Central, South & West Maui

Missing Middle Deep Dive™ Testing + Solutions for Missing Middle Housing

Prepared for:
Hawai'i Community Foundation + County of Maui

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HAWAI'I COMMUNITY FOUNDATION

OPTICOS

COUNTY OF MAUI
STATE OF HAWAI'I

Prepared For:

Hawai'i Community Foundation
395 Dairy Road, Unit G
Kahului, HI 96732
www.hawaiicommunityfoundation.org

Prepared By:

Opticos Design, Inc.
2100 Milvia Street; Suite 125
Berkeley, California 94704
510.558.6957

Missing Middle Housing term created by Daniel Parolek

For more info visit www.missingmiddlehousing.com

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Introduction

CHAPTER 1

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1.1 What the Missing Middle Housing Study Is About

Please note that the Missing Middle Housing Study references data that predates the devastating fires in Lahaina in August 2023 in describing Maui's housing challenges. The loss of housing due to the fires have only exacerbated the crisis.

The findings of the Missing Middle Housing Scan™ (the first report of this study) and the recommendations in this report, the Missing Middle Housing Deep Dive™ are intended to help Maui increase housing access and affordability in the coming decades.

The County of Maui is working to ensure housing attainability and increase housing choices to meet its current and future needs. The Missing Middle Housing Study carries out analysis and provides recommendations to support these goals.

Housing in Maui Today

In Maui, as in most places across the nation, housing unaffordability is a growing crisis. Population demographics are changing rapidly as well, requiring a wider variety of housing types to meet Maui's housing needs, beyond the typical single-family home.

In the United States, at least 75 percent of all residential land is zoned for single-unit (also called single-family) development. This land use pattern, among other factors, has contributed to a housing shortage of approximately 4.5 million housing units as of 2022.[1] In Maui County, 66 percent[2] of the housing stock is in the form of single-unit dwellings. Even though households in Maui are changing, the housing choices have not increased to meet this need. On the contrary, US census data shows that over the past ten years, the percentage of small multi-unit buildings within Maui's housing stock has decreased as compared to the number of single-unit housing products.

The housing crisis in Maui is further exacerbated by limited land and high costs of development, as well as the growing market for second homes and short-term rentals because of its desirable location, culture and climate. The recent natural disaster in Lahaina and consequent loss of housing has compounded the crisis.

A Road Map to Identify Barriers and Increase Housing Choices

The Missing Middle Housing (MMH) Study explores ways to expand housing choice and provide more attainable housing options. It is a focused effort to explore ways to implement Missing Middle Housing across Central, South and West Maui and help the County to respond to the urgent need for attainable housing at all income thresholds. The MMH Study includes extensive analysis to identify where MMH can be accommodated, carries out regulatory and policy analysis to identify barriers to MMH, and provides recommendations to facilitate the production of MMH across Central, South and West Maui.

How the MMH Study is Organized

The MMH Study summarizes its work in the form of two key reports:

- **The Missing Middle Housing Scan™** report presents the analysis to identify areas suitable for MMH, and identifies regulatory barriers.
- **The Missing Middle Housing Deep Dive™** report (this report) builds on the MMH Scan analysis, includes design and feasibility testing on opportunity sites, and provides a set of zoning and policy recommendations.

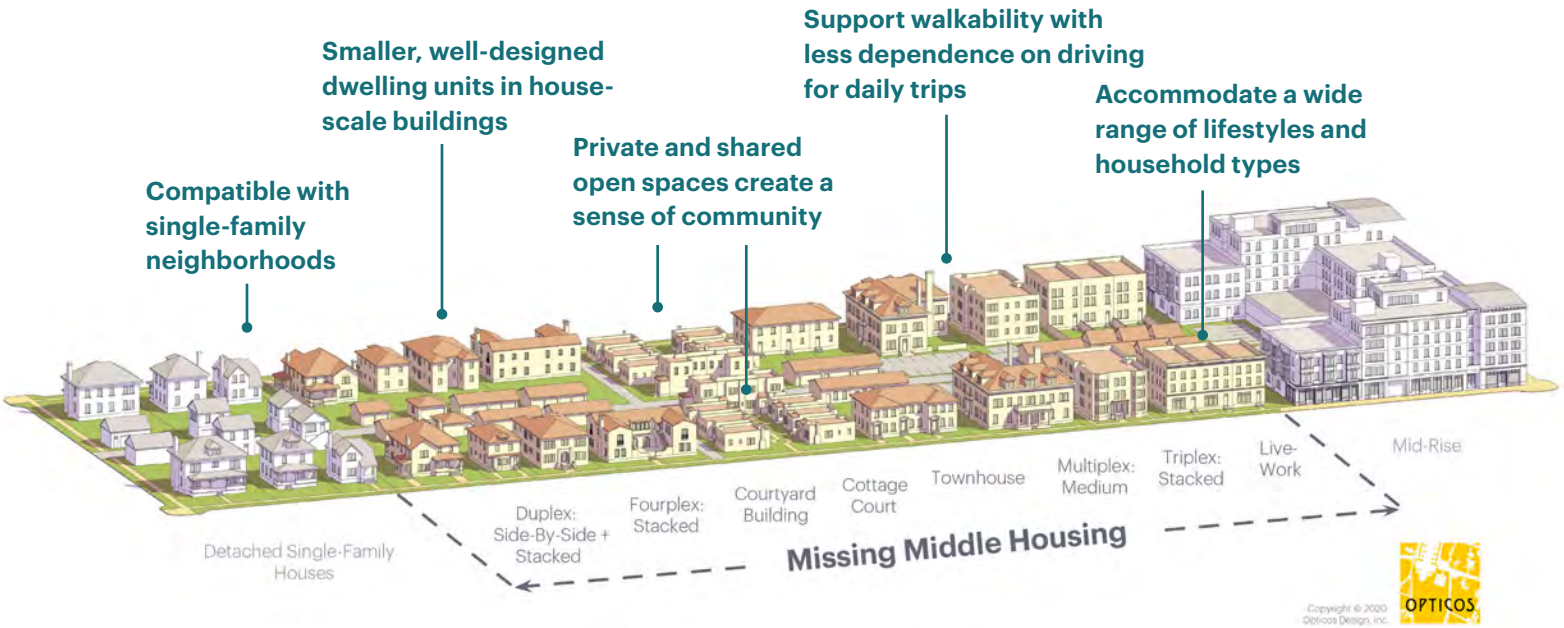
Sources

[1] *Zillow Research paper (https://www.zillow.com/research/affordability-housing-shortage-34153), 2024*

[2] *Hawai'i Housing Factbook, Economic Research Organization, University of Hawai'i (UHERO), 2024*

Missing Middle Housing is a range of house-scale buildings with multiple units, compatible in scale and form with detached single-family homes, that can promote housing diversity and attainability."

Dan Parolek
Founder of the Missing Middle concept
www.missingmiddlehousing.com



The Missing Middle Housing (MMH) Study will provide recommendations to help Maui expand housing choice and affordability.

1.2 Purpose of the Missing Middle Housing Deep Dive™

The Missing Middle Housing Deep Dive™ involves detailed testing of regulatory standards in selected areas in Maui County to identify barriers to Missing Middle Housing, and to recommend improvements to policies and zoning standards to remove these barriers.

Key Objectives

This report, the Missing Middle Housing Deep Dive™, is the second part of a two-part study of Maui County's policies and zoning standards with the objective of identifying barriers to Missing Middle Housing (MMH), and proposing recommendations to enable these housing types in suitable areas of Central, West and South Maui.

The first part of the analysis, the Missing Middle Housing Scan™, includes an assessment of existing mixed-use centers in Maui that can provide day-to-day amenities and services for Maui residents. The analysis identifies neighborhoods within a quarter to a half-mile distance of these centers that are "MMH-Ready", and can support additional housing.

The MMH Scan™ also includes preliminary regulatory analysis of six zoning districts that are prevalent in the MMH-Ready Areas: R-1, R-2, R-3, A-1, B-2 and WRA-B/MF. Figure 1.1 shows the identified centers, MMH-Ready Areas and the selected zoning districts.

This second part of the MMH Study, the MMH Deep Dive,™ goes into greater depth to assess potential MMH types that could fit on typical lot sizes in Maui through the process of Test Fits. This design testing process also helps to identify regulatory barriers that must be addressed to enable MMH. In addition, the Deep Dive™ also carries out financial feasibility analysis for selected MMH types in Maui's housing markets.

The design and feasibility testing includes the following steps:

- **Identify lot categories** for design testing to ensure that the MMH types being evaluated for this study are appropriate in scale and form, and can fit on typical existing lots in Maui. By selecting lots from each lot category, the process ensures that the Test Fit findings are broadly applicable, and can inform regulatory changes.
- **Test Fits on typical lots** is a multi-step process that assesses what the current zoning standards allow on a typical lot, what the actual yield is when additional development standards (such as parking) are applied, and which MMH types are suitable within the built context of the neighborhood. The testing helps to highlight changes needed to existing zoning standards.
- **Financial feasibility** of selected Test Fits, evaluated through a static developer pro forma, provides information on how viable the MMH types are under current housing market conditions, and what changes to zoning and entitlement, as well as development incentives, can help

Please note that this report is the second of two reports prepared as part of the Missing Middle Housing Study. The first report, the Missing Middle Housing Scan™, describes the analysis used to identify the MMH-Ready areas referred to in this report.

The Missing Middle Housing Scan™ can be accessed at this link: https://housemaui.com/wp-content/uploads/2024/10/MSD-MMHScan-FinalMemo-lower-res.pdf

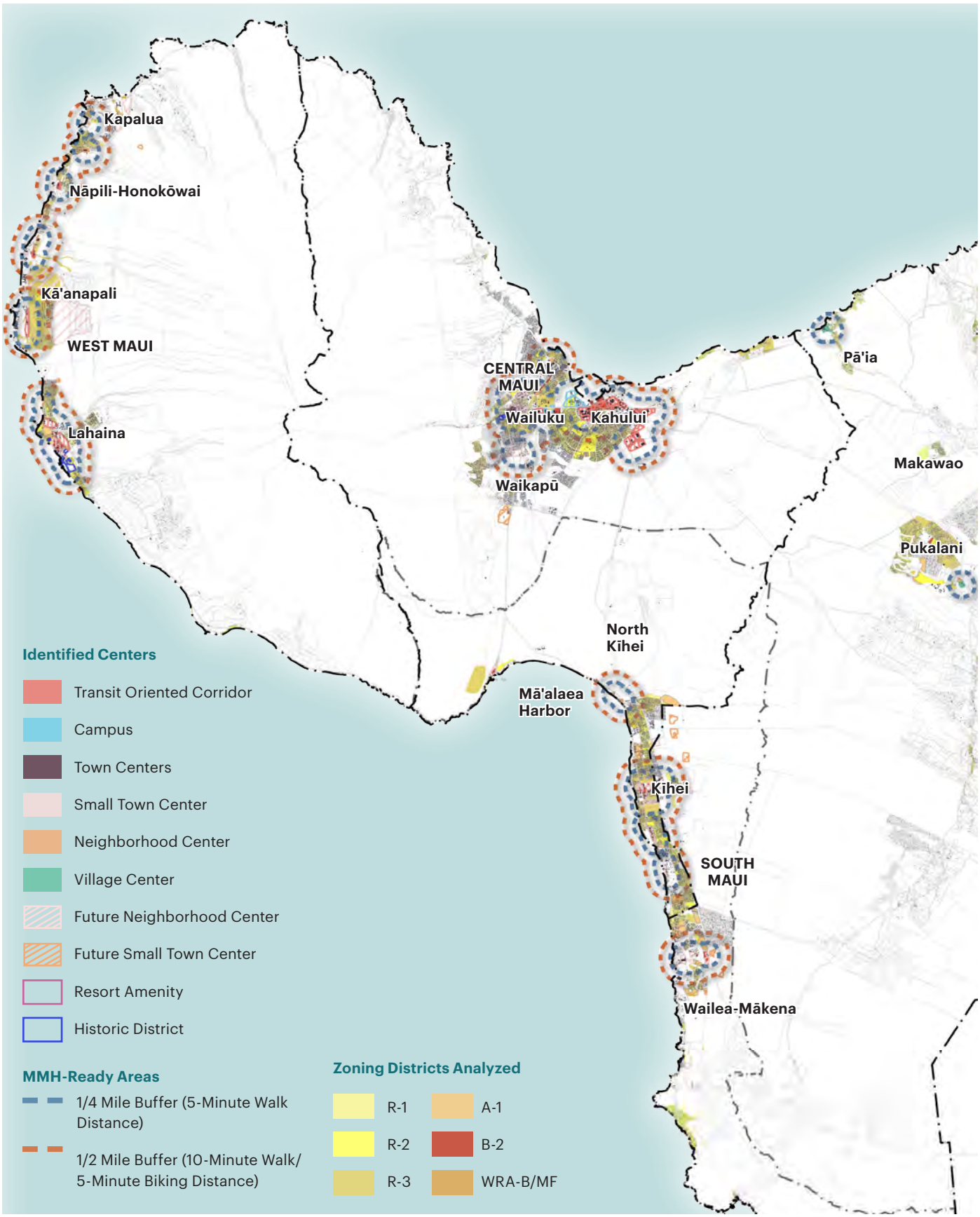


Figure 1.1 *MMH-Ready Areas in Central, West and South Maui and zoning districts analyzed.*

improve feasibility. With attainable housing as the goal of the MMH Study, the feasibility testing also identifies the Area Median Income (AMI) levels at which the tested MMH types are likely to rent or sell. The objective is to strike a balance between financial feasibility for MMH and attainability to middle-income households in Maui, without requiring a subsidy.

- **Testing on large sites** helps to illustrate how MMH neighborhoods may be created on large infill sites as well as large-scale development projects in planned growth areas. This process establishes design principles for neighborhood-scale development, with a focus on housing diversity, active open spaces, and pedestrian-friendly streetscapes.
- **Recommendations for MMH.** The preceding steps culminate in a set of zoning and policy recommendations to enable and encourage MMH in Maui. The recommendations can inform the Maui Island Plan 2030 and updates to existing zoning standards and entitlement processes. They can also help prioritize major infrastructure upgrades and related investment.

What was in the Missing Middle Housing Scan™?

The Missing Middle Housing (MMH) Scan,™ the first part of the MMH Study, provides information on MMH, identifies "MMH-Ready" Areas in Central, West and South Maui, and identifies regulatory barriers to MMH in the R-1, R-2, R-3, A-1, B-2 and WRA-B/MF zoning districts.

For the Missing Middle Housing Scan™ report visit https://housemaui.com/wp-content/uploads/2024/10/MSD-MMHScan-FinalMemo-lower-res.pdf

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Analysis of Barriers

→ **MMH-Ready Areas in Maui**

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What will the Missing Middle Housing Deep Dive™ do?

The Missing Middle Housing (MMH) Deep Dive,™ (this report) is the second part of the MMH Study, and builds on the MMH Scan™ by carrying out design and feasibility testing for MMH on common lot sizes in Maui, and provides recommendations to enable MMH.

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CHAPTER

2

Lot Category Analysis

In this chapter

2.1 Lot Category Analysis

Existing lots in Maui Island were analyzed to establish Lot Categories. Selecting typical lots from each category for design testing ensures that the results generated are representative of a repeatable condition and the findings can be broadly applied.

Why Lot Sizes Matter

Lot width and depth are key characteristics that impact the building types that can fit on that particular lot, taking into consideration the building footprint, parking and other regulatory requirements that apply. Different Missing Middle Housing (MMH) types have distinct dimensions that need minimum lot widths and depths in order to work effectively.

Analyzing existing lots and grouping them into lot categories helps to identify the corresponding range of MMH types that can physically fit on those lots. From this palette of viable types, the recommended MMH types also take into consideration the underlying character of that context. For most building types including MMH, lot width is typically a more critical factor than lot depth. Note that while smaller MMH types such as duplexes can fit on larger lots, it is unlikely that builders and property owners would choose to build a small MMH type on a large lot. Typically, they would select a building type that more closely matches the development potential of the lot.

Lot Category Analysis for Maui

All existing lots in Maui (the island of Maui, excluding Lanai and Molokai) were analyzed and categorized on the basis of lot widths and depths to understand which lot sizes are most prevalent.

The threshold sizes of these lot categories were determined based on the dimensions of typical MMH types, regulatory standards such as setbacks in each applicable zoning district, parking access (through a driveway or alley), etc.

The results identify prevalent lot sizes on Maui island, which in turn informs the selection of typical lot sizes for Test Fits in the next chapter of this report.

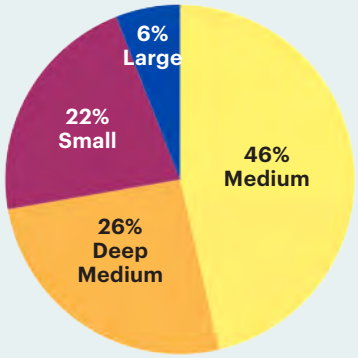
Out of the total number of lots analyzed, 28 percent (12,573 lots) fall into lot categories that are suitable for Missing Middle Housing. These lots are grouped into four lot size categories that are listed below, along with the total number of lots in each category:

- Small: 2,738 lots (22 percent of total)
- Medium: 5,833 lots (46 percent of total)
- Deep Medium: 3,253 lots (26 percent of total)
- Large: 749 lots (6 percent of total)

The analysis shows that while there is no single prevalent lot size on Maui island, 46 percent of the total (5,833 lots) are in the medium category, with widths ranging from 60 to 75 feet and 100 to 120 depth. These dimensions support a large range of Missing Middle types. Note that due to limitations of the analysis methodology, some outlier lots with irregular geometry are excluded from the analysis.

Figure 2.1 *Lot category analysis findings for Maui island*

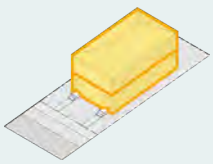
Lot Categories: Maui Island



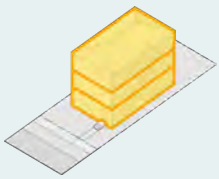
Lot Categories and MMH Types
The ratio of lots within each lot category is shown below, as well as the range of typical MMH types that can fit in each lot category.

	Lot Size Categories	Width Range	Depth Range	Single-Family	Duplex	Triplex	Fourplex	Multiplex	Townhouse	Live/Work	Cottage Court	Courtyard Apt	Number of Lots	Ratio of Total
	Small	40-55 ft	60-125 ft	■	■	■	■	■	■	■			**2,738**	**22%**
	Medium	60-75 ft	100-120 ft	■	■	■	■	■	■	■	■		**5,833**	**46%**
	Deep Medium	60-75 ft	125-150 ft	■	■	■	■	■	■	■	■	■	**3,253**	**26%**
	Large	100-120 ft	220-250 ft	■	■	■	■	■	■	■	■	■	**749**	**6%**

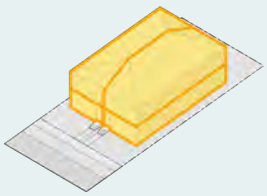
Typical MMH Types Considered for Lot Category Analysis



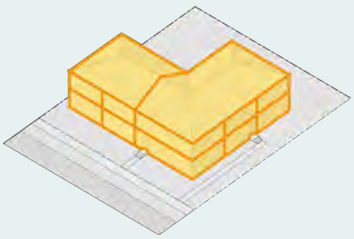
Duplex
2 Units



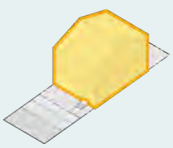
Triplex
3 Units



Fourplex
4 Units

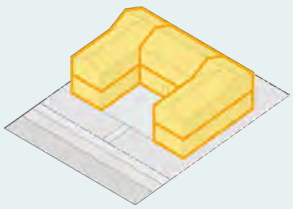


Multiplex
6-10 Units

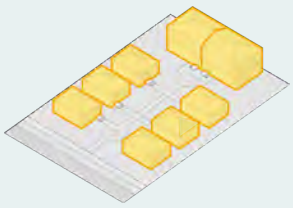


Townhome
1 Units

Live/work
1 Units



Courtyard
6-25 Units



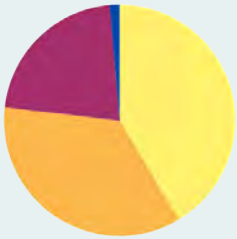
Cottage Court
3-10 Units

Lot Category Analysis by Location

Next, lots within the MMH-Ready Areas in Central, West and South Maui were assessed to understand the distribution across each of the four lot categories.

Figure 2.2 *Lot category analysis findings by sub-area: Central, West, South Maui and Villages (Upcountry)*

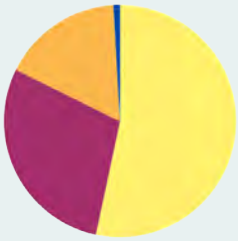
Central Maui



Total lots within MMH-Ready Areas in Central Maui: 3,373

- 41% Medium (1,398 lots)
- 35% Deep Medium (1,193 lots)
- 22% Small (736 lots)
- 2% Large (46 lots)

Villages in Maui

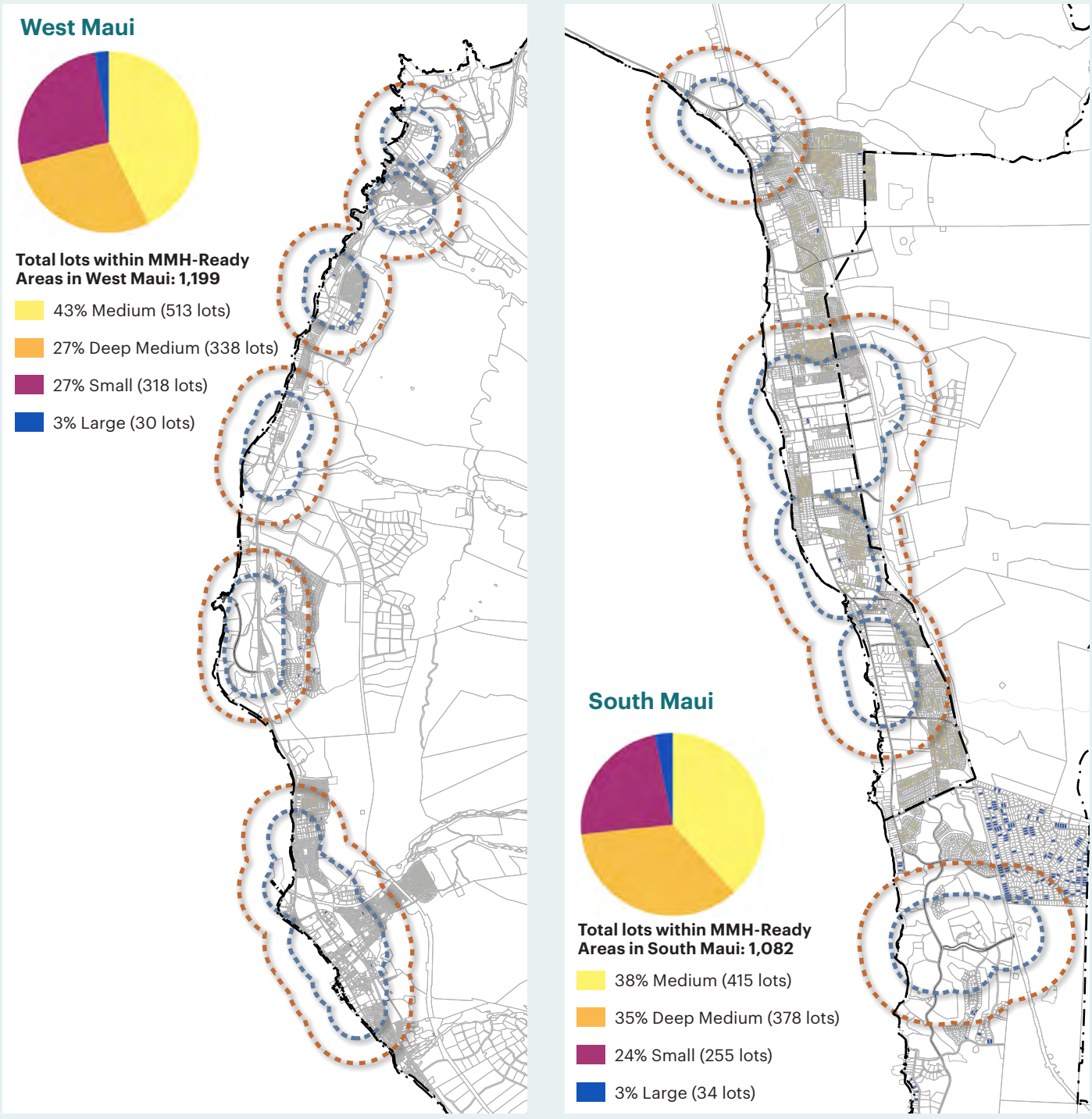


Total lots within MMH-Ready Areas in Villages: 328

- 53% Medium (175 lots)
- 29% Small (95 lots)
- 17% Deep Medium (55 lots)
- 1% Large (3 lots)

MMH-Ready Areas

- 1/4 Mile Buffer (5-Minute Walk Distance)
- 1/2 Mile Buffer (10-Minute Walk/ 5-Minute Biking Distance)



CHAPTER

3

Test Fits for MMH in Maui

In this chapter

3.1 Test Fits for Missing Middle Housing

Test Fits can provide guidance on which Missing Middle Housing (MMH) types can fit on typical existing lots in Maui. This process also helps to identify regulatory barriers to MMH.

Regulatory Barriers for MMH

The Missing Middle Housing Scan™, the first part of the two-part Missing Middle Housing Study, analyzes zoning standards in R-1, R-2, R-3, A-1, B-2 and WRA-B/MF and identifies key barriers that would disallow or disincentivize Missing Middle types.

The zoning districts selected for analysis are those that relate most closely to the MMH-Ready Areas identified in the Missing Middle Housing Scan™. Missing Middle Housing (MMH) types work best in connected neighborhoods that have access to retail, amenities and services.

The key regulatory barriers that were identified in the MMH Scan™ are listed below. To understand how to address these barriers, the Test Fits process goes into greater depth, as described in this chapter.

1. **Multi-family housing is not allowed** in residential zones
2. **Maximum density** allowed in R-1, R-2, and R-3 is too low
3. **Minimum lot size** standard in R-1, R-2, R-3, A-1 and B-2 is too large
4. **Minimum setbacks** are too large in R-1, R-2, R-3 and A-1
5. **Minimum off-street parking** required in all zones is too high
6. **Maximum lot coverage** is too low in A-1

The Purpose of Test Fits

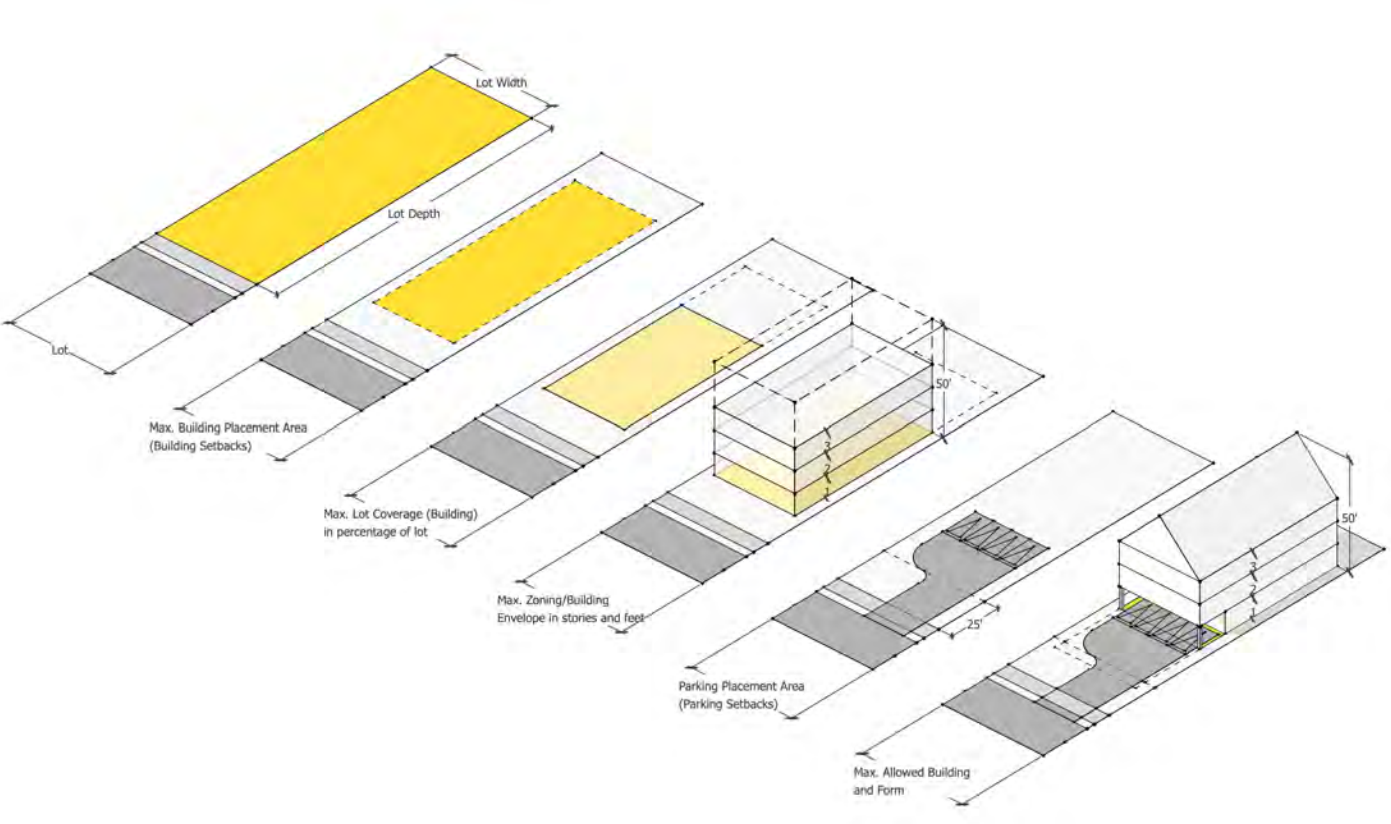
The Test Fits process involves the design testing of typical MMH prototypes on commonly-occurring lot sizes. The MMH types are selected to be compatible in form and scale with the existing neighborhood character. Lots were selected to represent each of the four lot categories identified in Central, West and South Maui, as well as the six zoning districts analyzed that overlap with the MMH-Ready Areas identified for Maui.

The Test Fits process has three steps that help to identify which regulatory standards need to be changed in order to accommodate MMH types. The process seeks to optimize the unit count and parking count for a given lot size, and uses actual building types and site and parking layouts to provide more precise results than numeric calculations based only on density or FAR. The steps are:

- **Maximum Zoning Envelope: What the Existing Zoning Allows.** This first step applies the zoning district's minimum setbacks, maximum height and density standards, if any, to identify what is hypothetically possible to build on the lot. The result is a three-dimensional "zoning envelope" within which any new building must fit.
- **Maximum Yield and Form: What the Existing Zoning Actually Allows.** This next step applies other development

Figure 3.1 ***Test Fits process***

The diagram below illustrates individual steps involved in the Test Fits process, and the information generated at each step.



standards that are required such as parking, lot coverage, open space, etc. to show the yield and form that is actually possible to build on the lot. In many cases the zoning envelope cannot be reached, once these additional requirements are factored in.

- **MMH Options: Which MMH Types Can Fit (Regardless of Existing Standards).** The next step evaluates the existing context and the built form characteristics of adjacent lots in the neighborhood (such as prevalent building heights, setbacks, etc.) to identify MMH types that are a good fit for that environment. The selected MMH types are then tested on the lot to identify which development standards are not met, and must be changed to allow the selected MMH types.

Test Fits Summary

The following lot sizes and zoning districts were selected for the Test Fits:

Zoning Districts	Lot Sizes	Lot Category
R-1	60' x 140'	Deep Medium
R-2	75' x 100'	Medium
R-3	100′ x 220′	Large
A-1	80' x 125'	Large
B-2	85' x 130'	Large
WRA-B/MF	50' x 135'	Small

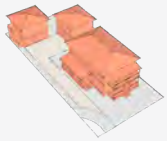
What was tested in each zone?

R-1

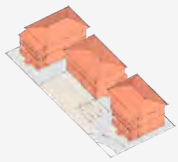
Residential District

Lot size: 60' x 140'
Lot Area: 8,400 sq ft (0.19 ac)
Lot Category: Deep Medium

Triplex + 2 ADUs



2 Duplexes + 2 ADUs

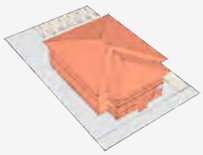


A-1

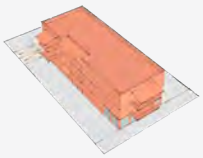
Apartment District

Lot size: 80' x 125'
Lot Area: 10,000 sq ft (0.23 ac)
Lot Category: Large

Sixplex



Main Street Building

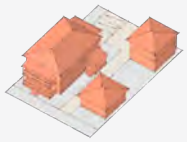


R-2

Residential District

Lot size: 75' x 100'
Lot Area: 7,500 sq ft (0.17 ac)
Lot Category: Medium

Triplex + 2 ADUs



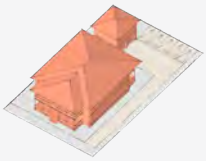
Fourplex + ADU

B-2

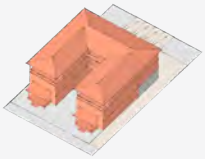
Community Business District

Lot size: 85' x 130'
Lot Area: 11,050 sq ft (0.25 ac)
Lot Category: Large

Sixplex + ADU



Courtyard Building

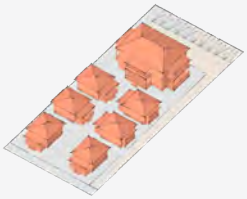


R-3

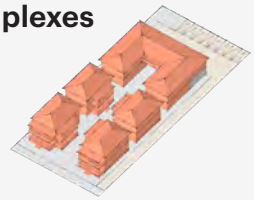
Residential District

Lot size: 100' x 220'
Lot Area: 22,000 sq ft (0.5 ac)
Lot Category: Large

Fourplex + 6 Cottages



Courtyard Building + 4 Duplexes

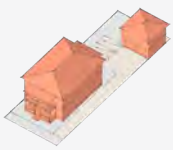


WRA-B/MF

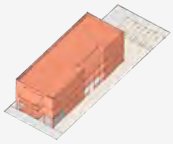
Business/ Multi-Family District

Lot size: 50' x 135'
Lot Area: 6,750 sq ft (0.15 ac)
Lot Category: Small

Fourplex + ADU



Main Street Building



"Large" Missing Middle in Maui

"Large" Missing Middle Housing refers to multi-unit buildings that are taller and deeper than typical MMH types. These look like larger homes, but with a footprint that allows them to fit on the size of lots found in typical single-unit neighborhoods. These building types are typically three to four stories tall and can be over 80 feet deep, often extending to the rear setback.

In certain areas, these types may be the optimal means of meeting the demand for new housing. Such areas can include:

- Major corridors where neither mixed-use buildings with ground-floor commercial uses, nor smaller-scale residential types are viable;
- Transitional areas between residential neighborhoods and commercial corridors or amenity-rich centers;
- Existing low-rise neighborhoods where policy and zoning envision a significant degree of change or transformation;
- Neighborhoods where high land values make smaller types financially infeasible to build.

In Maui, many of the areas zoned A-1, B-2 or WRA-B/MF fall into these categories of built environments and therefore may be appropriate locations for enabling larger MMH types. Such a development pattern is supported by the maximum height standards and permissive setbacks in these zones.

Figure 3.2

Large Missing Middle types are taller (3-4 stories) and slightly wider and deeper than typical Missing Middle types but these can still fit on typical lot sizes seen in most residential neighborhoods.

Figure 3.3

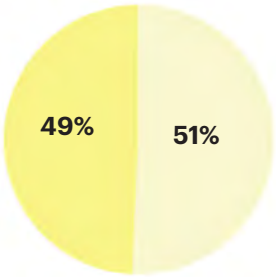
An example of Large MMH in Maui.

3.2 R-1 Zoning District

Zone Intent

The R-1 residential zoning district allows single-family dwellings without commercial and industrial activities, at a maximum overall gross density of 7.26 units per acre. The Department of Planning in Maui County is working on an ordinance amending the density in the R-1 district to allow two dwelling units and one ADU on lots with a minimum area of 6,000 square feet.

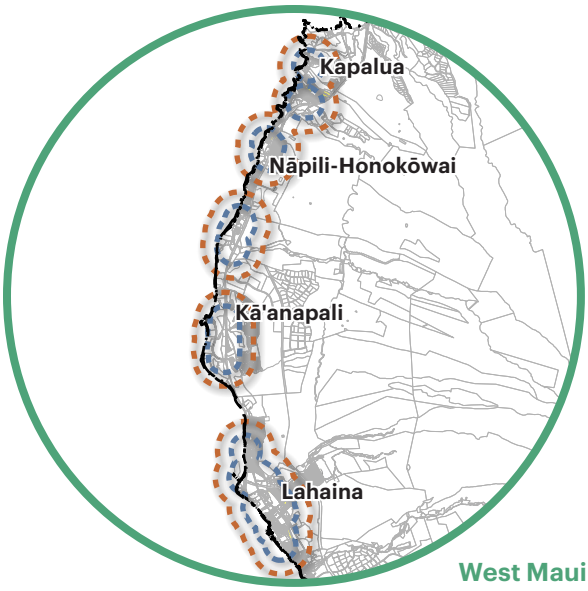
R-1 applies on approximately 19 percent of the residential zones in Maui County (Maui island excluding Moloka'i and Lanai). 51 percent of R-1 lots in Central, West and South Maui lie within MMH-Ready Areas.



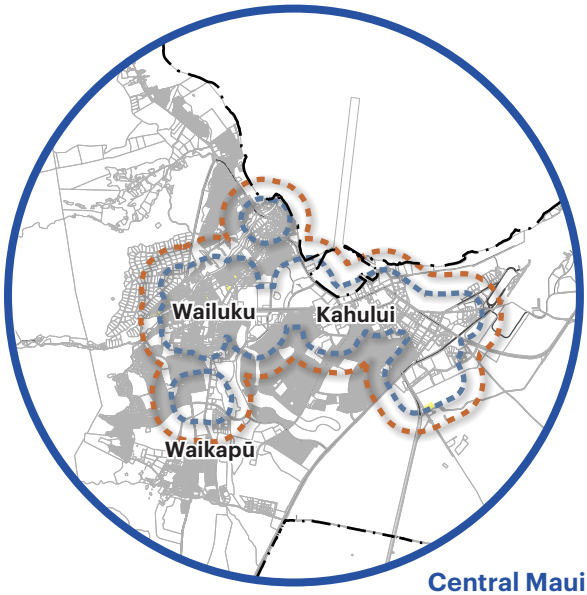
R-1 within MMH-Ready Areas

R-1 outside MMH-Ready Areas

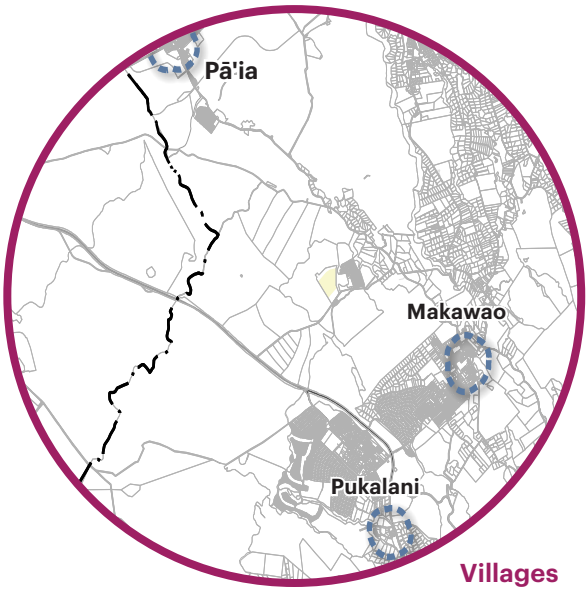
Distribution of R-1 lots within MMH-Ready Areas	
Central Maui	35%
West Maui	42%
South Maui	14%
Villages	9%



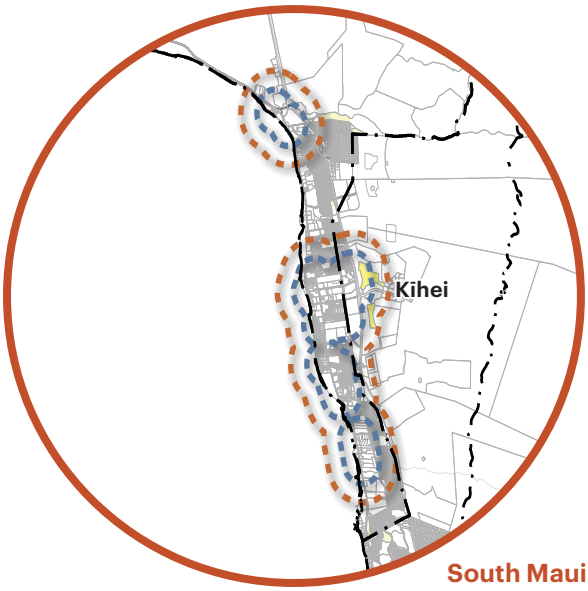
West Maui



Central Maui



Villages



South Maui

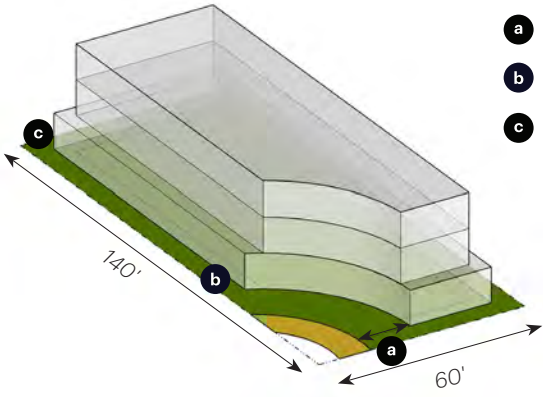
What the R-1 zoning standards allow

The Test Fit diagrams below illustrate what the R-1 zoning standards currently allow to be built. For these Test Fits, a typical "Deep Medium" category lot was selected, 60 feet wide and 140 feet deep. The "Maximum Zoning Envelope" diagram illustrates the R-1 zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

Maximum Zoning Envelope[1]

Lot Size Tested	
60 ft (width) x 140 ft (depth)	8,400 sf (0.19 ac)
Building Form	
Min Lot Size	6,000 sf
Min Lot Width	60 ft
Max. Height	30 ft
Max. Impervious Surface	65%
Parking	
Min. Parking Spaces	2 per unit + 1 per ADU
Density	
Resultant Units	1
Max. Allowed Density	7.26 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.



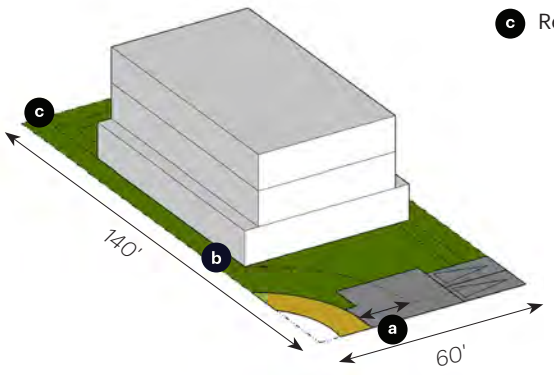
Required Setbacks (min.)

- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)

Maximum Yield and Form[1]

Lot Size Tested		
60 ft (width) x 140 ft (depth)		8,400 sf (0.19 ac)
Resultant		**R-1 Standards**
Footprint	48 ft x 68 ft	n/a
Height	30 ft	30 ft
Lot Coverage	65%	65%
Built Up Area	14,199 sf	n/a
Parking		
Number of Spaces	2 per unit	2
Density		
Resultant Units	1	1
Resultant Density	5.4 du/ac	7.26 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.



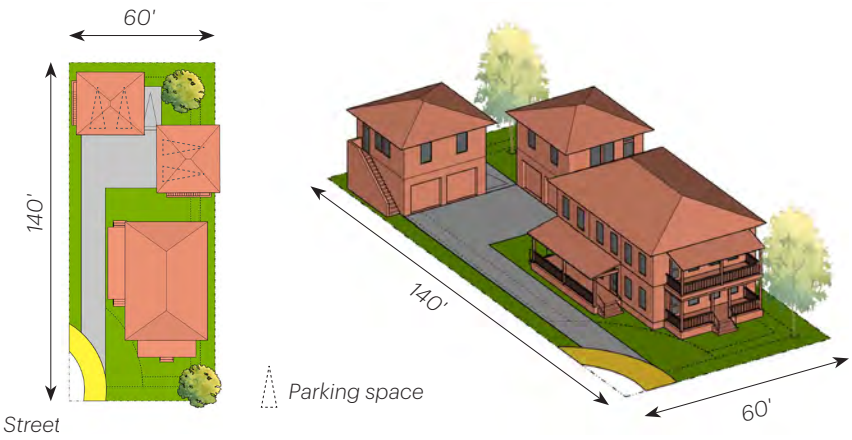
Required Setbacks (min.)

- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)

Test Fits for R-1

Triplex + 2 ADUs

Lot size: 60'x140' (8,400 sq ft | 0.19 ac lot area)
Parking access: Front driveway
Units shown: 3 primary units + 2 ADUs (5 units total)
Parking shown: 5 spaces



This Test Fit uses a triplex and two ADUs to demonstrate house-scale infill with MMH in a typical residential neighborhood. The triplex is placed in the front of the lot, with the ADUs at the rear. Parking is provided in the form of four covered spaces on the lower level of the ADUs and one surface parking space. This Test Fit meets the impervious surface requirement and includes shared open space.

Key barriers:

- **Density.** The zoning district allows a maximum of 7.26 du/ac, and this option achieves 15.8 du/ac (excluding ADUs).
- **Setbacks.** The required upper floor side and rear setbacks are a major constraint for MMH types that often have identical layouts on all floors. The ADUs do not meet the side setbacks.
- **Parking.** This option provides five parking spaces (not eight as required by the standards), assuming one parking space per dwelling unit, since this option is located in a MMH-Ready area.

Test Fit Summary

	Shown in Test Fit	Existing R-1 Standards[1]
No. of Units (du)	**3 Primary + 2 ADUs**	1 Primary + 2 ADUs[3]
Height	29 ft	30 ft max.
Impervious Surface	4,643 sf (55%)	5,460 sf (65% max.)
Avg Unit Size	660 sf	Not regulated
Parking	**5 sp**	8 sp min.[2]
Front Setback	15 ft [4]	15 ft min.
Side Setback	**0 ft**	6 ft min.
Rear Setback	6 ft	6 ft min.
Upper Floor Side Setback	**0 ft**	10 ft min.
Upper Floor Rear Setback	**6 ft**	10 ft min.
Lot Width	60 ft	60 ft min.
Lot Depth	140 ft	Not regulated
Lot Area	8,400 sf	6,000 sf min.
Density	**15.8 du/ac**	7.26 du/ac max.

Bold text indicates not complying with existing standards.

1. As proposed in the Maui County Code.

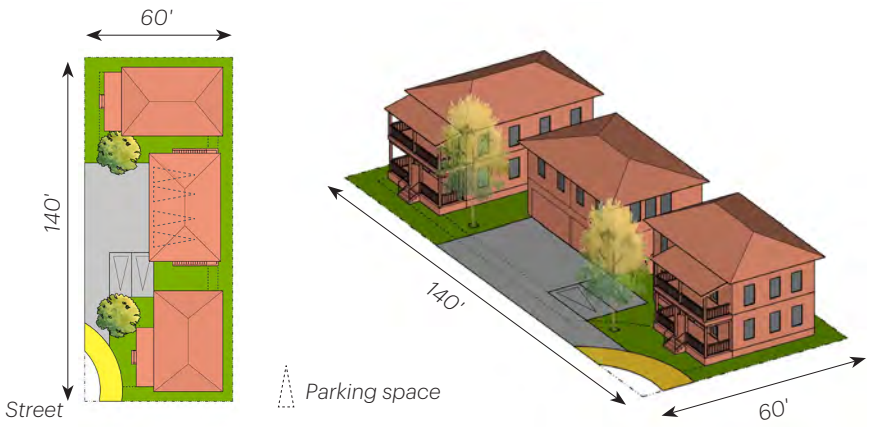
2. Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3. One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-1 max density excludes ADUs.

4. The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

2 Duplexes + 2 ADUs

Lot size: 60'x140' (8,400 sq ft | 0.19 ac lot area)
Parking access: Front driveway
Units shown: 4 primary units + 2 ADUs (6 total)
Parking shown: 6 spaces



This Test Fit shows two duplexes and two ADUs on the lot to test for higher density. The duplexes are located at either end of the lot with the ADUs in the center. Each unit has access to some shared open space. Parking is provided in the form of four covered spaces on the lower level of the ADUs and two surface parking spaces.

Key Barriers

- **Density.** The zoning district allows 7.26 du/ac, and this option achieves 21 du/ac (excluding ADUs).
- **Setbacks.** The required upper floor side and rear setbacks are a major constraint for MMH types that often have identical layouts on all floors.
- **Parking.** This option requires ten parking spaces. The Test Fit provides six, assuming one parking space per dwelling unit since this option is located in a MMH-Ready area.

Test Fit Summary

	Shown in Test Fit	Existing R-1 Standards [1]
No. of Units (du)	**4 Primary + 2 ADUs**	1 Primary + 2 ADUs[3]
Height	27 ft	30 ft
Impervious Surface	5,046 sf (60%)	5,460 sf (65% max.)
Avg Unit Size	700 sf	Not regulated
Parking	**6 sp**	10 sp min.[2]
Front Setback	**14 ft** [4]	15 ft min.
Side Setback	6 ft	6 ft min.
Rear Setback	6 ft	6 ft min.
Upper Floor Side Setback	**6 ft**	10 ft min.
Upper Floor Rear Setback	**6 ft**	10 ft min.
Lot Width	60 ft	60 ft min.
Lot Depth	140 ft	Not regulated
Lot Area	8,400 sf	6,000 sf min.
Density	**21 du/ac**	7.26 du/ac max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3 One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-1 max density excludes ADUs.

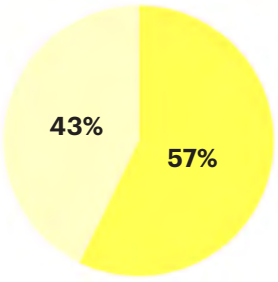
4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

3.3 R-2 Zoning District

Zone Intent

The R-2 residential zoning district allows single-family dwellings without commercial and industrial activities. It represents approximately 27 percent of the residential zones in Maui County (excluding Moloka'i and Lanai). R-2 allows a maximum overall gross density of 5.8 units per acre.

The Department of Planning of Maui County is working on an ordinance amending the density in the R-2 district to allow three dwelling units and two ADUs on lots with an area of 7,500 square feet.

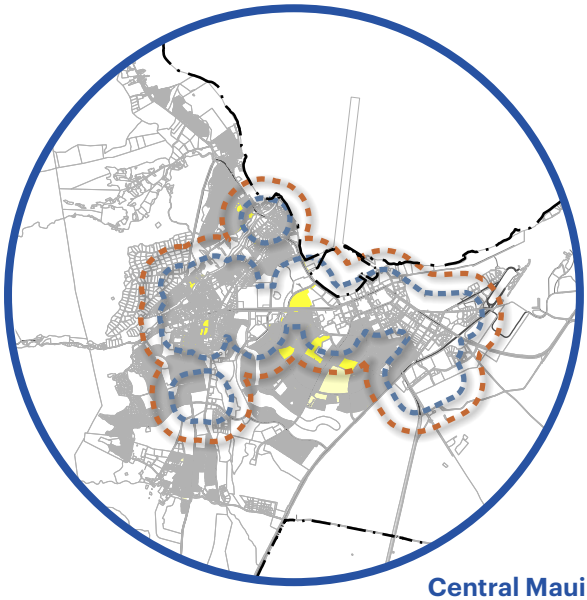


R-2 within MMH-Ready Areas

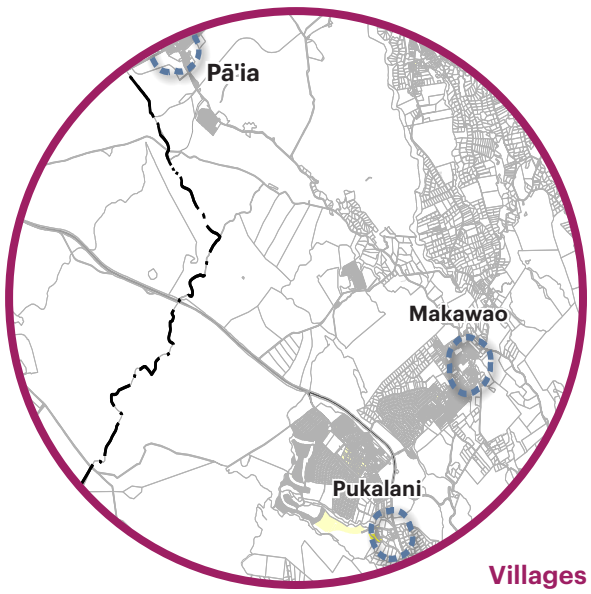
R-2 outside MMH-Ready Areas

Distribution of R-2 lots within MMH-Ready Areas	
Central Maui	47%
West Maui	18%
South Maui	33%
Villages	2%

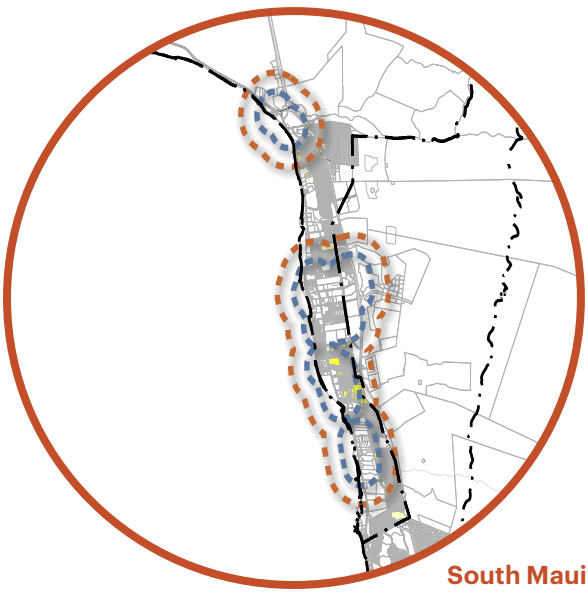
West Maui



Central Maui



Villages



South Maui

What the R-2 zoning standards allow

The Test Fit diagrams below illustrate what the R-2 zoning standards currently allow to be built. For these Test Fits, a typical "Medium" category lot was selected, 75 feet wide and 100 feet deep. The "Maximum Zoning Envelope" diagram illustrates the R-2 zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

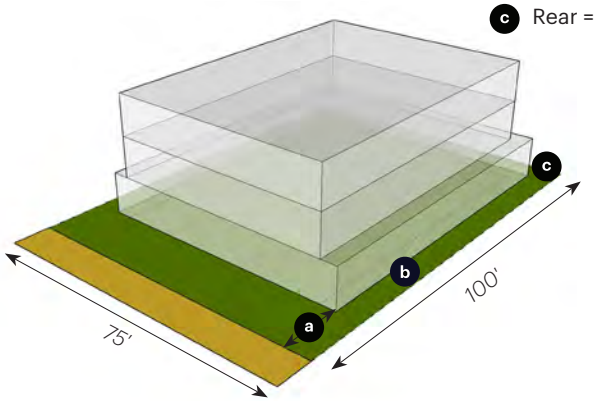
Maximum Zoning Envelope[1]

Maximum Envelope per R-2 Standards[1]	
Building Form	
Min Lot Size	7,500 sf
Min Lot Width	65 ft
Max. Height	30 ft
Max. Impervious Surface	65%
Parking	
Min. Parking Spaces	2 per unit + 1 per ADU
Density	
Resultant Units	1
Max. Allowed Density	5.8 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.

Required Setbacks (min.)

- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)



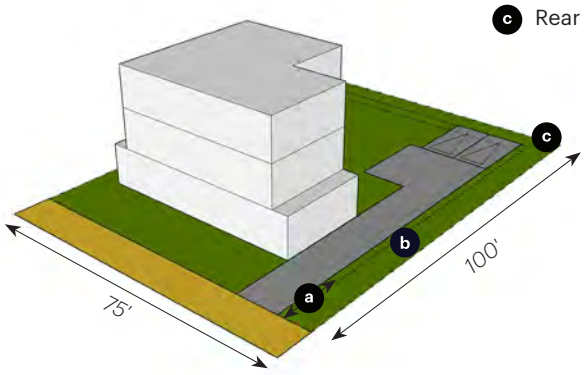
Maximum Yield and Form[1]

Maximum Yield and Form per R-2 Standards[1]		
Resultant		**R-2 Standards**
Footprint	51 ft x 40 ft	n/a
Height	30 ft	30 ft
Lot Coverage	65%	65%
Built Up Area	13,127 sf	n/a
Parking		
Number of Spaces	2 per unit	2
Density		
Resultant Units	1	1
Resultant Density	5.8 du/ac	5.8 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.

Required Setbacks (min.)

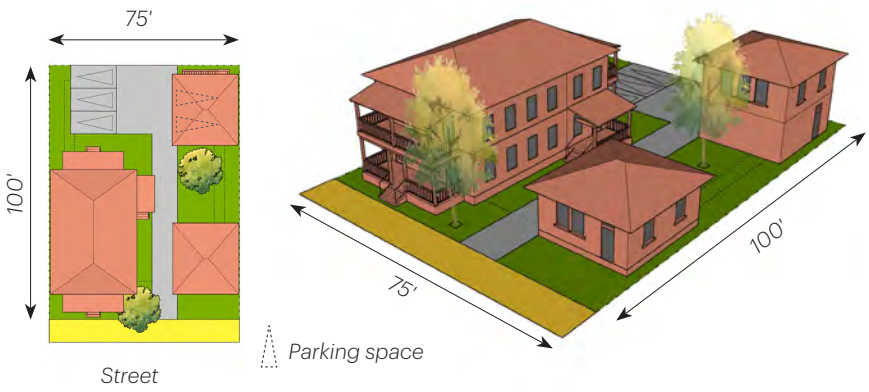
- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)



Test Fits for R-2

Triplex + 2 ADUs

Lot size: 75'x100' (7,500 sq ft lot area | 0.17 ac lot area)
Parking access: Front driveway
Units shown: 3 primary units + 2 ADUs (5 total)
Parking shown: 5 spaces



This Test Fit uses a triplex and two ADUs to demonstrate an efficient site layout with house-scale buildings while providing shared open space and parking. This scale of MMH infill is appropriate for Maui's lower-intensity residential neighborhoods.

Key Barriers

- **Density.** The zoning district allows 5.8 du/ac, and this option achieves 17.6 du/ac (excluding ADUs).
- **Setbacks.** This option does not meet front and side setbacks. It also does not meet the required upper floor side and rear setbacks which are a major constraint for MMH types that often have identical layouts on all floors.
- **Parking.** This option provides five parking spaces, not the eight required by standards.

Test Fit Summary	Shown in Test Fit	Existing R-2 Standards [1]
No. of Units (du)	**3 Primary + 2 ADUs**	1 Primary + 2 ADUs[3]
Height	29 ft	30 ft max.
Impervious Surface	4,875 sf (65%)	4,875 sf (65% max.)
Avg Unit Size	690 sf	Not regulated
Parking	**5 sp**	8 sp min.[2]
Front Setback	**11 ft** [4]	15 ft min.
Side Setback	**2.5 ft**	6 ft min.
Rear Setback	6 ft	6 ft min.
Upper Floor Side Setback	**2.5 ft**	10 ft min.
Upper Floor Rear Setback	**6 ft**	10 ft min.
Lot Width	75 ft	65 ft min.
Lot Depth	100 ft	Not regulated
Lot Area	7,500 sf	7,500 sf min.
Density	**17.6 du/ac**	5.8 du/ac max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

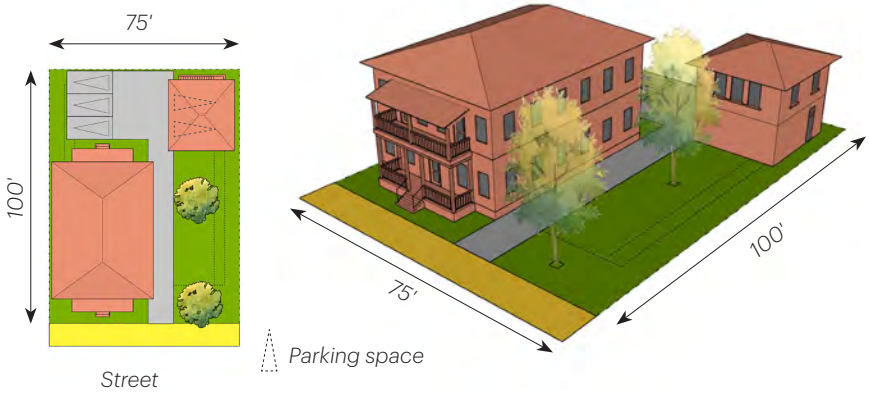
2 Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3 One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-2 max density excludes ADUs.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

Fourplex + ADU

Lot size: 75'x100' (7,500 sq ft lot area | 0.17 ac lot area)
Parking access: Front driveway
Units shown: 4 primary units + 1 ADU (5 total)
Parking shown: 5 spaces



This Test Fit explores providing the same number of units as the previous option but with lesser lot coverage by using a fourplex and an ADU. More open space can be achieved in this option.

Key Barriers

- **Density.** The zoning district allows 5.8 du/ac, and this option achieves 23.5 du/ac (excluding ADUs).
- **Setbacks.** This option does not meet front and side setbacks. It also does not meet the required upper floor side and rear setbacks which are a major constraint for MMH types that often have identical layouts on all floors.
- **Parking.** This option provides five parking spaces, not the nine required by current standards.

Test Fit Summary

	Shown in Test Fit	Existing R-2 Standards [1]
No. of Units (du)	**4 Primary + 1 ADU**	1 Primary + 1 ADUs[3]
Height	29 ft	30 ft max.
Impervious Surface	4,579 sf (61%)	4,875 sf (65% max.)
Avg Unit Size	710 sf	Not regulated
Parking	**5 sp**	9 sp min.[2]
Front Setback	**11 ft**[4]	15 ft min.
Side Setback	**3 ft**	6 ft min.
Rear Setback	6 ft	6 ft min.
Upper Floor Side Setback	**3 ft**	10 ft min.
Upper Floor Rear Setback	**6 ft**	10 ft min.
Lot Width	75 ft	65 ft min.
Lot Depth	100 ft	Not regulated
Lot Area	7,500 sf	7,500 sf min.
Density	**23.5 du/ac**	5.8 du/ac max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

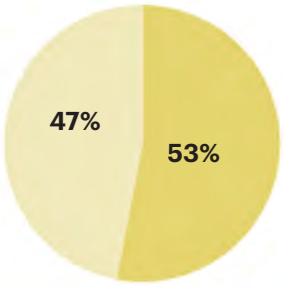
3 One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-2 max density excludes ADUs.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

3.4 R-3 Zoning District

Zone Intent

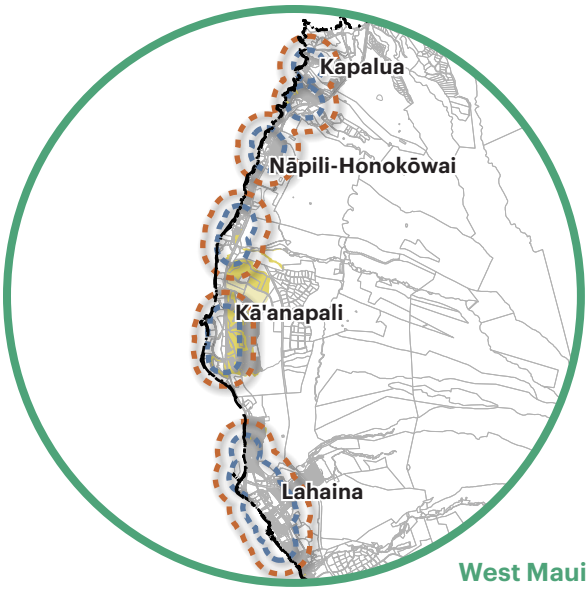
The R-3 residential zoning district allows single-family dwellings without commercial and industrial activities. It represents approximately thirty percent of the residential zones in Maui County (excluding Moloka'i and Lanai). R-3 allows a maximum overall gross density of 4.35 units per acre. The Department of Planning of Maui County is working on an ordinance amending the density in R-3 to allow four dwelling units and two ADUs on lots with an area of 10,000 square feet. This ordinance would create opportunities for Missing Middle Housing.



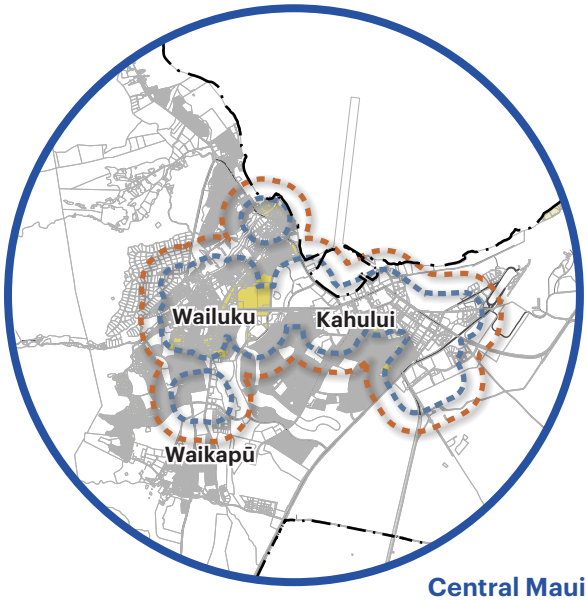
R-3 within MMH-Ready Areas

R-3 outside MMH-Ready Areas

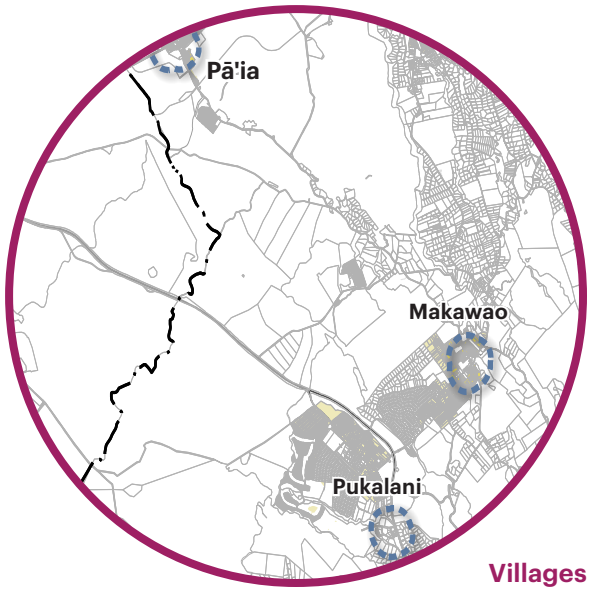
Distribution of R-3 lots within MMH-Ready Areas	
Central Maui	48%
West Maui	22%
South Maui	17%
Villages	13%



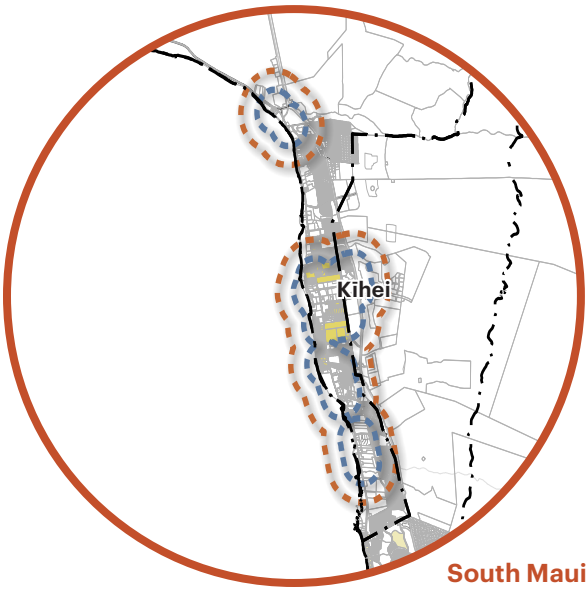
West Maui



Central Maui



Villages



South Maui

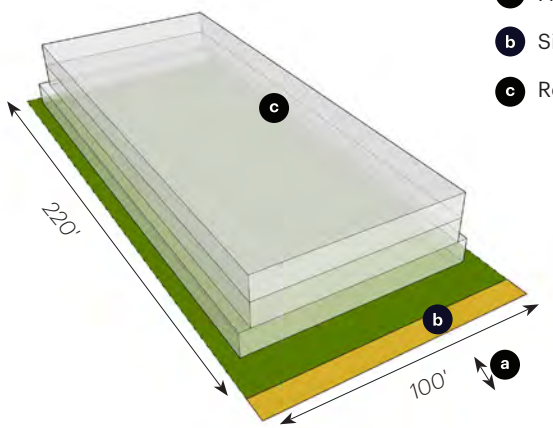
What the R-3 zoning standards allow

The Test Fit diagrams below illustrate what the R-3 zoning standards currently allow to be built. For these Test Fits, a typical "Large" category lot was selected, 100 feet wide and 220 feet deep. The "Maximum Zoning Envelope" diagram illustrates the R-3 zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

Maximum Zoning Envelope[1]

Maximum Envelope per R-3 Standards[1]	
Building Form	
Min Lot Size	10,000 sf
Min Lot Width	70 ft
Max. Height	30 ft
Max. Impervious Surface	65%
Parking	
Min. Parking Spaces	2 per unit + 1 per ADU
Density	
Resultant Units	n/a
Max. Allowed Density	4.35 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.



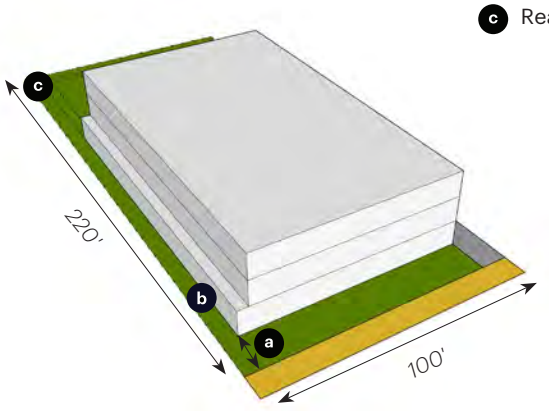
Required Setbacks (min.)

- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)

Maximum Yield and Form[1]

Maximum Yield and Form per R-3 Standards[1]		
Resultant		**R-3 Standards**
Footprint	84 ft x 136 ft	n/a
Height	30 ft	30 ft
Lot Coverage	65%	65%
Built Up Area	13,227 sf	n/a
Parking		
Number of Spaces	2 per unit	2
Density		
Resultant Units	1	n/a
Resultant Density	1.98 du/ac	4.35 du/ac

[1] As proposed in the Maui County Code, one single-family dwelling is permitted.



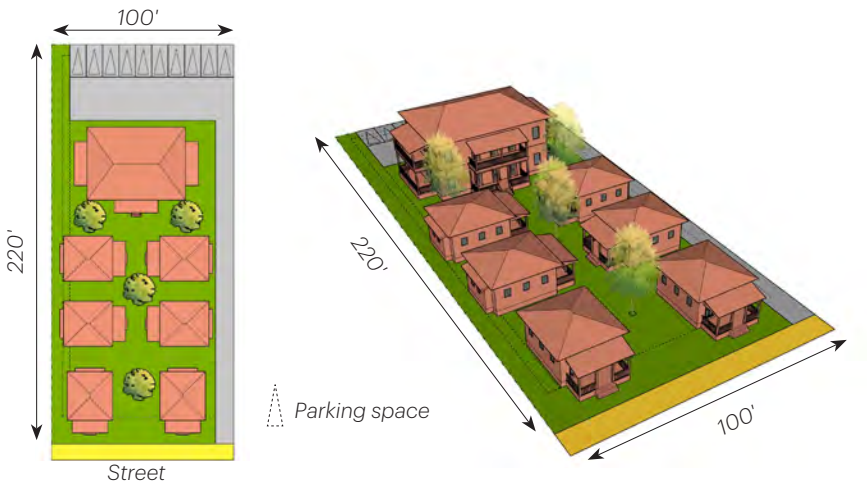
Required Setbacks (min.)

- a Front = 15'
- b Side = 6' | 10' (upper floor)
- c Rear = 6' | 10' (upper floor)

Test Fits for R-3

Fourplex + 6 Cottages

Lot size: 100'x220' (22,000 sq ft lot area | 0.51 ac lot area)
Parking access: Front driveway
Units shown: 10 primary units
Parking shown: 10 spaces



This Test Fit uses a 100-foot by 220-foot lot with front driveway access, a common condition in the village context. This Test Fit uses a combination of six cottages and a fourplex, creating a shared open space in the middle of the neighborhood. This Test Fit demonstrates how additional units can be provided with a built form compatible with single-family houses.

Key Barriers

- **Density.** The zoning district allows 4.35 du/ac, and this option achieves 19.8 du/ac.
- **Setbacks.** The required upper floor side and rear setbacks are a major constraint for most MMH types and this option does not comply with all required setbacks.
- **Parking.** This option requires 20 parking spaces; however the option shown provides ten at a ratio of one per unit.

Test Fit Summary

	Shown in Test Fit	Existing R-3 Standards [1]
No. of Units (du)	**10 Primary**	1 Primary + 2 ADUs[3]
Height	29 ft	30 ft max.
Impervious Surface	12,008 sf (55%)	14,300 sf (65% max.)
Avg Unit Size	750 sf	Not regulated
Parking	**10 sp**	20 sp min.[2]
Front Setback	15 ft[4]	15 ft min.
Side Setback	6 ft	6 ft min.
Rear Setback	47 ft	6 ft min.
Upper Floor Side setback	**6 ft**	10 ft min.
Upper Floor Rear Setback	47 ft	10 ft min.
Lot Width	100 ft	70 ft min.
Lot Depth	220 ft	Not regulated
Lot Area	22,000 sf	10,000 sf min.
Density	**19.8 du/ac**	4.35 du/ac

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

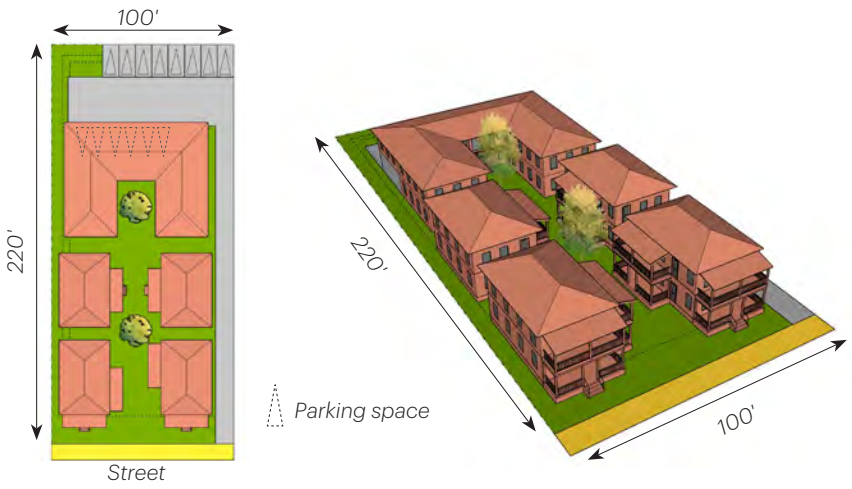
2 Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3 One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-3 max density excludes ADUs.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

Courtyard + 4 Duplexes

Lot size: 100'x220' (22,000 sq ft lot area | 0.51 ac lot area)
Parking access: Front driveway
Units shown: 14 primary units
Parking shown: 14 spaces



This Test Fit uses the same lot size, with a combination of a courtyard building and four duplexes arranged around a central shared open space with parking located at the rear.

Key Barriers

- **Density.** The zoning district allows 4.35 du/ac, and this option achieves 27.5 du/ac.
- **Setbacks.** The required upper floor side and rear setbacks are a major constraint for MMH and this option does not meet these requirements.
- **Parking.** This option requires 28 parking spaces; however, since this option is located in an MMH-Ready area, one parking per space per dwelling is shown.

Test Fit Summary		
	Shown in Test Fit	**Existing R-3 Standards [1]**
No. of Units (du)	**14 Primary**	1 Primary + 2 ADUs[3]
Height	27 ft	30 ft max.
Impervious Surface	13,975 sf (64%)	14,300 sf (65% max.)
Avg Unit Size	720sf	Not regulated
Parking	**14 sp**	28 sp min.[2]
Front Setback	18 ft [4]	15 ft min.
Side Setback	6 ft	6 ft min.
Rear Setback	44 ft	6 ft min.
Upper Floor Side Setback	**6 ft**	10 ft min.
Upper Floor Rear Setback	44 ft	10 ft min.
Lot Width	100 ft	70 ft min.
Lot Depth	220 ft	Not regulated
Lot Area	22,000 sf	10,000 sf min.
Density	**27.5 du/ac**	4.35 du/ac max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Residential parking district requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

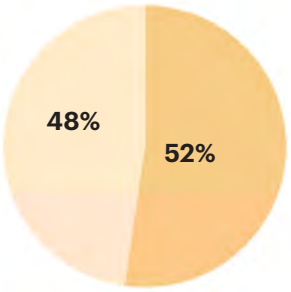
3 One ADU allowed on lots up to 7,500 sf, and two ADUs allowed on lots 7,500 sf and larger. R-3 max density excludes ADUs.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

3.5 A-1 Zoning District

Zone Intent

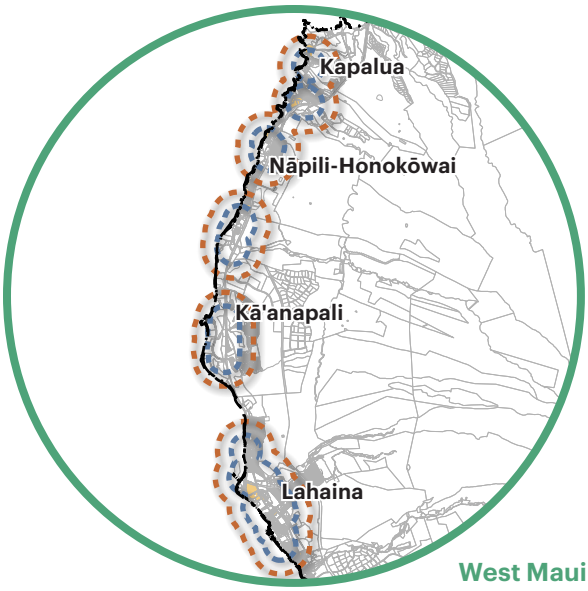
The A-1 apartment zoning district allows higher density and multi-family options. This district is usually near urban cores with access to amenities that align with the MMH-Ready areas considered in this study. Apartment districts were intended to provide a transition between residential districts and business districts. This district represents approximately six percent of the residential zones in Maui County (excluding Moloka'i and Lanai). A-1 allows a maximum overall Floor Area Ratio of 0.4 for lots 3 acres or more and 0.5 for lots less than 3 acres.



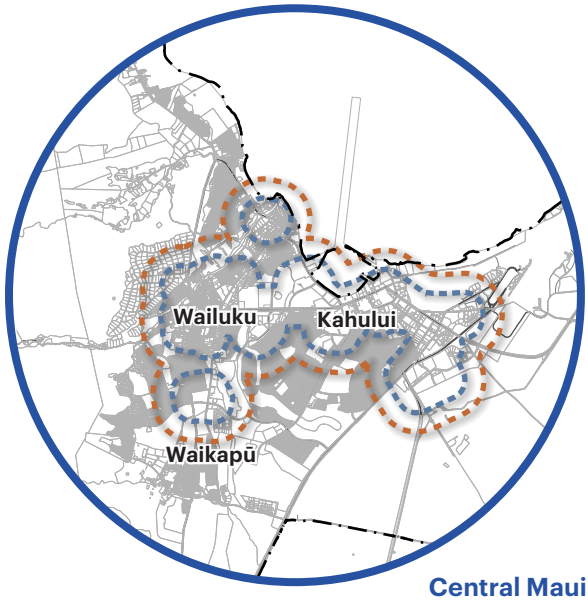
A-1 within MMH-Ready Areas

A-1 outside MMH-Ready Areas

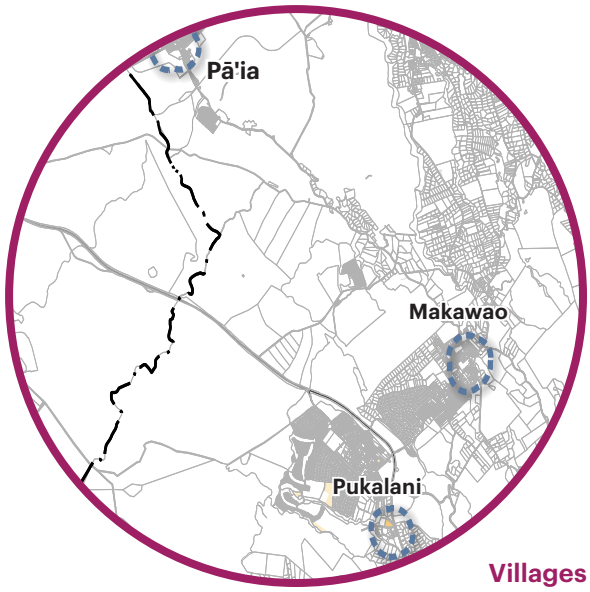
Distribution of A-1 lots within MMH-Ready Areas	
West Maui	34%
South Maui	64%
Villages	2%



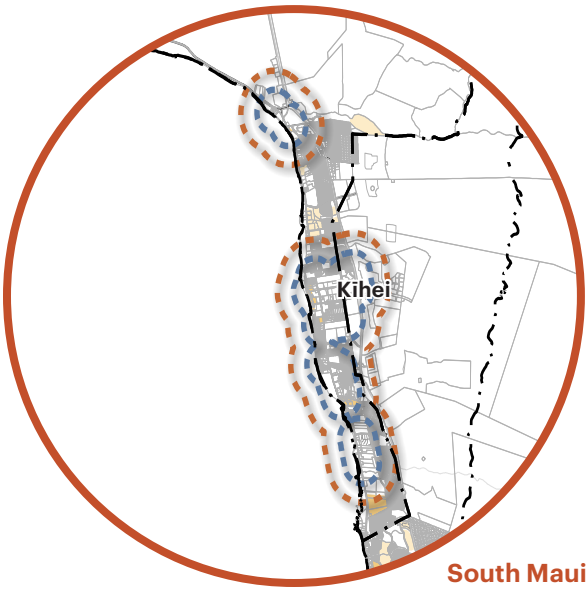
West Maui



Central Maui



Villages



South Maui

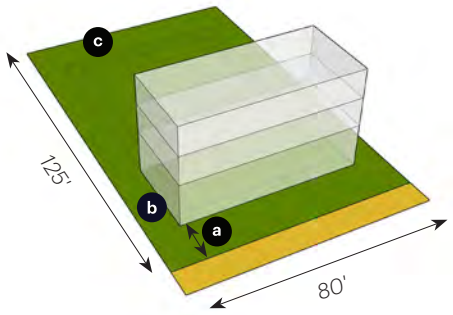
What the A-1 zoning standards allow

The Test Fit diagrams below illustrate what the A-1 zoning standards currently allow to be built. For these Test Fits, a typical "Medium" category lot was selected, 80 feet wide and 125 feet deep. The "Maximum Zoning Envelope" diagram illustrates the A-1 zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

Maximum Zoning Envelope[1]

Maximum Envelope per A-1 Standards[1]	
Building Form	
Min Lot Size	10,000 sf
Min Lot Width	70 ft
Max. Height	35 ft
Max. lot coverage	25%
Parking	
Min. Parking Spaces	2 per unit + 1 per ADU
Density	
Resultant Units	n/a
Floor Area Ratio	0.5 for lots less than 3 acres

[1] As proposed in the Maui County Code



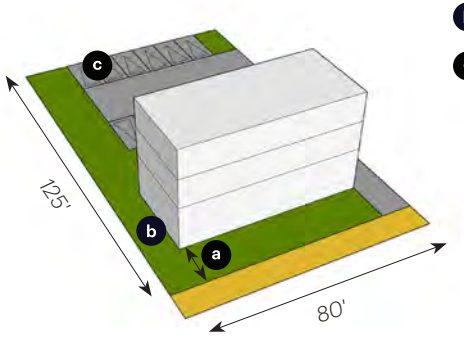
Required Setbacks (min.)

- a Front = 15' | 20' (taller than 35')
- b Side = 10' | 15' (taller than 35')
- c Rear = 15' | 20' (taller than 35')

Maximum Yield and Form[1]

Maximum Yield and Form per A-1 Standards[1]		
Resultant		**A-1 Standards**
Footprint	60 ft x 28 ft	n/a
Height	35 ft	35 ft
Lot Coverage	25%	25%
Built Up Area	5,000 sf	5,000 sf
Parking		
Number of Spaces	Varies	2 per unit
Density		
Resultant Units	Varies	n/a
Floor Area Ratio	0.5	0.5

[1] As proposed in the Maui County Code



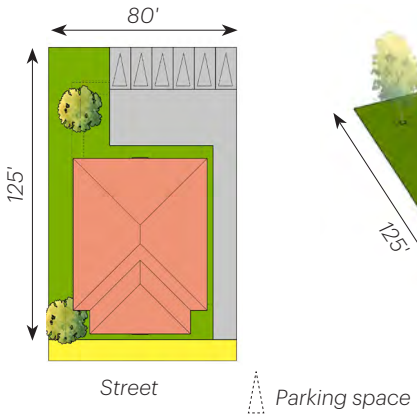
Required Setbacks (min.)

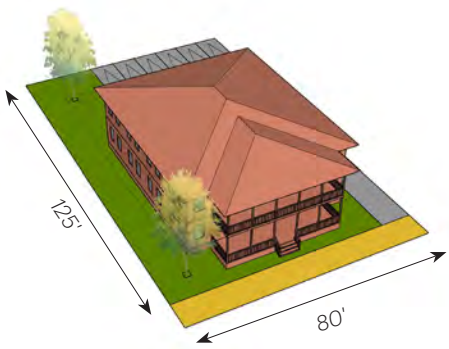
- a Front = 15' | 20' (taller than 35')
- b Side = 10' | 15' (taller than 35')
- c Rear = 15' | 20' (taller than 35')

Test Fits for A-1

Sixplex

Lot size: 80'x125' (10,000 sq ft lot area | 0.23 ac lot area)
Parking access: Front driveway
Units shown: 6 primary units
Parking shown: 6 spaces





This Test Fit uses an 80-foot by 125-foot lot with front driveway access, the minimum lot size for the A-1 standards. This Test Fits uses a sixplex in order to demonstrates how additional units can be provided within a built form compatible with single-family houses with smaller individual units and an overall building footprint that closely matches the size of a medium-to-large home.

This type was selected for the apartment context because of its appropriate density for a well-connected area near the urban core.

Key Barriers

- **Lot Coverage.** The 25 percent maximum lot coverage requirement is too low for a multi-family building. This option achieve 66 percent.
- **Floor Area Ratio.** The standards allow a maximum FAR of 0.5, which is too low for multi-family buildings. This option achieves a 0.6 FAR.
- **Parking.** This option can fit six parking spaces on the site at a ratio of one per unit. The zoning district requires 12 parking spaces.

Test Fit Summary		
	Shown in Test Fit	**Existing A-1 Standards [1]**
No. of Units (du)	6 Primary	Multi-family[3] + 2 ADUs
Height	30 ft	35 ft max.
Lot Coverage	**6,615 sf (66%)**	25% or 2,500 sf
Avg Unit Size	750 sf	Not regulated
Parking	**6 sp**	12 sp min.[2]
Front Setback	15 ft[4]	15 ft min.
Side Setback	12 ft	10 ft min.
Rear Setback	**6 ft**	15 ft min.
Front/Rear Setback (portion above 35')	N/A	20 ft min.
Side Setback (portion above 35')	N/A	15 ft min.
Lot Width	80 ft	70 ft min.
Lot Depth	125 ft	Not regulated
Lot Area	10,000 sf	10,000 sf min.
Floor Area Ratio	**0.6**	0.5 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

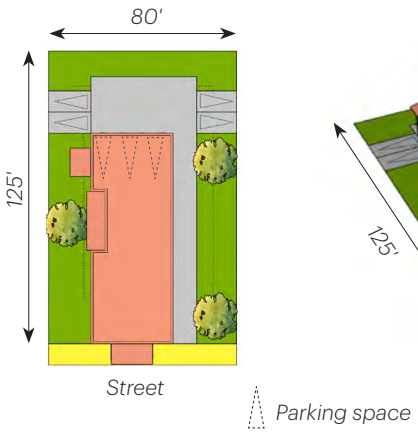
2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

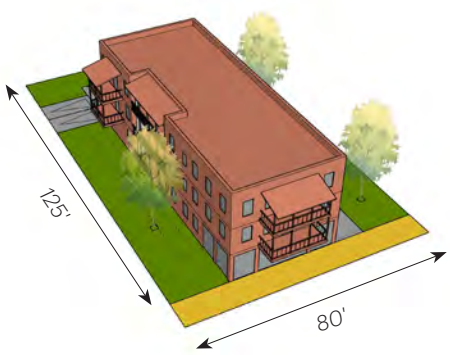
3 Zoning district allows bungalow courts, apartment courts, and townhouses. Apartment districts allow any use permitted in the residential district. One ADU is allowed on lots up to 7,500 sf, and two ADUs are allowed on lots 7,500 sf and larger.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

Main Street Building

Lot size: 80'x125' (10,000 sq ft lot area | 0.23 ac lot area)
Parking access: Front driveway
Units shown: 7 primary units
Parking shown: 7 spaces





This Test Fit uses an 80-foot by 125-foot lot with front driveway access, the minimum lot size for the A-1 standards. This Test Fit uses a Main Street building with seven units, to demonstrate a mixed-use building with a commercial ground floor. The smaller footprint allows more open space on the side setbacks.

This type was selected for the apartment context because of its appropriate density and fit for a mixed-use urban environment.

Key Barriers

- **Lot Coverage.** The 25 percent maximum lot coverage requirement is too low for a multi-family building. This option achieves 59 percent lot coverage.
- **Floor Area Ratio.** The standards allow a 0.5 FAR, which is too low for multi-family buildings. This option achieves a 0.9 FAR.
- **Front Setback.** The zoning district requires a minimum front setback of 15 feet. This option shows a zero-lot-line condition which is ideal for a commercial ground floor.
- **Parking.** The zoning district requires 14 parking spaces; however, this option provides seven at a ration of one space per unit.

Test Fit Summary

	Shown in Test Fit	Existing A-1 Standards [1]
No. of Units (du)	7 Primary	Multi-family[3] + 2 ADUs
Height	31 ft	35 ft max.
Lot Coverage	**5,869 sf (59%)**	25% or 2,500 sf
Avg Unit Size	830 sf	Not regulated
Parking	**7 sp**	14 sp min.[2]
Front Setback	**0 ft** [4]	15 ft min.
Side Setback	18 ft	10 ft min.
Rear Setback	35 ft	15 ft min.
Front/Rear Setback (portion above 35')	N/A	20 ft min.
Side Setback (portion above 35')	N/A	15 ft min.
Lot Width	80 ft	70 ft min.
Lot Depth	125 ft	Not regulated
Lot Area	10,000 sf	10,000 sf min.
Floor Area Ratio	**0.9**	0.5 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

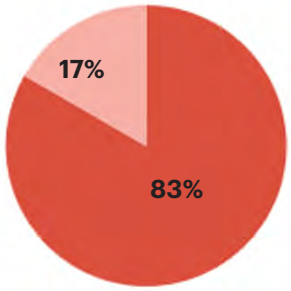
3 Zoning district allows bungalow courts, apartment courts, and townhouses. Apartment districts allow any use permitted in the residential district. One ADU is allowed on lots up to 7,500 sf, and two ADUs are allowed on lots 7,500 sf and larger.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

3.6 B-2 Zoning District

Zone Intent

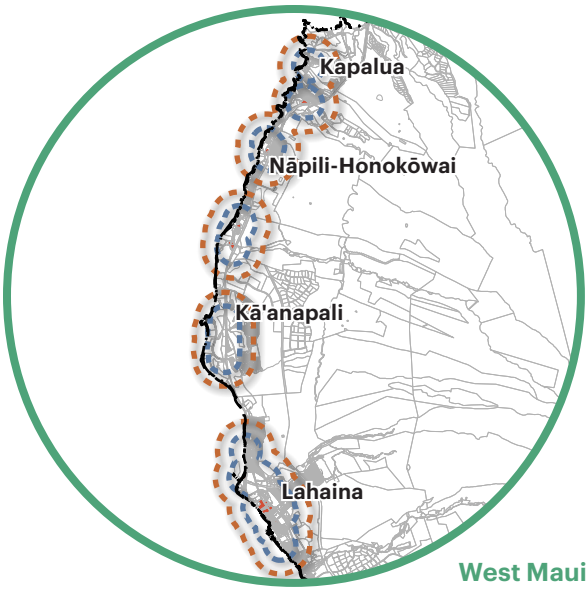
The B-2 community business district allows higher density and multi-family options. It's intended to provide a mixed-use environment that aligns with the MMH-Ready areas considered in this study. It's usually located near the main streets in the urban core. It represents approximately nine percent of the residential zones in Maui County (excluding Moloka'i and Lanai). B-2 allows a maximum overall floor area ratio of 2, incentivizing a larger development.



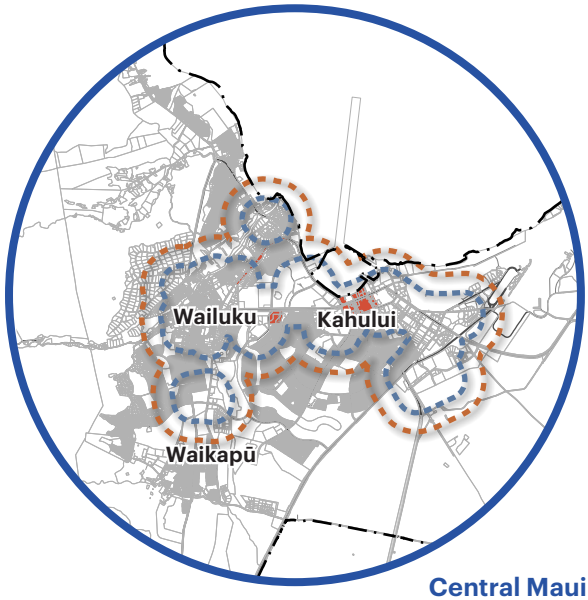
B-2 within MMH-Ready Areas

B-2 outside MMH-Ready Areas

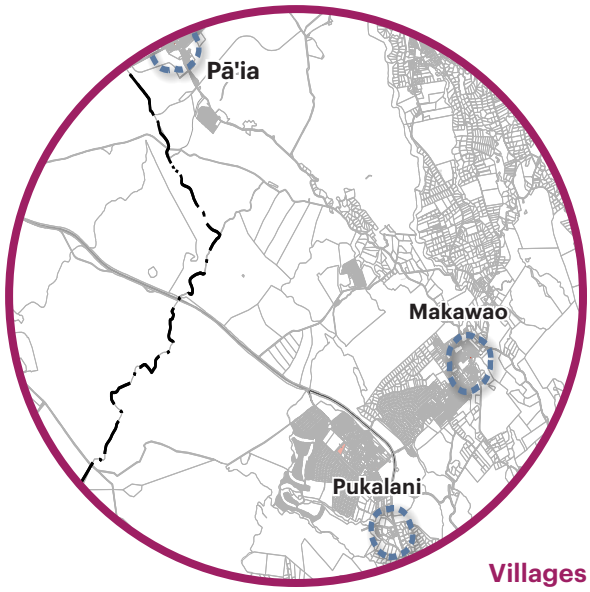
Distribution of B-2 lots within MMH-Ready Areas	
Central Maui	35%
West Maui	21%
South Maui	42%
Villages	2%



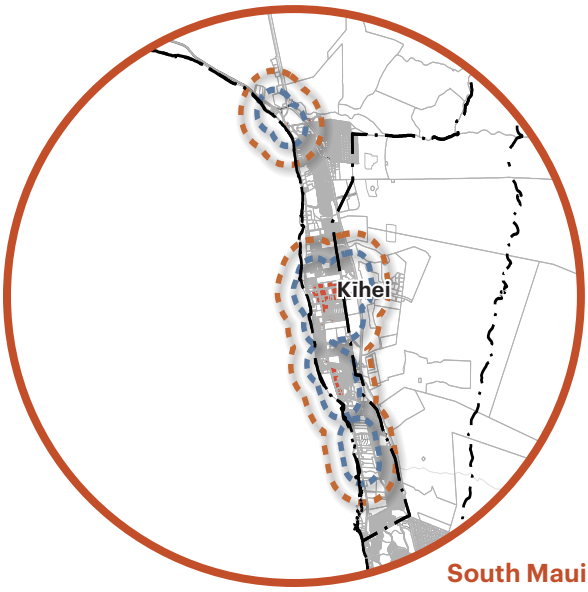
West Maui



Central Maui



Villages



South Maui

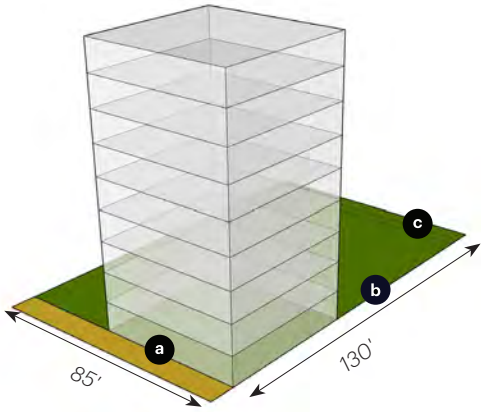
What the B-2 zoning standards allow

The Test Fit diagrams below illustrate what the B-2 zoning standards currently allow to be built. For these Test Fits, a typical "Deep Medium" category lot was selected, 80 feet wide and 130 feet deep. The "Maximum Zoning Envelope" diagram illustrates the B-2 zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

Maximum Zoning Envelope[1]

Maximum Envelope per B-2 Standards[1]	
Building Form	
Min Lot Size	6,000 sf
Min Lot Width	60 ft
Max. Height	90 ft
Max. Impervious Surface	Not regulated
Parking	
Min. Parking Spaces	2 per unit
Density	
Resultant Units	n/a
Floor Area Ratio	2.0 max.

[1] As proposed in the Maui County Code



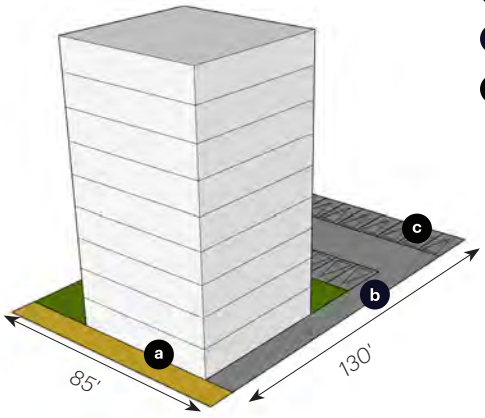
Required Setbacks (min.)

- a Front = 0'
- b Side = 0' | same as adjoining zoning
- c Rear = 0' | same as adjoining zoning

Maximum Yield and Form[1]

Maximum Yield and Form per B-2 Standards[1]		
Resultant		**B-2 Standards**
Footprint	50 ft x49 ft	n/a
Height	90 ft	30 ft
Built Up Area	22,100 sf	22,100 sf
Parking		
Number of Spaces	Varies	2 per unit
Density		
Resultant Units	Varies	n/a
Floor Area Ratio	2.0	2.0

[1] As proposed in the Maui County Code



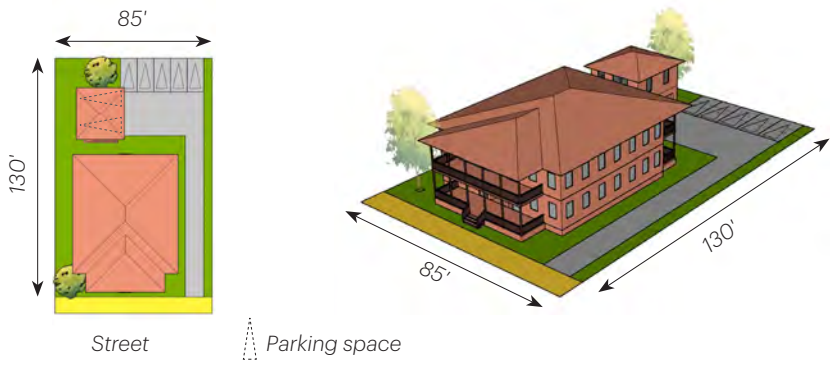
Required Setbacks (min.)

- a Front = 0'
- b Side = 0' | same as adjoining zoning
- c Rear = 0' | same as adjoining zoning

Test Fits for B-2

Sixplex + ADU

Lot size: 85'x130' (11,050 sq ft lot area | 0.25 ac lot area)
Parking access: Front driveway
Units shown: 6 primary units + 1 ADU (7 total)
Parking shown: 7 spaces



Test Fit Summary		
	Shown in Test Fit	**Existing B-2 Standards [1]**
No. of Units (du)	6 Primary **+ 1 ADU**	Multi-family[3]
Height	30 ft	90 ft max.
Lot Coverage	6,886 sf (62%)	Not regulated
Avg Unit Size	710 sf	Not regulated
Parking	**7 sp**	13 sp min.[2]
Front Setback	15 ft[4]	0 ft min.
Side Setback	12 ft	0 ft min.
Rear Setback	18 ft	6 ft min. [5]
Lot Width	85 ft	60 ft min.
Lot Depth	130 ft	Not regulated
Lot Area	11,050 sf	6,000 sf min.
Floor Area Ratio	0.6	2.0 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft.

3 Zone district allows multi-family dwellings, duplex and bungalow courts but no ADUs.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

5 The minimum setback considers the adjoining zoning as a residential district.

This Test Fit uses an 85-foot by 130-foot lot with front driveway access, a standard lot size for the B-2 zone. This test used a sixplex and an ADU to utilize the wider lot area more efficiently while remaining sensitive to the surrounding context.

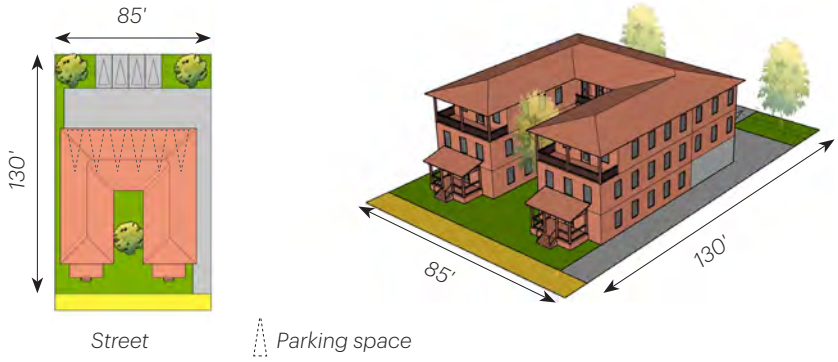
A typical sixplex has smaller individual units, with an overall building footprint closely matching that of a medium-to-large single-family home.

Key Barriers

- **Height.** The current standards allow 90 feet height, which incentivizes larger development than MMH. This, while not a barrier, would likely inhibit MMH in this zoning district.
- **Floor Area Ratio.** The standards allow a maximum FAR of 2.0, which incentivizes larger development than MMH. This option achieves an FAR of 0.6, inclusive of ADUs, far below the maximum threshold.
- **Parking.** The zoning district requires 13 parking spaces; however, this option can only provide seven spaces at a ratio of one per unit.
- **Building Types.** This zoning district does not allow an ADU as shown in the option.

Courtyard Building

Lot size: 85'x130' (11,050 sq ft lot area | 0.25 ac lot area)
Parking access: Front driveway
Units shown: 10 primary units
Parking shown: 10 spaces



This Test Fit uses the same 85-foot by 130-foot lot with front driveway access in the B-2 zoning district to test a courtyard building type to show a larger building appropriate for this context. The courtyard building is a three-storied "large MMH" type and has ten units with the building shaping a central shared open space.

Key Barriers

- **Height.** The current standards allow a height of 90 feet and the option achieves only 35 feet. The zone allows MMH but does not incentivize it.
- **Floor Area Ratio.** The standards allow a maximum FAR of 2.0, and this building, among the larger MMH types that can fit on this lot, achieves an FAR of 0.9 inclusive of ADUs.
- **Parking.** This zoning district would require 20 parking spaces for the number of units shown. However, this option cannot reasonably park more than ten spaces at a ratio of one parking space per unit.

Test Fit Summary

	Shown in Test Fit	Existing B-2 Standards [1]
No. of Units (du)	10 Primary	Multi-family[3]
Height	35 ft	90 ft max.
Lot Coverage	7,839 sf (71%)	Not regulated
Avg Unit Size	810 sf	Not regulated
Parking	**10 sp**	20 sp min.[2]
Front Setback	17 ft[4]	0 ft min.
Side Setback	4 ft	0 ft min.
Rear Setback	42 ft	6 ft min. [5]
Lot Width	85 ft	60 ft min.
Lot Depth	130 ft	Not regulated
Lot Area	11,050 sf	6,000 sf min.
Floor Area Ratio	0.9	2.0 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft.

3 Zone district allows multi-family dwellings, duplex and bungalow courts but no ADUs.

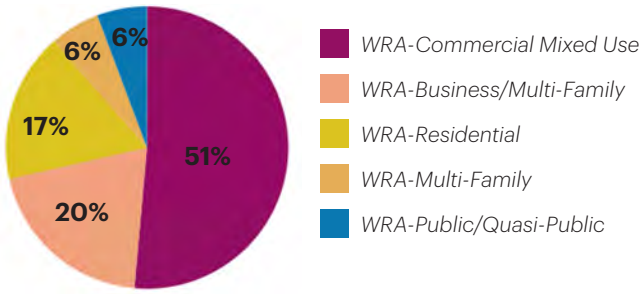
4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

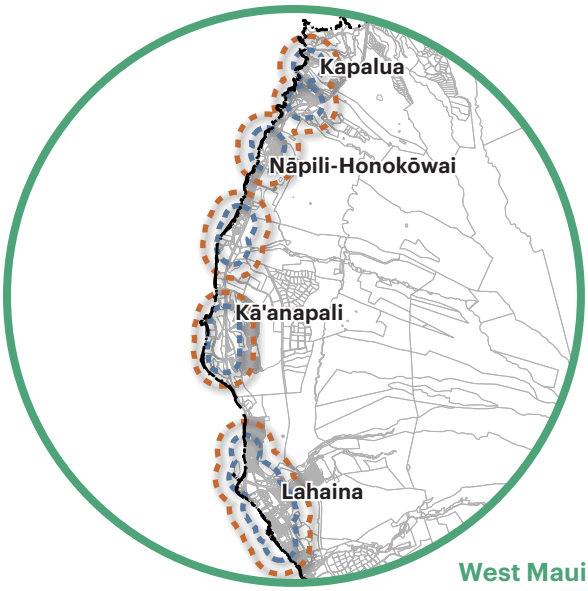
5 The minimum setback considers the adjoining zoning as a residential district.

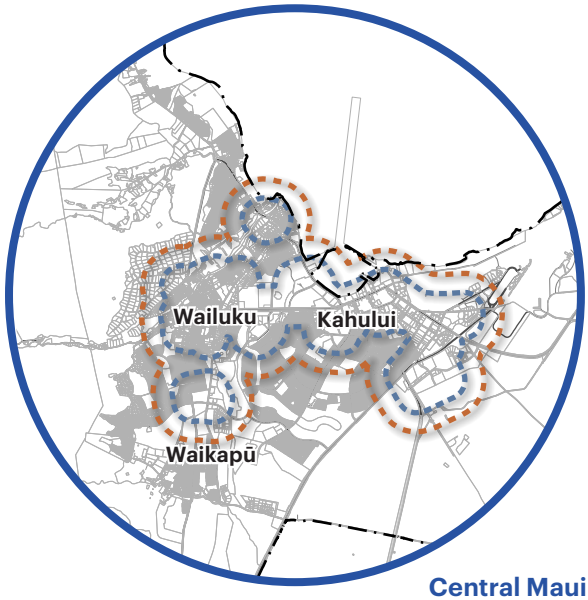
3.7 WRA-B/MF Zoning District

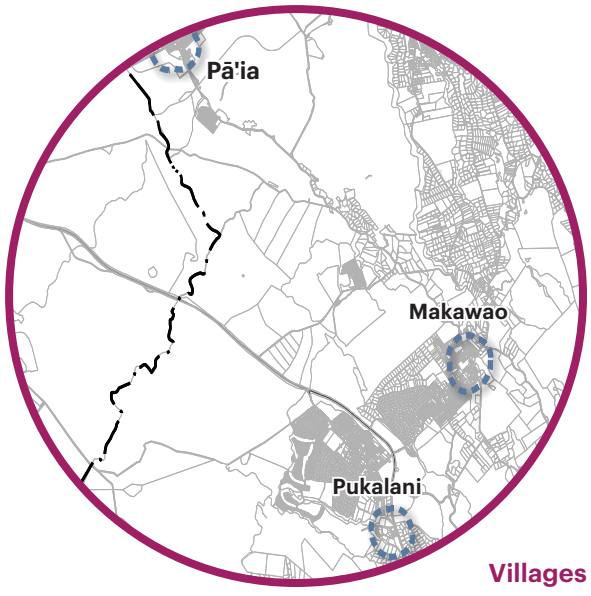
Zone Intent

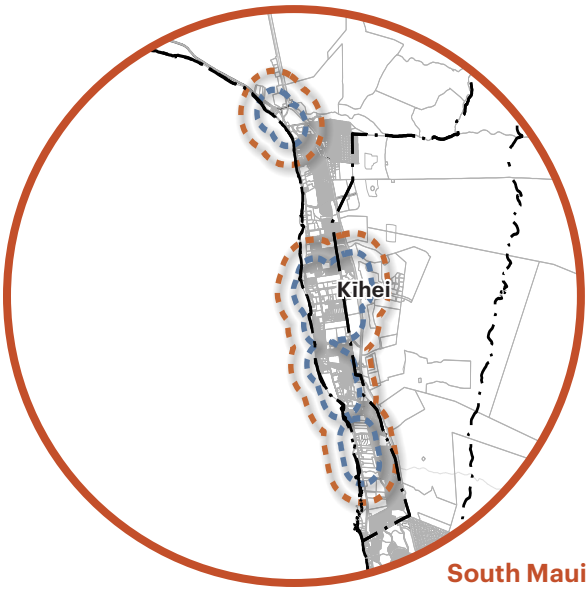
The Wailuku Redevelopment Area (WRA) covers approximately 68 acres in the urban core of Central Maui. The WRA Business/ Multi-Family (WRA-B/MF) zoning covers 20 percent of the WRA and promotes a mixed-use environment. 100 percent of this zoning district lies within the MMH-Ready areas. WRA-B/MF allows a maximum overall floor area ratio of 150 percent, incentivizing a larger scale of development, such as mixed-use buildings and larger apartment blocks. In this context, MMH types can be integrated along with larger (non-MMH) building types.











What the WRA-B/MF zoning standards allow

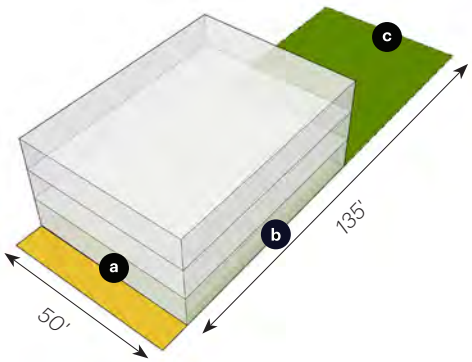
The Test Fit diagrams below illustrate what the WRA-B/MF zoning standards currently allow to be built. For these Test Fits, a typical "small" category lot was selected, 50 feet wide and 135 feet deep. The "Maximum Zoning Envelope" diagram illustrates the WRA-B/MF zone standards as stated in the Maui County zoning code. The "Maximum Yield and Form" diagram factors in additional development standards that apply, such as setbacks and parking requirements, thus showing what can actually be built.

Maximum Zoning Envelope[1]

Maximum Envelope per WRA-B/MF Standards[1]	
Building Form	
Min Lot Size	4,500 sf
Min Lot Width	45 ft
Max. Height	30 ft[2]
Max. Impervious Surface	Not regulated
Parking	
Min. Parking Spaces	2 per unit + 1 per ADU
Density	
Resultant Units	n/a
Floor Area Ratio	1.5

[1] As proposed in the Maui County Code.

[2] Max. height is dependent upon the street the parcel abuts.



Required Setbacks (min.)

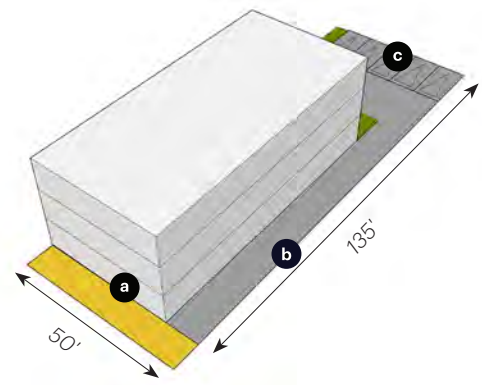
- a Front = 0' (up to 30 ft)
- b Side = 0' (up to 30 ft)
- c Rear = 0' (up to 30 ft)

Maximum Yield and Form[1]

Maximum Yield and Form per WRA-B/MF Standards[1]		
Resultant		**WRA-B/MF Stds.**
Footprint	40 ft x 84 ft	n/a
Height	30 ft	30 ft [2]
Built Up Area	10,125 sf	n/a
Parking		
Number of Spaces	Varies	2 per unit
Density		
Resultant Units	Varies	n/a
Floor Area Ratio	1.5	1.5

[1] As proposed in the Maui County Code.

[2] Max. height is dependent upon the street the parcel abuts.



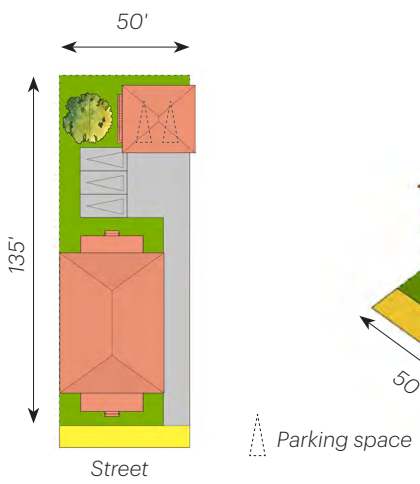
Required Setbacks (min.)

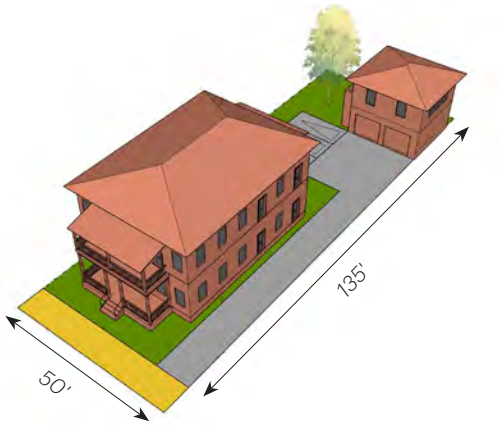
- a Front = 0' (up to 30 ft)
- b Side = 0' (up to 30 ft)
- c Rear = 0' (up to 30 ft)

Test Fits for WRA-B/MF

Fourplex + ADU

Lot size: 50'x135' (6,750 sq ft lot area | 0.15 ac lot area)
Parking access: Front driveway
Units: 4 primary units + 1 ADU (5 total)
Parking shown: 5 spaces





This Test Fit uses an 50-foot by 135-foot lot with front driveway access, a standard small lot. This Test Fit uses a fourplex and an ADU to demonstrate house-scale infill appropriate for many residential and mixed-use neighborhoods.

The WRA-B/MF zoning district envisions more intense development, as indicated by the FAR allowances. The type of MMH development shown here can be an option for smaller lots where larger buildings may not fit, and in combination with larger building types to provide housing variety.

Key Barriers

- **Floor Area Ratio.** The standards allow an FAR of 1.5, incentivizing larger development than MMH. This option achieves an FAR of 0.6 (including ADUs).
- **Parking:** The Test Fit provides five parking spaces, not the nine required.

Test Fit Summary

	Shown in Test Fit	Existing WRA-B/MF Standards[1]
No. of Units (du)	4 Primary + 1 ADU	Multi-family[3] + 1 ADU
Height	29 ft	30 ft max.[6]
Lot Coverage	4,740 sf (70%)	Not regulated
Avg Unit Size	710 sf	Not regulated
Parking	**5 sp**	9 sp min.[2]
Front Setback	14 ft [4]	0 ft min. [5]
Side Setback	0 ft	0 ft min. [5]
Rear Setback	5 ft	0 ft min. [5]
Lot Width	50 ft	45 ft min.
Lot Depth	135 ft	Not regulated
Lot Area	6,750 sf	4,500 sf min.
Floor Area Ratio	0.6	1.5 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3 Zoning district allows multi-family. A maximum of two accessory dwellings per lot subject to size limitations.

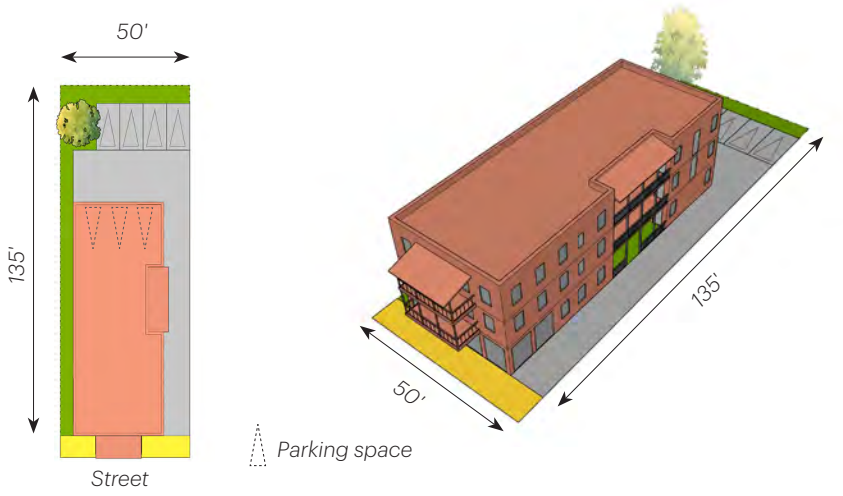
4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area.

5 The minimum setback considers the lot being located in Market Street.

6 The maximum height allowed for abutting Market Street.

Main Street Building

Lot size: 50'x135' (6,750 sq ft lot area | 0.15 ac lot area)
Parking access: Front driveway
Units shown: 7 primary units
Parking shown: 7 spaces



This Test Fit uses a Main Street building type on the 50-foot by 135-foot lot with front driveway access. This three-storied MMH type is a "large MMH" type, and can be used in more urban contexts. It has smaller units with a commercial ground floor appropriate for mixed-use neighborhoods, particularly in areas with good access to transit and amenities.

This Test Fit comes closer to meeting the FAR allowances for this zoning district and is a good example of a small-scale mixed-use typology.

Key Barriers

- **Floor Area Ratio.** This Test Fit achieves an FAR of 1.3, closer to the allowed FAR of 1.5.
- **Maximum Height.** This Test Fit achieves three stories with a flat roof, at a total height of 31 feet. It exceeds the maximum height allowance of 30 feet.
- **Parking.** This Test Fit provides seven parking spaces, not 14 as required by the zoning standards.

Test Fit Summary

	Shown in Test Fit	Existing WRA-B/MF Standards[1]
No. of Units (du)	7 Primary	Multi-family[3] + 1 ADU
Height	**31 ft**	30 ft max.[6]
Lot Coverage	5,598 sf (83%)	Not regulated
Avg Unit Size	830 sf	Not regulated
Parking	**7 sp**	14 sp min.[2]
Front Setback	0 ft [4]	0 ft min. [5]
Side Setback	5 ft	0 ft min. [5]
Rear Setback	45 ft	0 ft min. [5]
Lot Width	50 ft	45 ft min.
Lot Depth	135 ft	Not regulated
Lot Area	6,750 sf	4,500 sf min.
Floor Area Ratio	1.3	1.5 max.

Bold text indicates not complying with existing standards.

1 As proposed in the Maui County Code.

2 Multi-family dwelling requires 2 sp/du for dwellings under 3,000 sq ft, and 1 sp/du for an ADU.

3 Zoning district allows multi-family. A maximum of two accessory dwellings per lot subject to size limitations.

4 The lanai is not compliant with the 3 feet encroachment allowed in the setback area

5 The minimum setback considers the lot being located in Market Street.

6 The maximum height allowed for abutting Market Street.

CHAPTER

4

Testing MMH for Market Feasibility

In this chapter

4.1 Feasibility Testing for Missing Middle Housing

A range of the Missing Middle Housing Test Fits were assessed for market feasibility on a variety of lot sizes and zoning districts in different parts of Central, West and South Maui.

Testing for Feasibility and Attainability

Missing Middle Housing (MMH) types are "middle" in building scale and form, and can also provide a "middle level of affordability" because of smaller unit sizes and cost-saving design features. In most housing markets, Missing Middle types can be feasible to build with rents or sale prices that are affordable to a broad spectrum of middle-income households, without subsidy.

The intent of feasibility testing is two-fold:

- to assess if the project is viable for a developer to build under current market conditions, and
- to assess the level of attainability at which the project is feasible. In other words, could a "middle-income" household afford this housing type without spending more than 30 percent of total household income (a threshold used to determine if a household is "housing cost-burdened" or not). For the purpose of this testing, the Area Median Income (AMI) threshold of 80 to 120 percent is being considered "middle income".

By removing regulatory and other barriers, MMH can provide attainable housing options for middle-income and working class families in Maui. Additional incentives, such as fee reductions and bonus programs can further improve financial feasibility.

Feasibility Testing Process

From the Test Fits described in Chapter Three, seven Test Fits were tested for feasibility in four housing markets that cover the MMH Study areas in Central, West and South Maui:

- Lahaina
- Kihei
- Wailuku-Kahului
- Makawao-Pukalani

The development program achieved from the Test Fits was analyzed for financial feasibility by the team economist, following the steps outlined on the facing page. In this chapter, each feasibility Test Fit is described, along with key takeaways.

Figure 4.1 ***Feasibility Testing overview***

The diagram below illustrates individual steps involved in the feasibility analysis to understand the market viability of MMH.

Steps for Feasibility Testing

Step 1: Prototype Benchmarking

1. Estimate market value of land
2. Gather market data for achievable residential rental and sales prices by housing sub-market (sub-markets identified for Maui: Lahaina, Kihei, Wailuku-Kahului, Makawao-Pukalani)
3. Calibrate sale and rental building prototype pro-formas
4. Calculate minimum feasible rental rate and sales price for each prototype on selected lots
5. Map the ratio of maximum achievable price to minimum feasible price on each parcel

Step 2: Sensitivity Testing

1. Chart residual land value (RLV) for the benchmark prototype
2. Chart RLV for additional prototypes
3. Judge feasibility of additional prototypes relative to the benchmark
4. Adjust prototypes till desired feasibility is achieved

CLOSER LOOK

What is Financial Feasibility?

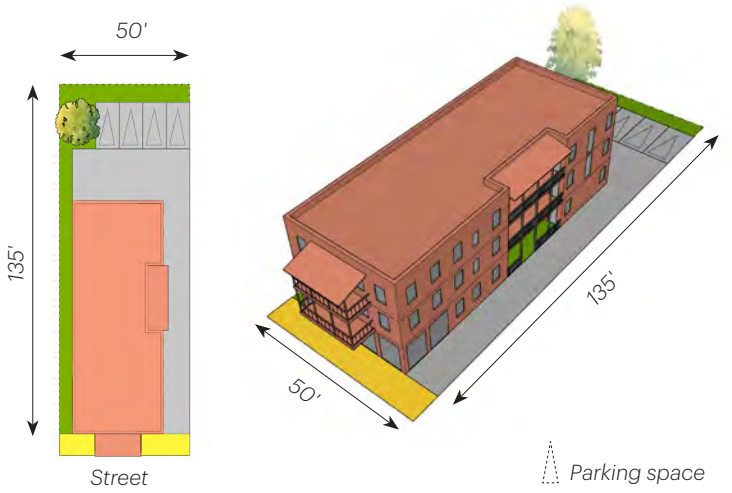
Developing housing involves a range of costs. Builders must pay for land, materials and labor (hard costs), taxes and fees (soft costs) and still be able to justify their investment with a reasonable rate of return (profit).

When the expected revenue (rent or sales price) from a project can cover all of its costs and generate an acceptable rate of return (generally ranging from 10-12%), it is considered financially feasible.

#1: Main Street Building in WRA-B/MF

Lot size: 50'x135' (6,750 sq ft lot area)
Lot category: Small
Parking access: Front driveway
No. of units: 7 primary units
Parking: 7 spaces

This Test Fit shows a Main Street building on a typical small lot in the WRA-B/MF zoning district. The 950 square-foot 2-bedroom units in this building would need to rent at around $3,800 per month. This price is attainable to a 3-person household earning 157 percent of Area Median Income (AMI) and would be feasible in Lahaina and Kihei.



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
7 Units	0.15 ac	For Rent	12.0%	$597

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	7	$3,904	157%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

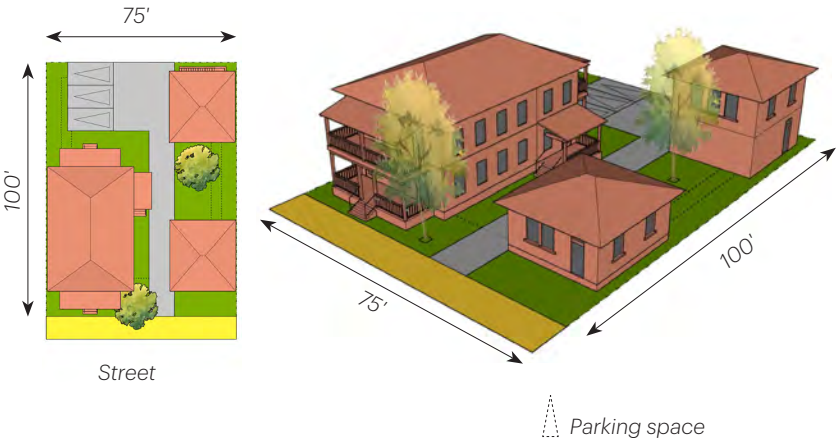
Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#2: Triplex + 2 ADUs in R-2

Lot size: 75'x100' (7,500 sq ft lot area)
Lot category: Medium
Parking access: Front driveway
No. of units: 3 primary + 2 ADUs (5 total)
Parking: 5 spaces

This Test Fit shows a triplex and 2 ADUs on a medium-sized lot in the R-2 zoning district. To achieve feasibility, units in this Test Fit would need to rent at levels above market pricing in most market areas. As an example, a 2-bedroom unit would need to rent at 191 percent of AMI. Given their relatively small size, ADU units would be more marketable than the triplex units (with rents at 116 percent of AMI), but likely only in Kihei.



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
5 Units	0.17 ac	For Rent	12.0%	$(139)

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	3	$4,749	191%
Studio / ADU Units	2	$2,571	116%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

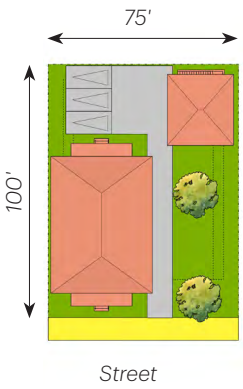
Legend: Market rent/ sales price needed for feasibility

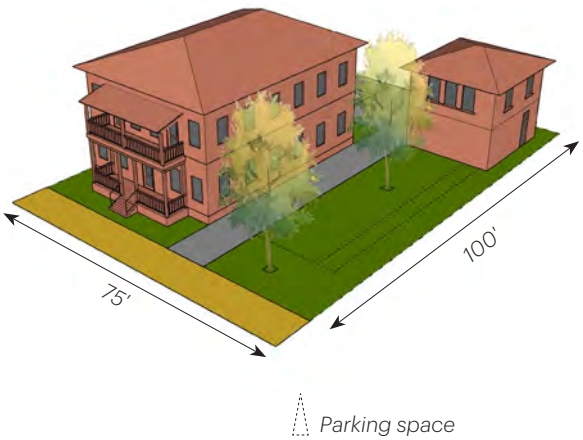
30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#3: Fourplex + 1 ADU in R-2

Lot size: 75'x100' (7,500 sq ft lot area)
Lot category: Medium
Parking access: Front driveway
No. of units: 4 primary + 1 ADU (5 total)
Parking: 5 spaces

This Test Fit shows a fourplex and an ADU on a medium lot in the R-2 zoning district. The smaller average unit sizes in the fourplex make it more attainable than units in the triplex in Test Fit #2, with 2-bedroom units needing to rent at 158 percent of AMI (compared to 191 percent of AMI in Test Fit #2) to be feasible. The units are also feasible in more locations including Lahaina and Kihei for 2-bedroom units and Kihei for studio/ADU units.





Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
5 Units	0.17 ac	For Rent	12.0%	$(153)

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	4	$3,928	158%
Studio / ADU Units	1	$2,558	115%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

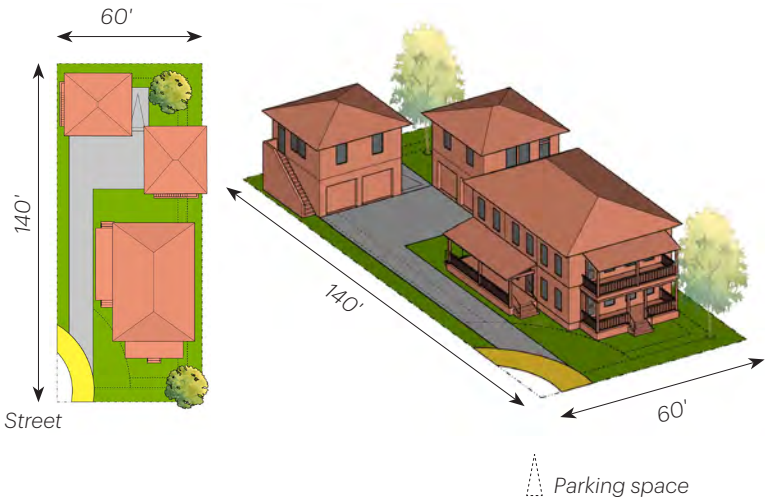
Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#4: Triplex + 2 ADUs in R-1

Lot size: 60'x140' (8,400 sq ft lot area)
Lot category: Deep Medium
Parking access: Front driveway
No. of units: 3 primary + 2 ADUs (5 total)
Parking: 5 spaces

This Test Fit shows a triplex and two ADUs on a deep medium lot in the R-1 zoning district. Larger triplex units (1,080 sq ft) are not broadly affordable at 213 percent of AMI for a 3-person household. Larger sizes would also require these units to be priced well above market prices in most areas in Maui. Studio or ADU units may be feasible in Kihei.



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
5 Units	0.17 ac	For Rent	12.0%	$(139)

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	3	$4,749	191%
Studio / ADU Units	2	$2,571	116%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

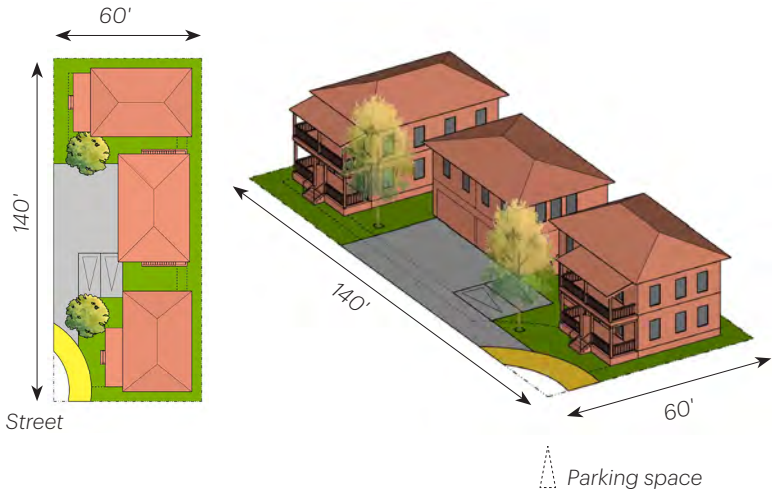
Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#5: 2 Duplexes + 2 ADUs in R-1

Lot size: 60'x140' (8,400 sq ft lot area)
Lot category: Deep Medium
Parking access: Front driveway
No. of units: 4 primary + 2 ADUs (6 total)
Parking: 6 spaces

This Test Fit shows two duplexes and two ADUs on a deep medium lot in R-1. Slightly smaller units in the duplexes make them more attainable and somewhat feasible across some areas of Maui. 2-bedroom units could be available at market rents in Lahaina and Kihei, and studios/ ADUs in Kihei. The stacked nature of the duplexes means they would still require the same sprinklering and fire rating systems that are required in triplexes, driving up costs.



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
6 Units	0.19 ac	For Rent	12.0%	$389

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	4	$3,971	159%
Studio / ADU Units	2	$2,384	108%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

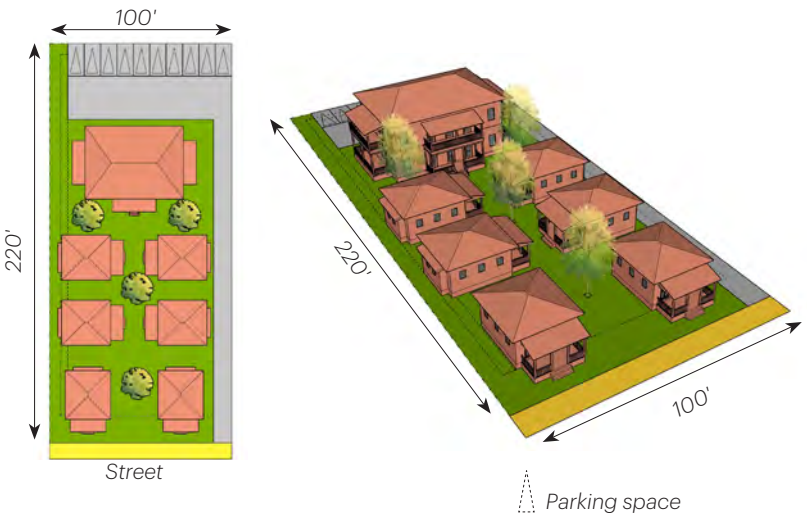
Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#6: Fourplex + 6 Cottages in R-3

Lot size: 100'x220' (0.5 ac lot area)
Lot category: Large
Parking access: Front driveway
No. of units: 10 primary units
Parking: 10 spaces

This Test Fit shows a fourplex and six cottages on a large lot tested in the R-3 zoning district. Relatively large units and a relatively low density mean these units are not attainable and would need to be priced at 10 to 30 percent above market rents in all of the market areas to be feasible.



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
10 Units	0.5 ac	For Rent	12.0%	$498

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	4	$4,564	183%
1 Bed Unit Size	6	$3,267	147%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

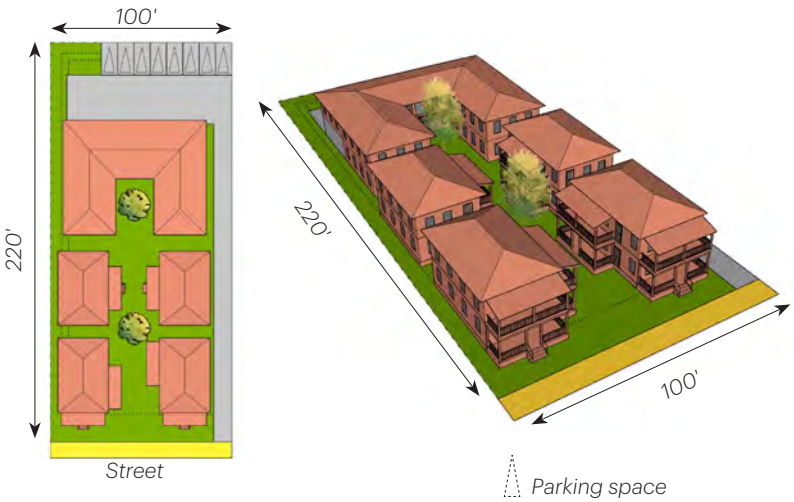
Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

#7: Courtyard Building + 4 Duplexes in R-3

Lot size: 100'x220' (0.5 ac lot area)
Lot category: Large
Parking access: Front driveway
No. of units: 14 primary units
Parking: 14 spaces

This Test Fit shows a Courtyard building type with four duplexes on a large lot in R-3. More efficient use of land through higher densities means these units are moderately attainable and feasible in some of the market study areas (Lahaina and Kihei).



Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
14 Units	0.5 ac	For Rent	11.9%	$(1,612)

Unit Breakdown and Required Rents or Sales Prices

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford)
2 Bed Unit Size	14	$3,925	157%

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

Legend: Market rent/ sales price needed for feasibility

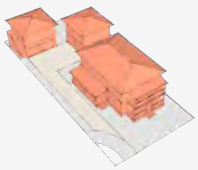
30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

Feasibility Testing Summary

R-1

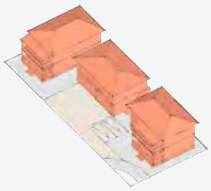
Residential District
Lot size: 60' x 140'
Lot area: 8,400 sq ft
Lot category: Deep Medium

Triplex + 2 ADUs



- Feasible in Kihei
- Attainability: 2-bed units at 191% AMI, Studio/ADU units at 116% AMI

2 Duplexes + 2 ADUs

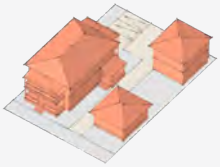


- Feasible in Lahaina and Kihei
- Attainability: 2-bed units at 159% AMI, Studio/ADU units at 108% AMI

R-2

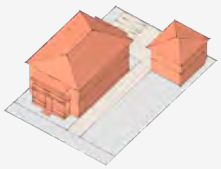
Residential District
Lot size: 75' x 100'
Lot area: 7,500 sq ft
Lot category: Medium

Triplex + 2 ADUs



- Feasible in Kihei
- Attainability: 2-bed units at 191% AMI, Studio/ADU units at 116% AMI

Fourplex + ADU

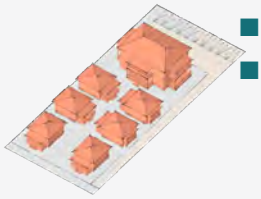


- Feasible in Lahaina and Kihei
- Attainability: 2-bed units at 158% AMI, Studio/ADU units at 115% AMI

R-3

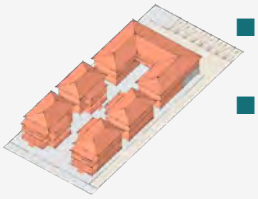
Residential District
Lot size: 100' x 220'
Lot area: 0.5 ac
Lot category: Large

Fourplex + 6 Cottages



- Not feasible
- Attainability: 2-bed units at 183% AMI, 1-bed units at 147% AMI

Courtyard Building + 4 Duplexes

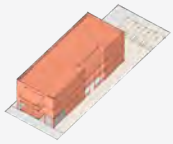


- Feasible in Lahaina and Kihei
- Attainability: 2-bed units at 157% AMI

WRA-B/MF

Business/ Multifamily
Lot size: 50'x135'
Lot area: 6,750 sq ft
Lot category: Small

Main Street Building



- Feasible in Lahaina and Kihei
- Attainability: 2-bed units at 157% AMI

4.2 Improving Feasibility and Attainability for MMH

There are many challenges to project feasibility on Maui, including high land and construction costs, inadequate infrastructure and lengthy project review timelines.

Key Takeaways

The feasibility testing identified the following takeaways that could improve project feasibility in Maui.

- **Reduce Parking Requirements.** On small infill sites, parking competes with leasable area. With less parking, more area is available for housing units, leading to a more feasible project.
- **Create More, Smaller-Sized Units (Increase Density).** Increasing density limits on lots while regulating the maximum building footprint allows for smaller units, that can be offered at lower cost.
- **Streamline Permitting.** Longer permitting times increase costs, delay revenues, and create additional risk for MMH projects.
- **Waivers and Subsidies.** Workforce housing (at 80-120 percent of AMI) is hard to build on Maui. Fee waivers or other forms of subsidy can improve feasibility.

Testing Potential Impacts

To illustrate how these factors play a role in determining project feasibility, one of the Test Fits was taken as an example. As shown on the facing page, adjusting some of these factors tips the project closer to feasibility and attainability.

The Test Fit shows a triplex and two ADUs on a typical medium-sized lot in Maui. To achieve feasibility (assuming 12 percent rate of return), units in this project would need to rent at levels above market price in most market areas. Given their relatively small size, ADU units would be most marketable, but likely only in Kīhei.

The following changes were tested:

- Parking reduced to 0.5 space per unit, allowing more space for leasable area.
- Density increased by reducing unit sizes, without changing the overall building footprint. This provides an additional unit (total six) that increases gross revenue.
- Reduce permitting time by 50 percent, from 12 months to six.
- Waive impact fees, assuming an amount of $60,000 per unit.

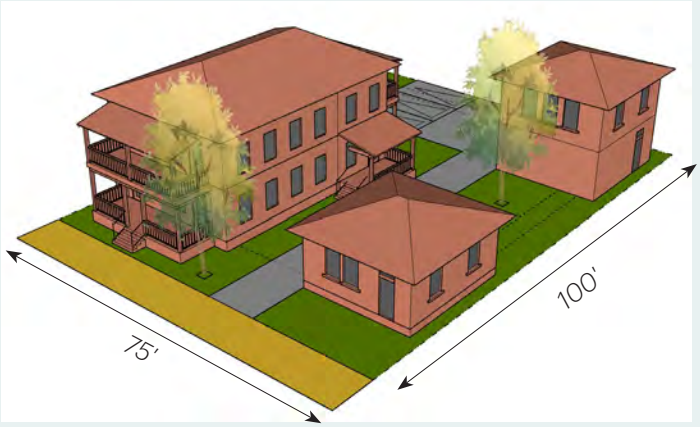
The impacts of these changes on feasibility and attainability include:

- 2-bed units are now feasible in all markets at up to 10 percent above market rents (more attainable).
- ADU/Studio units feasible in Lahaina, Kihei, Makawao-Pukalani at up to 20 percent above market rents.
- Rents for 2-bed units reduce the attainability threshold from 189 to 133 percent AMI.
- Rents for ADU/ studio units reduce attainability threshold from 115 to 106 percent AMI.

Figure 4.2 ***Feasibility Testing Case Study***

Feasibility Testing Steps:

- **Reduce Parking Requirements**
- **Reduce Unit Sizes (Increase Density)**
- **Streamline Permitting**
- **Offer Waivers and Subsidies**



Lot size: 75'x100' (7,500 sq ft lot area)
Lot category: Medium
Parking access: Front driveway
No. of units: 3 primary + 2 ADUs (5 total) => Changed to 6 by reducing unit size and parking

Project-Wide Metrics

Units	Lot Size	Project Type	Internal Rate of Return	Surplus (Gap) per Unit
6 Units	0.17 ac	For Rent	12.0%	$(222)

Unit Breakdown and Required Rents or Sales Prices

More broadly attainable

Unit Type	Number of Units	Montly Rent	Attainability (AMI Needed to Afford
2 Bed Unit Size	4	$3,318	133%
Studio / ADU Units	2	$2,358	106%

Feasible in more locations

Market Pricing

Market Rent	Lahaina	Kihei	Wailuku-Kahului	Makawao-Pukalani
3 Bed Unit Size	$5,124	$4,812	$3,732	$4,080
2 Bed Unit Size	$3,843	$3,609	$2,799	$3,060
1 Bed Unit Size	$2,760	$2,824	$2,112	$2,104
Studio / ADU Size	$1,784	$2,472	$1,056	$2,104

Legend: Market rent/ sales price needed for feasibility

30%+ Above Market	20% Above Market	10% Above Market	At Market	10%+ Below Market

CHAPTER

5

Opportunity Sites

In this chapter

5.1 Design Considerations for Missing Middle in Maui

Missing Middle Housing types for Maui must consider local climate and culture, and be designed with these considerations in mind.

Missing Middle for Maui

Missing Middle Housing (MMH) types have specific dimensions (such as minimum width, depth and height) that enable these types to work well within residential neighborhoods. Site placement and location of parking and open space are important considerations for MMH as well. The MMH types recommended for Maui have been selected on the basis of how well they would fit into Maui neighborhoods on typical existing lot sizes, as well as with the neighborhood scale and form. In addition, it is important that the MMH types in Maui be adapted to fit Maui's culture and climate.

Adaptations for Maui

Missing Middle Housing types that were tested for Maui include simple adaptations to accommodate outdoor living and natural cross-ventilation. As shown in Figure 5.2, these design features would make MMH types in Maui feel familiar and work well with the local climate and lifestyle preferences.

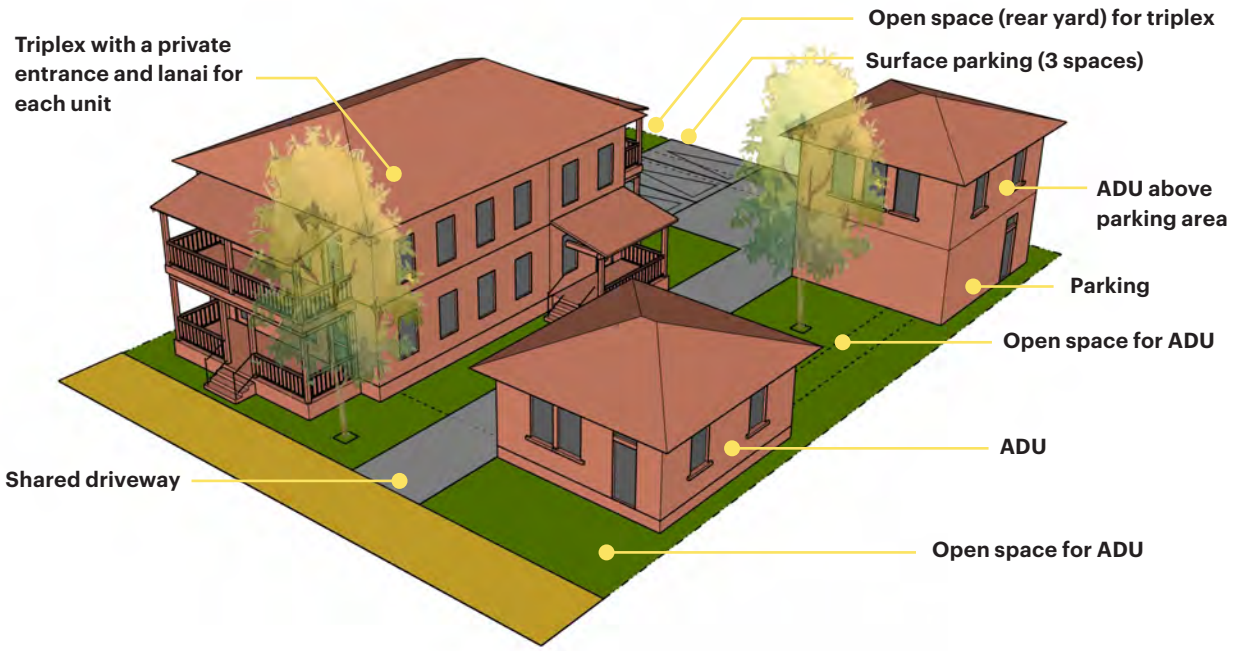
Figure 5.1 *Examples of Maui's vernacular architectural style that incorporates design elements to address local climate.*

Figure 5.2 *Design considerations for MMH on typical lots*

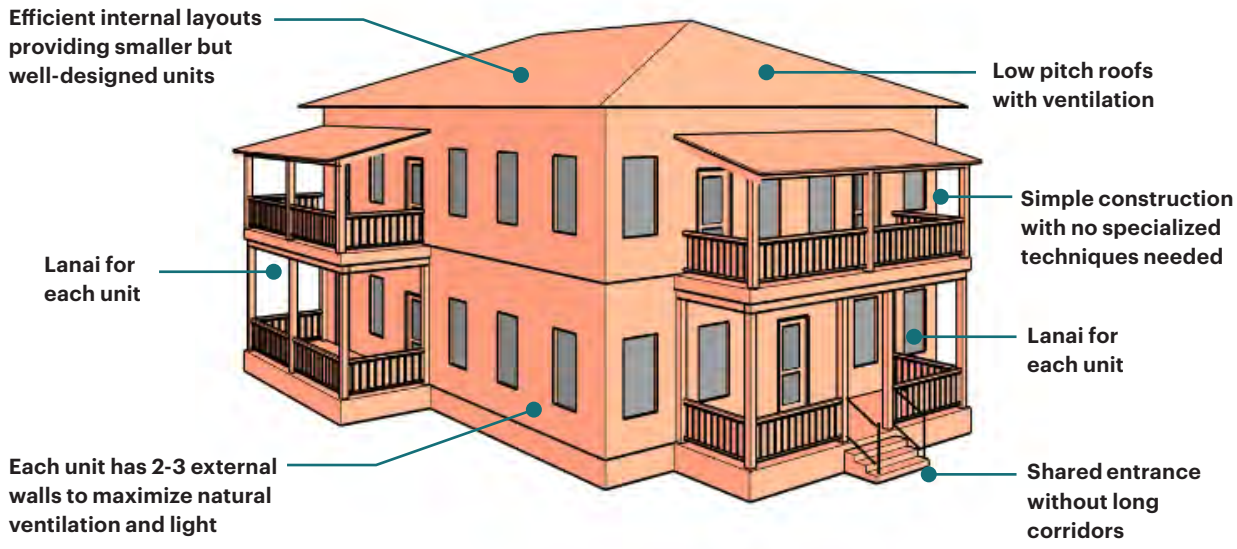
MMH on a Typical Maui Lot

MMH Types: Triplex and 2 ADUs

This example shows how neighborhood-scale MMH can fit on a typical "medium" category lot in Maui.



MMH Adaptations for Maui



What can Missing Middle look like in Maui?

Neighborhood-Scale MMH

The Missing Middle types shown in this example include a two-storey triplex and two ADUs. The ADU in the rear has tuck-under parking on the ground level with the residential unit on the second floor. The second ADU facing the street is a small single-story cottage. All of these infill buildings maintain the house-scale environment of the neighborhood. The building placement creates distinct open spaces for every building, in addition to lanais for each unit.

Design Highlights

1. *House-scale triplex provides three housing units.*
2. *Shared and/or private lanais provide semi-private shaded open spaces for the units.*
3. *Each unit has a dedicated entrance, with shared entryway stairs but no internal access corridors.*
4. *Shared driveway with a pervious surface allows water infiltration and reduces the heat island effect.*
5. *Semi-private outdoor open space is provided for each unit.*

Housing Types

1. *Triplex*
2. *Accessory dwelling unit (ADU/ Ohana unit)*

Note that this rendering is for illustrative purposes only and does not indicate an actual project.

5.2 Missing Middle Housing on Large Sites

Designing Large Sites with MMH

This section explores how large sites on Maui can be developed into MMH neighborhoods. Although MMH on small infill sites is a recommended development strategy for Maui, it is also important to consider what role MMH can play in the development of larger projects such as large infill sites, transformation of commercial sites to mixed-use, redevelopment of brownfield sites, planned growth areas, etc. On Maui, where utility infrastructure such as water and sewer is a common development constraint, larger development projects may often be in a position to provide infrastructure upgrades at scale.

MMH neighborhoods can comprise of only house-scale MMH types, or be designed in conjunction with larger mixed-use or residential development. This section aims to examine both these types of MMH development, on large sites in both rural and urban contexts. The intent is to identify key design principles that would create successful, connected MMH neighborhoods for Maui.

Design Considerations

Two large sites were chosen for this design process with the help of Maui County and Hawaii Community Foundation (HCF) staff. The design process included multiple iterations to integrate feedback from the project team and produce MMH neighborhood examples specific to Maui's context.

While the design principles remain the same for designing MMH neighborhoods, the intensity of development and site configuration is influenced by the surrounding context and existing uses. It impacts the intensity of the building types, the size and location of open spaces, connectivity considerations, and parking location. Six design principles are proposed to guide the design of MMH on large sites to ensure that these could be exemplars of good neighborhood design.

Design Principles for Large Sites

#1. Connectivity

Link to adjacent streets and establish a framework of pedestrian-scaled, walkable streets and blocks.

#2. Diverse Housing Types

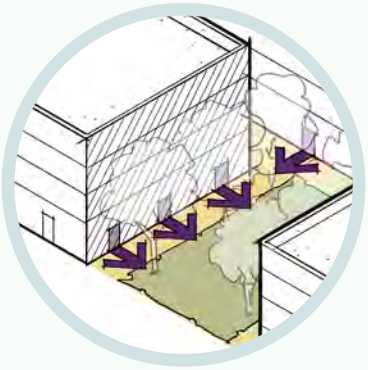
Use a variety of Missing Middle types to increase housing choice while maintaining neighborhood scale and form.

#3. Open Space and Trees

Create a hierarchy of shared open spaces for community gathering and events, and prioritize trees for shade and greenery.

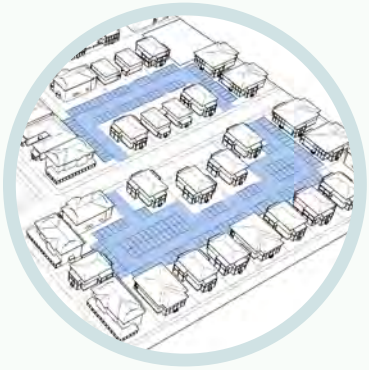
#4. Building Orientation

Orient building entrances towards streets and public spaces to create active, safe, and pedestrian-friendly streetscapes.



#5. Parking Strategy

Locate parking in block interiors, and shield large parking lots from view. Use on-street parking wherever possible.



#6. Context and Climate

Design and orient both buildings and open spaces to respond to the need for shade, natural ventilation and community functions.

Case Study #1: MMH Neighborhood in Kahului

At a Glance
This site in Kahului is a great example of how MMH types can work together with larger building types to create a neighborhood that responds to the desired development intensity and still provides pedestrian-scaled public spaces.

Program Information	
Location	Kahului Shopping Center
Area	16.8 acres
Units Achieved	455 units
Density	27 du/ac
Parking Ratio	1 space per unit

This site demonstrates how MMH can be used to create walkable urban neighborhoods.

Existing Conditions

This site is the Kahului Shopping Center on the Ka'ahumanu Avenue Community Corridor that links the harbor area with the commercial uses on the corridor. Ka'ahumanu, Pu'unene, Kamehameha, and Lono Avenues create the boundaries of this site. The Kahului Shopping Center site contains existing businesses such as Bistro Casanova, but much of the site is underutilized parking lots. Many of the existing buildings on the site are one to two-story buildings with few existing trees on the site.

This site is currently under B-2 zoning and has multiple parcels. For the site testing, this example assumes the consolidation of these parcels into one site. Allowed uses in the B-2 district are multi-family residential, bungalow courts (also referred to as cottage courts) and duplexes.

Aerial showing existing conditions

View from Kamehameha Avenue

MMH Urban Neighborhood along Ka'ahumanu Avenue

The design highlights include:

- Similar to what the Kahului Shopping Center had in its prime, the design breaks down the large site into small pedestrian-scaled blocks and establishes a network of internal streets and alleys.
- Provides a range of MMH and larger building types to offer housing options for residents at different levels of attainability.
- Allows the housing typologies to respond to different levels of intensity based on the context. Larger buildings such as double-loaded and single-loaded corridor buildings are sited along Ka'ahumanu Avenue since that is a wider, busier street. Smaller MMH such as triplexes and fourplexes are sited along inner streets.
- Increases the amount of open space and trees on the site and creates a well-connected network of public spaces and passages.
- Supports retail and non-residential uses along Ka'ahumanu Avenue.
- Provides parking in block interiors with alley access to create a pedestrian-focused public realm.

Conceptual design of a Missing Middle neighborhood on a site in Kahului. Note this is for illustrative purposes only and does not indicate an actual project.

Case Study #1: MMH Neighborhood in Kahului

Diverse Housing Types

Providing a range of housing types is essential for a successful Missing Middle neighborhood. This site uses a wide range of building types that respond to the context and the housing needs of the community:

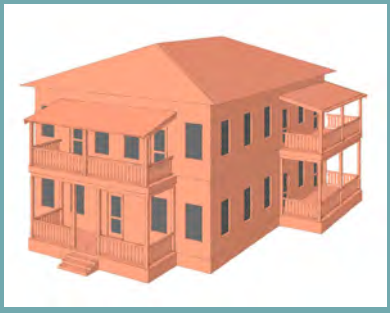
- Double-loaded and single loaded corridor buildings (not MMH)
- Large, medium, and small courtyard buildings
- Multiplexes
- Fourplexes
- Triplexes
- ADUs

CLOSER LOOK

Building Typology Examples

Below are some examples of the building types listed above. These MMH typologies have been adapted to the context of Maui and are based on local examples observed and documented by the team.

Triplex



Fourplex

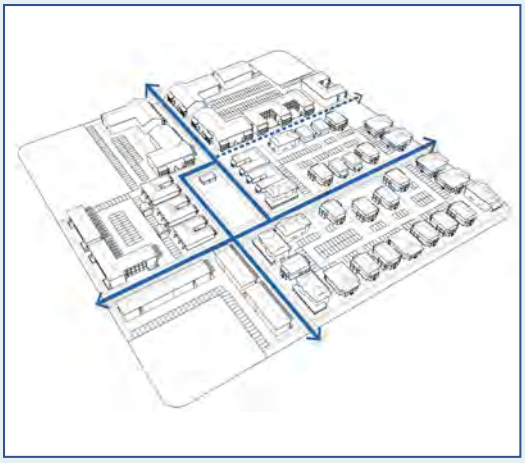
Sixplex

Multiplex

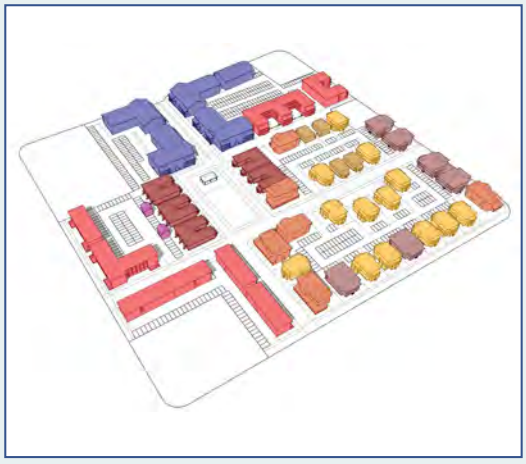
Courtyard Building

Single-Loaded Corridor Building

Existing Conditions

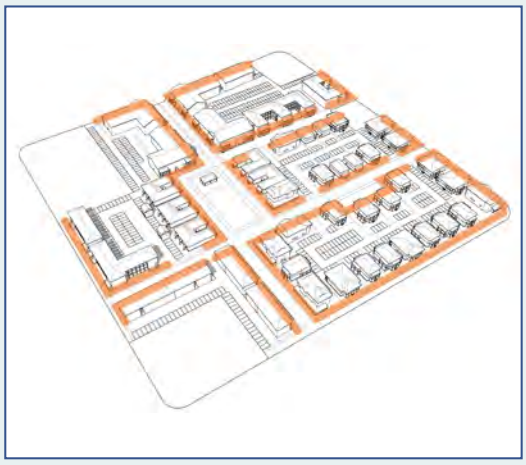


#1. Connectivity

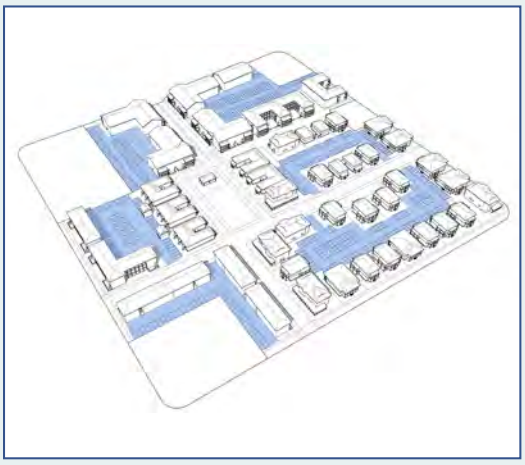


#2. Diverse Housing Types

#3. Open Space and Trees



#4. Building Orientation



#5. Parking Strategy

MMH in Urban Centers

MMH can work along with larger-scale development such as "podium" style mixed-use buildings, or larger double-loaded or single-loaded corridor buildings. In this example, the context is more urban, with a high level of connectivity. As the diagrams show, the internal layout of streets and blocks responds to this, maintaining through-streets and orienting buildings along existing and new streets and open spaces.

MMH as a Transition

MMH can help transition between more intense development along busy corridors, and quieter residential neighborhoods. In this example, the courtyard building type acts as a transition between the larger apartment buildings along Ka'ahumanu Avenue and the neighborhood-scale triplexes and fourplexes at the center of the neighborhood. This scale transition allows for a diversity of urban environments to occur harmoniously.

Case Study #1: MMH Neighborhood in Kahului

MMH and Transitions

The Ka'ahumanu Avenue site is well-located, with good access and busy streets on three sides. The location offers an opportunity for larger housing types, such as double-loaded corridor buildings, and MMH to work together to create a neighborhood that can meet the site's development potential while still creating human-scaled buildings and open spaces. This image shows MMH courtyard buildings as a transition between the larger buildings along Ka'ahumanu Avenue and the fourplexes in the site's interior. The courtyard buildings also help frame the central park.

Design Highlights

1. *Internal courtyard with private entry for every unit.*
2. *Shared central open space accommodates a variety of activities to meet residents' day-to-day needs.*
3. *A green paseo provides a pedestrian and bike connection to Pu'unene Avenue.*
4. *Pavilion provides a shaded gathering space.*

Housing Types

1. *Courtyard building*
2. *Double-loaded corridor building (Note: this is not a MMH type. This is shown here to illustrate how MMH can work with larger buildings in more urban locations.)*

Note that this rendering is for illustrative purposes only and does not indicate an actual project.

Case Study #2: MMH Neighborhood in Makawao

At a Glance
This site is located in Makawao town in Upcountry Maui. It is a landlocked site with limited access points to adjacent neighborhoods and the two main commercial streets, Makawao and Baldwin Avenues. The design shows a pocket neighborhood configuration with a diverse range of house-scale MMH types.

Program Information	
Location	Makawao
Area	11.2 acres
Units Achieved	115 units
Density	10.26 du/ac
Parking Ratio	1 space per unit

Pocket neighborhoods allow for increased density while still providing open space.

Existing Conditions

This site is located in Makawao town in a central location and is surrounded by residential neighborhoods. Makawao Avenue and Baldwin Avenue are two important commercial streets that constitute the external edges of this site. Both these streets contain one to two-story commercial buildings. The site is a located in the interior of the block without any existing through-streets. It contains clusters of mature trees, including a pine tree that has community significance.

The neighborhoods surrounding the site consist of one to two-story single-family homes. This site is within the Urban Reserve District. Single-family homes and ADUs are allowed, and the district allows a maximum height of 30 feet.

Aerial showing existing conditions

View from Makawao Avenue

MMH Pocket Neighborhood in Makawao

The following points summarize the design highlights:

- The design introduces two new streets connecting to Makawao Avenue to increase overall connectivity of the neighborhood.
- Introduces a network of alleys for parking and fire access.
- Provides a diverse group of house-scale MMH typologies such as duplexes, triplexes, fourplexes, cottages, and live/work.
- Provides active frontages along the Makawao Avenue and Baldwin Avenue through the use of the live/work MMH type.
- Creates a system of connected open spaces that vary in size and configuration.
- Preserves existing clusters of trees including the pine tree with community significance.
- Orients the buildings to face the open spaces to promote a sense of community and safety .
- Locates parking in the rear of the units with alley access to preserve the quality of the central open space.

Conceptual design of a Missing Middle neighborhood on a site in Makawao. Note this is for illustrative purposes only and does not indicate an actual project.

Case Study #2: MMH Neighborhood in Makawao

Diverse Housing Types

Providing a range of housing types is essential for a successful Missing Middle neighborhood. This can ensure that the neighborhood accommodates a variety of household types, and can also provide options across the different life stages of a family.

The Makawao site uses a wide range of house-scale MMH types in order to respond to the low-intensity residential context and the housing needs of the community. The following MMH types were used in this design concept:

- Duplex
- Triplex
- Fourplex
- Cottage
- Live/Work

CLOSER LOOK

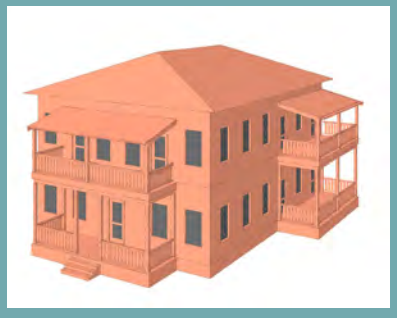
Building Typologies

Below are some examples of the building types listed above. These MMH typologies have been adapted to the context of Maui and are based on local examples observed and documented by the tea

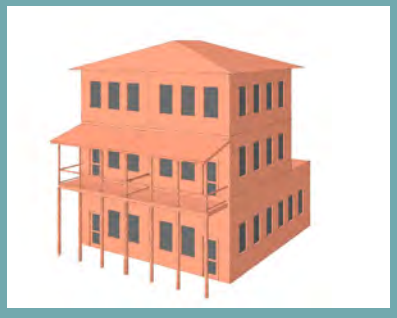
Cottage

Duplex

Triplex



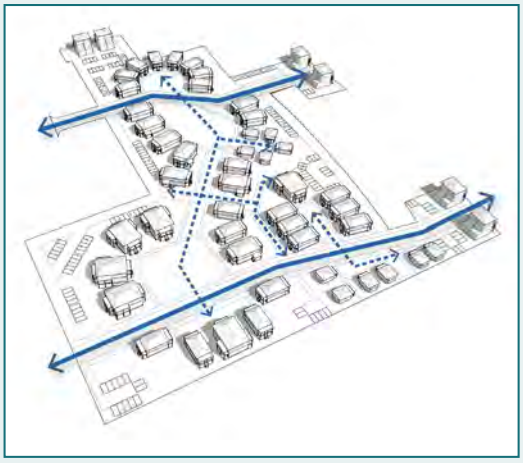
Fourplex



Live/Work

Design Principles for MMH

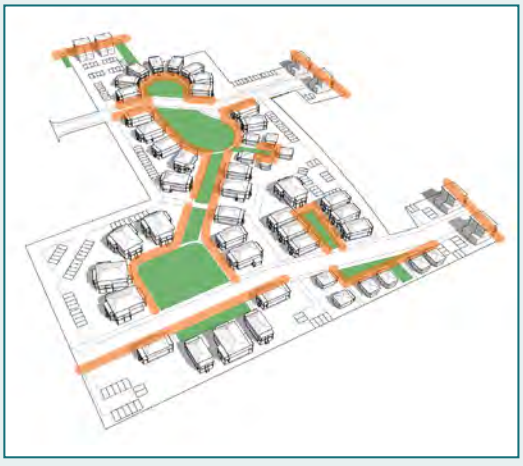
Existing Conditions



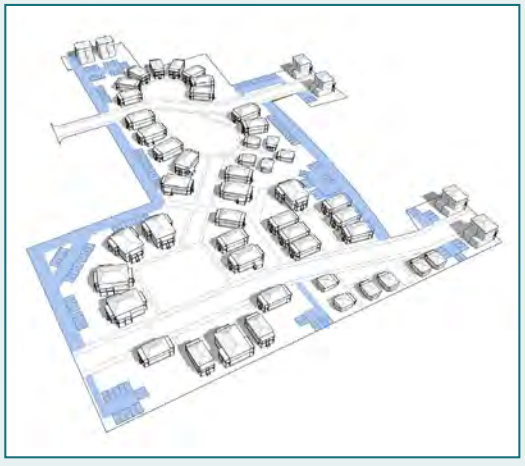
#1. Connectivity

#2. Diverse Housing Types

#3. Open Space and Trees



#4. Building Orientation



#5. Parking Strategy

Creating Pedestrian-Scale Neighborhoods

The design principles described here are intended to guide the location and orientation of homes, open spaces and parking in creating a neighborhood that feels inviting and designed with the pedestrian in mind. The diagrams on the left demonstrate how the design principles are enacted in the site layout and configuration of open spaces and circulation.

The Makawao site is located in the interior of a block, with limited access to adjacent streets. With a large open space as the central focus, a variety of MMH types are oriented around this system of shared open spaces, with parking access along the site periphery.

Case Study #2: MMH Neighborhood in Makawao

Pocket Neighborhood

The pocket neighborhood model of development emphasizes pedestrian and bike connectivity and provides ample access to the natural beauty of Maui through a network of open spaces. Alleys provide parking, fire and emergency access. Duplexes and fourplexes front onto the central larger open space. Additional smaller open spaces provide residents with space for outdoor activities. Native vegetation and foliage adds to the beauty of the neighborhood and provides privacy for the units.

Urban Design Highlights

1. *Neighborhood-scale multi-family living with a variety of unit sizes.*
2. *Building height restricted to two stories, with usable attics in some cases for additional living space.*
3. *Building frontages and entrances are oriented to the shared open space.*
4. *Native vegetation and trees provide greenery and shade.*
5. *Parking is located at the rear.*

MMH Types

1. *Duplex*
2. *Fourplex*
3. *Triplex*

Note that this rendering is for illustrative purposes only and does not indicate an actual project.

Case Study #2: MMH Neighborhood in Makawao

Layering of Open Space Types

This rendering highlights how different open spaces create a great neighborhood. The semi-private open space, created by the lanai, buffers the private space within the individual units from the public realm. This layering of spaces is essential to providing privacy in a multi-family environment. This rendering also shows a community-scale open space. Open spaces at this scale are an essential place-making element and help define the neighborhood's character. The pine tree pictured here is an existing tree that is important to the residents of Makawao.

Design Highlights

1. *Lanais provide semi-public open space for residents.*
2. *Neighborhood-scale open spaces accommodate community gatherings.*
3. *Native vegetation and trees enhance privacy for residential units.*
4. *Existing pine tree is preserved as a local landmark in Makawao.*
5. *Pavilion provides shade and space for activities.*

MMH Types

1. *Duplex*
2. *Triplex*
3. *Cottage*

Note that this rendering is for illustrative purposes only and does not indicate an actual project.

Recommendations for MMH

CHAPTER **6**

In this chapter

6.1 Summary of Regulatory Barriers

This analysis reveals major and minor barriers to the development of Missing Middle Housing in Maui.

Regulatory Analysis Overview

The R-1, R-2, R-3, A-1, B-2, and WRA-B/MF zoning districts were analyzed by modeling Missing Middle Housing (MMH) types on typical lot sizes, comparing the results with what would be allowed under existing standards. This process revealed which standards pose the most significant barriers to these types, which standards impose obstacles on a conditional basis, and which standards do not significantly interfere with MMH. These findings are summarized below and in the matrix on the facing page.

Primary Barriers to MMH

Certain existing standards are major barriers, effectively preventing MMH from being built on existing lots without either requesting exemptions or outright rezoning. In order to enable MMH throughout Maui, these are the standards that must be changed first:

- **Maximum Allowed Density** in R-1, R-2, R-3, and A-1.
- **Allowed Uses** in R-1, R-2, and R-3.
- **Required Off-Street Parking** in all the zoning districts analyzed.

Secondary Barriers to MMH

While these standards may not be deal-breakers in and of themselves, they can create barriers to MMH when applied in combination. Infill projects have limited site area and resources available, and the more that is needed to fulfill these standards, the less is available for the homes themselves:

- **Minimum Lot Size** standards
- **Maximum Lot Coverage** in the A-1 district.
- **Minimum Setback** standards.
- **Maximum Building Height** in the B-2 and WRA-B/MF districts
- **Fire Code** requirements are often a constraint for small-scale multi-family buildings.
- **Special Management Area** requirements apply for large geographies in Maui, often overlapping with areas otherwise suitable for housing.

Summary of Regulatory Barriers for MMH

Figure 6.1 *Summary of existing regulatory barriers for MMH identified in R-1, R-2, R-3, A-1, B-2 and WRA-B/MF zoning districts.*

Summary of Barriers to MMH (Maui County Zoning Code)

Barriers to MMH	R-1	R-2	R-3	A-1	B-2	WRA-BMF
Max. Density	✗	✗	✗	N/A	N/A	N/A
Min. Lot Size	●	●	✗	✗	●	✓
Max. Lot Coverage	✓[5]	✓[5]	✓[5]	✗	✓	✓
Min. Setbacks	●	●	●	✗	●	●
Min. Off-Street Parking	✗	✗	✗	✗	✗	✗
Floor Area Ratio (FAR)	N/A	N/A	N/A	✗	✓	✓
Allowed Uses	✗	✗	✗	✓	✓	✓
Max. Height	✓	✓	✓	✓	✗	●
Fire Sprinklers Required for 3 or more units	✗	✗	✗	✗	✗	✗
Number of MMH Types Allowed	1[2]	2[2]	3[2]	3[3]	3[4]	3[1]

Key

✗ Major Barrier

● Minor Barrier

✓ Enables MMH

Not Applicable

Notes:

n/a = Not applicable

[1]Zoning district allows multi-family

[2]Zoning district allows single-family, duplex with Special Use Permit, and ADUs

[3]Zoning district allows bungalow courts, apartment courts, and townhouses

[4]Zone district allows multi-family dwellings, duplex and bungalow courts

[5]No lot coverage regulation, maximum impervious surface regulations apply

*No buffer yards and open space requirements

Note

The summary of barriers takes into consideration findings from the analysis of the Maui County Zoning Code for the R-1, R-2, R-3, A-1, B-2 and WRA B/MF zoning districts.
Source: https://library.municode.com/hi/county_of_maui/codes/code_of_ordinances?nodeId=COCOMAHA

6.2 Built Form Standards for Regulating MMH Types

This section includes a general set of best practices and zoning guidance related to Missing Middle Housing building types, to provide useful context for the regulatory updates recommended in Section 6.3. This information may be helpful in the ongoing Title 19 updates to integrate MMH types as allowed building types in relevant zoning districts.

Building Height

The majority of MMH types can fit within 32 feet overall height and accommodate 2.5 stories. To enable MMH, allow a maximum of 2.5 stories and a maximum overall height of 32 feet. In more intense areas, a third story may be allowed, but this should be the exception and carefully regulated. The "0.5" identifies an attic story, allowing an additional story contained within the roof form that is not perceived as a full third story.

Building Footprint

A building's footprint is a significant factor in how building size is perceived. Regulate building footprints to consist of a main body and wings with the maximum size defined by the zone. These standards need to be coordinated with the different lot sizes in each zone. The "main body" of larger MMH types should be no larger than 60 feet in width and depth. To provide additional built area for larger MMH types, building extensions beyond the main body called "wings" as are allowed but at a smaller size. For example, if the main body is two stories, the wings are one story and less wide than the main body. This allows a building to be up to 80 feet maximum overall footprint while reducing the scale as seen from the street and along side yards with neighbors.

Sources

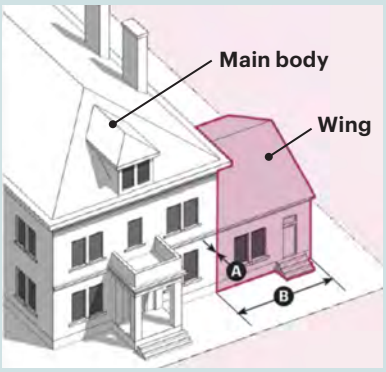
[1]*Missing Middle Housing, Thinking Big and Building Small to Respond to Today's Housing Crisis, Dan Parolek, Island Press*

CLOSER LOOK

Massing Features: "Main Body" and "Wings"

MMH types maintain their house-scale character by regulating the size of the building in the form of a "main body" and additional "wings" where needed. The size, particularly width, of the building's main body is restricted to be compatible with adjacent house-scale buildings. To accommodate additional buildable area without increasing the size of the main body, wings are used.

Wings, always secondary in building footprint and height to the main body, provide for physical transitions in scale while enabling additional floor area for housing. Strategies to emphasize the main body include recessing the wing from the facade of the primary building or limiting the wing to be at least one story less than the primary building.



Lot Area / Lot Width

Lot width is more important than lot area for how buildings fit on their lot and in a neighborhood. Discontinue regulating minimum lot area and instead regulate by minimum lot width. As a guide for considering new or modified regulations, lots that are between 40 and 125 feet wide are the most appropriate for MMH types. See the palette of MMH types for recommended ranges of lot widths.

Building Frontage

MMH types are intended to produce pedestrian-friendly streetscapes. Building fronts are required to have pedestrian entrances and windows. Blank facades or garage doors are not allowed to dominate street-facing facades. Minimum parking setback of at least 20 feet behind the front facade or minimum 40 feet from the front lot line ensures that garages are at the rear of the lot or building, and the MMH type presents an "active" frontage.

Private Open Space

MMH types rely on shared open space for the units, which should be calibrated to each type and no private open space should be required.

Parking and Driveways

MMH units work best in connected areas where driving is not necessary for all daily trips and at least some trips to services, shopping and food nearby could be carried out by walking or biking. This reduces the need for off-street parking in MMH projects, and allows the space on the lot to be used for housing and open space. Best practices require no more than one off-street parking space per unit, to not require guest parking, and to count street parking and shared parking in meeting parking requirements. Driveway width requirements for MMH should be the same as single-family units at approximately 10 feet wide. Driveway widths can also be tied to the number of parking spaces being accessed (not the number of units).

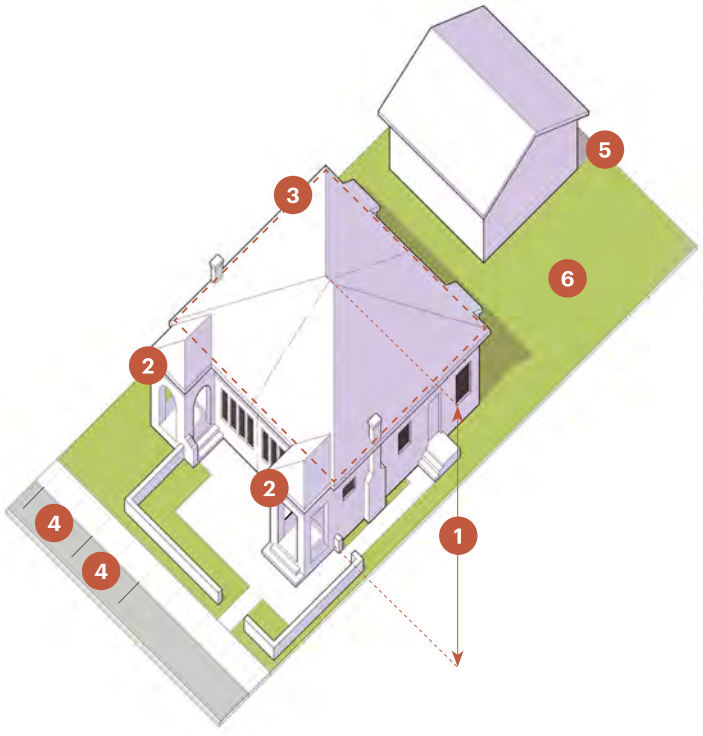


Figure 6.2

Important built form characteristics regulated for MMH types

1. Maximum height
2. Number of units (minimum 2)
3. Footprint/ main body dimensions
4. On-street parking
5. Off-street parking (if any) at rear of lot
6. On-site open space

6.3 Recommendations Related to Zoning

This section provides recommendations on how to address the major regulatory barriers identified.

Recommendations for MMH

The recommendations in this section address the barriers summarized in the previous section, with the focus on the major barriers. Overall, the approach is to remove barriers specifically to enable Missing Middle Housing. Since a comprehensive zoning code update is beyond the scope of the project, the recommendations included here should be vetted by County of Maui planning and code enforcement staff for effective implementation.

The regulatory recommendations are described in the following pages. The format includes a description of why the existing standards pose barriers, what needs to change and what could be the potential impact with regards to MMH. Summary tables are included for each recommendation. The recommendations have been derived from the Test Fits analysis described in Chapter Three of this report, as well as best practices for Missing Middle.

The first report of the two-part Maui Missing Middle Housing Study, the Missing Middle Housing Scan™, includes detailed description of typical regulatory barriers for MMH. That narrative and the information on built form characteristics of MMH types provided in Section 6.2 can provide additional background information on the regulatory barriers discussed here.

Priority Regulatory Updates

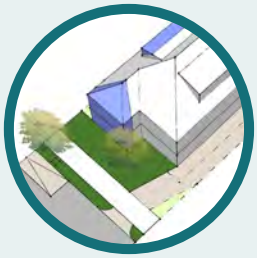
Identifying the top priorities can help the County focus on the updates that will have the greatest impact. The key recommendations for enabling MMH in Maui are summarized below and described in the following pages.

1

Maximum Density + Floor Area Ratio (FAR)

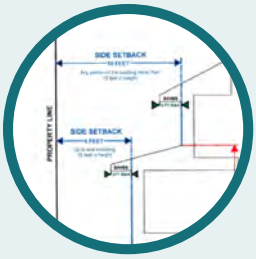
2

Allowed Uses



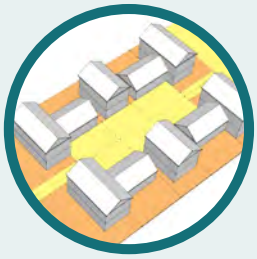
3

Minimum Off-Street Parking



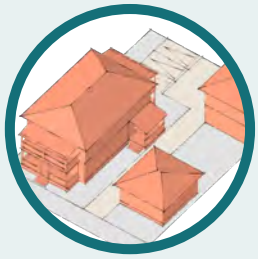
4

Site and Building Setbacks



5

Minimum Lot Sizes and Lot Widths

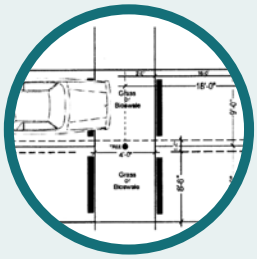


6

Maximum Lot Coverage

7

Maximum Allowed Height



8

Building Codes

9

Special Management Area Requirements

#1. Maximum Density + FAR

Table 6A	
Existing Standards	
R-1	7.26 du/ac *(potential increase to 14.5 du/ac)*
R-2	5.8 du/ac *(potential increase to 17.4 du/ac)*
R-3	4.35 du/ac *(potential increase to 17.4 du/ac)*
A-1	0.5 (FAR)
B-2	2.0 (FAR)
WRA-B/MF	1.5 (FAR)
Recommendations	
R-1, R-2, and R-3	Allow multi-unit MMH units in the R-1, R-2, and R-3 zones with exemptions from maximum density but additional form standards by MMH type. Allow ADUs according to existing City standards.
A-1	Allow multi-unit dwellings in the A-1 zone with special standards, including exemptions from allowable FAR.

Increasing density is necessary to enable MMH in appropriate locations.

Why are the current standards a barrier for MMH?

Missing Middle Housing can gently intensify existing neighborhoods without a discernible change in built character because of their house-scale form and appearance. But while MMH looks like single-family homes, the fact that they have multiple units means that the resultant density for these types is typically much higher than that of a single-family home.

The maximum allowed density in R-1, R-2 and R-3 is too low to allow MMH. This is true even after accounting for the potential increases in density allowed under the proposed ordinance that could permit one dwelling unit per 2,500 square feet of lot area in R-1, R-2 and R-3.

The A-1, B-2, and WRA-B/MF districts regulate not by density but by floor area ratio (FAR). Although the FAR limits of 2.0 in B-2 and 1.5 in WRA-B/MF broadly enable MMH, the FAR limit in A-1 (0.5) is too low to enable many MMH types, and is a barrier to MMH.

What needs to change?

Recommendations to allow MMH in R-1, R-2, and R-3:

- Select a palette of MMH types appropriate for R-1, R-2 and R-3 based on existing lot widths in these zoning districts, and the corresponding minimum lot widths required for house-scale MMH types. Suggested MMH types are shown in Figure 6.3. More information on lot width ranges is provided in Chapter Four of the MMH Scan™ report.
- For the selected palette of MMH types, allow exemptions from the maximum density requirements. Regulate the built form of each of the allowed MMH types for neighborhood compatibility, to ensure that the overall building footprint and height will not be out-of-scale with adjacent single-family residences.
- If density limits must remain, identify the desired MMH types and the number of units to be allowed and use the "resultant" density ranges to calibrate the existing density regulation.

Additional density could be allowed if smaller, attainable units are provided. For example, if the maximum density allows a building with up to four units of 950 square feet each, allow an additional unit if the average unit size for all units is 750 square feet or less.

- Continue allowing ADUs according to existing standards, including potentially allowing increases to the number of allowed ADUs based on lot size.

Recommendations to allow MMH in A-1:

- Select a range of MMH types appropriate for A-1 based on existing lot widths.
- Allow exemptions from the maximum FAR requirements for the selected MMH types.
- If FAR limits must remain, increase FAR limits to include the selected MMH types.
- Continue allowing ADUs according to existing standards, including potentially allowing increases to the number of allowed ADUs based on lot size.

What can be the benefits?

By allowing neighborhood-scale multi-unit dwellings in the zones analyzed, Maui can unlock the potential for infill development to help meet the high demand for attainable housing. Removing density restrictions on specific MMH types will enable builders to respond to residents' preferences.

Moreover, spreading this flexibility broadly across the island means Maui will be equipped to respond to changing housing needs.

Figure 6.3

Potential palette of MMH types for R-1, R-2 and R-3 based on required minimum lot widths for each zone and corresponding MMH minimum lot widths. Additional analysis is needed to develop a MMH palette for existing zoning districts.

#2. Allowed Uses

Table 6B

The residential zones analyzed only allow single-family dwellings and accessory dwellings. This is a barrier to MMH occurring in residential neighborhoods.

Existing Standards

R-1, R-2, R-3	Allows single family dwellings and accessory dwellings; duplex dwellings as a special use.

Recommendations

Establish a palette of building types with special standards for each of the residential zones.

Maui can keep communities strong by providing diverse housing types to meet the needs of residents.

Why are the current standards a barrier for MMH?

Currently, multi-family housing is not allowed in R-1, R-2, and R-3. This is a significant barrier to integrating MMH into residential neighborhoods in Maui. R-1, R-2, and R-3 are widespread in the identified MMH-Ready areas. Many of these neighborhoods have a high degree of connectivity and access to amenities, which makes them ideal locations for MMH.

What needs to change?

- Establish a palette of appropriate MMH types for R-1, R-2, R-3 with special standards to ensure compatibility within these residential environments. Figure 6.3 shows the range of MMH types that can work on existing lot widths in these zoning districts.

What can be the benefits?

Allowing MMH types can add variety to the housing options available in single-family neighborhoods. People's housing needs change throughout their lives. Allowing a variety of housing choices in a neighborhood ensures that people can find housing options that meet their needs in their current neighborhood. This housing variety helps families establish roots within the neighborhood, and makes communities strong and resilient.

#3. Minimum Off-Street Parking

Table 6C	
Existing Standards	
Dwelling unit < 3,000 sf	2 spaces per unit
ADU	1 space per unit
Recommendations	
Allow 1 space per unit for MMH types	
Do not require guest parking	
Allow street parking spaces to be counted in meeting parking requirements	

Lowering parking requirements can unlock housing potential on small infill lots.

Why are the current standards a barrier for MMH?

Off-street parking requirements are barriers in all the zones analyzed. Excessive parking requirements make development difficult on infill lots and add to the overall cost of the project. Reducing parking requirements can lead to more attainable units since parking costs are typically bundled into the home cost and passed on to the consumer.

The required off street parking for the average MMH unit in Maui is two spaces per unit. This is a significant barrier to the construction of MMH because the parking and driveway design take up valuable space on a lot and increase project cost.

What needs to change?

- Allow 1 space per unit for MMH types
- Do not require guest parking
- Allow street parking to be counted for meeting parking requirements.

What can be the benefits?

Allowing a lower parking ratio for MMH types can unlock development potential on infill sites in Maui, and enable MMH to provide more attainable housing.

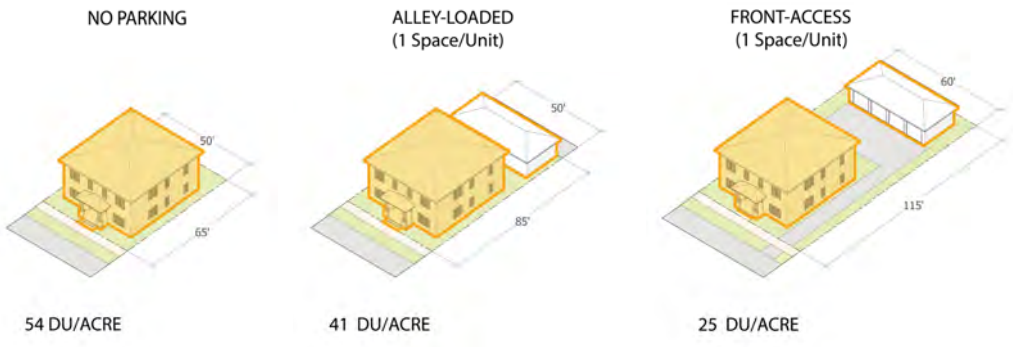


Figure 6.4
How Parking Impacts Housing
Requiring more parking, especially on lots without alley access, limits the amount of space available for dwelling units, and therefore limits the range of housing types that the lot can support and the resultant density.
Source: Opticos Design

#4. Site and Building Setbacks

Table 6D	
Existing Standards	
R-1, R-2, R-3	Front: 15', Side/Rear: 6' where height less than or equal to 15' Front: 15', Side/Rear: 10' where height > 15'
A-1	Front/Rear: 15', Side: 10' for buildings < 35' Front/Rear: 20', Side: 15' for buildings > 35'
B-2	Front: N/A; Side: 0' or same as adjoining zoning, whichever is greater
WRA-B/MF	Front/Side/Rear: 0' for buildings <30' height on select streets Front/Side/Rear: 10' for buildings between 35'-40' Front/Side/Rear: 20' for buildings between 45'-60'
Recommendations	
R-1, R-2, R-3, A-1, WRA-B/MF	Remove variable setbacks tied to building height.
R-1, R-2, and R-3	Front: 10' min. Side/Rear: 5' min. for MMH
A-1	Front/ Side/Rear: 10' min. for MMH
B-2	Allow front setback to vary according to adjacency, Side/rear: 5' for MMH
WRA-B/MF	Front: 10', Side/Rear: 5' for MMH

Modifying setbacks for MMH can increase housing choices in existing Maui neighborhoods.

Why are the current standards a barrier for MMH?

Maui uses setbacks to ensure new construction is compatible with the existing context. In some of the zones analyzed, these setbacks take up a large portion of the lot, making it difficult to accommodate the necessary living space, parking, and open space for additional units without encroaching into the setback.

Many of the zones analyzed also have upper-story setback requirements tied to building height. Most MMH types have a standard floor plan that does not work well if the upper story has a smaller footprint than the lower story. Also, these standards are barriers in infill conditions because they add to construction costs.

What needs to change?

- Remove variable upper-story setbacks tied to building height in all the zones analyzed.
- Allow MMH types to follow site setback requirements as shown in Table 6D.
- Allow lanais to encroach into the setbacks.
- Consider allowing ADUs to encroach into the rear and side setbacks.

What can be the benefits?

Adjusting setback standards for MMH in the zones analyzed and removing upper-story setbacks for MMH would allow these types to be built while still maintaining the character of the existing neighborhoods.

#5. Minimum Lot Sizes and Lot Widths

Table 6E	
Existing Standards: Min. Lot Area	
R-1	6,000 sf
R-2	7,500 sf
R-3	10,000 sf
A-1	10,000 sf
B-2	6,000 sf
WRA-BMF	4,500 sf
Recommendations: Min. Lot Area	
All	Reduce the minimum lot area for MMH types, calibrated to allowed palette of MMH types in each zoning district.
Existing Standards: Min. Lot Width	
R-1	60'
R-2	65'
R-3	70'
A-1	70'
B-2	60'
WRA-BMF	45'
Recommendations: Min. Lot Width	
All	Create minimum lot width and lot area standards for MMH types, and apply those for MMH types in each zoning district.
	Develop site placement and open space standards for MMH, to ensure livability and compatibility.

Allowing multi-unit buildings on smaller lots can encourage more attainable housing options in neighborhoods.

Why are the current standards a barrier for MMH?

High land and construction costs are limiting ownership opportunities for middle-income earners. The existing regulations for minimum lot width and lot area limit the ability to offer more units on smaller lots.

Since the supply of land is limited, a smaller unit on a smaller lot is also more attainable. The standards currently work against providing more attainable units. Adjusting minimum lot sizes could enable smaller MMH types, such as duplexes and cottages, to be built on existing lots.

What needs to change?

- Allow a reduced set of minimum lot area and lot width standards in all zones for MMH types. The lot area and lot width can be calibrated to each MMH type. This would mean that in R-1, on a typical 6,000 square feet minimum lot area, an applicant could build one single-family home or two MMH types with a minimum lot area standard of 3,000 square feet each.
- Require a minimum amount of shared open space per MMH unit to ensure the livability of these units is not compromised. Open space standards can ensure that the shared open space is usable and well-located. Similarly, site standards can guide the placement and orientation of the MMH types.

What can be the benefits?

Small MMH types on smaller lots will promote housing attainability. This change paired with standards ensuring the appropriate amount of open space per unit can ensure attainable housing options in a pleasant environment.

Changes to the minimum lot size standards in these districts can increase the variety of housing options in neighborhoods and increase the overall attainability of those options.

#6. Maximum Lot Coverage

Table 6F	
Existing Standards	
R-1, R-2, R-3	65% (impervious surface requirement)
A-1	25% (lot coverage requirement)
B-2, WRA-B/MF	n/a
Recommendations	
A-1	Allow a higher lot coverage of 60% for MMH on A-1 lots.
	Consider raising the 25% to allow more housing.
	Include minimum open space requirements and reduced parking requirements to support a higher lot coverage ratio. Count on-street parking to support parking needs.

Increasing the size of the allowed building footprint for MMH could allow more units to be built, increasing housing attainability.

Why are the current standards a barrier for MMH?

Lot coverage standards control the size of the building footprint. If the allowed coverage is low, it can limit development potential on a lot. The A-1 district is the only zone to have a lot coverage standard. The residential zones control lot coverage indirectly by enforcing a maximum impervious surface standard.

If the allowed lot coverage is too low, this prevents lots from reaching their full development potential. This is the case in the A-1 zone, where the lot coverage is only 25 percent. This standard promotes a more suburban site plan, and could be increased to allow more housing. The impervious surface standard used in the residential zones was not found to be a barrier in most cases.

What needs to change?

- Adjust A-1 standards to allow a higher lot coverage for development in general, to enable more housing.
- Allow MMH in A-1 to follow a higher lot coverage, coupled with reduced parking requirements. Based on Test Fits for A-1 described in Chapter Three, 60 percent was found to be a reasonable lot coverage ratio in A-1.

What can be the benefits?

Increasing lot coverage for MMH types would allow these types to be built in existing neighborhoods, which would increase attainability and housing choices in these neighborhoods, particularly since the A-1 district is intended for small-scale multi-family development.

Many of the test fits in Chapters Three and Four show MMH types with additional ADUs to push these developments closer to financial feasibility. The ADUs are financially feasible in many markets, and the extra lot coverage would help these ADUs to be integrated into new development projects.

#7. Maximum Allowed Height

Table 6G	
Existing Standards	
R-1, R-2, R-3	30'
A-1	35'
B-2	90'
WRA-B/MF	30', 45', or 60' depending on the street the lot abuts
Recommendations	
R-1, R-2, R-3	Raise the maximum height to 32' to allow MMH types at 2.5 stories. This can be accompanied by a restriction on the maximum number of floors to avoid 3-story buildings in these zoning districts.
B-2, WRA-B/MF	Add built form standards such as massing and articulation standards to avoid out-of-scale buildings.
	Develop a palette of Large MMH buildings, 3.5 to 4 stories in height, to provide more housing options in these zoning districts.

Height is an important factor to regulate building scale. MMH types typically do not exceed 2.5 stories in height.

Why are the current standards a barrier for MMH?

Height is an important factor that determines a building's scale and how it is perceived by the average pedestrian. Typical MMH types do not exceed 2.5 stories, or 35 feet, in height, in keeping with their intended house-scale character. Large MMH types are typically three to four stories, or 45 feet, tall.

Height was found to be a minor barrier in the residential zones analyzed, since 30 feet can inhibit the "0.5" story allowed in many MMH types as additional living space (which would require a minimum height of 32 feet).

- Both B-2 and WRA-B/MF have maximum height standards of 45 feet in certain conditions, which allows MMH but can tend to incentivize development taller than MMH, or in other words larger residential or mixed-use buildings. Where there is the possibility of more intense housing, such as three to four-story buildings within the urban core, the building height may need to be calibrated with additional form controls, particularly to allow Large MMH types.

What needs to change?

- Add built form standards to accompany the height requirements in B-2 and WRA-B/MF to prevent large, out-of-scale buildings.
- Develop a palette of Large MMH types in B-2 and WRA-B/MF to provide MMH types that are appropriate for the desired development intensity.

What can be the benefits?

Allowing Large MMH types in combination with larger residential and mixed-use building types can unlock the development potential of many sites that are located in MMH-Ready areas.

#8. Building Codes

Table 6H
Existing Standards
Single-family, duplex, and common wall townhouses are subject to the IRC.
Any building that is not a single-family, duplex, or common wall townhouse is subject to the IBC.
Recommendations
Broaden the scope of the IRC to include MMH types. Note that this needs to be changed at the State level.

Amending the IRC to cover MMH building types can reduce overall project cost and complexity of construction.

Why are the current standards a barrier for MMH?

The state establishes the building codes that apply to a project type. New buildings must comply with the International Residential Code (IRC) or the International Building Code (IBC). The IRC has less stringent standards that result in lower construction costs. The standards in the IBC are more rigorous and result in higher construction costs.

All MMH types, excluding side-by-side duplexes, must currently comply with the IBC which adds complexity to the construction of these building types, adding to the overall project costs. This can make it difficult for small-scale developers to take on these types of projects because of the greater financial risk. The additional cost also decreases the overall attainability of the units. The construction of MMH types is more akin to single-family homes, not large multi-family projects.

What needs to change?

- Broaden the scope of the IRC to include MMH types.

What can be the benefits?

Amending the IRC to cover MMH building types would make these projects much more feasible in the current market. Lower project costs could allow local small-scale developers to participate in the production of more attainable MMH projects.

Note: Since this is a change that would need to be enacted at the State level, it is recommended that County departments such as Planning, Fire and Public Safety, and Public Works coordinate efforts to discuss the feasibility of this best-practice recommendation.

#9. Special Management Area Requirements

Table 6I	
Existing Standards	
Minor Permits	Issued for development projects costing less than $500,000 and anticipated to have no substantial adverse environmental or ecological effect. Goes through administrative approval that does not require a public hearing process.
Major Permits	Issued for development projects costing more than $500,000 or ones anticipated to have substantial adverse coastal or environmental impacts. Required to go through a public hearing process and approval rests with the Maui Planning Commission.
Recommendations	
Update the SMA boundaries prioritizing MMH-Ready areas Establish an administrative approval process for small-scale MMH projects within the SMA as long as the project is not anticipated to have substantial adverse impacts.	

Updating Special Management Area boundaries and streamlining the permit process could facilitate MMH projects.

Why are the current standards a barrier for MMH?

Development projects within Special Management Areas (SMA) require additional review. The purpose of the SMA review is to regulate any use, activity or operation in proximity to Hawai'i's Coastal Zone that can qualify as a development, as a means to preserve, protect and restore natural resources. For development projects, the additional review can have an impact on the project timeline and cost.

Many MMH projects will exceed the $500,000 threshold for a development project and would need to apply for a Major Permit. This permitting process requires paying a fee based on valuation, starting at $3,515, and going through a more extensive review process, which involves a public hearing and approval from the Planning Commission. The cost and the more robust approval process can be a significant barrier for small-scale developers building on infill lots.

What needs to change?

- Update the SMA boundaries to reflect latest findings related to coastal protection. Prioritize updating the boundaries in MMH-Ready areas, and where infrastructure projects are being planned, in order to align these efforts.
- Set a project size threshold for MMH projects within SMA areas and establish an administrative approval process as long as the project is found to have no substantial adverse impacts.

What can be the benefits?

Updating the SMA boundaries to match the latest data and findings can unlock development sites throughout Maui. An administrative approval process with clear guidelines for project size and allowed development could simplify the permitting process and incentivize MMH projects.

6.4 MMH Implementation Recommendations

For effective implementation, the following zoning and policy guidance uses the ongoing Title 19 update as a prioritization benchmark.

Near-Term Zoning and Policy Priorities (Part of Title 19 Update)

- **Review Interim Legislation.** A number of Bills are in the process of being discussed and brought to Council to encourage housing production. These include Bills 103, 104, 105, 106 and 107, some of which were initiated without fully considering MMH types. For example, Bill 103 increases density but even with the increase, the density limits are not high enough to permit most MMH types. The MMH Study recommends evaluation of these bills as a high-priority item to ensure that they correctly enable and incentivize MMH.
- **Zoning Updates.** Initiate priority updates to the regulations for zoning districts R-1, R-2, R-3, A-1, B-2 and WRA-B/MF to remove the most impactful barriers to MMH development as per the recommendations in Section 6.3 to:
  - Provide a path for MMH types to circumvent existing density/FAR limits.
  - Lower parking standards.
  - Update site and upper story setback requirements to allow MMH.
- **Establish an MMH Overlay or a Floating Zone to Streamline MMH.** Using the MMH-Ready Areas as a guide as well as areas where priority infrastructure is being planned (described in Section 6.6), create MMH Overlay Zones or Floating Zones which allow MMH projects with clear regulatory guidance and a streamlined process relying on administrative review (not a discretionary review process) to reduce the entitlement timeline. The regulatory mechanism for this purpose can be a short-term measure that "sunsets" when the Title 19 update is complete.
- **Establish "Comprehensive Zoning" Protocols.** Integrate the ongoing work on the Community Area Plan for South Maui with the recommended zoning updates so that the two planning systems are aligned, and property owners do not have to apply for a zoning change if included in the Community Plan. This step can have a tremendous impact in reducing entitlement timelines and money for applicants.
- **Allow Innovative Technology and Lot Consolidation for Pilot Projects.** To encourage pilot projects in the near term, allow off-grid homes and MMH projects. Allow two or more adjacent lots to be developed jointly without having to go through a consolidation/re-subdivision process. This can be an interim process, to be replaced by MMH large site standards in the future.
- **Water Consumption.** Change the DWS design standards for water consumption, particularly in R-1.

Long-Term Zoning and Policy Priorities (Post Title 19 Update)

Zoning-Related Recommendations

- **Zoning Updates.** Complete Title 19 updates integrating standards to enable MMH in all zoning districts by:
  - Comprehensively updating the relevant zoning districts to enable MMH (with the guidance provided in Sections 6.2 and 6.3), or
  - Establishing new MMH zoning districts with the appropriate standards in the identified MMH-Ready areas, particularly where short-term infrastructure investments can be realized.
- **Lot Splits and Lot Consolidation.** Develop clear guidance for lot assembly and lot subdivision processes related to MMH to reduce review and entitlement time.
- **Large Site Standards.** Develop large site standards for MMH based on the guidance provided in Chapters Three and Five of this report. Create development standards and a streamlined process for large sites in planned growth areas requiring site plan review. This will establish clear direction for how to develop MMH neighborhoods on larger sites and avoid the complications of applying for such projects as Project Districts, Innovation Housing, etc.).
- **Development Incentives.** Develop a toolbox of incentives with objective guidance to encourage developers to build more MMH projects. Density bonuses are a popular method. Another way to incentivize MMH and also increase long-term attainability is to allow more units (a development bonus) in exchange for a certain number of deed-restricted family-size or affordable units.
- **Streamlined Review.** Lengthy review times add uncertainty and cost to any development project. Providing a clear and streamlined review and entitlement process for MMH projects can significantly help housing production.

Implementation-Related Recommendations

- **Impact Fees.** Revise existing impact fee structures so as to not inadvertently burden small-scale projects such as MMH. Impact fees levied on the basis of overall development square footage and not the number of units, for example, can be a huge barrier for a small-scale MMH developer.
- **Utility Requirements.** Coordinate with the Department of Public Works to identify constraints for small-scale multi-unit projects such as MMH. Often, public works standards are set up for large projects and can unintentionally burden smaller projects with requirements unnecessary for this type of small infill.
- **Reduce Soft Costs for MMH Projects.** Lowering soft costs can incentivize developers to opt for MMH over single-unit development.
  - Identify funding such as a utility tap rebate or waiving sewer hookup fees to offset MMH development costs.
  - Charge impact fees based on square feet of structure, not a flat rate per unit.

Other Recommendations

- **Pre-Approved MMH Building Plans.** A library of pre-approved plans of MMH types for Maui can help streamline the development process. These plans can promote predictable infill and reduce design fees, permitting costs, and time spent on the permit process.
- **Land Banking and Community Land Trusts (CLTs).** Work with local partners to create opportunities for land-banking. Community Land Trusts or CLTs are an effective mechanism to provide unsubsidized housing that is more attainably priced than market-rate. The unit is owned by the resident, but the land is owned by a nonprofit CLT who then leases the land to the homeowner for a fee. A CLT keeps property taxes low for homeowners and allows them to profit from a marginal increase in unit value while maintaining a degree of affordability for the next buyer.
- **Partnerships for MMH**. Continue to foster relationships between public and private entities to support MMH:
  - Local developers to test development barriers.
  - Local housing experts to advise on financing strategies.
  - Non-profits and institutions with developable land in testing new zoning standards, providing land at low to no cost, and developing on publicly-owned land.
  - Major employers such as school boards who can identify the housing needs of their employees and work with the County and non-profits to facilitate MMH projects leveraging the broader access of large institutions to financing options for housing.

6.5 Pilot Projects for Missing Middle

To demonstrate the viability of Missing Middle Housing and to test out the implementation recommendations, pilot projects are recommended for Maui in the identified MMH-Ready areas.

Figure 6.5

The palette of MMH Types ranges from buildings with 2 units to Multiplex Buildings with up to 20 units and represents a resultant density range that exceeds most existing density maximums.

Pilot Projects

The need for housing in Maui is acute, and it is imperative to think of both near-term solutions and longer-term efforts in addressing this issue.

Incremental infill with MMH types on a lot-by-lot basis across Maui can be a way to provide more housing in a steady manner over the coming decades. This medium to long-term strategy would require changes to existing zoning codes and upgrades to infrastructure. However, in the near term, to demonstrate the livability and attainability benefits of MMH and to address Maui's housing crisis, MMH pilot projects are recommended.

Pilot projects could be initiated by the County of Maui or another public entity through a public-private partnership and with a streamlined entitlement process. The following project types could be considered:

- **Lot-Scale Infill with MMH.** Typical medium sized lot (approx. 7,500 sq ft) to demonstrate a primary house-scale MMH building such as a triplex or fourplex along with ADUs as allowed by regulations. The Test Fits in Chapter Three provide several examples of this type of infill.
- **Large-Site Infill with MMH.** To demonstrate how a variety of MMH types can work in tandem to provide housing choices while maintaining neighborhood scale and form, a larger site could be selected (10 to 15 acres) that could be designed using a Project District zoning designation or be developed as a Special Demonstration Project (under the MCC § 16.28 Experimental Housing program). The zoning recommendations for MMH described in this chapter could be tested out in this pilot project. Chapters Three and Four provide guidance on designing MMH on larger sites.

In planning for pilot projects, a key concern is to get the project built in a timely manner. Key considerations for site selection include:

- Location within MMH-Ready Areas, ideally close to existing centers and with good access.
- Vacant parcels are ideal to redevelop for logistical, financial and political reasons.
- Publicly-owned parcels (assuming a land write-down) are ideal to consider for a pilot project, since land cost can be a substantial barrier for any development in Maui.
- Serviced by adequate infrastructure (wet utilities in particular) to enable MMH.

On the next page are maps for Central, West and South Maui and Villages that show land under public ownership (County and State) that are within the identified MMH-Ready areas.

These maps can help in the site selection for pilot projects.

Benefits of Pilot Projects

Initiating MMH pilot projects through a public-private process can offer a range of benefits for the County:

- **Increase Attainable Housing.** With each passing year, the housing crisis in Maui worsens. MMH can help clear some of the backlog with housing targeted for middle-income households.
- **Demonstrate Benefits of MMH.** A pilot project with a variety of MMH can go a long way in dispelling misconceptions community members may have about issues such as living in a small-scale multi-family environment, or how well the units within a typical MMH building may work, etc. In addition, it can be an opportunity to showcase the unique attributes of these types, in particular the value of well-designed interior layouts and shared open spaces.
- **Educate Local Development Community.** Construction in Maui is inherently more expensive because of challenges related to construction labor and materials, cost of land and the need for developers to provide infrastructure for larger projects. A demonstration project can be a great way to test out feasibility of MMH at a local level, as well as help local developers to learn more about MMH.
- **Inform Zoning and Policy Updates.** A pilot project can provide real-world testing to support changes to zoning, policy and entitlement processes. It can provide data on which changes were most impactful, and also help in crafting focused incentives to build more housing in future efforts.
- **Leverage Relationships with Local Partners.** Working with local partners, pilot projects can be a way to apply for grants and local funding, and to test out initiatives such as land banking, mortgage guarantees, lease-restricted housing development, etc.

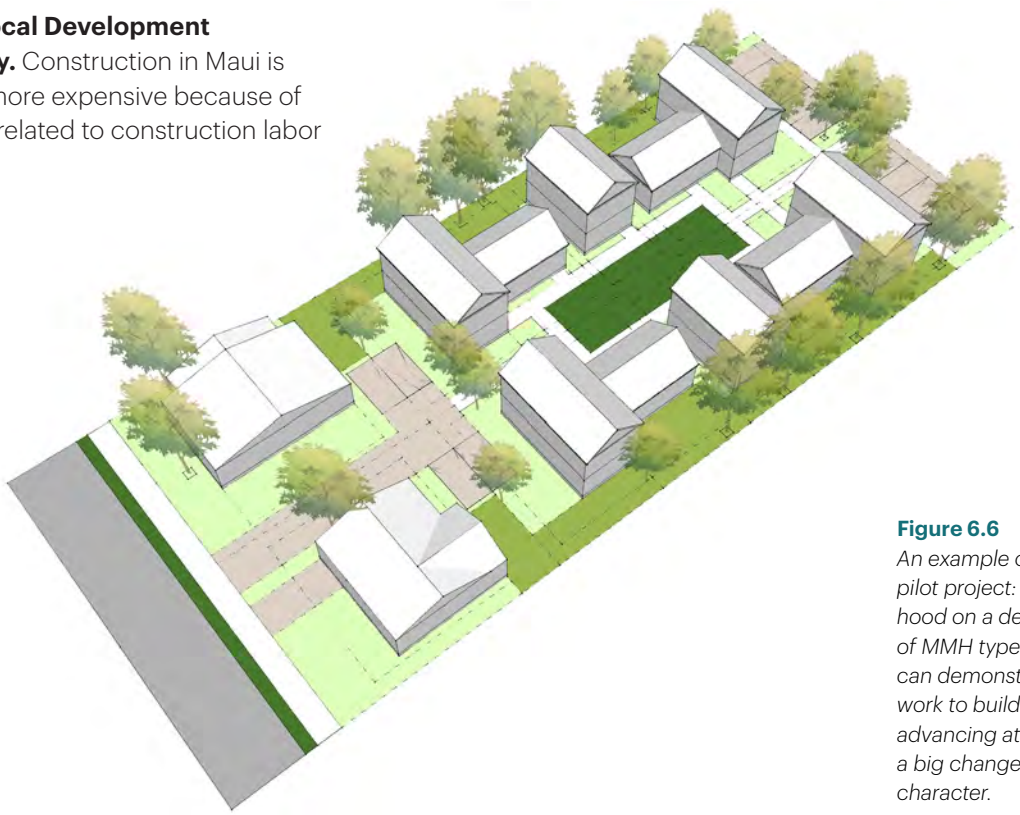
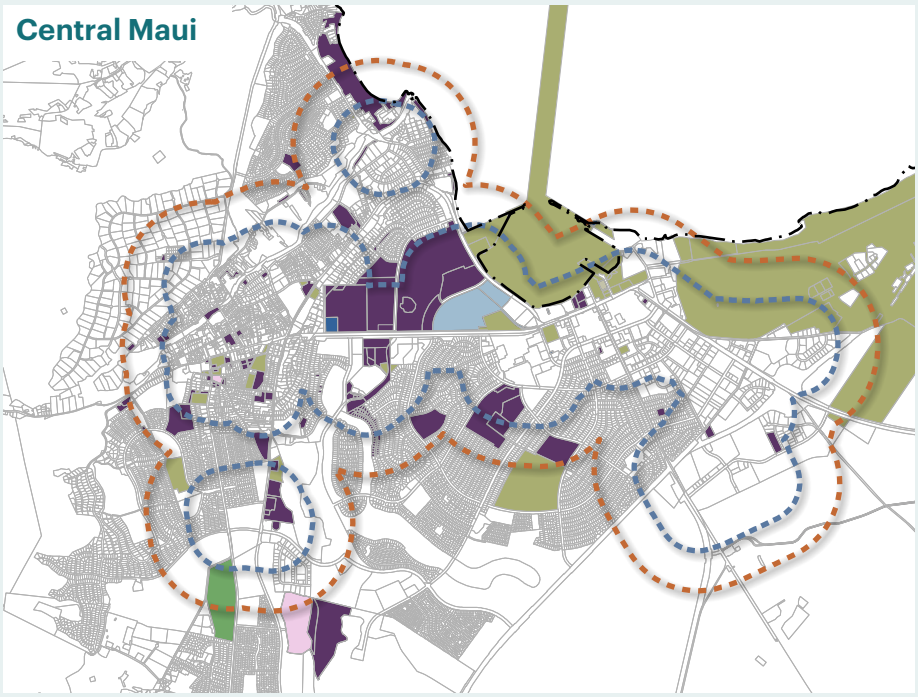
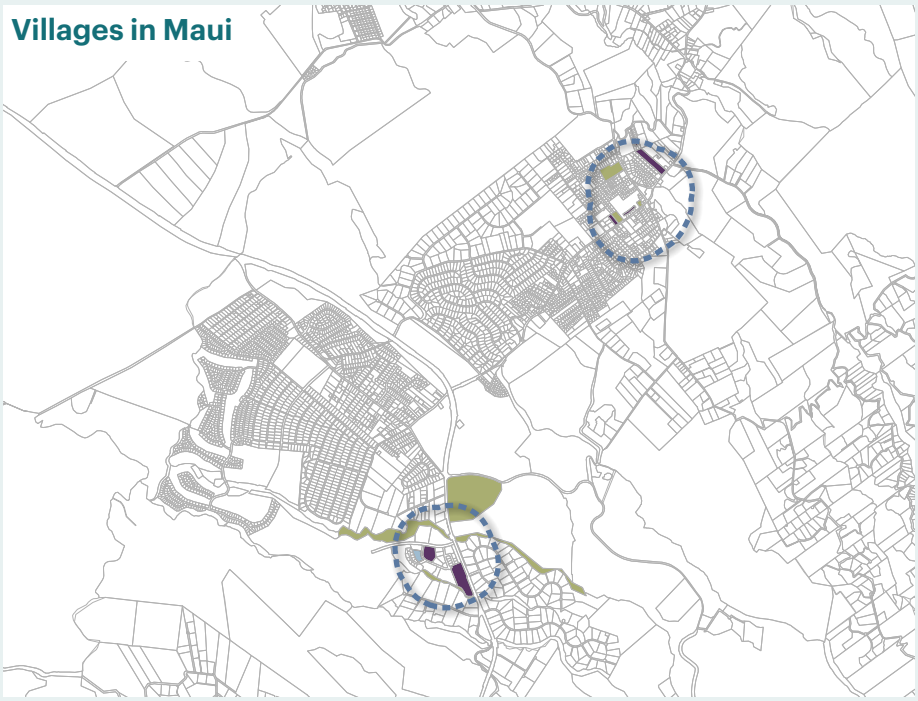


Figure 6.6
An example of a hypothetical MMH pilot project: a pocket neighborhood on a deep lot. Using a variety of MMH types, the pilot project can demonstrate how MMH can work to build community while advancing attainability without a big change to neighborhood character.

Figure 6.7 *Publicly-owned land within MMH-Ready areas could help prioritize site selection for pilot projects in Maui.*

Publicly-Owned Land in MMH-Ready Areas in Central, West, South Maui + Villages





Parcels with Public Ownership within MMH-Ready Areas

- County of Maui
- County of Maui - et al
- State of Hawai'i - Maui County
- State of Hawai'i
- State of Hawai'i - BLNR
- State of Hawai'i - DOT HD
- State of Hawai'i - DHHL
- State of Hawai'i - et al
- United States of America
- University of Hawai'i Maui College

MMH-Ready Areas

- 1/4 Mile Buffer (5-Minute Walk Distance)
- 1/2 Mile Buffer (10-Minute Walk/ 5-Minute Biking Distance)

MMH-Ready Areas

- 1/4 Mile Buffer (5-Minute Walk Distance)
- 1/2 Mile Buffer (10-Minute Walk/ 5-Minute Biking Distance)

Parcels with Public Ownership within MMH-Ready Areas

- County of Maui
- County of Maui - et al
- State of Hawai'i - Maui County
- State of Hawai'i
- State of Hawai'i - BLNR
- State of Hawai'i - DOT HD
- State of Hawai'i - DHHL
- State of Hawai'i - et al
- United States of America
- University of Hawai'i Maui College

West Maui

South Maui

6.6 Priority Infrastructure Projects + MMH-Ready Areas

Infrastructure constraints on Maui are among the most critical challenges that must be addressed to help meet current and future housing needs.

Infrastructure Challenges

Inadequate infrastructure particularly in the case of wet utilities (water and sewer) is a major issue in Maui that has a direct impact on development costs. In many cases, the cost of providing infrastructure is passed on directly to the developer, and in turn is reflected in the rent or sales price of the finished product.

In this section, ongoing priority projects in Central and West Maui are discussed to highlight areas of priority. This information has been provided by the Hawaii Community Foundation as part of their ongoing work on the House Maui initiative in coordination with the County of Maui.

According to House Maui, the cost allocation model for housing projects needs to change in order to facilitate the production of housing. Identifying the cost components for large projects helps reveal why the finished product is unattainable for most Maui residents. These costs include land, engineering, unit construction, on-site infrastructure, community infrastructure (off-site roads, water, sewer, electrical and public facilities), fees and permits and financing.

Priority Projects

According to research by House Maui, aside from land acquisition, one of the largest opportunities for cost reduction can be removing the price for community infrastructure from individual housing projects. Building public roads, creating potable water sources, and increasing wastewater capacity will generate more housing. When the government funds and manages these projects, the costs are not passed along to the individual buyer by developers, improving attainability.

Priority infrastructure projects in Central and West Maui are shown on the maps on the following pages, overlaid with the identified MMH-Ready areas; and listed in Tables 6J and 6K. Infrastructure projects in South Maui are currently under review and will be prioritized in the same manner.

According to House Maui, if these priority infrastructure projects can be completed without passing on the costs to consumers, it is possible to enable the construction of thousands of new units. Not doing so will have dire consequences. For example, an estimated 3,450 viable housing units in Central Maui cannot move forward unless the Kahului Wastewater Treatment Plant Fourth Aeration Basin is approved and the Waihee Aquifer project starts.

Since the MMH-Ready areas indicate places suitable for additional housing, the overlaps between these areas and the priority infrastructure projects can help focus the near-term efforts of the County, HCF and other entities.

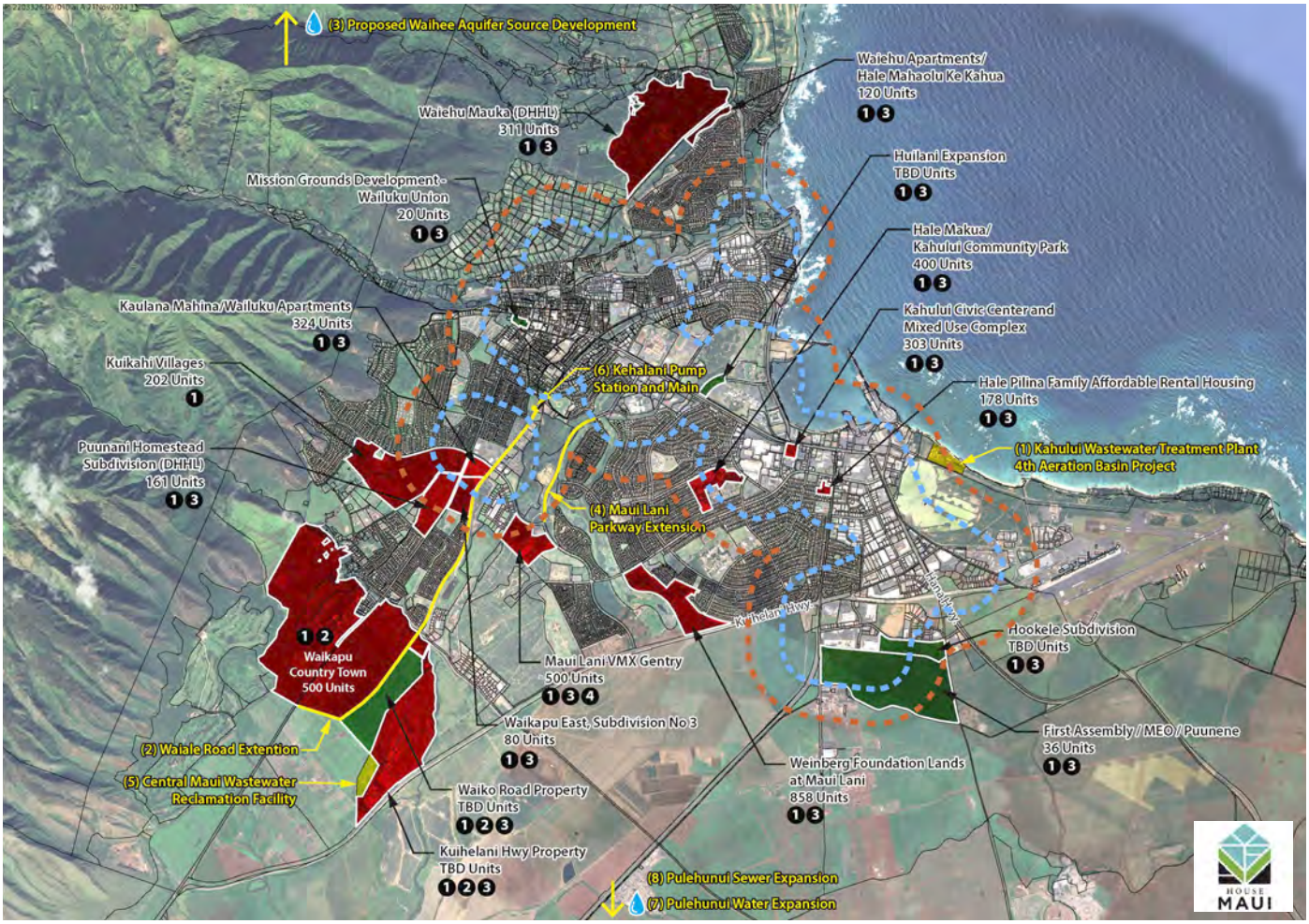


Figure 6.8 *Priority infrastructure projects: Central Maui*

Permanent housing
Maui housing pipeline
Priority infrastructure
Proposed water source

MMH-Ready Areas

1/4 Mile Buffer (5-Minute Walk Distance)
1/2 Mile Buffer (10-Minute Walk/ 5-Minute Biking Distance)

Table 6J: Priority Infrastructure Projects: Central Maui	
1	Wastewater Capacity - Kahului Wastewater Treatment Plant 4th Aeration Basin ($20M)
2	New Roadway/Utilities - Waiale Road/ Infrastructure Extension Project ($72M)
3	Potable Water Source - Proposed Waihee Aquifer Source Development ($10M)
4	New Roadway - Maui Lani Parkway Extension ($75M)
5	Wastewater Capacity - Central Maui Regional Wastewater Treatment Facility ($140M)
6	Wastewater Capacity - Kehalani Pump Station and Transmission Main ($26M)
7	Potable Water Source - Pulehunui Water Source (TBD)
8	Wastewater Capacity - Sewer Expansion Project in Pulehunui (TBD)

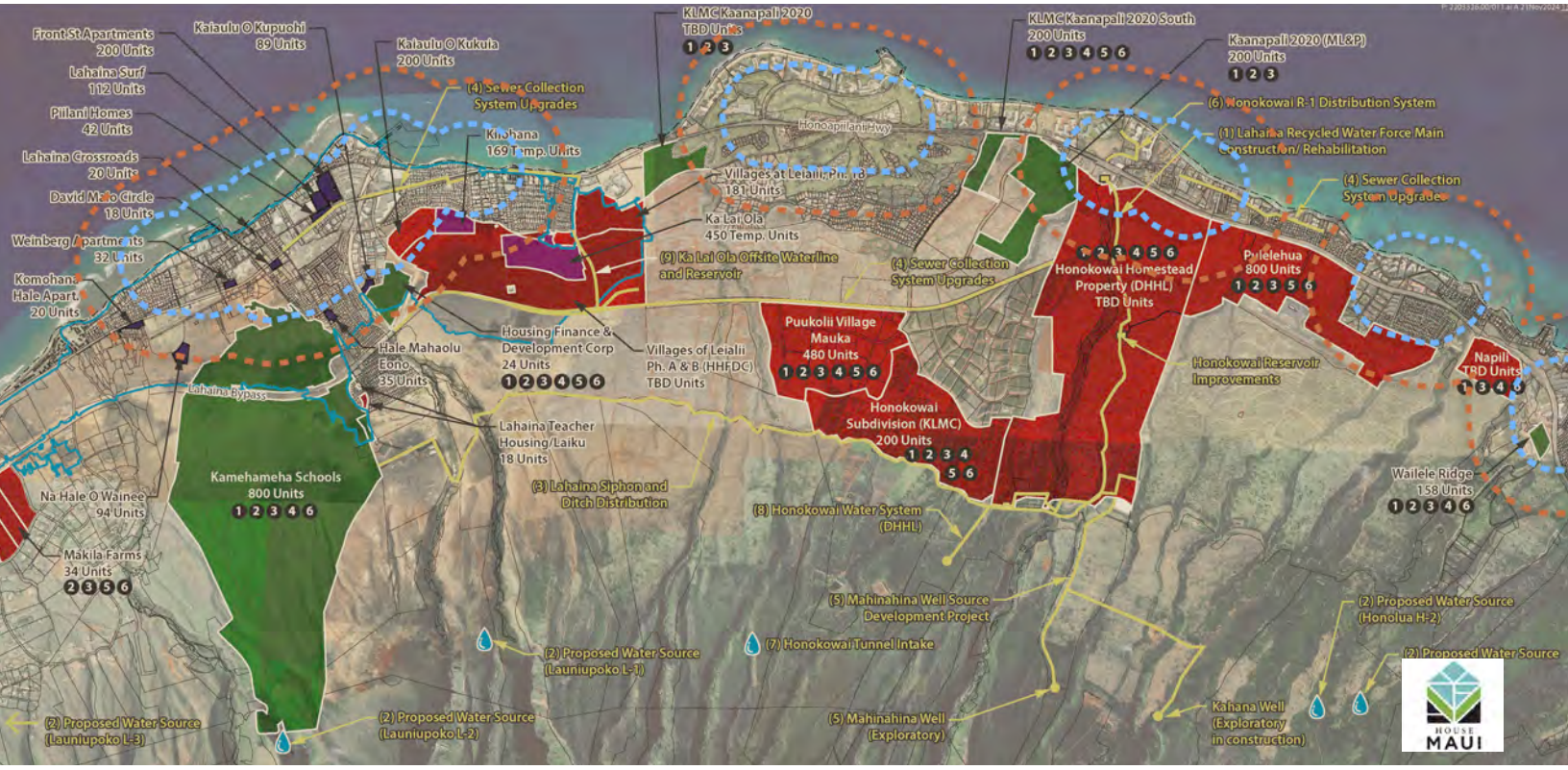


Table 6K: Priority Infrastructure Projects: West Maui

1	Recycled Water - Lahaina Recycled Water Force Main Construction/Rehabilitation ($12M)
2	Potable Water Source - Proposed Water Source Well Development and Transmission (L-1, L-2, L-3, H-1, H-2, 2 MG Tank, and Transmission mains) ($155M)
3	Recycled Water - Lahaina Siphon and Ditch Distribution ($12M)
4	Wastewater Capacity - Sewer Collection System Upgrades for Lahaina ($30M)
5	Potable Water Source - Mahinahina Well Source Development Project ($10M)
6	Recycled Water - Honokowai R-1 Water Distribution System ($4.7M)
7	Potable Water Source - Honokowai Tunnel Intake ($10M)
8	Potable Water Source - Honokowai Water System ($18M)
9	Permanent infrastructure within the Ka La'i Ola and Kilohana Projects (TBD)

Figure 6.9 *Priority infrastructure projects: West Maui*

Permanent housing
Maui housing pipeline
Priority infrastructure
Proposed water source
Affected by fire
Temporary housing

MMH-Ready Areas

1/4 Mile Buffer (5-Minute Walk Distance)

1/2 Mile Buffer (10-Minute Walk/ 5-Minute Biking Distance)

6.7 Next Steps

To carry out the recommendations and use the resources included in this chapter, the following next steps are recommended for the Hawaii Community Foundation, the County of Maui and supporting entities.

1. Select sites for, and initiate at least two MMH pilot projects at different scales of development in Maui using the Project District or Innovative Housing pathways for quick implementation.

2. Establish MMH Overlay Zones or Floating Zones with a streamlined entitlement pathway for MMH projects to get approved, entitled and built while the Title 19 update is ongoing.

3. Partner with local entities and apply for state and national funding to fast-track infrastructure upgrades and key projects in Central, West and South Maui.

4. Establish funds to set up a centralized "MMH resource center" to provide financial and technical assistance for MMH projects.

5. Initiate a toolkit of resources to promote, facilitate and expedite MMH, including MMH pre-approved plans, development incentives, developer training, etc.

DRIP Committee

From: Patricia Céspedes <patricia.cespedes@opticosdesign.com>
Sent: Tuesday, March 18, 2025 1:25 PM
To: DRIP Committee; Jarret P. Pascual
Cc: Stefan; Kate Blystone
Subject: Re: Additional Communications Relating to Missing Middle Housing DRIP-9(1)

Hi Jarret,

I hope this email finds you well. Please find in the following link the information we prepared for the Maui Scan & Deep Dive Analysis.

Direct download:
https://opticosdesign.egnyte.com/fl/ARn6llS2jn
Password: LR4FJu3Y5xQ6

The folder has the following content:

- Executive Summary in a format 11x17
- Scan Final Report
- Deep Dive Report

Let us know if you have any questions or issues downloading the information.
Best,

Patricia Céspedes (she/her), Senior Designer

Opticos Design, Inc. | 2100 Milvia Street, Suite 125 | Berkeley, CA 94704 | 510.717.0898 | opticosdesign.com
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From: "Jarret P. Pascual" <Jarret.Pascual@mauicounty.us>
Date: March 18, 2025 at 1:50:12 PM PDT
To: Kate.Blystone@co.maui.hi.us, "Gregory J. Pfost" <Gregory.J.Pfost@co.maui.hi.us>, Stefan <stefan.pellegrini@opticosdesign.com>
Cc: joy.paredes@co.maui.hi.us, Ana Lillis <Ana.Lillis@co.maui.hi.us>, "Carla M. Nakata" <Carla.Nakata2@mauicounty.us>, "Keone J. Hurdle" <Keone.Hurdle@mauicounty.us>, Yvette Bouthillier <Yvette.Bouthillier@mauicounty.us>
Subject: Additional Communications Relating to Missing Middle Housing DRIP-9(1)

Aloha Director Blystone, Greg, and Stefan,

I can confirm that DRIP Committee Staff has received the presentation on Missing Middle Housing for tomorrow's 1:30 DRIP meeting, thank you! In addition, were there additional communications that could also be provided to the DRIP Committee for the committee members' reference?

I'm noting an executive summary, final report, and final memorandum prepared by Opticos Design that was prepared for Hawaii Community Foundation and Maui County. Councilmember Paltin would like these to be transmitted to the Committee.

Would you be able to provide a copy of each communication to DRIP.Committee@mauicounty.us? Thank you!

Mahalo,

Jarret Pascual

--

Jarret P. Pascual
Legislative Analyst
County of Maui | Office of Council Se
Email: Jarret.Pascual@mauicounty.us
Office: (808) 270-7141 | Cell: (808) 79