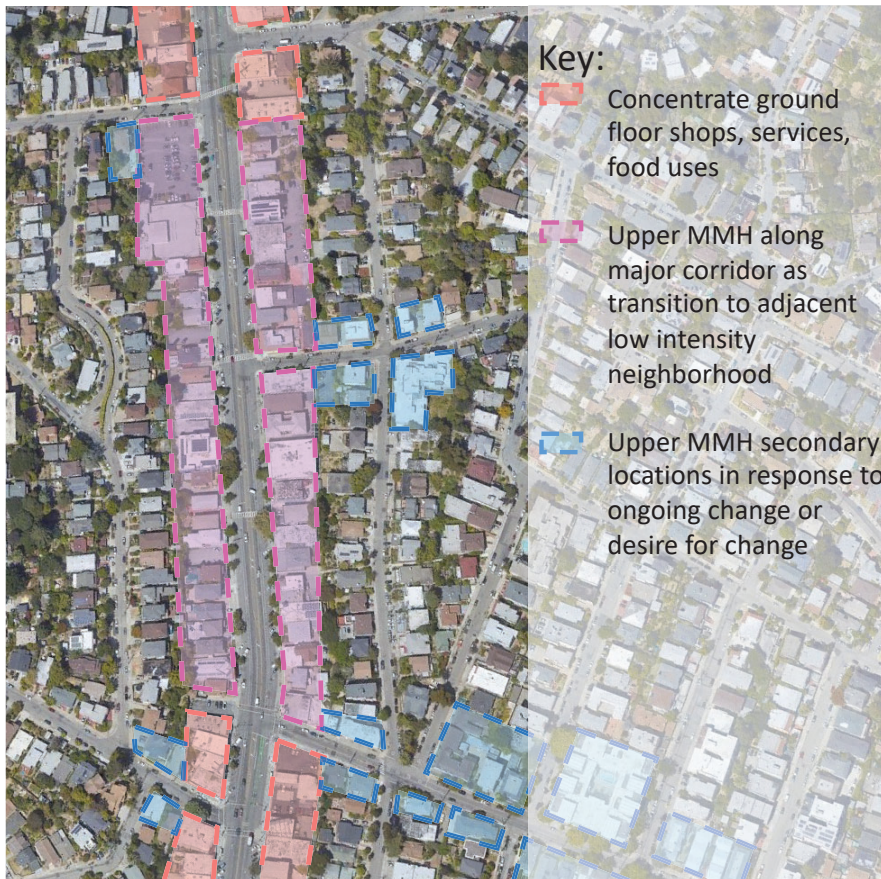
along edges of neighborhoods where substantial change is happening or desired

Tips:

Whether you use individual building type standards or more general form standards that don't prescribe a specific building type, it's critical to be clear about where the 2.5-story MMH and 3-4 story Upper MMH are and are not allowed.

1. For Upper MMH, strategically select the areas outside of neighborhoods (edges, corridors, etc.) where a change in size is already happening or desired.
2. Coordinate the locations on the zone map to the applicable standards in the zone(s).
3. Implement at least two different MMH Zoning districts.
 - 2.5-story MMH types (could be organized into 2 zones: lower end of MMH palette; higher end of MMH palette)
 - 3-4 story Upper MMH types

Upper MMH strategies



Tips:

Upper MMH is the category of multi-unit buildings taller and deeper than MMH that still fit on lots you would find in a single-unit neighborhood.

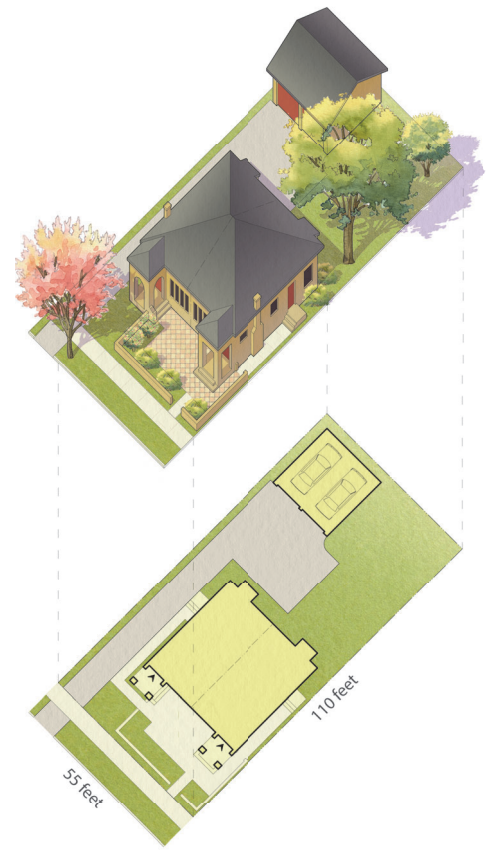
Upper MMH builds on MMH. By selecting strategic locations, it's still compatible with House-Scale neighborhoods while likely achieving higher financial feasibility than MMH.

1. Most effective where a greater degree of change is desired.
2. Use in transition areas of a neighborhood, connecting to more intense nodes or transit centers.
3. Allow more lot coverage and/or deeper building footprints than for MMH.
4. Require rear setback based on size of neighboring rear setbacks (up to 20' max)
5. Reduced total stories along rear adjacent to neighboring houses.

Missing Middle Housing Implementation

SECTION

4



Zoning for Missing Middle Housing



MMH strategies by location



Key Strategies	Neighborhoods/Corridors			Shopping Center Transformation with adjacent House-Scale neighborhood(s)
	Low Intensity	Moderate Intensity	High Intensity	
House-Scale approach	●	●	-	●
Building Type standards	●	●	-	●
Building footprint standards	●	●	●	●
2 stories, with 3 rd in pitched roof volume	●	●	-	●
Partial 3 rd story	-	●	●	●
Specific to Upper Missing Middle				
3-4 stories	-	-	●	●
Upper story stepback/ transitional standards (near 2 stories)	-	-	●	●
Horizontal façade articulation (Max. façade length without breaks)	-	●	●	●

Tips:

As stated earlier, it is critical that MMH buildings fit well in neighborhoods, especially when the mix mostly includes single-unit houses. Currently, the burden of House-Scale size and compatibility typically falls entirely on the proposed multi-unit building. But it is equally critical that single-unit houses be held to the same expectations.

Make sure to not apply strategies for controlling larger buildings to smaller buildings and vice-versa.

Make sure that your strategies are coordinated with the location(s) you are considering.



Implementation Approaches

1 Targeted Changes to Existing Zoning Standards

Edits to existing standards zone-wide or only for specific areas.
Full design review required.
Effort/Cost: LOW

2 New MMH Standards

Set of additional content and standards inserted as overlay standards; can include some changes to existing standard.
Some design review required.
Effort/Cost: LOW MODERATE

3 Replacement of Zone(s)

New MMH zone district(s) and standards to replace the zone(s) that apply to one or several neighborhoods.
Focused design review required.
Effort/Cost: MODERATE

4 Objective Standards

MMH zone(s) and standards replace existing zone(s) /standards.
No discretionary review required.
Effort/Cost: HIGH



Model Ordinances approaches



There is growing interest in approaches that feature a base set of information or a template instead of needing to generate the information from scratch. Two approaches that are particular to the west coast, Oregon and California, have been included for your reference and consideration:

- State of Oregon – House Bill 2001 – page 46
- Marin Objective Design and Development Standards (ODDS) – page 47

Medium Cities Middle Housing Model Code

User's Guide:
Oregon House Bill 2001 (2019) (HB 2001) requires that "Medium Cities" (defined as cities with a population of more than 10,000 and less than 25,000 that are not within Metro's jurisdiction) allow a duplex on each lot or parcel zoned for residential use that allows for the development of detached single-family dwellings. Duplexes provide an opportunity to increase housing supply in developed neighborhoods and can blend in well with detached single-family dwellings.

The bill allows local governments to regulate siting and design of duplexes, provided that the regulations do not, individually or cumulatively, discourage duplex development through unreasonable costs or delay. When regulating siting and design of duplexes, Medium Cities should balance concerns about neighborhood compatibility and other factors against the need to address Oregon's housing shortage by removing barriers to development and should ensure that any siting and design regulations do not, individually or cumulatively, discourage the development of duplexes through unreasonable costs or delay.

Medium Cities may develop their own standards in compliance with the requirements of HB 2001. This model code may provide guidance toward that end. However, if Medium Cities do not wish to prepare their own standards or if Medium Cities do not adopt the required code amendments by June 30, 2021, they must directly apply this model code prepared by the Department of Land and Conservation Development (DLCD) to development in their jurisdictions. The model code is intended to be straightforward and implementable by Medium Cities throughout the state. The model rules are consistent with the requirements and intent of HB 2001 and are intended to ensure that a duplex is no more difficult to develop than a detached single-family home. The model code will be adopted by reference into Oregon Administrative Rules.

To the extent they are applicable, the Administrative Rules contained in Chapter 660, Division 46 apply to and may be used to interpret this model code.

DLCD 660-046 Exhibit A – Medium Cities Middle Housing Model Code 1 of 7

Title X: Objective Design and Development Standards

February 17, 2021

Model Ordinances approaches



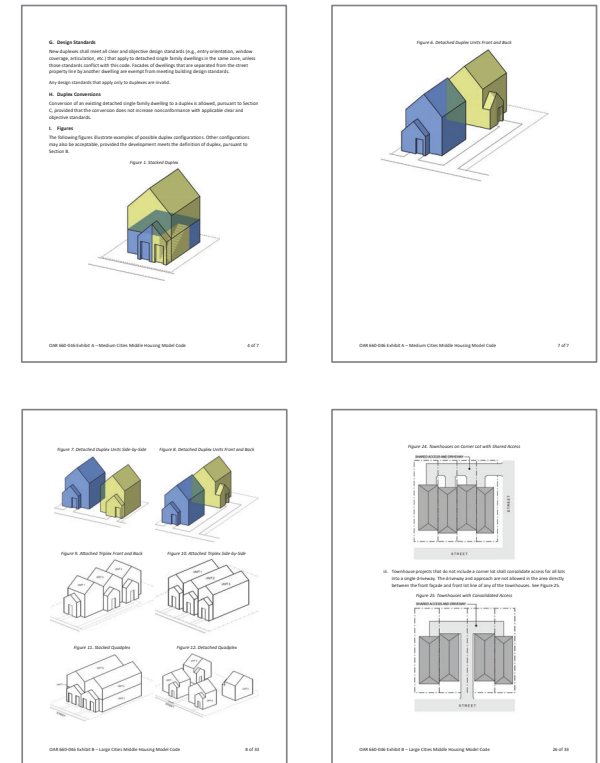
- **State of Oregon**

Oregon House Bill 2001 was passed by the state legislature in 2019, with administrative rules adopted by the state land use agency in 2020. It requires all cities with a population over 10,000 and nearly all jurisdictions in the Portland Metro region to allow middle housing in single-family residential zones. For smaller cities (10,000-25,000 population) outside the Portland region, the primary requirement is to allow a duplex on any lot that allows a single-family home. Larger cities (over 25,000) and Portland Metro area jurisdictions, in addition to allowing a duplex on any lot that allows a single-family home, must allow triplexes, fourplexes, townhomes, and cottage clusters on most lots in zones that allow single-family residential.

The state administrative rules that provide further detail to the law set boundaries related to lot size/density, parking requirements, height, and other development standards that jurisdictions can apply to middle housing. They ensure that jurisdictions cannot use burdensome code requirements to make building middle housing difficult or impossible.

The law also directed the state land use agency to develop and adopt a model code for middle housing. The model code serves two purposes: in addition to providing guidance and best practices to local governments to comply with the law, if jurisdictions have not adopted their own code amendments consistent with the law by the deadline set in the state law, they must apply the model code directly in reviewing applications for middle housing in residential zones that allow single-family housing.

Smaller jurisdictions have already adopted regulations addressing the duplex requirement, and larger and Portland Metro jurisdictions are in the process of adopting code amendments to comply with the law before a June 30, 2022 deadline. Several are working with team member ECONorthwest to understand how the market might respond to these changes, evaluate strategies to support affordability, and consider implications of different code options.



Source: Department of Land Conservation and Development : Housing Choices (House Bill 2001)

Model Ordinances approaches



- Marin County Toolkit of Objective Design and Development Standards**

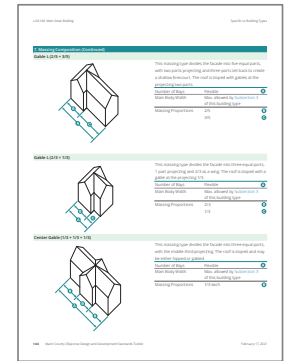
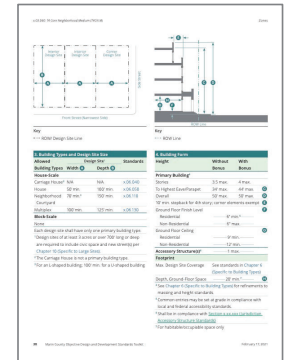
The County and 10 of the 11 towns pooled their SB 2 funding to hire Opticos Design¹ to prepare a Toolkit based on the needs and physical character of Marin County and its towns. The group of jurisdictions determined that instead of each doing much of the same work, that there was much they could share while leveraging their funding to produce a Toolkit relevant to their specific needs.

The Toolkit was informed by analysis of larger patterns (Place Types) and the patterns at the scale of individual buildings (Micro-scale Documentation) as well as through detailed site testing to compare existing zoning to potential Toolkit standards.

The Toolkit offers a palette of eight zone districts and development standards ranging from lower intensity neighborhoods up to higher intensity neighborhoods and main street environments. The Toolkit also offers a range of supplemental design standards addressing building and massing types, streetscapes, building frontage, architectural style, and signage. From this Toolkit, each jurisdiction can select as much or as little content as needed to address its objectives. The Toolkit was prepared as a stand-alone Title or Chapter that can be easily included in a jurisdiction's municipal code.

Opticos is in the process of further customizing the Toolkit content for several towns prior to adoption hearings.

¹ Consultants Plan to Place provided public meeting facilitation and LWC prepared procedures and administration content.



Resources



Resources on Missing Middle Housing from Opticos Design. <https://missingmiddlehousing.com>

David Driskell with Ian Carlton, Tyler Bump, Michelle Anderson. “Why zoning for Middle Housing doesn’t make it so”. Aug 11, 2021. Northern California APA.

<https://norcalapa.org/2021/08/why-zoning-for-middle-housing-doesnt-make-it-so/>

Portland Bureau of Planning and Sustainability - Residential Infill Project.

<https://www.portland.gov/bps/rip>

Oregon Department of Land Conservation and Development - Housing Choices: House Bill 2001.

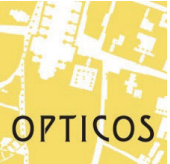
<https://www.oregon.gov/lcd/UP/Pages/Housing-Choices.aspx>

Marin County Toolkit of Objective Design and Development Standards.

<https://www.marincounty.org/depts/cd/divisions/planning/long-range-planning-initiatives/objective-design-and-development-standards>



MISSING
MIDDLE
HOUSING



OPTICOS