CITY OF MILWAUKIE

MILWAUKIE COTTAGE CLUSTER ANALYSIS

FINAL REPORT

JUNE 2019

CASCADIA PARTNERS

OPTICOS

Orange Splot

ACG

ACKNOWLEDGEMENTS

CITY OF MILWAUKIE

Staff

Alma Flores
Valeria Vidal
Dennis Egner
David Levitan
Templest Blanchard
Leila Aman
Vera Kolias
Jaime Crawford

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Councilor Wilda Parks

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Celestina DiMauro
Kiley Ford
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Stephan Lashbrook
Martha McLennan
Mary-Rain O'Meara
Matthew Rinker

Property Owners

Tony DaRosa
Michelle DaRosa
Jennifer Dillan
Mark Fretz
Donna Lomnicki

CONSULTING TEAM

Cascadia Partners

Alex Joyce
Garlynn Woodsong
Alex Steinberger
Neil Heller
Victor Tran
Irene Kim

Opticos Design

Dan Parolek
Alex Vondeling
Drew Finke
John Miki

Orange Splot

Eli Spevak

ACG

Ayreann Colombo

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EXECUTIVE SUMMARY

CLUSTER HOUSING: THE NEXT GENERATION

The focus of this document is Milwaukie's update of its cottage cluster ordinance, resulting in an innovative cluster housing code that uses pro-forma-based planning and empowers developers to build market-rate workforce and affordable housing more quickly and efficiently by design.

With people increasingly priced out of opportunities to live closer to the center of the Portland region, surrounding cities continue to feel rising housing pressures. This is particularly evident in Milwaukie, as the next city south of SE Portland, especially now that the new MAX Orange line has opened and brought with it increased accessibility to the rest of the region.

Milwaukie's original Cottage Cluster Code generated zero development applications or actual cottage clusters. This Cottage Cluster Housing Study and the resulting Cluster Housing Code showcases innovative solutions for cities in the 21st century to allow context-sensitive infill development affordable to households with a diverse mix of incomes. The study heard from developers who are struggling to provide

The proposed Cluster Housing Code showcases innovative solutions for cities in the 21st century to allow context-sensitive infill development affordable to diverse mix of incomes.

market-rate housing within the confines of existing zoning codes, and learned lessons from these narratives to inform this set of proposed solutions to deploy in Milwaukie.

Cluster housing product types, including cottage clusters, townhome clusters, apartment clusters, and others, can be found in communities great and small. These updated cluster housing standards are meant to be compatible with many different community types, as they are scalable from lower intensities in neighborhoods, to higher intensities around high-quality transit and in commercial and mixed-use areas.

THE PROPOSED CLUSTER HOUSING CODE RESULTING FROM THIS STUDY CONSISTS OF THE FOLLOWING KEY ELEMENTS:

- **Form is regulated rather than density**, using elements such as heights, setbacks, and lot coverage
- **The intensity of form scales based on context**, from lower-intensity residential base zones, to higher-intensities within walking distance of high-quality transit and in higher-intensity base zones
- **Cluster housing locations within walking distance of high-quality transit** are defined as "transit-connected locations"
- **No restrictions on site or lot size**
- **Restrictions on the individual footprint and overall floor areas** of homes in a cluster housing development, as well as a restriction on the maximum average floor area, intended to act as a measure to ensure affordable outcomes while allowing for a diverse range of home sizes
- **Design guidelines specifying orientation and design elements** facing common green and public streets that encourage a sense of community and place
- **Allowance for a common building or other indoor community space** to help further create a sense of community
- **Requirement for minimum amounts of vegetation** on the site and between the street and the front homes, and a maximum amount of allowed impervious area, to encourage trees and plantings to provide shade, air quality benefits, and rainwater infiltration capabilities
- **Reduced off-street parking requirements** that require less parking in areas well-served by transit and nearby amenities
- **Bicycle parking requirements** sufficient to provide for the use of the bicycle as a reasonable everyday transportation solution
- **Flexible design requirements for bicycle and pedestrian pathway connections** through the site, including conditional allowance of woonerfs to provide for a shared common space and auto drive aisle to access parking located near the center of long, skinny sites

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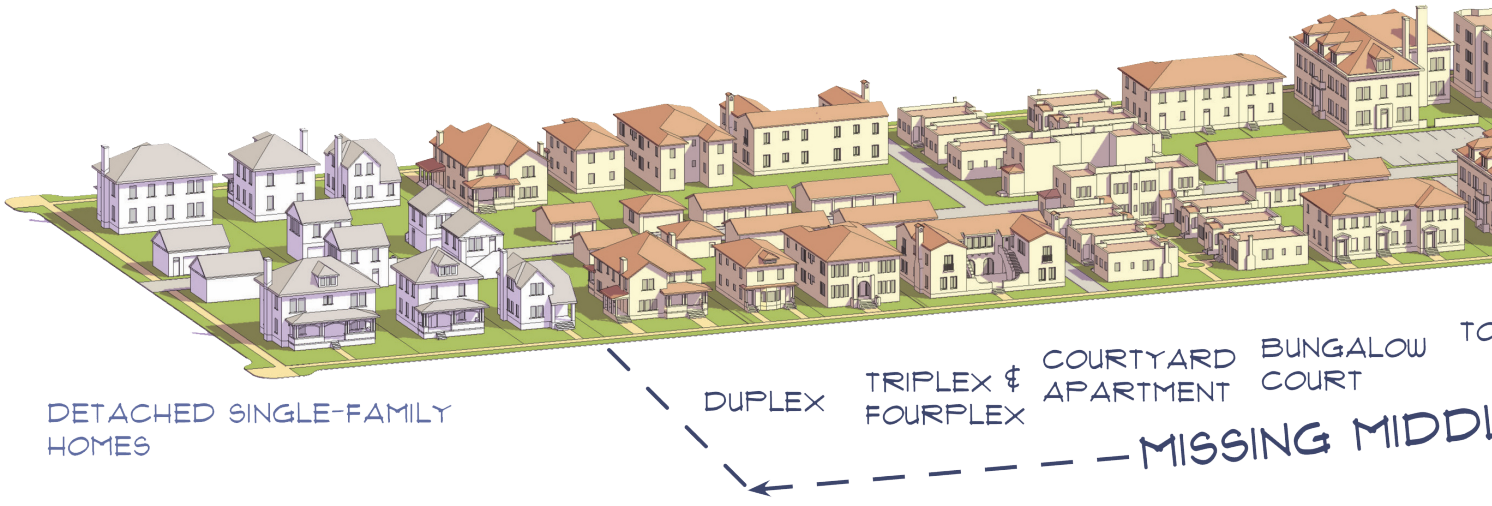
INTRODUCTION

The cottage cluster feasibility study is one part of the City of Milwaukie's multi-pronged approach to diversifying its housing stock to increase the supply of workforce and affordable housing.

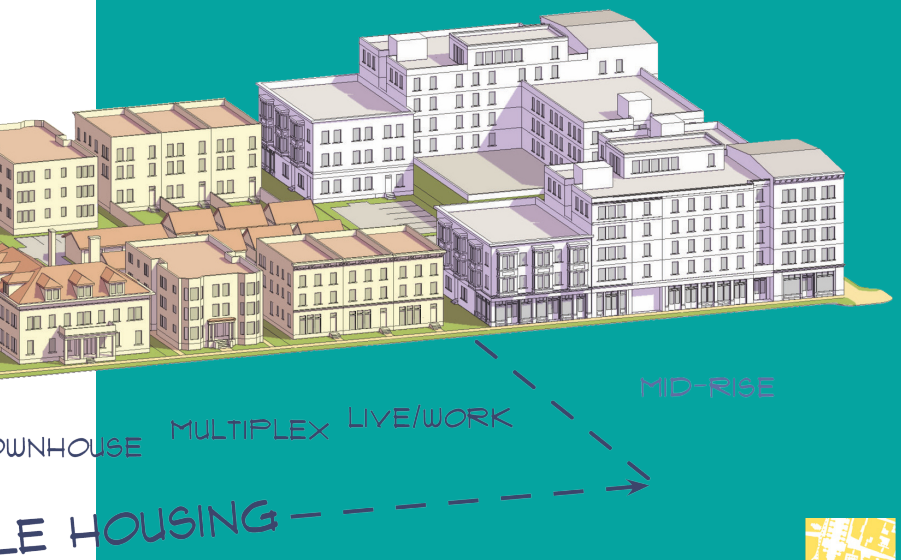
Cottage cluster and shared court housing product types represent an opportunity to capitalize on market strengths to expand housing options, with smaller, more affordable units that fit the scale and density of a residential neighborhood.

Cottage cluster and shared court housing product types are referred to in this report collectively as cluster housing. Cluster housing is itself one flavor of missing middle housing.



WHAT IS MISSING MIDDLE HOUSING?

Missing Middle is the term for all housing product types that are not single family homes on their own lot or large apartment buildings, including townhomes, duplexes, triplexes, fourplexes, small house-scale multiplexes, and live-work units.



BACKGROUND

There are very few missing middle housing options available in Milwaukie today. During the 1950s, the US Department of Housing and Urban Development (HUD) distributed zoning codes that mostly banned its construction. Some American cities, like Portland, have large amounts of old missing middle housing stock that were constructed before the adoption of those template-based codes. Cities like Milwaukie that experienced most of their growth during or after the 1950s do not have many examples of missing middle housing. Milwaukie's city leadership identified this lack of missing middle types as an obstacle to achieving greater housing diversity and affordability, and commissioned this study to identify solutions.

The study is divided into three phases:

1. **Learn**
2. **Design**
3. **Implement**

During all phases, the project was guided by community feedback from a Stakeholder Advisory Group (SAG), including representatives of neighborhoods, property owners, community nonprofits, and other stakeholders.

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PHASE 1: LEARN

- Identify issues and barriers to cottage clusters development in Milwaukie, and examine potential solutions
- Audit the zoning code
- Identify candidate properties for conceptual planning and design
- Understand community desires and expectations regarding outcomes for the study
- Establish performance measures based on community feedback

GENERAL STUDY QUESTIONS

- Where are cottage clusters appropriate in Milwaukie?
- What specific obstacles does the current zoning code represent to the feasibility of development of cottage clusters?
- What is the demand for smaller units in Milwaukie?
- What is the specific demand for detached rentals?
- What income categories should be chosen to assess the potential affordability of housing options studied, in relation to Area Median Income (AMI)?
- How does an HOA fee fit in, if applicable?

PHASE 2: DESIGN

- Perform a market assessment for cottage cluster types in the Milwaukie context
- Establish conceptual designs for the candidate sites
- Engage the SAG to examine the current zoning in relation to the proposed new zoning code, including the architecture and design for prototype development on project study sites
- Perform pro forma analyses on designs
- Analyze the affordable housing potential of these and related designs
- Use the analysis to inform the final concepts for development of each site, and inform an updated zoning code section to regulate cluster housing types

PHASE 3: IMPLEMENT

- Host an open house to collect feedback on revised drafts of project proposals from the community
- Gather feedback from the Planning Commission and City Council
- Draft new cluster housing code for adoption by the City alongside the Comprehensive Plan at a later date

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ENGAGEMENT

The following groups were engaged during the analysis:

- Stakeholder Advisory Group (SAG)
- Property owners of project study sites
- Planning and Zoning Commission
- City Council

Additionally, project materials were posted online on a project web page, and project summaries were sent out in the City's printed newsletter.

STAKEHOLDER ADVISORY GROUP

Four meetings were held with the SAG throughout the project, and SAG members were encouraged to use project materials to present information to their networks.

The SAG included:

- Representatives with experience in constructing accessory dwelling units in SE Portland and Milwaukie
- Landowners of property in Milwaukie that could become cluster housing sites
- Neighborhoods containing project study sites
- Partner agencies, such as the Clackamas County Housing Authority
- Organizations that could construct cluster housing projects if/when they become feasible to build in Milwaukie.

PERFORMANCE MEASURES

Performance measures were developed with the SAG to assess the success of the project and its achievement of project goals. At the initial two SAG meetings, a list of project performance measures was developed, reviewed, and approved, including:

- Establish partnerships between owners & builders
- Seek solutions for a range of income levels, including workforce housing
- Test renter and owner solutions
- Create models and lessons that can be reproduced locally and regionally
- Craft financially feasible zone standards
- Right-size SDCs
- Develop context sensitive parking standards
- Cultivate broad-based interest in community
- Design easily accessible materials

PUBLIC OPEN HOUSE

The City hosted a "Missing Middle Housing Options" Open House for the project on April 3rd, 2019 to gather feedback from the community on the site designs and code recommendations for cottage clusters in the city. Cascadia Partners provided two presentations throughout the event to be able to provide information about the cottage cluster feasibility study as well as context for the proposed site designs. Poster boards asked if participants would support (green dot stickers) or not support (red dot stickers) each proposed code amendment and added sticky notes for additional comments. General comment cards were also available. All responses were summarized and provided to the Planning Commission and City Council.

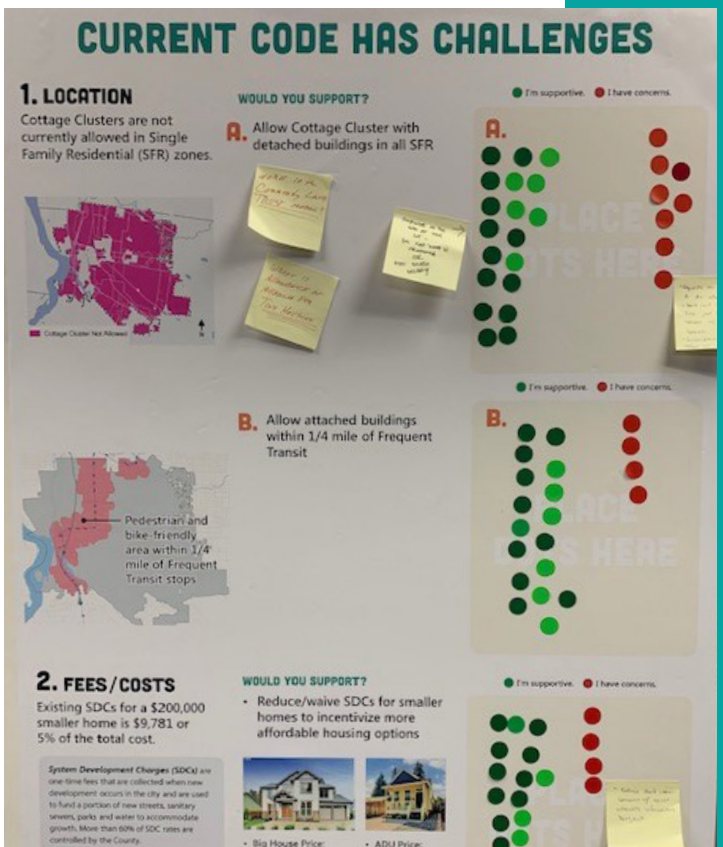
WHAT WE HEARD AT THE OPEN HOUSE

Most participants were supportive of the revised code recommendations. Participants were most concerned about providing less than one parking space per unit in order to build more cluster housing on a site. However, others felt code changes should consider a future with autonomous vehicles and a less car-oriented society.

"

Make sure that tree canopy and greenspace is maintained as much as possible.

- Open house participant



"

Cottage clusters is a move in the right direction. I'd like to see modified building codes to allow for tiny housing.

- Open house participant

PLANNING COMMISSION AND CITY COUNCIL

These proposed cluster housing standards were presented to a joint session of Milwaukie's Planning Commission and City Council on April 16, 2019, and to City Council on May 21, 2019. Feedback from both meetings included:

- Define the concept of Maximum Average Floor Area more clearly, so that it can be more easily understood by decision makers
- Perform tests to determine how low the maximum average floor area standard can be set without negatively impacting development potential, with the goal of incentivizing as much workforce housing production as possible
- Clarify that existing homes allowed to remain within a housing cluster when the cluster is developed around them may be excluded from the maximum average floor area calculation
- Help City Council better understand the impacts of a tiny housing cluster on small sites, such as 5,000 to 7,000 sf lots, by showing how clusters of 3 to 5 homes can meet porch orientation, setback, lot coverage, vegetation, and other standards
- Look into recommending a change in how parking in driveways is regulated, to allow parking within the first 20 ft of the property line to count towards required minimum parking requirements
- Look into reducing the amount of parking required if some of that parking is set aside for shared vehicles
- Look into establishing a map of streets that can be designated as having characteristics, such as ROW width and street classification, potentially acceptable to accommodate head-in or angled on-street parking
- Look into which SDCs and fees to reduce or waive, and if a reduction, the amount of the reduction.

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ZONING CODE ANALYSIS

THE APPROACH

The existing Cottage Cluster Housing code, Section 19.505.4 of the Milwaukie Municipal Code (to which all code references in this document refer) was thoroughly reviewed, in combination with the applicable elements of the code:

- Section 19.201: Definitions
- Chapter 19.300: Base zones
- Chapter 19.700: Transportation & street frontage standards
- Chapter 12.16: Access Management

The zones where the existing Cottage Cluster Housing code could be most easily applied (i.e. without a Conditional Use permit) were identified as:

- R3: Medium Density Residential
- R2.5: Medium Density Residential
- R2: Medium Density Residential
- R1: High Density Residential
- R1-B: High Density Residential-Business Office
- GMU: General Mixed Use

For each of these zoning classifications, three to four sizes of sites were analyzed for a hypothetical build-out of the highest and best use allowable under the Cottage Cluster code:

- Tiny: 6-7,000 sq ft site (only for R1, R1-B, and GMU)
- Small: ~12,000 sq ft site
- Medium: ~25-26,000 sq ft site
- Large: ~73,000 sq ft site

A matrix was developed to list all possible combinations of zoning code and site size (see Table 1). Existing properties already identified as a part of the outreach efforts that fell into one of these categories were used as the basis for the analysis. In all other instances, a hypothetical site was analyzed to determine the feasibility of developing a cottage cluster of that size under each particular zoning classification.

For sites with an existing property identified, the purchase price in the pro forma was set to the last known transaction amount for the site. For all other sites, a representative value per square foot was used.

The analysis showed that no combination of zoning and site size results in a scenario where a for-profit cottage cluster development would be feasible under the existing zoning code.

18%

is the general rate of return that investors are seeking in the market.

None of the scenarios studied produced higher than an 11% return. This return is only found on 26,000 sf sites in a General Mixed Use (GMU) zone. In addition, the maximum number of units in a cottage cluster (12) for a 26,000 sf site would not meet the minimum density threshold for a GMU zone (25 dwelling units per acre), and therefore would be illegal under the current zoning code. In other words, there is no incentive for a private developer or landowner to build cottage cluster developments under the existing code.

TABLE 1. RATE OF RETURN UNDER EXISTING COTTAGE CLUSTER CODE

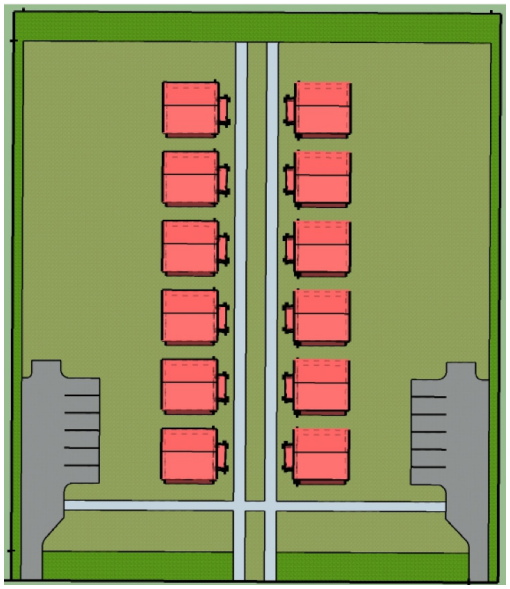
Site Size	Tiny	Small	Medium	Large
Zoning	6-7,000 sq ft	~12,000 sq ft	~25-26,000 sq ft	~73,000 sq ft
R3	n/a	2.81%	1.06%	-5.27%
R2.5	n/a	2.22%	6.59%	0.11%
R2	n/a	-0.51%	6.66%	2.05%
R1	-15.91%	9.63%	9.63%	0.04%
R1-B	-9.23%	9.59%	9.63%	0.04%
GMU	-31.26%	1.34%	**10.96%**	-0.04%

ZONING CODE ANALYSIS: LESSONS LEARNED

LESSON 1

Large sites are limited by the current cottage cluster code's maximum number of units, which is 12.

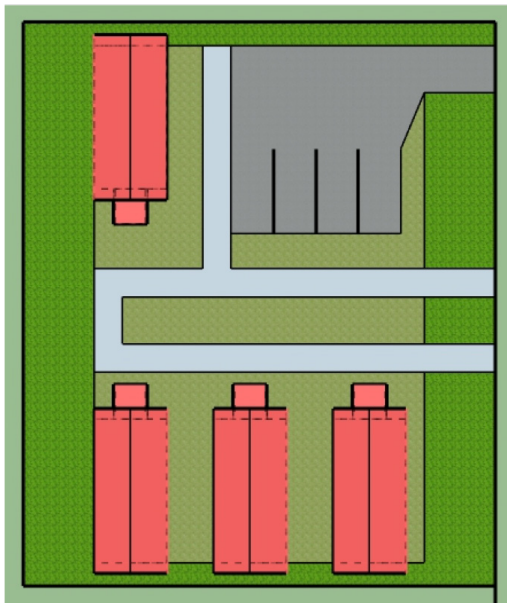
At the other end of the size spectrum, smaller sites come with a lower acquisition cost, meaning that a lower total number of units must be built before the site cost is paid back. However, the number of units required to achieve a feasible development is not legal on these sites.



LESSON 2

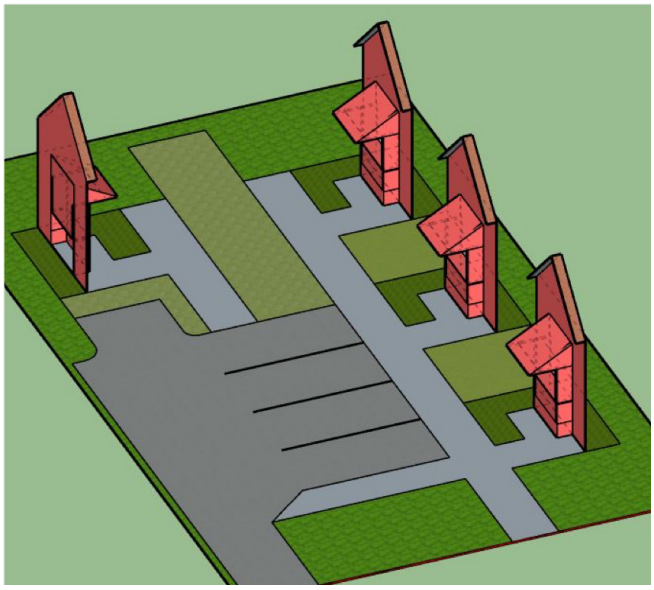
Small sites are limited by density limits.

Building a sufficient number of units on a smaller site would result in a number of units per acre that exceeds the allowable densities for those zones. Indeed, on a certain number of smaller sites, there simply is not enough room on the site to accommodate all of the setbacks required by the combination of the base zoning and the cottage cluster codes.



LESSON 3

Setback requirements make the development of sites below a certain size impossible, as the entire buildable area of the site is used up by setbacks, leaving insufficient area for the construction of the minimum number of cottages (4).



On a 6,000 sf site, no building area remains to place cottages once all of the setback requirements are met. Only the front porches could be constructed, as porches are allowed to intrude into the front setback of each cottage.

- Front site setback: 15 ft
- Side site setbacks: 5 ft each side
- Rear site setback: 15 ft
- Space between cottages: 10 ft
- Minimum front yard depth: 10.5 ft
- Minimum rear yard depth: 7.5 ft
- Cottage other setback: 5 ft
- Minimum private open space per cottage: 100 sq ft
- Minimum dimensions of all sides of private open space: 10 ft
- Minimum common open space area per cottage: 100 sq ft
- Minimum dimension of one side of common open space: 20 ft

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FINANCIAL FEASIBILITY

This section will provide an overview of key findings from the market analysis, sensitivity analysis of the new proposed code, and its implications on housing affordability.

The goals of the financial feasibility studies:

- **Audit the existing zoning code to determine what impacts it has on the development feasibility of cottage cluster developments** on a range of sites in zones where cottage clusters are currently allowed and the residential zones where cottage clusters are not currently allowed.
- **Model the effects of different potential policy changes** on the feasibility of cluster housing development, and what the resulting price points of homes might be.
- **Determine which design concepts would be economically feasible for market-rate developers to construct.** A market study was performed to understand the variables in financial feasibility, including construction costs, sales prices, rents, and projected changes in these variables over the five year near-term planning horizon for the project.

MARKET ANALYSIS

The market analysis is based on demographic trends, home sales data, and developer interviews. Findings of the market analysis for the next five years include:

- Ownership products will continue to dominate the Milwaukie housing market, though a loss of renters over recent years could indicate growing pent-up demand for rental products
- Milwaukie will continue to add households including first time home buyers, retirees, and families with children
- The existing housing stock is exceptionally uniform in terms of lot size, home size, and number of bedrooms; so new development that diversifies the housing stock will likely do well in the market
- It appears that Metro's 2015 Population and Household Forecast is very conservative; estimates based on this forecast indicate a demand for about 55 to 60 new homes per year between 2018 and 2023
- It is very likely that with new housing added in Milwaukie, the city could experience significantly higher rates of growth in

population and households than it has seen over the last two decades of very low population and household growth.

See Appendix B for the full market analysis report.

NEW CODE AUDIT PRO FORMA ANALYSIS

Part of Cascadia Partners' development process for new codes involves sensitivity testing to understand how the proposed code performs in terms of reducing housing costs for new units produced under such a code.

SAG members expressed a shared goal of providing more workforce housing. This is generally measured using the concept of Area Median Income (AMI), which is calculated by the U.S. Department of Housing and Urban Development (HUD) annually for different communities. By definition, 50% of households within the specified geographic area earn less than AMI, and 50% earn more.

Workforce Housing vs. Affordable Housing

AMI is adjusted based on household size. The concept of workforce housing is sometimes defined as housing that is affordable to households making 80% to 120% AMI. Affordable housing is defined as housing affordable to households making less than 80% AMI.

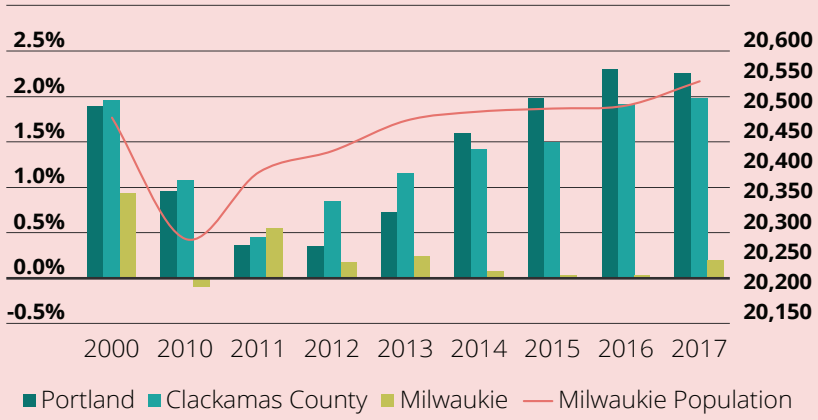
By that definition, housing in Milwaukie is affordable to households making $41,850 (for a 1-person household at 80% AMI) to $85,890 (for a 4-person household making 115% AMI*).

** While 115% AMI is the cut-off for the multi-family tax exemption, 120% AMI is sometimes used as the upper limit for the definition of workforce housing. HUD only publishes figures up to 115%, however.*

TABLE 2. INCOME LEVELS AND MAXIMUM RENTS (HUD), 2017

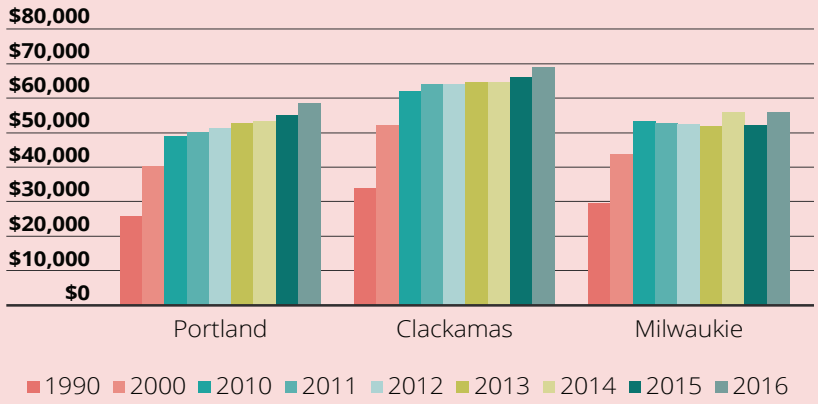
	1-PERSON HOUSEHOLD		2-PERSON HOUSEHOLD		4-PERSON HOUSEHOLD	
INCOME LEVEL	ANNUAL INCOME	MAX AFFORDABLE RENT	ANNUAL INCOME	MAX AFFORDABLE RENT	ANNUAL INCOME	MAX AFFORDABLE RENT
115% AMI (Current level for multi-family tax exemption)	$60,160	$1,504	$68,710	$1,718	$85,890	$2,147
100% AMI	$52,310	$1,308	$59,750	$1,494	$74,690	$1,867
80% AMI (Low-income)	$41,850	$1,046	$47,800	$1,195	$59,750	$1,494
50% AMI (Very Low-income)	$26,150	$654	$29,900	$748	$37,350	$934
30% AMI (Extemely Low-income)	$15,700	$393	$17,950	$449	$24,600	$615

FIGURE 1. POPULATION GROWTH RATE, 2000-2017



Milwaukie has grown by about 0.4% annually since 1990. Given low rates of housing production in Milwaukie, it is likely that its relatively slower growth is due largely to the lack of housing available in the city.

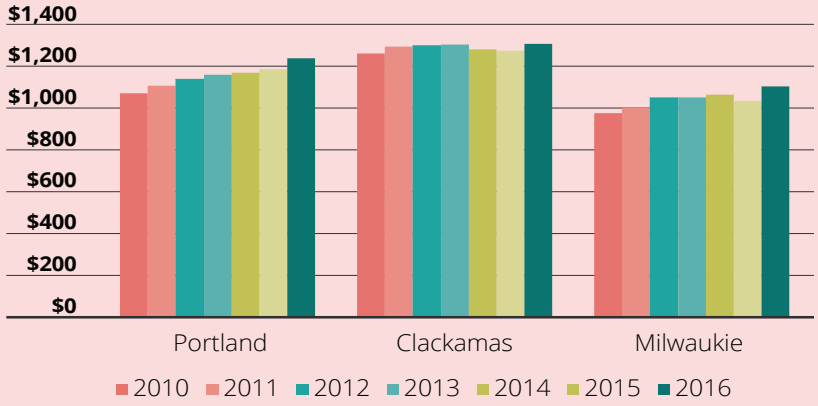
FIGURE 2. MEDIAN HOUSEHOLD INCOME, 1990-2007



Median household income in Milwaukie has remained relatively flat since 2010 increasing at 0.8% annually with some years experiencing a decline, which may indicate that higher income households are leaving the city.

On the other hand, Portland and Clackamas County have consistently seen small but positive gains in median household income since 2010.

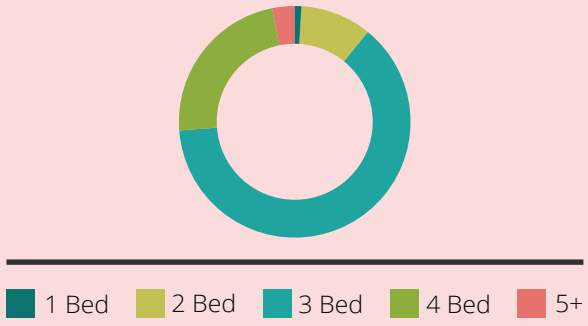
FIGURE 3. MEDIAN MONTHLY HOUSING COSTS, 2010-2016



Median monthly housing costs have increased since 2010 by over 2% annually in both Portland and Milwaukie while Clackamas County's costs have remained relatively stable increasing by only 0.6% annually.

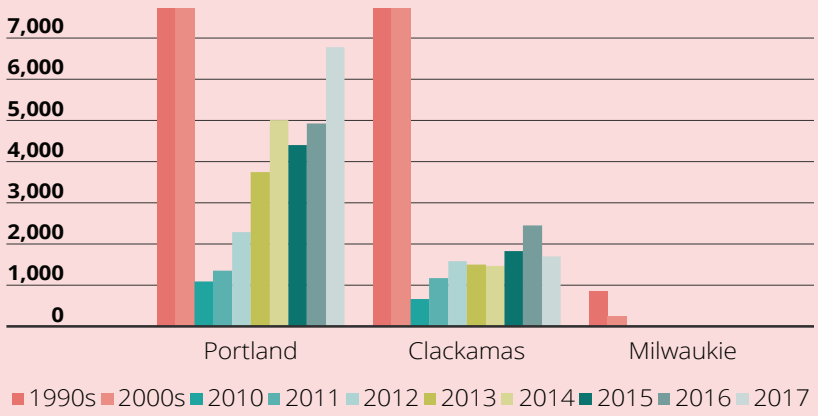
Generally, since 2000, the increase in the median cost of housing for owners and renters has outpaced the increase in median household income by roughly 0.5% to 1% per year.

FIGURE 4. HOME SALES BY AVERAGE NUMBER OF BEDROOMS, 2011-2018



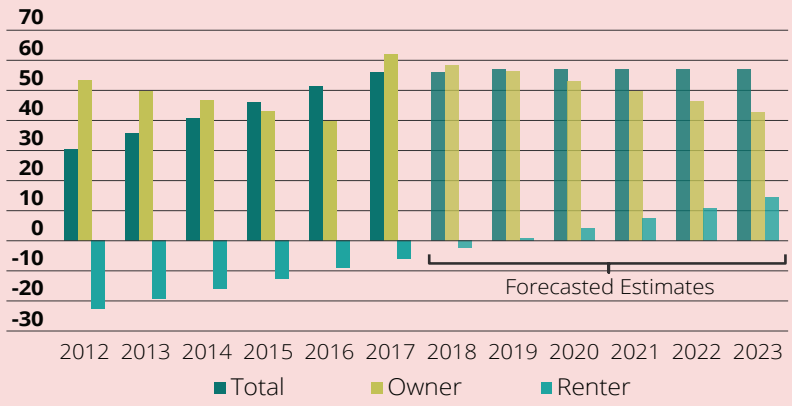
The vast majority of the homes sold are between 1,100 and 2,300 square feet, with three or four bedrooms, and sit on lots of about 0.17 acres in size; 90 to 95% of this housing stock was built before the year 2000.

FIGURE 5. RESIDENTIAL BUILDING PERMITS ISSUED, 1990-2017



The bulk of new housing units added since 1990 were constructed prior to 2000, resulting in an average annual growth rate in housing units since 1990 of 0.5% per year. This likely has a causal relationship to the 0.4% annual growth in households since 1990.

FIGURE 6. DEMAND FOR NEW HOUSING, 2012-2023



Over the next five years to 2023, 343 new housing units are needed based on population and household growth forecasts prepared by Metro. Of these, roughly 307 new homes will be needed to meet ownership demand, and 36 new homes will be needed to meet rental demand.

HOUSING AFFORDABILITY ANALYSIS

Market rate options

Market-rate affordability can be provided at a fairly deep level. Pairing these built form types with affordable housing policies can allow for true affordable housing to be provided using the cluster housing product type.

Sensitivity testing of policies on hypothetical site

A series of pro forma analyses were conducted on a hypothetical study site to determine the relative impact of different policy changes on home prices. The study site is a hypothetical 14,000 sf lot in an R7 zone. Policies tested include:

- Baseline assessment of two standard single-family homes, if the lot were subdivided into two
- Price per home if the existing cottage cluster code were made an allowed use and a four-home cluster built on the site
- Impact of removing the density limit that otherwise would come from the underlying base zone
- Reduction in setbacks and separation standards
- Reduction in private and shared yard standards
- Change in parking policy to allow on-street parking to count towards required minimum parking for the site
- Increase in the allowable height limit to a full two stories
- Allow attached unit types

The results are shown in Table 3.

Cluster housing in Milwaukie represents a compelling opportunity to provide mixed-income housing affordability in the neighborhood context with appropriately scaled developments and greater access to more diverse housing options.

Lessons Learned

On the hypothetical site, home prices could be as low as $190,000 per home, which would be affordable to a household earning 68% AMI. Rents for market-rate homes could be less than $1,540 per month, which would be affordable to households earning 82% AMI.

These results show that it's possible to build market-rate workforce and affordable courtyard housing in Milwaukie, but that there are no silver bullets for affordability. Multiple changes to standards are required, and the density limit change is required for any other zone changes to have an impact. Smaller units are more affordable, but they must be allowed.

TABLE 3. RESULTS OF SENSITIVITY TESTING OF HYPOTHETICAL SITE

	Zone Standards	Sales Price Per Unit	# of Units	Monthly Mortgage Payment	Monthly Rent Per Unit
LESS AFFORDABLE	Standard single-family home	$575,800 **(181% AMI)**	1	$2,473	$3,361 **(180% AMI)**
	Current cottage cluster standard	$334,000 **(107% AMI)**	4	$1,434	$2,900 **(155% AMI)**
	Remove density limit	$231,000 **(82% AMI)**	5	$992	$2,061 **(110% AMI)**
	Reduce setbacks and separation standards	$216,300 **(77% AMI)**	7	$929	$1,888 **(101% AMI)**
	Reduce private and shared yard standards	$207,100 **(74% AMI)**	8	$889	$1,773 **(95% AMI)**
	Allow on-street parking to count	$202,100 **(72% AMI)**	9	$868	$1,674 **(90% AMI)**
	Increase height to two full stories	$199,600 **(71% AMI)**	10	$857	$1,643 **(88% AMI)**
MORE AFFORDABLE	Allow attached unit types	$191,000 **(68% AMI)**	15	$820	$1,538 **(82% AMI)**

TABLE 4. COST BREAKDOWN OF LARGE SINGLE FAMILY HOMES VS. SMALLER HOMES

DEVELOPMENT COSTS	LARGE SINGLE FAMILY HOUSE (2,350 SF)		SMALLER HOME (620 SF)	
	TOTAL	/SQFT	TOTAL	/SQFT
SITE ACQUISITION	$55,125	$8	$14,002	$9
HARD COST	$292,250	$123	$101,420	$164
SOFT COST	$187,884	$80	$71,614	$116
EXPECTED RETURN	$40,491	$17	$15,084	$24
TOTAL COST	$575,750	$228	$202,120	$302

Policy testing on real-world study sites

On the four real-world study sites studied in detail, Opticos Design developed two scenarios for each site:

1. **"Max Build" scenario** to test the maximum feasible development intensity in order to determine the potential impacts on pricing; and
2. **"Ready-to-Build" scenario** that meets the property owner's vision while gaining sufficient financial return on investment.

Cascadia Partners developed pro formas for each design scenario on each site. All the design concepts were adjusted to provide the same rate of return to the developer, so all achieve financial feasibility goals. Each study site was tested assuming a set of draft new policies that included:

- a reduction in parking and setback requirements
- an increase in allowable height and density
- Waiving the maximum number of units allowed on a site

The results are shown below in Table 5.

TABLE 5. RESULTS OF REAL-WORLD STUDY SITES

STUDY SITE	10325 SE 36TH AVE		3736 SE HARVEY ST		10244 SE 43RD AVE		4420 SE JOHNSON CREEK BLVD	
SCENARIO	Design 1	Design 2	Design 1	Design 2	Design 1	Design 2	Design 1	Design 2
# HOMES	11	9	16	13	36	10	36	34
LOW SIZE	1-bed, 400 sf	1-bed, 700 sf	1-bed, 510 sf	2-bed, 700 sf	1-bed, 450 sf	1-bed, 700 sf	1-bed, 700 sf	1-bed, 700 sf
LOW PRICE	$126K	$235K	$182K	$248K	$142K	$249K	$221K	$229K
LOW AMI	29%	54%	42%	57%	33%	57%	51%	53%
HIGH SIZE	3-bed, 1,090 sf	3-bed, 1,000 sf	2-bed, 765 sf	3-bed, 1,000 sf	2-bed, 900 sf	3-bed, 1,050 sf	3-bed, 1,050 sf	3-bed, 1,000 sf
HIGH PRICE	$278K	$317K	$256K	$302K	$274K	$366K	$268K	$313K
HIGH AMI	64%	73%	59%	69%	63%	84%	62%	72%
AVG SIZE	963 sf	967 sf	701 sf	865 sf	675 sf	980 sf	875 sf	985 sf

Lessons Learned

1. None of the design concepts developed for the study sites resulted in a maximum average home size of greater than 1,000 square feet. This can be seen as the threshold of financially feasible and affordable (at less than 80% AMI) cottage cluster development.
2. The degree of affordability in market-rate housing seems to be dependent on the development intensity that is allowed and attained on each site.
3. Some of the scenarios envisioned lower parking ratios than might be allowable under the proposed cluster housing code, unless the underlying zone were to be changed. Yet, even with these caveats, all of the design scenarios for all of the study sites appear to be affordable at less than 85% AMI, with the lowest-price options being affordable to households under 60% AMI.

NONPROFIT & SUBSIDIZED AFFORDABLE HOUSING OPTIONS

Deeper affordability could be provided by subsidized affordable housing providers. There are at least three broad opportunity types for affordable housing to be provided in Milwaukie using the cluster housing program:

- Land trusts
- Affordable housing developments
- Government purchase of individual homes to be provided as dispersed affordable housing

Learn more about these opportunity types in Appendix C.

06

INITIAL SITE DESIGN CONCEPTS

Candidate sites for the initial site design concepts were selected based on:

- the need for a diversity of sites, including a diversity of sizes, shapes, and underlying zoning
- the location outside of a floodplain
- a property owner(s) willing to participate in the process
- the potential to accommodate cluster housing and no other current development proposals or activity that might preclude the eventual development of a housing cluster

DESIGN PROCESS

Cascadia Partners developed a draft pro forma for each site, which set up design goals including number of homes and home size, that achieved financial return targets. Opticos developed a series of design studies to test against various policies, such as lot coverage, parking, common green space area requirements, and the other elements of a cluster housing code. For each site, a design concept was chosen that best achieved the right balance of factors to achieve policy and financial goals.

Design concepts for each site were also reviewed with the site's property owner including pro formas. A pro forma training was held with each owner to transfer knowledge of how to use the pro forma spreadsheet, which was delivered to each owner for their further use.

Two scenarios were developed for each site:

"Max Build" scenario tested the hypothetical and physical maximum build-out of each site within maxed-out code parameters (such as height, parking, and common area dimensions).

"Ready-to-Build" scenario met the property owner's vision and aspirations, and met the need to provide a sufficient financial return on investment.

STUDY SITE SELECTION METHOD

1. GIS property screen

A GIS property screen was used to rank potential study area sites based on lot size, neighborhood, relationship to flood plains, underlying zoning, proximity to transit/LRT, presence of sidewalks, presence of bicycle facilities, and other factors.

2. Property owner outreach

The resulting list of sites was cross-referenced with City staff's knowledge of property owners based on past experience with permit inquiries to develop an initial list of potential property owner participants for the study. The project team conducted outreach to potential participants to perform due diligence and determine which owners would be most suitable for the study. Offers were made to suitable owners to participate in the study, and four were chosen for the study. These owners joined the SAG and remained engaged in the project. The project team visited each site and interviewed each owner to determine their aspirations, visions, and constraints.

STUDY SITE SELECTION CRITERIA

- Need for a diversity of sites, including a diversity of sizes, shapes, and underlying zoning
- Location outside of a floodplain
- Property owner(s) willing to participate in the process
- Site with potential to accommodate cluster housing and no other current development proposals or activity that might preclude the eventual development of a housing cluster

Concept 1:

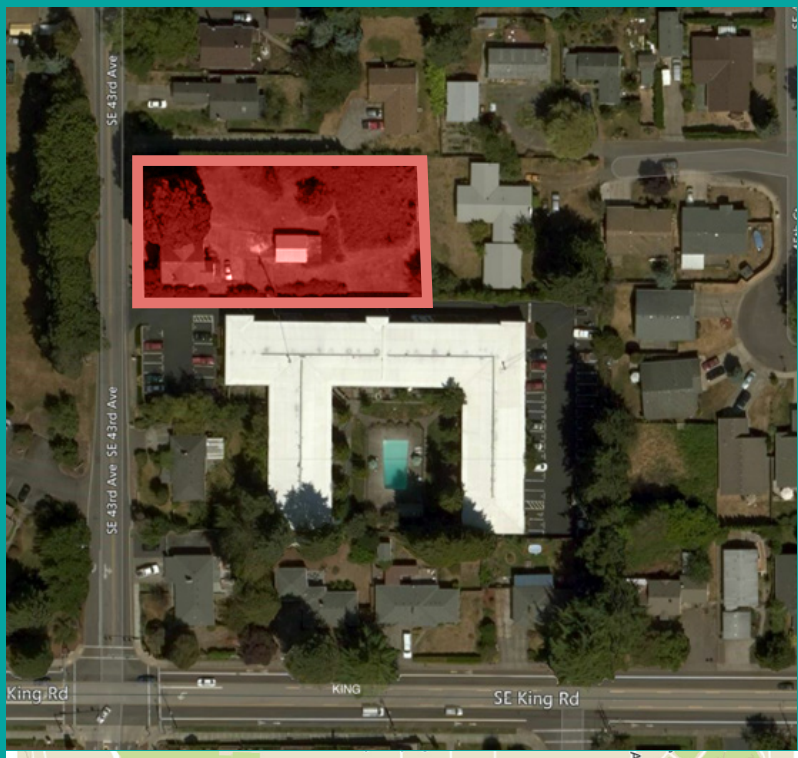
FULL LOT REDESIGN

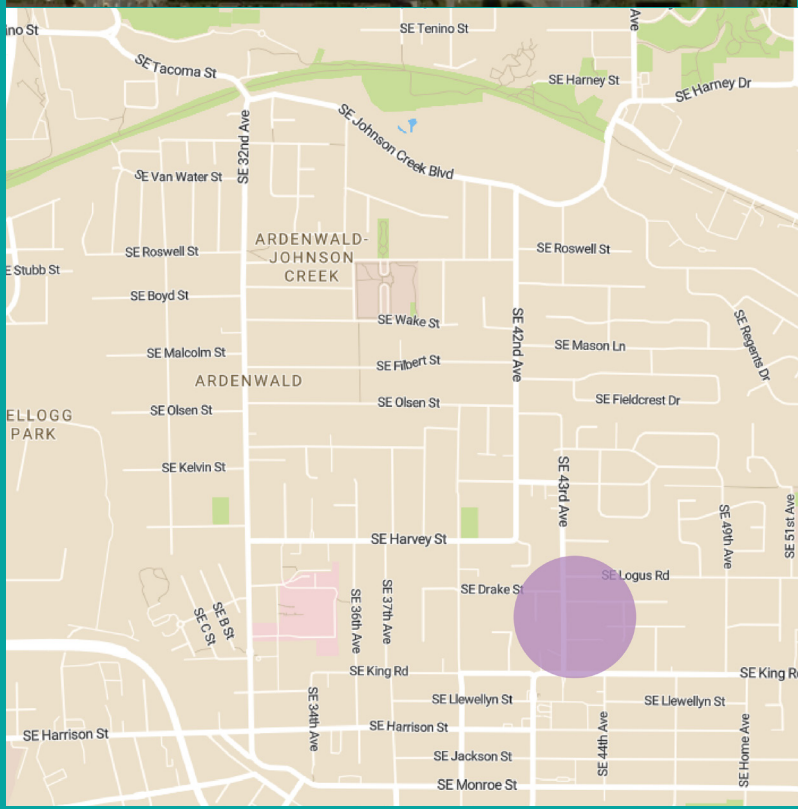
Location: 10244 SE 43rd Ave

Near a commercial center with grocery store, restaurants and retail, and served by a bus line, this commercial center represents an opportunity for a future village center area that could service as an amenities anchor for the surrounding neighborhood. A large apartment complex and a few single family homes are between this site and the commercial center. Increased intensity is thus appropriate for the future context of this site.

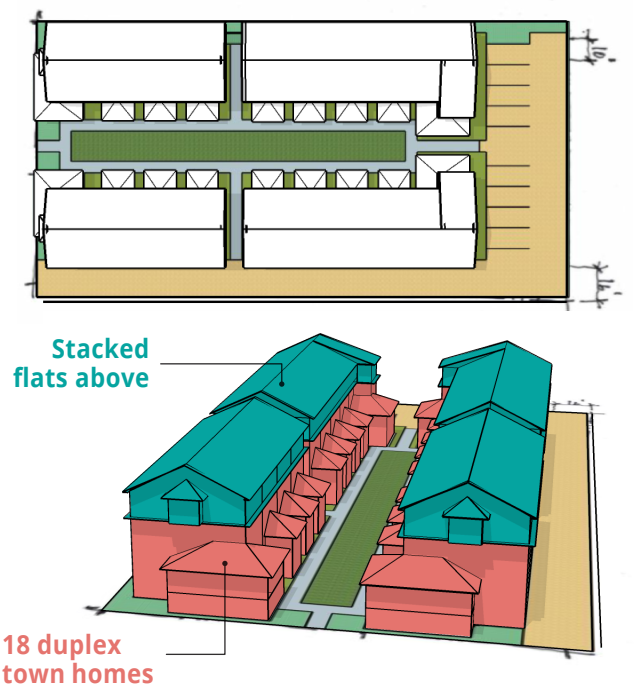
At nearly 26,700 sq ft , this site is largely flat. It features an large deciduous tree in the front yard, and a number of small fruit trees on the property. An existing house anchors the other half of the street frontage next to the large tree.

Currently zoned R7, the max build concept explores the possibility of re-zoning this site to allow for more intense development of attached building types, whereas the second concept explores a less-intense vision that more closely resembles the form of the existing zoning.

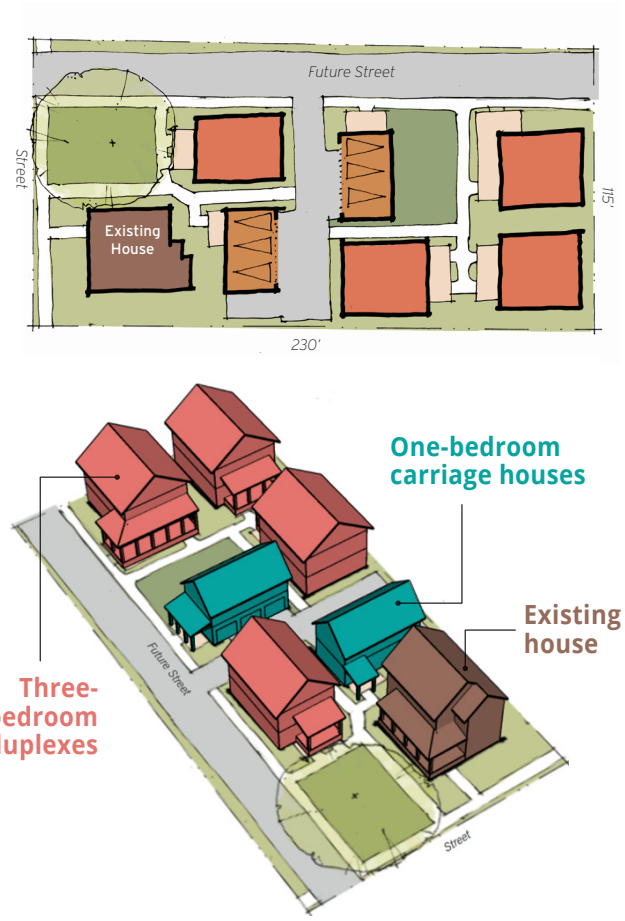




Max Build Scenario	
UNITS	36 total units
UNIT TYPE/ AFFORD-ABILITY	• 18 two-bedroom; 900 sq ft; $274,000 each; **affordable at 63% AMI** • 18 one-bedroom, 450 sq ft; $142,000 each; **affordable at 33% AMI**
AVERAGE HOME SIZE	675 sq ft
PARKING	9 parking spaces in the rear; 0.25 spaces per home*



Ready-to-Build Scenario	
UNITS	10 total units spread across six buildings, in addition to existing house
UNIT TYPE/ AFFORD-ABILITY	• 8 three-bedroom; 1,050 sq ft; $366,000 each; **affordable at 84% AMI** • 2 one-bedroom; 700 sq ft; $249,000 each; **affordable at 57% AMI**
AVERAGE HOME SIZE	980 sq ft
PARKING	Two three-car garages and dedicated surface parking*



** It is assumed that the transit-adjacent location, plentiful bicycle parking, and the changing nature of the transportation economy (including on-demand services such as Lyft and Uber) would provide for mobility for site residents and visitors in the future.*

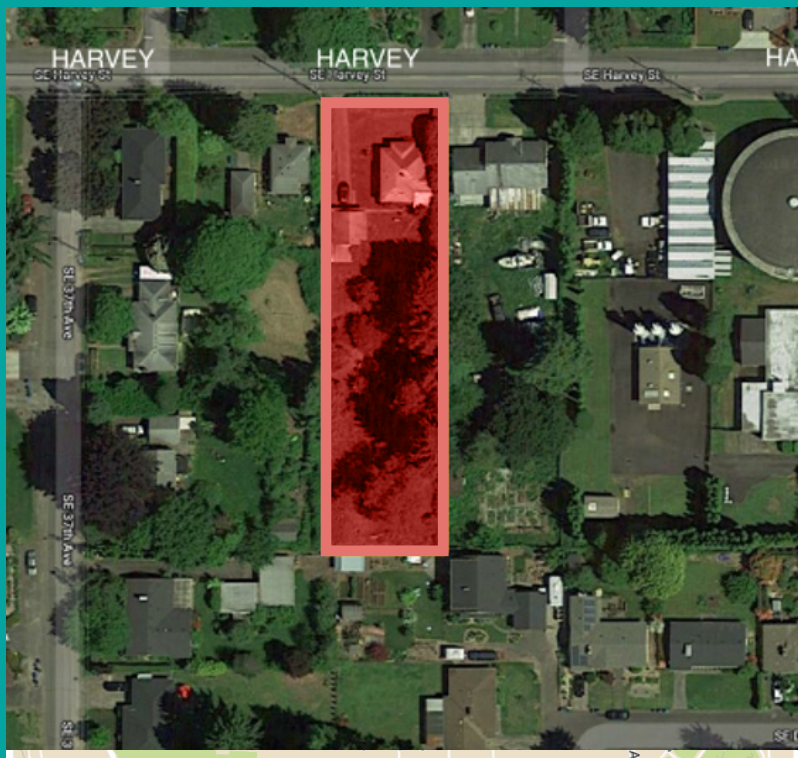
Concept 2:

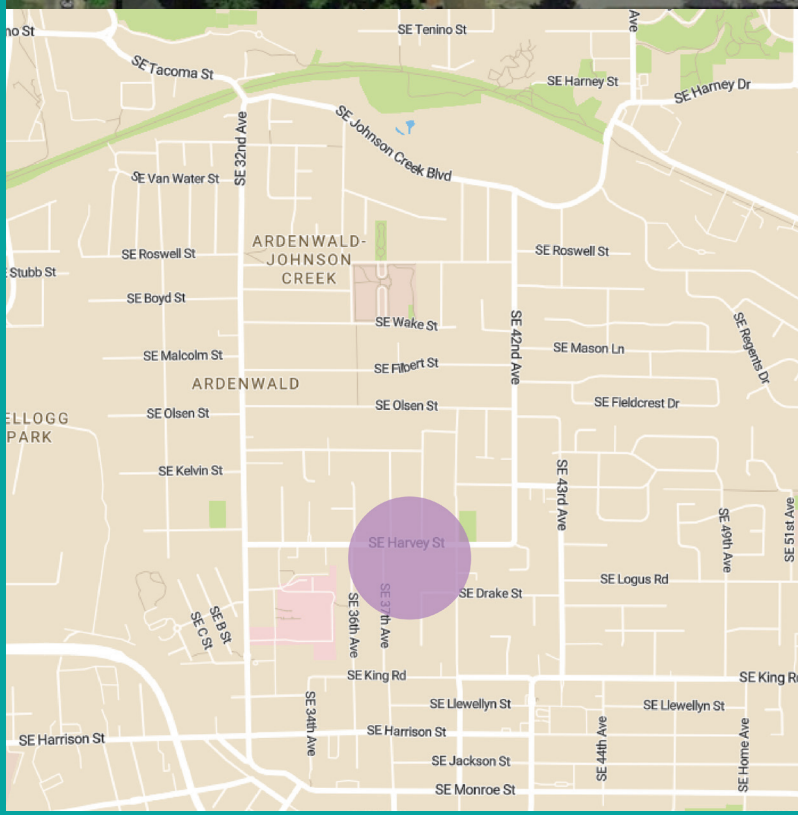
NARROW LOT REDESIGN

Location: 3736 SE Harvey Street

The site at 3736 SE Harvey Street is a long, narrow, mostly-flat lot that's roughly 80 ft wide and 300 ft deep. It features an older existing house and garage closer to the street, with a large garden occupying most of the site. During interviews, the property owner expressed no particular attachment to save the house or garage, so both concepts envisioned their replacement with smaller structures better-located to accommodate the site design.

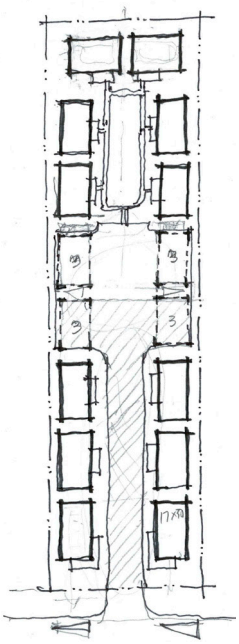
The existing zoning is R7, making this site suitable for testing the application of a cluster housing code on a long, skinny site in a residential neighborhood context.

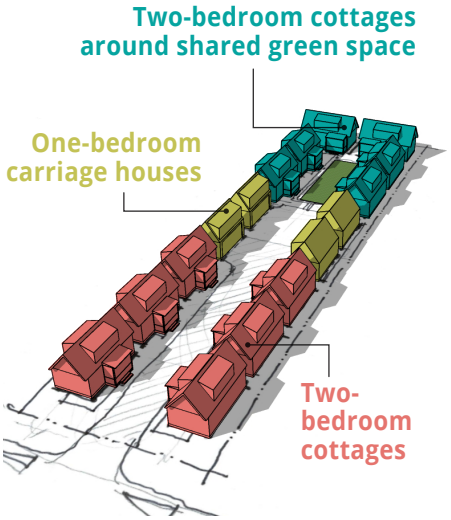




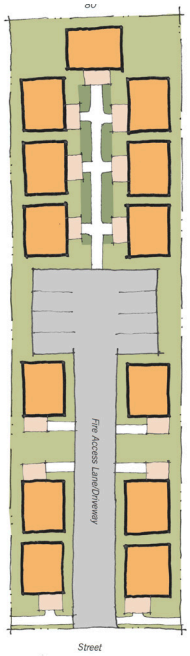
Due to the relatively skinny width of the lot at 80 ft, the initial design concept explored using a "Woonerf" concept – a shared court that places emphasis on providing a safe space for bicycles and pedestrians while allowing automobiles to pass through as guests in the space.

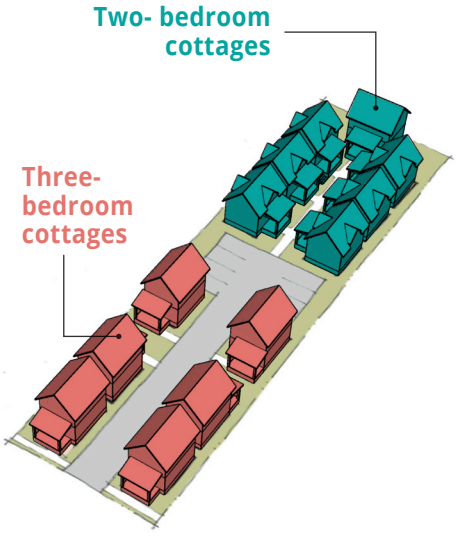
Max Build Scenario	
UNITS	16 total homes
UNIT TYPE/ AFFORD-ABILITY	• 12 two-bedroom; 765 sq ft; $256,000 each; **affordable at 59% AMI**
	• 4 one-bedroom; 510 sq ft; $182,000 each; **affordable at 42% AMI**
AVERAGE HOME SIZE	701 sq ft
PARKING	Three garage parking spaces below each carriage house





Ready-to-Build Scenario	
UNITS	13 total homes
UNIT TYPE/ AFFORD-ABILITY	• 6 three-bedroom; 1,000 sq ft; $302,000 each; **affordable at 69% AMI**
	• 7 two-bedroom; 700 sq ft; $248,000 each; **affordable at 57% AMI**
AVERAGE HOME SIZE	865 sq ft
PARKING	8 parking spaces; 0.5 spaces per home*





** This concept was developed when the proposed parking ratio for this site was 0.5 spaces per home. The parking ratio for housing clusters in R7 base zones not within walking distance of high-quality transit has since been raised to one space per home, meaning that this site design would need to see at least two cottages converted into carriage houses, each with three parking spaces underneath, in order to provide the required amount of off-street parking.*

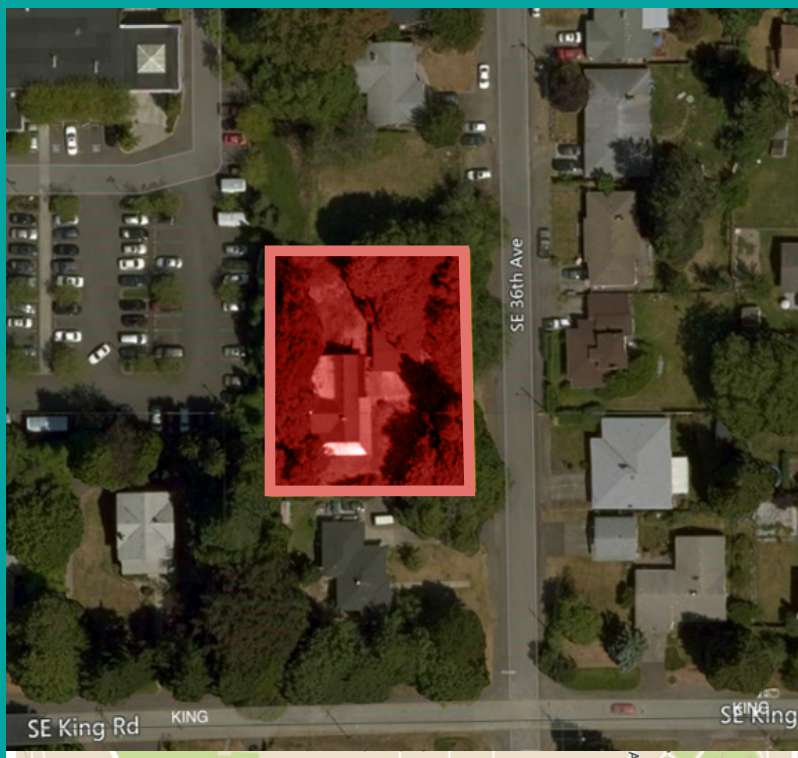
Concept 3:

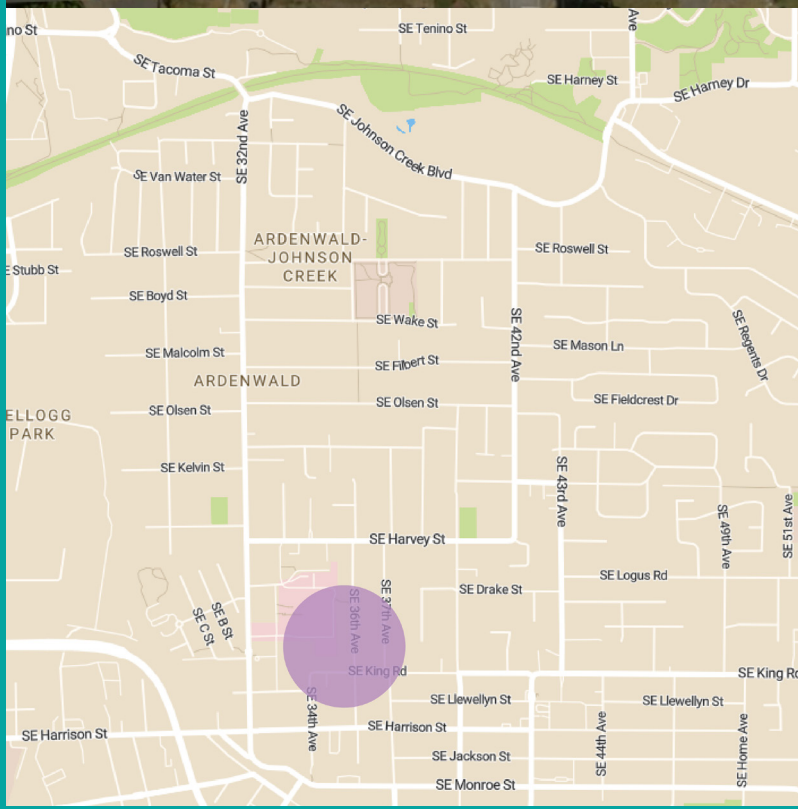
FULL LOT REDESIGN #2

Location: 10325 SE 36th Avenue

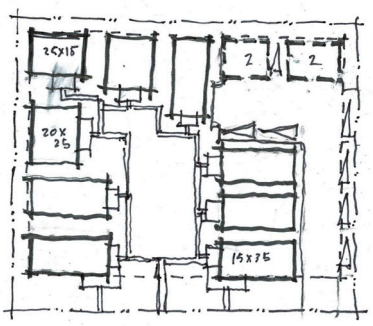
The site is nearly square, at 125 x 150ft, providing 24,000 sf of area to design within. The back of the lot drops off to the adjacent Providence Milwaukie Hospital's parking lot. Taller houses up against this lot line would benefit from a view looking towards Portland's West Hills.

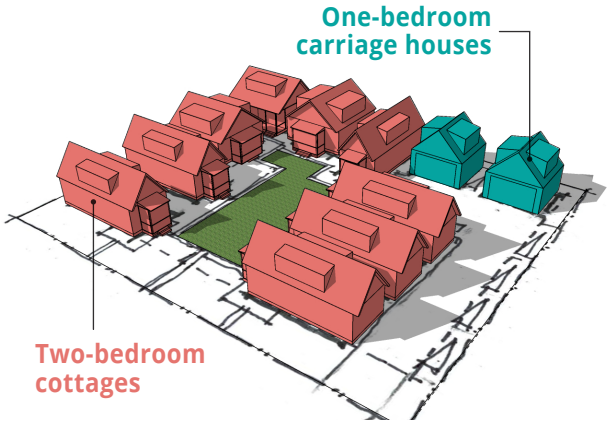
The existing zoning is R7, leading to a lower intensity residential character.



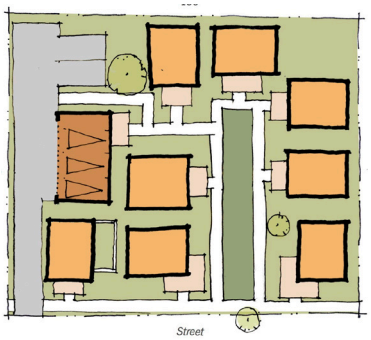


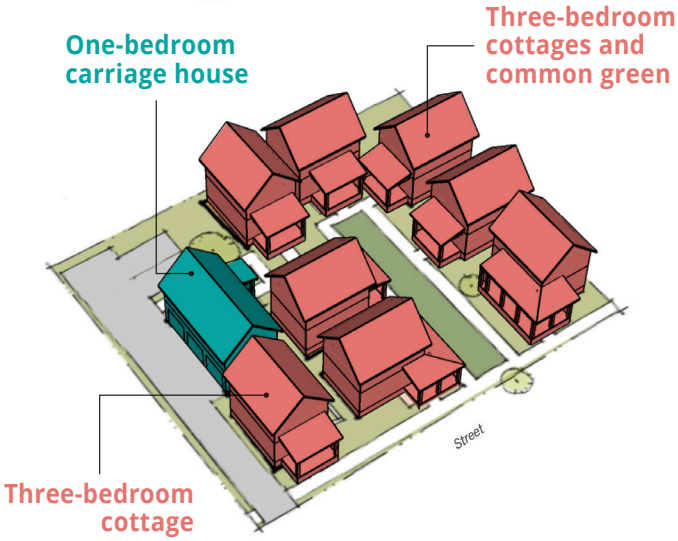
Max Build Scenario	
UNITS	11 total homes
UNIT TYPE/ AFFORD-ABILITY	• 9 three-bedroom; 1,090 sq ft; $278,000 each; **affordable at 64% AMI**
	• 2 one-bedroom; 400 sq ft; $126,000 each; **affordable at 29% AMI**
AVERAGE HOME SIZE	963 sq ft
PARKING	11 parking spaces; 1 space per home





Ready-to-Build Scenario	
UNITS	13 total homes
UNIT TYPE/ AFFORD-ABILITY	• 8 three-bedroom; 1,000 sq ft; $317,000 each; **affordable at 73% AMI**
	• 1 one-bedroom; 700 sq ft; $235,000 each; **affordable at 54% AMI**
AVERAGE HOME SIZE	967 sq ft
PARKING	13 parking spaces; 1 space per home





Concept 4:

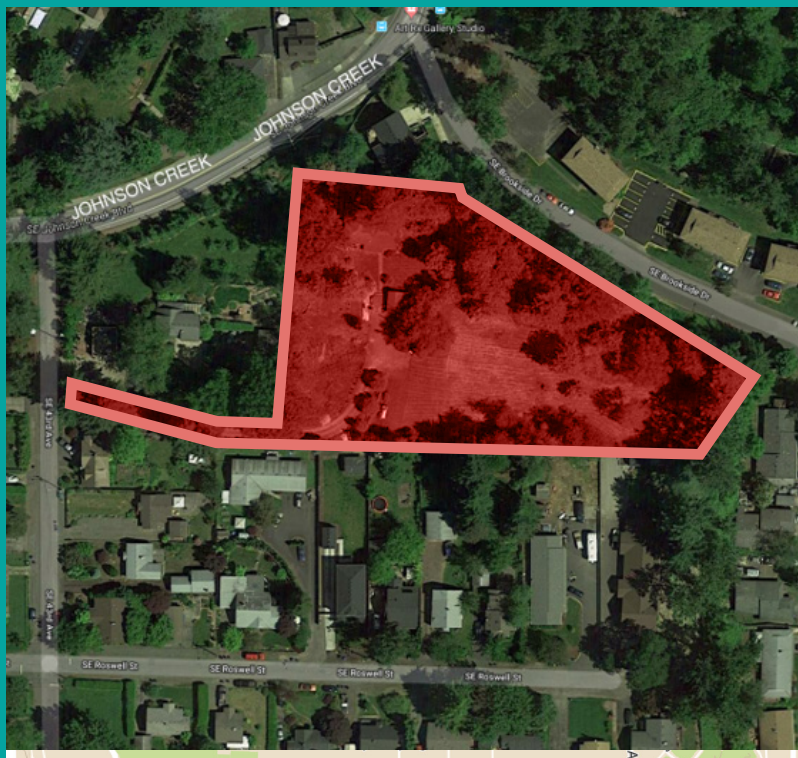
OPEN SPACE REDESIGN

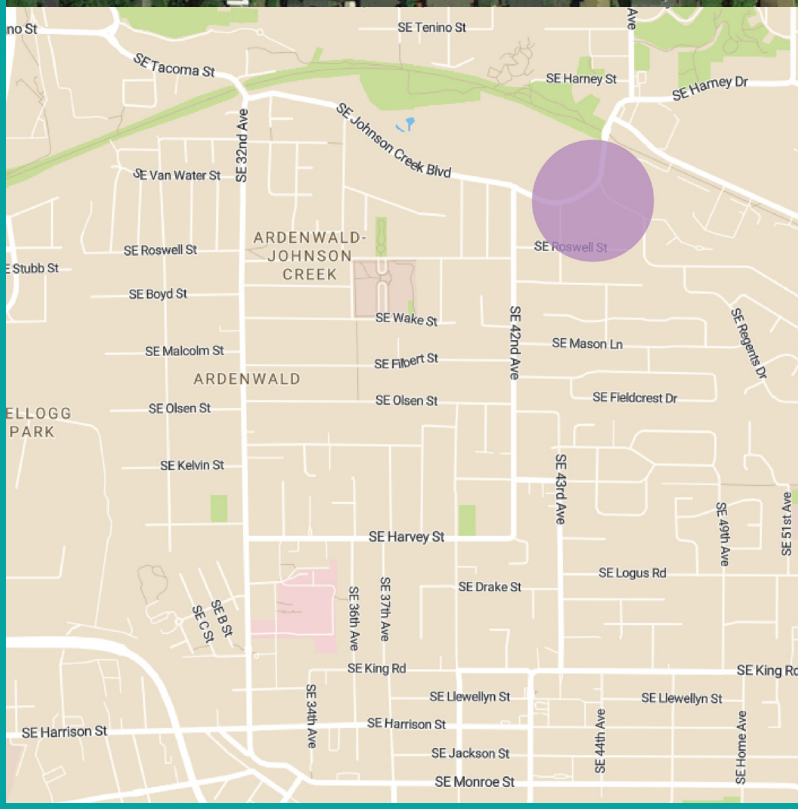
Location: 4420 SE Johnson Creek Boulevard

This site is perhaps the most interesting of all the sites, for reasons beginning with the address: the site is not actually located on SE Johnson Creek Blvd. It originally included a parcel that fronted onto Johnson Creek Blvd, but when that parcel was sold off, this parcel did not receive a new address. Now, however, access is via a long, narrow flagpole driveway from SE 43rd Ave, making this, at 2.11 acres, effectively an extremely large flag lot.

The bulk of the site is relatively flat, except for along the eastern edge of the property where it slopes steeply down through a forested slope to SW Brookside Drive. It features a small number of larger, older fruit trees left over from its agricultural past.

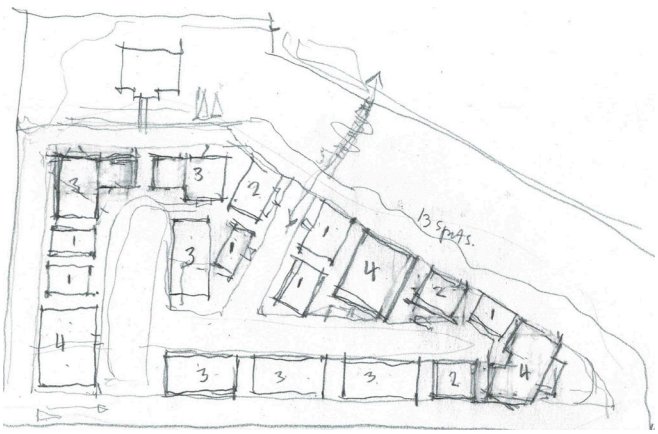
The site is currently zoned R7, but given its proximity to the Frequent Service bus line on Johnson Creek Blvd, as well as the Springwater Corridor bicycle trail just to the north, a case could be made for the site to support higher intensity than would otherwise be envisioned in an R7 zone.

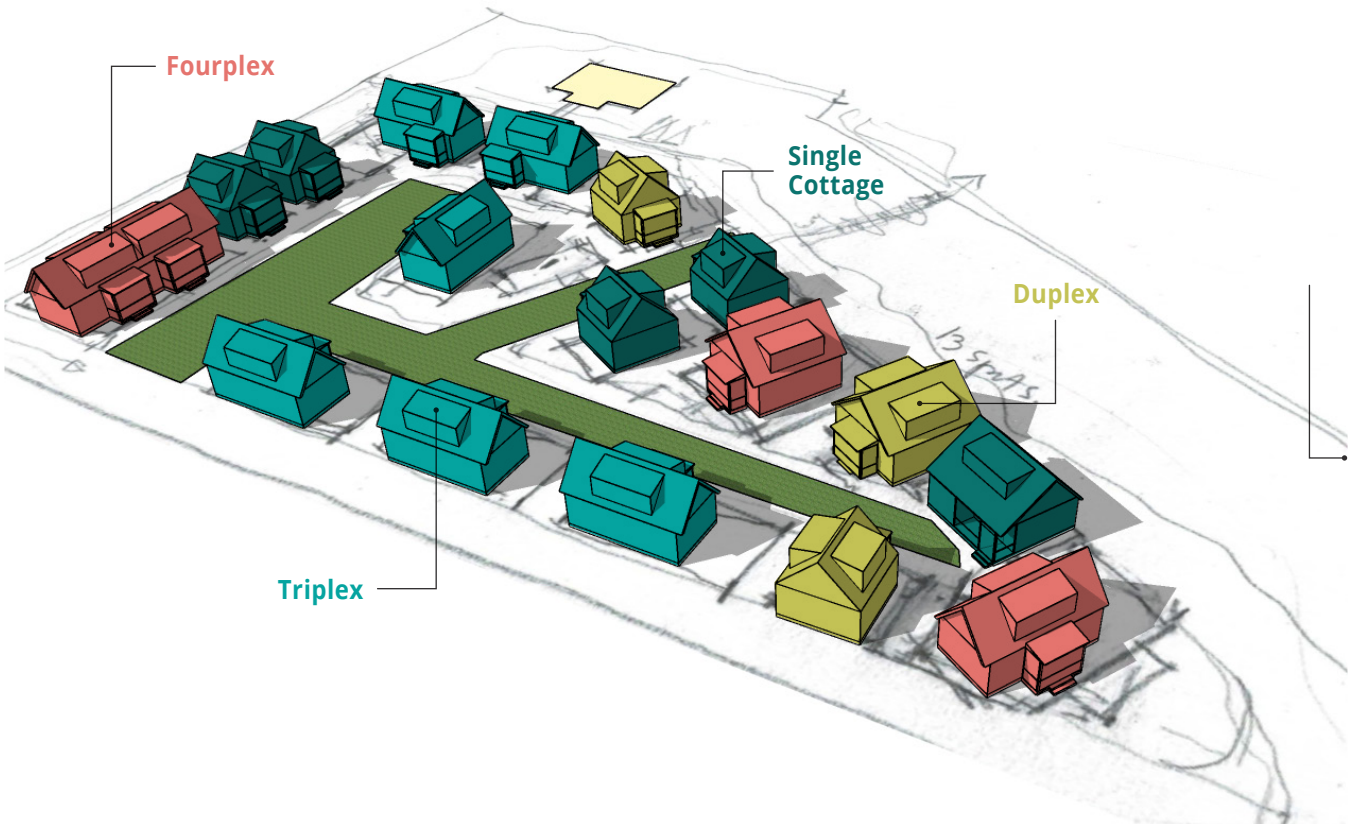




Homes on the site are clustered around a three-pronged common green. A loop road surrounds the housing cluster with most parking provided on-street on this road. A trail with a ramp and staircase would thread down the forested slope to provide access to Johnson Creek Blvd via Brookside Drive.

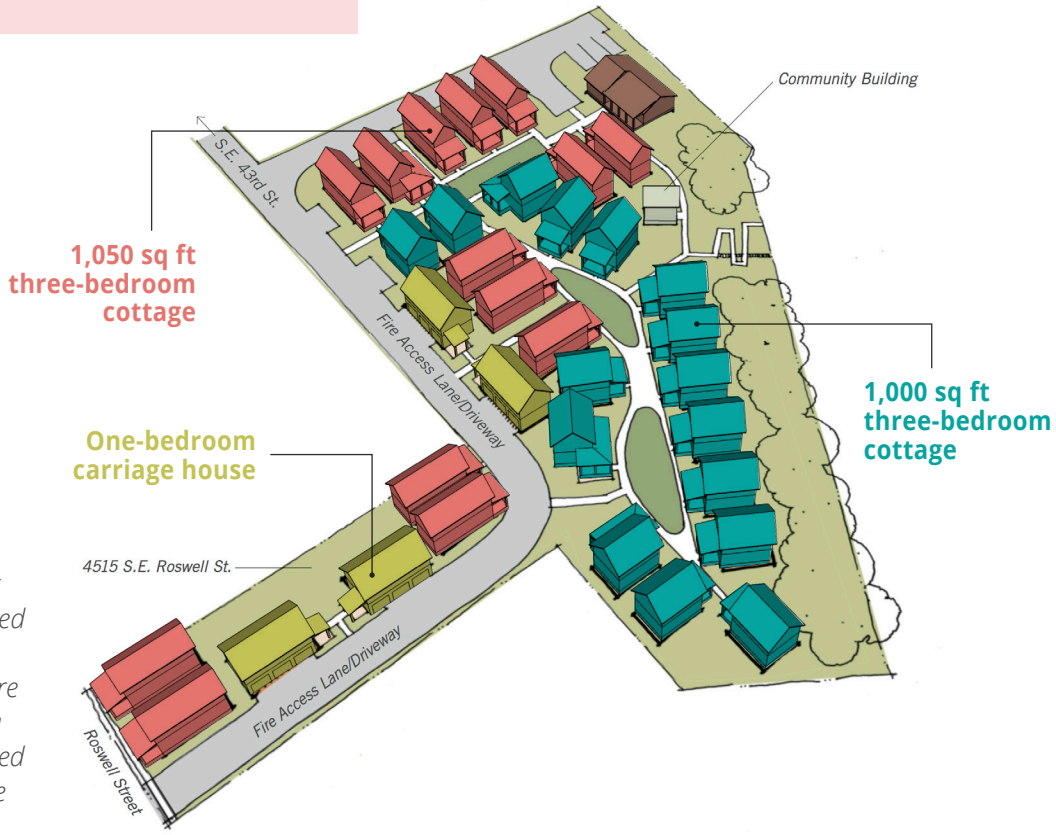
Max Build Scenario	
UNITS	36 total homes
UNIT TYPE/ AFFORD-ABILITY	• 18 one-bedroom; 700 sq ft; $221,000 each; **affordable at 51% AMI** • 18 three-bedroom; 1,050 sq ft; $268,000 each; **affordable at 62% AMI**
AVERAGE HOME SIZE	875 sq ft
PARKING	On-street parking





Based on property owner feedback, this scenario includes fire access lane due to the narrow width of the existing driveway. A revised circulation plan emphasizes an internal sidewalk network, with automobiles kept to the south and west edges of the site and more cohesive common green spaces.

Ready-to-Build Scenario	
UNITS	34 total homes
UNIT TYPE/ AFFORD-ABILITY	• 4 one-bedroom; 700 sq ft; $229,000 each; **affordable at 53% AMI**
	• 16 three-bedroom; 1,000 sq ft; $313,000 each; **affordable at 72% AMI**
	• 14 three-bedroom; 1,050 sq ft; $328,000 each; **affordable at 75% AMI**
AVERAGE HOME SIZE	985 sq ft
PARKING	19 parking spaces



The neighboring property at 4515 SE Roswell St was added to this concept based on conversations with the property owner and the fire marshal, indicating that a new access lane would need to be provided to meet the fire code.

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07

PROPOSED CLUSTER HOUSING CODE RECOMMENDATIONS

PURPOSE AND TITLE

Milwaukie's original Cottage Cluster code contained a single use type that was only allowed in a certain set of zones, not including the lower-density residential R5, R7, and R10 zones which cover the majority of the city. The proposed revised code is retitled the "Cluster Housing Code" to reflect the three types of standards it contains:

1. **low-density neighborhoods;**
2. **commercial and multifamily zones; and**
3. **transit-connected locations**

These standards allow a mix of building types, including attached types such as townhomes that could not be accurately referred to as "cottages."

APPLICABILITY

The revised code is proposed to apply in three types of locations within Milwaukie: The base zones R5, R7, and R10; transit-connected locations; and all other commercial and multifamily base zones where cluster housing is allowed.

Low density neighborhoods

Cluster housing is allowed in the base zones R5, R7 and R10, outside of the area considered to be transit-connected locations.

Commercial and multifamily zones

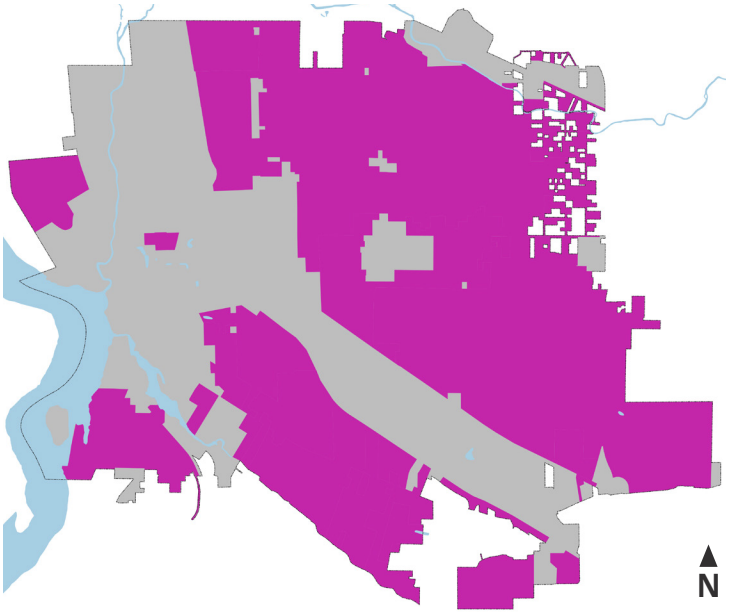
Cluster housing is also is allowed within commercial, mixed use and multifamily zones where cluster housing is listed as an allowed use (R-1, R-1B, R-2, R-2.5, R-3, GMU). Conditional Use review is required for Limited Commercial zones (C-L) and Neighborhood Mixed Use zones (NMU).

Transit-connected locations

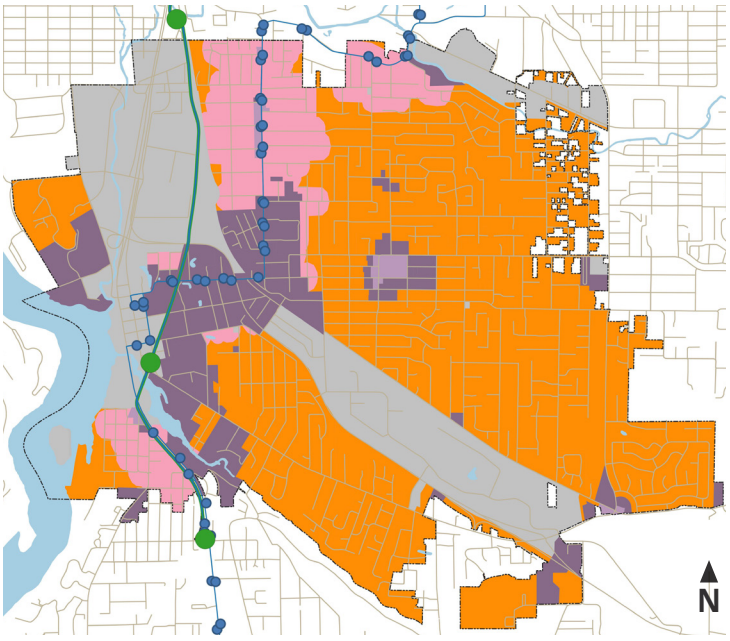
The third location where cluster housing is allowed are transit-connected locations within the base zones R5, R7, and R10. A lot is considered to be in a "transit-connected location" if the applicant can show that it is (or will be by the time construction is complete) directly connected by a complete sidewalk network to a frequent transit service stop within a 1/4 mile walk.

** Sidewalk network data not available. Map shows areas that would count as transit-connected locations if the sidewalk network were built out.*

*** Conditional use permit required for cluster housing in the NMU and C-L zones.*



Residential zones where cottage clusters are currently not allowed



TriMet MAX Line/ Station

TriMet Frequent Transit Service

Low Density Neighborhood

Transit-connected Locations*

Commercial/ Multifamily Zones

Commericial/ Multifamily Zones**

Cluster Housing Not Allowed

The proposed code revisions are summarized below. See Appendix D for further details on the code revisions.

LAND DIVISIONS

- Allow a cluster housing development on any size site to include a land division resulting in new lots with **no minimum lot size, and no maximum density limitations**.

DEVELOPMENT STANDARDS

- **Proposed cluster housing code supersedes the base zone development standards** for height, density, minimum lot size, setbacks, yards, lot coverage, and minimum vegetation, as well as other design standards and parking standards. These proposed standards are shown in Table 4.

The development standards are intended to:

1. **Promote market-rate provision of homes affordable to households of a variety of incomes and sizes.**
2. **Encourage a design that balances a reduction in private outdoor space with shared outdoor common area.**
3. **Promote community-building both within a housing cluster and with the surrounding neighborhood.**

SIZE

- **Total footprint of each home:** Maximum 1,200 sq ft (or 1,000 for lots that are not in a transit-connected location in base zones R5, R7 and R10); maximum footprint per building containing one to four homes in a low-density neighborhood is 1,650 sq ft
- **Total floor area of each home:** Maximum 1,600 sq ft
- **Average floor area of all homes:** Maximum 1,000 sq ft (existing homes excluded)

HEIGHT

- **Maximum number of stories:**
  - » 2 stories in low density neighborhoods (R5, R7, and R10)
  - » 2.5 stories in transit-connected locations within base zones
  - » 3 stories in commercial and multifamily zones
- **Maximum height to the highest eaves on any building facing a common open:**
  - » 1.618 times the width of that common green between the two closest buildings across its narrowest average width.
- **Daylight basements exempted from floor count.**

ORIENTATION

- **Front façade orientation:**
  - » must be oriented toward common open space or public street.
- **If a home does not face a common open space or public street:**
  - » must be oriented toward an internal pedestrian circulation path.
- **Minimum 50% of all cluster homes** must be oriented towards common open space.

TABLE 6. CLUSTER HOUSING DEVELOPMENT STANDARDS

Standards	Low-density neighborhoods	Transit-connected locations	Commercial and multifamily zones
HOME TYPES			
Buiding types allowed	Detached houses containing 1-4 homes	Detached and Attached	Detached and Attached
HOME SIZE			
Max building footprint per home	1,000 sf	1,200 sf	1,200 sf
Max total footprint per building	1,650 sf	no requirement	no requirement
Max floor area per ho me	1,600 sf		
Max average floor area per home	1,000 sf		
HEIGHT			
Max # of stories	2	2.5	3
Max structure height between 5 & 10 ft of rear lot line	15 ft		
Max height to eaves facing common green	1.618 times the narrowest average width between two closest buildings		
SETBACKS, SEPARATIONS, AND ENCROACHMENTS			
Separation between eaves of structures (minimum)	6 ft	6 ft	6 ft
Side and rear site setbacks	5 ft		
Front site setback (minimum)	15 ft	10 ft	0-10 ft
Front site setback (maximum)	20 ft		
LOT COVERAGE, IMPERVIOUS AREA, VEGETATED AREA			
Lot coverage (maximum)	50%	55%	60%
Impervious area (maximum)	60%	65%	70%
Vegetated site area (minimum)	35%	30%	25%
Tree cover (minimum at maturity)	40%		
COMMUNITY AND COMMON SPACE			
Community building footprint (maximum)	1,500 sf	2,000 sf	3,000 sf
PARKING			
Automobile parking spaces per primary home (minimum)	1	0.5	0.25
Dry, secure bicycle parking spaces per home (minimum)	1.5		
Guest bicycle parking spaces per home (minimum)	0.5		

HOME TYPES

- **Allow detached primary houses containg 1 to 4 homes in R5, R7, or R10 base zones** in non-transit-connected locations
- **Allow detached and attached home types** in transit-connected locations and in all other base zones.
- **Allow accessory dwelling units (ADUs)** for any detached or attached single family home in a cluster housing development, in compliance with recent state legislation in Oregon where ADUs are allowed.

SETBACKS, SEPARATIONS, AND ENCROACHMENTS

- **Minimum rear and side setbacks:**
  - » 10 ft rear setback for structures above 15 feet high in zones R5, R7, and R10
  - » 5 ft rear setback for all other structures within a cluster development
  - » 5 ft side setback for all cluster housing development
- **Minimum front setback:**
  - » 15 ft in the R5, R7, and R-10 base zones
  - » 10 ft in transit-connected locations
  - » 10 ft in all other locations, unless the base zone allows for a smaller setback
- **Maximum front setback:**
  - » 20 ft, unless a greater setback is required due to steep slopes or natural features
- **Minimum separation between eaves:**
  - » 6 ft separation required between the eaves of each independent structure, unless the structure is attached directly to another structure (e.g., townhomes), in which case no separation is required
- **Maximum front stair encroachment into common green space:**
  - » 20% of the width of the green
- **Maximum eave overhang onto common green space:**
  - » 24 inches, or to the extent allowable by the building code

FRONT PORCHES AND ENTRIES

- **Front porch or recessed entryway required** on each primary home in a cluster development.
  - » The front door of the dwelling must open onto the porch or recessed entry
  - » Entire front porch area or recessed entry must be covered
  - » Surface of the front porch or recessed entry not to exceed 48 in above grade, as measured from the average ground level at the front of the porch.
- **Minimum porch depth:** 6.5 ft
- **Minimum porch width:** at least 60% of the length of the front façade

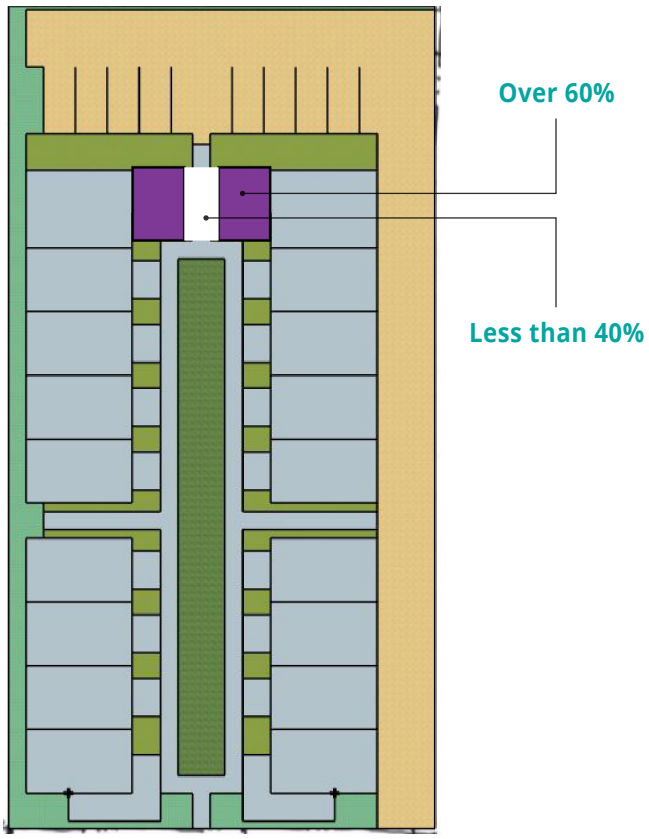
- **Minimum dimensions of recessed entry:** 5 ft by 5 ft

CLUSTER HOUSING DESIGN STANDARDS

- **Front porch fronting a street:**
  - » Minimum 60% coverage of the width of the home and is at least 8 ft deep.
- **Windows and doors:**
  - » Minimum 15% coverage of the façade area if oriented toward a street, common open space, or interior walkway
  - » Windows must be vertical or square in orientation – at least as tall as each window is wide.
  - » Allow horizontal window openings to be filled by either two or more vertically-oriented windows with maximum of two different sizes or a horizontal window with a band of individual lites across the top. Lites must be either vertical or square and must cover at least 20% of the total height of the window.

SITE DESIGN AND OTHER STANDARDS

- **Minimum of 3 primary homes required in cluster development** with an adequately sized and central common open space.
- **A common open space must meet the following standards:**
  - » Minimum 100 sq ft of area for each home, excluding ADUs
  - » Minimum dimensions of 20 ft by 12 ft;
  - » Entrance to at least one common open space area must be visible and accessible from an adjacent public street
    - » Homes must enclose at least 60% of three sides of common open space areas to which at least half of the homes are oriented.



INDOOR COMMUNITY SPACE

- **Allow community building or other common indoor space** for the shared use of its residents and guests;
  - **Maximum footprint:**
    - 1,500 sq ft in the R-5, R-7, and R-10 zones
    - 2,000 sq ft in transit-connected locations
    - 3,000 sq ft in all other locations

Photo credit: Ross Chapin

LOT COVERAGE, IMPERVIOUS AREA, VEGETATED AREA AND TREE COVER

- **Maximum footprint of all structures within a housing cluster:**
  - 50% of the site area in the R5, R7, and R-10 base zones
  - 55% of the site in transit-connected locations
  - 60% in all other locations
- **Maximum footprint of impervious surfaces, including all structures:**
  - 60% of the site area in the R5, R7, and R-10 base zones
  - 65% of the site in transit-connected locations
  - 70% in all other locations
- **Minimum footprint of vegetation and landscaped, pervious areas:**
  - 35% of the site area in the R5, R7, and R-10 base zones
  - 30% of the site in transit-connected locations
  - 25% in all other locations
- **Minimum required footprint of vegetation and landscaped, pervious areas:**
  - 50% of front yard between front of homes and the adjacent street
- **Tree plan required for approval:**
  - Minimum 40% site coverage with summer tree canopy at tree maturity.
  - Must include maintenance procedures to ensure tree health, including proper watering systems such as drip irrigation or graywater systems.

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08

CONCLUSION & NEXT STEPS

This analysis of cluster housing in Milwaukie clearly shows that, with the changes described, cluster housing has very strong potential to deliver meaningful workforce housing in an attractive and livable format. This proposal has been finely tuned to balance the scale of development so that it does not overwhelm surrounding neighborhoods, while allowing for sufficient development intensity to allow price points affordable as workforce housing.

RECOMMENDED NEXT STEPS IN THE EVOLUTION OF CLUSTER HOUSING STANDARDS

01

Develop a set of design standard guidelines for cluster housing that provide specific design strategies to:

- create the feeling of a shared outdoor room within common green areas;
- create a sense of community within each housing cluster; and
- provide a sense of timeless quality that will stand the test of time while still enabling the provision of affordable workforce housing.

The cluster housing format has historically provided some of our most enduring examples of quality workforce housing, not just in the Portland region, but also up and down the West Coast and across the country.

With the shifting focus of housing development in the United States after World War II to focus rather exclusively on single family homes and large-scale apartment buildings, cluster housing production dwindled and nearly vanished. Now, however, it has been revived by Ross Chapin, Eli Spevak, and other New Urbanists and practitioners. This project continues and encourages this revival by showing a path forward to use the cluster housing format to provide affordable market-rate workforce housing that fits and enhances the community.

02

Establish a set of streets (or sections of streets) and a map of locations where head-in or angled on-street parking would be acceptable, possibly with two tiers of allowance:

1. one where on-street parking would be allowed unconditionally, and
2. one where it would be allowed only in combination with some amount of property dedication.

03

Develop a set of SDC and fee reductions and/or waivers to incentivize cluster housing development in Milwaukie in the near term. Market this incentive to the development community along with the launch of the new cluster housing program, possibly with a well-advertised sunset date (within five or ten years).

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MILWAUKIE COTTAGE CLUSTER ANALYSIS

APPENDICES

A

EXPERT REVIEW OF ZONING CODE ANALYSIS

Peer review of the existing cottage cluster zoning code analysis and proposals for the new code was conducted over several months in two phases. The initial peer review was conducted with Opticos Design, leading directly to recommendations for the proposed new code. The first draft of the proposed new code was then reviewed with Eli Spevak of Orange Splot, and with CNU-Cascadia.

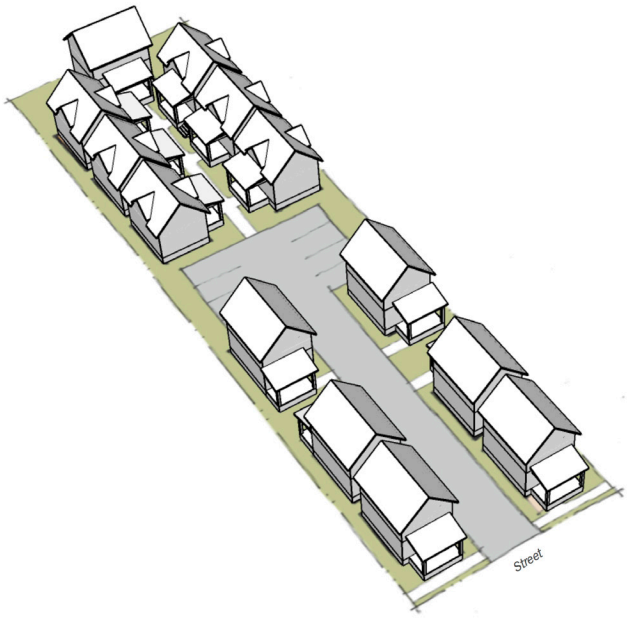
Initial review with Opticos Design including the following general comments and suggestions:

- Cluster housing should be allowed without requiring a lot subdivision process, which works better with detached buildings than for attached units, and may not be compatible with stacked units
- Private open space should not be required; a key component of cluster housing is shared open space.
- Provide a minimum (and perhaps maximum) common open space width and length that is defined relative to the surrounding building heights
- The shared court should be accessible from the front street
- Use the project study sites to confirm that the common open space requirement per unit can be met, or otherwise determine a reasonable reduction in size
- The current code restricts material types facing the street to only two, lap or shake material - could other materials be allowed?
- Consider allowing multiple common greens on a site
- Limit cluster housing heights in low density residential zones to two
- Allow more height in higher density zones where the base zone height is also taller

Follow-up peer review with CNU-Cascadia and Eli Spevak of Orange Splot included the following themes, comments, and suggestions:

- Consider waiving some SDCs and fees in order to “prime the pump” and encourage construction of new cluster housing projects in Milwaukie

- Allow cluster housing developments below a certain size threshold to use existing water connections, rather than charging SDCs for new connections
- Classify SDCs and fees by those that seem fair, and those that need to scale more appropriately
- Do not use language referring to the classic dichotomy of "single family" vs "multifamily", which is misleading when it comes to single family (which may in fact contain multiple families, or just an individual or unrelated persons rather than a "family"), and indeed may soon evolve to include more Missing Middle housing types; instead, refer to lower intensity and higher intensity zones
- Define zones and housing types by virtues of form, such as height and lot coverage, as well as proximity to high quality transit
- Provide for multiple ownership options, including fee simple (single family or townhome on own lot), condominium, and others, such as housing cooperatives.
- Eliminate minimum lot size standards to allow for parcelization and sale of fee-simple homes; do not require any minimum lot frontage, depth, or width for new lots created within a cluster housing development
- Offer incentives to encourage more cluster housing:
  - » Type 1 review by right
  - » Waive SDCs
  - » Right-size infrastructure requirements
- Determine incentives for a developer to choose to use the provisions of the Cluster Housing Code in multifamily or commercial zones, rather than just building a simple apartment building, such as:
  - » Allow for a townhome on its own lot where otherwise single dwellings on own lots might not be allowed
- Establish a gradation of pedestrian path size minimums, for units served by the same path:
  - » 3 ft for up to 4 units
  - » 4 ft for 4 to 20 units
  - » 5 ft for more than 20 units
- Allow woonerfs (shared pedestrian / bicycle space where automobiles are allowed as low-speed guests, use design elements such as permeable pavers to communicate the intent of the space)



Require bicycle parking:

- » Especially in the context of a city that lacks a complete sidewalk network or widespread high-quality transit, bicycles represent the lowest-hanging fruit in terms of a low-carbon transportation solution
- » 1.5 dry, secure bicycle parking spaces for each unit, minimum

- Don't regulate density, instead just regulate elements of form such as site coverage and height
- Require tall narrow vertical windows, rather than horizontal windows
- Do not require or specify a minimum site or lot size
- 50% lot coverage is too strict, allow for up to 60%
- Regulate common open space to achieve the desired feeling of spaciousness, and encourage more balconies, porches, rooftops, etc to provide more open space
- The common open space should be regulated and designed to feel like an outdoor room, using planters and other elements to visually make it as room-like as possible
- Providing two paths around a green, narrowing down to one path at entries, and widening out again, creates the necessary separation between private, semi-private, and public space; the fact of the common green is defined as the area in the middle of the two paths
- Consider providing setback bonuses, SDC breaks, or landscape requirement reductions for developers proposing innovative solutions to daylight and views, because dense proposals provide other public benefits
- Do not require additional common open space for ADUs
- Do not require front porches on the interior of a cluster housing development; instead, focus on making the entry, and allow recessed entries
- Require front porches facing the public street to help contribute to the sense of neighborhood community
- Don't regulate style; there are beautiful modern-style cluster housing developments out there, such as Aqua in Miami, that include wonderful contributing elements such as useable roof decks, patios, balconies, tall vertical windows, and a tight street presence.

Photo credit: Duany Plater-Zyberk

B

DETAILED MARKET ANALYSIS

DEMOGRAPHICS: POPULATION, HOUSEHOLDS AND TENURE

Milwaukie has grown by about 0.4% annually since 1990, with most growth occurring between 1990 and 2000, some negative growth between 2000 and 2010, and annual population increases of 0.2% since 2011. For comparison's sake, the City of Portland and Clackamas County have grown by 1.4% and 1.5% annually over the same period. Given the low rates of housing production in Milwaukie, it is likely that its relatively slower growth is due largely to the lack of housing available in the city.

Household size in Milwaukie decreased between 1990 and 2010 from 2.35 to about 2.30, where it has remained since. Portland, by comparison, has crept upwards from

FIGURE 7. POPULATION GROWTH RATE, 2000-2017

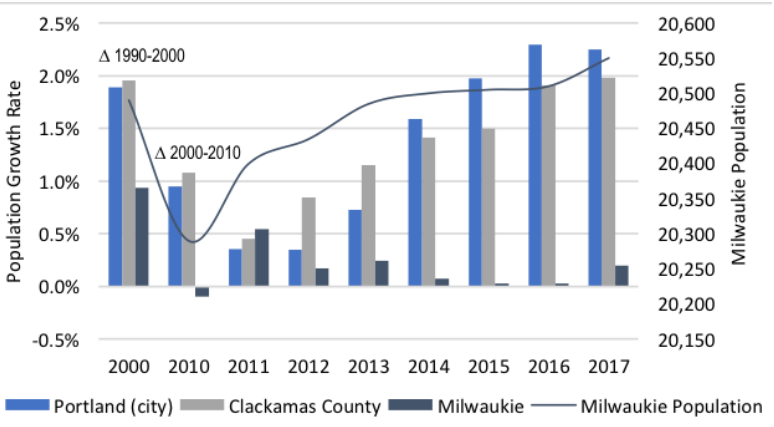
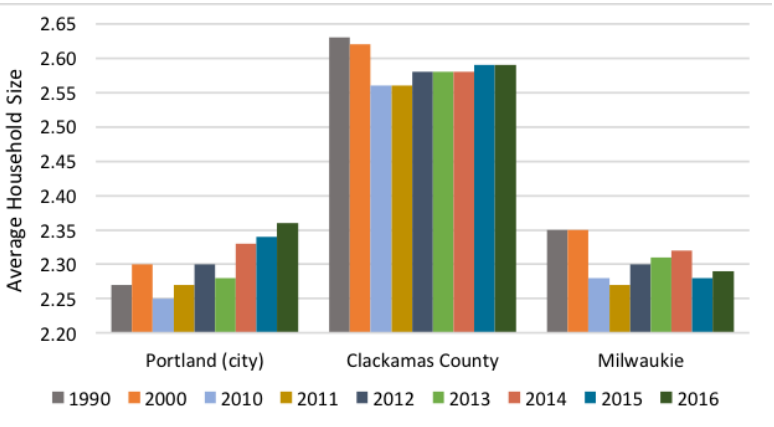


FIGURE 8. AVERAGE HOUSEHOLD SIZE COMPARISON, 1990-2016



2.27 in 1990 to 2.35; and Clackamas County has consistently remained at 2.60 people per household. Most households in Milwaukie have one or two people; between 2011 and 2016, marginal household growth in the city occurred in four and four or more person households. The city has been losing population under 35 and between the ages of 55 and 64, typically one-person and downsizing households; it has been gaining population between the ages of 34 and 54, and over the age of 65.

Owner-occupied homes have made up between 55% and 60% of Milwaukie's housing stock at a relatively constant rate over the past 26 years. Since 2010 Milwaukie has been gaining home owners and losing renters, but at low rates (0.6% owner gain / renter loss). By comparison, Portland has been gaining renter over owner households at much higher rates (0.1% owner and 1.6% renter), as has Clackamas County (0.5% owner, 1.9% renter); unlike Milwaukie, neither Portland nor Clackamas County has been losing owners or renters in absolute terms. It is very likely that, with very low housing production over recent decades in Milwaukie, that existing units have been converted from rentals to ownership, pushing renters out of the city for lack of alternative rental homes within the city for them to go to.

FIGURE 9. OWNER-OCCUPIED HOMES COMPARISON, 1990-2016

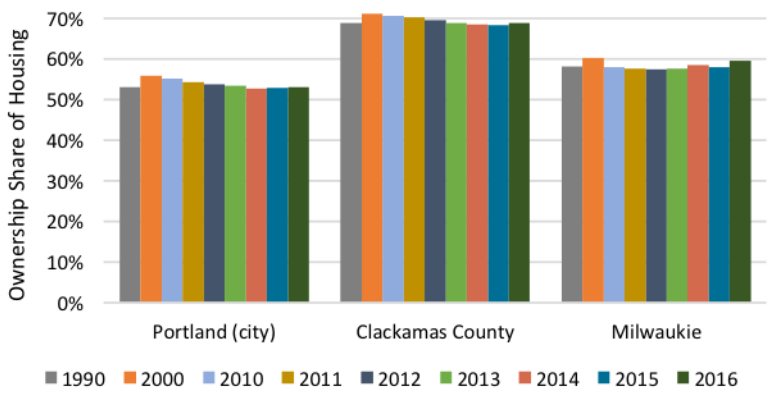


FIGURE 10. RESIDENTIAL BUILDING PERMITS ISSUED BETWEEN 1990-2017

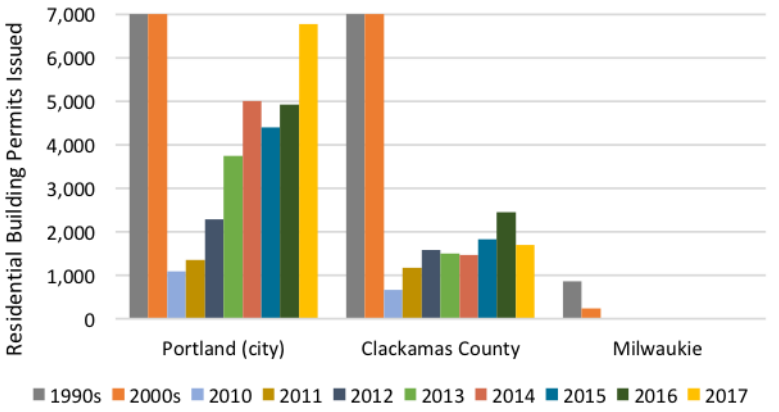
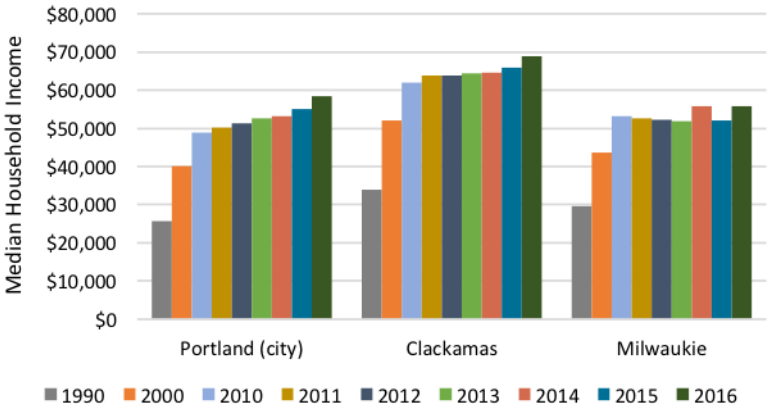


FIGURE 11. MEDIAN HOUSEHOLD INCOME, 1990-2016



HOUSING STOCK

Milwaukie added almost no housing between 2000 and 2017 (the latest year for which market study data was available when it was conducted in August, 2018). Since 2000, 294 housing units have been added, including only 40 between 2010 and 2017. The bulk of new housing units added since 1990 were constructed prior to 2000, resulting in an average annual growth rate in housing units since 1990 of 0.5% per year. This likely has a causal relationship to the 0.4% annual growth in households since 1990.

HOUSEHOLD INCOME AND HOUSING COSTS

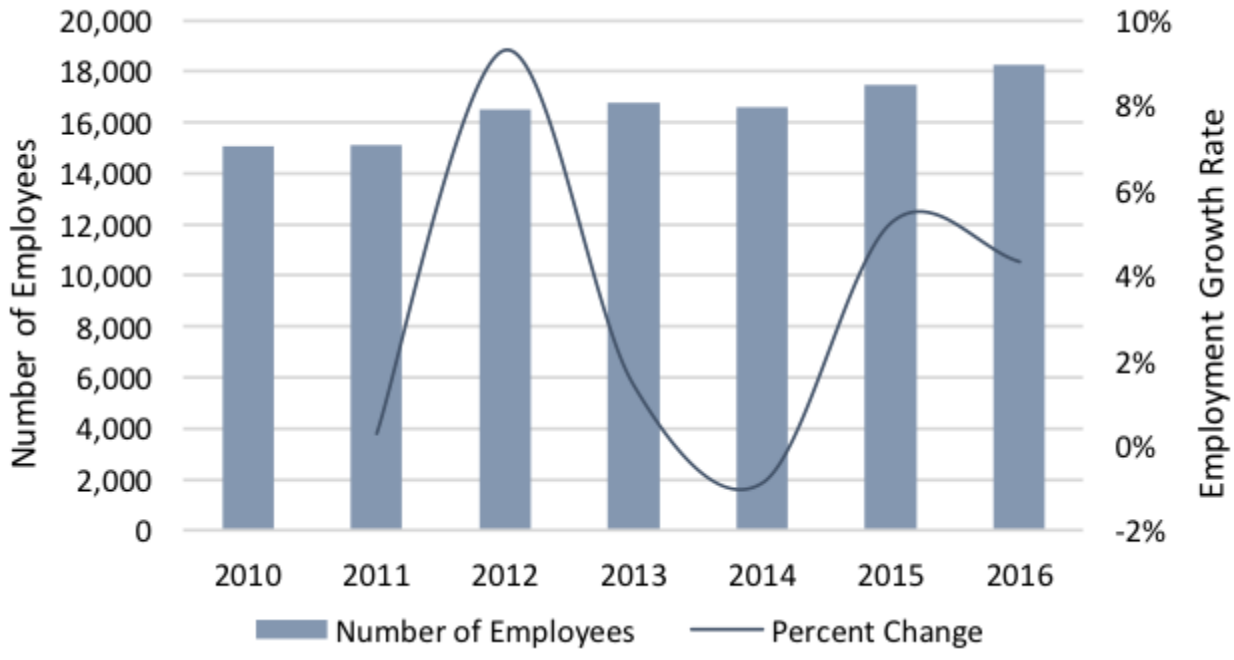
Since 2010, median household income in Milwaukie has remained relatively flat, with 0.8% annual increases in some years balanced by declines in other years, indicating that higher income households are leaving the city. Portland and Clackamas County, on the other hand, has been small but consistently positive gains in median household income since 2010.

Median housing costs have increased by over 2% annually since 2010 in Milwaukie. Since 2000, the increase in the median cost of housing for owners and renters has outpaced the increase in median household income by roughly 0.5% to 1% annually. This indicates that housing has been consistently getting less affordable in Milwaukie, as wage increases of earners have not kept pace with housing cost increases.

EMPLOYMENT

Unlike housing, employment in Milwaukie has average an annual growth rate of about 3.2%, with significantly higher growth in some years. With employment growth roughly 18 times higher than population growth in Milwaukie, presumably an increasing amount of employees would prefer to find housing close to their jobs in the city.

FIGURE 12. EMPLOYMENT BETWEEN 2010-2016



HOUSING STOCK SALES TREND DATA

Home sales data of nearly 3,000 RMLS transactions between 2011 and 2018 were analyzed, and the results indicate an exceptionally uniform housing stock. The vast majority of the homes sold are between 1,100 and 2,300 square feet, with three or four bedrooms, and sit on lots of about 0.17 acres in size; 90 to 95% of this housing stock was built before the year 2000. Comparing the most recent home sales to existing housing unit data from the U.S. Census reveals significant demand for newer housing, specifically homes built after 2010.

A growth in sales prices per square foot since 2011 indicates that demand is more significant for smaller than larger homes: in general, sales price per square foot is higher for smaller homes. When price per square foot for similar units is compared over time, the pattern of demand that emerges indicates that the price per square foot for a two-bedroom home has been increasing by 14% per year since 2011, while since then it has only been increasing by 10% for three bedroom and 8% for four bedroom homes, annually. Similarly, the average price per square foot for homes of 400 to 800 square feet in size has been increasing by 22% per year since 2011, whereas since then it has only been increasing by 13% annually for 800 to 1,200 square foot homes, by 10% for homes

FIGURE 13. HOME SALES BY AVERAGE SQUARE FEET AND LOT SIZE, 2011-2018

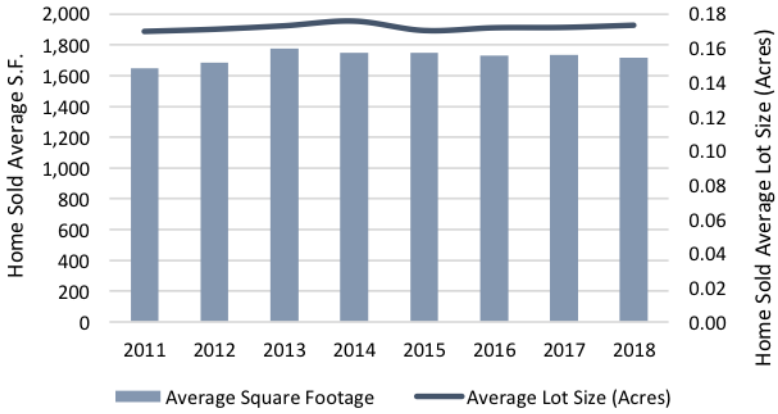


FIGURE 14. HOME SALES BY AVERAGE NUMBER OF BEDROOMS, 2011-2018

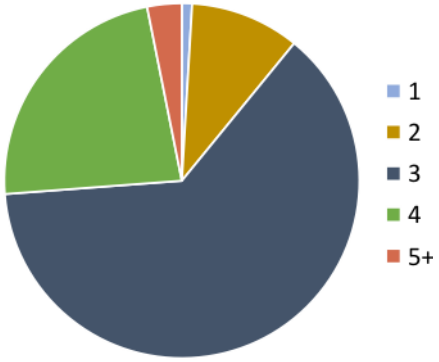


FIGURE 15. HOME SALES BY YEAR BUILT VS AGE OF HOUSING STOCK, 2011-2018

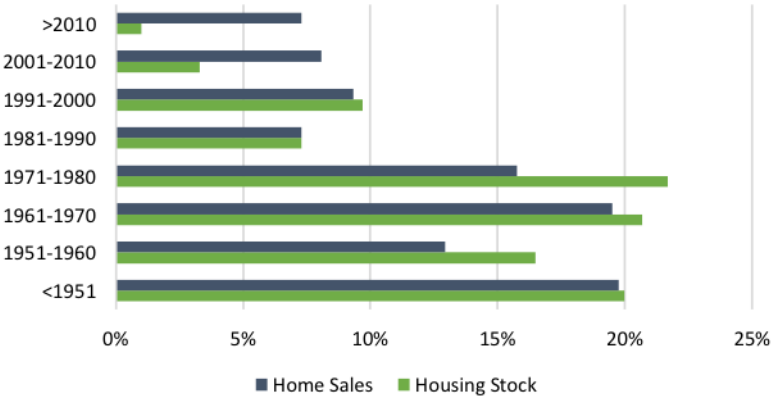


FIGURE 16. SALES PRICE/SQUARE FOOT BY NUMBER OF BEDROOMS IN MILWAUKIE, 2011-2018

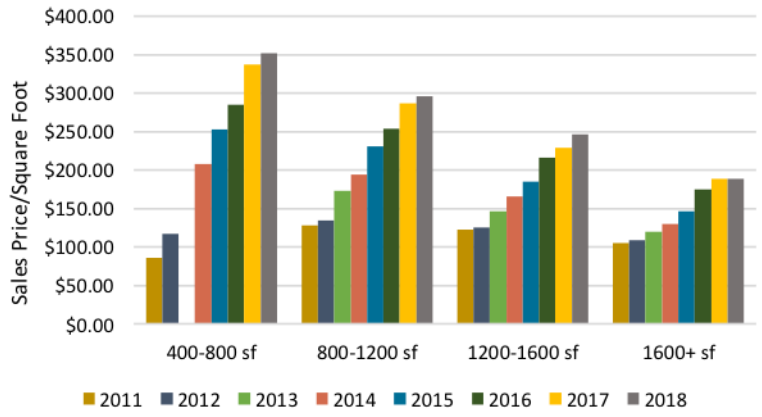


FIGURE 17. SALES PRICE/SQUARE FOOT BY UNIT SIZE IN MILWAUKIE, 2011-2018

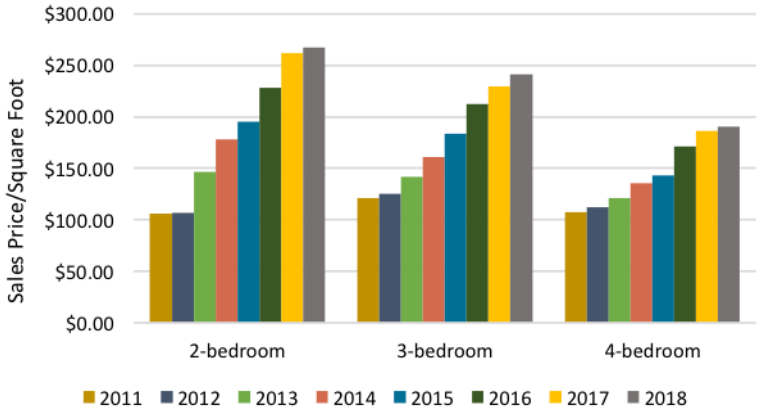
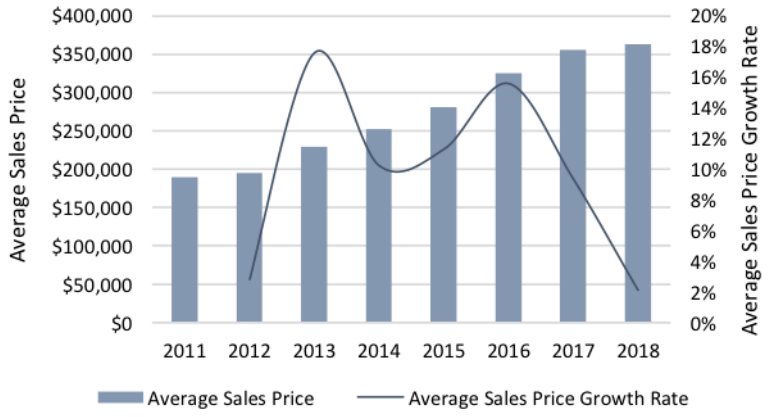


FIGURE 18. AVERAGE SALES PRICE IN MILWAUKIE, 2011-2018



of 1,200 to 1,600 square feet, and by 9% annually for homes larger than 1,600 square feet.

Home prices in Milwaukie have increased by about 10% annually since 2011, from an average of $189,500 in 2011 to about $363,000 in 2018, almost doubling over seven years.

New homes in housing clusters will likely find a ready market, as buyers in Milwaukie have been willing to pay increasingly more for smaller homes. Average pricing for new homes for sale with an average size of 800 to 2,000 square feet will likely increase by about 7.8% to $336 per square foot, from roughly $231 in 2018. For smaller homes of 600 to 1,100 square feet, pricing is projected to increase from an average of $285 per square foot in 2018 to roughly $450 per square foot in 2023.

RENTAL MARKET DATA

Since 2014, rent has increased by 9% to 10% annually for all home types except studios. Assuming an annual increase in rents of about 6% over the next five years, average rents are anticipated to rise from $1.33 per square foot in 2018 to $2.05 per square foot by 2023, or from $1,409 to $1,687 in average monthly rent from 2018 to 2023.

FIGURE 19. AVERAGE RENTS, RENTS/SF AND UNIT SIZES, 2014-2018

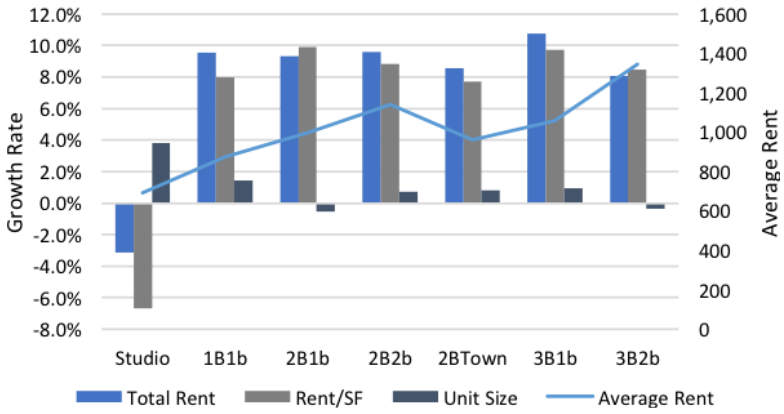


FIGURE 20. ESTIMATED PRICING FOR RENTAL HOUSING, 2018-2023

Estimated Current Demand (2018) | One to Three Bedroom Units (Avg 600-1,100 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	600	$795	$1,113	$954	$1.59
2 Bed	850	$1,008	$1,332	$1,224	$1.44
3 Bed	1,100	$1,213	$1,836	$1,443	$1.31
Totals/Weighted Avg	**1,061**	**$795**	**$1,836**	**$1,409**	**$1.33**

Forecasted Values (2023) | One to Three Bedroom Units (Avg 600-1,100 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	600	$1,064	$1,489	$1,277	$2.13
2 Bed	850	$1,551	$2,049	$1,800	$2.12
3 Bed	1,100	$1,624	$2,457	$2,041	$1.86
Totals/Weighted Avg	**1,061**	**$1,064**	**$2,457**	**$1,687**	**$2.05**

ESTIMATED HOUSING DEMAND

Over the next five years to 2023, 343 new housing units are needed based on population and household growth forecasts prepared by Metro. Of these, roughly 307 new homes will be needed to meet ownership demand, and 36 new homes will be needed to meet rental demand. Given the apparent demand for smaller units over the past seven years, the number of smaller households in Milwaukie, and the overwhelming uniformity of its housing stock, it is likely that new smaller homes will outperform larger homes.

FIGURE 21. DEMAND FOR NEW HOUSING BY OWNERSHIP AND RENTAL DEMAND, MILWAUKIE, 2012-2023

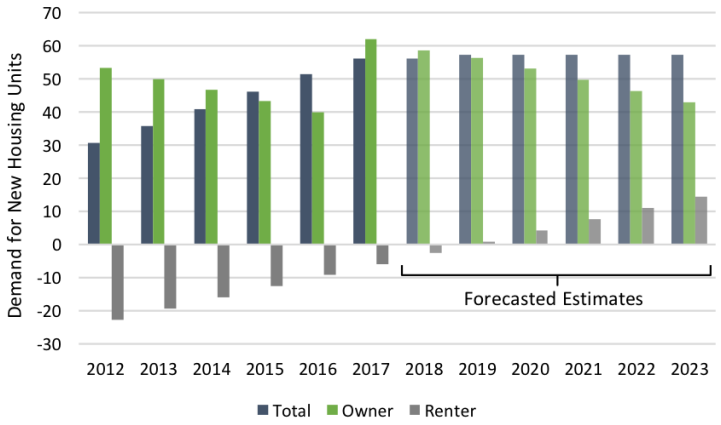


FIGURE 22. ESTIMATED PRICING FOR OWNERSHIP HOUSING, SCENARIO A, MILWAUKIE, 2018-2023

Estimated Current Demand (2018) | One to Three Bedroom Units (Avg 600-1,100 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	600	$171,708	$233,573	$214,635	$357.72
2 Bed	850	$234,317	$309,633	$284,527	$334.74
3 Bed	1,100	$255,463	$386,646	$303,794	$276.18
Totals/Weighted Avg	**1,061**	**$171,708**	**$386,646**	**$300,801**	**$285.27**

Forecasted Values (2023) | One to Three Bedroom Units (Avg 600-1,100 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	600	$229,784	$312,574	$271,179	$451.96
2 Bed	850	$360,525	$476,409	$418,467	$492.31
3 Bed	1,100	$341,867	$517,420	$429,644	$390.59
Totals/Weighted Avg	**1,061**	**$229,784**	**$517,420**	**$371,109**	**$450.62**

FIGURE 23. ESTIMATED PRICING FOR OWNERSHIP HOUSING, SCENARIO B, MILWAUKIE, 2018-2023

Estimated Current Demand (2018) | One to Four Bedroom Units (Avg 800-2,000 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	800	$201,915	$306,849	$252,394	$315.49
2 Bed	1,200	$177,778	$383,562	$315,492	$262.91
3 Bed	1,600	$166,935	$523,111	$386,495	$241.56
4 Bed	2,000	$156,077	$446,132	$380,480	$190.24
Totals/Weighted Avg	**1,659**	**$156,077**	**$523,111**	**$376,777**	**$230.58**

Forecasted Values (2023) | One to Four Bedroom Units (Avg 800-2,000 Square Feet)

Unit Type	Average	Range of Unit Pricing			
	SqFt	Low	High	Average	Avg $/SqFt
1 Bed	800	$270,208	$410,634	$340,421	$425.53
2 Bed	1,200	$273,533	$590,157	$431,845	$359.87
3 Bed	1,600	$223,397	$700,041	$461,719	$288.57
4 Bed	2,000	$208,866	$597,025	$402,945	$201.47
Totals/Weighted Avg	**1,659**	**$208,866**	**$700,041**	**$407,785**	**$336.31**

C

NON-PROFIT AND SUBSIDIZED AFFORDABLE HOUSING OPTIONS

Deeper affordability could be provided by subsidized affordable housing providers. There are at least three broad opportunity types for affordable housing to be provided in Milwaukie using the cluster housing program:

- Land trusts
- Affordable housing developments
- Government purchase of individual homes to be provided as dispersed affordable housing

LAND TRUSTS

When a land trust develops or acquires a site, it can provide affordable housing using three broad mechanisms: writing down the cost of the land; renting homes at cost without marking up for profit; and restricting the resale price of homes sold.

Land cost write-down

One of the primary tools used by a community land trust to provide housing at affordable prices is to remove the price of land from the price of each home. The land trust in effect holds the land, then sells the homes on top of it without including the cost of land in the selling price of the home. This can lead to a commensurate reduction in housing costs that depends on how much of the price of each home is made up of the cost of the land, which in turn depends on the initial cost of the land and the number of homes placed on that land.

Land trust rental homes

When land trusts provide rental housing, that housing can be offered at a reduced rate for two reasons: 1) the cost of the land may not need to be paid back through revenue from rents, and 2) the land trust, as a non-profit, does not need to show a return on investment beyond that needed to cover costs. Sometimes, a land trust will also be structured as a Community Development Corporation (CDC), allowing it to focus on providing housing and services to low-income and vulnerable populations.

Land trust home sales

When a land trust sells homes that it develops, it will often deed-restrict the home, such that the revenue from any future sale is constrained;

one popular model is to only allow the seller to collect up to 50% on the gain in property value due to appreciation, ensuring that the home will remain relatively more affordable than market-rate homes for sale in the same area. While this restricts the wealth-building potential of such homes for their buyers, it does not completely preclude the opportunity to build wealth through home ownership, and it also offers the opportunity to engage in such wealth-building to populations that may not otherwise have access to it at all, due to the high costs of market-rate housing.

AFFORDABLE HOUSING DEVELOPMENTS

When an entire site is developed by an affordable housing provider, a number of different tools can be combined to allow for homes to be brought to market at deep levels of affordability, potentially including for households making less than 30% of AMI. These include: subsidies to purchase the site; low-interest financing for construction; and other tools to allow for services to be provided for residents with additional needs beyond the basic need for housing within financial reach. Many of these tools are policy-based, such that the degree of affordability that is attainable is based on the specific policies being implemented by the tool, more so than the physical design of the homes being provided.

GOVERNMENT PURCHASE OF INDIVIDUAL DISPERSED-LOCATION HOMES

By definition under this proposed cluster housing code, cluster housing developments bring at least three homes to market on each site; potentially, these can include a mix of home sizes and types, at different price points. Under a dispersed-location home purchase program, funding from Metro's Affordable Housing Bond or other sources could be used to purchase one or more homes from the developer of a housing cluster, to be managed as affordable housing to help meet regional goals for affordable housing production. The benefits of such a program would include allowing the costs of home production to be carried by the private sector, while allowing the public sector to purchase homes on the open market in order to meet policy goals for affordable housing production. It's possible that deeper affordability benefits could be attained if low- or no-interest financing could be provided for the construction of mixed-income housing clusters, from which some units could be purchased as affordable housing, and some sold (or rented) at market rates.

D

PROPOSED CLUSTER HOUSING CODE RECOMMENDATIONS

LAND DIVISIONS

The proposed revised code would allow a cluster housing development on any size site to include a land division resulting in new lots with no minimum lot size, and no maximum density limitations. It would allow access to each new lot be provided flexibly, including using pedestrian paths through private common areas controlled by a Home Owners Association (HOA) or otherwise dedicated for common, rather than private or limited use.

DEVELOPMENT STANDARDS

The proposed revised cluster housing code supersedes the base zone development standards for height, density, minimum lot size, setbacks, yards, lot coverage, and minimum vegetation, as well as other design standards and parking standards.

These proposed standards are shown in Table 4. These proposed cluster housing standards are intended to:

1. promote market-rate provision of homes affordable to households of a variety of incomes and sizes,
2. encourage a design that balances a reduction in private outdoor space with shared outdoor common area, and
3. promote community-building, both within a housing cluster, and between the cluster and its surrounding neighborhood.

SIZE

The total footprint of a home in a housing cluster is proposed to be limited to 1,200 sq ft (or 1,000 for lots that are not in a transit-connected location in base zones R5, R7 and R10). The total building footprint of a house containing two to four homes is limited to 1,650 sq ft in low-density neighborhoods. The total floor area of each home is proposed to be limited to 1,600 sq ft, and the maximum average floor area of all homes in a housing cluster shall not exceed 1,000 sq ft.

TABLE 7. CLUSTER HOUSING DEVELOPMENT STANDARDS

Standards	Low-density neighborhoods	Transit-connected locations	Commercial and multifamily zones
HOME TYPES			
Buiding types allowed	Detached houses containing 1-4 homes	Detached and Attached	Detached and Attached
HOME SIZE			
Max building footprint per home	1,000 sf	1,200 sf	1,200 sf
Max total footprint per building	1,650 sf	no requirement	no requirement
Max floor area per ho me	1,600 sf		
Max average floor area per home	1,000 sf		
HEIGHT			
Max # of stories	2	2.5	3
Max structure height between 5 & 10 ft of rear lot line	15 ft		
Max height to eaves facing common green	1.618 times the narrowest average width between two closest buildings		
SETBACKS, SEPARATIONS, AND ENCROACHMENTS			
Separation between eaves of structures (minimum)	6 ft	6 ft	6 ft
Side and rear site setbacks	5 ft		
Front site setback (minimum)	15 ft	10 ft	0-10 ft
Front site setback (maximum)	20 ft		
LOT COVERAGE, IMPERVIOUS AREA, VEGETATED AREA			
Lot coverage (maximum)	50%	55%	60%
Impervious area (maximum)	60%	65%	70%
Vegetated site area (minimum)	35%	30%	25%
Tree cover (minimum at maturity)	40%		
COMMUNITY AND COMMON SPACE			
Community building footprint (maximum)	1,500 sf	2,000 sf	3,000 sf
PARKING			
Automobile parking spaces per primary home (minimum)	1	0.5	0.25
Dry, secure bicycle parking spaces per home (minimum)	1.5		
Guest bicycle parking spaces per home (minimum)	0.5		

The restriction on the maximum average floor area is intended to ensure that increased production of workforce housing is an outcome of the cluster housing code adoption.

HEIGHT

The height for all structures in a housing cluster is proposed to be restricted to: two stories in base zones R5, R7, and R10, except for lots in transit-connected locations within those base zones, where the height shall not exceed 2.5 stories; and 3 stories in all other base zones and locations.

To ensure that the heights of buildings around a common green do not overwhelm the scale of that green, the height to the highest eaves on any building facing a common open is restricted to exceed 1.618 times the width of that common green between the two closest buildings across its narrowest average width. Daylight basements are proposed to be exempted from counting towards the number of floors of height allowed for structures in a housing cluster development.

ORIENTATION

The front of a home is defined as the façade with the main entry door and front porch. This façade will need to be oriented toward either a common open space or public street. If a home is not contiguous to either of these, then it should orient toward an internal pedestrian circulation path. At least half of all the homes in a housing cluster need to be oriented toward its common open space.

HOME TYPES

The proposed revised code allows detached houses containing one to four homes in the R5, R7, or R10 base zones that are not in a transit-connected location; it allows for attached home types in transit-connected locations and in all other base zones.

Accessory dwelling units (ADUs) are allowed for any detached or attached single family home in a cluster housing development, in compliance with recent state legislation in Oregon broadening the situations where ADUs are allowed and encouraged. Indeed, the pro forma sensitivity testing performed for this project shows that accessory units to homes in a housing cluster could allow for the deepest levels of housing affordability within each cluster.

SETBACKS, SEPARATIONS, AND ENCROACHMENTS

The proposal allows for the front stairs of a home to encroach into a common green by no more than 20% of the width of the green; and for eaves to overhang the common green by up to 24 in.

The minimum space between the eaves of structures is proposed to be 6 ft, unless the structures are directly attached (e.g., townhomes), in which case no separation is required.

The proposal requires structures above 15 feet in height within a cluster development to be located at least 10 ft from the rear lot line(s) in zones R5, R7, and R10, and it requires all structures within a cluster development to be located no closer than 5 ft from the rear lot line, and at least 5 ft from the side lot line(s), of the site on which the housing cluster is developed. It allows parking, steps, ramps, drive aisles, and retaining walls to encroach into these side and rear setback areas as needed, within the overall lot coverage and lot vegetation requirements.

The proposed minimum setback between the nearest home and the site's front street lot line is 15 ft in the R5, R7, and R-10 base zones; 10 ft in transit-connected locations; and 10 ft in all other locations, unless the base zone allows for a smaller setback, in which case it allows for the smaller setback. It restricts the maximum front setback to 20 ft, unless a greater setback is required because of steep slopes. It allows porches to intrude into the front setback to within 5 ft of the front lot line. It allows walkways, sidewalks, steps, ramps, drive aisles, and retaining walls to encroach into the front setback as needed, within the limitations of the required amount of vegetation within the front setback.

CLUSTER HOUSING DESIGN STANDARDS

The intent of the housing cluster design standards is to create homes that engage with the street and each other in a manner that builds community and contributes positively to the neighborhood public realm. To this end, the proposed standards require homes in a cluster fronting a street to include a front porch facing the street that covers at least 60% of the width of the home and is at least 8 ft deep. The standards require that windows and doors account for at least 15% of the façade area for façades oriented toward a street, common open space, or interior walkway, and that these windows be either vertical or square in orientation – at least as tall as each window is wide. Horizontal window openings are allowed to be filled by either two or more vertically-oriented windows that are either all the same size, or with no more than two sizes used, or a horizontal window with a band of individual lites across the top; the lites must be either vertical or square and must cover at least 20% of the total height of the window.

FRONT PORCHES AND ENTRIES

The proposed standards require each primary home in a cluster to have a porch or recessed entryway on the front of the home. This area is intended to function as an outdoor room that extends the living space of the home into the semipublic area between the home and the open space.

When a porch is provided, the minimum porch depth is to be 6.5 ft, and the width of the porch is to be at least 60% of the width of the overall length of the front façade.

When a recessed entry is provided, it is to have minimum dimensions of 5ft by 5ft.

The front door of the dwelling is to open onto the porch or recessed entry. The entire area of the front porch or recessed entry is to be covered, and the surface of the front porch or recessed entry is not to exceed 48 in above grade, as measured from the average ground level at the front of the porch.

SITE DESIGN AND OTHER STANDARDS

Under this proposal, a cluster housing development is to include a minimum of 3 primary homes. It must include an adequately sized and centrally located common open space, as a key component of cluster housing developments. A common open space needs to meet the following standards: the common open space is to have at least 100 sq ft of area for each home in the housing cluster development, excluding ADUs; the minimum dimensions for the common open space are 20 ft by 12 ft; the entrance to at least one common open space area in a cluster housing development is to be

visible and accessible from an adjacent public street; and homes are to enclose at least 60% of three sides of common open space areas to which at least half of the homes in a cluster housing development are oriented. Enclosure is defined as the sum of the widths of all the homes on each side of a common open space area over the width of that side of that common open space area. This requirement is intended to provide the feeling of an outdoor room for the common open space area.

INDOOR COMMUNITY SPACE

Each cluster housing development may feature a community building or other common indoor space for the shared use of its residents and guests; such a building or space may have a footprint not to exceed: 1,500 sq ft in the R-5, R-7, and R-10 zones; 2,000 sq ft in transit-connected locations; or 3,000 sq ft in all other locations.

LOT COVERAGE, IMPERVIOUS AREA, VEGETATED AREA AND TREE COVER

The standards for lot coverage, impervious area, vegetated area, and tree cover are intended to provide for the eventual growth of an urban forest canopy that covers at least 40% of the area of the City of Milwaukie, with ample room for gardens and other vegetation, as well as for natural functions provided by permeable surfaces, such as stormwater infiltration (though this particular function can also be provided using solutions such as dry wells).

To this end, the total footprint of all structures within a housing cluster are not to exceed: 50% of the site area in the R5, R7, and R-10 base zones; 55% of the site in transit-connected locations; or 60% in all other locations. Impervious surfaces, including all structures, are not to exceed: 60% of the site area in the R5, R7, and R-10 base zones; 65% of the site in transit-connected locations; or 70% in all other locations. Vegetation and landscaped, pervious areas are to cover at least: 35% of the site area in the R5, R7, and R-10 base zones; 30% of the site in transit-connected locations; or 25% in all other locations. The area of the site's front yard, between the front homes and the adjacent street, is to be at least 50% covered by vegetation and landscaped, pervious areas. A tree plan is to be approved and followed that includes the planting of tree species in appropriate locations to cover at least 40% of the site with summer tree canopy at tree maturity. The tree plan must include maintenance procedures to ensure tree health throughout each tree's lifetime, including proper watering through means such as drip irrigation or greywater systems.

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CASCADIA PARTNERS

OPTICOS

Orange Splot

jla public involvement

CITY OF MILWAUKIE