Appendix A
Guidance from the Comprehensive Plan

This document provides a compilation of goals and policies from the 2035 Comprehensive Plan that provide guidance regarding development in the multi-dwelling zones. These policies serve as a basis for the Proposed Draft zoning code proposals. In summary, policies especially relevant to the multi-dwelling zones call for development to:

1. Accommodate housing growth, especially in and around centers, corridors, and transit station areas.
2. Contribute to providing a diversity of housing types, including an adequate supply of affordable housing and physically-accessible housing.
3. Provide healthy and safe environments for residents, with design that supports active living.
4. Provide pedestrian-oriented environments that are accessible to people of all ages and abilities.
5. Contribute to providing a network of safe and accessible street and pedestrian connections, especially around centers and transit stations.
6. Use design that responds to and enhances the positive qualities of context, including the distinct characteristics of Portland's five neighborhood pattern areas.
7. Integrate nature and green infrastructure into the urban environment, avoid environmental impacts, and reduce impervious surfaces and urban heat island effects.
8. Use resource-efficient design and development approaches.

This document groups Comprehensive Policies under each of the above topics.

Comprehensive Plan Goals and Policy Related to Multi-Dwelling Development

1. Accommodate housing growth, especially in and around centers, corridors, and transit station areas.

- **Goal 3.C - Focused growth.** Household and employment growth is focused in the Central City and other centers, corridors, and transit station areas, creating compact urban development in areas with a high level of service and amenities, while allowing the relative stability of lower-density single-family residential areas.
- **Goal 3.D - A system of centers and corridors.** Portland's interconnected system of centers and corridors provides diverse housing options and employment opportunities, robust multimodal transportation connections, access to local services and amenities, and supports low-carbon complete, healthy, and equitable communities.

- **Policy 3.2 - Growth and stability.** Direct the majority of growth and change to centers, corridors, and transit station areas, allowing the continuation of the scale and characteristics of Portland's residential neighborhoods.
- **Policy 3.12 - Role of centers.** Enhance centers as anchors of complete neighborhoods that include concentrations of commercial and public services, housing, employment, gathering places, and green spaces.
- **Policy 3.14 - Housing in centers.** Provide housing capacity for enough population to support a broad range of commercial services, focusing higher-density housing within a half-mile of the center core.
- **Policy 3.32 - Housing.** Provide for a wide range of housing types in Town Centers, which are intended to generally be larger in scale than the surrounding residential areas. There should be sufficient zoning capacity within a half-mile walking distance of a Town Center to accommodate 7,000 households.
- **Policy 3.36 - Housing.** Provide for a wide range of housing types in Neighborhood Centers, which are intended to generally be larger in scale than the surrounding residential areas, but smaller than Town Centers. There should be sufficient zoning capacity within a half-mile walking distance of a Neighborhood Center to accommodate 3,500 households.
- **Policy 3.39 - Growth.** Expand the range of housing and employment opportunities in the Inner Ring Districts. Emphasize growth that replaces gaps in the historic urban fabric, such as redevelopment of surface parking lots and 20th century auto-oriented development.
- **Policy 3.48 - Integrated land use and mobility.** Enhance Civic Corridors as distinctive places that are models of ecological urban design, with transit-supportive densities of housing and employment, prominent street trees and other green features, and high-quality transit service and pedestrian and bicycle facilities.
- **Policy 3.52 - Neighborhood Corridors.** Enhance Neighborhood Corridors as important places that support vibrant neighborhood business districts with quality multi-family housing, while providing transportation connections that link neighborhoods.
- **Policy 3.53 - Transit-oriented development.** Encourage transit-oriented development and transit-supportive concentrations of housing and jobs, and multimodal connections at and adjacent to high-capacity transit stations.
- **Policy 3.56 - Center stations.** Encourage transit stations in centers to provide high density concentrations of housing and commercial uses that maximize the ability of residents to live close to both high-quality transit and commercial services.
- **Policy 3.58 - Transit neighborhood stations.** Encourage concentrations of mixed-income residential development and supportive commercial services close to transit neighborhood stations. Transit neighborhood stations serve mixed-use areas that are not in major centers.
- **Policy 4.20 - Walkable scale.** Focus services and higher-density housing in the core of centers to support a critical mass of demand for commercial services and more walkable access for customers.

- **Policy 5.5 - Housing in centers.** Apply zoning in and around centers that allows for and supports a diversity of housing that can accommodate a broad range of households, including multi-dwelling and family-friendly housing options.
- **Policy 5.6 - Middle housing.** Enable and encourage development of middle housing. This includes multi-unit or clustered residential buildings that provide relatively smaller, less expensive units; more units; and a scale transition between the core of the mixed use center and surrounding single family areas. Where appropriate, apply zoning that would allow this within a quarter mile of designated centers, corridors with frequent service transit, high capacity transit stations, and within the Inner Ring around the Central City.
- **Policy 5.8 - Physically-accessible housing.** Allow and support a robust and diverse supply of affordable, accessible housing to meet the needs of older adults and people with disabilities, especially in centers, station areas, and other places that are proximate to services and transit.
- **Policy 5.22 - New development in opportunity areas.** Locate new affordable housing in areas that have high/medium levels of opportunity in terms of access s to active transportation, jobs, open spaces, high-quality schools, and supportive services and amenities.
- **Policy 5.23 - Higher-density housing.** Locate higher-density housing, including units that are affordable and accessible, in and around centers to take advantage of the access to active transportation, jobs, open spaces, schools, and various services and amenities.
- **Policy 5.31 - Household prosperity.** Facilitate expanding the variety of types and sizes of affordable housing units, and do so in locations that provide low-income households with greater access to convenient transit and transportation, education and training opportunities, the Central City, industrial districts, and other employment areas.
- **Policy 5.32 - Affordable housing in centers.** Encourage income diversity in and around centers by allowing a mix of housing types and tenures.

2. Contribute to providing a diversity of housing types, including an adequate supply of affordable housing and physically-accessible housing.

- **Goal 5.A - Housing diversity.** Portlanders have access to high-quality affordable housing that accommodates their needs, preferences, and financial capabilities in terms of different types, tenures, density, sizes, costs, and locations.
- **Goal 5.D - Affordable housing.** Portland has an adequate supply of affordable housing units to meet the needs of residents vulnerable to increasing housing costs.
- **Policy 4.15 - Residential area continuity and adaptability.** Encourage more housing choices to accommodate a wider diversity of family sizes, incomes, and ages, and the changing needs of households over time. Allow adaptive reuse of existing buildings, the creation of accessory dwelling units, and other arrangements that bring housing diversity that is compatible with the general scale and patterns of residential areas.
- **Policy 5.4 - Housing types.** Encourage new and innovative housing types that meet the evolving needs of Portland households, and expand housing choices in all neighborhoods. These housing types include but are not limited to single-dwelling units; multi-dwelling units; accessory

dwelling units; small units; pre-fabricated homes such as manufactured, modular, and mobile homes; co-housing; and clustered housing/clustered services.

- **Policy 5.5 - Housing in centers.** Apply zoning in and around centers that allows for and supports a diversity of housing that can accommodate a broad range of households, including multi-dwelling and family-friendly housing options.
- **Policy 5.6 - Middle housing.** Enable and encourage development of middle housing. This includes multi-unit or clustered residential buildings that provide relatively smaller, less expensive units; more units; and a scale transition between the core of the mixed use center and surrounding single family areas. Where appropriate, apply zoning that would allow this within a quarter mile of designated centers, corridors with frequent service transit, high capacity transit stations, and within the Inner Ring around the Central City.
- **Policy 5.7 - Adaptable housing.** Encourage adaption of existing housing and the development of new housing that can be adapted in the future to accommodate the changing variety of household types.
- **Policy 5.8 - Physically-accessible housing.** Allow and support a robust and diverse supply of affordable, accessible housing to meet the needs of older adults and people with disabilities, especially in centers, station areas, and other places that are proximate to services and transit.
- **Policy 5.9 - Accessible design for all.** Encourage new construction and retrofitting to create physically-accessible housing, extending from the individual unit to the community, through the use of Universal Design Principles.
- **Policy 5.19 - Aging in place.** Encourage a range of housing options and supportive environments to enable older adults to remain in their communities as their needs change.
- **Policy 5.23 - Higher-density housing.** Locate higher-density housing, including units that are affordable and accessible, in and around centers to take advantage of the access to active transportation, jobs, open spaces, schools, and various services and amenities.
- **Policy 5.31 - Household prosperity.** Facilitate expanding the variety of types and sizes of affordable housing units, and do so in locations that provide low-income households with greater access to convenient transit and transportation, education and training opportunities, the Central City, industrial districts, and other employment areas.
- **Policy 5.32 - Affordable housing in centers.** Encourage income diversity in and around centers by allowing a mix of housing types and tenures.
- **Policy 5.36 - Impact of regulations on affordability.** Evaluate how existing and new regulations affect private development of affordable housing, and minimize negative impacts where possible. Avoid regulations that facilitate economically-exclusive neighborhoods.
- **Policy 5.38 - Workforce housing.** Encourage private development of a robust supply of housing that is affordable to moderate-income households located near convenient multimodal transportation that provides access to education and training opportunities, the Central City, industrial districts, and other employment areas.

- **Policy 5.39 - Compact single-family options.** Encourage development and preservation of small resource-efficient and affordable single-family homes in all areas of the city.
- **Policy 5.43 - Variety in homeownership opportunities.** Encourage a variety of ownership opportunities and choices by allowing and supporting including but not limited to condominiums, cooperatives, mutual housing associations, limited equity cooperatives, land trusts, and sweat equity.

3. Provide healthy and safe environments for residents, with design that supports active living.

- **Goal 5.C - Healthy connected city.** Portlanders live in safe, healthy housing that provides convenient access to jobs and to goods and services that meet daily needs. This housing is connected to the rest of the city and region by safe, convenient, and affordable multimodal transportation.
- **Policy 4.10 - Design for active living.** Encourage development and building and site design that promotes a healthy level of physical activity in daily life.
- **Policy 4.11 - Access to light and air.** Provide for public access to light and air by managing and shaping the height and mass of buildings while accommodating urban-scale development.
- **Policy 4.12 - Privacy and solar access.** Encourage building and site designs that consider privacy and solar access for residents and neighbors while accommodating urban-scale development.
- **Policy 4.13 - Crime-preventive design.** Encourage building, site, and public infrastructure design approaches that help prevent crime.
- **Policy 4.14 - Fire prevention and safety.** Encourage building and site design that improves fire prevention, safety, and reduces seismic risks.
- **Policy 4.25 - Residential uses on busy streets.** Improve the livability of places and streets with high motor vehicle volumes. Encourage landscaped front setbacks, street trees, and other design approaches to buffer residents from street traffic.
- **Policy 4.87 - Growing food.** Increase opportunities to grow food for personal consumption, donation, sales, and educational purposes.
- **Policy 5.47 - Healthy housing.** Encourage development and maintenance of all housing, especially multi-dwelling housing, that protects the health and safety of residents and encourages healthy lifestyles and active living.
- **Policy 5.49 - Housing quality.** Encourage housing that provides high indoor air quality, access to sunlight and outdoor spaces, and is protected from excessive noise, pests, and hazardous environmental conditions.
- **Policy 5.51 - Healthy and active living.** Encourage housing that provides features supportive of healthy eating and active living such as useable open areas, recreation areas, community gardens, crime-preventive design, and community kitchens in multifamily housing.

- **Policy 5.52 - Walkable surroundings.** Encourage active transportation in residential areas through the development of pathways, sidewalks, and high-quality onsite amenities such as secure bicycle parking.
- **Policy 5.53 - Responding to social isolation.** Encourage site designs and relationship to adjacent developments that reduce social isolation for groups that often experience it, such as older adults, people with disabilities, communities of color, and immigrant communities.

4. Provide pedestrian-oriented environments that are accessible to people of all ages and abilities.

- **Policy 3.4 - All ages and abilities.** Strive for a built environment that provides a safe, healthful, and attractive environment for people of all ages and abilities.
- **Policy 4.5 - Pedestrian-oriented design.** Enhance the pedestrian experience throughout Portland through public and private development that creates accessible, safe, and attractive places for all those who walk and/or use wheelchairs or other mobility devices.
- **Policy 4.6 - Street orientation.** Promote building and site designs that enhance the pedestrian experience with windows, entrances, pathways, and other features that provide connections to the street environment.
- **Policy 4.7 - Development and public spaces.** Guide development to help create high-quality public places and street environments while considering the role of adjacent development in framing, shaping, and activating the public space of streets and urban parks.
- **Policy 4.8 - Alleys.** Encourage the continued use of alleys for parking access, while preserving pedestrian access. Expand the number of alley-facing accessory dwelling units.
- **Policy 4.20 - Walkable scale.** Focus services and higher-density housing in the core of centers to support a critical mass of demand for commercial services and more walkable access for customers.
- **Policy 9.58 - Off-street parking.** Limit the development of new parking spaces to achieve land use, transportation, and environmental goals, especially in locations with frequent transit service. Regulate off-street parking to achieve mode share objectives, promote compact and walkable urban form, encourage lower rates of car ownership, and promote the vitality of commercial and employment areas. Use transportation demand management and pricing of parking in areas with high parking demand. Strive to provide adequate but not excessive off-street parking where needed, consistent with the preceding practices.

5. Contribute to providing a network of safe and accessible street and pedestrian connections, especially around centers and transit stations.

- **Goal 9.B - Multiple goals.** Portland's transportation system is funded and maintained to achieve multiple goals and measurable outcomes for people and the environment. The transportation system is safe, complete, interconnected, multimodal, and fulfills daily needs for people and businesses.

- **GOAL 9.F - Positive health outcomes.** The transportation system promotes positive health outcomes and minimizes negative impacts for all Portlanders by supporting active transportation, physical activity, and community and individual health.
- **Policy 3.18 - Accessibility.** Design centers to be compact, safe, attractive, and accessible places, where the street environment makes access by transit, walking, biking, and mobility devices such as wheelchairs, safe and attractive for people of all ages and abilities.
- **Policy 3.19 - Center connections.** Connect centers to each other and to other key local and regional destinations, such as schools, parks, and employment areas, by pedestrian trails and sidewalks, bicycle sharing, bicycle routes, frequent and convenient transit, and electric vehicle charging stations. Prepare and adopt future street plans for centers that currently have poor street connectivity, especially where large commercial parcels are planned to receive significant additional housing density.
- **Policy 3.37 - Transportation.** Design Neighborhood Centers as multimodal transportation hubs that are served by frequent-service transit and optimize pedestrian and bicycle access from adjacent neighborhoods.
- **Policy 3.54 - Community connections.** Integrate transit stations into surrounding communities and enhance pedestrian and bicycle facilities (including bike sharing) to provide safe and accessible connections to key destinations beyond the station area.
- **Policy 3.97 - Eastern Neighborhoods active transportation.** Enhance access to centers, employment areas, and other community destinations in Eastern Neighborhoods by ensuring that corridors have safe and accessible pedestrian and bicycle facilities and creating additional secondary connections that provide low-stress pedestrian and bicycle access.
- **Policy 3.99 - Western Neighborhoods active transportation.** Provide safe and accessible pedestrian and bicycle connections, as well as off-street trail connections, to and from residential neighborhoods.
- **Policy 4.23 - Design for pedestrian and bicycle access.** Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors.
- **Policy 9.17 - Pedestrian transportation.** Encourage walking as the most attractive mode of transportation for most short trips, within neighborhoods and to centers, corridors, and major destinations, and as a means for accessing transit.
- **Policy 9.18 - Pedestrian networks.** Create more complete networks of pedestrian facilities, and improve the quality of the pedestrian environment.
- **Policy 9.47 - Connectivity.** Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district-specific street plans found in the Transportation System Plan, and prioritize access to specific places by certain modes in accordance with policies 9.6 and 9.7:
    - **Policy 9.6 - Transportation strategy for people movement.** Implement a prioritization of modes for people movement by making transportation system decisions according to the following ordered list:

- Walking
- Bicycling
- Transit
- Taxi / commercial transit / shared vehicles
- Zero emission vehicles
- Other single-occupant vehicles

When implementing this prioritization, ensure that:

- The needs and safety of each group of users are considered, and changes do not make existing conditions worse for the most vulnerable users higher on the ordered list.
- All users' needs are balanced with the intent of optimizing the right of way for multiple modes on the same street.
- When necessary to ensure safety, accommodate some users on parallel streets as part of a multi-street corridor.
- Land use and system plans, network functionality for all modes, other street functions, and complete street policies, are maintained.
- Policy-based rationale is provided if modes lower in the ordered list are prioritized.

6. Use design that responds to and enhances the positive qualities of context, including the distinct characteristics of Portland's five neighborhood pattern areas.

- **Goal 4.A - Context-sensitive design and development.** New development is designed to respond to and enhance the distinctive physical, historic, and cultural qualities of its location, while accommodating growth and change.
- **Policy 3.42 - Diverse residential areas.** Provide a diversity of housing opportunities in the Inner Ring Districts' residential areas. Encourage approaches that preserve or are compatible with existing historic properties in these areas. Acknowledge that these areas are historic assets and should retain their established characteristics and development patterns, even as Inner Ring centers and corridors grow. Apply base zones in a manner that takes historic character and adopted design guidelines into account.
- **Policy 3.91 - Inner Neighborhoods residential areas.** Continue the patterns of small, connected blocks, regular lot patterns, and streets lined by planting strips and street trees in Inner Neighborhood residential areas.
- **Policy 3.92 - Eastern Neighborhoods street, block, and lot pattern.** Guide the evolving street and block system in the Eastern Neighborhoods in ways that build on positive aspects of the area's large blocks, such as opportunities to continue mid-block open space patterns and create new connections through blocks that make it easier to access community destinations.
- **Policy 3.93 - Eastern Neighborhoods site development.** Require that land be aggregated into larger sites before land divisions and other redevelopment occurs. Require site plans which advance design and street connectivity goals.

- **Policy 3.94 - Eastern Neighborhoods trees and natural features.** Encourage development and right-of-way design that preserves and incorporates Douglas fir trees and groves, and that protects the area's streams, forests, wetlands, steep slopes, and buttes.
- **Policy 3.96 - Eastern Neighborhoods corridor landscaping.** Encourage landscaped building setbacks along residential corridors on major streets.
- **Policy 3.98 - Western Neighborhoods village character.** Enhance the village character of the Western Neighborhoods' small commercial districts and increase opportunities for more people to live within walking distance of these neighborhood anchors.
- **Policy 3.100 - Western Neighborhoods development.** Encourage new development and infrastructure to be designed to minimize impacts on the area's streams, ravines, and forested slopes.
- **Policy 4.1 - Pattern areas.** Encourage building and site designs that respect the unique built natural, historic, and cultural characteristics of Portland's five pattern areas described in Chapter 3: Urban Form.
- **Policy 4.2 - Community identity.** Encourage the development of character-giving design features that are responsive to place and the cultures of communities.
- **Policy 4.3 - Site and context.** Encourage development that responds to and enhances the positive qualities of site and context — the neighborhood, the block, the public realm, and natural features.
- **Policy 4.16 - Scale and patterns.** Encourage design and development that complements the general scale, character, and natural landscape features of neighborhoods. Consider building forms, scale, street frontage relationships, setbacks, open space patterns, and landscaping. Allow for a range of architectural styles and expression.
- **Policy 4.25 - Residential uses on busy streets.** Improve the livability of places and streets with high motor vehicle volumes. Encourage landscaped front setbacks, street trees, and other design approaches to buffer residents from street traffic.
- **Policy 4.30 - Scale transitions.** Create transitions in building scale in locations where higher-density and higher-intensity development is adjacent to smaller-scale single-dwelling zoning. Ensure that new high-density and large-scale infill development adjacent to single dwelling zones incorporates design elements that soften transitions in scale and limit light and privacy impacts on adjacent residents.
- **Policy 4.46 - Historic and cultural resource protection.** Within statutory requirements for owner consent, identify, protect, and encourage the use and rehabilitation of historic buildings, places, and districts that contribute to the distinctive character and history of Portland's evolving urban environment.
- **Policy 4.48 - Continuity with established patterns.** Encourage development that fills in vacant and underutilized gaps within the established urban fabric, while preserving and complementing historic resources.

7. Integrate nature and green infrastructure into the urban environment, avoid environmental impacts, and reduce impervious surfaces and urban heat island effects.

- **Goal 4.C - Human and environmental health.** Neighborhoods and development are efficiently designed and built to enhance human and environmental health: they protect safety and livability; support local access to healthy food; limit negative impacts on water, hydrology, and air quality; reduce carbon emissions; encourage active and sustainable design; protect wildlife; address urban heat islands; and integrate nature and the built environment.
- **Policy 3.7 - Integrate nature.** Integrate nature and use green infrastructure throughout Portland.
- **Policy 3.20 - Green infrastructure in centers.** Integrate nature and green infrastructure into centers and enhance public views and connections to the surrounding natural features.
- **Policy 4.4 - Natural features and green infrastructure.** Integrate natural and green infrastructure such as trees, green spaces, ecoroofs, gardens, green walls, and vegetated stormwater management systems, into the urban environment. Encourage stormwater facilities that are designed to be a functional and attractive element of public spaces, especially in centers and corridors.
- **Policy 4.73 - Design with nature.** Encourage design and site development practices that enhance, and avoid the degradation of, watershed health and ecosystem services and that incorporate trees and vegetation.
- **Policy 4.74 - Flexible development options.** Encourage flexibility in the division of land, the siting and design of buildings, and other improvements to reduce the impact of development on environmentally-sensitive areas and to retain healthy native and beneficial vegetation and trees.
- **Policy 4.75 - Low-impact development and best practices.** Encourage use of low-impact development, habitat-friendly development, bird-friendly design, and green infrastructure.
- **Policy 4.76 - Impervious surfaces.** Limit use of and strive to reduce impervious surfaces and associated impacts on hydrologic function, air and water quality, habitat connectivity, tree canopy, and urban heat island effects.
- **Policy 4.77 - Hazards to wildlife.** Encourage building, lighting, site, and infrastructure design and practices that provide safe fish and wildlife passage, and reduce or mitigate hazards to birds, bats, and other wildlife.
- **Policy 4.83 - Urban heat islands.** Encourage development, building, landscaping, and infrastructure design that reduce urban heat island effects.

8. Use resource-efficient design and development approaches.

- **Policy 4.18 - Compact single-family options.** Encourage development and preservation of small resource-efficient and affordable single-family homes in all areas of the city.
- **Policy 4.19 - Resource efficient and healthy residential design and development.** Support resource efficient and healthy residential design and development.

- **Policy 4.60 - Rehabilitation and adaptive reuse.** Encourage rehabilitation and adaptive reuse of buildings, especially those of historic or cultural significance, to conserve natural resources, reduce waste, and demonstrate stewardship of the built environment.
- **Policy 4.61 - Compact housing.** Promote the development of compact, space- and energy-efficient housing types that minimize use of resources such as smaller detached homes or accessory dwellings and attached homes.
- **Policy 4.62 - Seismic and energy retrofits.** Promote seismic and energy-efficiency retrofits of historic buildings and other existing structures to reduce carbon emissions, save money, and improve public safety.
- **Policy 4.69 - Reduce carbon emissions.** Encourage a development pattern that minimizes carbon emissions from building and transportation energy use.
- **Policy 4.70 - District energy systems.** Encourage and remove barriers to the development and expansion of low-carbon heating and cooling systems that serve multiple buildings or a broader district.
- **Policy 4.71 - Ecodistricts.** Encourage ecodistricts, where multiple partners work together to achieve sustainability and resource efficiency goals at a district scale.
- **Policy 4.72 - Energy-producing development.** Encourage and promote development that uses renewable resources, such as solar, wind, and water to generate power on-site and to contribute to the energy grid.
- **Policy 5.39 - Compact single-family options.** Encourage development and preservation of small resource-efficient and affordable single-family homes in all areas of the city.
- **Policy 5.50 - High-performance housing.** Encourage energy efficiency, green building practices, materials, and design to produce healthy, efficient, durable, and adaptable homes that are affordable or reasonably priced.
- **Policy 9.55 - Parking management.** Reduce parking demand and manage supply to improve pedestrian, bicycle and transit mode share, neighborhood livability, safety, business district vitality, vehicle miles traveled (VMT) reduction, and air quality. Implement strategies that reduce demand for new parking and private vehicle ownership, and that help maintain optimal parking occupancy and availability.
- **Policy 9.58 - Off-street parking.** Limit the development of new parking spaces to achieve land use, transportation, and environmental goals, especially in locations with frequent transit service. Regulate off-street parking to achieve mode share objectives, promote compact and walkable urban form, encourage lower rates of car ownership, and promote the vitality of commercial and employment areas. Use transportation demand management and pricing of parking in areas with high parking demand. Strive to provide adequate but not excessive off-street parking where needed, consistent with the preceding practices.

EXHIBIT B

Appendix B

Code Modeling – Prototypes

Better Housing by Design

AN UPDATE TO PORTLAND'S MULTI-DWELLING ZONING CODE

March 2019

The purpose of these prototypes was to model draft multi-dwelling zoning code development standards to illustrate and assess potential built outcomes and to consider how the various regulations work in relationship to each other. Project staff used the prototypes to assess if the draft base and bonus floor area ratios (FAR) for the multi-dwelling zones are achievable, given the other development parameters, such as maximum building height, site coverage, and required setbacks.

Notes on the Code Modeling Prototypes and Parameters

- **Zone names:** uses current zones. The current R3 and R2 zones are proposed to be combined into the new RM1 zone (the proposed standards for this new zone correspond to those shown for the R2 zone code modeling prototypes).
- **Prototype site locations:** based on common inner neighborhood and eastern neighborhood site configurations.
- **Development standards:** modeled on basic development standards in the Proposed Draft. See table – shading indicates standards that are the same as current regulations. Not shown on the table are standards for the Deeper Housing Affordability Bonus (modeled for prototypes 2, 4, 8 and 10), which provide 10 feet of additional height and an additional 10% building coverage for qualifying projects.

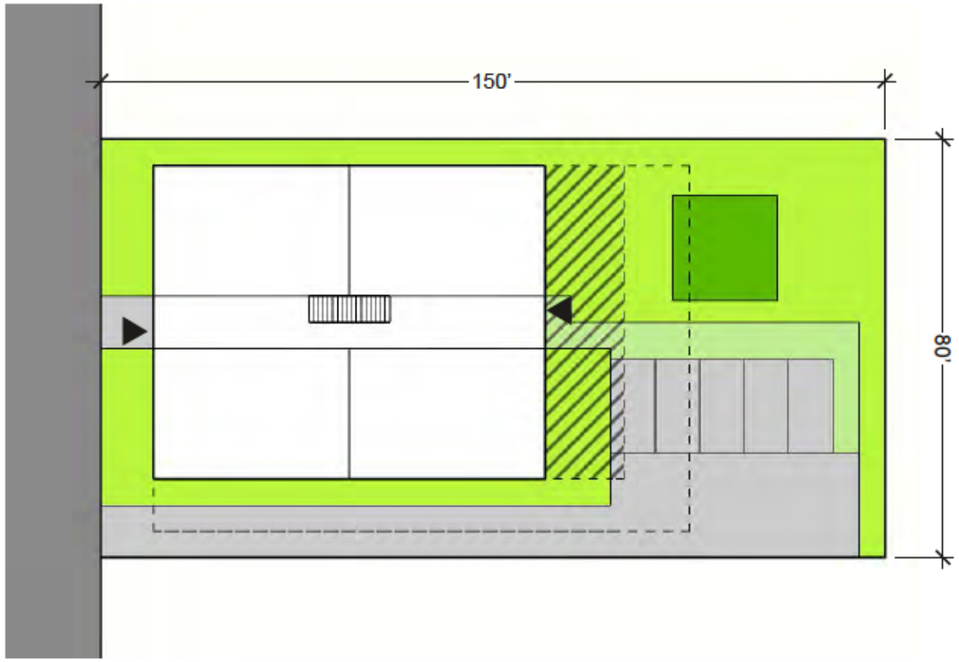
Development Standards *New Proposed Zone*	R3 RM1	R2 RM1	R1 RM2	RH RM3/RM4
Base FAR	.75 to 1	1 to 1	1.5 to 1	2 to 1 / 4 to 1
Bonus FAR	1.125 to 1	1.5 to 1	2.25 to 1	3 to 1 / 6 to 1
Max. Height	35'	35'	45'	65' / 75'
Max. Building Coverage	45%	50%	60%	85%
Min. Front Setback	10'	10'	10'	10' / 0'
Side/Rear Setback	5'	5'	5'	5'
Outdoor Space / Unit	48 sq. ft.	48 sq. ft.	48 sq. ft.	36/48 sq. ft.
Landscaping	35%	30%	20%	15%

- **Eastern Portland rear setback:** Eastern Portland prototypes used a rear setback equivalent to 25% of site depth.
- **Step down height:** R1 inner neighborhood prototypes were modeled assuming rear of site abuts single-dwelling zoning, with height limited to 35 feet for a 25-foot distance from rear property line.
- **Outdoor space:** all prototypes show outdoor space as common area (regulations also allow private outdoor spaces such as balconies). Large prototype sites modeled the draft requirement for outdoor common area equal to 10 percent of site area.
- **FAR modeling and numbers of units:** prototypes illustrate maximum base and bonus FARs, but this is not intended to indicate the likelihood or economic feasibility of this scale. Except for the townhouse variants, modeling assumed approximately 1,000 square feet per unit (gross – including shared hallways/stairways).
- **Parking:** assumes site locations close to frequent transit, where no parking is required for projects with up to 30 units.
- **RH (4 to 1 FAR) prototypes:** prototypes 10 and 11 did not model the 10-foot side/rear setbacks proposed in the Discussion Draft for buildings taller than 55 feet.

Code Modeling Outcomes

The code modeling showed that the draft development parameters can accommodate the proposed base and bonus FARs, although the bonus FARs almost entirely fill the potential building envelope defined by the building height, coverage and setback parameters. The modeling also showed that requirements for outdoor common areas and Eastern Portland deep rear setbacks would not prevent the maximum FARs from being achieved.

Additional Information: See ***Appendix C*** for a summary of an analysis of the economic feasibility of the proposed base and bonus FARs, based on these prototypes.



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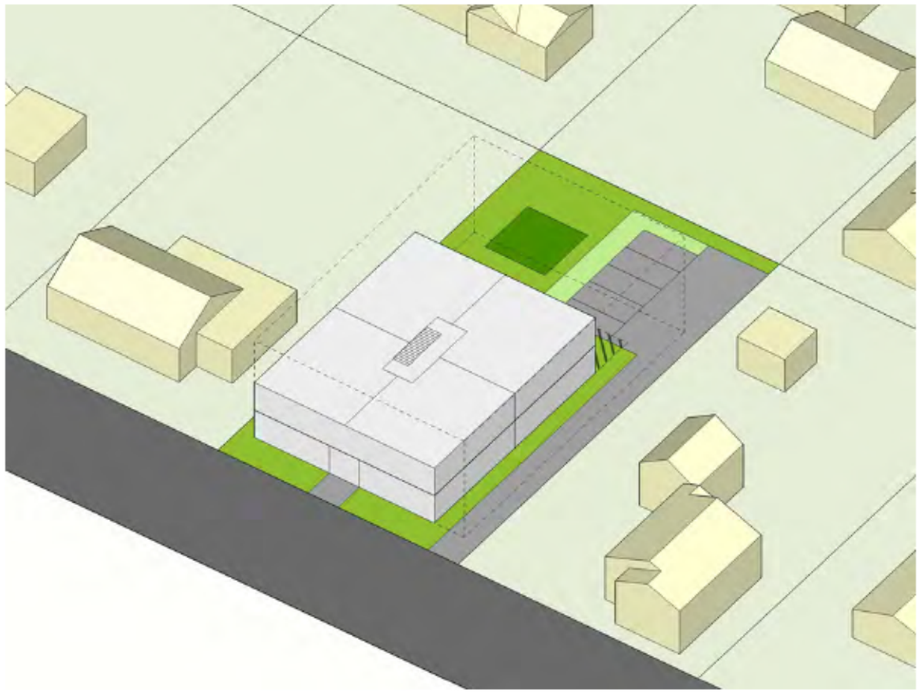
GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 80' x 150'
Area: 12,000 SF

R3 ZONE STANDARDS

Max FAR: 0.75 : 1
Allowable Building Floor Area: 9,000 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 45% (5,400 SF)

Required Landscaping: 35% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 0.75 : 1
Building Floor Area: 9,000 SF

Height: 20'

Building Coverage: 4,500 SF

Landscaping: 4,200 SF

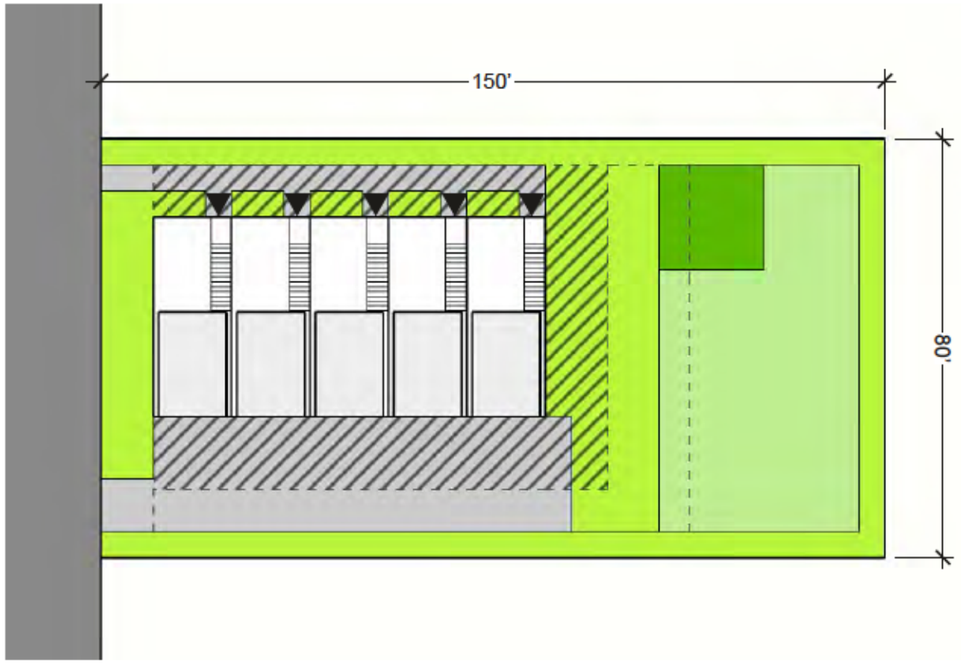
Required Outdoor Space: 384 SF
(shown as part of common area)

Common Area: 400 SF

Provided Parking Stalls: 5

Number of Units: 8
Average Unit Area: 1,000 SF
88%

PROTOTYPE 1 | R3 ZONE - BASE FAR | EASTERN NEIGHBORHOOD



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GROUND FLOOR PLAN

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 80' x 150'
Area: 12,000 SF

R3 ZONE STANDARDS

Max FAR: 0.75 : 1
Allowable Building Floor Area: 9,000 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 45% (5,400 SF)

Required Landscaping: 35% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 0.71 : 1
Building Floor Area: 8,500 SF

Height: 30'

Building Coverage: 2,850 SF

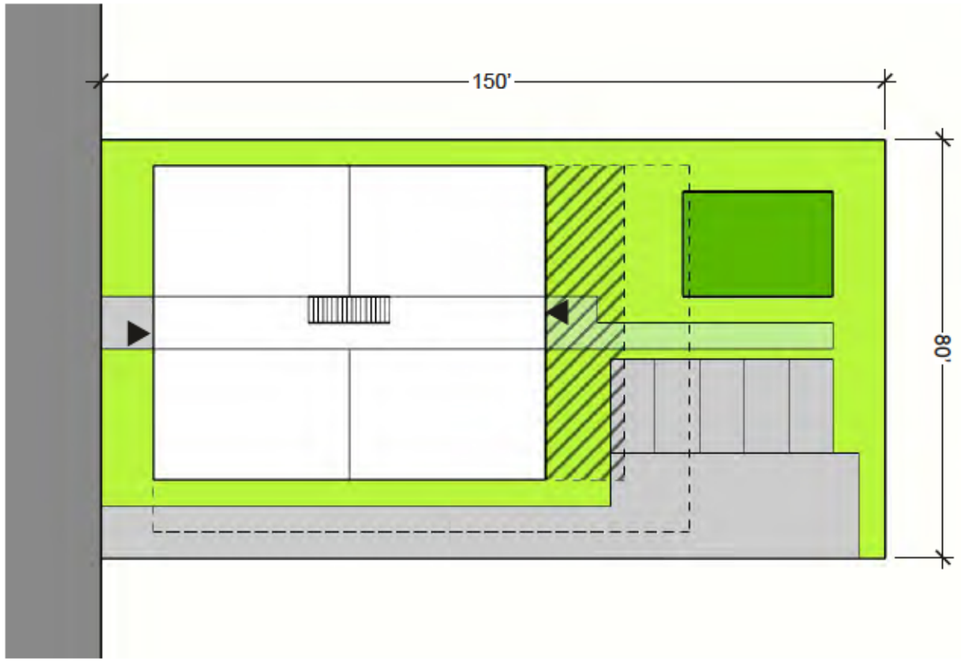
Landscaping: 4,200 SF

Required Outdoor Space: 240 SF
(shown as part of common area)

Common Area: 400 SF

Provided Parking Stalls: 5

Number of Units: 5
Unit Area: 1,450 SF
Garage Area: 260 SF
Total Area: 1,710 SF



0 10 20 40

SITE

Dimensions: 80' x 150'
Area: 12,000 SF

R3 ZONE STANDARDS

Max FAR: 1.125 : 1 (With Bonus)
Allowable Building Floor Area: 13,500 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 45% (5,400 SF)

Required Landscaping: 35% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.125 : 1
Building Floor Area: 13,500 SF

Height: 30'

Building Coverage: 4,500 SF

Landscaping: 4,200 SF

Required Outdoor Space: 576 SF
(shown as part of common area)

Common Area: 576 SF

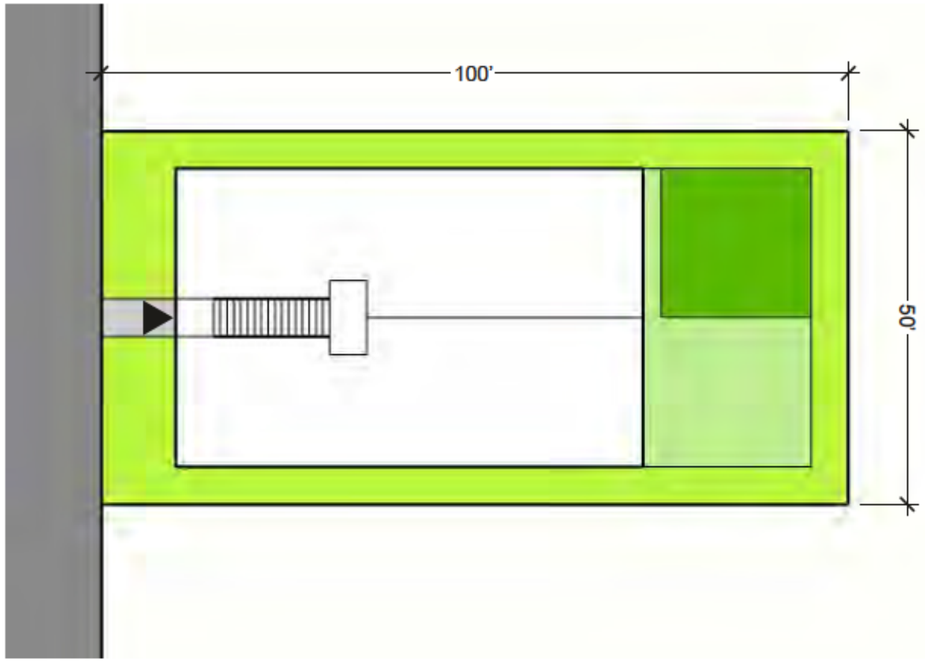
Provided Parking Stalls: 5

Number of Units: 12
Average Unit Area: 1,020 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **90%**

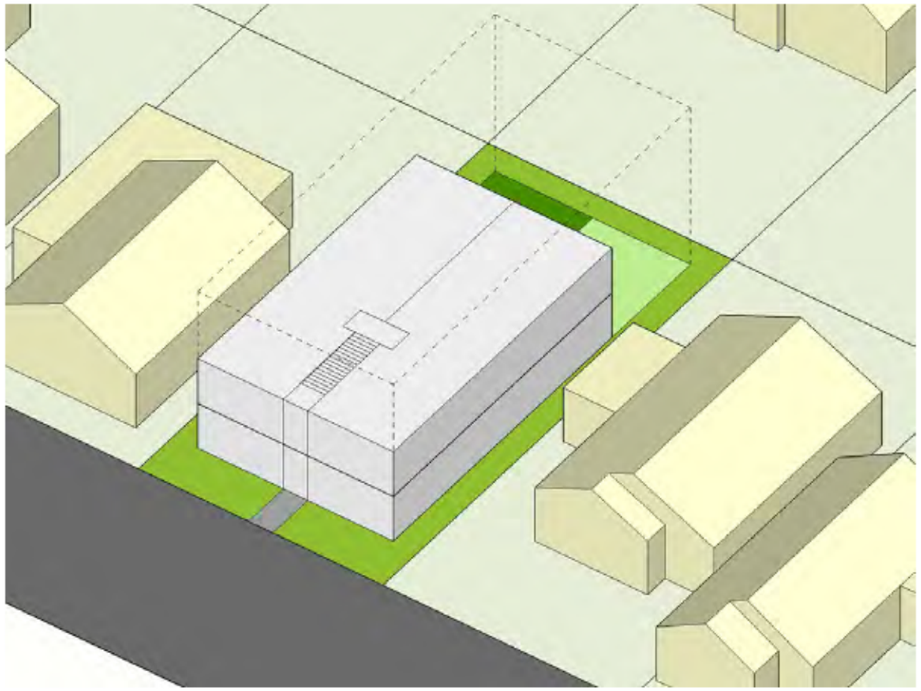
GROUND FLOOR PLAN

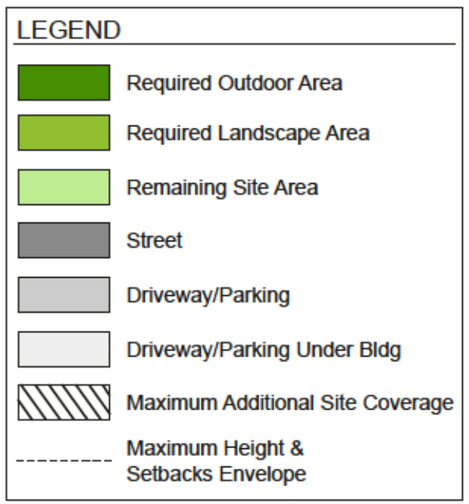
LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope



GROUND FLOOR PLAN





SITE

Dimensions: 50' x 100'
Area: 5,000 SF

R2 ZONE STANDARDS

Max FAR: 1 : 1
Allowable Building Floor Area: 5,000 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 50% (2,500 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1 : 1
Building Floor Area: 5,000 SF

Height: 20'

Building Coverage: 2,500 SF

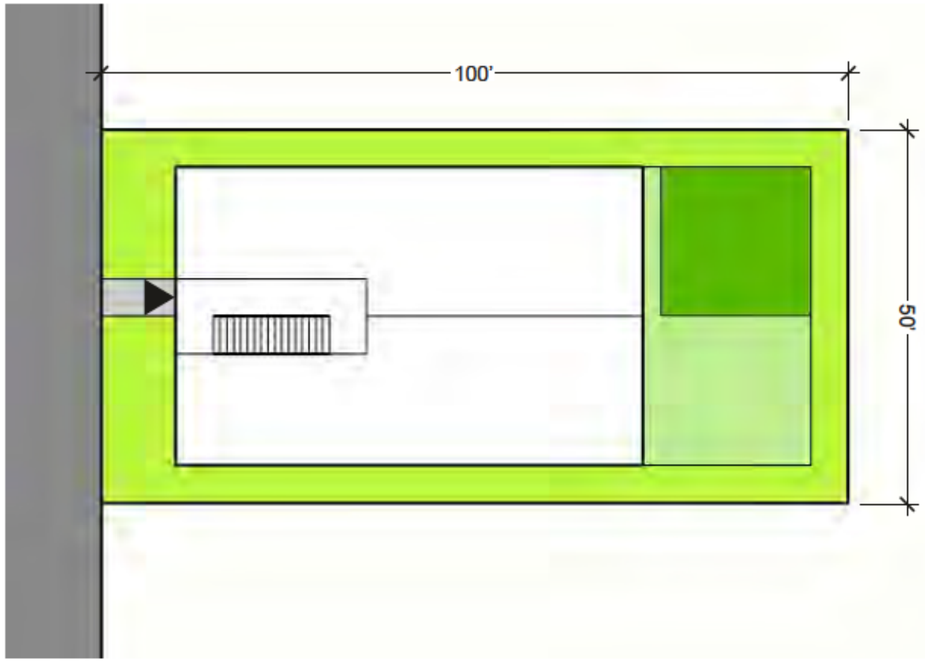
Landscaping: 1,500 SF

Required Outdoor Space: 192 SF
(shown as part of common area)

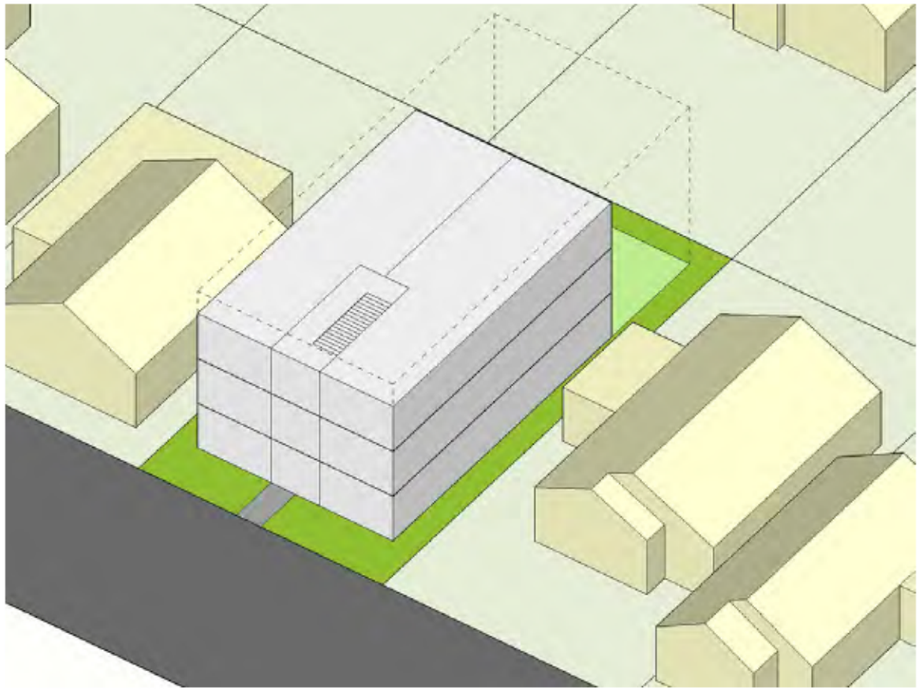
Common Area: 400 SF

Provided Parking Stalls: 0

Number of Units: 4
Average Unit Area: 1,173 SF
93%



GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 50' x 100'
Area: 5,000 SF

R2 ZONE STANDARDS

Max FAR: 1.5 : 1 (With Bonus)
Allowable Building Floor Area: 7,500 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 50% (2,500 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.5 : 1
Building Floor Area: 7,500 SF

Height: 30'

Building Coverage: 2,500 SF

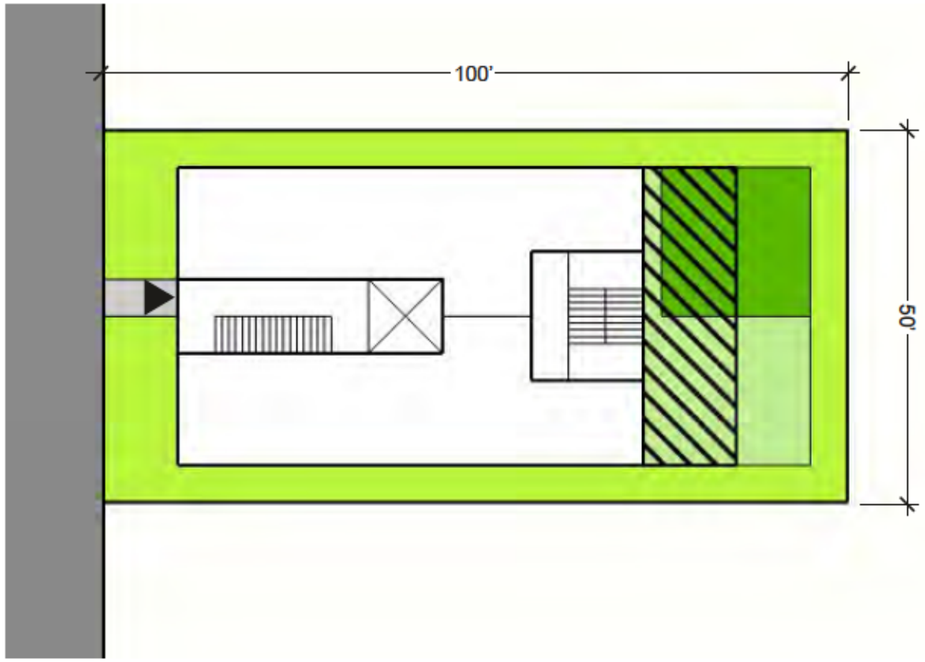
Landscaping: 1,500 SF

Required Outdoor Space: 288 SF
(shown as part of common area)

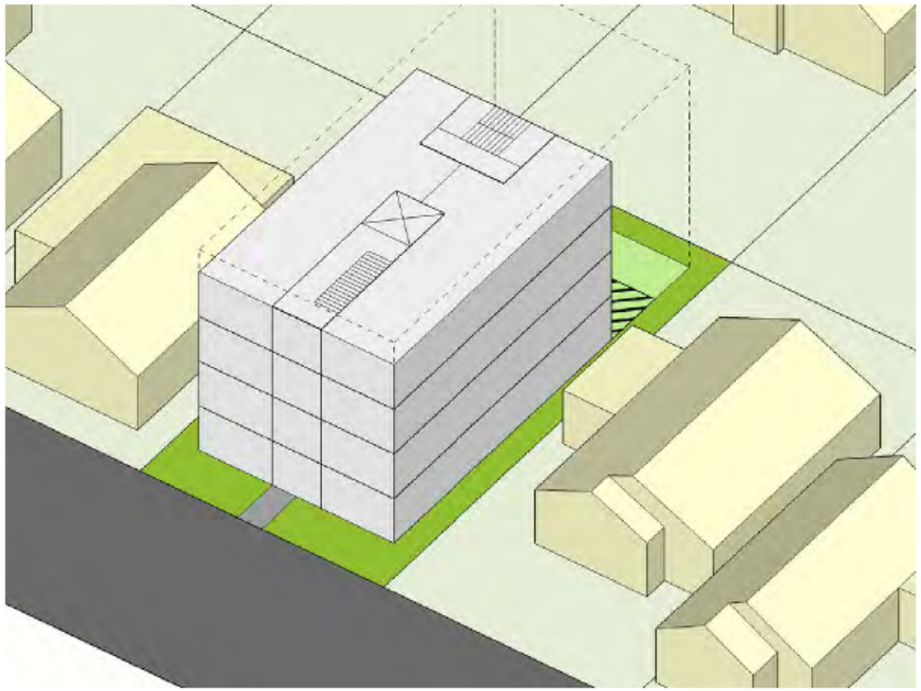
Common Area: 400 SF

Provided Parking Stalls: 0

Number of Units: 6
Average Unit Area: 1,122 SF
90%



GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 50' x 100'
Area: 5,000 SF

R2 ZONE STANDARDS

Max FAR: 2 : 1 (With Deeper Affordability Bonus)
Allowable Building Floor Area: 10,000 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 60% (3,000 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2 : 1
Building Floor Area: 10,000 SF

Height: 40'

Building Coverage: 2,500 SF

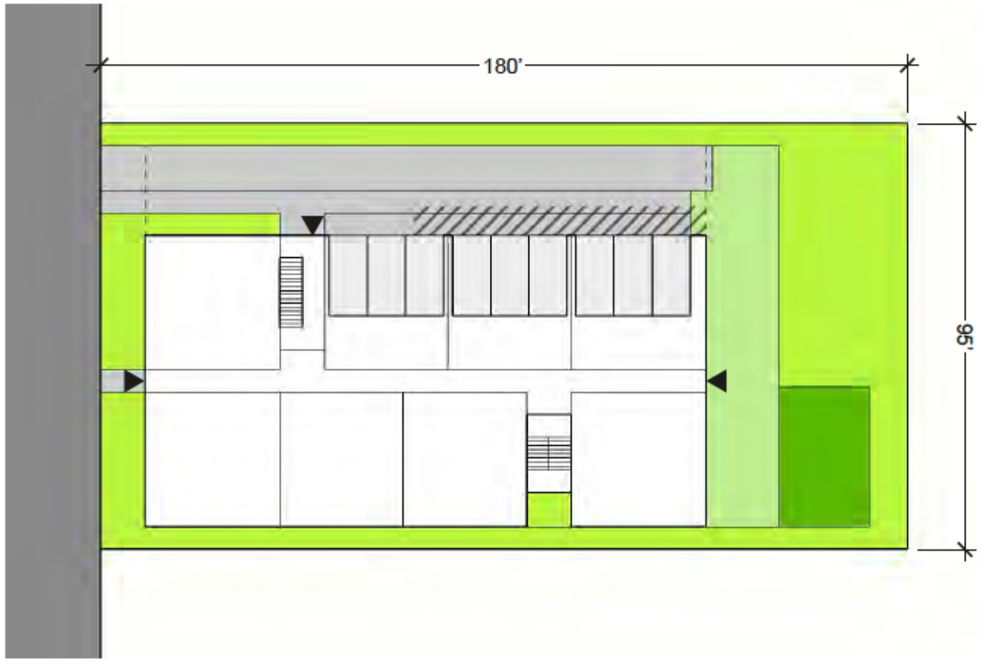
Landscaping: 1,500 SF

Required Outdoor Space: 384 SF
(shown as part of common area)

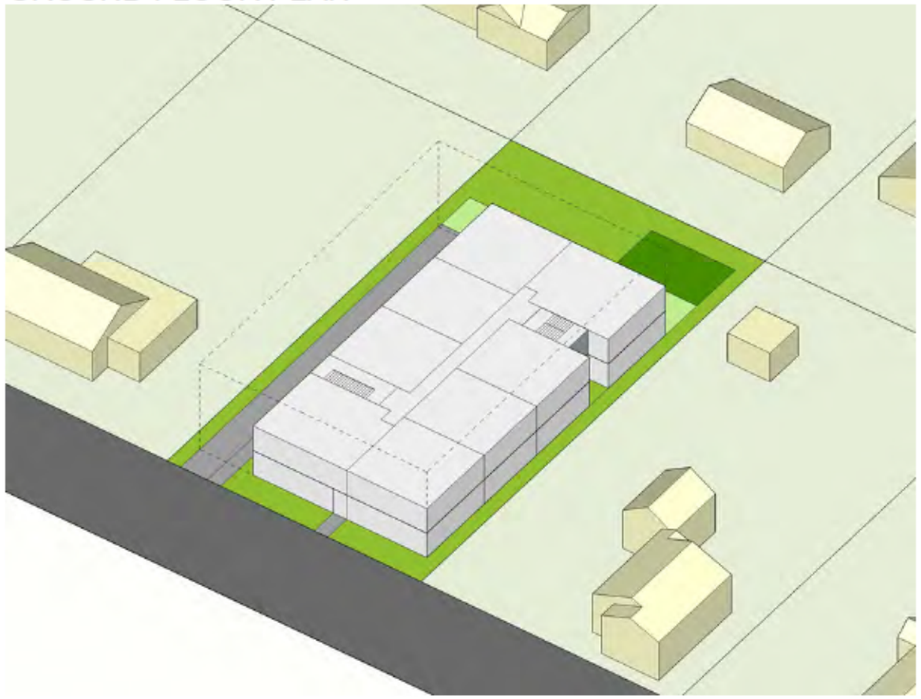
Common Area: 400 SF

Provided Parking Stalls: 0

Number of Units: 8
Average Unit Area: 924 SF
74%



GROUND FLOOR PLAN



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LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 95' x 180'
Area: 17,100 SF

R2 ZONE STANDARDS

Max FAR: 1 : 1
Allowable Building Floor Area: 17,100 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 50% (8,550 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 3

BUILDING PROTOTYPE

FAR: 0.94 : 1
Building Floor Area: 16,096 SF

Height: 20'

Building Coverage: 8,048 SF

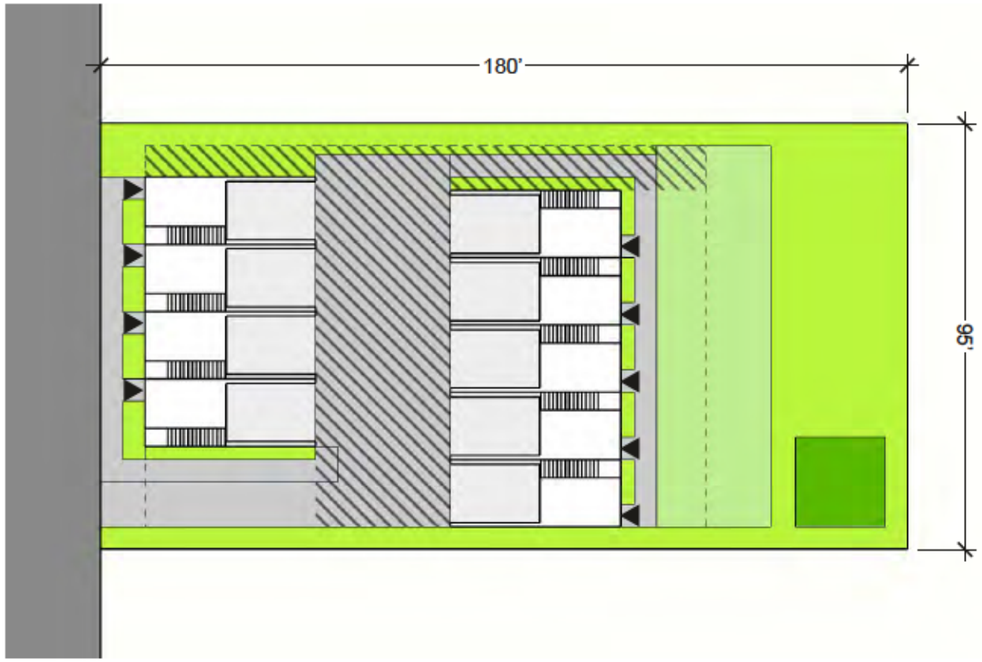
Landscaping: 5,130 SF

Required Outdoor Space: 624 SF
(shown as part of common area)

Common Area: 624 SF

Provided Parking Stalls: 9

Number of Units: 13
Average Unit Area: 885 SF
71%



SITE

Dimensions: 95' x 180'
Area: 17,100 SF

R2 ZONE STANDARDS

Max FAR: 1 : 1
Allowable Building Floor Area: 17,100 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 50% (8,550 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 2

BUILDING PROTOTYPE

FAR: 0.9 : 1
Building Floor Area: 15,390 SF

Height: 30'

Building Coverage: 5,130 SF

Landscaping: 5,130 SF

Required Outdoor Space: 432 SF
(shown as part of common area)

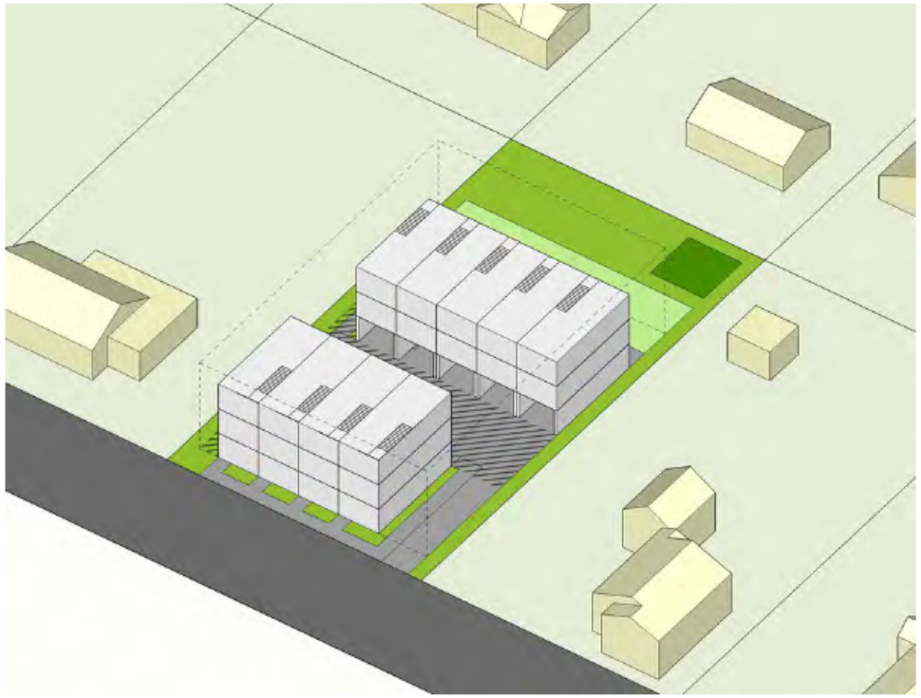
Common Area: 432 SF

Provided Parking Stalls: 9

Number of Units: 9
Unit Area: 1,450 SF
Garage Area: 260 SF
Total Area: 1,710 SF

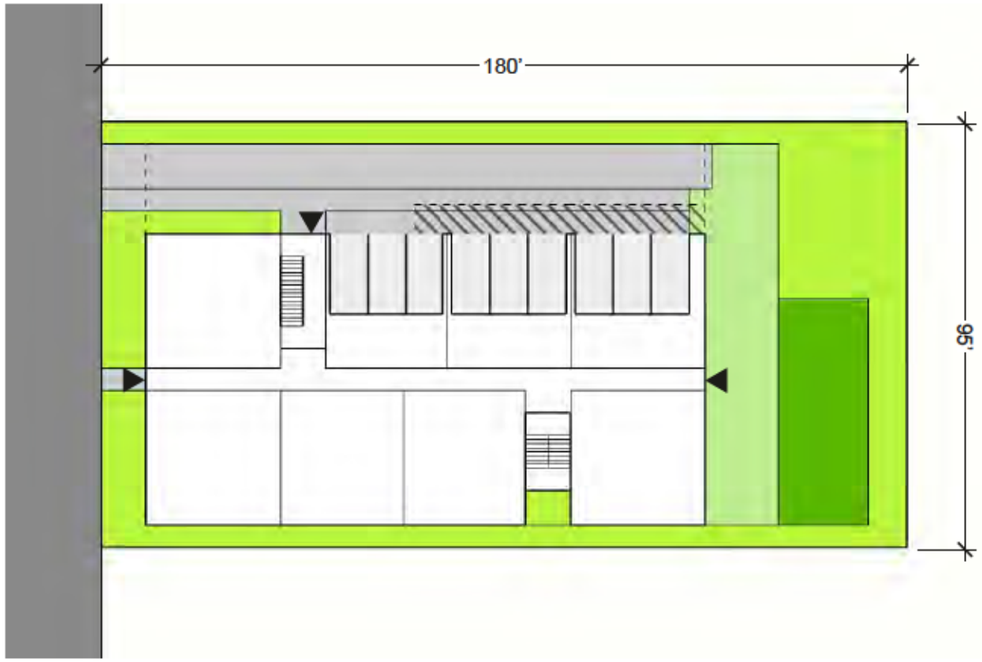
0 10 20 40

GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope



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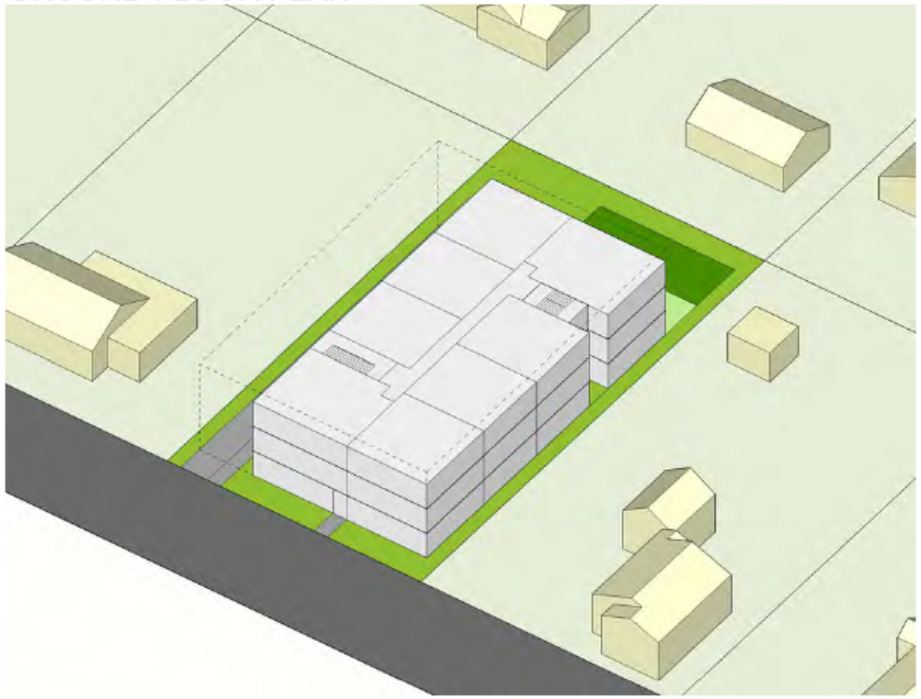
GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 95' x 180'
Area: 17,100 SF

R2 ZONE STANDARDS

Max FAR: 1.5 : 1 (With Bonus)
Allowable Building Floor Area: 25,650 SF

Max Height: 35'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 50% (8,550 SF)

Required Landscaping: 30% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.41 : 1
Building Floor Area: 24,144 SF

Height: 30'

Building Coverage: 8,048 SF

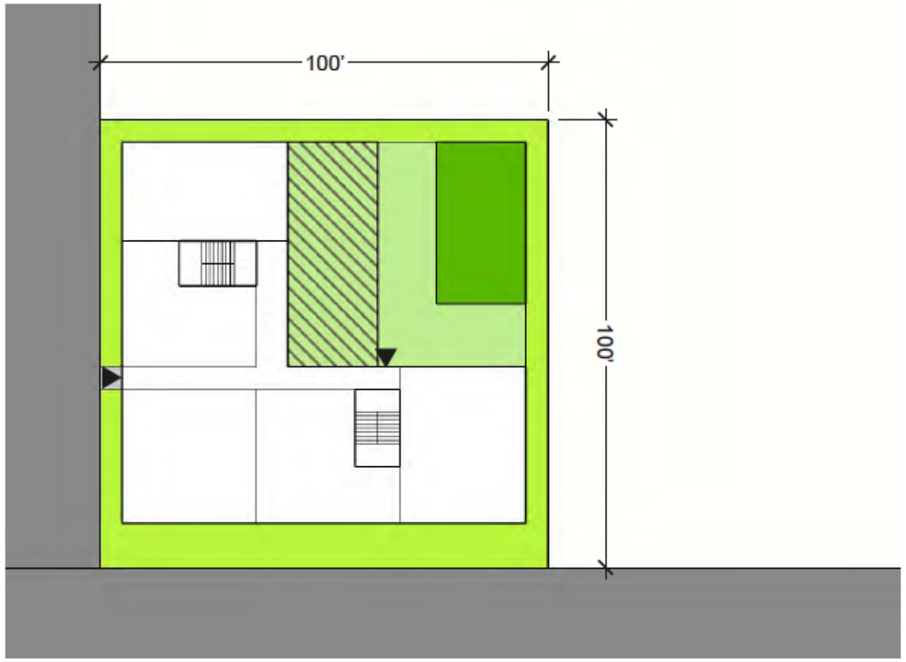
Landscaping: 5,130 SF

Required Outdoor Space: 1,008 SF
(shown as part of common area)

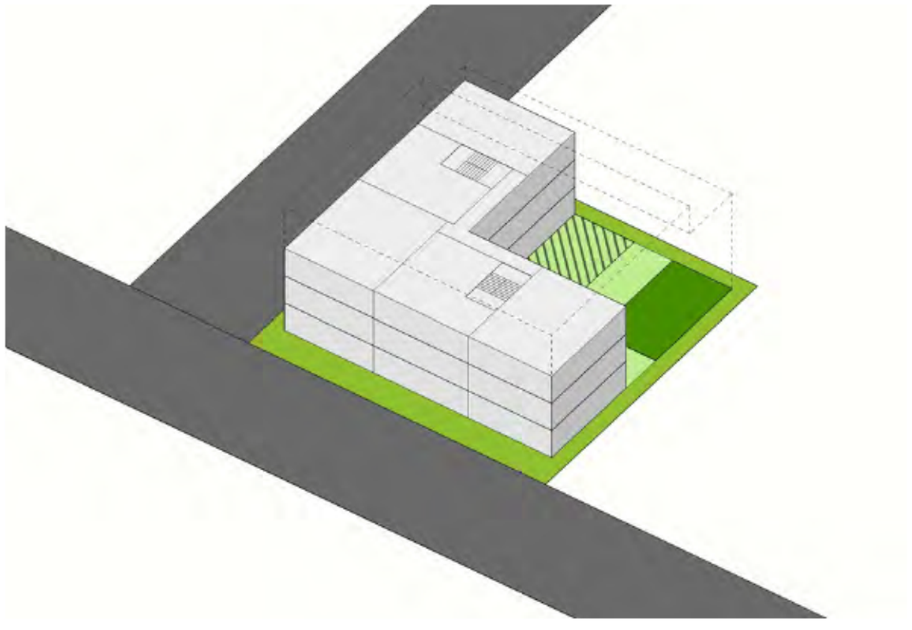
Common Area: 1,008 SF

Provided Parking Stalls: 9

Number of Units: 21
Average Unit Area: 888 SF
77%



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

R1 ZONE STANDARDS

Max FAR: 1.5 : 1
Allowable Building Floor Area: 15,000 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 60% (6,000 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.5 : 1
Building Floor Area: 15,000 SF

Height: 30'

Building Coverage: 5,000 SF

Landscaping: 2,000 SF

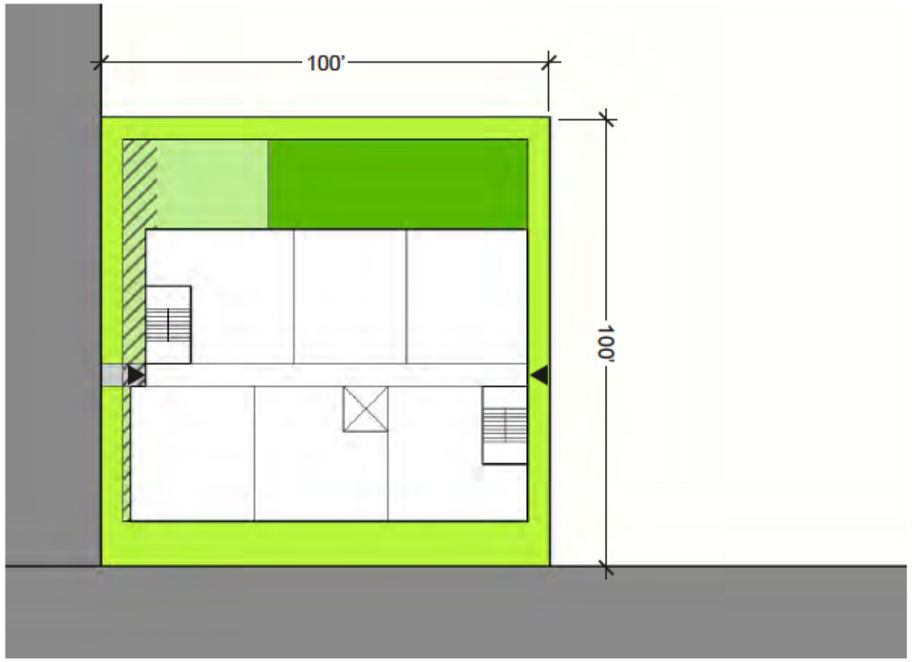
Required Outdoor Space: 720 SF
(shown as part of common area)

Common Area: 720 SF

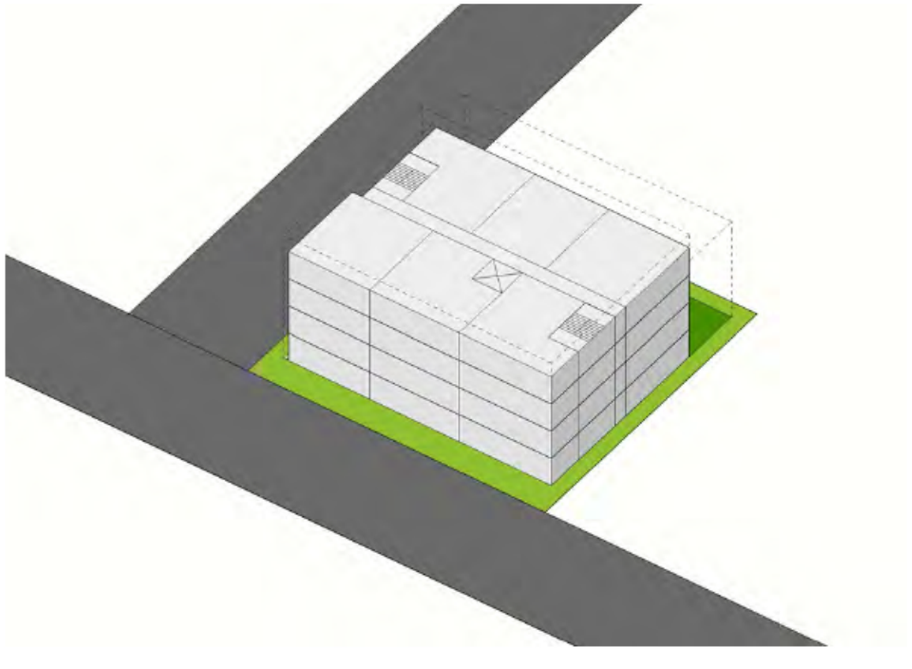
Provided Parking Stalls: 0

Number of Units: 15
Average Unit Area: 863 SF
86%

Note: Prototype shows the building height step-down required adjacent to single-dwelling zoning, which limits building height to 35 feet within a 25-foot distance of abutting lots with single-dwelling zoning.



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

R1 ZONE STANDARDS

Max FAR: 2.25 : 1 (With Bonus)
Allowable Building Floor Area: 22,500 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 60% (6,000 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2.25 : 1
Building Floor Area: 22,500 SF

Height: 40'

Building Coverage: 5,625 SF

Landscaping: 2,000 SF

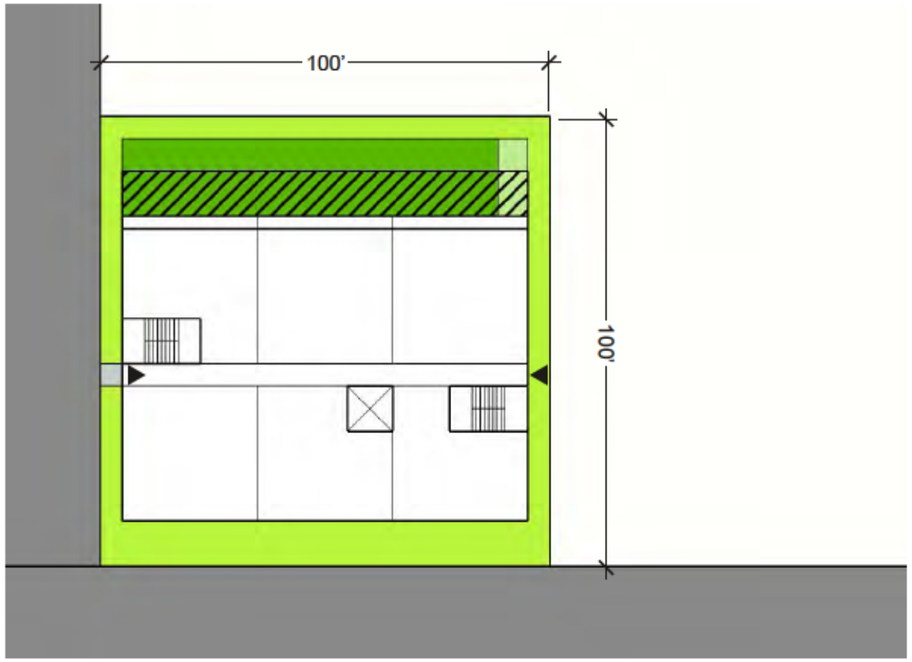
Required Outdoor Space: 1,152 SF
(shown as part of common area)

Common Area: 1,152 SF

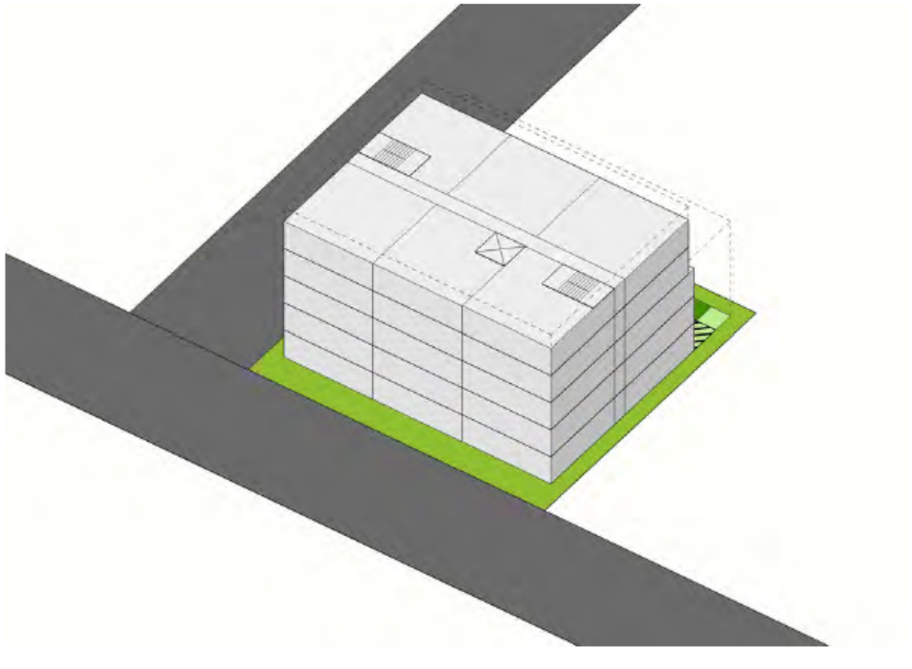
Provided Parking Stalls: 0

Number of Units: 24
Average Unit Area: 793 SF
85%

Note: Prototype shows the building height step-down required adjacent to single-dwelling zoning, which limits building height to 35 feet within a 25-foot distance of abutting lots with single-dwelling zoning.



GROUND FLOOR PLAN



0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 100' x 100'
Area: 10,000 SF

R1 ZONE STANDARDS

Max FAR: 3 : 1 (With Deeper Affordability Bonus)
Allowable Building Floor Area: 30,000 SF

Max Height: 55'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 70% (7,000 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 3 : 1
Building Floor Area: 30,000 SF

Height: 50'

Building Coverage: 6,100 SF

Landscaping: 2,000 SF

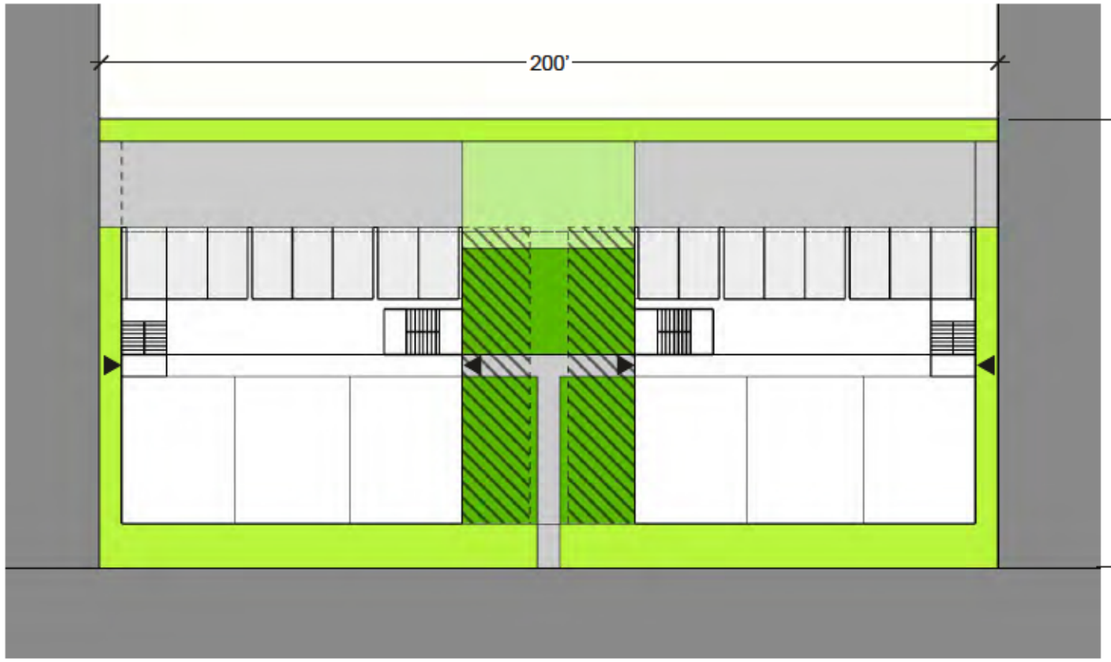
Required Outdoor Space: 1,440 SF
(shown as part of common area)

Common Area: 1,440 SF

Provided Parking Stalls: 0

Number of Units: 30
Average Unit Area: 826 SF
85%

Note: Prototype shows the building height step-down required adjacent to single-dwelling zoning, which limits building height to 35 feet within a 25-foot distance of abutting lots with single-dwelling zoning.

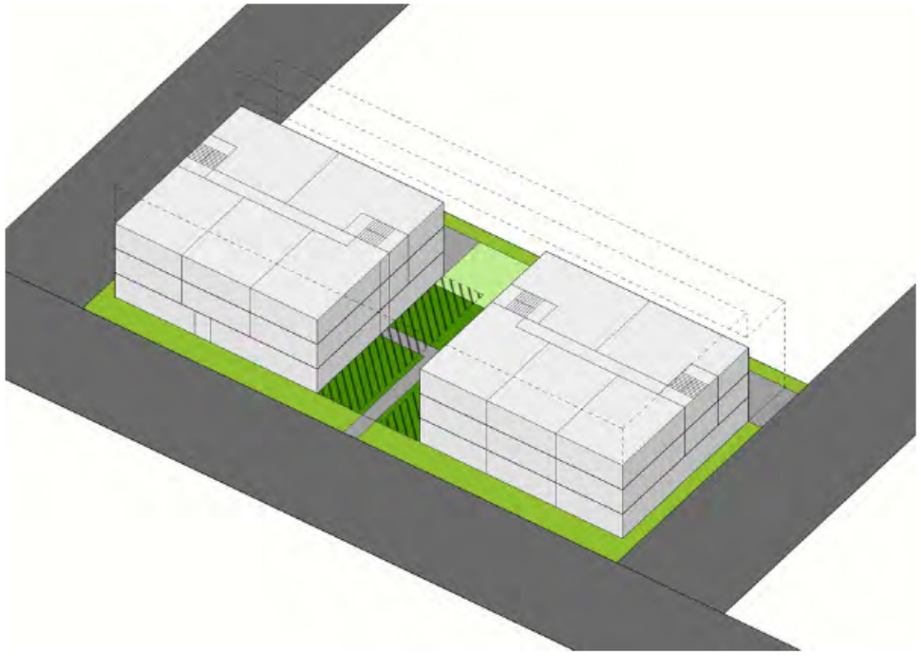


GROUND FLOOR PLAN

SITE

Dimensions: 200' x 100'
Area: 20,000 SF

0 10 20 40



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

R1 ZONE STANDARDS

Max FAR: 1.5 : 1
Allowable Building Floor Area: 30,000 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 60% (12,000 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.5 : 1
Building Floor Area: 30,000 SF

Height: 30'

Building Coverage: 10,000 SF

Landscaping: 4,000 SF

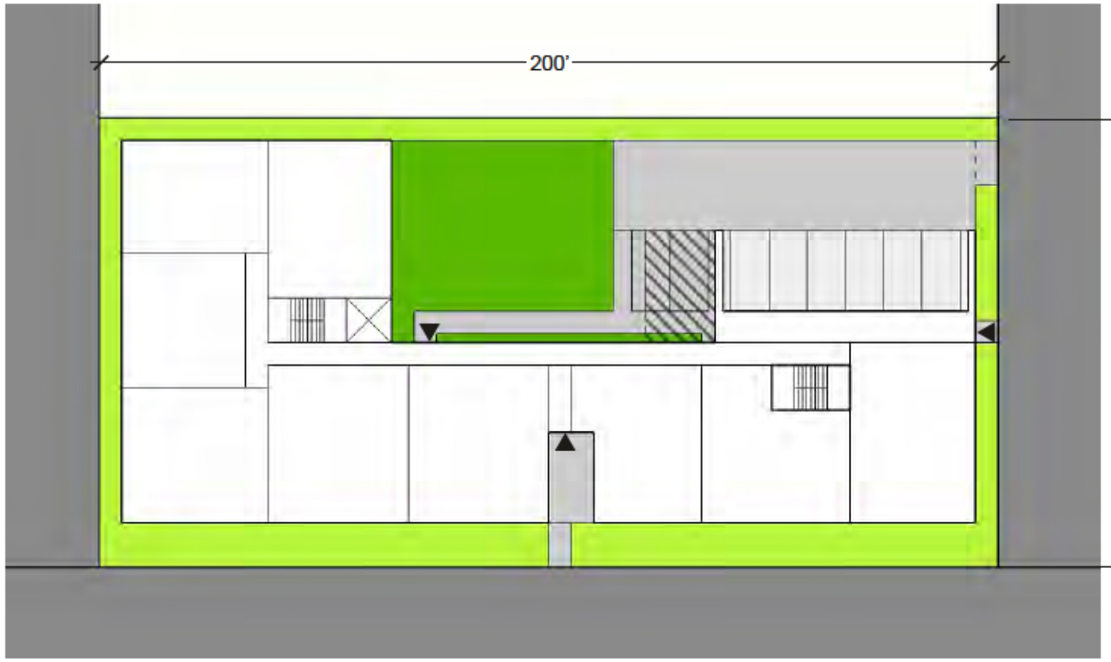
Required Outdoor Space: 1,248 SF
(shown as part of common area)

Common Area: 2,000 SF

Provided Parking Stalls: 16

Number of Units: 26 (13 / Building)
Average Unit Area: 865 SF
75%

Note: Prototype shows the building height step-down required adjacent to single-dwelling zoning, which limits building height to 35 feet within a 25-foot distance of abutting lots with single-dwelling zoning.

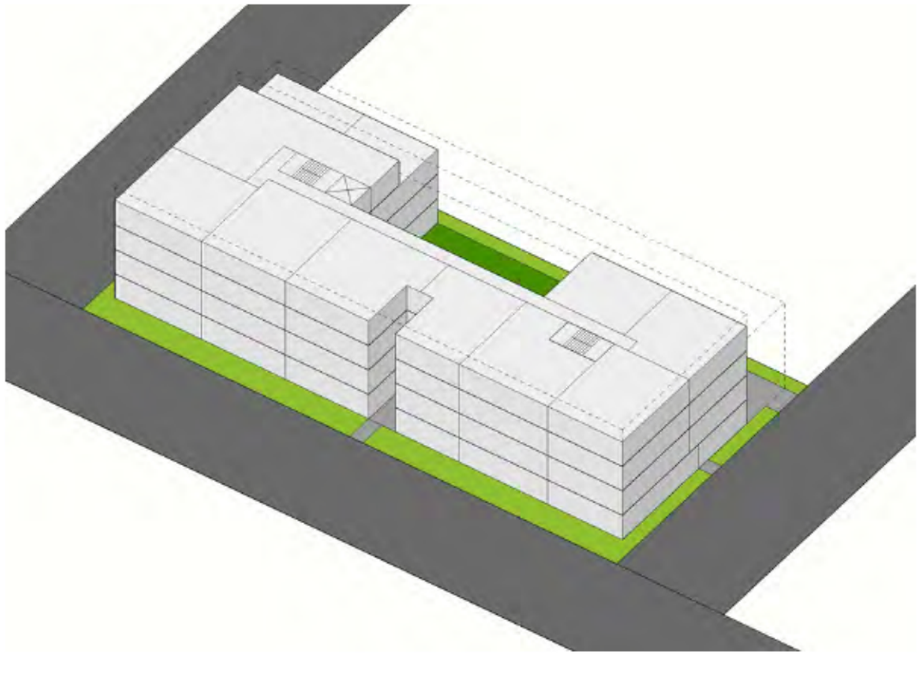


GROUND FLOOR PLAN

0 10 20 40

SITE

Dimensions: 200' x 100'
Area: 20,000 SF



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

R1 ZONE STANDARDS

Max FAR: 2.25 : 1 (With Bonus)
Allowable Building Floor Area: 45,000 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 60% (12,000 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2.25 : 1
Building Floor Area: 45,000 SF

Height: 40'

Building Coverage: 11,550 SF

Landscaping: 4,000 SF

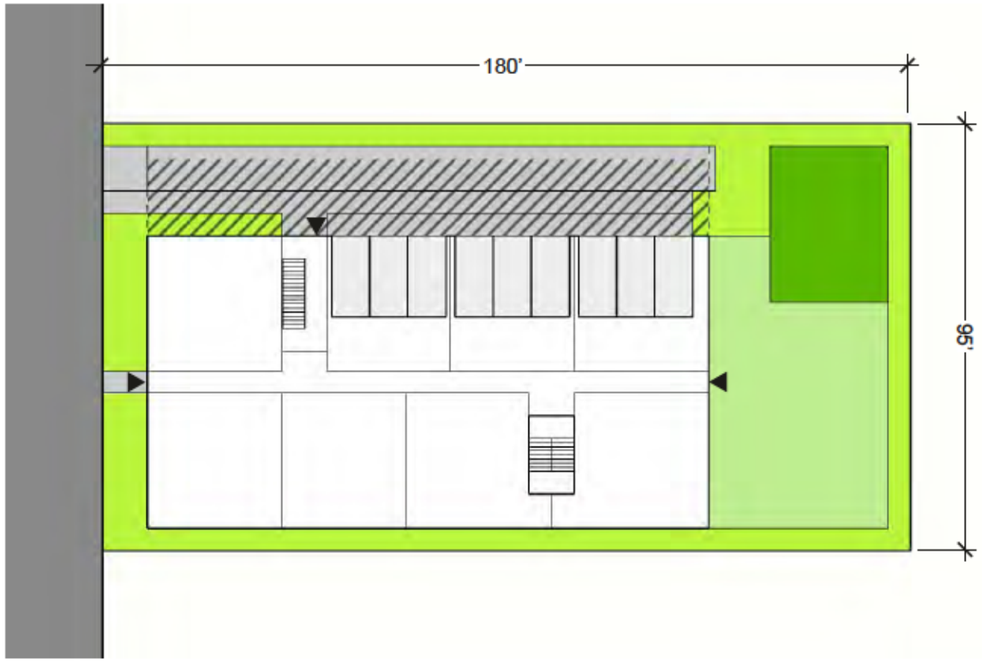
Required Outdoor Space: 1,920 SF
(shown as part of common area)

Common Area: 2,000 SF

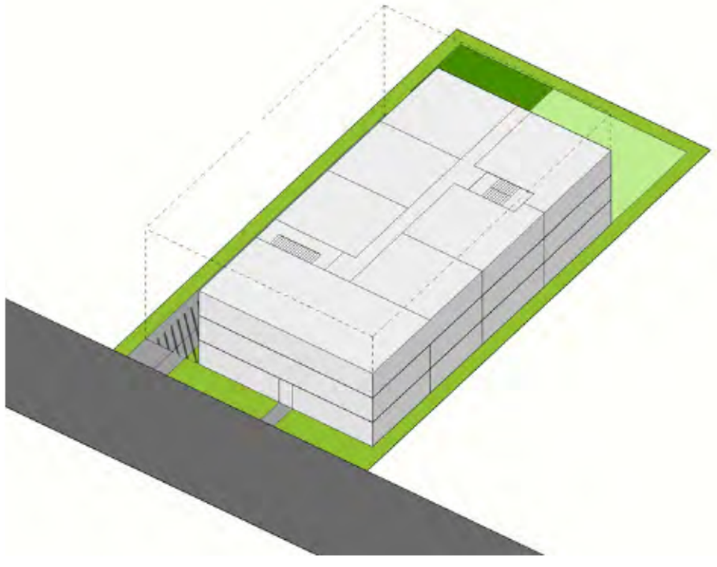
Provided Parking Stalls: 8

Number of Units: 40
Average Unit Area: 961 SF
86%

Note: Prototype shows the building height step-down required adjacent to single-dwelling zoning, which limits building height to 35 feet within a 25-foot distance of abutting lots with single-dwelling zoning.



GROUND FLOOR PLAN



SITE

Dimensions: 95' x 180'
Area: 17,100 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

R1 ZONE STANDARDS

Max FAR: 1.5 : 1
Allowable Building Floor Area: 25,650 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 60% (10,260 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.43 : 1
Building Floor Area: 24,375 SF

Height: 30'

Building Coverage: 8,125 SF

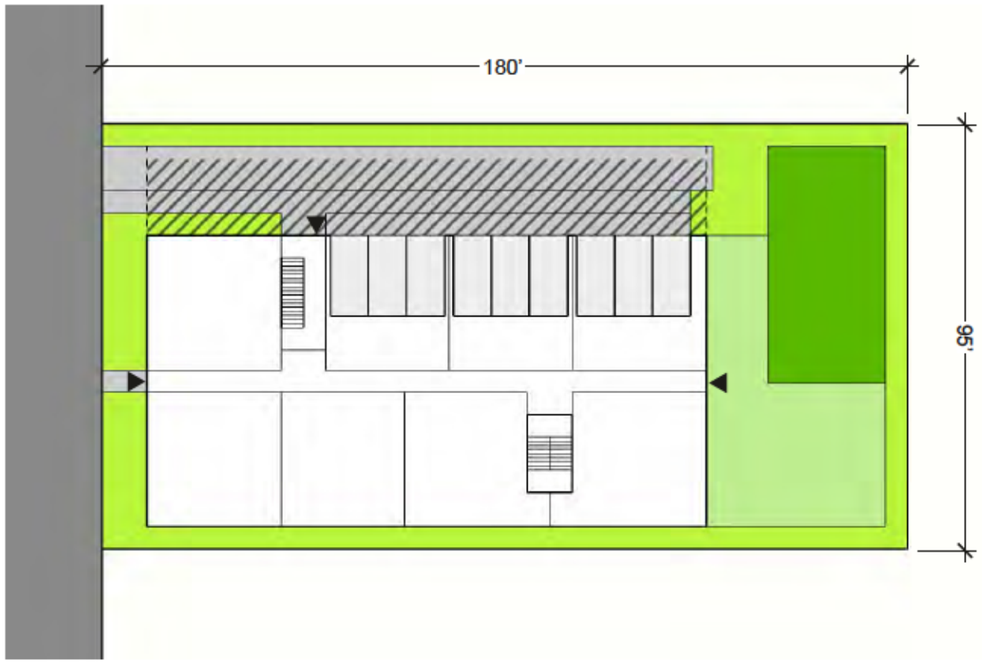
Landscaping: 3,420 SF

Required Outdoor Space: 912 SF
(shown as part of common area)

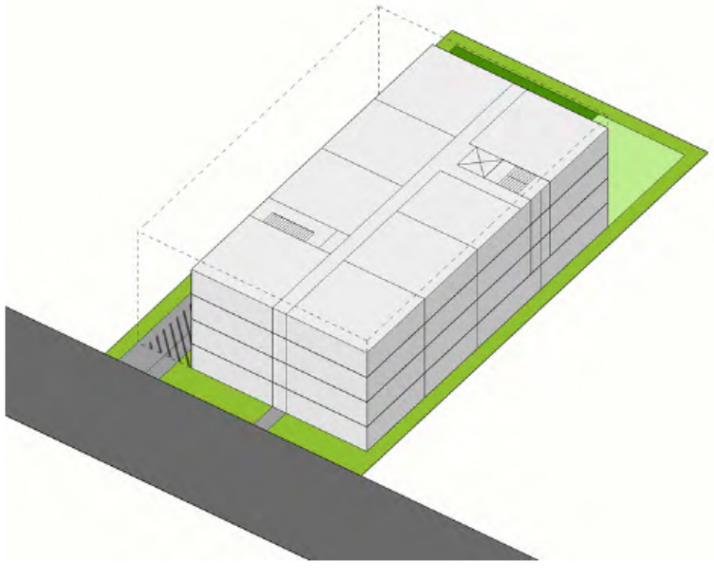
Common Area: 912 SF

Provided Parking Stalls: 9

Number of Units: 19
Average Unit Area: 983 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ 76%



GROUND FLOOR PLAN



0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 95' x 180'
Area: 17,100 SF

R1 ZONE STANDARDS

Max FAR: 2.25 : 1 (With Bonus)
Allowable Building Floor Area: 38,475 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 60% (10,260 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 1.90 : 1
Building Floor Area: 32,500 SF

Height: 40'

Building Coverage: 8,125 SF

Landscaping: 3,420 SF

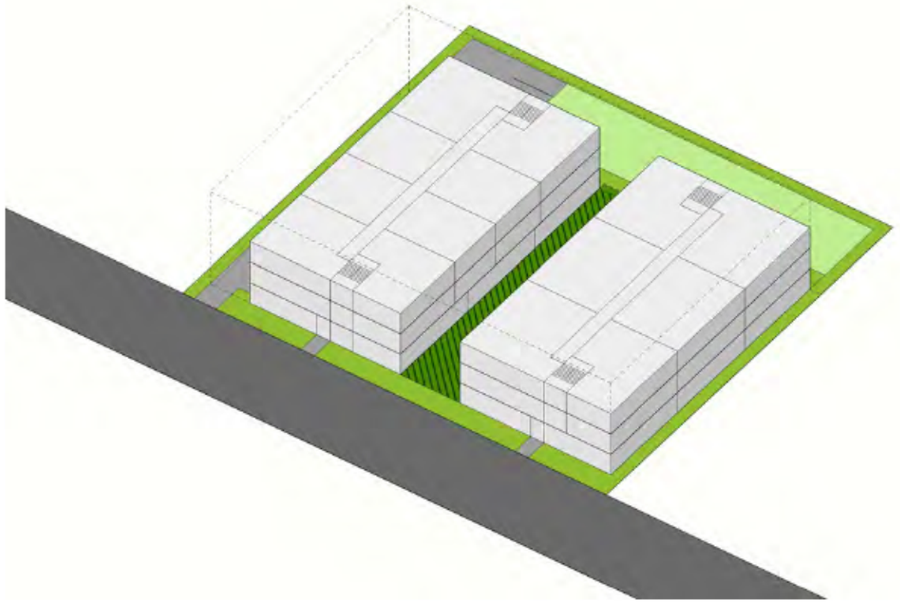
Required Outdoor Space: 1,392 SF
(shown as part of common area)

Common Area: 1,392 SF

Provided Parking Stalls: 9

Number of Units: 29
Average Unit Area: 851 SF
76%

GROUND FLOOR PLAN



0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 190' x 180'
Area: 34,200 SF

R1 ZONE STANDARDS

Max FAR: 1.5 : 1
Allowable Building Floor Area: 51,300 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 60% (20,520 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 8

BUILDING PROTOTYPE

FAR: 1.48 : 1
Building Floor Area: 50,707 SF

Height: 30'

Building Coverage: 16,902 SF

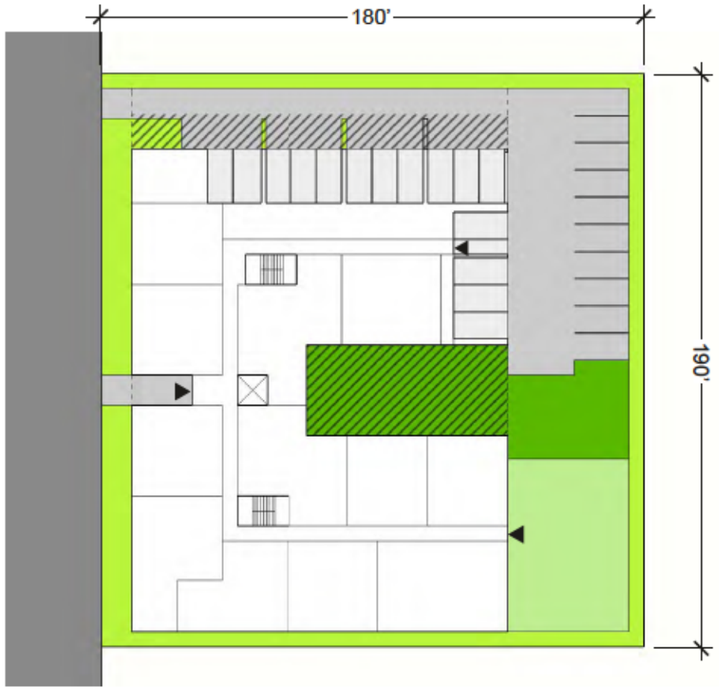
Landscaping: 6,840 SF

Required Outdoor Space: 1,824 SF
(shown as part of common area)

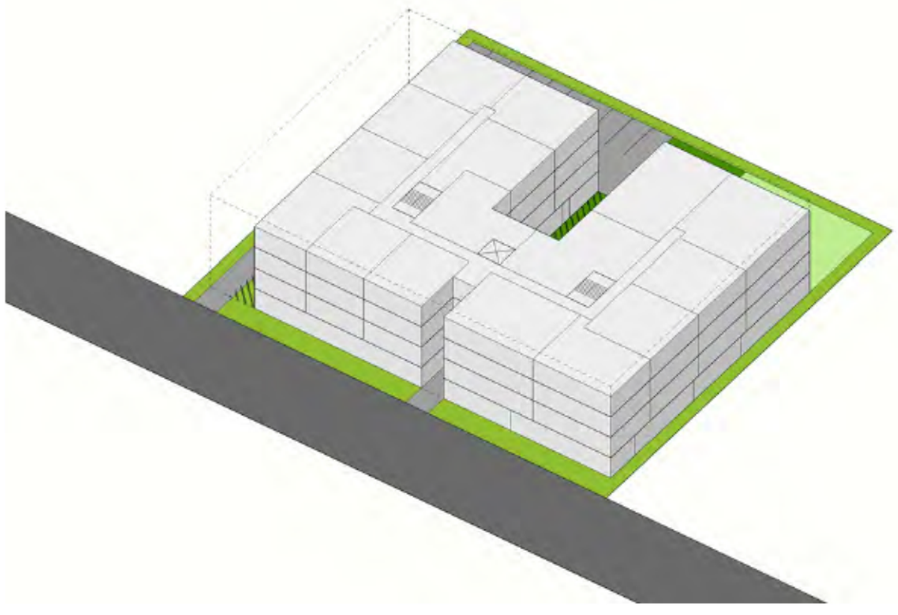
Common Area: 3,420 SF

Provided Parking Stalls: 16

Number of Units: 38
Average Unit Area: 1,078 SF
81%



GROUND FLOOR PLAN



0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 190' x 180'
Area: 34,200 SF

R1 ZONE STANDARDS

Max FAR: 2.25 : 1 (With Bonus)
Allowable Building Floor Area: 76,950 SF

Max Height: 45'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 60% (20,520 SF)

Required Landscaping: 20% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2.08 : 1
Building Floor Area: 71,200 SF

Height: 40'

Building Coverage: 17,800 SF

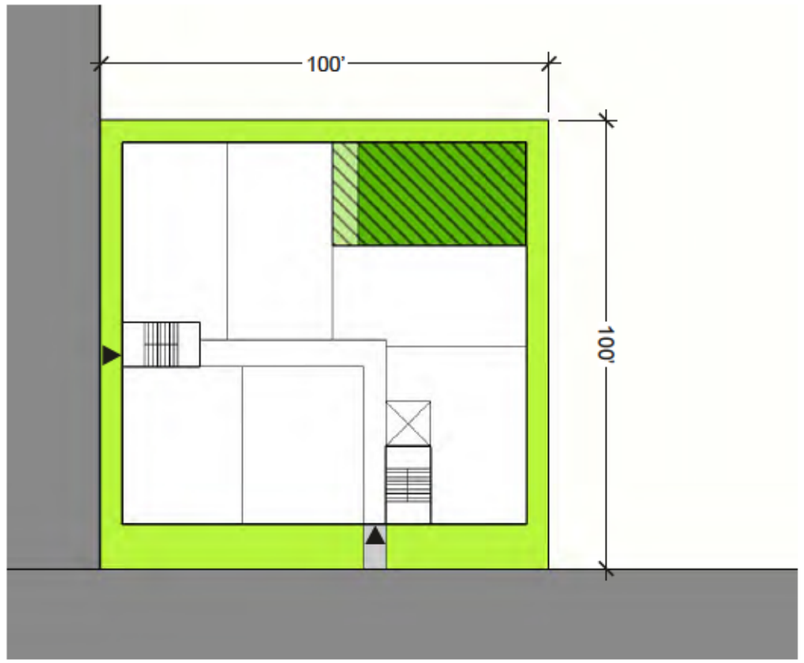
Landscaping: 6,840 SF

Required Outdoor Space: 2,880 SF
(shown as part of common area)

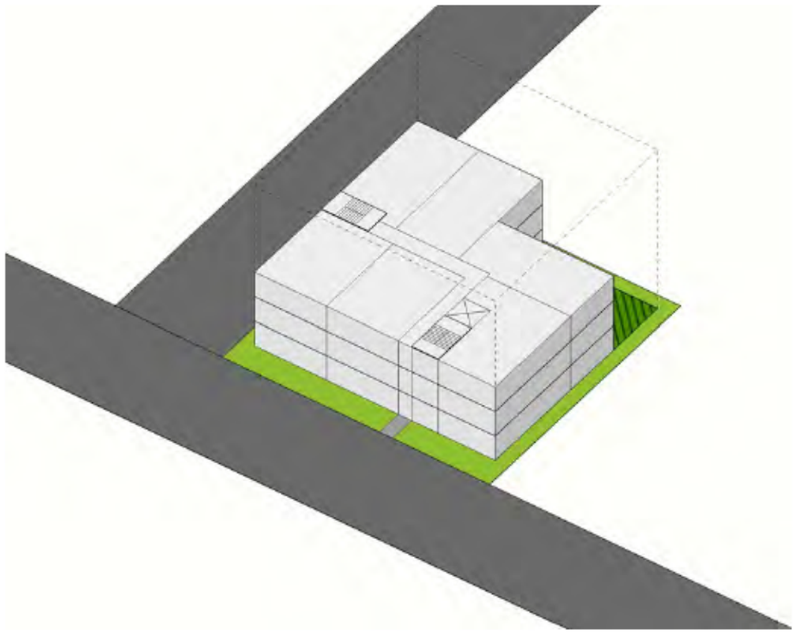
Common Area: 3,420 SF

Provided Parking Stalls: 25

Number of Units: 60
Average Unit Area: 869 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **85%**



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 2 : 1
Allowable Building Floor Area: 20,000 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2 : 1
Building Floor Area: 20,000 SF

Height: 30'

Building Coverage: 6,666 SF

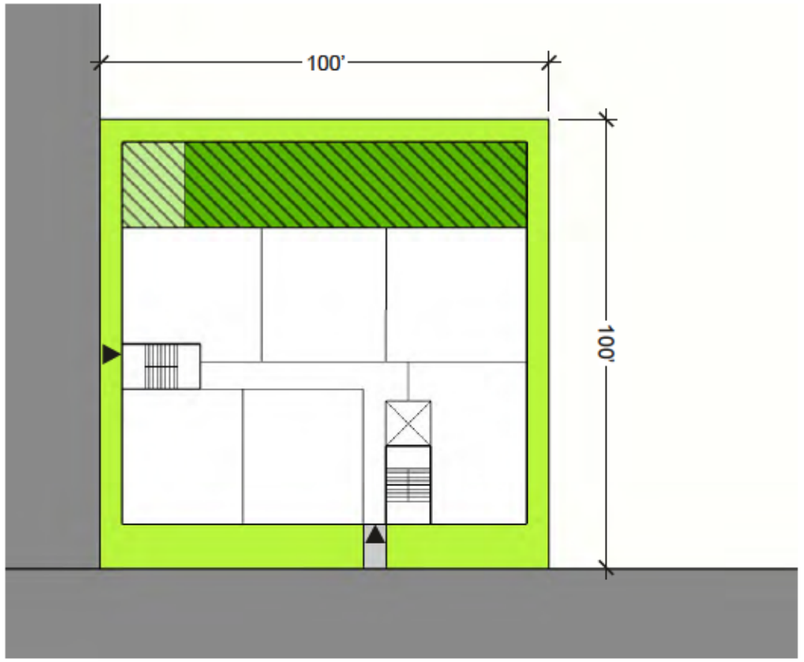
Landscaping: 1,500 SF

Required Outdoor Space: 864 SF
(shown as part of common area)

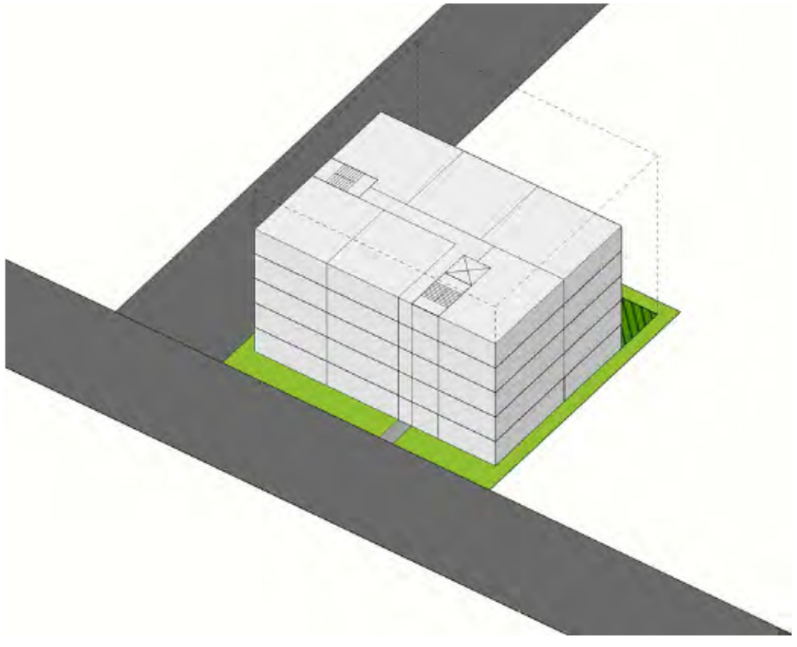
Common Area: 864 SF

Provided Parking Stalls: 0

Number of Units: 18
Average Unit Area: 964 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **87%**



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

RH ZONE STANDARDS

Max FAR: 3 : 1 (With Bonus)
Allowable Building Floor Area: 30,000 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2.97 : 1
Building Floor Area: 29,700 SF

Height: 50'

Building Coverage: 5,000 SF

Landscaping: 1,500 SF

Required Outdoor Space: 1,440 SF
(shown as part of common area)

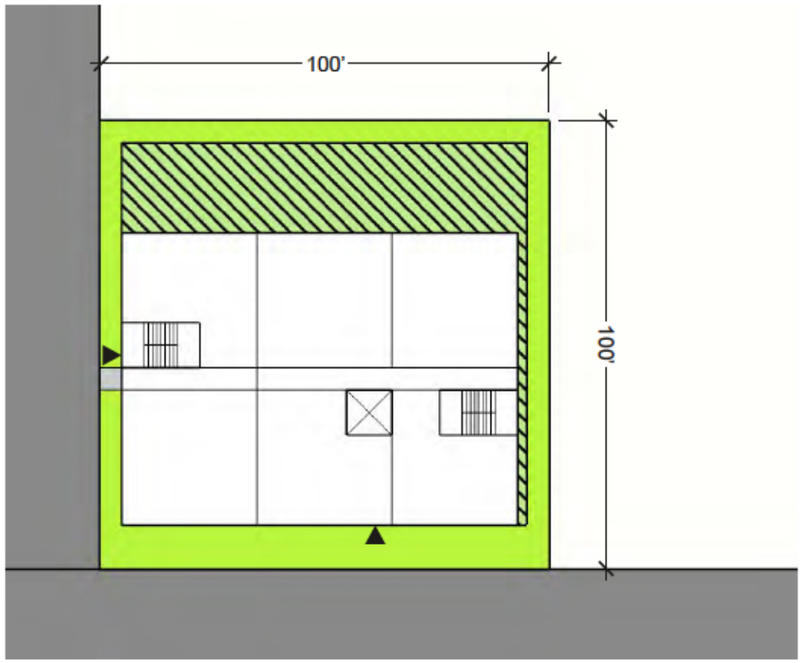
Common Area: 1,440 SF

Provided Parking Stalls: 0

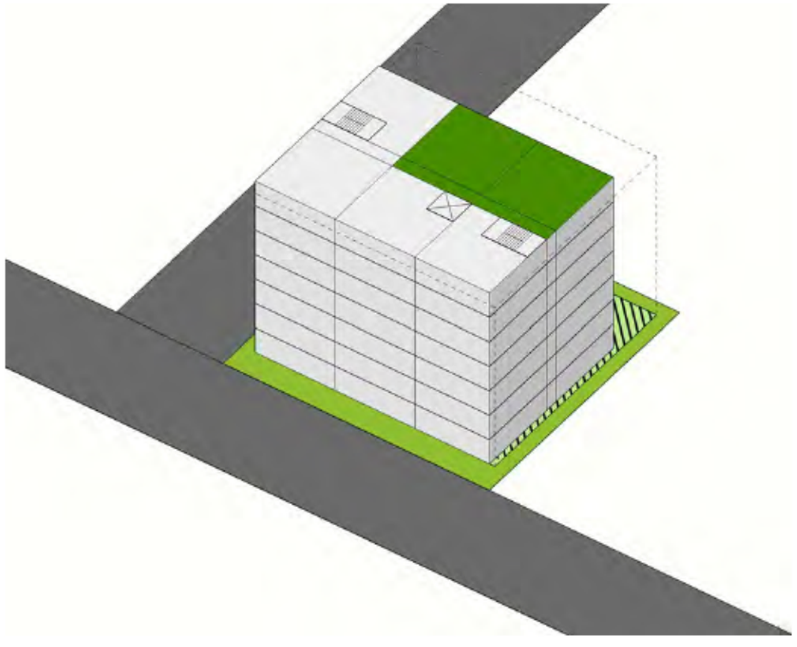
Number of Units: 30
Average Unit Area: 842 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **85%**

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope



GROUND FLOOR PLAN



0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

SITE

Dimensions: 100' x 100'
Area: 10,000 SF

RH ZONE STANDARDS

Max FAR: 4 : 1 (With Deeper Affordability Bonus)
Allowable Building Floor Area: 40,000 SF

Max Height: 75'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 4 : 1
Building Floor Area: 40,000 SF

Height: 70'

Building Coverage: 5,715 SF

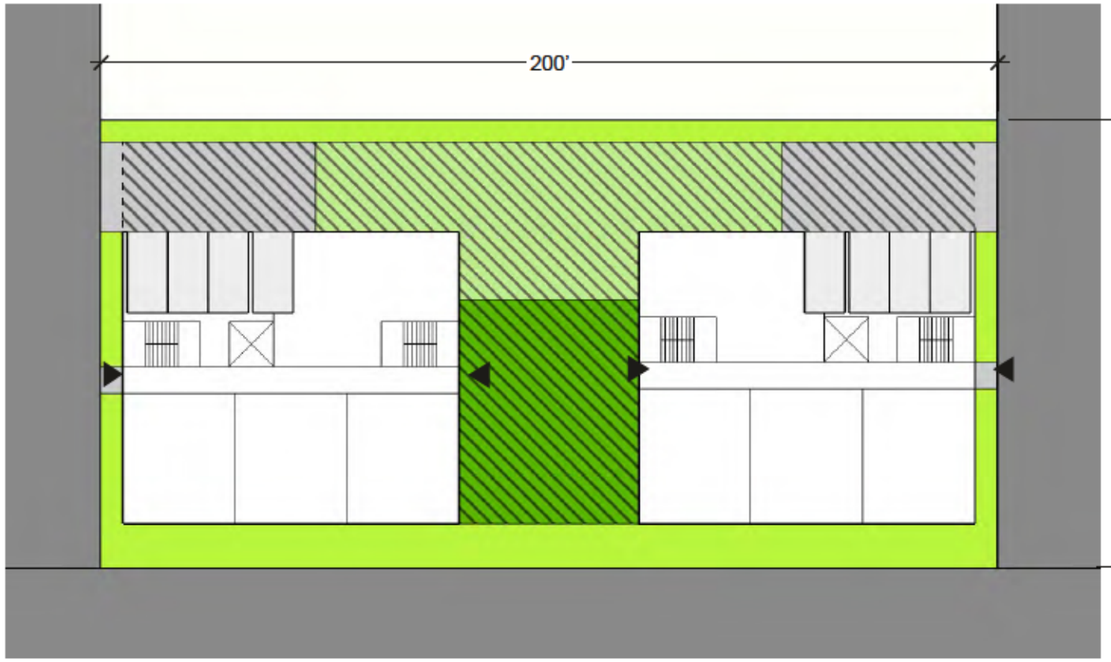
Landscaping: 1,500 SF

Required Outdoor Space: 2,016 SF
(shown as part of common area)

Common Area: 2,016 SF

Provided Parking Stalls: 0

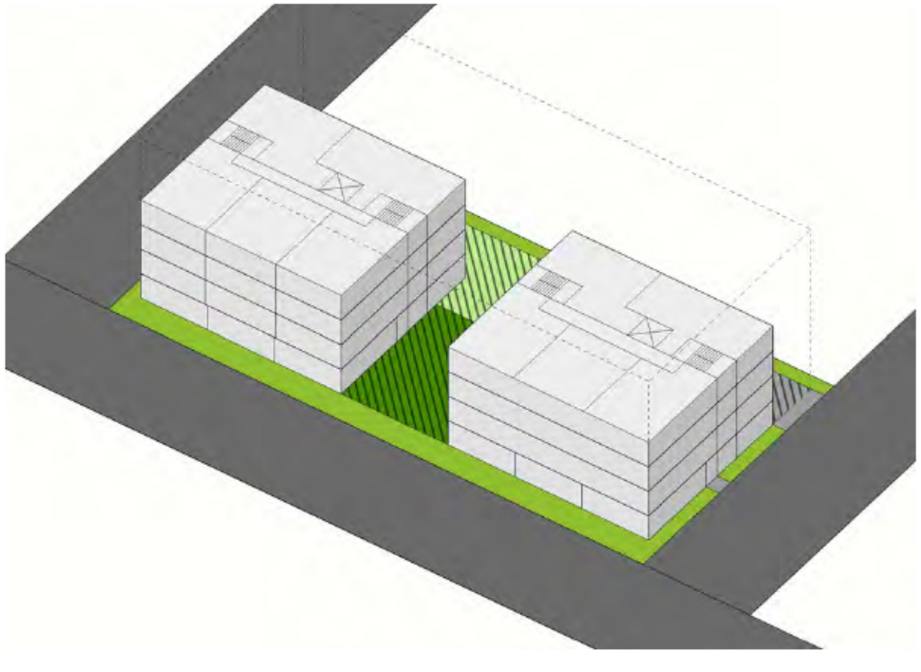
Number of Units: 42
Average Unit Area: 806 SF
85%



GROUND FLOOR PLAN

SITE
Dimensions: 200' x 100'
Area: 20,000 SF

0 10 20 40



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 2 : 1
Allowable Building Floor Area: 40,000 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (17,000 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 8

BUILDING PROTOTYPE

FAR: 1.95 : 1
Building Floor Area: 39,000 SF

Height: 40'

Building Coverage: 9,750 SF

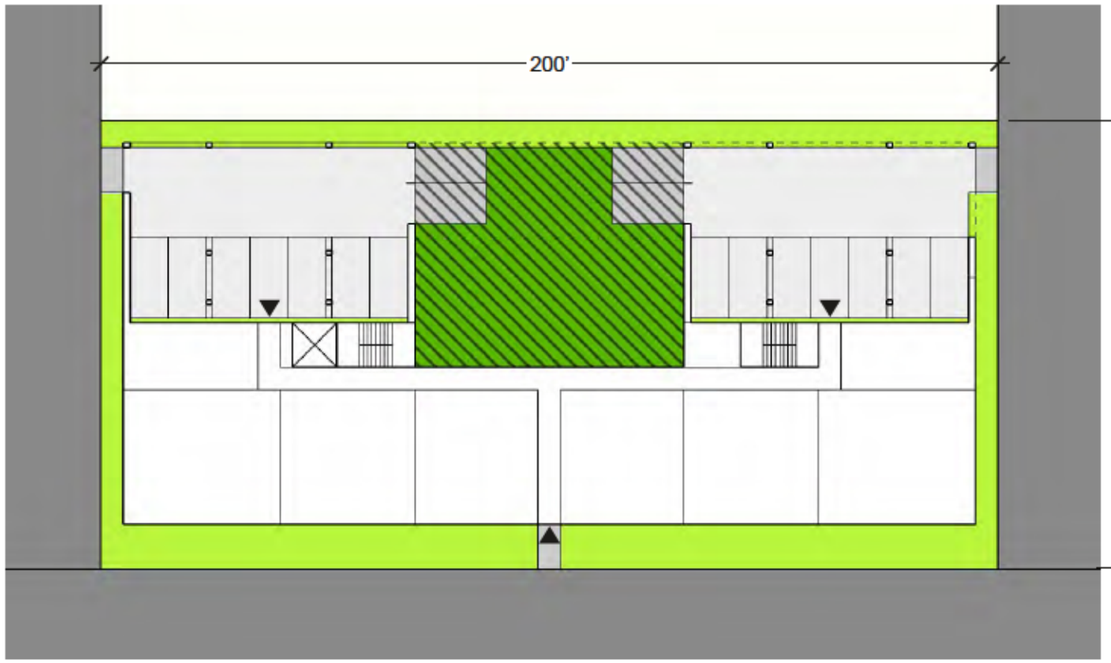
Landscaping: 3,000 SF

Required Outdoor Space: 1,824 SF
(shown as part of common area)

Common Area: 2,000 SF

Provided Parking Stalls: 8

Number of Units: 38 (19 / Building)
Average Unit Area: 820 SF
80%

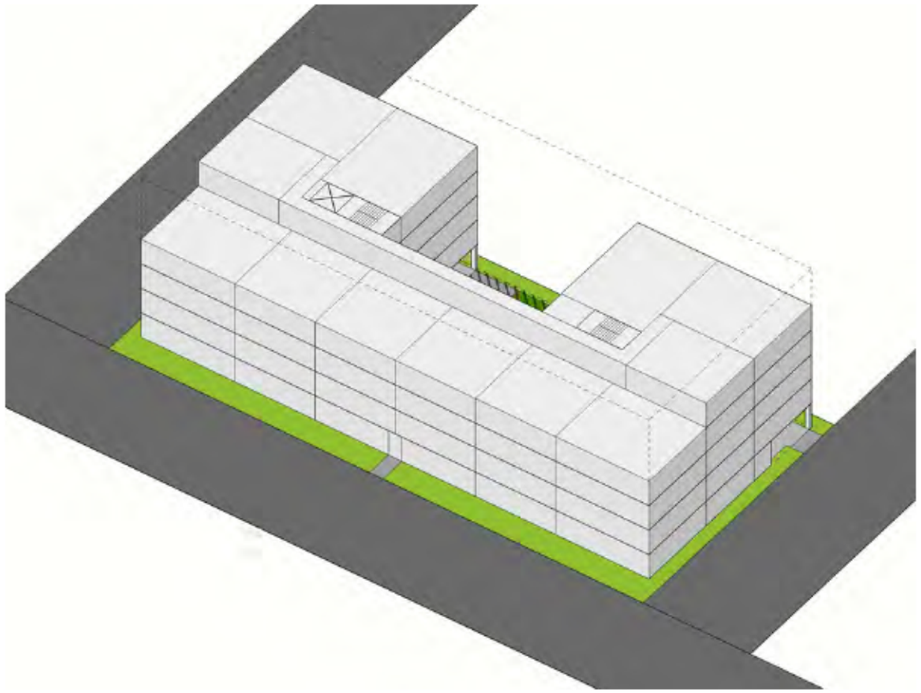


SITE

Dimensions: 200' x 100'
Area: 20,000 SF

0 10 20 40

GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 3 : 1 (With Bonus)
Allowable Building Floor Area: 60,000 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (17,000 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 3 : 1
Building Floor Area: 60,000 SF

Height: 50'

Building Coverage: 13,150 SF

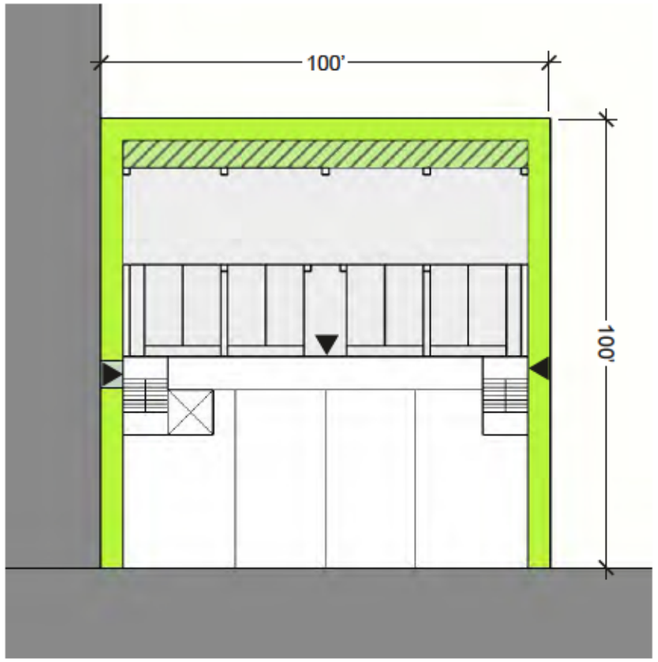
Landscaping: 3,000 SF

Required Outdoor Space: 2,304 SF
(shown as part of common area)

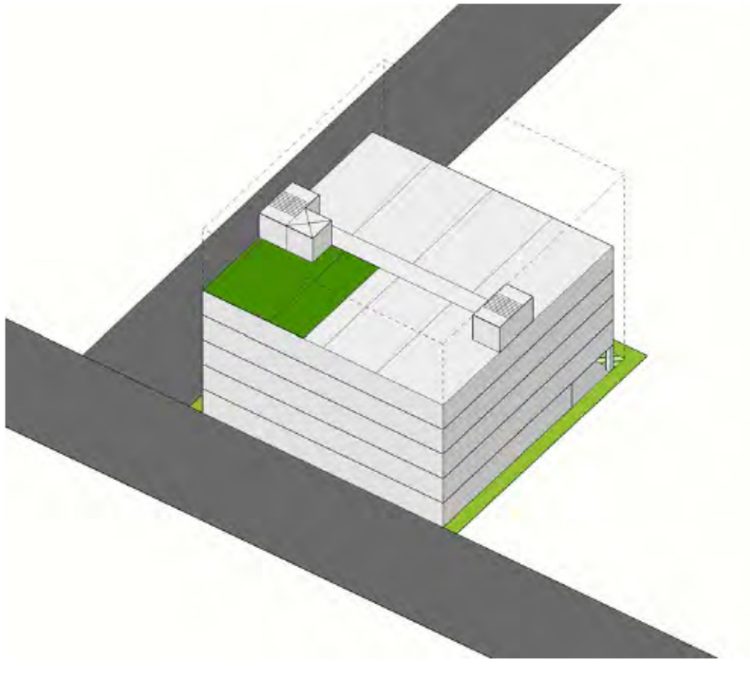
Common Area: 2,304 SF

Provided Parking Stalls: 18

Number of Units: 48
Average Unit Area: 975 SF
78%



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 4 : 1
Allowable Building Floor Area: 40,000 SF

Max Height: 65'
Minimum Front Setback: 0'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 36 SF / unit

Required Common Area: 0%

Required Parking Stalls: 8

BUILDING PROTOTYPE

FAR: 4 : 1
Building Floor Area: 40,000 SF

Height: 50'

Building Coverage: 8,000 SF

Landscaping: 1,500 SF

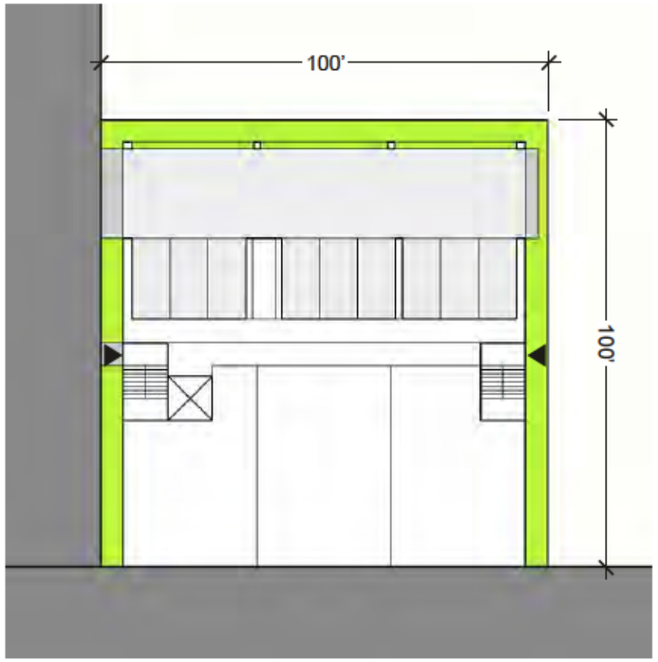
Required Outdoor Space: 1,296 SF
(shown as part of common area)

Common Area: 1,296 SF

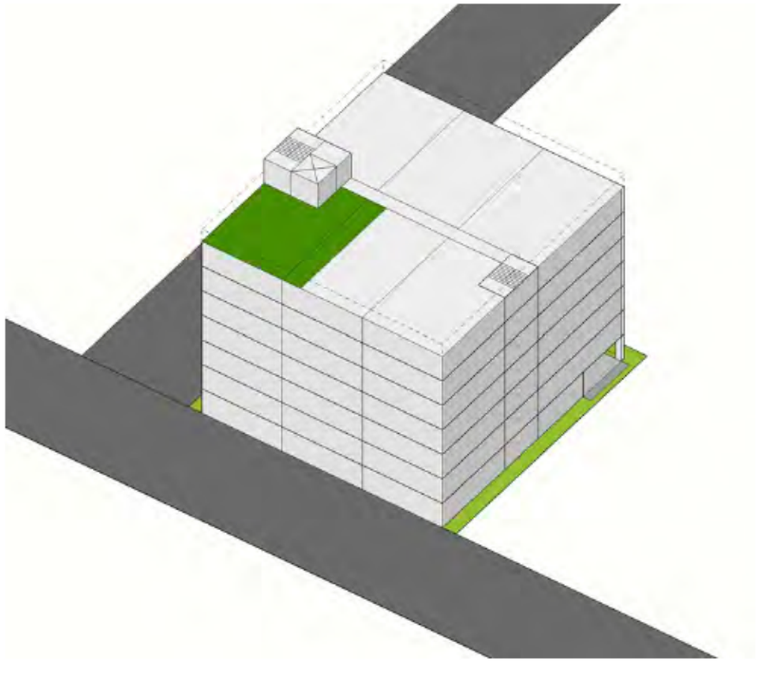
Provided Parking Stalls: 8

Number of Units: 36
Average Unit Area: 873 SF
79%

Note: The 36 units in this prototype would trigger mandatory inclusionary housing requirements and allowances for additional FAR.



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 6 : 1 (With Bonus)
Allowable Building Floor Area: 60,000 SF

Max Height: 75'
Minimum Front Setback: 0'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 36 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 5.99 : 1
Building Floor Area: 59,850 SF

Height: 70'

Building Coverage: 8,500 SF

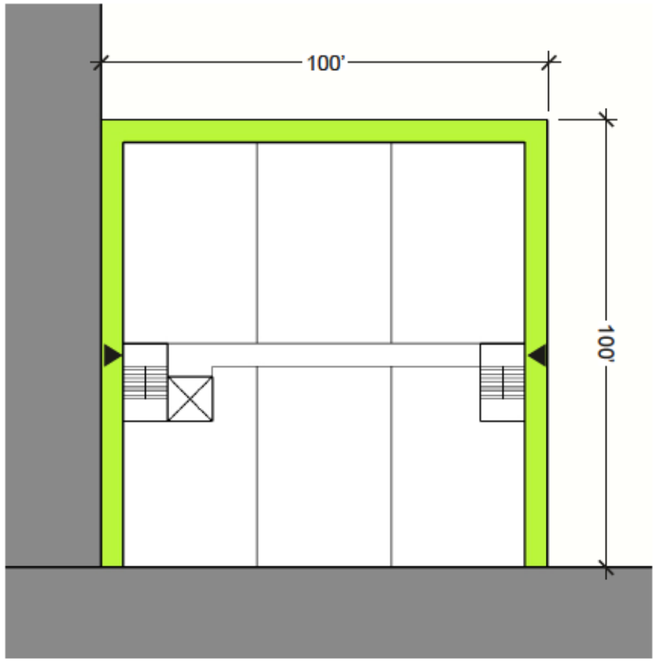
Landscaping: 1,500 SF

Required Outdoor Space: 1,404 SF
(shown as part of common area)

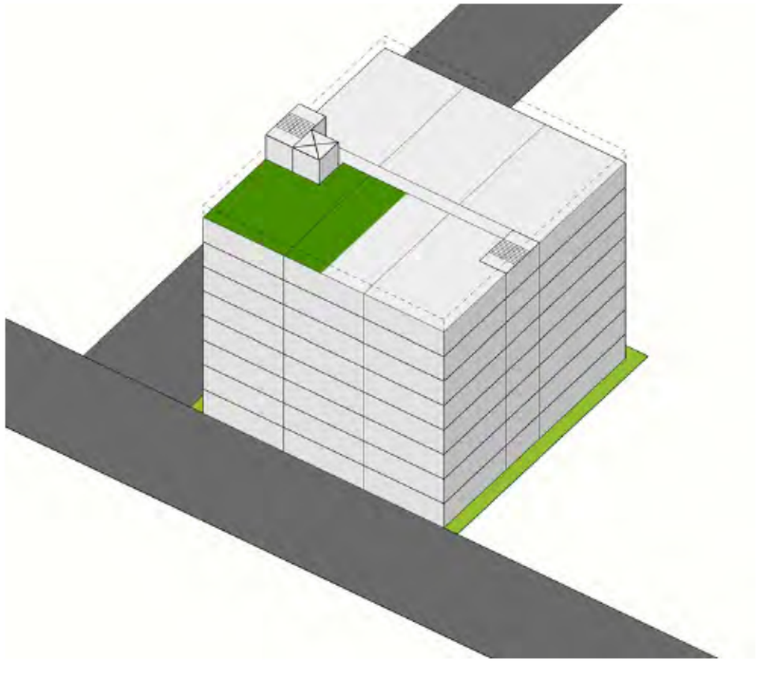
Common Area: 1,404 SF

Provided Parking Stalls: 9

Number of Units: 39
Average Unit Area: 1,284 SF
84%



GROUND FLOOR PLAN



SITE

Dimensions: 100' x 100'
Area: 10,000 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 7 : 1 (With Deeper Affordability Bonus)
Allowable Building Floor Area: 60,000 SF

Max Height: 85'
Minimum Front Setback: 0'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (8,500 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 36 SF / unit

Required Common Area: 0%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 6.84 : 1
Building Floor Area: 68,400 SF

Height: 80'

Building Coverage: 8,500 SF

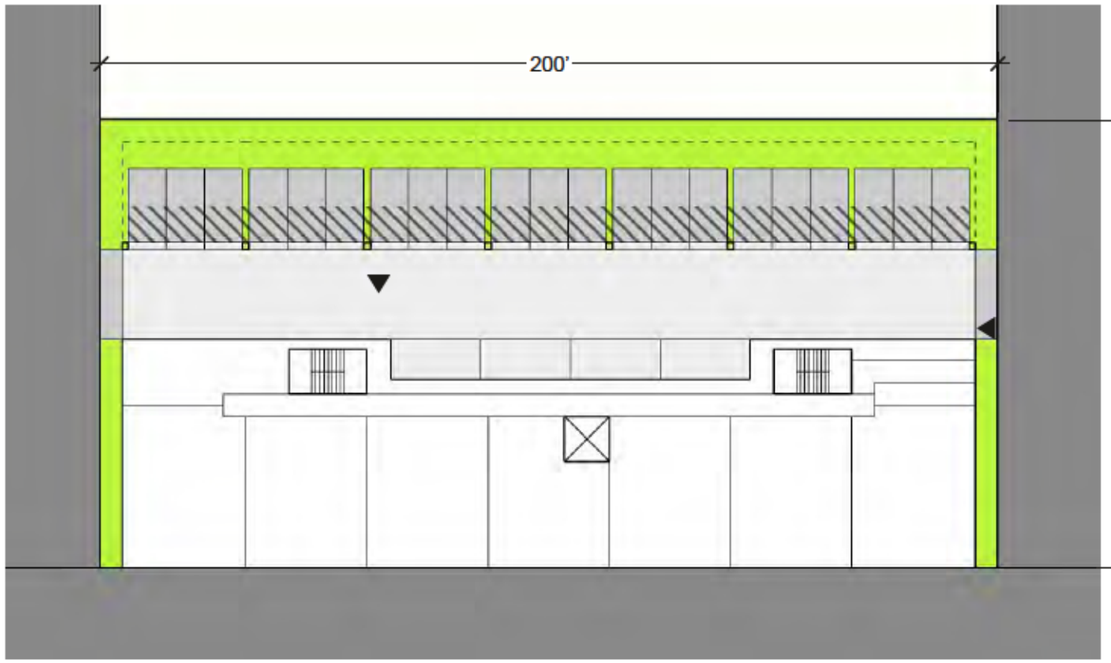
Landscaping: 1,500 SF

Required Outdoor Space: 1,728 SF
(shown as part of common area)

Common Area: 1,728 SF

Provided Parking Stalls: 0

Number of Units: 48
Average Unit Area: 1,288 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **90%**

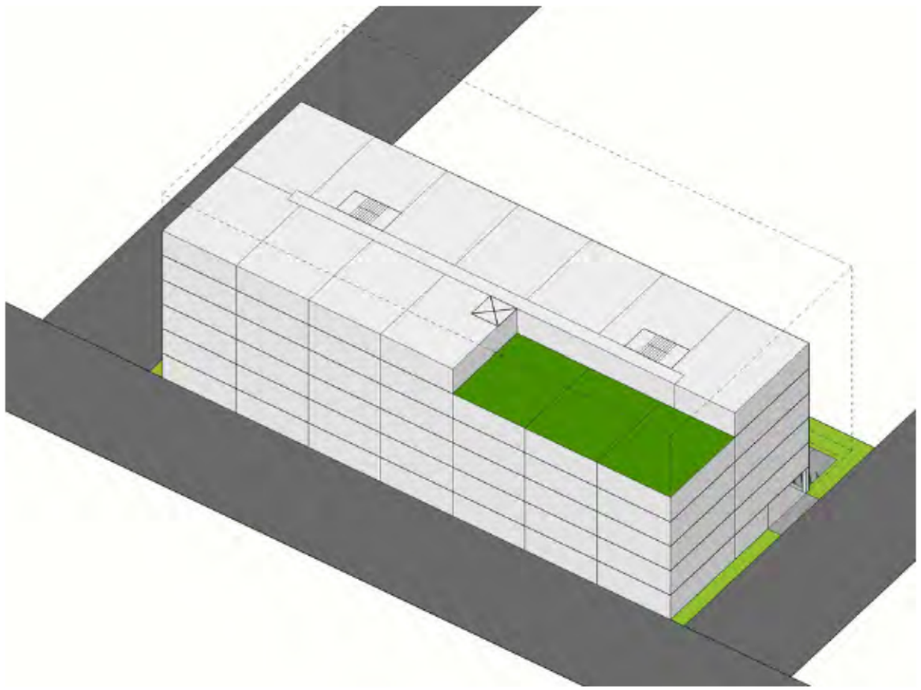


SITE

Dimensions: 200' x 100'
Area: 20,000 SF

0 10 20 40

GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 4 : 1
Allowable Building Floor Area: 80,000 SF

Max Height: 75'
Minimum Front Setback: 0'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (17,000 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 36 SF / unit

Required Common Area: 10%

Required Parking Stalls: 25

BUILDING PROTOTYPE

FAR: 4 : 1
Building Floor Area: 79,900 SF

Height: 60'

Building Coverage: 13,775 SF

Landscaping: 3,000 SF

Required Outdoor Space: 2,664 SF
(shown as part of common area)

Common Area: 2,664 SF

Provided Parking Stalls: 25

Number of Units: 74
Average Unit Area: 901 SF
83%

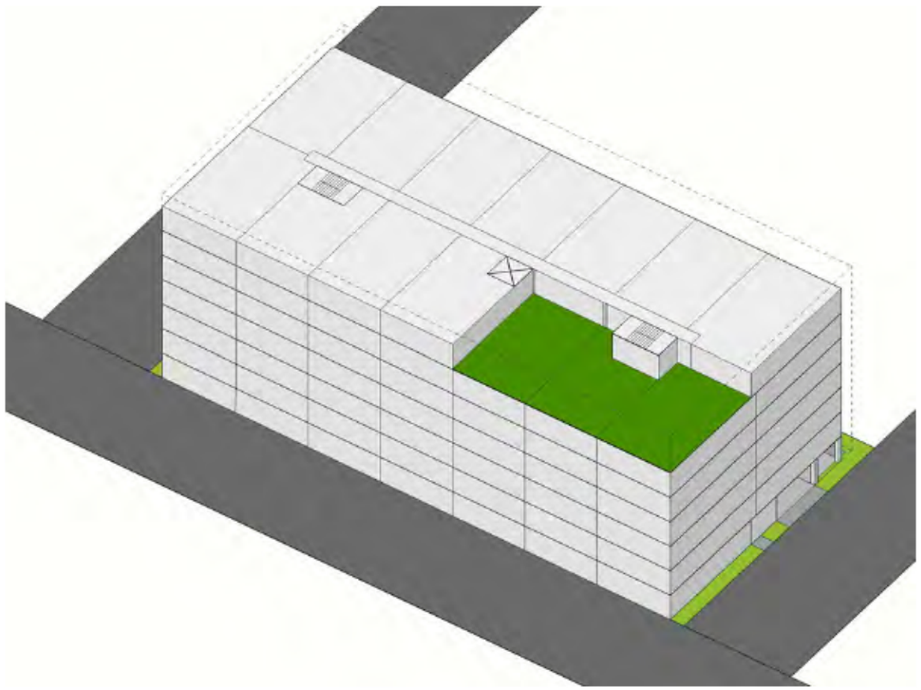
Note: The 74 units in this prototype would trigger mandatory inclusionary housing requirements and allowances for additional FAR.

SITE

Dimensions: 200' x 100'
Area: 20,000 SF

0 10 20 40

GROUND FLOOR PLAN



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 6 : 1 (With Bonus)
Allowable Building Floor Area: 120,000 SF

Max Height: 75'
Minimum Front Setback: 0'
Minimum Side Setback: 5'
Minimum Rear Setback: 5'

Max Building Coverage: 85% (17,000 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 36 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 5.78 : 1
Building Floor Area: 115,675 SF

Height: 70'

Building Coverage: 17,000 SF

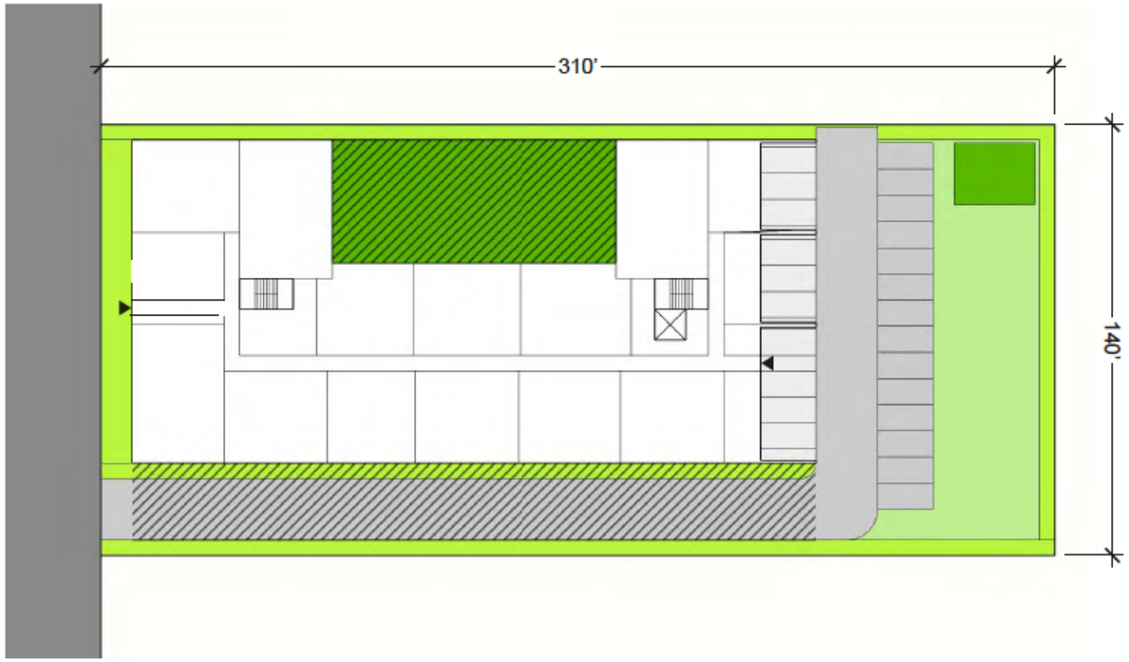
Landscaping: 3,000 SF

Required Outdoor Space: 3,168 SF
(shown as part of common area)

Common Area: 3,168 SF

Provided Parking Stalls: 30

Number of Units: 88
Average Unit Area: 1,127 SF
86%

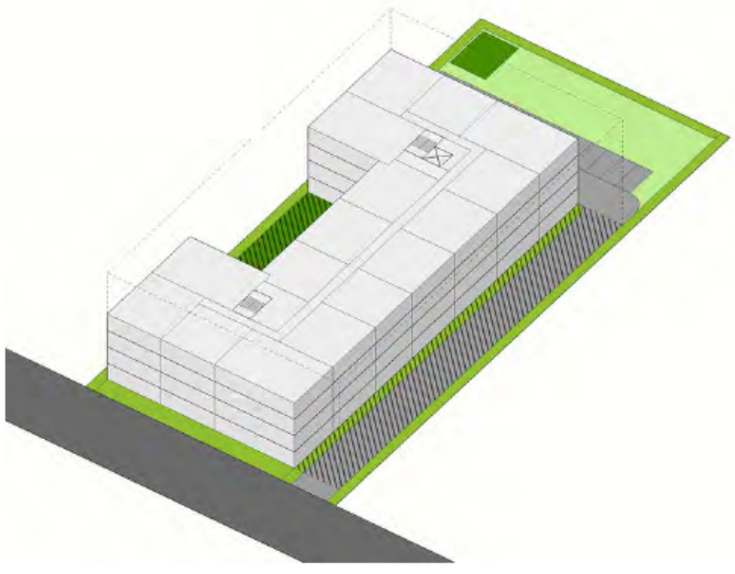


GROUND FLOOR PLAN

SITE

Dimensions: 140' x 310'
Area: 43,400 SF

0 10 20 40



LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 2 : 1
Allowable Building Floor Area: 86,800 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 85% (36,890 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 21

BUILDING PROTOTYPE

FAR: 1.81 : 1
Building Floor Area: 78,652 SF

Height: 40'

Building Coverage: 19,663 SF

Landscaping: 6,510 SF

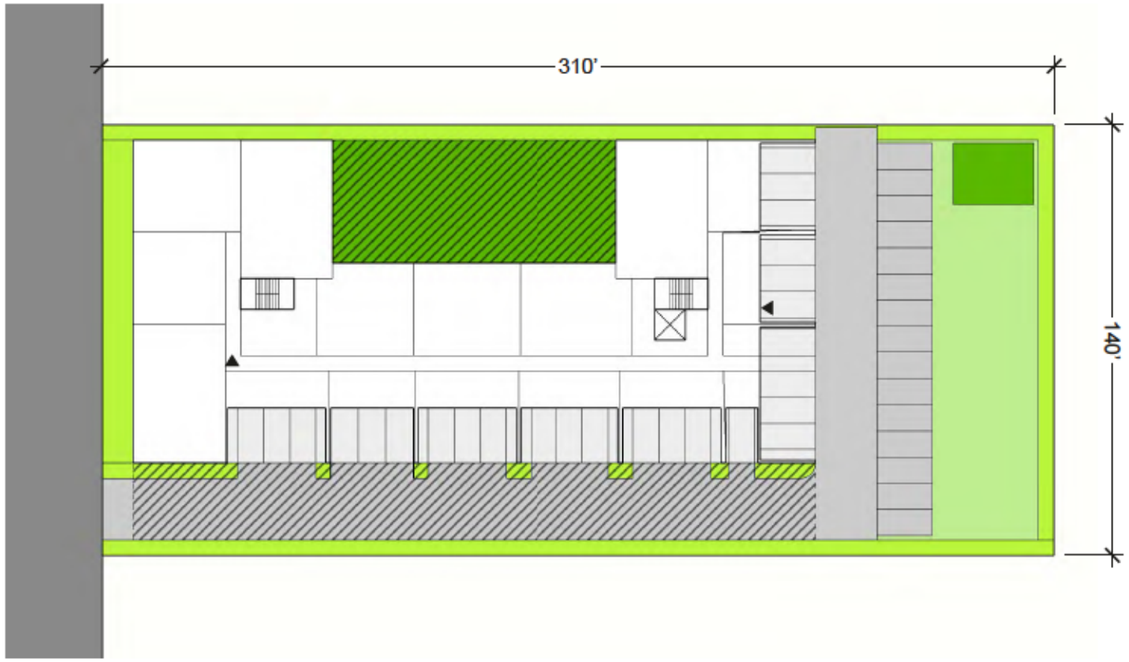
Required Outdoor Space: 2,928 SF
(shown as part of common area)

Common Area: 4,340 SF

Provided Parking Stalls: 24

Number of Units: 61
Average Unit Area: 1,074 SF
▯ ▯ ▯ ▯ ▯ ▯ ▯ ▯ **83%**

Note: The 61 units in this prototype would trigger mandatory inclusionary housing requirements and allowances for additional FAR.



GROUND FLOOR PLAN

SITE

Dimensions: 140' x 310'
Area: 43,400 SF

0 10 20 40

LEGEND

- Required Outdoor Area
- Required Landscape Area
- Remaining Site Area
- Street
- Driveway/Parking
- Driveway/Parking Under Bldg
- Maximum Additional Site Coverage
- Maximum Height & Setbacks Envelope

RH ZONE STANDARDS

Max FAR: 3 : 1 (With Bonus)
Allowable Building Floor Area: 130,200 SF

Max Height: 65'
Minimum Front Setback: 10'
Minimum Side Setback: 5'
Minimum Rear Setback: 25% of site depth

Max Building Coverage: 85% (36,890 SF)

Required Landscaping: 15% of site area

Required Outdoor Space: 48 SF / unit

Required Common Area: 10%

Required Parking Stalls: 0

BUILDING PROTOTYPE

FAR: 2.72 : 1
Building Floor Area: 117,978 SF

Height: 60'

Building Coverage: 19,663 SF

Landscaping: 6,510 SF

Required Outdoor Space: 4,224 SF
(shown as part of common area)

Common Area: 4,340 SF

Provided Parking Stalls: 31

Number of Units: 88
Average Unit Area: 1,080 SF
81%

Appendix C - Part 1
Better Housing by Design - Feasibility Analysis

EXHIBIT B

MEMORANDUM

To: Tyler Bump, Senior Economic Planner
City of Portland Bureau of Planning and Sustainability

From: Dan Guimond and David Schwartz,
Economic & Planning Systems

Subject: Multi-Dwelling Unit district density bonus
residual land value analysis; EPS #153070

Date: May 18, 2018

This memorandum outlines the process, objectives, and findings of an analysis the City of Portland Bureau of Planning and Sustainability (BPS) engaged Economic & Planning Systems (EPS) to undertake regarding whether proposed density bonuses would create sufficient additional residual land value to compensate for newly-established regulatory requirements in Multi-Dwelling Unit zone districts.

Summary of Findings

1) For sale townhomes continue to be the most feasible development type in the lower density RM1 zone in inner neighborhoods due to market conditions.
2) Rental stacked flat development types in the RM1 zone are feasible, especially in eastern neighborhoods where rents could support this development type over ownership townhomes.
3) Larger multifamily ownership development types in the RM2 and RM3 demonstrate higher feasibility than rental buildings when the market can support this development type.
4) The affordable housing density bonus in the RM2 and RM3 zones are marginally effective for rental development types that cross the threshold for compliance with the Inclusionary Housing (IH) program. Development in this product type could still be feasible depending on market conditions and supportable residual values.

The Economics of Land Use

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Process

The process began with discussions with City BPS staff to understand specific goals and desired outcomes of the effort. After developing a preliminary modeling framework, EPS met with and interviewed numerous developers that are active in areas of the city, primarily those active in MDU zone districts. One purpose of these meetings was to gain an understanding of the market's perspective and receptivity to the proposed entitlement changes. Another purpose of the meetings was to open lines of communication with the specific developers to seek review of critical cost and revenue assumptions that would be used in the modeling framework. It should be noted that EPS also obtained additional feedback from numerous other developers who were contacted by telephone to be interviewed.

Objectives

The City is currently in the process of substantially re-writing its Multi-Dwelling Unit (MDU) zone districts. Whereas the zone districts were previously defined on a per-unit basis, the City would like to move to a FAR basis to be consistent with the approach in other zones in the city. Because the City has observed under-building in a few geographies that include MDU zone districts, this analysis is intended to demonstrate the changes to the MDU zones do not disincentivize higher density development. The core objectives of this effort are to:

- Re-evaluate the IH density bonus under each MDU zoning category, and to
- Identify whether the proposed density bonus under each zoning category is sufficient to offset the "costs" associated with the new IH ordinance requirements, new construction excise tax (CET), and revamped system development charges (SDC).

Several guiding questions are also at the root of the City's motivation to recalibrate these MDU zone districts.

- Can the City facilitate better use of its entitlements?
- What is the value of the zoning flexibility and density bonus increase in each district?
- Will the market shift from townhomes to stacked flats (i.e. rental or apartment projects) if more flexibility is allowed in these zone districts?

Technical Analysis

To accommodate these technical questions, EPS structured a static pro forma to understand the residual land value (RLV) and profitability implications of four regulatory program scenarios (for each development prototype). That is, for each development prototype, performance metrics were calculated for the following regulatory scenarios:

- No IH or CET
- IH and CET, but no incentives
- IH and CET, with current incentives
- IH and CET, with bonus FAR

It is intended that the composite of this technical analysis will assist in quantifying the value created by additional entitlements (i.e. bonus FAR) and whether or not that value is sufficient to compensate for the "costs" associated with regulatory requirements (i.e. IH and CET) that are perceived to be one explanation of the market's hesitation to build in some of the MDU zones.

Prototype assumptions

To inform the technical analysis, the City BPS worked with OTAK to identify a series of prototypical development scales and building forms in three zone districts: R1, R2, and RH. In total, 12 building form prototypes were designed, including townhome and stacked flat concepts. Each prototype was scaled in total building square footage, open space, set-back requirements, height, site dimensions, lot coverage, common area, number of units, average square feet of units, and the number of parking spaces, if any.

- Prototype #2 – Inner neighborhood R2 zone (50x100 lot) – stacked flats, townhomes
- Prototype #3 – Eastern neighborhood R2 zone (95x180 lot) – stacked flats, townhomes
- Prototype #4 – Inner neighborhood R1 zone (100x100 lot) – stacked flats, townhomes
- Prototype #6 – Eastern neighborhood R1 zone (95x180 lot) – stacked flats, townhomes
- Prototype #8 – Inner neighborhood RH zone - (100x100 lot) – stacked flats
- Prototype #10 – Inner neighborhood RH zone (100x100 lot) – stacked flats
- Prototype #12 – Eastern neighborhood RH zone (140x310 lot) – stacked flats

Inputs and Assumptions

Development Program

The development program assumptions used were structured initially with the City and OTAK. Additionally, feedback from the development community active with projects in the close-in neighborhoods—East Portland, Northeast Portland—and other outer neighborhoods were consulted at length to vet the initial development program assumptions, development costs, and appropriate ranges of supportable market sales prices and rents, depending on neighborhood. For the proforma, the parameters of prototypes were simplified to provide greater uniformity for comparison of the impacts of regulatory and density changes on financial returns. Following are the core type of assumptions used for each development prototype:

- Site area: parcel sizes among the prototypes situated in R1 and R2 zones range between 5,000 and 17,100 square feet, and the parcel size of prototypes in the RH zones are either 10,000 or 43,100 square feet.
- Total units: development programs in the R1 and R2 prototypes range between 2 and 29 units, but are generally smaller than 20 units, and the prototypes in the RH zones range between 18 and 113 units.
- Average unit size: while there is variation in the unit sizes and distribution of units within a project, average unit sizes were applied uniformly to individual prototypes. Stacked flats ranged between 775 and 975 square feet, and townhome units ranged between 1,400 and 2,050 square feet.

- Gross floor area (GFA): the GFA was estimated based on the sum of total unit square footage plus any gross square footage for tuck-under parking plus any space for common area, which was relevant to the stacked flat projects. Common area was assumed at 10 percent of GFA in smaller stacked flat projects and 15 percent of GFA in larger-scale projects.
- Parking: the development community was clear regarding the necessity of parking to meet market demands for projects not close to transit. As such, each development program includes parking. Stacked flat projects were structured with 1 parking space per 2 units, and townhome projects were structured with 1 parking space per 1 unit.

Development Costs

The inputs and assumptions used for development costs were vetted with developers active in the areas of MDU zone districts. While varying degree of details were discussed with developers regarding components of total development costs, the following factors were used for the major development program components:

- Hard costs (HC): hard costs for projects of these scales ranged between $140 and $160 per square foot, excluding parking costs, which are calculated separately. At this level of HC, total development costs (TDC) for projects range between approximately $200 and $225 per square foot (not including land), as shown in the tables below.
- Parking: to give the modeling scenarios greater flexibility, parking costs on a per-space basis were estimated separately. Feedback generally indicated that tuck-under spaces were most common for these scale projects and were $30,000 per space. For the larger-scale projects in which podium-style construction might be used, this factor was still considered reasonable (translated as $100 per square foot HC) given that the GFA of parking was just one-third of the floor plate at most in the highest density scenarios (RH).
- Soft costs: as a percent of HC, the soft cost assumption was used as a gauge to calibrate the total soft costs, which include independently calculated system development charges, and a few other individual soft costs. Soft costs on each prototype evaluated ranged between 30 and 35 percent, consistent with the feedback from the development community.
- SDCs: included in the modeling were individual calculations of the SDCs for sanitary sewer, stormwater, parks and recreation, as well as Portland Bureau of Transportation (PBOT). The methodologies for calculating each SDC were pulled from the City's respective websites (from Portland Development Services) and applied as such to each pro forma, as shown in the tables below. Each SDC was calculated according to the City's requirements and by the size of unit or location in the city.
- Inclusionary zoning: when applicable, the City's recently established IH requirements were applied to the prototypes exceeding the threshold of applicability of 20 units. Based on the level of affordability, the appropriate incentives were also applied to each prototype by relevant regulatory scenario, as described below.
- Construction excise tax (CET): each prototype also includes the appropriate estimation of the City's recently adopted CET, calculated with the International Code Council's (ICC) Building Valuation Data (BVD) for 2017.

- General liability insurance premium: to give the modeling structure additional flexibility and nuance, a risk premium was included for all for-sale projects (i.e. stacked flat projects). Based on feedback from insurance providers as well as the development community, this premium typically increases GL insurance costs by approximately $10,000 per unit.
- Construction loan interest carry: this soft cost also builds nuance into the pro forma, adding additional costs associated with the financing of conventional debt used for the construction of a project. This factor accounts for the construction loan interest rate, which ranges between 5.5 and 6.5 percent depending on the scale of the project, the construction period—which ranges between 10 and 16 months—and the loan to cost ratio, which is generally 75 percent for most (not all) developers.

Development Revenues

Again, the inputs and assumptions used for development revenue potentials were vetted with developers active in the areas of MDU zone districts. And while the market supportability for sales prices per square foot and rents per square foot per month vary greatly between districts and parts of the city, low and high ranges were used in the model with sensitivities performed for each. The following assumptions were used in the pro forma, related to revenue generation:

- Market-rate sales prices: because the markets in which these zone districts are situated vary widely, the model's assumptions generally reflect sales prices not as strong as close-in neighborhoods, but not as soft as eastern-most neighborhoods. Feedback from the development community indicates a general consensus about price points converging around the $450,000 mark. Some product price points for ownership stacked flats range between $350,000 and $450,000, but for townhomes, price points are generally falling in the range of $450,000 and $750,000 or higher. The model assumes stacked flat price points of $350,000 to $460,000 and assumes townhome pricing between $550,000 and $740,000.
- Market-rate rents: the development community acknowledges that the market for rental product is weaker than that of a few years ago. As such, rental projects are not as readily feasible as they were. As with the market differences in sales prices, there are significant differences between rental rates by market. For close-in neighborhoods, rental projects are more capable of achieving rents around $3.00 per square foot, but neighborhoods in East Portland struggle to achieve this high rent level. It should be noted that even at $2.85 per square foot in East Portland (as assumed in the RH prototypes)—which reflect 120 percent median household income (MHI) according to the Portland Bureau of Housing's (PHB) 2018 income limits and affordable price maximums—that these prototypes as modeled possess negative residual land values. It should also be noted that this general rental rate range has been applied only to the stacked flat prototype configuration, whereas the townhomes when analyzed as rental projects use lower market rents; i.e. given the size of units and supportability of the market for high monthly payments, the model uses rents averaging $2.00 per square foot for 4- and 5-bedroom products rather than $2.85 to $3.00.
- Affordable housing sales prices: the maximum sales prices in the model are based directly on the limits as defined by PHB's 2016 schedule of incomes, sales prices by unit size, and maximum rents by unit size.
- Affordable housing rents: the maximum sales prices in the model are based directly on the limits as defined by PHB's 2016 schedule of incomes, sales prices by unit size, and maximum rents by unit size.

Regulatory Requirements & Incentives

In addition to the SDCs and CET costs, which are identified as components of soft costs (calculated individually in the pro forma), EPS identified the following regulatory requirements for each development prototype and scale:

- Applicability of the IH ordinance
- Application of IH options (i.e. providing 20 percent of units at 60 percent AMI or providing 10 percent of units at 80 percent AMI)
- Current density bonus under existing MDU zone districts
- Proposed density bonus for MDU zone districts

Proforma Modeling

The outcomes of the modeling are structured to identify a selection of metrics that, when compared to one another, provide an understanding of whether or not and to what extent the additional bonus FAR contributes a net positive offsetting effect of the costs associated with the IH, CET, and revamped SDCs for each prototype in each of the MDU zone districts. Again, the four scenarios are as follows:

- (A) No IH or CET
- (B) IH and CET, but no incentives
- (C) IH and CET, with current incentives
- (D) IH and CET, with bonus FAR

The following residual land value metrics are calculated in the model:

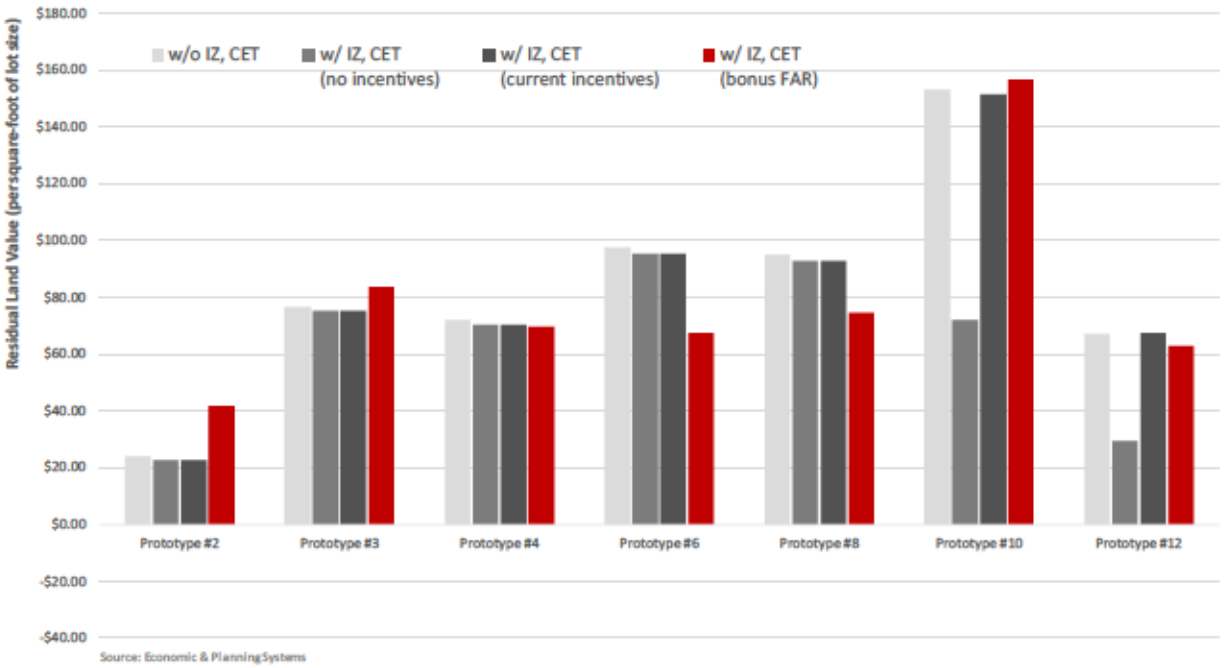
- Difference in RLV between (A) and (B): this value identifies the "costs" associated with the regulatory requirements absent the incentives currently available.
- Difference in RLV between (B) and (C): this value identifies to what extent the current incentives offset the costs associated with current regulatory requirements.
- Difference in RLV between (B) and (D): this value identifies to what extent the additional bonus FAR offsets the costs associated with current regulatory requirements.

Findings

For-Sale Prototypes

- R2: The proposed bonus has a net positive impact on the RLV of the lower-density prototypes (#2 and #3), situated in the R2 district.
- R1: There is a slightly net negative impact to the prototype #4 in the R1 district when the proposed bonus is applied to base zoning (increasing from 10 to 16 units). There is, however, a more substantial net negative impact to the RLV to the prototype #6 in the R1 district (increasing from 19 to 29 units). This impact is the result of crossing the 20-unit threshold and requiring compliance with Inclusionary Housing program requirements. For the larger building type utilizing the full density bonus to maintain parity with the base entitlement RLV, achievable sales prices would need to increase beyond what is currently supportable in the market.
- RH: In the prototype #8, the proposed bonus has a net negative impact on the project's RLV where the additional density crosses the threshold of the IH policy applicability. The proposed bonus has a net positive impact on RLV to the prototype #10 but not the prototype #12. The scale of prototype #10 is smaller (54 versus 113 units) and is thus less sensitive to the substantial increase in costs associated with: a) building more GFA; and b) building more units that must satisfy the IH policy. This finding is also consistent with the understanding that developers will utilize the density bonus to the extent that adding density does not require a higher-cost building construction type.
- Another finding of the RLV analysis relates specifically to prototypes #6 and #8. Because of the wide range in land values throughout non-Central City Portland, this analysis does not suggest that the proposed bonus FAR will not work in areas where the land value is actually equal to or lower than the estimated RLV in the analysis. In other words, developments under the proposed bonus FAR for prototypes #6 and #8 may still be feasible where land values differ.

Figure 1
Residual Land Value Summary by Scenario (as for-sale projects)



Rental Prototypes

- R2: As with this scale of for-sale projects, the proposed bonus has a net positive impact on the RLV of the lower-density stacked flat prototypes in both inner and eastern neighborhoods situated in the R2 district.

- R1: There is also a slightly net positive impact to the prototype #4 in the R1 district when the proposed bonus is applied to base zoning (increasing from 10 to 16 units). But there is a substantial net negative impact to the RLV to the prototype #6 in the R1 district (increasing from 19 to 29 units), because of the cost impacts of complying with the Inclusionary Housing program requirements. Again, at this scale, the only compensating mechanism (i.e. change in assumption yielding an accretive result to the RLV) would be an increase to the market rents beyond what is currently supportable in the market.

- RH: In the prototype #8, as with prototype #6, the additional density under the proposed bonus means that a project crosses the threshold of the IH policy applicability. As such, the RLV for the first three regulatory scenarios is net positive, but is negative in the proposed bonus scenario. As for the other prototypes, the results indicate two patterns: 1) that the Inclusionary Housing requirements have a net negative impact on RLV to these prototypes in general; 2) that with the current incentive structures, the RLV is brought into a positive RLV; and 3) that the additional density in projects of this scale does not increase RLV to market supportable levels unless rents can be pushed beyond current market conditions.

- In general, it should be clarified that the RLV in prototypes #10 and #12 under the proposed bonus FAR are negative to the extent they are for a variety of reasons. While hard costs are held constant and not assumed to cross a threshold into a higher density building construction type, soft costs are applied consistently at 30 to 35 percent of hard costs, which may be contributing to some degree of this negative RLV effect. The major reason why these results are considerably more negative is that for each additional unit that can be built within the form of the proposed bonus FAR, additional IH units must be set-aside.

Figure 2
Residual Land Value Summary by Scenario (as rental projects)

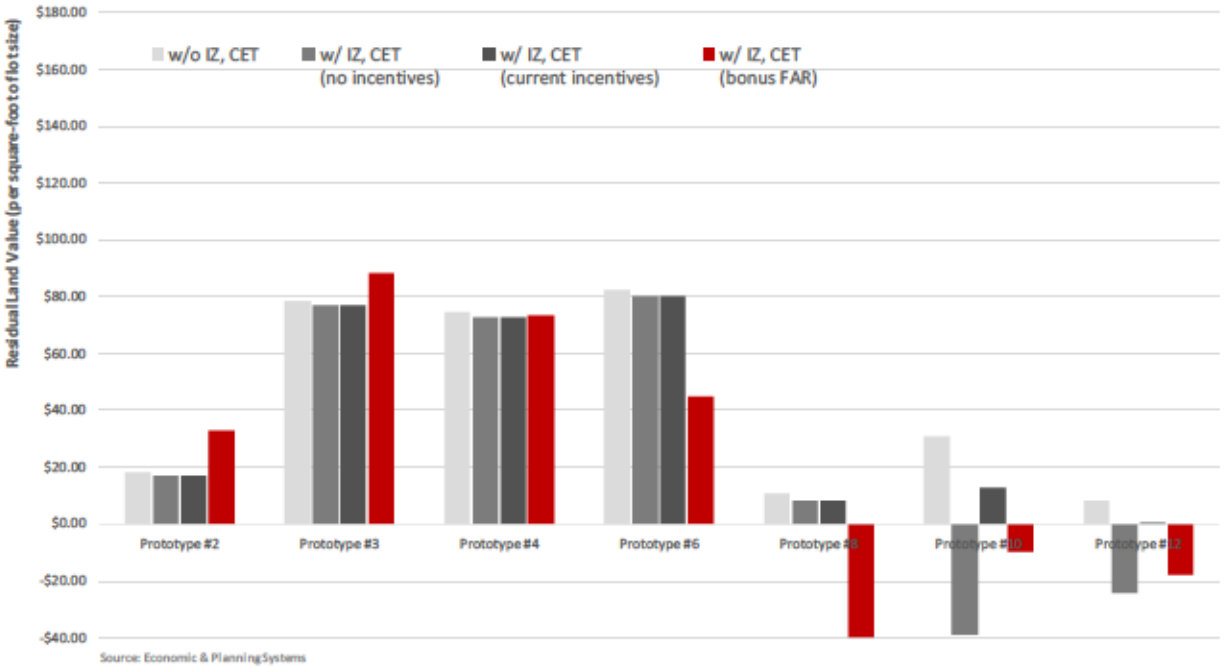


Table 1
Residual Land Value Summary by Scenario

	Stacked flats				Townhomes			
	w/o IZ, CET	w/ IZ, CET (no incentives)	w/ IZ, CET (current incentives)	w/ IZ, CET (bonus FAR)	w/o IZ, CET	w/ IZ, CET (no incentives)	w/ IZ, CET (current incentives)	w/ IZ, CET (bonus FAR)
Prototype (as a for-sale project)								
Prototype #2	$24.15	$22.85	$22.85	$41.85	$51.08	$49.78	$49.78	$49.78
Prototype #3	$76.51	$75.22	$75.22	$83.83	$49.67	$48.37	$48.37	$48.37
Prototype #4	$72.13	$70.30	$70.30	$69.64	$129.82	$127.35	$127.35	$127.35
Prototype #6	$97.47	$95.47	$95.47	$67.37	$99.00	$96.80	$96.80	$96.80
Prototype #8	$95.09	$92.75	$92.75	$74.43	---	---	---	---
Prototype #10	$153.02	$71.93	$151.35	$156.70	---	---	---	---
Prototype #12	$66.95	$29.42	$67.54	$62.75	---	---	---	---
Prototype (as a rental project)								
Prototype #2	$18.27	$16.97	$16.97	$33.03	$87.73	$86.43	$86.43	$86.43
Prototype #3	$78.24	$76.95	$76.95	$88.23	$60.01	$58.71	$58.71	$58.71
Prototype #4	$74.41	$72.58	$72.58	$73.28	$151.55	$149.08	$149.08	$149.08
Prototype #6	$82.14	$80.15	$80.15	$44.94	$96.39	$94.19	$94.19	$94.19
Prototype #8	$10.71	$8.37	$8.37	-$39.69	---	---	---	---
Prototype #10	$30.75	-$38.92	$12.80	-$9.57	---	---	---	---
Prototype #12	$8.25	-$24.01	$0.56	-$17.79	---	---	---	---

Source: Economic & Planning Systems

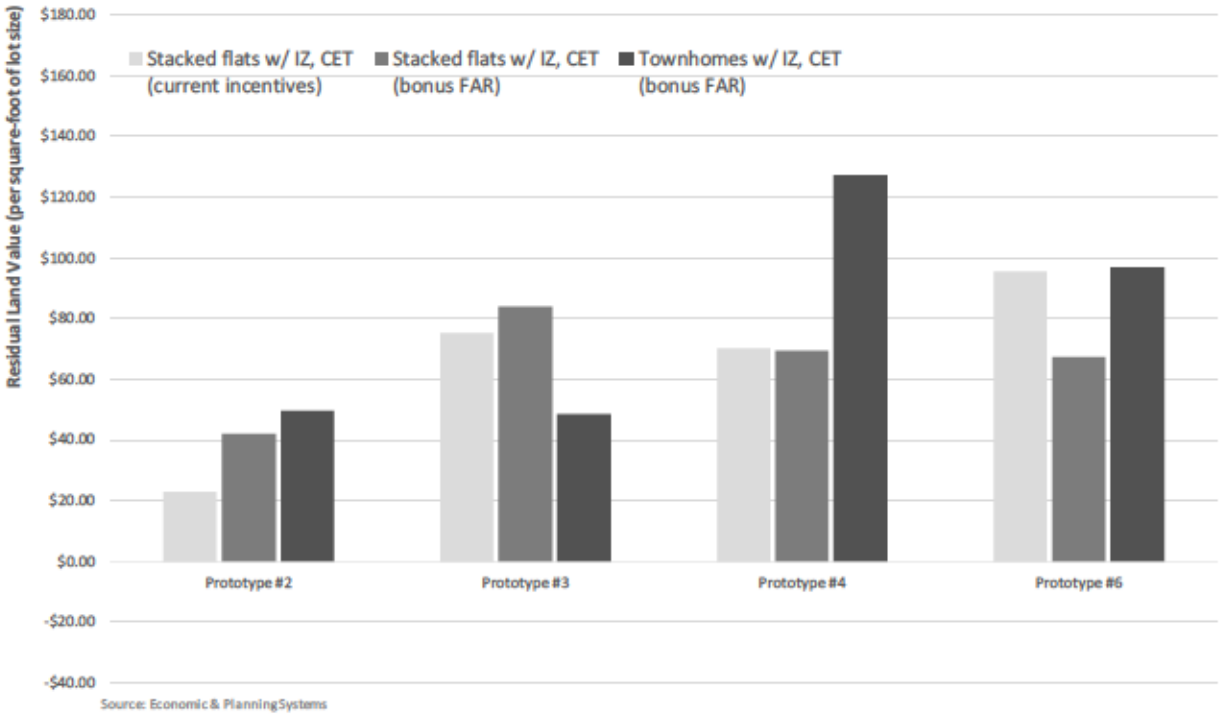
H:\153070-Portland On-Call Economic Services\Models\Project 2 - MDU Analysis\[153070-MDU Model-05i518.xlsx]T5 - Summary RLV per sqft

Market Considerations

The following analysis of findings deals with a disposition and development consideration in zone districts where the additional density (via a bonus FAR) creates an opportunity to build a different type of project, such as stacked flats as opposed to townhomes, in a neighborhood where townhomes would be more commonplace.

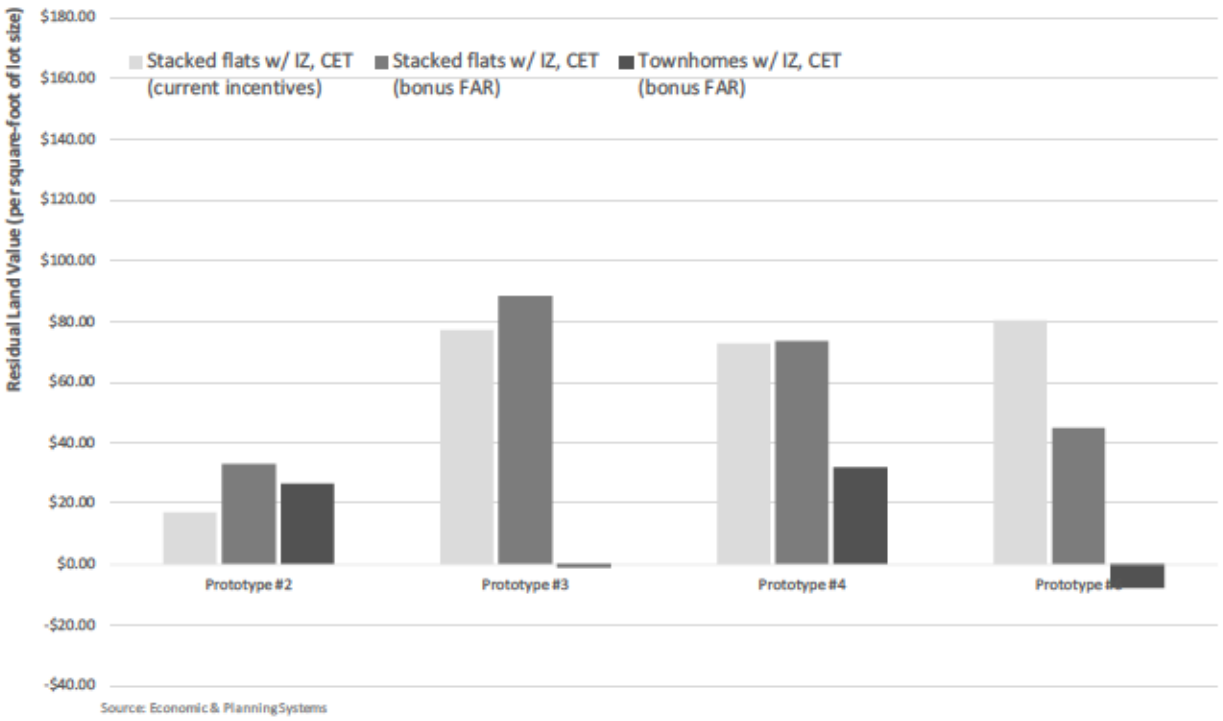
- The following figure provides a visual comparison of RLVs for prototypes in R1 and R2 districts showing the RLV of stacked flats versus townhomes as for-sale projects.
- R2: The findings of the analysis for the prototype #2 indicate that under the proposed bonus structure, townhomes have a slightly higher land value (this finding could also vary by location depending on the actual cost of land), but that the prototype #3 in the R2 district would have a higher RLV under the stacked flat configuration than a townhome. This would imply that developers of this prototype in this particular zone would begin contemplating the development of stacked flats (as for-sale projects) rather than townhomes.
- R1: The findings of the analysis for prototypes #4 and #6 indicate that under current market conditions, the townhome possesses a higher RLV than stacked flats (as for-sale projects).

Figure 3
Comparison of RLV Among Different Prototypes (as for-sale projects)



- The following figure provides a visual comparison of RLVs for prototypes in R1 and R2 districts showing the RLV of stacked flats versus townhomes as rental projects.
- R2: Because of the market supportability for high-enough rents in the townhome project, these findings indicate that stacked flats as a rental project would have a higher RLV. The finding is consistent for the prototype #3, as well.
- R1: The findings of the analysis for prototypes #4 and #6 also indicate that townhomes as a rental project would have lower RLVs than stacked flats.

Figure 4
Comparison



Comparison of RLV by Project Tenure

The following is a comparison of a the RLV for each of these project prototypes to illustrate the consideration a developer might make in identifying whether or not to build a rental project, in so far as these assumptions represent current market conditions of supply and demand for for-sale and rental projects.

- This graphic illustrates the difference between the RLV for rental prototypes compared to for-sale prototypes under each scenario.
- The findings indicate that, in general, under current market conditions, rental townhomes have lower RLV than for-sale townhome projects, which is consistent with the market reality that townhome projects are typically built as for-sale products.
- The findings also indicate that for prototypes #3 and #4, the rental stacked flats generally have a higher RLV than the for-sale iterations do. This would also be consistent with the market reality that stacked flats of this scale (i.e. larger than 6 units) are typically brought to the market as rentals, not for-sale products.

Following are summary tables representing the RLV calculations for each prototype under each regulatory scenario.

Table 2
Prototype 2 Pro forma

	Prototype 2							
	w/o IZ, CET		w/ IZ, CET (no Incentives)		w/ IZ, CET (current Incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 946,111	$ 650,000
Parking Costs								
Structured, tuck-under (per space)	$ 120,000	$ 60,000	$ 120,000	$ 60,000	$ 120,000	$ 60,000	$ 180,000	$ 60,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 770,000**	**$ 710,000**	**$ 770,000**	**$ 710,000**	**$ 770,000**	**$ 710,000**	**$ 1,126,111**	**$ 710,000**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 19,348	$ 12,092	$ 19,348	$ 12,092	$ 19,348	$ 12,092	$ 29,022	$ 12,092
Stormwater	$ 1,155	$ 1,069	$ 1,155	$ 1,069	$ 1,155	$ 1,069	$ 1,155	$ 1,069
Transportation (PBOT)	$ 8,096	$ 5,628	$ 8,096	$ 5,628	$ 8,096	$ 5,628	$ 12,144	$ 5,628
Parks & Recreation	$ 36,776	$ 25,102	$ 36,776	$ 25,102	$ 36,776	$ 25,102	$ 55,164	$ 25,102
Construction Excise Taxes (CET)			$ 6,352	$ 6,352	$ 6,352	$ 6,352	$ 9,246	$ 6,352
Other Soft Costs (as % of HC)	$ 192,500	$ 177,500	$ 192,500	$ 177,500	$ 192,500	$ 177,500	$ 281,528	$ 177,500
Subtotal (SC, excluding loan interest carry)	$ 257,875	$ 221,411	$ 264,227	$ 227,763	$ 264,227	$ 227,763	$ 388,259	$ 227,763
as % of HC	33%	31%	34%	32%	34%	32%	34%	32%
Construction Loan Interest	$ 25,054	$ 22,703	$ 25,209	$ 22,858	$ 25,209	$ 22,858	$ 36,913	$ 22,858
Total (SC)	**$ 282,929**	**$ 244,114**	**$ 289,437**	**$ 250,621**	**$ 289,437**	**$ 250,621**	**$ 425,172**	**$ 250,621**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ -	$ -
CET Waivers					$ -	$ -	$ -	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ -**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 1,052,929**	**$ 954,114**	**$ 1,059,437**	**$ 960,621**	**$ 1,059,437**	**$ 960,621**	**$ 1,551,283**	**$ 960,621**
per unit	$ 263,232	$ 477,057	$ 264,859	$ 480,311	$ 264,859	$ 480,311	$ 258,547	$ 480,311
per GFA sqft	$ 211	$ 191	$ 212	$ 192	$ 212	$ 192	$ 213	$ 192
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 40,000	$ 20,000	$ 40,000	$ 20,000	$ 40,000	$ 20,000	$ 60,000	$ 20,000
For-Sale Revenues								
MR Revenues	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 2,185,500	$ 1,476,000
AH Revenues			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Sales	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 2,185,500	$ 1,476,000
Sales Marketing Costs	$ (29,140)	$ (29,520)	$ (29,140)	$ (29,520)	$ (29,140)	$ (29,520)	$ (43,710)	$ (29,520)
Total Sales Revenues	**$ 1,427,860**	**$ 1,446,480**	**$ 1,427,860**	**$ 1,446,480**	**$ 1,427,860**	**$ 1,446,480**	**$ 2,141,790**	**$ 1,446,480**
Unleveraged Hurdle Rate	$ (142,786)	$ (144,648)	$ (142,786)	$ (144,648)	$ (142,786)	$ (144,648)	$ (214,179)	$ (144,648)
Leveraged Hurdle Rate	$ (214,179)	$ (216,972)	$ (214,179)	$ (216,972)	$ (214,179)	$ (216,972)	$ (321,269)	$ (216,972)
Revenues, Less Profit	$ 1,213,681	$ 1,229,508	$ 1,213,681	$ 1,229,508	$ 1,213,681	$ 1,229,508	$ 1,820,522	$ 1,229,508
Revenues - TDC = Residual Land Value	**$ 160,752**	**$ 275,394**	**$ 154,244**	**$ 268,887**	**$ 154,244**	**$ 268,887**	**$ 269,239**	**$ 268,887**
Land Value (per sqft)	$ 24.15	$ 51.08	$ 22.85	$ 49.78	$ 22.85	$ 49.78	$ 41.85	$ 49.78
Land Value (per unit)	$ 53,545	$ 108,486	$ 53,545	$ 108,486	$ 53,545	$ 108,486	$ 53,545	$ 108,486
Value of (in terms of RLV):								
IZ + CET req't			$ (6,507)	$ (6,507)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 84,994	$ -
Rental Revenue Assumptions								
MR Rent Income	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 167,400	$ 98,400
AH Rental Income			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Gross Annual Revenues	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 167,400	$ 98,400
Vacancy	$ (5,580)	$ (4,920)	$ (5,580)	$ (4,920)	$ (5,580)	$ (4,920)	$ (8,370)	$ (4,920)
Operational Costs								
O&M	$ (17,000)	$ (8,500)	$ (17,000)	$ (8,500)	$ (17,000)	$ (8,500)	$ (25,500)	$ (8,500)
Annual Property Taxes	$ (3,164)	$ (3,020)	$ (3,164)	$ (3,020)	$ (3,164)	$ (3,020)	$ (4,745)	$ (3,020)
NOI	**$ 85,856**	**$ 81,960**	**$ 85,856**	**$ 81,960**	**$ 85,856**	**$ 81,960**	**$ 128,785**	**$ 81,960**
Gross Value of Rental Project	$ 1,373,702	$ 1,311,359	$ 1,373,702	$ 1,311,359	$ 1,373,702	$ 1,311,359	$ 2,060,553	$ 1,311,359
Sales Marketing Costs (as % of Gross)	$ (27,474)	$ (26,227)	$ (27,474)	$ (26,227)	$ (27,474)	$ (26,227)	$ (41,211)	$ (26,227)
Net Proceeds of Rental Project	**$ 1,346,228**	**$ 1,285,132**	**$ 1,346,228**	**$ 1,285,132**	**$ 1,346,228**	**$ 1,285,132**	**$ 2,019,342**	**$ 1,285,132**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ -	$ -
Total Project Value (w/ R-E Incentives)	**$ 1,346,228**	**$ 1,285,132**	**$ 1,346,228**	**$ 1,285,132**	**$ 1,346,228**	**$ 1,285,132**	**$ 2,019,342**	**$ 1,285,132**
Unleveraged Hurdle Rate	$ (134,623)	$ (128,513)	$ (134,623)	$ (128,513)	$ (134,623)	$ (128,513)	$ (201,934)	$ (128,513)
Leveraged Hurdle Rate	$ (201,934)	$ (192,770)	$ (201,934)	$ (192,770)	$ (201,934)	$ (192,770)	$ (302,901)	$ (192,770)
Revenues, Less Profit	$ 1,144,294	$ 1,092,362	$ 1,144,294	$ 1,092,362	$ 1,144,294	$ 1,092,362	$ 1,716,440	$ 1,092,362
Revenues - TDC = Residual Land Value	**$ 91,364**	**$ 138,248**	**$ 84,857**	**$ 131,741**	**$ 84,857**	**$ 131,741**	**$ 165,158**	**$ 131,741**
Land Value (per sqft)	$ 18.27	$ 27.65	$ 16.97	$ 26.35	$ 16.97	$ 26.35	$ 33.03	$ 26.35
Value of (in terms of RLV):								
IZ + CET req't			$ (6,507)	$ (6,507)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 80,301	$ 48,884

Source: Economic & Planning Systems

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Table 3
Prototype 3 Pro forma

	Prototype 3							
	w/o IZ, CET		w/ IZ, CET (no Incentives)		w/ IZ, CET (current Incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 2,372,067	$ 2,391,480	$ 2,372,067	$ 2,391,480	$ 2,372,067	$ 2,391,480	$ 3,656,800	$ 2,391,480
Parking Costs								
Structured, tuck-under (per space)	$ 210,000	$ 270,000	$ 210,000	$ 270,000	$ 210,000	$ 270,000	$ 330,000	$ 270,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 2,582,067**	**$ 2,661,480**	**$ 2,582,067**	**$ 2,661,480**	**$ 2,582,067**	**$ 2,661,480**	**$ 3,986,800**	**$ 2,661,480**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 62,881	$ 54,414	$ 62,881	$ 54,414	$ 62,881	$ 54,414	$ 96,740	$ 54,414
Stormwater	$ 3,950	$ 1,069	$ 3,950	$ 1,069	$ 3,950	$ 1,069	$ 3,950	$ 1,069
Transportation (PBOT)	$ 26,312	$ 25,326	$ 26,312	$ 25,326	$ 26,312	$ 25,326	$ 40,480	$ 25,326
Parks & Recreation	$ 119,522	$ 99,486	$ 119,522	$ 99,486	$ 119,522	$ 99,486	$ 183,880	$ 99,486
Construction Excise Taxes (CET)			$ 21,526	$ 21,702	$ 21,526	$ 21,702	$ 33,185	$ 21,702
Other Soft Costs (as % of HC)	$ 645,517	$ 665,370	$ 645,517	$ 665,370	$ 645,517	$ 665,370	$ 996,700	$ 665,370
Subtotal (SC, excluding loan interest carry)	$ 858,182	$ 845,685	$ 879,708	$ 867,387	$ 879,708	$ 867,387	$ 1,354,935	$ 867,387
as % of HC	33%	32%	34%	33%	34%	33%	34%	33%
Construction Loan Interest	$ 83,856	$ 85,487	$ 84,381	$ 86,016	$ 84,381	$ 86,016	$ 130,205	$ 86,016
Total (SC)	**$ 942,038**	**$ 931,172**	**$ 964,089**	**$ 953,403**	**$ 964,089**	**$ 953,403**	**$ 1,485,140**	**$ 953,403**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ (32,505)	$ -
CET Waivers					$ -	$ -	$ (3,318)	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ (35,824)**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 3,524,104**	**$ 3,592,652**	**$ 3,546,156**	**$ 3,614,883**	**$ 3,546,156**	**$ 3,614,883**	**$ 5,436,116**	**$ 3,614,883**
per unit	$ 271,085	$ 399,184	$ 272,781	$ 401,654	$ 272,781	$ 401,654	$ 271,806	$ 401,654
per GFA sqft	$ 208	$ 210	$ 209	$ 212	$ 209	$ 212	$ 208	$ 212
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 130,000	$ 90,000	$ 130,000	$ 90,000	$ 130,000	$ 90,000	$ 180,000	$ 90,000
For-Sale Revenues								
MR Revenues	$ 5,957,250	$ 5,440,500	$ 5,957,250	$ 5,440,500	$ 5,957,250	$ 5,440,500	$ 8,248,500	$ 5,440,500
AH Revenues			$ -	$ -	$ -	$ -	$ 214,400	$ -
Subtotal Sales	$ 5,957,250	$ 5,440,500	$ 5,957,250	$ 5,440,500	$ 5,957,250	$ 5,440,500	$ 8,462,900	$ 5,440,500
Sales Marketing Costs	$ (119,145)	$ (108,810)	$ (119,145)	$ (108,810)	$ (119,145)	$ (108,810)	$ (169,258)	$ (108,810)
Total Sales Revenues	**$ 5,838,105**	**$ 5,331,690**	**$ 5,838,105**	**$ 5,331,690**	**$ 5,838,105**	**$ 5,331,690**	**$ 8,293,642**	**$ 5,331,690**
Unleveraged Hurdle Rate	$ (583,811)	$ (533,169)	$ (583,811)	$ (533,169)	$ (583,811)	$ (533,169)	$ (829,364)	$ (533,169)
Leveraged Hurdle Rate	$ (875,716)	$ (799,754)	$ (875,716)	$ (799,754)	$ (875,716)	$ (799,754)	$ (1,244,046)	$ (799,754)
Revenues, Less Profit	$ 4,962,389	$ 4,531,937	$ 4,962,389	$ 4,531,937	$ 4,962,389	$ 4,531,937	$ 7,049,596	$ 4,531,937
Revenues - TDC = Residual Land Value	**$ 1,308,285**	**$ 849,284**	**$ 1,288,234**	**$ 827,063**	**$ 1,288,234**	**$ 827,063**	**$ 1,433,479**	**$ 827,063**
Land Value (per sqft)	$ 76.51	$ 49.67	$ 75.22	$ 48.37	$ 75.22	$ 48.37	$ 83.83	$ 48.37
Land Value (per unit)	$ 67,363	$ 88,862	$ 67,363	$ 88,862	$ 67,363	$ 88,862	$ 62,202	$ 88,862
Value of (in terms of RLV):								
IZ + CET req't			**$ (22,051)**	**$ (22,231)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ 147,245**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 456,300	$ 334,800	$ 456,300	$ 334,800	$ 456,300	$ 334,800	$ 631,800	$ 334,800
AH Rental Income			$ -	$ -	$ -	$ -	$ 26,376	$ -
Subtotal Gross Annual Revenues	$ 456,300	$ 334,800	$ 456,300	$ 334,800	$ 456,300	$ 334,800	$ 658,176	$ 334,800
Vacancy	$ (22,815)	$ (16,740)	$ (22,815)	$ (16,740)	$ (22,815)	$ (16,740)	$ (32,909)	$ (16,740)
Operational Costs								
O&M	$ (55,250)	$ (38,250)	$ (55,250)	$ (38,250)	$ (55,250)	$ (38,250)	$ (85,000)	$ (38,250)
Annual Property Taxes	$ (13,442)	$ (9,944)	$ (13,442)	$ (9,944)	$ (13,442)	$ (9,944)	$ (19,200)	$ (9,944)
NOI	**$ 364,793**	**$ 269,866**	**$ 364,793**	**$ 269,866**	**$ 364,793**	**$ 269,866**	**$ 521,067**	**$ 269,866**
Gross Value of Rental Project	$ 5,836,690	$ 4,317,856	$ 5,836,690	$ 4,317,856	$ 5,836,690	$ 4,317,856	$ 8,337,071	$ 4,317,856
Sales Marketing Costs (as % of Gross)	$ (116,734)	$ (86,357)	$ (116,734)	$ (86,357)	$ (116,734)	$ (86,357)	$ (166,741)	$ (86,357)
Net Proceeds of Rental Project	**$ 5,719,956**	**$ 4,231,499**	**$ 5,719,956**	**$ 4,231,499**	**$ 5,719,956**	**$ 4,231,499**	**$ 8,170,329**	**$ 4,231,499**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ 11,798	$ -
Total Project Value (w/ R-E Incentives)	**$ 5,719,956**	**$ 4,231,499**	**$ 5,719,956**	**$ 4,231,499**	**$ 5,719,956**	**$ 4,231,499**	**$ 8,182,127**	**$ 4,231,499**
Unleveraged Hurdle Rate	$ (571,996)	$ (423,150)	$ (571,996)	$ (423,150)	$ (571,996)	$ (423,150)	$ (817,033)	$ (423,150)
Leveraged Hurdle Rate	$ (857,993)	$ (634,725)	$ (857,993)	$ (634,725)	$ (857,993)	$ (634,725)	$ (1,225,549)	$ (634,725)
Revenues, Less Profit	$ 4,861,962	$ 3,596,774	$ 4,861,962	$ 3,596,774	$ 4,861,962	$ 3,596,774	$ 6,944,780	$ 3,596,774
Revenues - TDC = Residual Land Value	**$ 1,337,858**	**$ 4,122**	**$ 1,316,807**	**$ (18,110)**	**$ 1,316,807**	**$ (18,110)**	**$ 1,508,664**	**$ (18,110)**
Land Value (per sqft)	$ 78.24	$ 0.24	$ 76.95	$ (1.06)	$ 76.95	$ (1.06)	$ 88.23	$ (1.06)
Land Value (per unit)	$ 65,999	$ 70,525	$ 65,999	$ 70,525	$ 65,999	$ 70,525	$ 61,277	$ 70,525
Value of (in terms of RLV):								
IZ + CET req't			**$ (22,051)**	**$ (22,231)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ 192,857**	**$ (1,333,917)**

Source: Economic & Planning Systems

[illegible]

Table 4
Prototype 4 Pro forma

	Prototype 4							
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 3,154,447	$ 2,660,000
Parking Costs								
Structured, tuck-under (per space)	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ 720,000	$ 150,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 3,874,447**	**$ 2,810,000**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 77,392	$ 60,460
Stormwater	$ 2,310	$ 1,069	$ 2,310	$ 1,069	$ 2,310	$ 1,069	$ 2,310	$ 1,069
Transportation (PBOT)	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 32,384	$ 28,140
Parks & Recreation	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 147,104	$ 110,540
Construction Excise Taxes (CET)			$ 17,891	$ 24,139	$ 17,891	$ 24,139	$ 28,626	$ 24,139
Other Soft Costs (as % of HC)	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 968,612	$ 702,500
Subtotal (SC, excluding loan interest carry)	$ 715,742	$ 902,729	$ 733,634	$ 926,868	$ 733,634	$ 926,868	$ 1,256,428	$ 926,868
as % of HC	32%	32%	33%	33%	33%	33%	32%	33%
Construction Loan Interest	$ 68,608	$ 87,017	$ 69,027	$ 87,583	$ 69,027	$ 87,583	$ 120,255	$ 87,583
Total (SC)	**$ 784,350**	**$ 989,746**	**$ 802,661**	**$ 1,014,451**	**$ 802,661**	**$ 1,014,451**	**$ 1,376,683**	**$ 1,014,451**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ -	$ -
CET Waivers					$ -	$ -	$ -	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ -**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 2,995,880**	**$ 3,799,746**	**$ 3,014,190**	**$ 3,824,451**	**$ 3,014,190**	**$ 3,824,451**	**$ 5,251,130**	**$ 3,824,451**
per unit	$ 299,588	$ 379,975	$ 301,419	$ 382,445	$ 301,419	$ 382,445	$ 328,196	$ 382,445
per GFA sqft	$ 213	$ 200	$ 214	$ 201	$ 214	$ 201	$ 233	$ 201
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 160,000	$ 100,000
For-Sale Revenues								
MR Revenues	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 7,332,000	$ 6,240,000
AH Revenues			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Sales	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 7,332,000	$ 6,240,000
Sales Marketing Costs	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (146,640)	$ (124,800)
Total Sales Revenues	**$ 4,490,850**	**$ 6,115,200**	**$ 4,490,850**	**$ 6,115,200**	**$ 4,490,850**	**$ 6,115,200**	**$ 7,185,360**	**$ 6,115,200**
Unleveraged Hurdle Rate	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (718,536)	$ (611,520)
Leveraged Hurdle Rate	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (1,077,804)	$ (917,280)
Revenues, Less Profit	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 6,107,556	$ 5,197,920
Revenues - TDC = Residual Land Value	**$ 721,343**	**$ 1,298,174**	**$ 703,032**	**$ 1,273,469**	**$ 703,032**	**$ 1,273,469**	**$ 696,426**	**$ 1,273,469**
Land Value (per sqft)	$ 72.13	$ 129.82	$ 70.30	$ 127.35	$ 70.30	$ 127.35	$ 69.64	$ 127.35
Land Value (per unit)	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 67,363	$ 91,728
Value of (in terms of RLV):								
IZ + CET req't			**$ (18,311)**	**$ (24,705)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ (6,606)**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 561,600	$ 384,000
AH Rental Income			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Gross Annual Revenues	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 561,600	$ 384,000
Vacancy	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (28,080)	$ (19,200)
Operational Costs								
O&M	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (68,000)	$ (42,500)
Annual Property Taxes	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (16,544)	$ (11,454)
NOI	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 448,976**	**$ 310,846**
Gross Value of Rental Project	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 7,183,618	$ 4,973,535
Sales Marketing Costs (as % of Gross)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (143,672)	$ (99,471)
Net Proceeds of Rental Project	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 7,039,946**	**$ 4,874,064**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ -	$ -
Total Project Value (w/ R-E Incentives)	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 7,039,946**	**$ 4,874,064**
Unleveraged Hurdle Rate	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (703,995)	$ (487,406)
Leveraged Hurdle Rate	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (1,055,992)	$ (731,110)
Revenues, Less Profit	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 5,983,954	$ 4,142,955
Revenues - TDC = Residual Land Value	**$ 744,091**	**$ 343,209**	**$ 726,781**	**$ 318,504**	**$ 726,781**	**$ 318,504**	**$ 732,824**	**$ 318,504**
Land Value (per sqft)	$ 74.41	$ 34.32	$ 72.58	$ 31.85	$ 72.58	$ 31.85	$ 73.28	$ 31.85
Land Value (per unit)	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 65,999	$ 73,111
Value of (in terms of RLV):								
IZ + CET req't			**$ (18,311)**	**$ (24,705)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ 7,043**	**$ (407,277)**

Source: Economic & Planning Systems

H:\183073-Portland On-Call Economic Services\Models\Project 2 - MDU Analysis\[183073 MDU Model [illegible].xlsx]T4 - Pro forma - [illegible]

Table 5
Prototype 6 Pro forma

	Prototype 6							
	w/o IZ, CET		w/ IZ, CET (no Incentives)		w/ IZ, CET (current Incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 3,670,800	$ 4,046,000	$ 3,670,800	$ 4,046,000	$ 3,670,800	$ 4,046,000	$ 5,602,800	$ 4,046,000
Parking Costs								
Structured, tuck-under (per space)	$ 300,000	$ 270,000	$ 300,000	$ 270,000	$ 300,000	$ 270,000	$ 870,000	$ 270,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 3,970,800**	**$ 4,316,000**	**$ 3,970,800**	**$ 4,316,000**	**$ 3,970,800**	**$ 4,316,000**	**$ 6,472,800**	**$ 4,316,000**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 91,903	$ 102,782	$ 91,903	$ 102,782	$ 91,903	$ 102,782	$ 140,273	$ 102,782
Stormwater	$ 3,960	$ 1,069	$ 3,960	$ 1,069	$ 3,960	$ 1,069	$ 3,960	$ 1,069
Transportation (PBOT)	$ 38,456	$ 47,838	$ 38,456	$ 47,838	$ 38,456	$ 47,838	$ 58,696	$ 47,838
Parks & Recreation	$ 174,686	$ 187,918	$ 174,686	$ 187,918	$ 174,686	$ 187,918	$ 266,626	$ 187,918
Construction Excise Taxes (CET)			$ 33,312	$ 36,717	$ 33,312	$ 36,717	$ 50,845	$ 36,717
Other Soft Costs (as % of HC)	$ 992,700	$ 1,079,000	$ 992,700	$ 1,079,000	$ 992,700	$ 1,079,000	$ 1,618,200	$ 1,079,000
Subtotal (SC, excluding loan interest carry)	$ 1,301,695	$ 1,418,627	$ 1,335,007	$ 1,455,344	$ 1,335,007	$ 1,455,344	$ 2,138,590	$ 1,455,344
as % of HC	33%	33%	34%	34%	34%	34%	33%	34%
Construction Loan Interest	$ 123,574	$ 134,405	$ 124,355	$ 135,266	$ 124,355	$ 135,266	$ 201,829	$ 135,266
Total (SC)	**$ 1,425,269**	**$ 1,553,032**	**$ 1,459,362**	**$ 1,590,610**	**$ 1,459,362**	**$ 1,590,610**	**$ 2,340,419**	**$ 1,590,610**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ (48,574)	$ -
CET Waivers					$ -	$ -	$ (5,260)	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ (53,833)**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 5,396,069**	**$ 5,869,032**	**$ 5,430,162**	**$ 5,906,610**	**$ 5,430,162**	**$ 5,906,610**	**$ 8,759,386**	**$ 5,906,610**
per unit	$ 284,004	$ 345,237	$ 285,798	$ 347,448	$ 285,798	$ 347,448	$ 302,048	$ 347,448
per GFA sqft	$ 206	$ 203	$ 207	$ 204	$ 207	$ 204	$ 219	$ 204
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 190,000	$ 170,000	$ 190,000	$ 170,000	$ 190,000	$ 170,000	$ 260,000	$ 170,000
For-Sale Revenues								
MR Revenues	$ 8,706,750	$ 9,282,000	$ 8,706,750	$ 9,282,000	$ 8,706,750	$ 9,282,000	$ 11,914,500	$ 9,282,000
AH Revenues			$ -	$ -	$ -	$ -	$ 296,052	$ -
Subtotal Sales	$ 8,706,750	$ 9,282,000	$ 8,706,750	$ 9,282,000	$ 8,706,750	$ 9,282,000	$ 12,210,552	$ 9,282,000
Sales Marketing Costs	$ (174,135)	$ (185,640)	$ (174,135)	$ (185,640)	$ (174,135)	$ (185,640)	$ (244,211)	$ (185,640)
Total Sales Revenues	**$ 8,532,615**	**$ 9,096,360**	**$ 8,532,615**	**$ 9,096,360**	**$ 8,532,615**	**$ 9,096,360**	**$ 11,966,341**	**$ 9,096,360**
Unleveraged Hurdle Rate	$ (853,262)	$ (909,636)	$ (853,262)	$ (909,636)	$ (853,262)	$ (909,636)	$ (1,196,634)	$ (909,636)
Leveraged Hurdle Rate	$ (1,279,892)	$ (1,364,454)	$ (1,279,892)	$ (1,364,454)	$ (1,279,892)	$ (1,364,454)	$ (1,794,951)	$ (1,364,454)
Revenues, Less Profit	$ 7,252,723	$ 7,731,906	$ 7,252,723	$ 7,731,906	$ 7,252,723	$ 7,731,906	$ 10,171,390	$ 7,731,906
Revenues - TDC = Residual Land Value	**$ 1,666,654**	**$ 1,692,874**	**$ 1,632,561**	**$ 1,655,296**	**$ 1,632,561**	**$ 1,655,296**	**$ 1,152,004**	**$ 1,655,296**
Land Value (per sqft)	$ 97.47	$ 99.00	$ 95.47	$ 96.80	$ 95.47	$ 96.80	$ 67.37	$ 96.80
Land Value (per unit)	$ 67,363	$ 80,262	$ 67,363	$ 80,262	$ 67,363	$ 80,262	$ 61,895	$ 80,262
Value of (in terms of RLV):								
IZ + CET req't			**$ (34,093)**	**$ (37,577)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ (480,557)**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 666,900	$ 571,200	$ 666,900	$ 571,200	$ 666,900	$ 571,200	$ 912,600	$ 571,200
AH Rental Income			$ -	$ -	$ -	$ -	$ 35,526	$ -
Subtotal Gross Annual Revenues	$ 666,900	$ 571,200	$ 666,900	$ 571,200	$ 666,900	$ 571,200	$ 948,126	$ 571,200
Vacancy	$ (33,345)	$ (28,560)	$ (33,345)	$ (28,560)	$ (33,345)	$ (28,560)	$ (47,406)	$ (28,560)
Operational Costs								
O&M	$ (104,500)	$ (93,500)	$ (104,500)	$ (93,500)	$ (104,500)	$ (93,500)	$ (159,500)	$ (93,500)
Annual Property Taxes	$ (18,802)	$ (15,962)	$ (18,802)	$ (15,962)	$ (18,802)	$ (15,962)	$ (26,342)	$ (15,962)
NOI	**$ 510,253**	**$ 433,178**	**$ 510,253**	**$ 433,178**	**$ 510,253**	**$ 433,178**	**$ 714,878**	**$ 433,178**
Gross Value of Rental Project	$ 8,164,051	$ 6,930,852	$ 8,164,051	$ 6,930,852	$ 8,164,051	$ 6,930,852	$ 11,438,049	$ 6,930,852
Sales Marketing Costs (as % of Gross)	$ (163,281)	$ (138,617)	$ (163,281)	$ (138,617)	$ (163,281)	$ (138,617)	$ (228,761)	$ (138,617)
Net Proceeds of Rental Project	**$ 8,000,770**	**$ 6,792,235**	**$ 8,000,770**	**$ 6,792,235**	**$ 8,000,770**	**$ 6,792,235**	**$ 11,209,288**	**$ 6,792,235**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ 16,744	$ -
Total Project Value (w/ R-E Incentives)	**$ 8,000,770**	**$ 6,792,235**	**$ 8,000,770**	**$ 6,792,235**	**$ 8,000,770**	**$ 6,792,235**	**$ 11,226,032**	**$ 6,792,235**
Unleveraged Hurdle Rate	$ (800,077)	$ (679,223)	$ (800,077)	$ (679,223)	$ (800,077)	$ (679,223)	$ (1,120,929)	$ (679,223)
Leveraged Hurdle Rate	$ (1,200,116)	$ (1,018,835)	$ (1,200,116)	$ (1,018,835)	$ (1,200,116)	$ (1,018,835)	$ (1,681,393)	$ (1,018,835)
Revenues, Less Profit	$ 6,800,655	$ 5,773,400	$ 6,800,655	$ 5,773,400	$ 6,800,655	$ 5,773,400	$ 9,527,895	$ 5,773,400
Revenues - TDC = Residual Land Value	**$ 1,404,586**	**$ (95,632)**	**$ 1,370,493**	**$ (133,210)**	**$ 1,370,493**	**$ (133,210)**	**$ 768,509**	**$ (133,210)**
Land Value (per sqft)	$ 82.14	$ (5.59)	$ 80.15	$ (7.79)	$ 80.15	$ (7.79)	$ 44.94	$ (7.79)
Land Value (per unit)	$ 63,164	$ 59,931	$ 63,164	$ 59,931	$ 63,164	$ 59,931	$ 57,979	$ 59,931
Value of (in terms of RLV):								
IZ + CET req't			**$ (34,093)**	**$ (37,577)**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ (601,983)**	**$ (1,503,703)**

Source: Economic & Planning Systems

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Table 6
Prototype 8 Pro forma

	Prototype 8							
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 2,884,659	—	$ 2,884,659	—	$ 2,884,659	—	$ 4,350,706	—
Parking Costs								
Structured, tuck-under (per space)	$ 270,000	—	$ 270,000	—	$ 270,000	—	$ 450,000	—
Surface (per space)	$ -	—	$ -	—	$ -	—	$ -	—
Total (HC)	**$ 3,154,659**	**$ -**	**$ 3,154,659**	**$ -**	**$ 3,154,659**	**$ -**	**$ 4,800,706**	**$ -**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 87,066	—	$ 87,066	—	$ 87,066	—	$ 130,599	—
Stormwater	*$ 2,310*	—	*$ 2,310*	—	*$ 2,310*	—	*$ 2,310*	—
Transportation (PBOT)	$ 36,432	—	$ 36,432	—	$ 36,432	—	$ 54,648	—
Parks & Recreation	$ 165,492	—	$ 165,492	—	$ 165,492	—	$ 248,238	—
Construction Excise Taxes (CET)			$ 22,844	—	$ 22,844	—	$ 34,454	—
Other Soft Costs (as % of HC)	$ 788,665	—	$ 788,665	—	$ 788,665	—	$ 1,200,176	—
Subtotal (SC, excluding loan interest carry)	$ 1,079,965	$ -	$ 1,102,809	$ -	$ 1,102,809	$ -	$ 1,670,425	$ -
as % of HC	34%	—	35%	—	35%	—	35%	—
Construction Loan Interest	$ 96,073	—	$ 96,591	—	$ 96,591	—	$ 146,814	—
Total (SC)	**$ 1,176,038**	—	**$ 1,199,400**	—	**$ 1,199,400**	—	**$ 1,817,239**	—
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ (48,422)	$ -
CET Waivers					$ -	—	$ (3,828)	—
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ (52,250)**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 4,330,697**	—	**$ 4,354,059**	—	**$ 4,354,059**	—	**$ 6,566,696**	—
per unit	$ 240,594	$ -	$ 241,892	$ -	$ 241,892	$ -	$ 243,174	$ -
per GFA sqft	$ 210	$ -	$ 211	$ -	$ 211	$ -	$ 211	$ -
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 180,000 —		$ 180,000 —		$ 180,000 —		$ 240,000 —	
For-Sale Revenues								
MR Revenues	$ 6,556,500	—	$ 6,556,500	—	$ 6,556,500	—	$ 8,742,000	—
AH Revenues			$ -	—	$ -	—	$ 321,600	—
Subtotal Sales	$ 6,556,500	$ -	$ 6,556,500	$ -	$ 6,556,500	$ -	$ 9,063,600	$ -
Sales Marketing Costs	$ (131,130)	—	$ (131,130)	—	$ (131,130)	—	$ (181,272)	—
Total Sales Revenues	**$ 6,425,370**	**$ -**	**$ 6,425,370**	**$ -**	**$ 6,425,370**	**$ -**	**$ 8,882,328**	**$ -**
Unleveraged Hurdle Rate	$ (642,537)	—	$ (642,537)	—	$ (642,537)	—	$ (888,233)	—
Leveraged Hurdle Rate	$ (963,806)	—	$ (963,806)	—	$ (963,806)	—	$ (1,332,349)	—
Revenues, Less Profit	$ 5,461,565	—	$ 5,461,565	—	$ 5,461,565	—	$ 7,549,979	—
Revenues - TDC = Residual Land Value	**$ 850,868**	—	**$ 827,506**	—	**$ 827,506**	—	**$ 744,284**	—
Land Value (per sqft)	$ 95.09	—	$ 92.75	—	$ 92.75	—	$ 74.43	—
Land Value (per unit)	$ 53,545		$ 53,545		$ 53,545		$ 49,346	
Value of (in terms of RLV):								
IZ + CET req't			**$ (23,362)**	**$ -**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ (183,222)**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 477,090	—	$ 477,090	—	$ 477,090	—	$ 636,120	—
AH Rental Income			$ -	—	$ -	—	$ 39,564	—
Subtotal Gross Annual Revenues	$ 477,090	$ -	$ 477,090	$ -	$ 477,090	$ -	$ 675,684	$ -
Vacancy	$ (23,855)	—	$ (23,855)	—	$ (23,855)	—	$ (33,784)	—
Operational Costs								
O&M	$ (108,000)	—	$ (108,000)	—	$ (108,000)	—	$ (162,000)	—
Annual Property Taxes	$ (12,269)	—	$ (12,269)	—	$ (12,269)	—	$ (17,055)	—
NOI	**$ 332,966**	**$ -**	**$ 332,966**	**$ -**	**$ 332,966**	**$ -**	**$ 462,845**	**$ -**
Gross Value of Rental Project	$ 5,327,462	—	$ 5,327,462	—	$ 5,327,462	—	$ 7,405,518	—
Sales Marketing Costs (as % of Gross)	$ (106,549)	—	$ (106,549)	—	$ (106,549)	—	$ (148,110)	—
Net Proceeds of Rental Project	**$ 5,220,912**	**$ -**	**$ 5,220,912**	**$ -**	**$ 5,220,912**	**$ -**	**$ 7,257,408**	**$ -**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	—	$ 11,644	—
Total Project Value (w/ R-E Incentives)	**$ 5,220,912**	**$ -**	**$ 5,220,912**	**$ -**	**$ 5,220,912**	—	**$ 7,269,052**	—
Unleveraged Hurdle Rate	$ (522,091)	—	$ (522,091)	—	$ (522,091)	—	$ (725,741)	—
Leveraged Hurdle Rate	$ (783,137)	—	$ (783,137)	—	$ (783,137)	—	$ (1,088,611)	—
Revenues, Less Profit	$ 4,437,776	—	$ 4,437,776	—	$ 4,437,776	—	$ 6,168,797	—
Revenues - TDC = Residual Land Value	**$ 107,079**	—	**$ 83,717**	—	**$ 83,717**	—	**$ (396,898)**	—
Land Value (per sqft)	$ 10.71	—	$ 8.37	—	$ 8.37	—	$ (39.69)	—
Land Value (per unit)	$ 43,508		$ 43,508		$ 43,508		$ 40,319	
Value of (in terms of RLV):								
IZ + CET req't			**$ (23,362)**	**$ -**				
Current Incentives available					**$ -**	**$ -**		
Proposed Bonus FAR							**$ (480,816)**	**$ -**

Source: Economic & Planning Systems

[illegible]

Table 7
Prototype 10 Pro forma

	Prototype 10							
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 5,698,165	—	$ 5,698,165	—	$ 6,846,988	—	$ 8,458,306	—
Parking Costs								
Structured, tuck-under (per space)	$ 540,000	—	$ 540,000	—	$ 540,000	—	$ 600,000	—
Surface (per space)	$ -	—	$ -	—	$ -	—	$ -	—
Total (HC)	**$ 6,238,165**	**$ -**	**$ 6,238,165**	**$ -**	**$ 7,386,988**	**$ -**	**$ 9,058,306**	**$ -**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 174,132	—	$ 174,132	—	$ 217,665	—	$ 261,198	—
Stormwater	$ 2,310	—	$ 2,310	—	$ 2,310	—	$ 2,310	—
Transportation (PBOT)	$ 72,864	—	$ 72,864	—	$ 91,080	—	$ 109,296	—
Parks & Recreation	$ 330,984	—	$ 330,984	—	$ 413,730	—	$ 496,476	—
Construction Excise Taxes (CET)			$ 45,125	—	$ 54,222	—	$ 66,982	—
Other Soft Costs (as % of HC)	$ 1,559,541	—	$ 1,559,541	—	$ 1,846,747	—	$ 2,264,576	—
Subtotal (SC, excluding loan interest carry)	$ 2,139,831	$ -	$ 2,184,956	$ -	$ 2,625,754	$ -	$ 3,200,839	$ -
as % of HC	34%	—	35%	—	36%	—	35%	—
Construction Loan Interest	$ 190,076	—	$ 191,100	—	$ 227,164	—	$ 278,129	—
Total (SC)	**$ 2,329,907**	—	**$ 2,376,056**	—	**$ 2,852,918**	—	**$ 3,478,968**	—
Cost-Reducing Incentives								
SDC Waivers					$ (80,532)	$ -	$ (96,587)	$ -
CET Waivers					$ (6,025)	—	$ (7,442)	—
Subtotal Cost-Reducing Incentives					**$ (86,558)**	**$ -**	**$ (104,029)**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 8,568,072**	—	**$ 8,614,220**	—	**$ 10,153,350**	—	**$ 12,433,246**	—
per unit	$ 238,002	$ -	$ 239,284	$ -	$ 282,038	$ -	$ 230,245	$ -
per GFA sqft	$ 211	$ -	$ 212	$ -	$ 208	$ -	$ 206	$ -
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 360,000	—	$ 320,000	—	$ 400,000	—	$ 480,000	—
For-Sale Revenues								
MR Revenues	$ 12,555,000	—	$ 11,160,000	—	$ 13,950,000	—	$ 16,740,000	—
AH Revenues			$ 428,800	—	$ 536,000	—	$ 643,200	—
Subtotal Sales	$ 12,555,000	$ -	$ 11,588,800	$ -	$ 14,486,000	$ -	$ 17,383,200	$ -
Sales Marketing Costs	$ (251,100)	—	$ (231,776)	—	$ (289,720)	—	$ (347,664)	—
Total Sales Revenues	**$ 12,303,900**	**$ -**	**$ 11,357,024**	**$ -**	**$ 14,196,280**	**$ -**	**$ 17,035,536**	**$ -**
Unleveraged Hurdle Rate	$ (1,230,390)	—	$ (1,135,702)	—	$ (1,419,628)	—	$ (1,703,554)	—
Leveraged Hurdle Rate	$ (1,845,585)	—	$ (1,703,554)	—	$ (2,129,442)	—	$ (2,555,330)	—
Revenues, Less Profit	$ 10,458,315	—	$ 9,653,470	—	$ 12,066,838	—	$ 14,480,206	—
Revenues - TDC = Residual Land Value	**$ 1,530,243**	—	**$ 719,250**	—	**$ 1,513,488**	—	**$ 1,566,961**	—
Land Value (per sqft)	$ 153.02	—	$ 71.93	—	$ 151.35	—	$ 156.70	—
Land Value (per unit)	$ 51,266		$ 47,321		$ 59,151		$ 47,321	
Value of (in terms of RLV):								
IZ + CET req't			**$ (810,993)**	**$ -**				
Current Incentives available					**$ 794,237**	**$ -**		
Proposed Bonus FAR							**$ 847,710**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 954,180	—	$ 848,160	—	$ 1,060,200	—	$ 1,272,240	—
AH Rental Income			$ 52,752	—	$ 65,940	—	$ 79,128	—
Subtotal Gross Annual Revenues	$ 954,180	$ -	$ 900,912	$ -	$ 1,126,140	$ -	$ 1,351,368	$ -
Vacancy	$ (47,709)	—	$ (45,046)	—	$ (56,307)	—	$ (67,568)	—
Operational Costs								
O&M	$ (216,000)	—	$ (216,000)	—	$ (270,000)	—	$ (324,000)	—
Annual Property Taxes	$ (24,538)	—	$ (22,740)	—	$ (28,425)	—	$ (34,110)	—
NOI	**$ 665,933**	**$ -**	**$ 617,127**	**$ -**	**$ 771,408**	**$ -**	**$ 925,690**	**$ -**
Gross Value of Rental Project	$ 10,654,923	—	$ 9,874,024	—	$ 12,342,530	—	$ 14,811,037	—
Sales Marketing Costs (as % of Gross)	$ (213,098)	—	$ (197,480)	—	$ (246,851)	—	$ (296,221)	—
Net Proceeds of Rental Project	**$ 10,441,825**	**$ -**	**$ 9,676,544**	**$ -**	**$ 12,095,680**	**$ -**	**$ 14,514,816**	**$ -**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ 19,406	—	$ 23,288	—
Total Project Value (w/ R-E Incentives)	**$ 10,441,825**	**$ -**	**$ 9,676,544**	**$ -**	**$ 12,115,086**	—	**$ 14,538,104**	—
Unleveraged Hurdle Rate	$ (1,044,182)	—	$ (967,654)	—	$ (1,209,568)	—	$ (1,451,482)	—
Leveraged Hurdle Rate	$ (1,566,274)	—	$ (1,451,482)	—	$ (1,814,352)	—	$ (2,177,222)	—
Revenues, Less Profit	$ 8,875,551	—	$ 8,225,062	—	$ 10,281,328	—	$ 12,337,593	—
Revenues - TDC = Residual Land Value	**$ 307,480**	—	**$ (389,158)**	—	**$ 127,978**	—	**$ (95,652)**	—
Land Value (per sqft)	$ 30.75	—	$ (38.92)	—	$ 12.80	—	$ (9.57)	—
Land Value (per unit)	$ 43,508		$ 40,319		$ 50,399		$ 40,319	
Value of (in terms of RLV):								
IZ + CET req't			**$ (696,637)**	**$ -**				
Current Incentives available					**$ 517,136**	**$ -**		
Proposed Bonus FAR							**$ 293,506**	**$ -**

Source: Economic & Planning Systems

[illegible]

Table 8
Prototype 12 Pro forma

	Prototype 12							
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 12,141,294	—	$ 12,141,294	—	$ 14,566,588	—	$ 17,930,706	—
Parking Costs								
Structured, tuck-under (per space)	$ 930,000	—	$ 930,000	—	$ 930,000	—	$ 1,320,000	—
Surface (per space)	$ -	—	$ -	—	$ -	—	$ -	—
Total (HC)	**$ 13,071,294**	**$ -**	**$ 13,071,294**	**$ -**	**$ 15,496,588**	**$ -**	**$ 19,250,706**	**$ -**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 362,775	—	$ 362,775	—	$ 454,678	—	$ 546,581	—
Stormwater	$ 10,026	—	$ 10,026	—	$ 10,026	—	$ 10,026	—
Transportation (PBOT)	$ 151,800	—	$ 151,800	—	$ 190,256	—	$ 228,712	—
Parks & Recreation	$ 689,550	—	$ 689,550	—	$ 864,236	—	$ 1,038,922	—
Construction Excise Taxes (CET)			$ 96,149	—	$ 115,355	—	$ 141,996	—
Other Soft Costs (as % of HC)	$ 3,267,824	—	$ 3,267,824	—	$ 3,874,147	—	$ 4,812,676	—
Subtotal (SC, excluding loan interest carry)	$ 4,481,974	$ -	$ 4,578,122	$ -	$ 5,508,697	$ -	$ 6,778,913	$ -
as % of HC	34%	—	35%	—	36%	—	35%	—
Construction Loan Interest	$ 579,258	—	$ 582,431	—	$ 693,174	—	$ 858,977	—
Total (SC)	**$ 5,061,232**	—	**$ 5,160,553**	—	**$ 6,201,872**	—	**$ 7,637,890**	—
Cost-Reducing Incentives								
SDC Waivers					$ (161,617)	$ -	$ (193,725)	$ -
CET Waivers					$ (12,272)	—	$ (15,079)	—
Subtotal Cost-Reducing Incentives					**$ (173,888)**	**$ -**	**$ (208,804)**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 18,132,526**	—	**$ 18,231,847**	—	**$ 21,524,572**	—	**$ 26,678,792**	—
per unit	$ 241,767	$ -	$ 243,091	$ -	$ 286,994	$ -	$ 236,104	$ -
per GFA sqft	$ 209	$ -	$ 210	$ -	$ 207	$ -	$ 208	$ -
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 750,000	—	$ 670,000	—	$ 840,000	—	$ 1,010,000	—
For-Sale Revenues								
MR Revenues	$ 26,156,250	—	$ 23,366,250	—	$ 29,295,000	—	$ 35,223,750	—
AH Revenues			$ 857,600	—	$ 1,072,000	—	$ 1,286,400	—
Subtotal Sales	$ 26,156,250	$ -	$ 24,223,850	$ -	$ 30,367,000	$ -	$ 36,510,150	$ -
Sales Marketing Costs	$ (523,125)	—	$ (484,477)	—	$ (607,340)	—	$ (730,203)	—
Total Sales Revenues	**$ 25,633,125**	**$ -**	**$ 23,739,373**	**$ -**	**$ 29,759,660**	**$ -**	**$ 35,779,947**	**$ -**
Unleveraged Hurdle Rate	$ (2,563,313)	—	$ (2,373,937)	—	$ (2,975,966)	—	$ (3,577,995)	—
Leveraged Hurdle Rate	$ (3,844,969)	—	$ (3,560,906)	—	$ (4,463,949)	—	$ (5,366,992)	—
Revenues, Less Profit	$ 21,788,156	—	$ 20,178,467	—	$ 25,295,711	—	$ 30,412,955	—
Revenues - TDC = Residual Land Value	**$ 2,806,630**	—	**$ 1,278,620**	—	**$ 2,831,139**	—	**$ 2,723,163**	—
Land Value (per sqft)	$ 66.95	—	$ 29.42	—	$ 67.54	—	$ 62.75	—
Land Value (per unit)	$ 51,266		$ 47,479		$ 59,519		$ 47,496	
Value of (in terms of RLV):								
IZ + CET req't			**$ (1,828,011)**	**$ -**				
Current Incentives available					**$ 1,854,520**	**$ -**		
Proposed Bonus FAR							**$ 1,448,543**	**$ -**
Rental Revenue Assumptions								
MR Rent Income	$ 1,987,875	—	$ 1,775,835	—	$ 2,226,420	—	$ 2,677,005	—
AH Rental Income			$ 105,504	—	$ 131,880	—	$ 158,256	—
Subtotal Gross Annual Revenues	$ 1,987,875	$ -	$ 1,881,339	$ -	$ 2,358,300	$ -	$ 2,835,261	$ -
Vacancy	$ (99,394)	—	$ (94,067)	—	$ (117,915)	—	$ (141,763)	—
Operational Costs								
O&M	$ (450,000)	—	$ (450,000)	—	$ (564,000)	—	$ (678,000)	—
Annual Property Taxes	$ (51,121)	—	$ (47,525)	—	$ (59,576)	—	$ (71,628)	—
NOI	**$ 1,387,360**	**$ -**	**$ 1,289,747**	**$ -**	**$ 1,616,808**	**$ -**	**$ 1,943,870**	**$ -**
Gross Value of Rental Project	$ 22,197,757	—	$ 20,635,959	—	$ 25,868,941	—	$ 31,101,924	—
Sales Marketing Costs (as % of Gross)	$ (443,955)	—	$ (412,719)	—	$ (517,379)	—	$ (622,038)	—
Net Proceeds of Rental Project	**$ 21,753,802**	**$ -**	**$ 20,223,240**	**$ -**	**$ 25,351,562**	**$ -**	**$ 30,479,886**	**$ -**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ 38,944	—	$ 46,739	—
Total Project Value (w/ R-E Incentives)	**$ 21,753,802**	**$ -**	**$ 20,223,240**	**$ -**	**$ 25,390,506**	—	**$ 30,526,624**	—
Unleveraged Hurdle Rate	$ (2,175,380)	—	$ (2,022,324)	—	$ (2,535,156)	—	$ (3,047,989)	—
Leveraged Hurdle Rate	$ (3,263,070)	—	$ (3,033,486)	—	$ (3,802,734)	—	$ (4,571,983)	—
Revenues, Less Profit	$ 18,490,732	—	$ 17,189,754	—	$ 21,548,828	—	$ 25,907,902	—
Revenues - TDC = Residual Land Value	**$ 358,206**	—	**$ (1,042,094)**	—	**$ 24,256**	—	**$ (771,890)**	—
Land Value (per sqft)	$ 8.25	—	$ (24.01)	—	$ 0.56	—	$ (17.79)	—
Land Value (per unit)	$ 43,508		$ 40,446		$ 50,703		$ 40,460	
Value of (in terms of RLV):								
IZ + CET req't			**$ (1,400,288)**	**$ -**				
Current Incentives available					**$ 1,066,350**	**$ -**		
Proposed Bonus FAR							**$ 270,204**	**$ -**

Source: Economic & Planning Systems

[illegible]

Appendix C - Part 2
Better Housing by Design - Feasibility Analysis

MEMORANDUM

To: Tyler Bump, Senior Economic Planner
City of Portland Bureau of Planning and Sustainability

From: Dan Guimond and David Schwartz,
Economic & Planning Systems

Subject: Multi-Dwelling Unit district density bonus
residual land value analysis; EPS #153070

Date: October 28, 2018

The purpose of this memorandum is to update three of the prototypes evaluated and reported in a memorandum dated May 18, 2018, to City of Portland Bureau of Planning and Sustainability (BPS).

Prototype Updates

Economic & Planning Systems (EPS) was requested to perform a pro-forma and feasibility analysis update to two of the development prototypes identified in the previous modeling effort. The new assumptions to be modeled were as follows:

1) Prototype 2 (stacked flat): with 9 units, 555 gross square feet per unit using a 90 percent efficiency factor, and zero parking spaces.
2) Prototype 4 (stacked flat): with 19 units, 790 gross square feet per unit using an 85 percent efficiency factor, and zero parking spaces.
3) Prototype 4 (stacked flat): with 32 units, 700 gross square feet per unit using an 85 percent efficiency factor, and zero parking spaces. (This prototype is referred to in the memo as "Prototype 4B")

The following findings outline the results of the feasibility modeling and provide comparisons to the original level of feasibility for greater depth of understanding the results.

The Economics of Land Use

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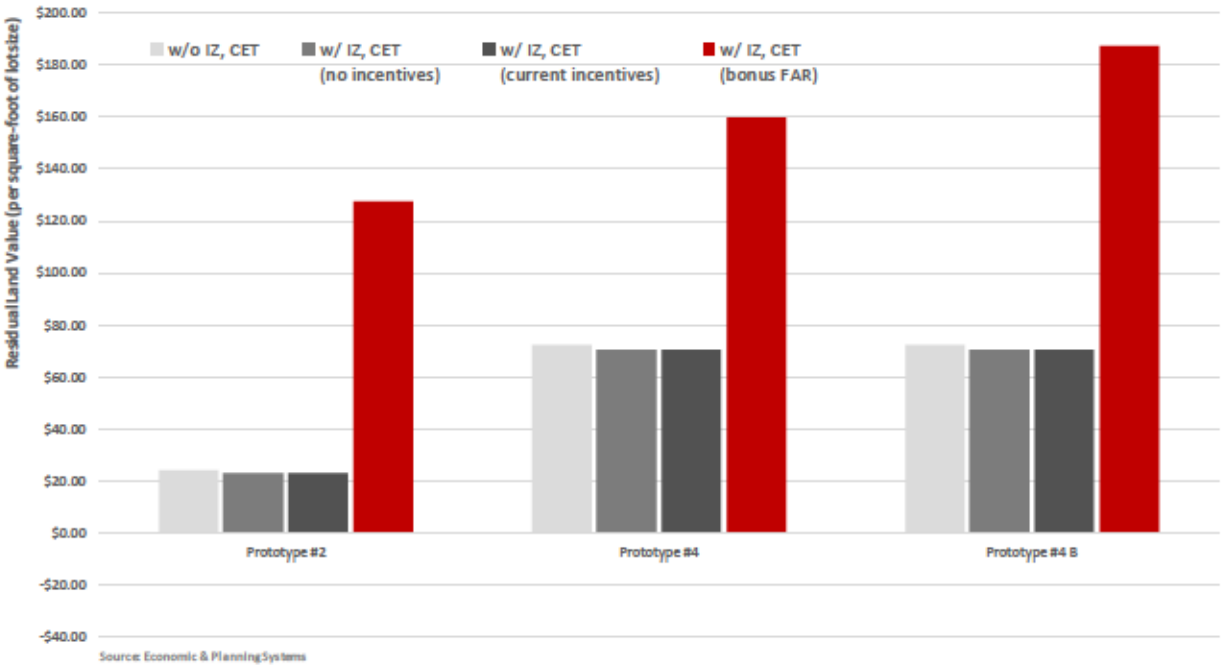
Findings

For-Sale Prototypes

- R2: Under the conditions evaluated in the previous memorandum (dated May 18, 2018), the bonus FAR scenario for Prototype #2 yielded a RLV of approximately $42, double the other scenarios in Prototype #2. In this current configuration, the RLV (with more units, smaller units, and zero parking), the RLV exceeds $120 per square foot. The substantial difference is attributable to the elimination of parking costs and 50 percent more units and, thus, revenues (the old "bonus FAR" scenario had 6 units).
- R1: In the previous versions of Prototype #4 with bonus FAR, in which there were 16 units with associated parking, the resulting RLV was nearly equivalent to the scenarios without bonus FAR as a result of the mitigating effects of more units but greater costs. In this new version, in which there are 3 more units of a smaller size and zero parking, the RLV in the bonus FAR scenario more than doubles to $160 per square foot. In the version of Prototype #4 (shown as #4B below), which has 32 smaller units and zero parking, the RLV exceeds $190 per square foot.

Figure 1
Residual Land Value Summary by Scenario (as for-sale projects)



Rental Prototypes

- R2: In the previous version of Prototype #2 with bonus FAR, the RLV was estimated to be approximately $33 per square foot, double the RLV of the other scenarios. In this version with several more, smaller units and zero parking, the RLV is estimated to reach $90 per square foot.

- R1: In Prototype #4 with bonus FAR, the RLV in the previous version was estimated to have been nearly equivalent to the RLV of the other scenarios. In this version, the RLV is estimated (of Prototype #4) to increase to nearly $140 per square foot. Similarly, the RLV of the Prototype #4B (with 32 units) to just above $120 per square foot.

Figure 2
Residual Land Value Summary by Scenario (as rental projects)

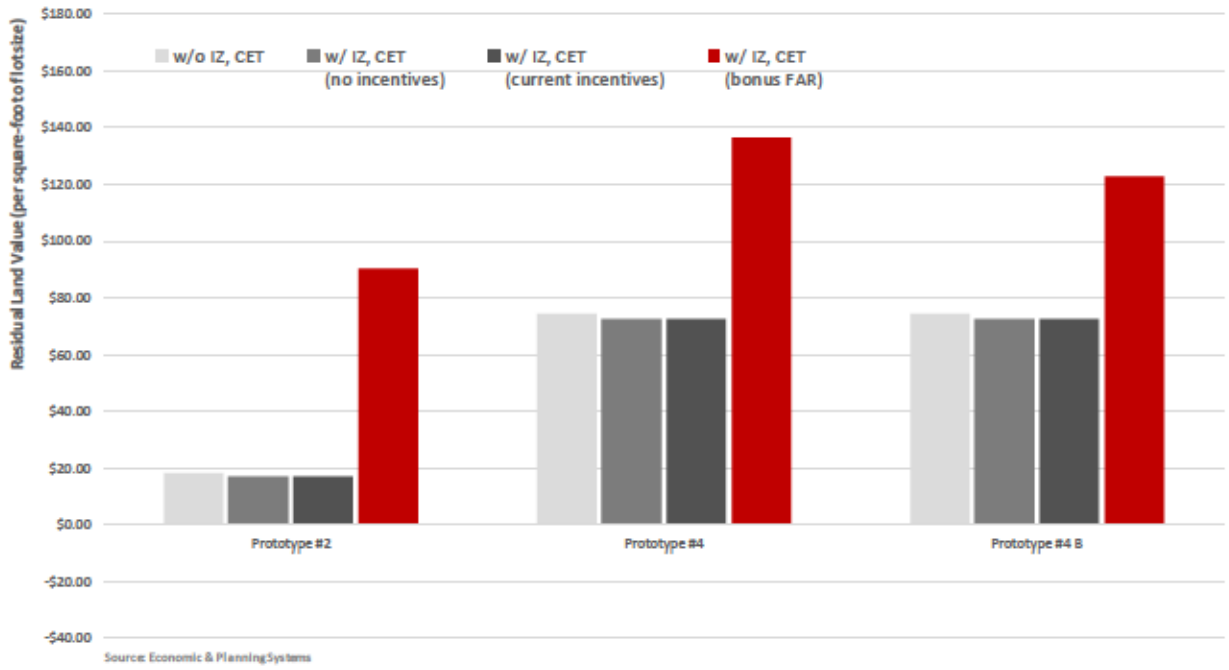


Table 1
Residual Land Value Summary by Scenario

	Stacked flats				Townhomes			
	w/o IZ, CET	w/ IZ, CET (no incentives)	w/ IZ, CET (current incentives)	w/ IZ, CET (bonus FAR)	w/o IZ, CET	w/ IZ, CET (no incentives)	w/ IZ, CET (current incentives)	w/ IZ, CET (bonus FAR)
Prototype (as a for-sale project)								
Prototype #2	$24.15	$22.85	$22.85	$127.28	$51.08	$49.78	$49.78	$49.78
Prototype #4	$72.13	$70.30	$70.30	$159.75	$129.82	$127.35	$127.35	$127.35
Prototype #4 B	$72.13	$70.30	$70.30	$187.25	$129.82	$127.35	$127.35	$127.35
Prototype (as a rental project)								
Prototype #2	$18.27	$16.97	$16.97	$90.20	$27.65	$26.35	$26.35	$26.35
Prototype #4	$74.41	$72.58	$72.58	$136.33	$34.32	$31.85	$31.85	$31.85
Prototype #4 B	$74.41	$72.58	$72.58	$122.70	$34.32	$31.85	$31.85	$31.85

Source: Economic & Planning Systems

H:\153070-Portland On-Call Economic Services\Models\Project 2 - MDU Analysis\[153070- MDU Model- 102516.xlsx]T5 - Summary RLV per sqft

Table 2
Prototype 2 Pro forma

	Prototype 2											
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 707,128	$ 650,000
Parking Costs								
Structured, tuck-under (per space)	$ 120,000	$ 60,000	$ 120,000	$ 60,000	$ 120,000	$ 60,000	$ -	$ 60,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	$ 770,000	$ 710,000	$ 770,000	$ 710,000	$ 770,000	$ 710,000	$ 707,128	$ 710,000
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 19,348	$ 12,092	$ 19,348	$ 12,092	$ 19,348	$ 12,092	$ 43,533	$ 12,092
Stormwater	$ *1,155*	$ *1,059*	$ *1,155*	$ *1,059*	$ *1,155*	$ *1,059*	$ *1,155*	$ *1,059*
Transportation (PBOT)	$ 8,096	$ 5,628	$ 8,096	$ 5,628	$ 8,096	$ 5,628	$ 18,216	$ 5,628
Parks & Recreation	$ 36,776	$ 25,102	$ 36,776	$ 25,102	$ 36,776	$ 25,102	$ 55,314	$ 25,102
Construction Excise Taxes (CET)			$ 6,352	$ 6,352	$ 6,352	$ 6,352	$ 6,911	$ 6,352
Other Soft Costs (as % of HC)	$ 192,500	$ 177,500	$ 192,500	$ 177,500	$ 192,500	$ 177,500	$ 176,782	$ 177,500
Subtotal (SC, excluding loan interest carry)	$ 257,875	$ 221,411	$ 264,227	$ 227,763	$ 264,227	$ 227,763	$ 301,911	$ 227,763
as % of HC	33%	31%	34%	32%	34%	32%	43%	32%
Construction Loan Interest	$ 25,054	$ 22,703	$ 25,209	$ 22,858	$ 25,209	$ 22,858	$ 24,595	$ 22,858
Total (SC)	$ 282,929	$ 244,114	$ 289,437	$ 250,621	$ 289,437	$ 250,621	$ 326,506	$ 250,621
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ -	$ -
CET Waivers					$ -	$ -	$ -	$ -
Subtotal Cost-Reducing Incentives					$ -	$ -	$ -	$ -
Total Development Costs (TDC) (excluding land)	$ 1,052,929	$ 954,114	$ 1,058,437	$ 960,821	$ 1,058,437	$ 960,821	$ 1,033,634	$ 960,821
per unit	$ 263,232	$ 477,057	$ 264,859	$ 480,311	$ 264,859	$ 480,311	$ 114,848	$ 480,311
per GFA sqft	$ 211	$ 191	$ 212	$ 192	$ 212	$ 192	$ 190	$ 192
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 40,000	$ 20,000	$ 40,000	$ 20,000	$ 40,000	$ 20,000	$ 90,000	$ 20,000
For-Sale Revenues								
MR Revenues	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 2,112,885	$ 1,476,000
AH Revenues			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Sales	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 1,457,000	$ 1,476,000	$ 2,112,885	$ 1,476,000
Sales Marketing Costs	$ (29,140)	$ (29,520)	$ (29,140)	$ (29,520)	$ (29,140)	$ (29,520)	$ (42,258)	$ (29,520)
Total Sales Revenues	$ 1,427,860	$ 1,446,480	$ 1,427,860	$ 1,446,480	$ 1,427,860	$ 1,446,480	$ 2,070,627	$ 1,446,480
Unleveraged Hurdle Rate	$ (142,786)	$ (144,648)	$ (142,786)	$ (144,648)	$ (142,786)	$ (144,648)	$ (207,063)	$ (144,648)
Leveraged Hurdle Rate	$ (214,179)	$ (216,972)	$ (214,179)	$ (216,972)	$ (214,179)	$ (216,972)	$ (310,594)	$ (216,972)
Revenues, Less Profit	$ 1,213,681	$ 1,229,508	$ 1,213,681	$ 1,229,508	$ 1,213,681	$ 1,229,508	$ 1,760,033	$ 1,229,508
Revenues - TDC = Residual Land Value	$ 120,752	$ 255,394	$ 114,244	$ 248,887	$ 114,244	$ 248,887	$ 836,398	$ 248,887
Land Value (per sqft)	$ 24.15	$ 51.08	$ 22.85	$ 49.78	$ 22.85	$ 49.78	$ 127.28	$ 49.78
Land Value (per unit)	$ 53,545	$ 108,486	$ 53,545	$ 108,486	$ 53,545	$ 108,486	$ 34,510	$ 108,486
Value of (in terms of RLV):								
IZ + CET req't			$ (6,607)	$ (6,607)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 622,155	$ -
Rental Revenue Assumptions								
MR Rent Income	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 161,838	$ 98,400
AH Rental Income			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Gross Annual Revenues	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 111,600	$ 98,400	$ 161,838	$ 98,400
Vacancy	$ (5,580)	$ (4,920)	$ (5,580)	$ (4,920)	$ (5,580)	$ (4,920)	$ (8,092)	$ (4,920)
Operational Costs								
O&M	$ (17,000)	$ (8,500)	$ (17,000)	$ (8,500)	$ (17,000)	$ (8,500)	$ (38,250)	$ (8,500)
Annual Property Taxes	$ (3,164)	$ (3,020)	$ (3,164)	$ (3,020)	$ (3,164)	$ (3,020)	$ (4,105)	$ (3,020)
NOI	$ 85,858	$ 81,980	$ 85,858	$ 81,980	$ 85,858	$ 81,980	$ 111,382	$ 81,980
Gross Value of Rental Project	$ 1,373,702	$ 1,311,359	$ 1,373,702	$ 1,311,359	$ 1,373,702	$ 1,311,359	$ 1,782,265	$ 1,311,359
Sales Marketing Costs (as % of Gross)	$ (27,474)	$ (26,227)	$ (27,474)	$ (26,227)	$ (27,474)	$ (26,227)	$ (35,645)	$ (26,227)
Net Proceeds of Rental Project	$ 1,346,228	$ 1,285,132	$ 1,346,228	$ 1,285,132	$ 1,346,228	$ 1,285,132	$ 1,746,619	$ 1,285,132
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ -	$ -
Total Project Value (w/ R-E Incentives)	$ 1,346,228	$ 1,285,132	$ 1,346,228	$ 1,285,132	$ 1,346,228	$ 1,285,132	$ 1,746,619	$ 1,285,132
Unleveraged Hurdle Rate	$ (134,623)	$ (128,513)	$ (134,623)	$ (128,513)	$ (134,623)	$ (128,513)	$ (174,662)	$ (128,513)
Leveraged Hurdle Rate	$ (201,934)	$ (192,770)	$ (201,934)	$ (192,770)	$ (201,934)	$ (192,770)	$ (261,993)	$ (192,770)
Revenues, Less Profit	$ 1,144,294	$ 1,092,362	$ 1,144,294	$ 1,092,362	$ 1,144,294	$ 1,092,362	$ 1,484,627	$ 1,092,362
Revenues - TDC = Residual Land Value	$ 91,364	$ 138,248	$ 84,857	$ 131,741	$ 84,857	$ 131,741	$ 450,993	$ 131,741
Land Value (per sqft)	$ 18.27	$ 27.65	$ 16.97	$ 26.35	$ 16.97	$ 26.35	$ 90.20	$ 26.35
Value of (in terms of RLV):								
IZ + CET req't			$ (6,607)	$ (6,607)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 386,138	$ 48,884

Source: Economic & Planning Systems

H:\30370 Portland On Call Economic Services\Models\Project 2 - MDU Analysis\[30370 MDU Model 102818.xlsx]T4 - Pro forma - Ptp 2

Table 3
Prototype 4 Pro forma

	Prototype 4											
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 2,291,141	$ 2,660,000
Parking Costs								
Structured, tuck-under (per space)	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ -	$ 150,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 2,291,141**	**$ 2,810,000**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 91,903	$ 60,460
Stormwater	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*
Transportation (PBOT)	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 38,456	$ 28,140
Parks & Recreation	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 116,774	$ 110,540
Construction Excise Taxes (CET)			$ 17,891	$ 24,139	$ 17,891	$ 24,139	$ 20,792	$ 24,139
Other Soft Costs (as % of HC)	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 572,785	$ 702,500
Subtotal (SC, excluding loan interest carry)	$ 715,742	$ 902,729	$ 733,634	$ 926,868	$ 733,634	$ 926,868	$ 843,020	$ 926,868
as % of HC	32%	32%	33%	33%	33%	33%	37%	33%
Construction Loan Interest	$ 68,608	$ 87,017	$ 69,077	$ 87,583	$ 69,077	$ 87,583	$ 73,457	$ 87,583
Total (SC)	**$ 784,350**	**$ 988,746**	**$ 802,881**	**$ 1,014,451**	**$ 802,881**	**$ 1,014,451**	**$ 916,477**	**$ 1,014,451**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ -	$ -
CET Waivers					$ -	$ -	$ -	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ -**	**$ -**
Total Development Costs (TDC) (excluding land)	**$ 2,995,880**	**$ 3,798,746**	**$ 3,014,190**	**$ 3,824,451**	**$ 3,014,190**	**$ 3,824,451**	**$ 3,207,618**	**$ 3,824,451**
per unit	$ 299,588	$ 379,975	$ 301,419	$ 382,445	$ 301,419	$ 382,445	$ 168,822	$ 382,445
per GFA sqft	$ 213	$ 200	$ 214	$ 201	$ 214	$ 201	$ 196	$ 201
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 190,000	$ 100,000
For-Sale Revenues								
MR Revenues	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 5,996,495	$ 6,240,000
AH Revenues			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Sales	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 5,996,495	$ 6,240,000
Sales Marketing Costs	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (119,930)	$ (124,800)
Total Sales Revenues	**$ 4,490,850**	**$ 6,115,200**	**$ 4,490,850**	**$ 6,115,200**	**$ 4,490,850**	**$ 6,115,200**	**$ 5,876,565**	**$ 6,115,200**
Unleveraged Hurdle Rate	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (587,657)	$ (611,520)
Leveraged Hurdle Rate	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (881,485)	$ (917,280)
Revenues, Less Profit	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 4,995,080	$ 5,197,920
Revenues - TDC = Residual Land Value	**$ 721,343**	**$ 1,298,174**	**$ 703,032**	**$ 1,273,469**	**$ 703,032**	**$ 1,273,469**	**$ 1,687,482**	**$ 1,273,469**
Land Value (per sqft)	$ 72.13	$ 129.82	$ 70.30	$ 127.35	$ 70.30	$ 127.35	$ 159.75	$ 127.35
Land Value (per unit)	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 46,394	$ 91,728
Value of (in terms of BLVI):								
IZ + CET req't			$ (18,311)	$ (24,706)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 894,430	$ -
Rental Revenue Assumptions								
MR Rent Income	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 459,306	$ 384,000
AH Rental Income			$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Gross Annual Revenues	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 459,306	$ 384,000
Vacancy	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (22,965)	$ (19,200)
Operational Costs								
O&M	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (80,750)	$ (42,500)
Annual Property Taxes	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (12,637)	$ (11,454)
NOI	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 342,954**	**$ 310,846**
Gross Value of Rental Project	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 5,487,257	$ 4,973,535
Sales Marketing Costs (as % of Gross)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (109,745)	$ (99,471)
Net Proceeds of Rental Project	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 5,377,512**	**$ 4,874,064**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ -	$ -
Total Project Value (w/ R-E Incentives)	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 5,377,512**	**$ 4,874,064**
Unleveraged Hurdle Rate	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (537,751)	$ (487,406)
Leveraged Hurdle Rate	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (806,627)	$ (731,110)
Revenues, Less Profit	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 4,570,885	$ 4,142,955
Revenues - TDC = Residual Land Value	**$ 744,091**	**$ 343,209**	**$ 725,781**	**$ 318,504**	**$ 725,781**	**$ 318,504**	**$ 1,383,287**	**$ 318,504**
Land Value (per sqft)	$ 74.41	$ 34.32	$ 72.58	$ 31.85	$ 72.58	$ 31.85	$ 136.33	$ 31.85
Land Value (per unit)	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 42,454	$ 73,111
Value of (in terms of BLVI):								
IZ + CET req't			$ (18,311)	$ (24,706)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 837,488	$ (487,277)

Source: Economic & Planning Systems

H:\E3070-Portland On-Call Economic Services\Models\Project 2 - MDU Analysis\[E3070_MDU Model_102818.xlsx]T4 - Pro forma - Ptp 4

Table 4
Prototype 4B Pro forma

	Prototype 4B											
	w/o IZ, CET		w/ IZ, CET (no incentives)		w/ IZ, CET (current incentives)		w/ IZ, CET (bonus FAR)	
	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs	Stacked flats	THs
Development Costs								
Construction Costs								
Hard costs (per sqft of GFA)	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 1,971,529	$ 2,660,000	$ 3,325,741	$ 2,660,000
Parking Costs								
Structured, tuck-under (per space)	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ 240,000	$ 150,000	$ -	$ 150,000
Surface (per space)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total (HC)	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 2,211,529**	**$ 2,810,000**	**$ 3,325,741**	**$ 2,810,000**
Soft Costs (per sqft)								
System Development Charges								
Sanitary Sewer	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 48,370	$ 60,460	$ 154,784	$ 60,460
Stormwater	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*	*$ 2,310*	*$ 1,050*
Transportation (PBOT)	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 20,240	$ 28,140	$ 64,768	$ 28,140
Parks & Recreation	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 91,940	$ 110,540	$ 196,672	$ 110,540
Construction Excise Taxes (CET)			$ 17,891	$ 24,139	$ 17,891	$ 24,139	$ 30,181	$ 24,139
Other Soft Costs (as % of HC)	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 552,882	$ 702,500	$ 831,435	$ 702,500
Subtotal (SC, excluding loan interest carry)	$ 715,742	$ 902,729	$ 733,634	$ 926,868	$ 733,634	$ 926,868	$ 1,280,150	$ 926,868
as % of HC	32%	32%	33%	33%	33%	33%	38%	33%
Construction Loan Interest	$ 68,608	$ 87,017	$ 69,027	$ 87,583	$ 69,027	$ 87,583	$ 107,951	$ 87,583
Total (SC)	**$ 784,350**	**$ 988,746**	**$ 802,661**	**$ 1,014,451**	**$ 802,661**	**$ 1,014,451**	**$ 1,388,101**	**$ 1,014,451**
Cost-Reducing Incentives								
SDC Waivers					$ -	$ -	$ (52,317)	$ -
CET Waivers					$ -	$ -	$ (3,773)	$ -
Subtotal Cost-Reducing Incentives					**$ -**	**$ -**	**$ (56,089)**	**$ -**
Total Development Costs (TDC) (exclusing land)	**$ 2,995,880**	**$ 3,798,746**	**$ 3,014,190**	**$ 3,824,451**	**$ 3,014,190**	**$ 3,824,451**	**$ 4,657,752**	**$ 3,824,451**
per unit	$ 299,588	$ 379,975	$ 301,419	$ 382,445	$ 301,419	$ 382,445	$ 145,555	$ 382,445
per GFA sqft	$ 213	$ 200	$ 214	$ 201	$ 214	$ 201	$ 196	$ 201
Revenues & Valuation Assumptions								
Less: GL insurance premium for construction defects	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 280,000	$ 100,000
For-Sale Revenues								
MR Revenues	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 7,830,200	$ 6,240,000
AH Revenues			$ -	$ -	$ -	$ -	$ 345,394	$ -
Subtotal Sales	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 4,582,500	$ 6,240,000	$ 8,175,594	$ 6,240,000
Sales Marketing Costs	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (91,650)	$ (124,800)	$ (163,512)	$ (124,800)
Total Sales Revenues	**$ 4,490,850**	**$ 6,116,200**	**$ 4,490,850**	**$ 6,116,200**	**$ 4,490,850**	**$ 6,116,200**	**$ 8,012,082**	**$ 6,116,200**
Unleveraged Hurdle Rate	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (449,085)	$ (611,520)	$ (801,208)	$ (611,520)
Leveraged Hurdle Rate	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (673,628)	$ (917,280)	$ (1,201,812)	$ (917,280)
Revenues, Less Profit	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 3,817,223	$ 5,197,920	$ 6,810,270	$ 5,197,920
Revenues - TDC = Residual Land Value	**$ 721,343**	**$ 1,298,174**	**$ 703,032**	**$ 1,273,469**	**$ 703,032**	**$ 1,273,469**	**$ 1,872,617**	**$ 1,273,469**
Land Value (per sqft)	$ 72.13	$ 129.82	$ 70.30	$ 127.35	$ 70.30	$ 127.35	$ 187.25	$ 127.35
Land Value (per unit)	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 67,363	$ 91,728	$ 37,557	$ 91,728
Value of (in terms of RLV):								
IZ + CET req't			$ (18,311)	$ (24,706)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 1,189,486	$ -
Rental Revenue Assumptions								
MR Rent Income	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 599,760	$ 384,000
AH Rental Income			$ -	$ -	$ -	$ -	$ 25,293	$ -
Subtotal Gross Annual Revenues	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 351,000	$ 384,000	$ 625,053	$ 384,000
Vacancy	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (17,550)	$ (19,200)	$ (31,253)	$ (19,200)
Operational Costs								
O&M	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (42,500)	$ (136,000)	$ (42,500)
Annual Property Taxes	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (10,340)	$ (11,454)	$ (16,270)	$ (11,454)
NOI	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 280,610**	**$ 310,846**	**$ 441,531**	**$ 310,846**
Gross Value of Rental Project	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 4,489,761	$ 4,973,535	$ 7,064,500	$ 4,973,535
Sales Marketing Costs (as % of Gross)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (89,795)	$ (99,471)	$ (141,290)	$ (99,471)
Net Proceeds of Rental Project	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 6,923,210**	**$ 4,874,064**
Revenue-Enhancing Incentives								
PV of Property Tax Exemption					$ -	$ -	$ 12,496	$ -
Total Project Value (w/ R-E Incentives)	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 4,399,966**	**$ 4,874,064**	**$ 6,935,706**	**$ 4,874,064**
Unleveraged Hurdle Rate	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (439,997)	$ (487,406)	$ (692,321)	$ (487,406)
Leveraged Hurdle Rate	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (659,995)	$ (731,110)	$ (1,038,481)	$ (731,110)
Revenues, Less Profit	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 3,739,971	$ 4,142,955	$ 5,884,728	$ 4,142,955
Revenues - TDC = Residual Land Value	**$ 744,091**	**$ 343,209**	**$ 725,781**	**$ 318,504**	**$ 725,781**	**$ 318,504**	**$ 1,228,878**	**$ 318,504**
Land Value (per sqft)	$ 74.41	$ 34.32	$ 72.58	$ 31.85	$ 72.58	$ 31.85	$ 122.70	$ 31.85
Land Value (per unit)	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 65,999	$ 73,111	$ 32,453	$ 73,111
Value of (in terms of RLV):								
IZ + CET req't			$ (18,311)	$ (24,706)				
Current Incentives available					$ -	$ -		
Proposed Bonus FAR							$ 601,186	$ (487,277)

Source: Economic & Planning Systems

H:\E3070-Portland On-Call Economic Services\Models\Project 2 - MDU Analysis\[E3070_MDU Model_102818.xlsx]T4 - Pro forma - Prototype 4B

EXHIBIT B
Appendix D

Better Housing by Design

AN UPDATE TO PORTLAND'S MULTI-DWELLING ZONING CODE

Concept Report
July 2017

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.
City of Portland, Oregon
Ted Wheeler, Mayor • Susan Anderson, Director

This project is partially funded by a Metro Community Planning and Development Grant, as part of a regional grant program that assists local planning efforts that support development of future housing and jobs.

Acknowledgments

Bureau of Planning and Sustainability

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For more information

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- **Contact Bureau of Planning and Sustainability:**
  - Bill Cunningham, Project Manager at 503-823-4203
  - Sara Wright, Community Involvement at 503-823-7728
  - email: betterhousing@portlandoregon.gov

Comments

The Bureau of Planning and Sustainability will accept comments on the Better Housing by Design Concept Report until 5 p.m. on Monday, August 7, 2017. You may submit your comment in the following ways:

- Email: betterhousing@portlandoregon.gov
- U.S. Mail: City of Portland Bureau of Planning and Sustainability, Attn: Better Housing by Design Project, 1900 SW 4th Avenue, Suite 7100, Portland, OR 97201

The Bureau of Planning and Sustainability is committed to providing meaningful access. For accommodations, modifications, translation, interpretation or other services, please contact at 503-823-7700 or use City TTY 503-823-6868, or Oregon Relay Service 711.

Traducción o interpretación	Chuyển Ngữ hoặc Phiên Dịch	翻译或传译	Письменный или устный перевод	Traducere sau Interpretare
الترجمة التحريرية أو الشفهية	Письмовий або усний переклад	翻訳または通訳	Turjumida ama Fasiraadda	ภาษาแปลภาษา ที่ ภาษาอะที่บาย

503-823-7700 | www.portlandoregon.gov/bps/71701

Contents

Introduction

Better Housing by Design: An Update to Portland's Multi-Dwelling Zoning Code is being led by the City of Portland's Bureau of Planning and Sustainability (BPS). This project is revising Zoning Code development standards in Portland's multi-dwelling zones (R3, R2, R1, and RH) outside the Central City. These medium- to high-density residential zones play a key role in providing new housing to meet the needs of a growing Portland. The many types of housing built in these zones include apartment and condominium buildings, fourplexes, rowhouses and houses.

The project's objective is to revise City regulations to better implement Comprehensive Plan policies that call for:

- Housing opportunities in and around centers and corridors.
- Housing diversity, including affordable and accessible housing.
- Design that supports residents' health and active living.
- Pedestrian-oriented street environments.
- Safe and convenient street and pedestrian connections.
- Design that respects neighborhood context and the distinct characteristics of different parts of Portland.
- Nature and green infrastructure that are integrated into the urban environment.
- Low-impact development that helps limit climate change and urban heat island effects.

This project includes a focus on Eastern Portland in order to foster more positive development outcomes that reflect the area's distinct characteristics and needs. Eastern Portland, largely located east of 82nd Avenue, includes large amounts of multi-dwelling zoning, often in areas that lack good street connections to local destinations and transit. Project staff are coordinating with the Portland Bureau of Transportation's (PBOT) Connected Centers Street Plan. PBOT's project is developing new approaches for creating street and pedestrian connections, with an initial focus on the Jade District and Rosewood centers in Eastern Portland.

What is the purpose of this report?

The Better Housing by Design Concept Report presents ideas (concepts) that will guide the development of detailed Zoning Code regulations. These concepts describe outcomes and approaches the regulations should be crafted to achieve. Project staff developed the concepts based on Comprehensive Plan policies, direction from past planning projects, and community input from a series of Stakeholder Working Group meetings and other public involvement activities (see Public Involvement, page 26).

Additional analysis and refinement of the concepts will occur as staff work on developing detailed code language for the Code Amendments Discussion Draft, to be published in Fall 2017 (see Next Steps, page 28). Some concept elements could change as part of this process, and as staff considers public comments on the Concept Report.

Why does this project matter?

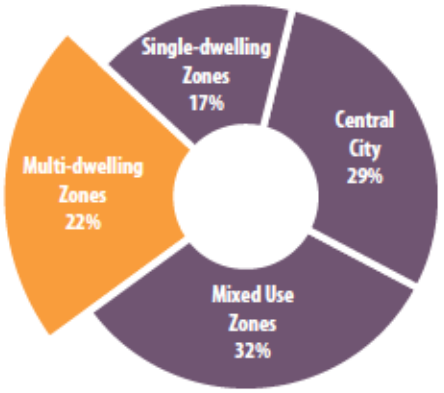
Between today and 2035, 80 percent of the roughly 120,000 new housing units developed in Portland will be in multi-dwelling buildings. Many of those buildings will be along mixed use corridors and main streets. Nearly one-quarter of the total growth will be in multi-dwelling zones outside the Central City. This housing development in and near centers and corridors will help meet local and regional objectives for locating housing close to services and transit. It also means that more Portlanders will be living in multi-dwelling buildings and other compact housing types, and that the design of this housing will be playing an increasingly important role in providing quality living environments for residents and in shaping the form and character of neighborhoods. Better Housing by Design is developing approaches to help ensure that new development in the multi-dwelling zones better meets the needs of current and future residents, while contributing to the positive qualities of the places where they are built.

Multi-dwelling zones play an important role in providing affordable housing opportunities, which are increasingly not available in single-dwelling zones or in higher density mixed-use zones – especially for families. Multi-dwelling zones have been the location of a large portion of housing development by affordable housing providers. These zones will continue to play a critical role in providing a broad range of housing to meet the needs of all Portlanders.

The livability of multi-dwelling housing has a disproportionate impact on the quality of life of people of color and low-income households, larger proportions of whom live in multi-dwelling housing than the general population. The project has been informed by extensive outreach to people of color, low-income and immigrant households, undertaken as part of past projects that focused on healthy housing. These projects identified the need for residential open spaces, housing design supportive of healthy living, and better and safer connections to neighborhood destinations — especially in East Portland.

Percent of housing units by zone

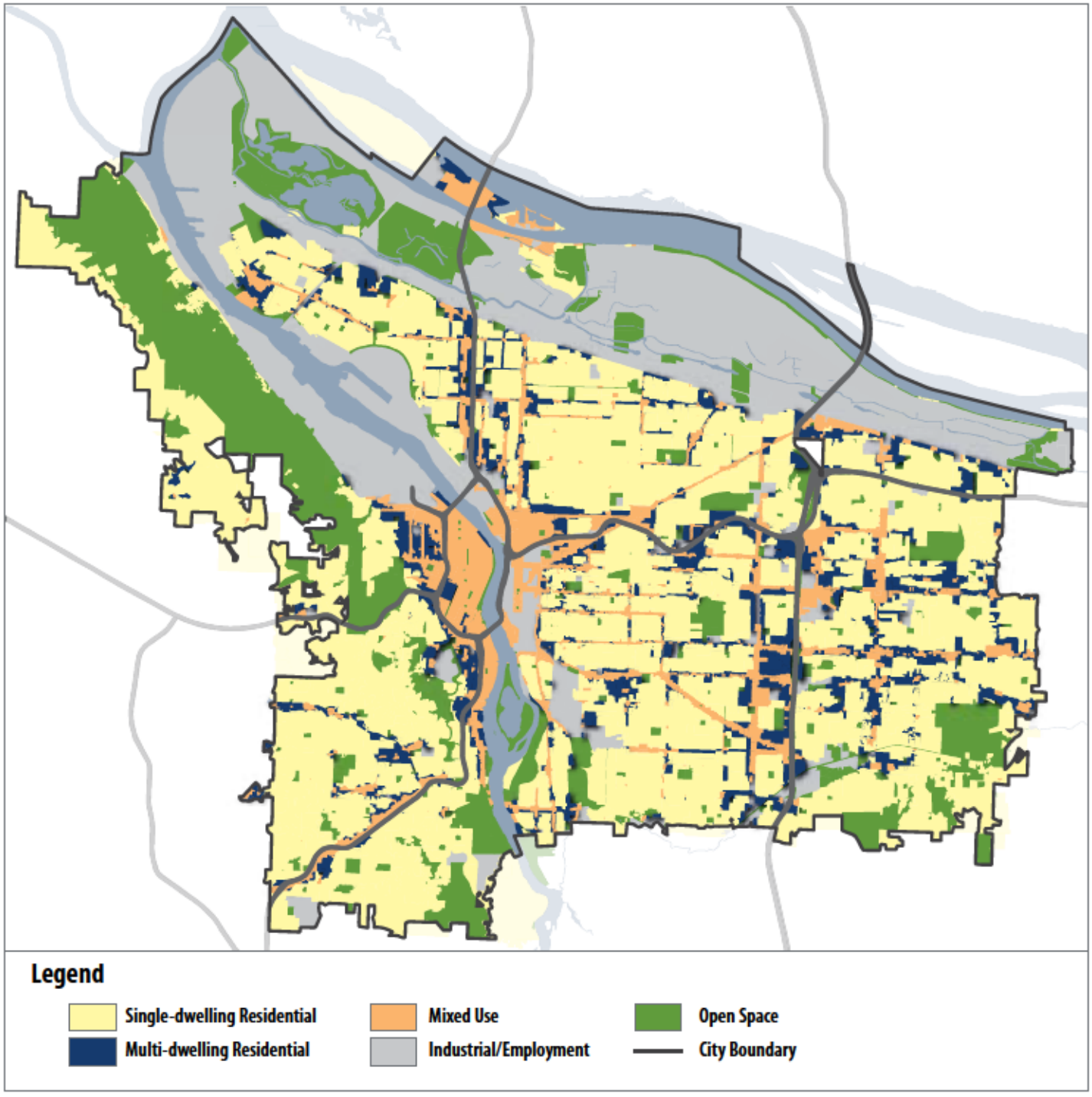
By 2035, more than 23,000 new housing units will likely be built in the multi-dwelling zones outside the Central City. That is 22 percent of the total residential growth expected over the next 20 years.



Zoning Map

Portland's Zoning Map and Zoning Code regulate what types of development (e.g., commercial, industrial, residential) are allowed where, and regulate the scale and general features of this development.

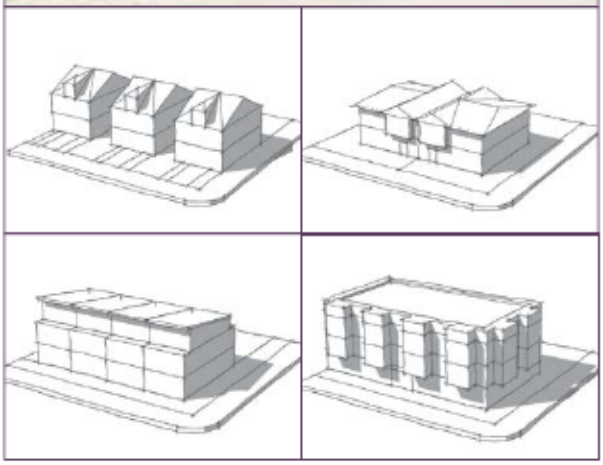
Multi-dwelling zones (blue) are typically located along or near transit corridors and in mixed-use centers, such as the St. Johns town center and the Jade District. These zones help implement the Comprehensive Plan and Climate Action Plan by providing housing opportunities close to commercial and community services, as well as transit. As summarized on the following pages, the zones allowing the greatest development intensity (such as the RH zone) are located close to the Central City and near high-capacity transit corridors. Lower density multi-dwelling zones (R3 and R2) are often located along local neighborhood streets close to major corridors and are intended to be compatible in scale with established residential areas.



Summary of the Base Zones

R3: Residential 3000

R3 is a low-density multi-dwelling zone located predominately in East Portland. Housing is characterized by one to two story buildings and a low building coverage.

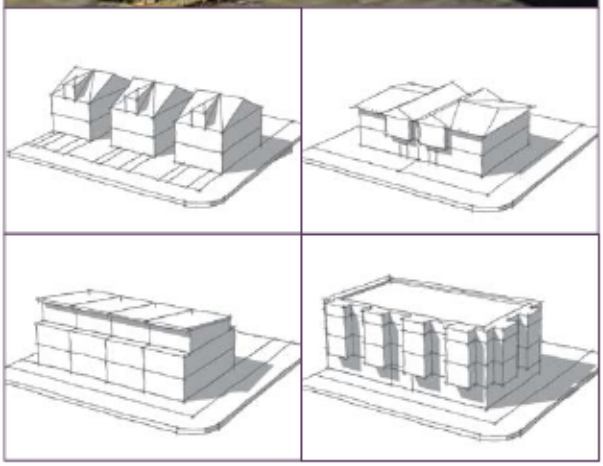


At a glance:

Height	35 feet
Maximum density	1 unit per 3,000 square feet of site area
Maximum lot coverage	45 percent of site area
Minimum front setback	10 feet
Required outdoor area	48 square feet per unit

R2: Residential 2000

R2 is a low-density multi-dwelling zone characterized by two to three story residential buildings and a medium building coverage. It is Portland's most widely-mapped zone and is typically located near civic and neighborhood corridors and centers, often along local side streets.

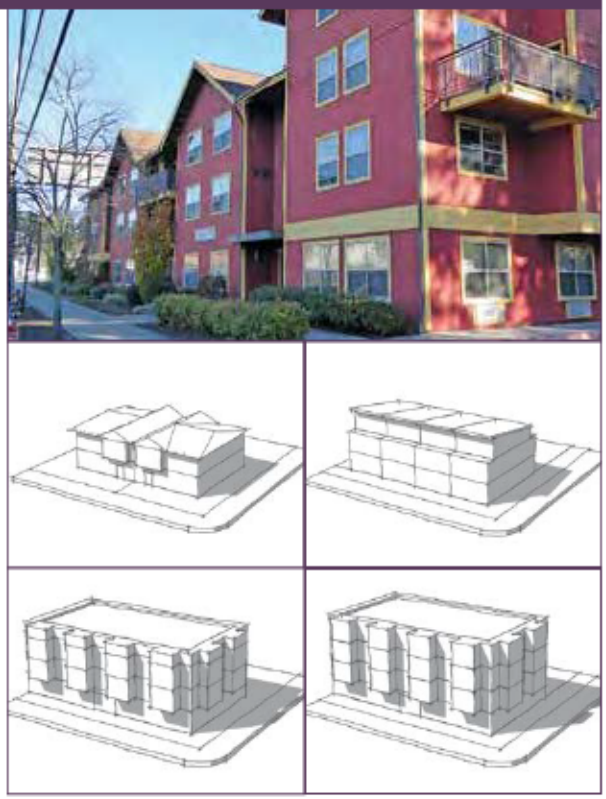


At a glance:

Height	40 feet
Maximum density	1 unit per 2,000 square feet of site area
Maximum lot coverage	50 percent of site area
Minimum front setback	10 feet
Required outdoor area	48 square feet per unit

R1: Residential 1000

R1 is a medium-density multi-dwelling zone characterized by two to four story residential buildings, with higher building coverage than the lower density zones. R1 zoning is applied along civic and neighborhood corridors, and local streets in centers and near high-capacity transit stations.



At a glance:

Height	45 feet
Maximum density	1 unit per 1,000 square feet of site area
Maximum lot coverage	60 percent of site area
Minimum front setback	3 feet
Required outdoor area	48 square feet per unit

RH: High-Density Residential

RH is a high-density multi-dwelling zone typically located close to the Central City or near high-capacity transit stations. Housing is characterized by buildings up to six or seven stories and high building coverage.

At a glance:

Height*	65/75/100 feet
Maximum density*	2:1 / 4:1 FAR
Maximum lot coverage	85 percent of site area
Minimum front setback	0 feet
Required outdoor area	none

* Varies by mapped location.

Concepts Overview

The concepts in this section propose new regulatory tools to address the following major topics. In the next section of this report, each topic is described in further detail with background information provided, followed by concept proposals.

Outdoor spaces and green elements that support human and environmental health.

- Open Space Requirements | Concepts 1 and 2
- Green Site Design | Concepts 3 and 4

Building design and scale that contributes to pedestrian-friendly streets, relates to context, and allows diverse housing types.

- Scale-based Zoning | Concept 5
- Building Design and Transitions | Concepts 6 – 10

Development bonuses and density transfers that offer incentives for affordable housing, family-sized units, and tree preservation.

- Concepts 11 and 12

Eastern Portland development standards that are responsive to the area's distinct characteristics.

- Concepts 13 and 14

Street connections that make it easier for people to access local destinations and transit.

- Concepts 15 – 18

Outdoor Space Requirements: Background

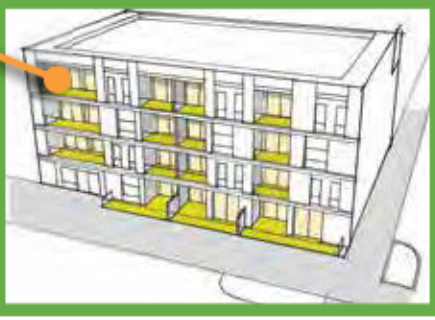
2035 Comprehensive Plan policies call for housing to include features that support healthy living, such as usable outdoor spaces for recreation, gardening and other activities.

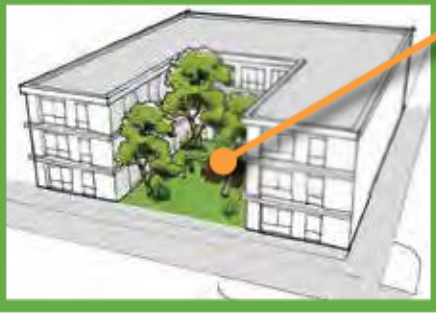
Currently, most of the multi-dwelling zones require outdoor space (48 square feet per unit), which can be private spaces or combined into larger shared spaces, such as courtyards.

48 square feet = enough space for a small table and chairs.

Types of residential outdoor spaces

Individual/ private spaces, such as patios, balconies or small yards





Larger shared spaces, like courtyards, play areas or shared recreation space

Issues include:

No residential outdoor space required in the RH zone

The high-density residential zone (RH) requires no outdoor spaces. In some situations, such as in East Portland where the RH zone is located close to light rail stations, parking lots are the only places for children to play.

Shared outdoor spaces

Apartment residents have identified the need for having usable outdoor spaces located close by for activities such as children's play and growing food. Currently, shared outdoor spaces that are large enough to provide these opportunities are not required and often not provided with new multi-dwelling development.

Outdoor Space Requirements: Concepts

Objective: Provide usable outdoor space for residents and opportunities for healthy eating/active living amenities.

CONCEPT 1. REQUIRE RESIDENTIAL OUTDOOR SPACES IN THE RH ZONE.

- **Require 48 square feet per unit** (36 square feet for small sites under 20,000 square feet), consistent with standards for similar development in mixed-use zones. This outdoor space can be in the form of private outdoor spaces or combined into shared outdoor spaces.
- **Indoor community facilities** – Allow indoor community spaces to be used to meet outdoor space requirements in all the multi-dwelling zones.

Examples of private and shared outdoor spaces included in development typical of the RH Zone.

CONCEPT 2. REQUIRE SHARED OUTDOOR SPACES FOR LARGER SITES.

- **Apply this requirement to sites 20,000 square feet or larger.** Larger sites can more easily accommodate shared outdoor spaces than can smaller sites.
- **Provide flexibility for a range of shared outdoor space arrangements**, such as spaces designed for children's play, gathering, and gardening. Providing spaces large enough for such activities will help support active living and improve health outcomes for residents.

  The percentage of site area to be shared outdoor space will be determined during code development (potentially 5 to 10 percent of site area). Other considerations will include the possibility of allowing this requirement to be met by outdoor spaces on rooftops or raised courtyards. Regulations may also be crafted to ensure that shared outdoor spaces are conveniently located for residents.

Green Site Design: Background

2035 Comprehensive Plan policies call for integrating green elements, such as eco roofs and vegetated stormwater facilities, into the urban environment. Comprehensive Plan policies also call for limiting impervious surfaces (e.g., cement, asphalt paving) and reducing urban heat island effects, which can be caused by large amounts of paved surfaces.

Issues include:

Lack of allowances for innovative green site design

Current regulations require multi-dwelling development to include landscaped areas. However, these regulations do not allow many innovative types of green features to count toward meeting required landscaping, which must be at ground level. For instance, eco roofs, raised landscaped courtyards and raised stormwater planters do not meet these requirements.

Large paved areas and urban heat islands

Due to climate change, Portland is expected to experience hotter, drier summers with more high-heat days. This can result in heat-related health problems, especially in locations with large amounts of pavement, which can cause urban heat islands. Modeling of urban heat island effects indicates that development with large amounts of asphalt paving can be over six degrees hotter than comparable development with intensive landscaping (see Appendices).

While the multi-dwelling zones limit the amount of building coverage, there is not a similar limit on the amount of paved surfaces, such as surface parking lots. Multi-dwelling development with large amounts of surface parking are a common development type in East Portland.

Green Site Design: Concepts

Objective: Provide opportunities for innovative approaches to green site design and minimize urban heat island effects.

CONCEPT 3. ALLOW ALTERNATIVES TO CONVENTIONAL LANDSCAPING.

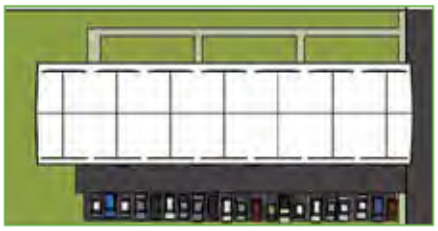
- Allow eco roofs, raised courtyards and raised stormwater planters to be used to meet a portion of landscaping requirements.
- Existing tree density requirements would continue, meaning that some site area would need to be suitable for trees.

CONCEPT 4. LIMIT LARGE SURFACE PARKING LOTS.

- Limit the amount of ground-level area that can be devoted to impervious surfaces, such as surface parking lots and driveways (potentially limiting these areas to no more than 30 percent of site area).

  Further analysis will be undertaken during code development to determine the appropriate limit, and whether this would apply only to vehicle areas or to all ground-level impervious surfaces.

Limits on impervious paved areas, such as large parking lots would encourage alternative approaches,



such as tucking some parking under buildings

or using permeable paving.

Scale-based Zoning: Background

2035 Comprehensive Plan policies call for a range of housing options and building scale, with more intense development in centers and corridors.

Low-rise multi-dwelling zones, such as the R2 zone, often provide transitions in scale between higher density areas and single-family residential areas. Historically, low-rise, multi-dwelling areas provided a diversity of middle housing types, such as duplexes, fourplexes, townhouses and courtyard apartments. These two- to three-story housing types provide housing density at a scale not much taller than single-family houses. Many of these, however, could not be built today in Portland's most common multi-dwelling zone, R2, because they exceed unit density limits. Other issues in the medium-density zones (R3, R2 and R1) include:

- Density-based regulations often result in large townhouse-type units whose multiple levels and stairs are not accessible to people with mobility limitations.
- The lack of housing unit variety also limits the range of affordability levels.
- In the R1 zone, often located along transit corridors and allowing four-story buildings, density regulations similarly limit housing options, even in transit-rich locations.

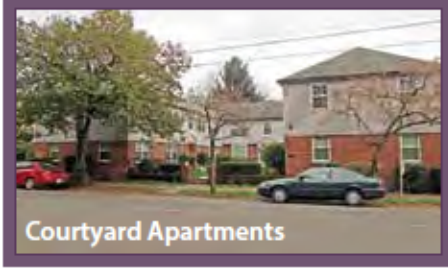
Middle Housing refers to a wide variety of multi-unit housing types at a low-rise scale, including duplexes, fourplexes and courtyard apartments. This variety is not possible within today's zones.

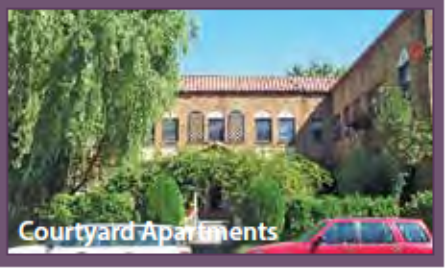

Duplex


Fourplex


Small-lot Duplex


Apartments


Courtyard Apartments


Courtyard Apartments

In the R1 zone old and new buildings along transit corridors are similar in scale, but the older apartment buildings accommodate more households.


1920 – 34 units | 10,000 sq. ft. site


2015 – 18 units | 18,000 sq. ft. site

Scale-based Zoning: Concepts

Objectives:

- Encourage greater housing diversity (including physically-accessible units).
- Limit building scale in zones that typically apply along neighborhood side streets.
- Expand housing opportunities in zones along transit corridors.

CONCEPT 5: REGULATE BY BUILDING SCALE/FAR INSTEAD OF UNIT DENSITY.

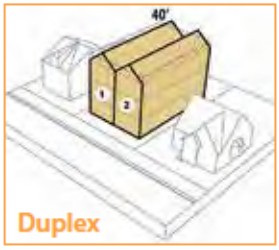
R2 Zone

Current approach:

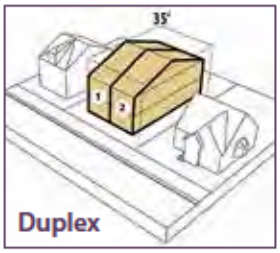
- 40-foot height limit.
- Density limited to one unit per 2,000 square feet of site area (2 units on a 5,000 square foot site).
- Often results in large townhouse units.

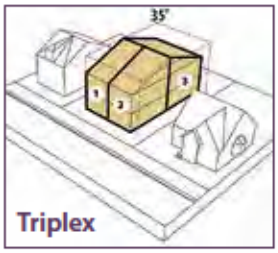
Proposed new approach:

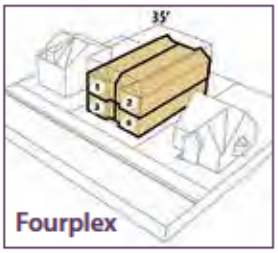
- Reduce allowed height to 35 feet.
- Provide flexibility for what happens inside a defined building scale (potentially a floor-to-area ratio of 1 to 1).



The proposed concept for the R2 zone would allow greater flexibility within a smaller building envelope. This would create incentives for more and different kinds of housing units



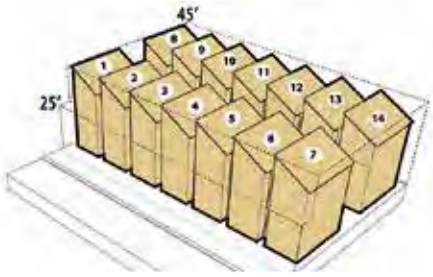




R1 Zone

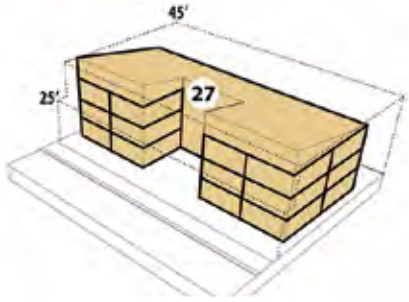
Current approach:

- 45-foot height limit.
- Density limited to one unit per 1,000 square feet of site area.
- Often results in townhouse units.



Proposed new approach:

- 45-foot height limit (unchanged)
- Provide flexibility for what happens inside the building (potentially a floor-to-area ratio of 1.5 to 1).



Physically accessible units. Along with greater flexibility for numbers of units, this concept would require 25 percent of units to be physically accessible when projects exceed a specified density, which will be determined during code development. Also to be determined is if the requirement will be for single-level, fully-accessible units, or for ***visitable*** units. Visitable units have accessible ground levels, but can have living spaces like bedrooms on upper levels.

Floor-to-area ratios (FAR). The building scale/FAR limits are preliminary and will be refined during code development, taking into account relationships to affordable housing development bonuses and building scale outcomes. For the R3 zone, the preliminary concept is for an FAR of .75 to 1. The RH zone is already regulated by FAR (2 to 1 or 4 to 1, depending on location).

Building Design and Transitions: Background

2035 Comprehensive Plan policies call for development to be designed to respond to context, contribute to pedestrian-friendly street frontages and transition in scale to lower density zones. Examples of issues related to these topics include:

Despite policy aspirations, the multi-dwelling zones have few limits on front garages and, in some cases, no requirements for front entrances, which can negatively impact the pedestrian environment of streets.

Community plan vision

Recent development

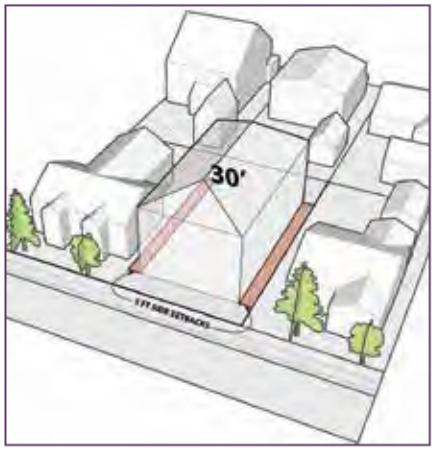
Lack of front setback requirements in the higher density zones (R1 and RH) sometimes result in abrupt transitions to existing development, and can impact residents' privacy.

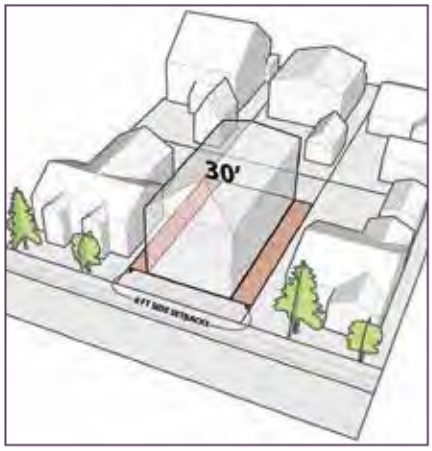
Also creating abrupt transitions, buildings of four or more stories can be built next to properties with single-dwelling zoning.

Barriers to small-site development

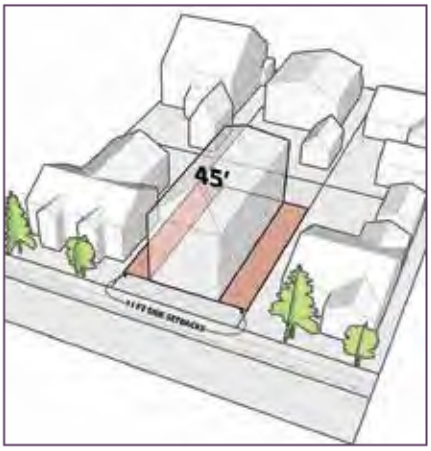
Some regulations are oriented to large development sites typical of suburban locations and do not work well on small infill sites.

For instance, existing side setback requirements in the multi-dwelling zones often require more space around buildings (setbacks) than is required for similar scale development in single-dwelling zones (up to 14 feet, compared to 5 feet in single-dwelling zones). This makes it difficult to do small site development that can continue neighborhood patterns.





Single-dwelling zones



Multi-dwelling zones

Building Design and Transitions: Concepts

Design of Street Frontages Objective: Foster pedestrian-friendly streets by orienting buildings to streets, and minimizing front garages, blank walls and other building features that do not create an inviting street environment.

CONCEPT 6. LIMIT GARAGES ALONG STREET FRONTAGES TO 50 PERCENT OF THE BUILDING GROUND LEVEL. REQUIRE PARKING TO BE ACCESSED FROM ALLEYS, WHERE THEY EXIST.

This would promote arrangements such as the following:

Rear parking, or options with no off-street parking in areas close to transit.

Front parking that takes up no more than half of street frontages.

Exemptions may be provided for other garage arrangements like tuck-under garages, that limit impacts on the street environment.

This limitation would also apply to large ground-level parking garages.

Requirements for alley-accessed parking will need to be coordinated with PBOT and it may be necessary to reconsider existing limitations on alley access for multi-dwelling parking.

CONCEPT 7. REQUIRE BUILDING ENTRANCES TO BE ORIENTED TO PUBLIC STREETS OR PATHWAYS, OR TO COURTYARDS CONNECTED TO PUBLIC STREETS.

This would prevent this.

And promote entrances oriented to the streets and pedestrian spaces.

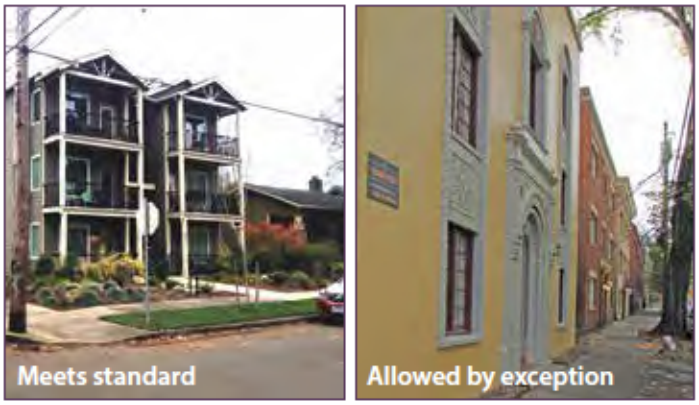
Building Design and Transitions: Concepts

Building Setbacks and Height Transitions Objective: Integrate larger scale buildings into residential areas through greater continuity in front setbacks and transitions in scale next to single-dwelling zoning, while facilitating compact development on small sites.

CONCEPT 8. REQUIRE 10-FOOT FRONT SETBACKS IN R1 AND RH ZONES.

This would help integrate new development with established residential characteristics. The concept would allow for reduced setbacks to match adjacent existing buildings and provide exemptions for development that includes ground-floor commercial uses (see Concept 14).

The most intensely urban RH zoning (with an FAR of 4 to 1) would continue to not require front setbacks. Further analysis will be needed to assess impacts of these setback requirements on other issues, such as rear parking and the feasibility of small-site development.



The required front setback would be relative to the context of neighboring buildings.

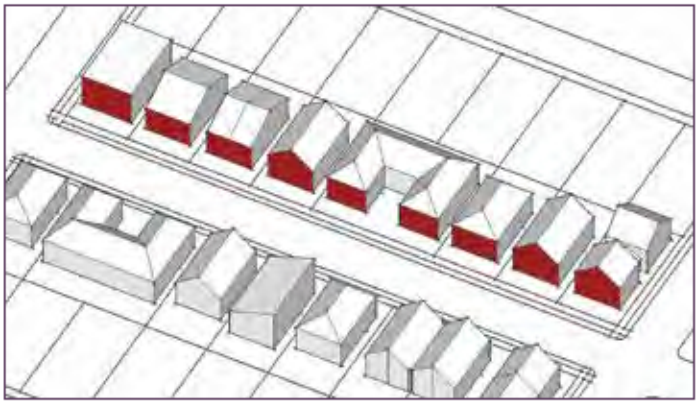
CONCEPT 9. REQUIRE HEIGHT TRANSITIONS.

Require taller buildings to step down in scale when located next to single-dwelling zones, with building heights limited to 35 feet (three stories) within 25 feet of properties with single-dwelling zoning.

CONCEPT 10. SIMPLIFY SIDE SETBACK REGULATIONS.

Require 5-foot minimum setbacks (as applies in single-dwelling zones) to facilitate development on small sites that can continue neighborhood patterns, and leaving room for more usable outdoor space, such as central courtyards.

Consider other potential code amendments that could facilitate development on small sites, such as allowing small structures like storage sheds in setback areas, reducing parking requirements, more flexible landscaping standards, and allowing the creation of new small lots.



Development Bonuses and Density Transfers: Concepts

Objective: Prioritize affordable housing as a development outcome, and provide incentives for the preservation of historic buildings and trees.

Background

Currently, through a system of development bonuses, buildings can be larger if they provide specific amenities or affordable units. In multi-dwelling zones, the amount of additional development scale provided for affordable housing units is limited to 25 percent (compared to more than 60 percent in the mixed use zones), while other development bonuses can be combined for up to 50 percent more development.

This limits the ability to provide an attractive incentive for affordable housing units, especially for buildings with fewer than 20 units that are not required to provide affordable housing. In Stakeholder Working Group discussions, community members identified affordable housing as the greatest priority for development bonuses.

CONCEPT 11. PRIORITIZE AFFORDABLE HOUSING BY INCREASING THE INCLUSIONARY HOUSING DEVELOPMENT BONUS AND BY DISCONTINUING MOST OTHER DEVELOPMENT BONUSES.

Existing Development Bonuses	Proposed Concept Direction
Affordable housing	Prioritize by increasing amount of development bonus (beyond current 25 percent bonus, potentially to 50 percent).
Three bedroom units	Continue, in order to provide an incentive for family-sized units.
Outdoor recreation facilities Play areas for children Large outdoor areas	Remove as a development bonus, but address through new requirements for shared outdoor spaces.
Storage areas Sound insulation Crime prevention Solar water heating	Remove as a development bonus.
Tree preservation	Remove as a development bonus, but address through a new transfer of development rights allowance for tree preservation.

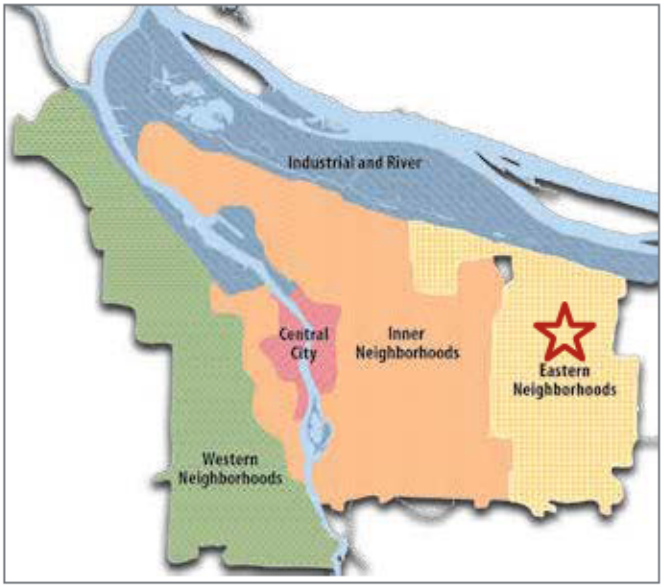
CONCEPT 12. MODIFY ALLOWANCES FOR TRANSFERS OF DEVELOPMENT RIGHTS TO PRIORITIZE TREE PRESERVATION ALONG WITH HISTORIC PRESERVATION.

In order to retain an incentive to preserve trees, this would follow an approach that is currently used for historic preservation. This approach allows unused development potential to be transferred to other sites with multi-dwelling zoning, in exchange for preservation. The current tree preservation development bonus, which allows greater density on the same site as the preserved trees, is rarely used.

Eastern Portland Development Standards: Background

2035 Comprehensive Plan policies call for development to be responsive to the distinct characteristics and needs of different parts of Portland. For Eastern Portland (largely east of 82nd Avenue), policies call for respecting the area's stands of Douglas firs and the positive aspects of its large blocks. Policies also recognize the need for more street connections to make it easier for people to get to community destinations.

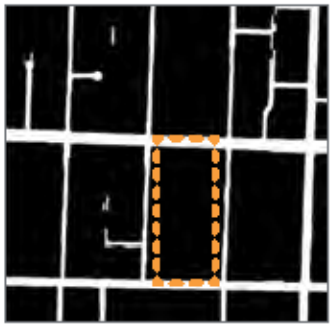
New multi-dwelling development in Eastern Portland has contributed to meeting housing needs. But it has not always met expectations in terms of design, and few new street connections have been created.



Issues and opportunities include:

- Large numbers of families, many of whom live in apartments.
- Large blocks (often 400 to 600 feet wide at their narrow dimension, compared to 200-feet wide in Inner neighborhoods), resulting in poor street connectivity, but also providing opportunities for new types of open space patterns and connections.
- Groves of Douglas firs that are valued by community members.
- Big, multi-lane arterial streets, often lined by multi-dwelling zoning, with traffic that compromises residential livability.

Roughly 12 square blocks in downtown Portland …



… could fit into one large East Portland block.

Development on the area's deep lots often leaves little unbuilt or unpaved space.

Common open space areas

Space for large trees

Landscaped front setbacks

Mid-block open space

Elements that East Portland community members say are important to include with multi-dwelling development

Eastern Portland Development Standards: Concepts

Objective: Guide development to respond in a positive way to Eastern Portland characteristics, such as the area's large blocks and big streets.

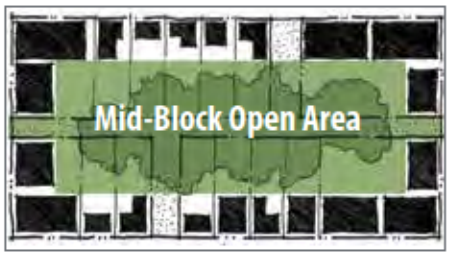
CONCEPT 13. CONTINUE EASTERN PORTLAND MID-BLOCK OPEN AREAS. KEEP MID-BLOCK AREAS AS GREENER AND MORE OPEN, WITH DEVELOPMENT FOCUSED ALONG STREETS.

This would help retain some of the area's patterns of open spaces, such as rear yards and tree groves. Keeping mid-block areas more open could also help leave space for connections through the area's large blocks to help improve connectivity.

These two examples have the same housing unit sizes and density.

Current approach: Development extends to rear of lots.

Mid-block open area approach: development arranged to provide mid-block outdoor area at rear of site.



CONCEPT 14. ALLOW SMALL-SCALE COMMERCIAL USES IN MULTI-DWELLING ZONES ON MAJOR CORRIDORS AND NEAR LIGHT RAIL STATIONS.

Allowing limited ground-floor commercial uses (such as live-work spaces that combine business space with a housing unit) could help address the negative impacts from traffic to residents of housing in the multi-dwelling zones located along Eastern Portland's multi-lane corridors. It would also allow more opportunities for neighborhood commercial services in an area of Portland that lacks walkable access to services. Facilitating commercial services near light rail stations also responds to the area's need for these services in locations that have a lot of pedestrian activity.

These allowances could apply along major corridors citywide, although Eastern Portland has greater amounts of multi-dwelling zoning located in these types of locations.

Housing along outer SE Division

Light rail station at 148th Avenue

Small commercial uses at ground level of rowhouses

Other concepts closely related to Eastern Portland issues:

- **Outdoor Space Requirements** (Concepts 1 and 2)
- **Building Design and Transitions**, including front setbacks and transitions to single-dwelling zones (Concepts 8 – 9)
- **Development Bonuses and Density Transfers**, including tree preservation (Concept 12)
- **Street Connections** (Concepts 15 – 18)

Street Connections: Background

2035 Comprehensive Plan policies call for safe and accessible street and pedestrian connections, especially in centers, where services and housing are intended to be concentrated.

Many of Portland's Eastern Neighborhoods contain areas where the blocks are very large and streets are few and far between. They often do not meet street connectivity standards, which require streets to be spaced no further than 530 feet apart.

The long blocks and lack of connections make these areas challenging to get around by foot or bicycle. As the area's centers continue to grow, new streets will be needed to serve the increasing numbers of residents, workers, and visitors.

Currently, there are limited tools to get new street connections

New development provides opportunities to create new street connections in existing neighborhoods. In the past, standards for new connections required full streets with parking and sidewalks on both sides. But many lots in Eastern Portland are too small to fit a full street connection, resulting in no new connections when development occurs on these sites. Also, when new street connections are provided, current regulations reduce the amount of housing units that can be built, which creates a disincentive to providing street connections. These and other factors have made it difficult to get new connections where they are needed.

Connected Centers Street Plan

In coordination with the Better Housing by Design project, Portland Bureau of Transportation (PBOT) is developing a Connected Centers Street Plan to examine regulatory and implementation measures that could create better connectivity in growing centers. The focus of this PBOT plan is areas where street and pathway connectivity is severely deficient. Eastern Portland's Jade District and Rosewood neighborhood centers are the initial study areas. The concepts and implementation approaches developed for these areas will be refined for use in other centers where new connections are needed.

Full street connections are too wide to fit into many lots in Eastern neighborhoods (50 foot wide street shown).

Street Connections: Concepts

Objective: Provide more effective ways to achieve needed street and pedestrian connections when development occurs.

CONCEPT 15. PROVIDE MORE OPTIONS TO ACHIEVE REQUIRED STREET CONNECTIONS BASED ON SITE-SPECIFIC OPPORTUNITIES.

Allow connections that serve pedestrian and bicycle access in locations where full street connections are not feasible, and establish a hierarchy of priorities for different types of street connections. Include references in the multi-dwelling zoning code to street connectivity requirements.

Option 1 (Most Desirable) — **Street Connection**
Dedicated Right-of-way
full street | partial street | one-way street

If option 1 is not feasible then go to option 2

Option 2 (Second choice) — **Pedestrian/Bicycle Connection**
Dedicated Right-of-way
Public easement

If option 2 is not feasible then go to option 3

Option 3 (Third choice) — **Right-of-way Dedication**
Public access easement only
reserved for possible future connection

If option 3 is not feasible then

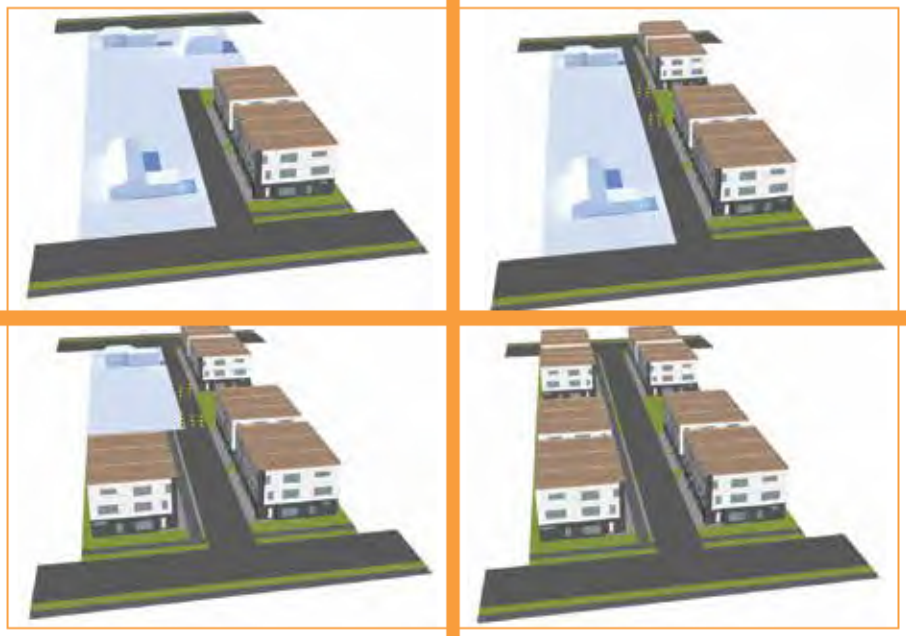
NO CONNECTION

CONCEPT 16. PROVIDE NEW INCREMENTAL APPROACHES TO CREATING STREETS ON SMALL SITES.

This approach would create street connections in stages as infill development occurs, sharing requirements for building street improvements across adjacent properties over time, with narrow dimensions to make it easier to create connections on small sites. Allowances for this approach may focus on ***Connection Opportunity Areas***, which will be specified locations with poor street connectivity in designated centers.

Phase 1
- Narrow street space shared by cars and pedestrians.
- No through connection.

Phase 2
- Narrow street space shared by cars and pedestrians.
- Through connection for peds/bikes.
- No through connects for motor vehicles.



Phase 3
- Sidewalk added with new development.
- Through connection for peds/bikes.
- No through connection for motor vehicles.

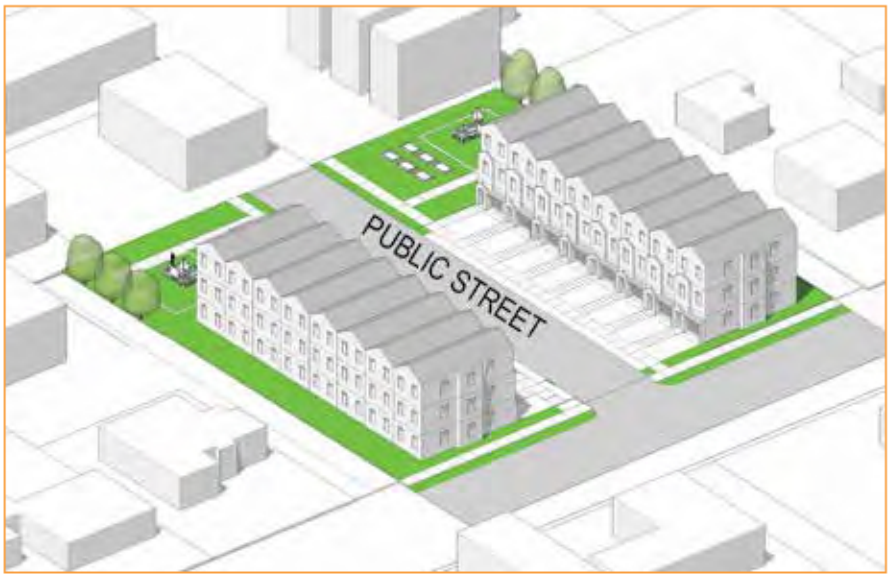
Phase 4
- Completed street.
- Sidewalk on one side of street.
- Through connection for all modes.

Street Connections: Concepts

CONCEPT 17. SET A MINIMUM LOT SIZE OR MINIMUM STREET FRONTAGE REQUIREMENT FOR NEW MULTI-DWELLING DEVELOPMENT IN LOCATIONS THAT HAVE DEFICIENT STREET CONNECTIVITY.

This approach would ensure new development is on sites of sufficient size to provide connections to facilitate new street connections where they are needed most.

This approach would be applied to ***Connection Opportunity Areas***, which will be specified locations within designated centers that have poor connectivity (based on street spacing standards and analysis of pedestrian connectivity). Dimensions for this requirement will be determined during code development, and will be coordinated with the incremental approaches of Concept 16.



CONCEPT 18. CALCULATE DENSITY ALLOWANCES PRIOR TO STREET DEDICATION.

Allow density to be calculated before right-of-way for a new connection is dedicated, to reduce disincentives to providing street connections.

Currently, development that provides a public street connection loses development allowances.

While a development that only includes a private driveway has no such penalty.

Performance Measures

The following performance measures will be used to monitor successful implementation of the Better Housing by Design concepts and code amendments over time. They will also provide information on progress toward broader city objectives related to housing and Portland's growth.

1. **New multi-dwelling housing built using amended zoning code.**

   This measures the number of new multi-dwelling units built under the amended multi-dwelling zoning code.

   a. **By development type.** What kinds of buildings and densities are being built in each multi-dwelling zone (detached or attached homes, duplexes, fourplexes and other plexes, apartment buildings, etc.)?

   b. **By geographic area.** Where are new multi-dwelling units being built in Portland? What is the geographic distribution by various sub geographies, such as the Central City, Riverside, and Western, Inner and Eastern neighborhood pattern areas?

   c. **By centers and corridors.** What is the increase in density in designated centers and corridors? Is higher density development occurring where there is complementary transit service?

2. **Affordablility of new multi-dwelling units.**

   How many new regulated affordable housing units have been built in the multi-dwelling zones?

3. **Less site area devoted to vehicle-only circulation.**

   How many new multi-dwelling projects devote less than 30 percent of the site to vehicle-only circulation or impervious surfaces?

4. **Better shared open space within multi-dwelling sites.**

   For each new multi-dwelling project, what types and how many square feet of shared open space is within the site?

5. **New connected streets in centers.**

   How many new multi-dwelling properties in centers with deficient street connectivity add walking and biking connections to the existing street network or plan for some type of connected access? This measure applies primarily to East Portland (e.g., the Jade District and Rosewood neighborhood centers).

Public Involvement

Development of the Better Housing by Design concepts was informed by a range of public involvement activities, including:

Stakeholder Working Group meetings

A series of five Stakeholder Working Group (SWG) meetings were held from March through May 2017. These meetings included participants with a range of perspectives, including community group representatives, development professionals, tenant advocates, neighborhood residents, affordable housing providers and age-friendly advocates.

These meetings served as a forum for discussing issues and potential solutions, and helped inform City staff as they developed concepts. Each meeting focused on a different set of topics, with three of the meetings focusing on development and street connectivity issues in Eastern Portland. Participants in the SWG meetings were not appointed, and meetings were open to any interested community members. This approach allowed for a shifting set of meeting participants with interest and experience in the specific topics and geographies for each meeting.

Community walks in the Jade District and Rosewood Neighborhood Centers

Walks with community stakeholders were held in the Jade District and Rosewood neighborhood centers during October and November 2016. Participants shared perspectives on multi-dwelling development and street connectivity issues in these areas, which served as study areas for both the Better Housing by Design project and PBOT's Connected Centers Street Plan project.

Roundtable discussions with development professionals

A series of three roundtable discussions were held with affordable housing providers, designers, and builders and developers in January and February 2017. These discussions provided an opportunity to hear from development professionals about what is working or not working well with Portland's multi-dwelling regulations and how they can be improved, as well as receive initial feedback on potential new directions and implementation ideas.

Initial public workshop

A public workshop was held on February 25, 2017, to introduce the project to the public and provide an initial opportunity to discuss issues related to multi-dwelling development and street connectivity. The event was held at PCC Southeast at SE 82nd and Division to accommodate community members who live in Eastern Portland.

Public open houses on draft concepts

On June 1 and June 3, 2017, public open houses were held to present the draft code concepts and to receive initial public input prior to the release of the Concept Report. Again, one of the open houses was held at PCC Southeast for the convenience East Portlanders.

Meetings with community groups

Project staff met with community groups to introduce project issues and potential solutions, and to receive feedback, including:

- Neighborhood district coalitions
- Jade District/APANO
- The Rosewood Initiative
- Anti-displacement PDX
- Urban League
- East Portland Action Plan Housing Subcommittee

Ongoing communication

Regular communications about the Better Housing by Design project were made available through the project website, monthly e-mail updates to the project mailing list, Bureau of Planning and Sustainability newsletters, social media sites (Facebook, NextDoor and Twitter) and media releases.

What staff heard

Among the many issues raised by community members were:

- Participants in SWG meetings emphasized the need to address Portland's housing challenges by prioritizing affordable housing and expanding housing opportunities. Other important priorities were having development contribute to pedestrian-friendly streets and usable outdoor space for residents. Points of contention in these meetings and other community meetings included differing perspectives on off-street parking and compatibility with neighborhood characteristics.
- East Portland community members emphasized the importance of including areas for play and gathering as part of multi-dwelling development, especially given the many families living in apartments in the area and the lack of parks. They also emphasized the need for designing pedestrian connections for safety.
- Development professionals emphasized the need for predictable regulations and allowing development flexibility. Some indicated that development and density standards in the multi-dwelling zones complicated development; that it was easier to do multi-dwelling development in commercial zones than in the multi-dwelling zones. Many also indicated that it was important to reduce the cost of creating new streets because providing street connections affected the feasibility of projects and housing affordability.

More complete information on public input, including summary notes and submitted comments from the project's public events, are included in the Concept Report Appendices.

Development Prototypes

A series of development prototypes, illustrating alternative development configurations, were shared with Stakeholder Working Group participants during meetings. Staff used the development prototypes for discussions on whether some configurations were preferred outcomes and should be facilitated by regulations, or discouraged. The prototypes were based on common site types in different parts of the city and included Eastern Portland examples. The following are some examples that were identified by meeting participants as representing positive or negative outcomes.

The positively rated prototypes tended to have shared open spaces, such as courtyards, as central design elements, or fit density within a house-like form.

The negatively rated examples tended to have less substantial open spaces and prominent vehicle areas.

How to Comment and Next Steps

This Concept Report describes the development and design concepts that project staff will use to create detailed regulations for the multi-dwelling zones. Staff will consider public comments received on the concepts in this report as they begin work on drafting the zoning code regulations.

Comments

The Bureau of Planning and Sustainability will accept comments on the Better Housing by Design Concept Report until **5 p.m. on Monday, August 7, 2017.** You may submit your comment in the following ways:

- Email: betterhousing@portlandoregon.gov
- U.S. Mail: City of Portland Bureau of Planning and Sustainability, Attn: Better Housing by Design Project, 1900 SW 4th Avenue, Suite 7100, Portland, OR 97201

Next Steps

With completion of the Concept Report, the project will move into the code development stage. Project staff will turn the ideas in the Concept Report into zoning code language to guide future development in the multi-dwelling zones. There will be several opportunities for the public to comment on the draft zoning code amendments.

Fall 2017	• **Discussion Draft Code Amendments released**, followed by a public comment period.
Winter – Spring 2018	• **Proposed Draft Code Amendments released.** Testimony will be received by the Planning and Sustainability Commission (PSC) in writing and at a public hearing. • **Recommended Draft released** (incorporating changes directed by the PSC). Testimony will be received by City Council in writing and at a public hearing. • **Adopted Draft released** (incorporating changes directed by Council).

For more information

- **Visit: www.portlandoregon.gov/bps/betterhousing**
- **Contact Bureau of Planning and Sustainability:**
  - Bill Cunningham, Project Manager at 503-823-4203
  - Sara Wright, Community Involvement at 503-823-7728
  - email: betterhousing@portlandoregon.gov

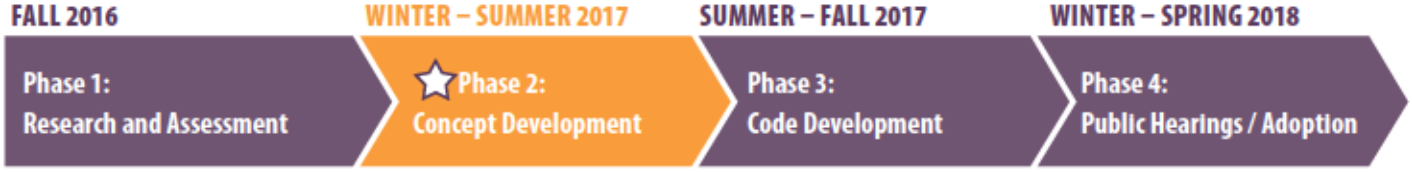


EXHIBIT B

Photo Credit: MWA Architects

Better Housing by Design:

An Update to Portland's Multi-Dwelling Zoning Code

Appendix E

Assessment Report

December 2016

Bureau of Planning and Sustainability

Innovation. Collaboration. Practical Solutions.

Acknowledgments

Bureau of Planning and Sustainability

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Purpose and Organization of this Report

The primary purpose of this report is to establish a foundation for the development of implementation tools, such as Zoning Code regulations and street connectivity approaches, and to inform public discussion on the topic of the multi-dwelling zones and development.

Table of Contents

Appendix

Introduction

Better Housing by Design: An Update to Portland's Multi-Dwelling Zoning Code Project is being led by the City of Portland's Bureau of Planning and Sustainability (BPS). It will address barriers to achieving higher quality multi-dwelling residential development and healthy, connected neighborhoods. This will help implement Portland's new Comprehensive Plan, including policies that call for the development of a wide range of housing types to meet Portland's diverse housing needs, with design that is supportive of the positive qualities of neighborhoods. As part of goals for healthy, complete neighborhoods, policies call for safe and healthy housing that provides convenient access to the goods and services that meet Portlanders' daily needs.

Project Overview

The Better Housing by Design Project will focus on revising Zoning Code development and design standards in Portland's multi-dwelling zones (R3, R2, R1, and RH) outside the Central City. These medium to high-density residential zones play a key role in providing new housing to meet the needs of a growing Portland. The many types of housing built in these zones include apartment and condominium buildings, fourplexes, rowhouses, and houses. The project will address a range of subjects, including:

- Reducing barriers to housing development (especially a□ordable housing).
- Creating opportunities for open space and green elements that support healthy living for residents.
- Cra□ing building design and scale in middle-density zones that fits into neighborhoods.
- Integrating well-designed high-density housing in centers and corridors.
- Enabling new approaches to creating street and pedestrian connections in areas that lack them.
- Developing incentives for a□ordable housing and desirable features.

The project is partially funded by a Metro Community Planning and Development Grant, as part of a regional grant program that assists local planning e□orts, to support development of future housing and jobs.

Portland Bureau of Transportation's Connected Centers Street Plan

This project will include a focus on East Portland to foster positive development outcomes responsive to the area's distinct characteristics and needs. This project and its public involvement components will be coordinated with the Portland Bureau of Transportation's Connected Centers Street Plan, which will be creating street plans for the Jade District and Rosewood/Glenfair centers.

The lack of street connectivity in East Portland neighborhoods is largely attributed to their rural and auto-oriented development history, and street systems that were created before they became part of the City of Portland. The Jade District and Rosewood/Glenfair area are examples of recently-designated centers, intended to become walkable places with concentrations of services and housing, that have large amounts of multi-dwelling zoning, but poor street connectivity.





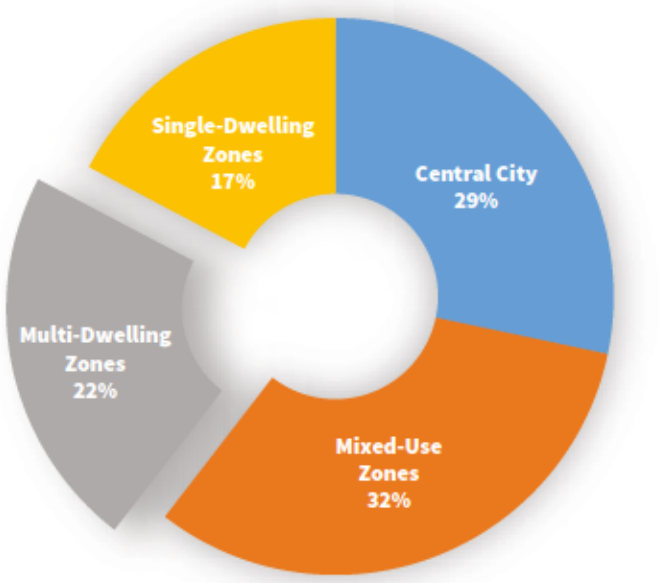

The range of housing types in the Multi-Dwelling Zones is diverse.






Why does this matter?

Between today and 2035, 80 percent of the roughly 120,000 new housing units developed in Portland will be in multi-dwelling buildings. Many of those buildings will be along mixed use corridors and main streets. Nearly one-quarter of the total growth will be in multi-dwelling zones outside the Central City. This housing development in and near centers and corridors is helping to meet local and regional objectives for locating housing close to services and transit. It also means that a lot more Portlanders will be living in multi-dwelling buildings and other compact housing types, and that the design of this housing will be playing an increasingly important role in providing quality living environments for residents and in shaping the form and character of neighborhoods. Better Housing by Design will develop approaches to help ensure that new development in the multi-dwelling zones better meets the needs of current and future residents, while contributing to the positive qualities of the places where they are built.

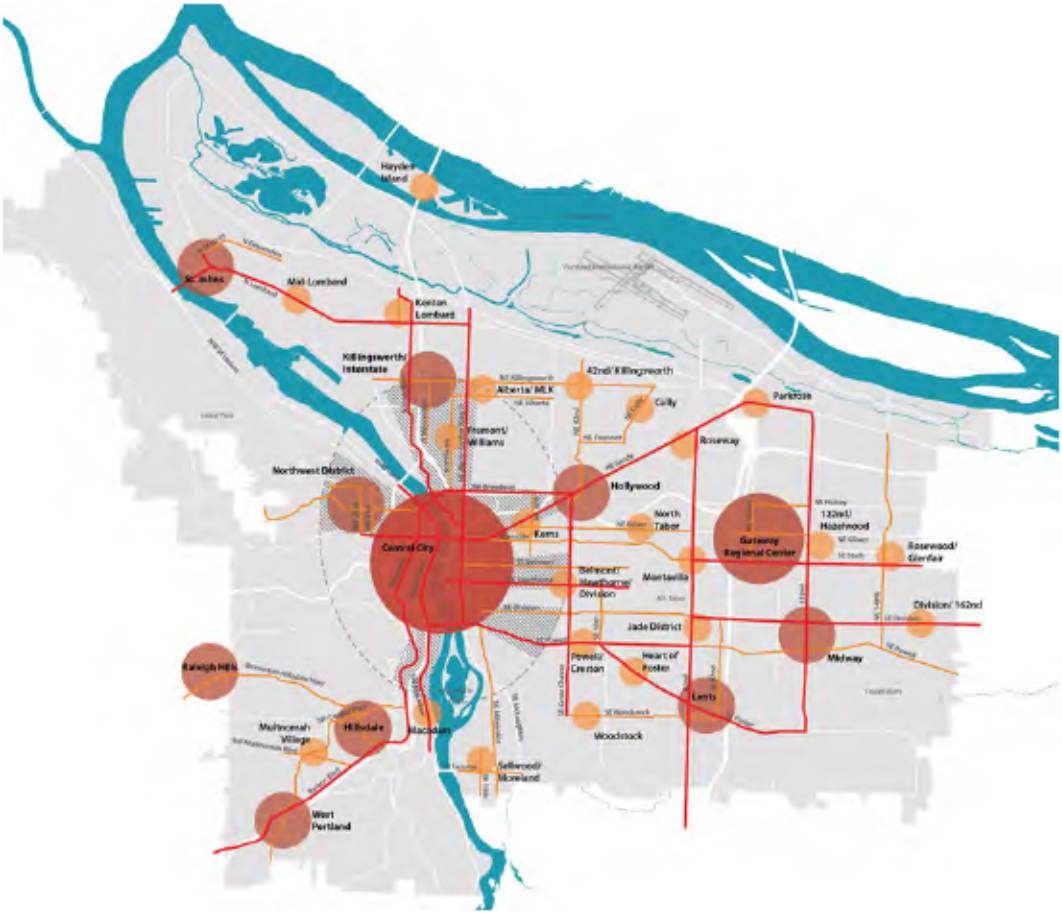


Percent of housing units by zone by 2035

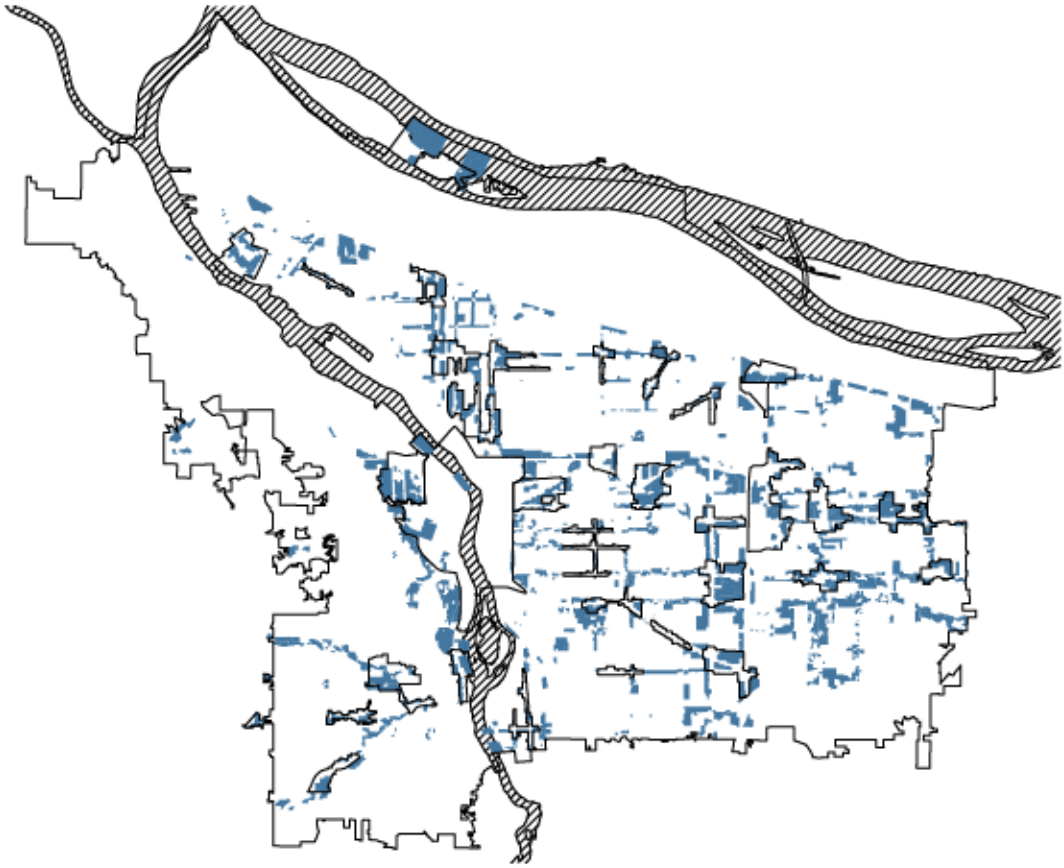
The Multi-Dwelling Zones outside the Central City are anticipated to be the location of more than 23,000 new housing units by 2035. That is 22 percent of the total residential growth anticipated for the next 20 years.

Multi-dwelling zones play an important role in providing affordable housing opportunities, which are increasingly not available in single-dwelling zones or in higher density mixed-use zones – especially for families. Multi-dwelling zones have been the location of a large portion of housing development by affordable housing providers. These zones will continue to play a critical role in providing a broad range of housing to meet the needs of all Portlanders.

The livability of multi-dwelling housing has a disproportionate impact on the quality of life of people of color and low-income households, larger proportions of whom live in multi-dwelling housing than the general population. The project will be informed by extensive outreach to people of color, low-income and immigrant households, which was undertaken as part of past projects that focused on healthy housing. These projects identified the need for residential open spaces, housing design supportive of healthy living, and better and safer connections to neighborhood destinations – especially in East Portland.



Centers and Corridors Growth Strategy - Comprehensive Plan Urban Design Framework



Proposed Multi-Dwelling Zoning in Centers

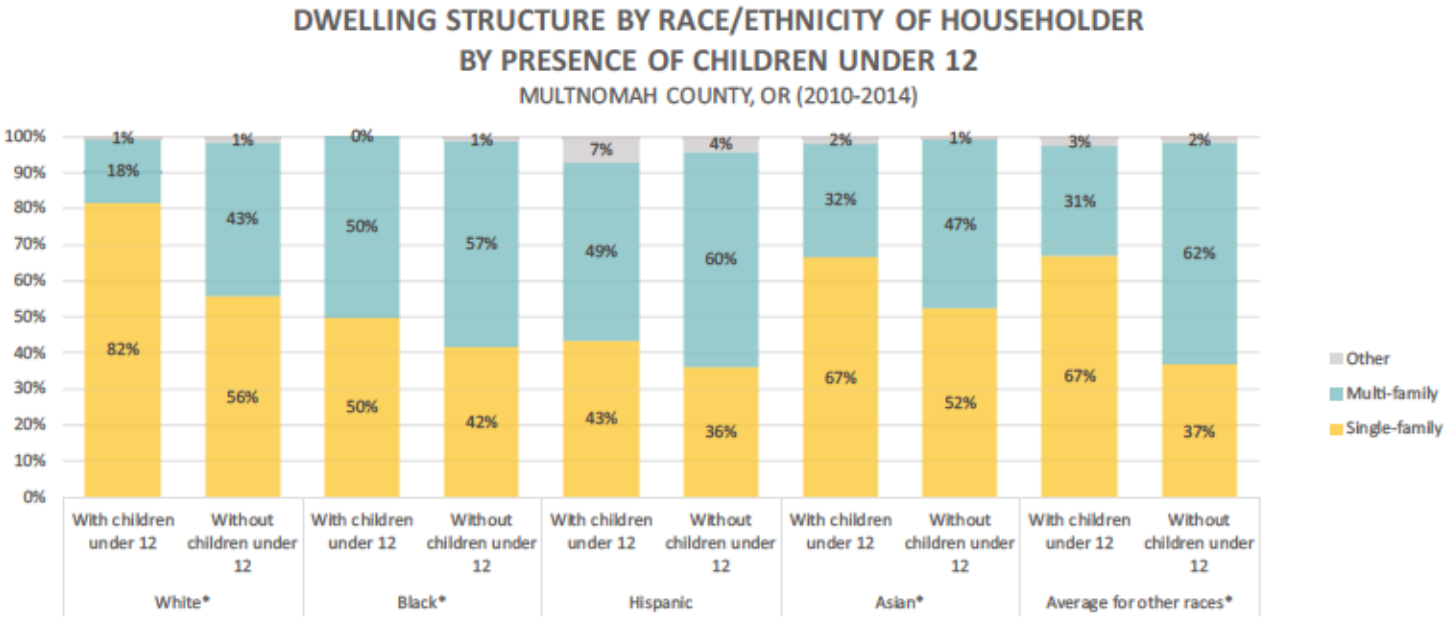
Focus Areas

East Portland

East Portland is home to a large percentage of Portland's youth, communities of color and low-income populations. This project will work on improving regulations to support the development of neighborhoods that increase safety and access to opportunity in East Portland, an area of the city where the lack of street connectivity compromises safe and convenient access to local destinations and transit for the area's population.

While mixed-use zoning is well-distributed along Portland's major streets, nearly 40 percent of all multi-dwelling zoning, over 2,000 acres, is located in East Portland. This project will create Zoning Code and Portland Bureau of Transportation (PBOT) tools to improve the design of development and street/pedestrian connectivity in East Portland (site design and connectivity issues will also be relevant to West Portland). This project will focus on two study areas: the Jade District (R1 and R2 zoning) and Rosewood/Glenfair around the 148th Light Rail station (RH zoning).

Key Equity Considerations



Denotes not Hispanic or Latino.
Source: IPUMS-USA, University of Minnesota. 2010-2014 ACS 5-year estimates. Portland Bureau of Planning and Sustainability.

The Portland Plan and 2035 Comprehensive Plan direct the City to prioritize underserved communities in planning decisions. Larger proportions of people of color, low income households and renters live in multi-family housing compared to the general population. The project will address the needs of under-represented Portlanders through better housing design, incentives for affordable housing and safer and more convenient street connections.

High-Density Housing in Inner Neighborhoods

The project will look at design and development standards in the RH zones, which allow 65 feet to 75 feet of height in areas with small-lot residential platting patterns. It will consider issues related to the form of high-density housing on small lots and focus on the Interstate Corridor, which has large areas with RH zoning.

Middle-Density Housing in Inner Neighborhoods

The Better Housing by Design project will consider design and development standards for medium-density, multi-dwelling infill development in neighborhoods that have an established small-lot residential platting pattern (including the Inner Ring Districts). It will also consider how middle-density housing (typically two-to-five units per lot) can be designed with greater continuity within the context of mixed single-family and small-scale multi-dwelling housing.

What will the Better Housing by Design Project do?

Over the past decade, multiple City of Portland project teams have worked with the community to identify issues related to the design of multi-dwelling development and the topic of healthy, connected neighborhoods.

Building on this diversity of public input, Better Housing by Design (BHD) will focus on creating new tools, such as Zoning Code regulations and street connectivity approaches, to address issues that are important to the community. The relationship between these previous projects and this project, including identification of issues and desired outcomes, are described in the Summary of Related Projects section of this report.

The BHD Project will focus on the following topics:

Site Design and Healthy Active Living

- Open space and other amenities for residents.
- Landscaping requirements, space for new trees or tree preservation.
- Accessibility/visitability, accommodation of on site stormwater management, and minimizing impervious surfaces.
- Possibilities for review of site design of large sites.

Past Projects

- 2035 Comprehensive Plan
- Infill Design Project
- East Portland Review and Action Plan
- Eastside MAX Station Community Project
- 122nd Avenue Planning Study
- Healthy Active Communities for Portland's A□ordable Housing Families Initiative
- Promoting Health through Multi-Family Housing
- PBOT Street / Bicycle / Pedestrian Connectivity Studies

Increased Connectivity

- Develop implementation tools to achieve better street/pedestrian system connectivity. This is particular important in East Portland and will be explored through PBOT's Connected Centers Street Plan.

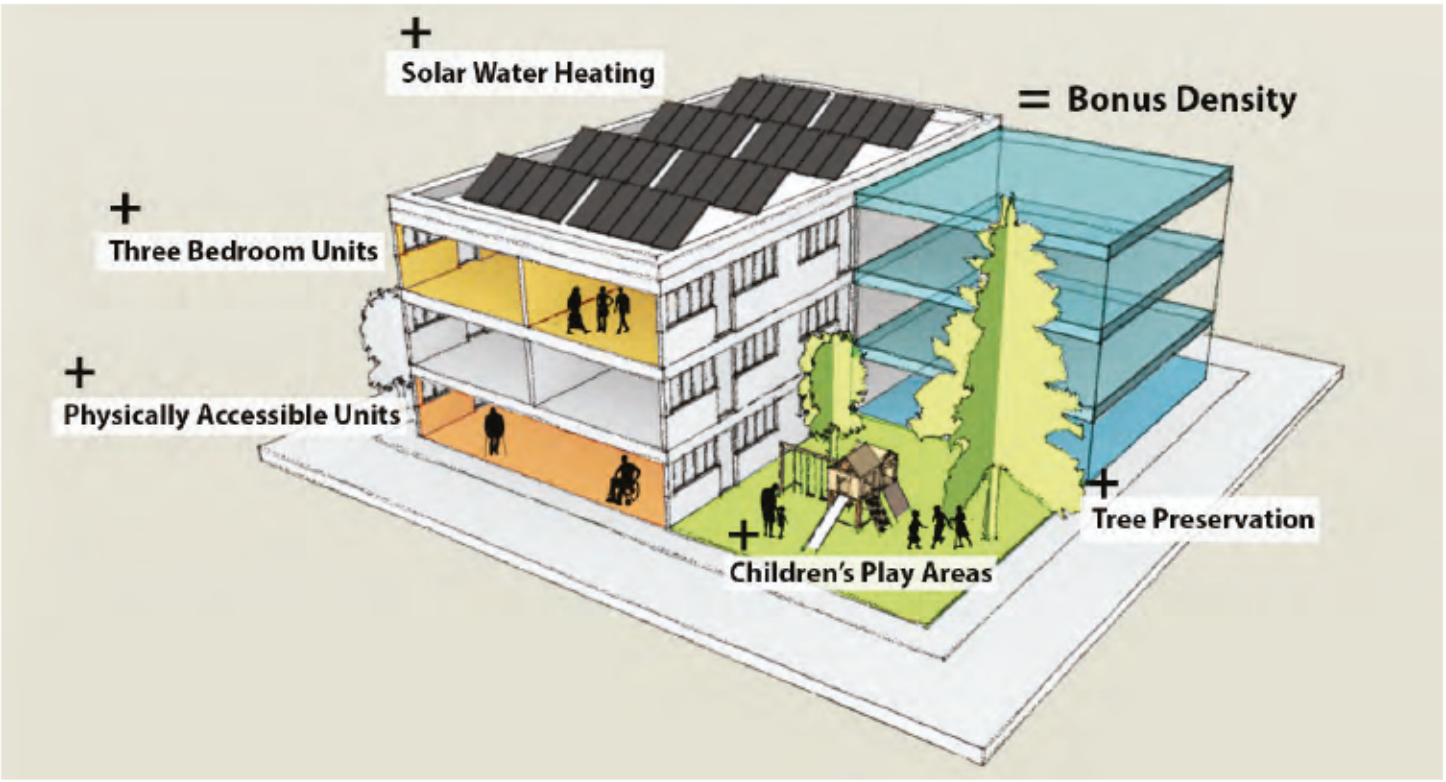
- Minimum site size requirements for land divisions and multi-dwelling development proposals in areas with poor street connectivity, so that development sites are of su□icient size to provide street or pedestrian connections.

What will the Better Housing by Design Project do?

Address Building Design and Scale

- Address relation of buildings to streets, neighborhood context and transitions to lower-scale zones.
- Consideration of whether development standards should be different on corridors versus neighborhood side streets.
- Consideration of building form-related standards, including whether detached houses should be regulated similarly regardless of being on separate or shared lots.

Amenity Bonuses



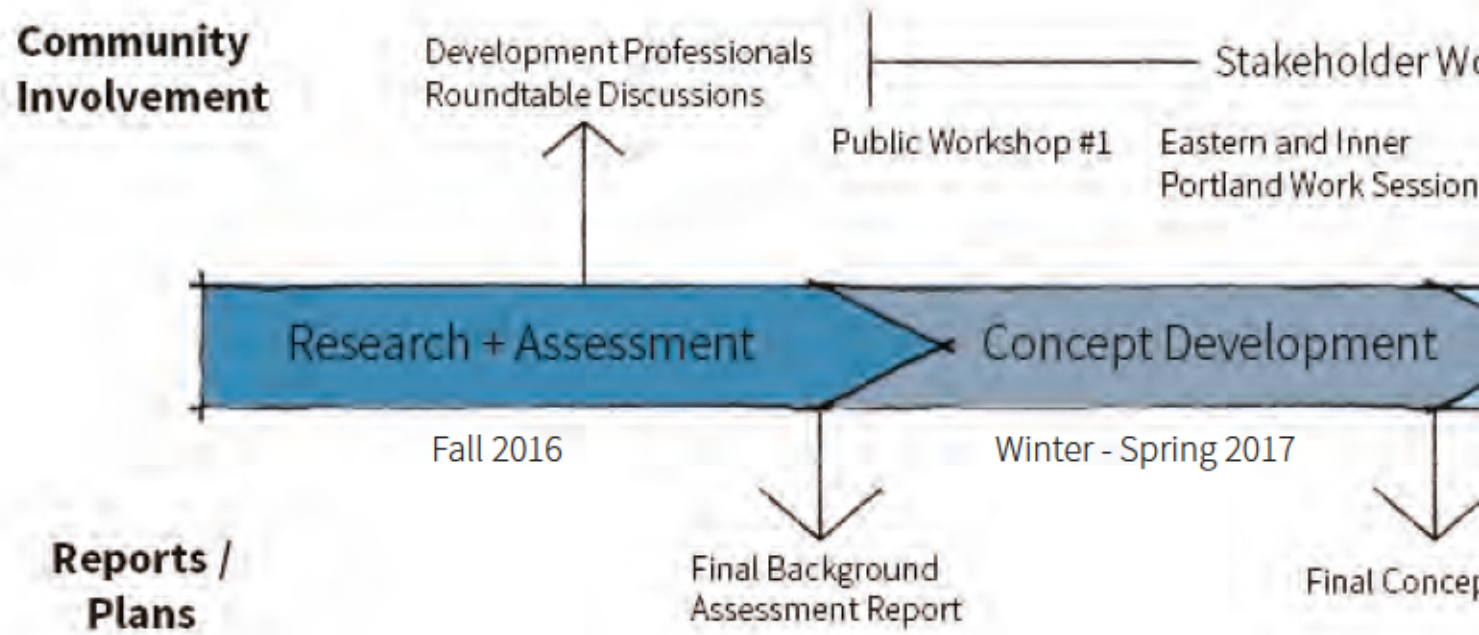
- Consideration of effectiveness of existing amenity bonuses.

- Consideration of refinements to bonuses for affordable housing, adopted as part of the Inclusionary Housing Zoning Project.

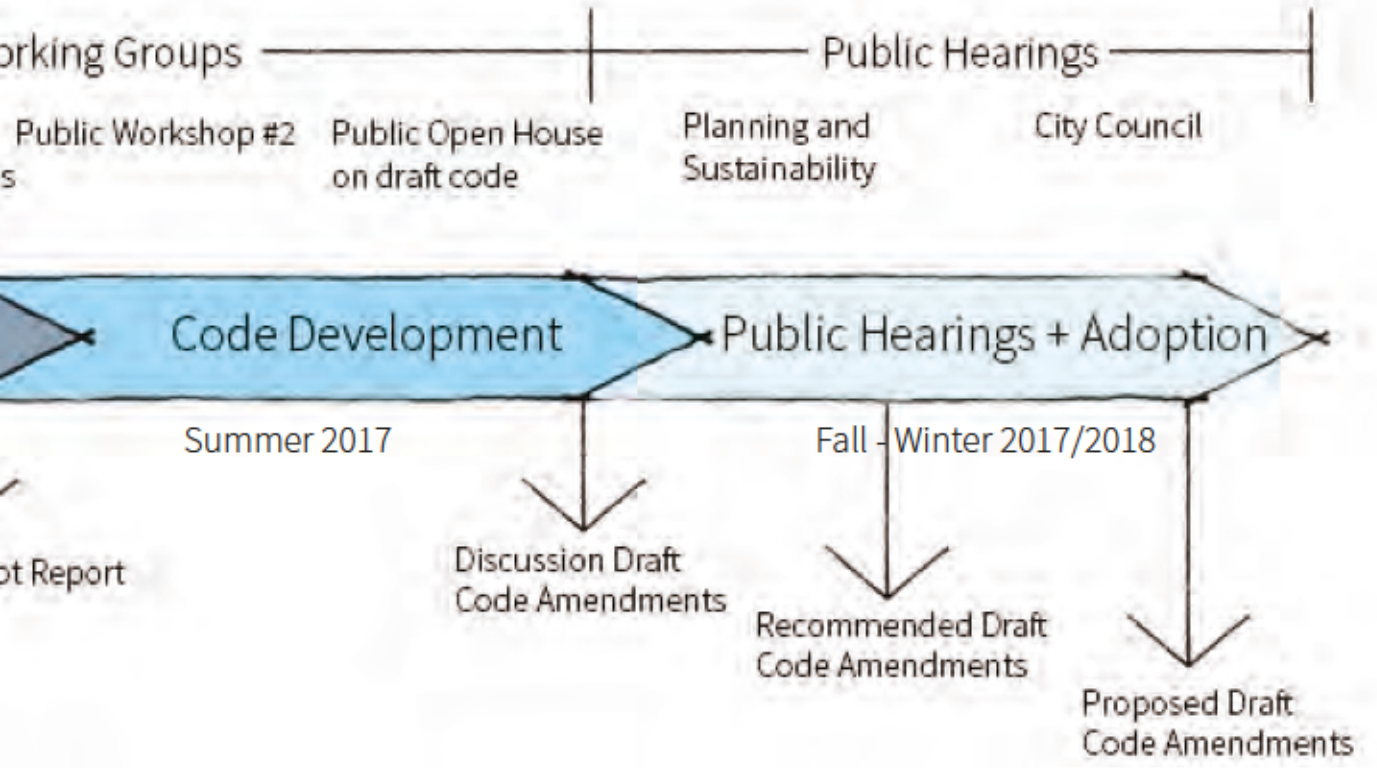
- Consider incentives for accessibility/age-friendly design and other outcomes called for by new Comprehensive Plan policies.

Project Work Plan
Outreach Components

Phase		Tasks
I. Research and Assessment	*Fall 2016*	• Policy and code analysis • Regulatory review • Historic and recent development research • Block and street connectivity analysis • Best practice research
II. Concept Development	*Winter - Spring 2017*	• Develop concepts for development standards • Create development prototypes for community discussion of preferred outcomes. • Analyze economic feasibility of concepts • Select performance measures for monitoring success. • Identify conceptual street/pedestrian connections for East Portland study areas.



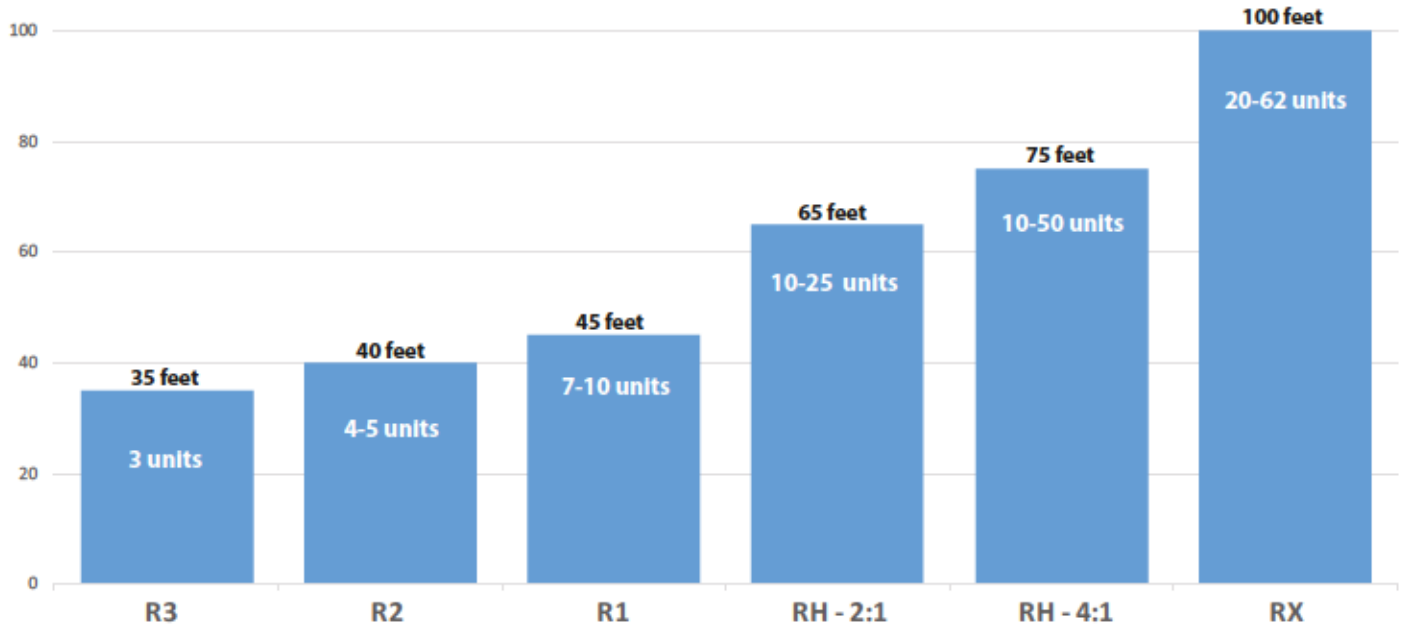
Phase		Tasks
III. Code Development	*Summer 2017*	• Develop Zoning Code development standards to implement the Concept Plan. • Develop Connected Centers street plans for Jade District and Rosewood centers.
IV. Public Hearings and Adoption	*Fall - Winter 2017*	• Prepare proposed draft code amendments. • Present to Planning and Sustainability Commission at hearings and worksession. • Present to City Council at hearings and worksessions.



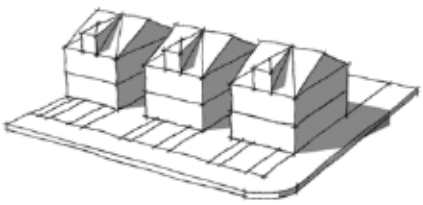
Summary of Citywide Development Activity (2006 - 16)

Base Zone Density Diagram

Below is a diagram showing the estimated amount of units for each multi-dwelling base zone, based on a 10,000 square foot site. The diagrams shows maximum heights and density requirements for each zone [The RH and RX zones are regulated by floor area ratio, instead of unit density].

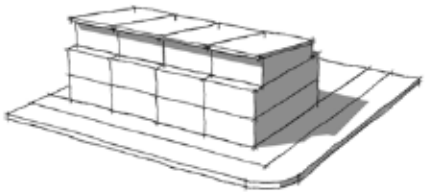


Multi-Dwelling Housing Types

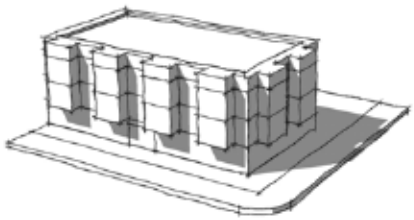


Single-family homes
Found in: R3, R2, R1 zones

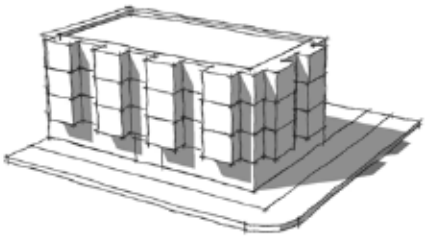
Duplex
Found in: R3, R2, R1, RH zones



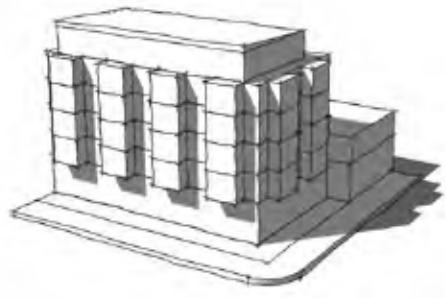
Rowhouses / Townhouses
Found in: R3, R2, R1, RH zones



Low-rise Apartments
(fewer than 20 units)
Found in: R2, R1, RH, RX zones



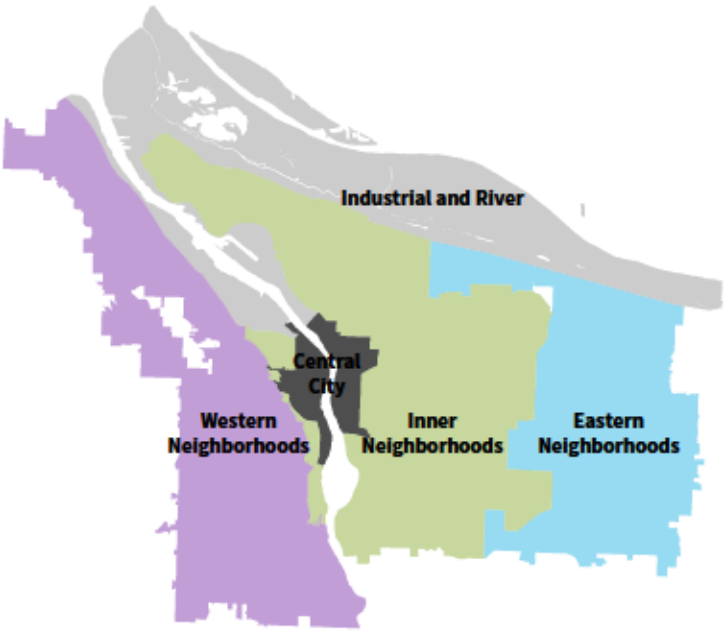
Mid-rise Apartments
(fewer than 20 units)
Found in: R2, R1, RH, RX zones



High-rise Apartments
(more than 20 units)
Found in: RH, RX zones

Portland's Five Pattern Areas

Portland includes three fundamentally distinct types of neighborhoods: the Inner Neighborhoods, with their main street commercial districts and compact street grid; the Western Neighborhoods, whose urban form is shaped by hilly terrain, streams and other natural features; and the Eastern Neighborhoods, whose diverse mix of urban and more rural forms is set against a backdrop of Douglas firs and buttes. Beyond these three neighborhood urban forms are two other Portland patterns: those of the Central City neighborhoods, Portland's most intensely urbanized area; and the industrial districts, with their own distinct urban form characteristics.



Western Neighborhoods

Inner Neighborhoods

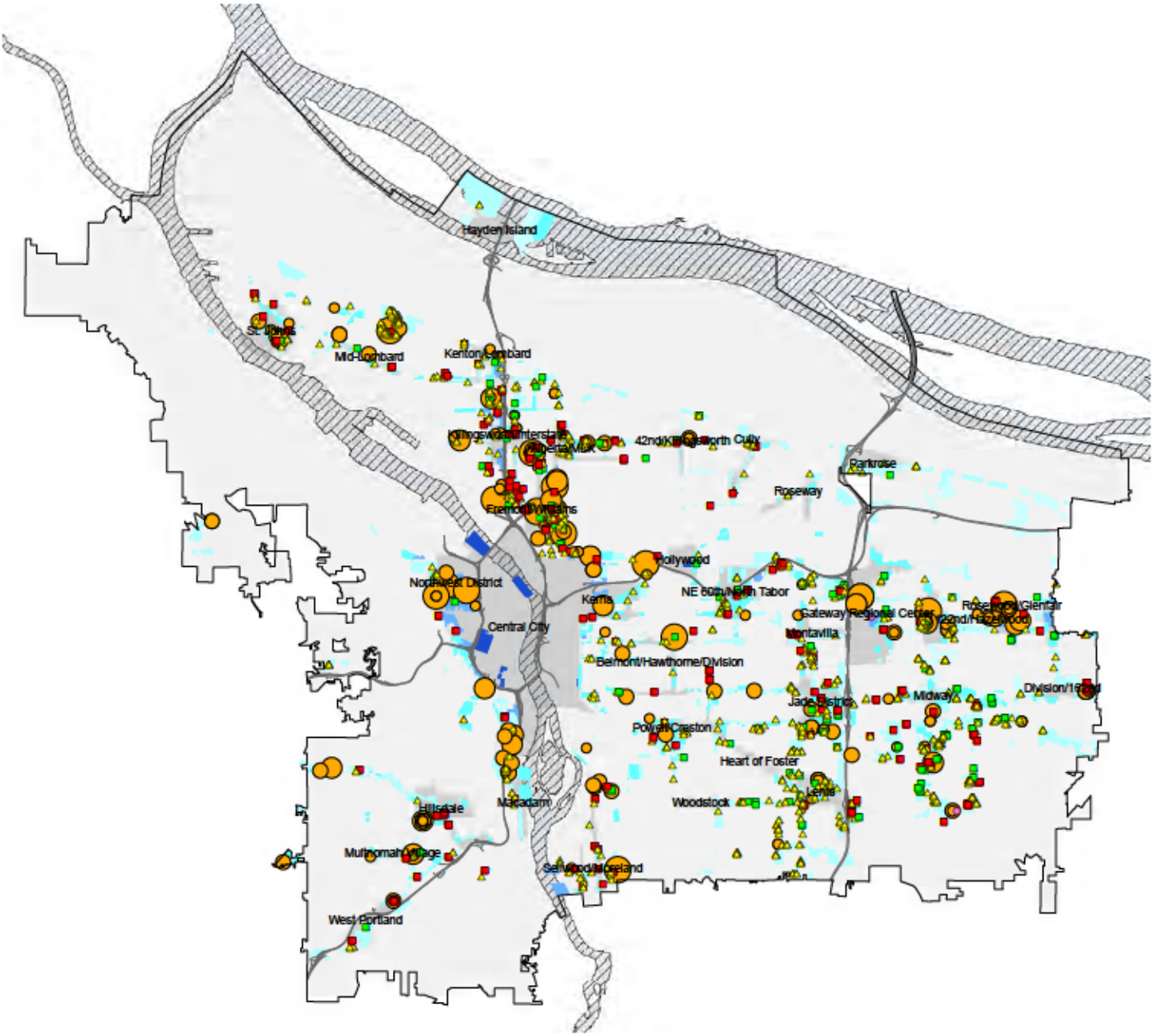
Central City

Eastern Neighborhoods

Industrial and River

Summary of Citywide Development Activity

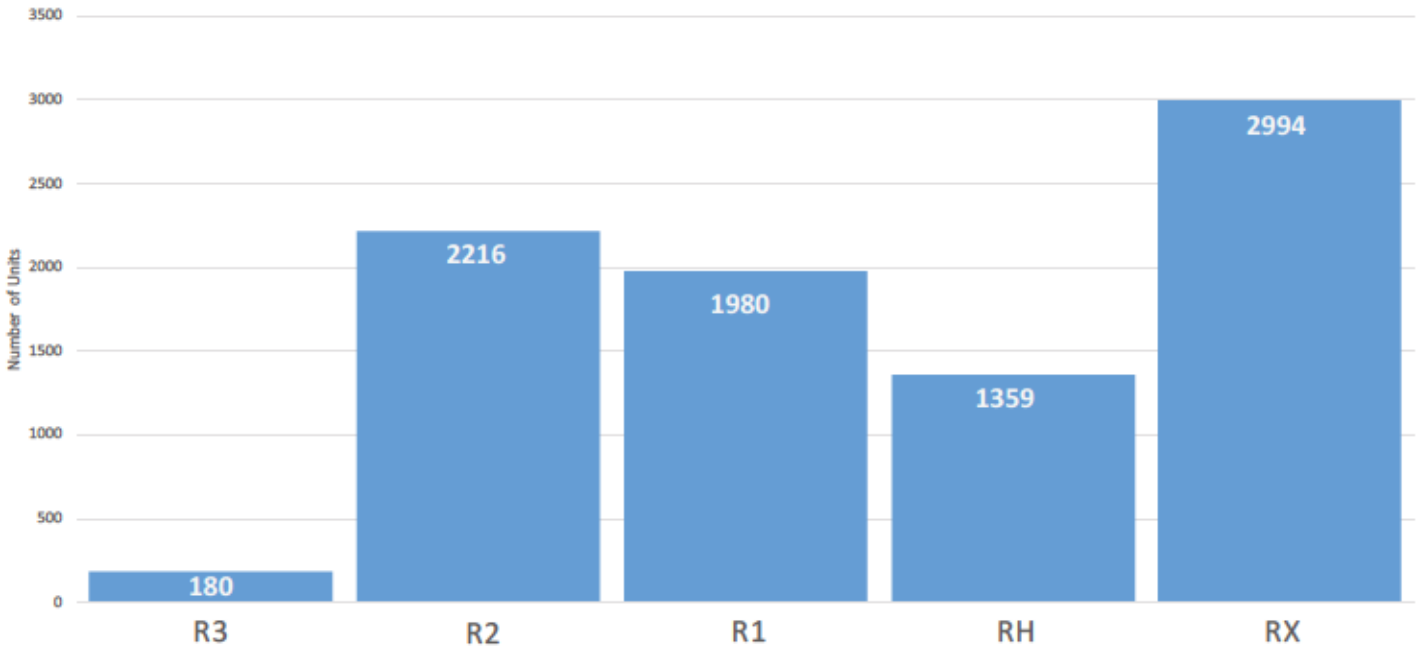
The following map and charts show development activity in the multi-dwelling residential zones from 2006 through 2016.



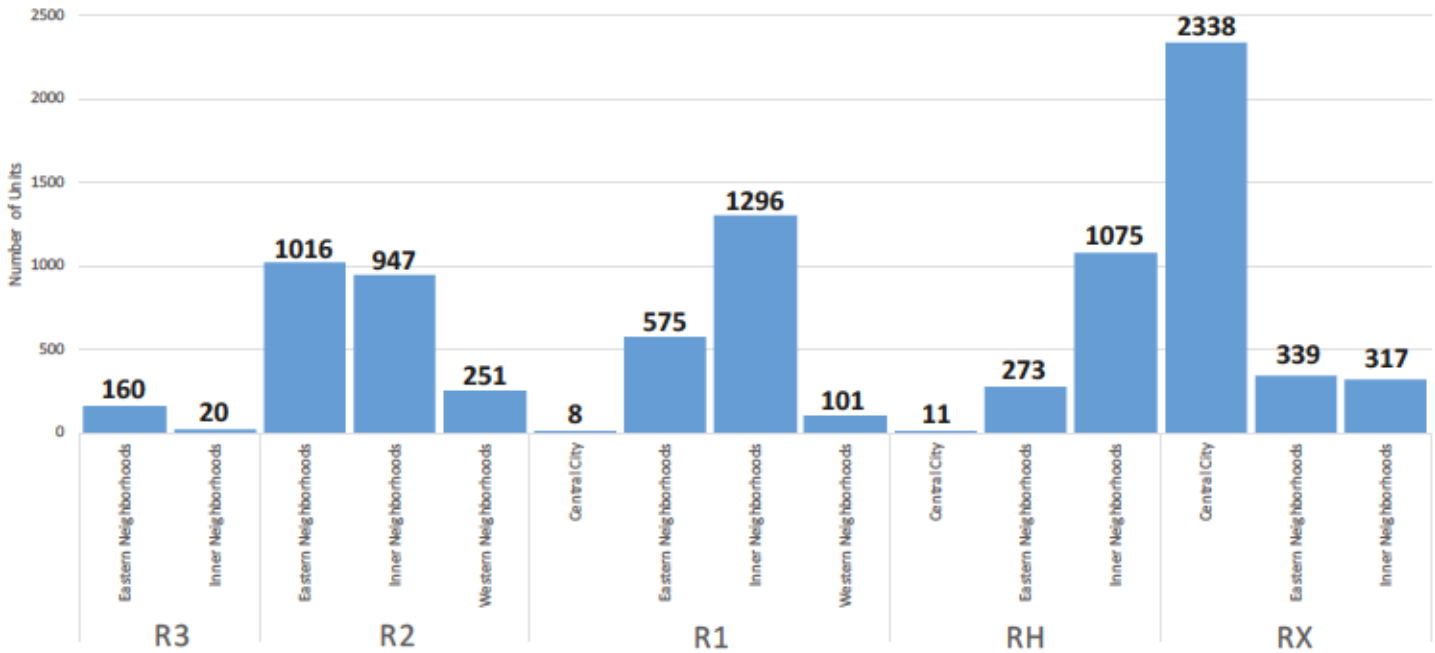
What is the data telling us?

- RX zone is producing the most units. Most of these units are located in the Central City, which is outside the scope of the Better Housing by Design project.
- The majority of R1 and RH units are located in the inner neighborhoods.
- R2 zone is producing the most units in East Portland.
- R3 zone is producing the least amount of units, mostly located in East Portland in limited areas.

Number of units by zone [2006 - 16]



Number of units by zone and pattern area [2006 - 16]



Profile of the Base Zones

R3: Residential 3000

Summary

R3 is a low-density multi-dwelling zone located predominately in East Portland. Housing is characterized by one to two story buildings and a low building coverage. Often the types of new development will be multi-dwelling structures such as duplexes, triplex and rowhouses. Density is approximately 14.5 dwelling units per acre, 21 units per acre if an amenity bonus provision is used.

Community Examples

Examples of recent development in R3 zones throughout the city.

Pattern Area: **Eastern**
Housing Type: **Duplex**
Number of Units: **2**

Pattern Area: **Eastern**
Housing Type: **Duplex**
Number of Units: **2**

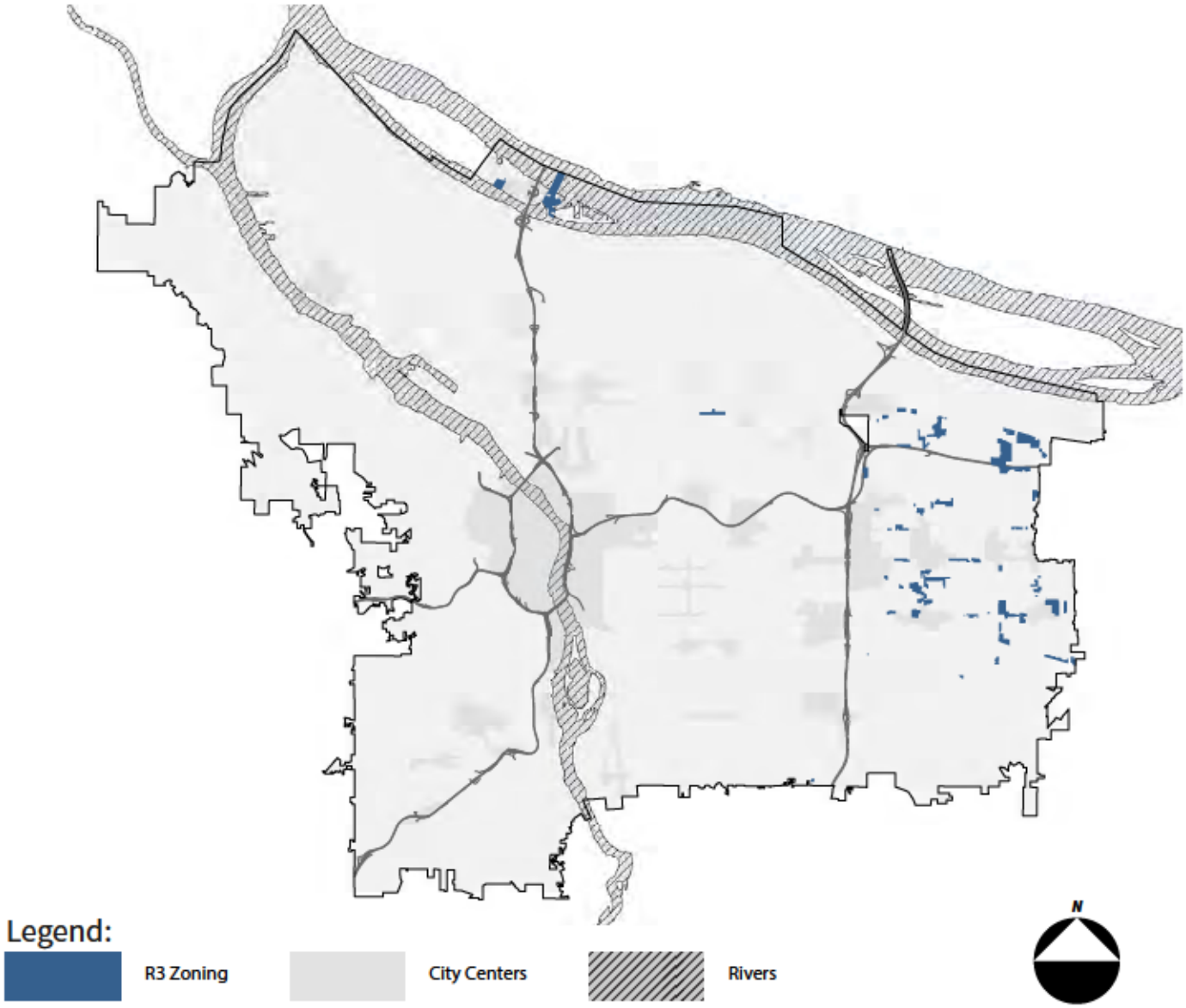
Pattern Area: **Eastern**
Housing Type: **Townhouses**
Number of Units: **20**

Pattern Area: **Eastern**
Housing Type: **Duplex**
Number of Units: **2**

Pattern Area: **Eastern**
Housing Type: **Duplex**
Number of Units: **2**

Pattern Area: **Eastern**
Housing Type: **Single-family homes**
Number of Units: **2**

Map of R3 Zone

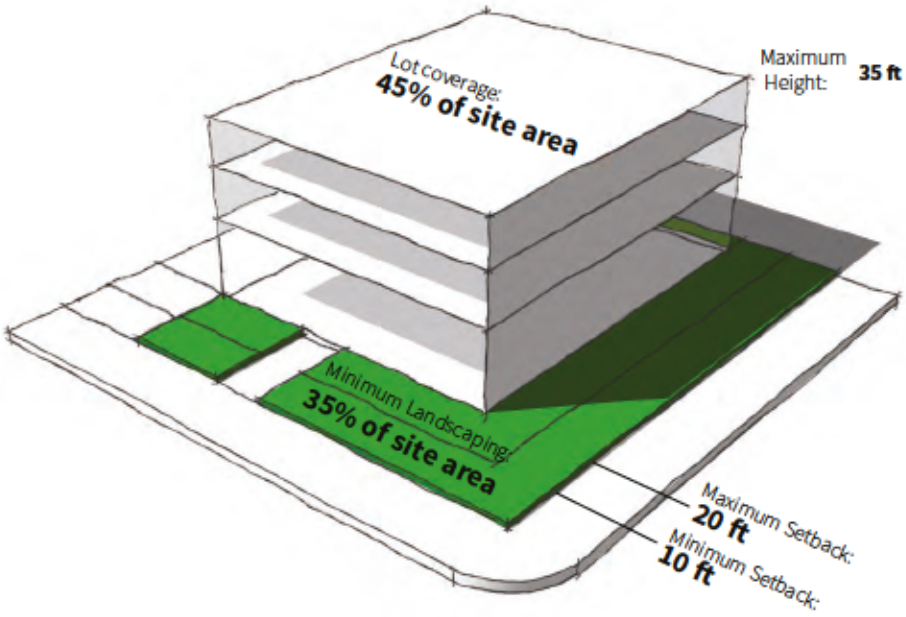


Land Area

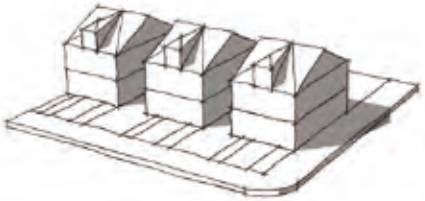
R3 has a total of 517 acres, a majority of this land located in the eastern neighborhoods. According to the City's Buildable Land Inventory, roughly 720 units will be built in the R3 zone over the next 20 years.

R3: Building and Site Requirements

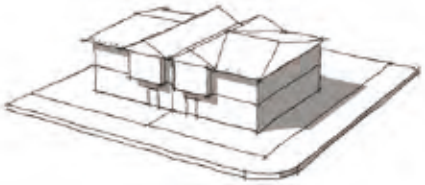
Primary permitted uses	**Residential**
Height	**35 ft**
Maximum density	**1 unit per 3000 ft^2** **Allows 8 units maximum per building**
Minimum density	**1 unit per 3750 ft^2**
Maximum front setback	**20 ft**
Minimum front setback	**10 ft**
Maximum lot coverage	**45% of site area**
Maximum building length	**None**
Minimum Landscaping	**35% of site area**
Required outdoor area	**48 ft^2 / unit**



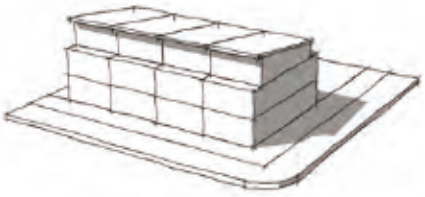
What housing types are found in the R3 Zone?



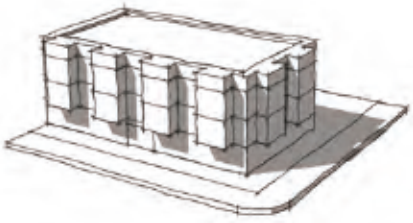
Single-family homes



Duplex



Rowhouses / Townhouses

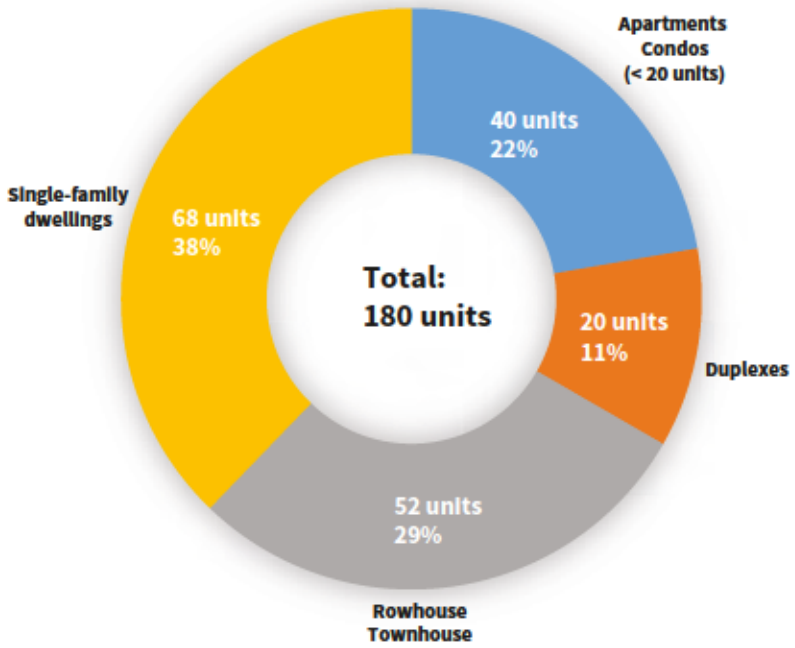


Low-rise apartments (fewer than 20 units)

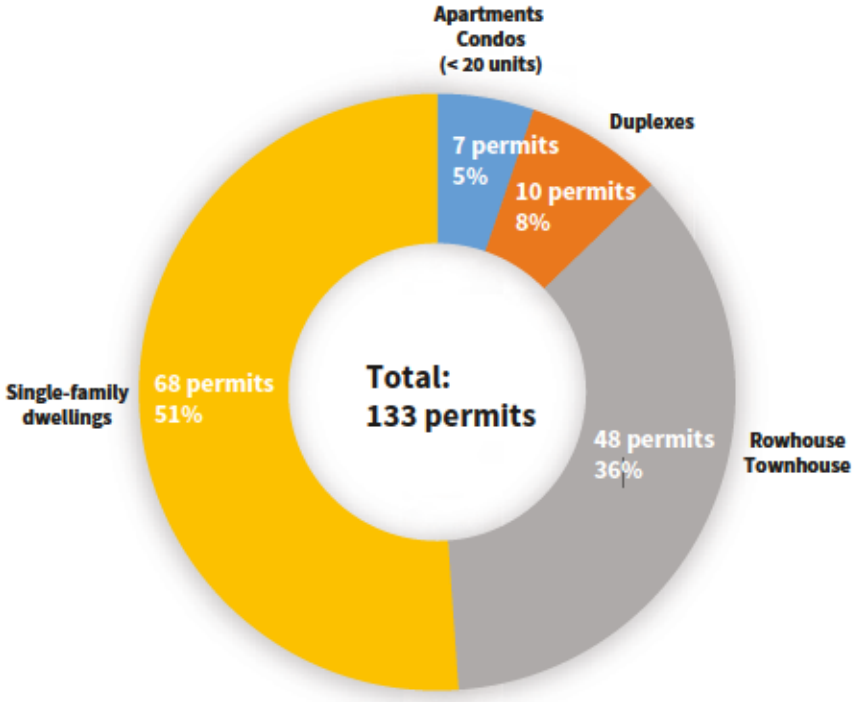
What is the data telling us?

- In this zone, Single Family Dwellings are the most prevalent housing type.
- Rowhouses / Townhouses are becoming a more common development type in the R3 zone.
- Duplex is the least common housing type.

Number of units by zone and typology [2006 - 16]



Number of permits by zone and typology [2006 - 16]



R2: Residential 2000

Summary

R2 is a low density multi-dwelling zone characterized by two to three story residential buildings and a medium building coverage. The types of new development include multi-dwelling structures (condominiums and apartments), duplexes, townhouses, and rowhouses. Density is approximately 21.8 dwelling units per acre, 32 units per acre if an amenity bonus provision is used.

Community Examples

Examples of recent development in R2 zones throughout the city.

Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **32**

Pattern Area: **Inner**
Housing Type: **Rowhouses**
Number of Units: **10**

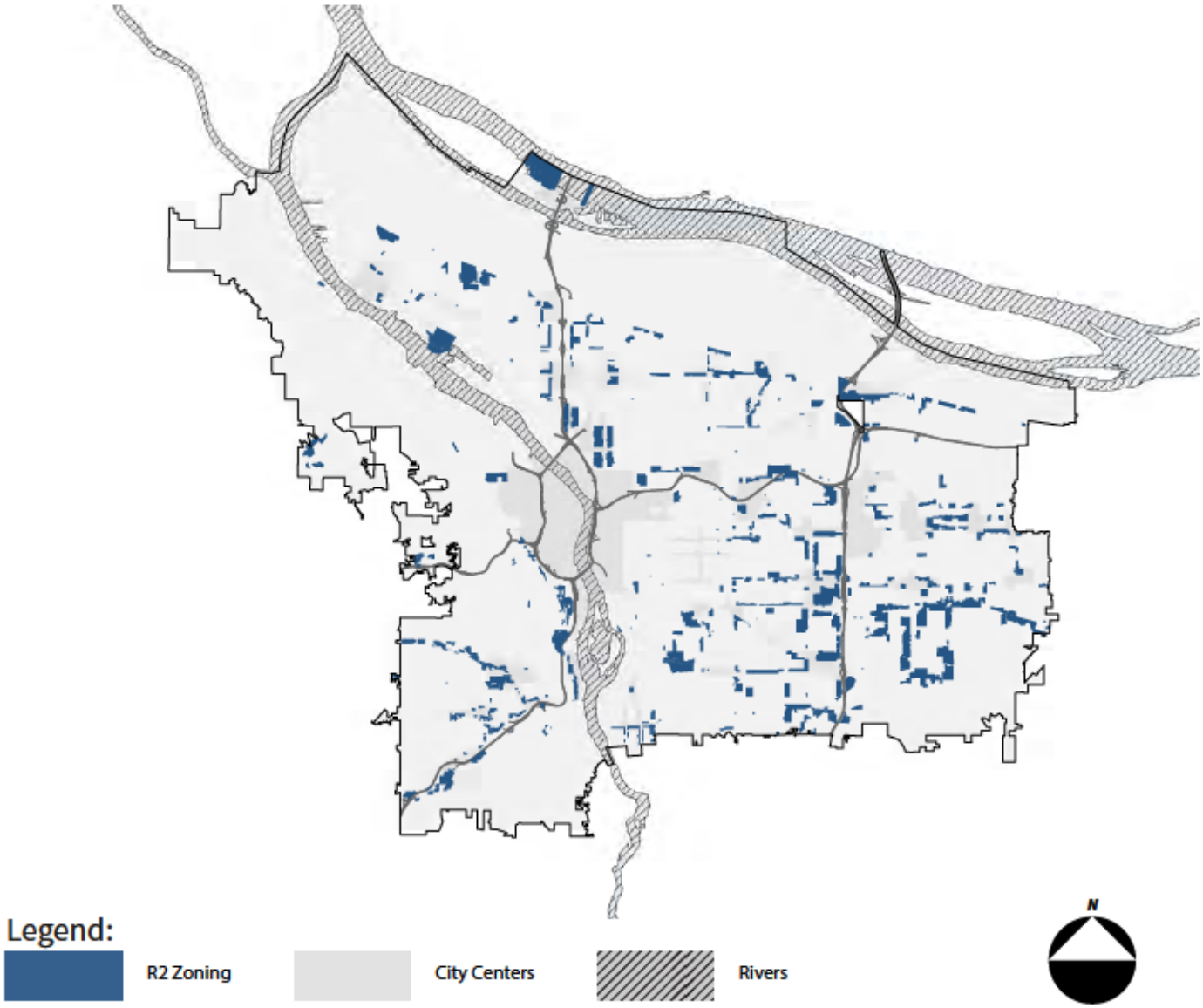
Pattern Area: **Inner**
Housing Type: **Triplexes**
Number of Units: **6**

Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **12**

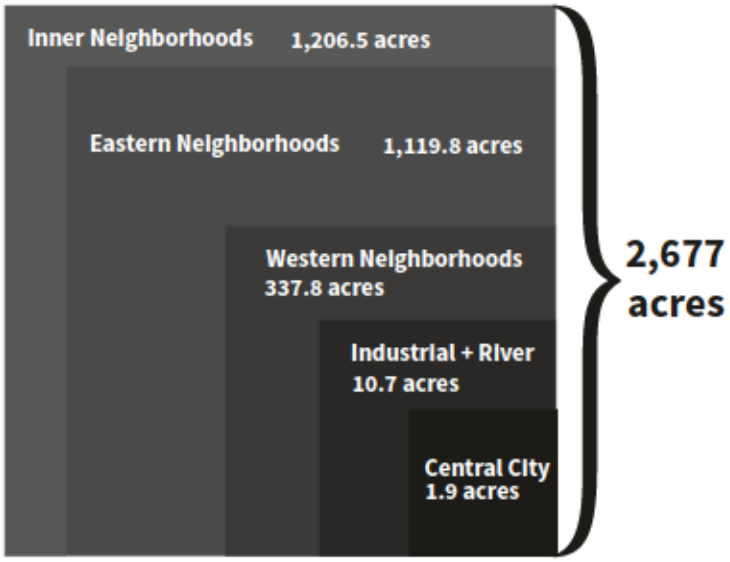
Pattern Area: **Eastern**
Housing Type: **Single-family homes**
Number of Units: **7**

Pattern Area: **Eastern**
Housing Type: **Duplex / Apartment**
Number of Units: **11**

Map of R2 Zone



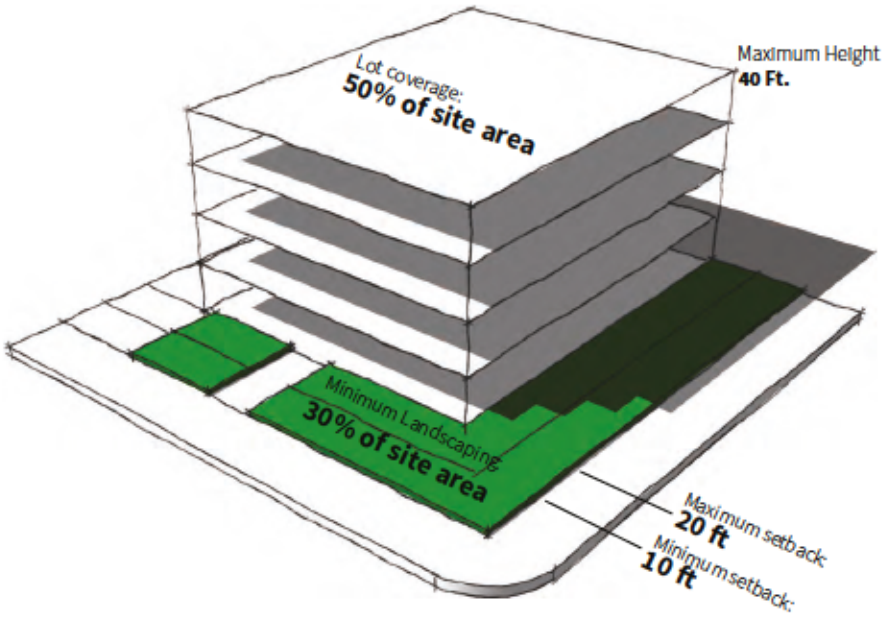
Land Area



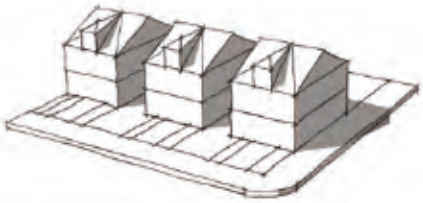
There is a total of 2,677 acres of R2 in Portland, distributed broadly across the city. According to the City's Buildable Land Inventory, roughly 5,187 units will be built in the R2 zone over the next 20 years.

R2: Building and Site Requirements

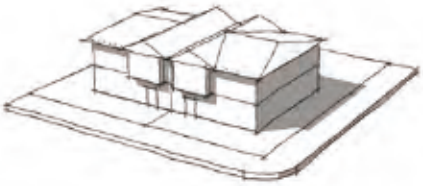
Primary permitted uses	**Residential**
Height	**40 ft.**
Maximum density	**1 unit per 2000 ft^2**
Minimum density	**1 unit per 2500 ft^2**
Maximum front setback	**20 ft**
Minimum front setback	**10 ft**
Maximum lot coverage	**50% of site area**
Maximum building length	**100 ft**
Minimum Landscaping	**30% of site area**
Required outdoor area	**48 ft^2 / unit**



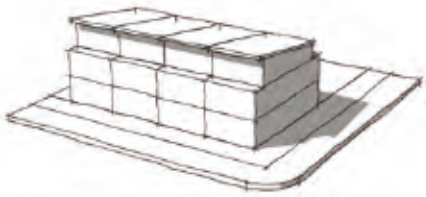
What housing types are found in the R2 Zone?



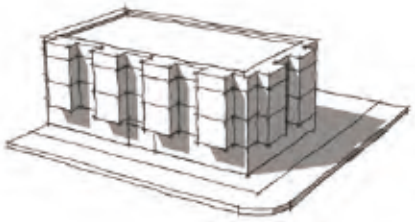
Single-family homes



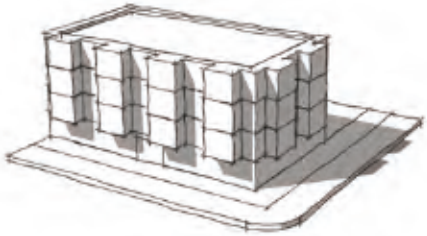
Duplex



Rowhouses / Townhouses



Low-rise apartments (fewer than 20 units)

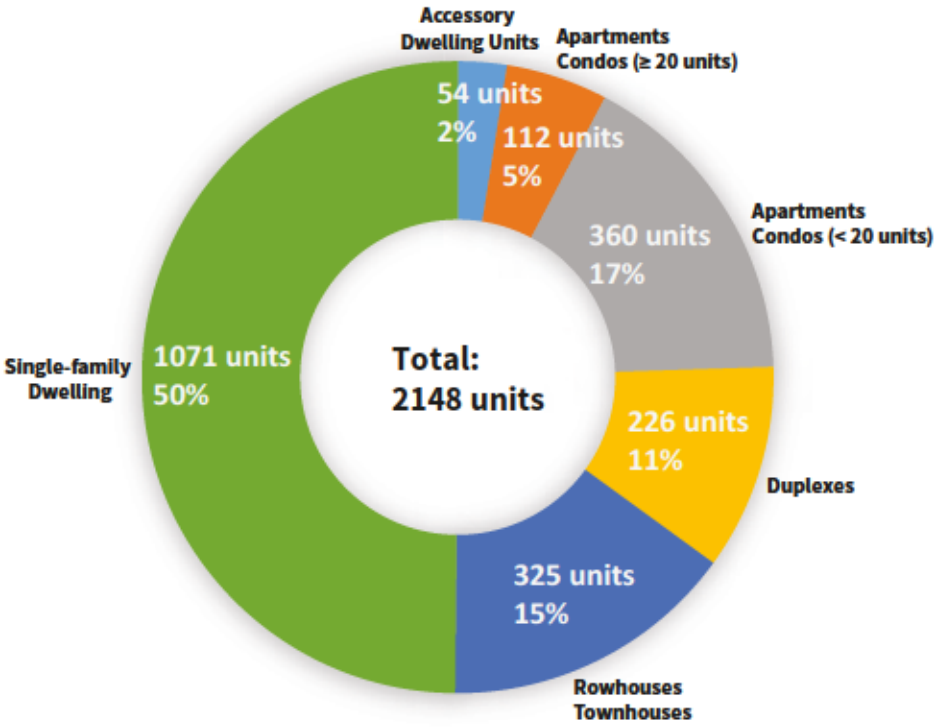


Mid-rise apartments (more than 20 units)

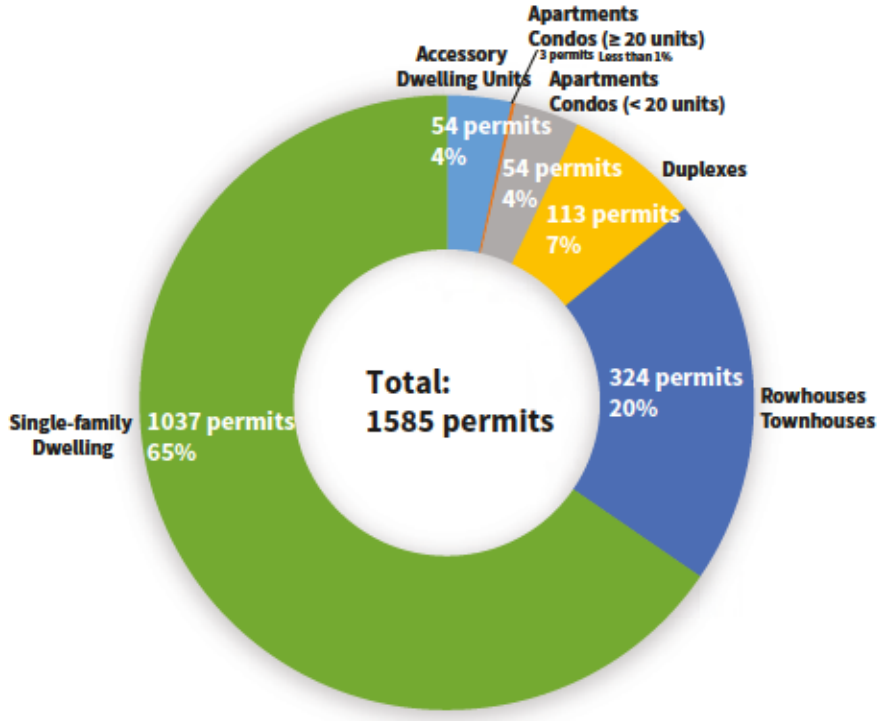
What is the data telling us?

- There is a diverse range of housing types in the R2 zone, mostly in smaller buildings.
- Single-family homes are the most prevalent housing type, often in the form of multiple houses on the same lot (especially in East Portland).
- The most common development types on typical 5000 square foot residential lots in inner neighborhoods are pairs of attached or detached houses and duplexes.

Number of units by zone and typology [2006 - 16]



Number of permits by zone and typology [2006 - 16]



R1: Residential 1000

Summary

R1 is a medium density multi-dwelling zone characterized by two to four story residential buildings and a high building coverage. The types of new development include multi-dwelling structures (condominiums and apartments), duplexes, townhouses, and rowhouses. Density is approximately 43 units per acre and as high as 65 units per acre if amenity bonus provisions are used. R1 zoning is applied near civic and neighborhood corridors and local streets adjacent to commercial areas and transit streets.

Community Examples

Examples of recent development in R1 zones throughout the city.

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **9**

Pattern Area: **Inner**
Housing Type: **Townhouses**
Number of Units: **7**

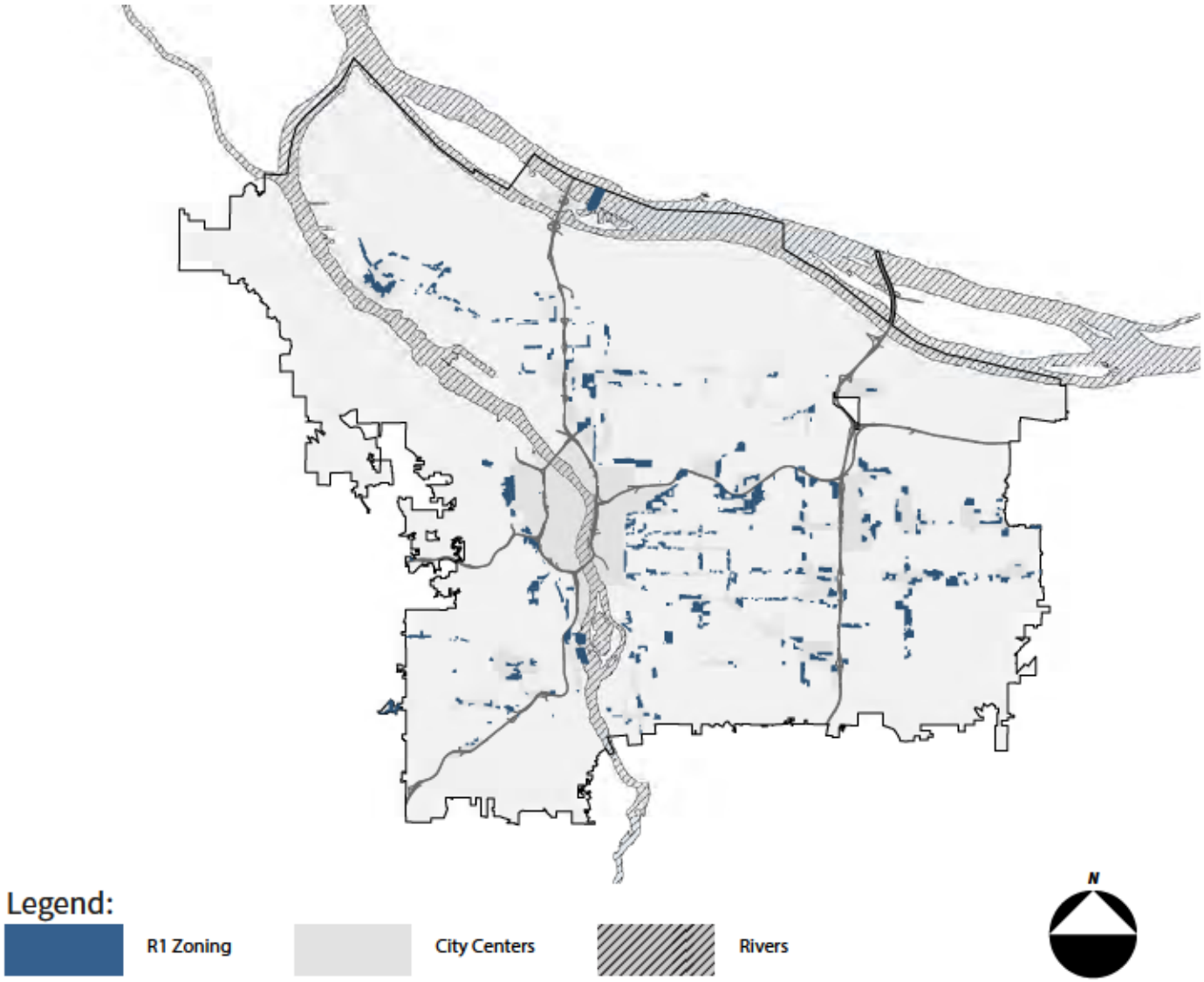
Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **7**

Pattern Area: **Inner**
Housing Type: **Rowhouses**
Number of Units: **18**

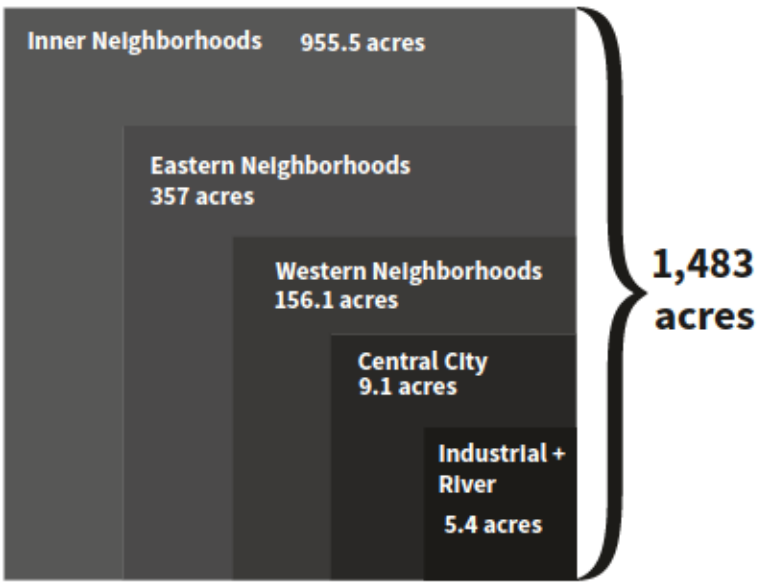
Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **37**

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **112**

Map of R1 Zone



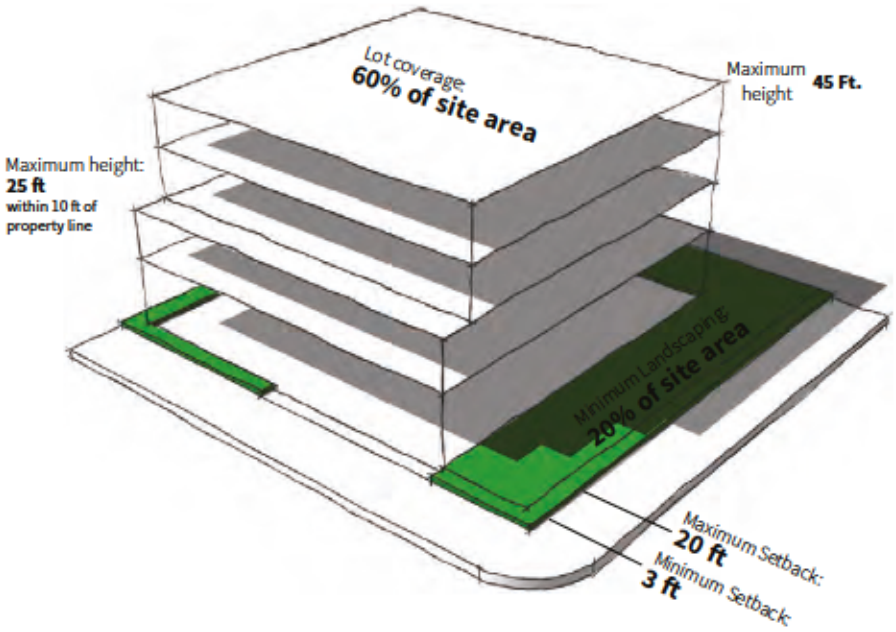
Land Area



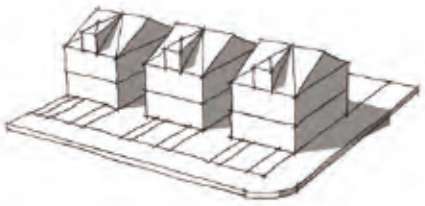
R1 has a total of 1,483 acres, distributed across the city. According to the City's Buildable Land Inventory, roughly 9,587 units will be built in the R1 zone over the next 20 years.

R1: Building and Site Requirements

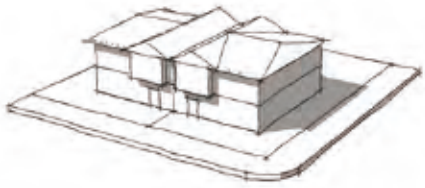
Primary permitted uses	**Residential**
Height	**25 ft / 45 ft**
Maximum density	**1 unit / 1000 ft^2**
Minimum density	**1 unit / 1450 ft^2**
Maximum front setback	**20 ft**
Minimum front setback	**3 ft**
Maximum lot coverage	**60% of site area**
Maximum building length	**Yes / 100 ft**
Minimum Landscaping	**20% of site area**
Required outdoor area	**48 ft^2 / unit**



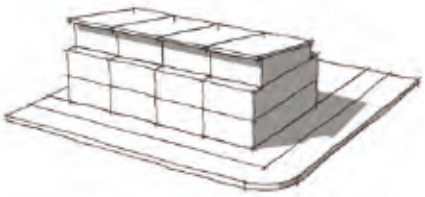
What housing types are found in the R1 Zone?



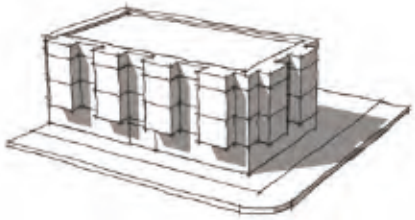
Single-family Homes



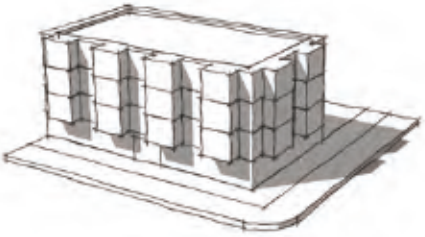
Duplex



Rowhouse / Townhouses



Low-rise apartments (fewer than 20 units)

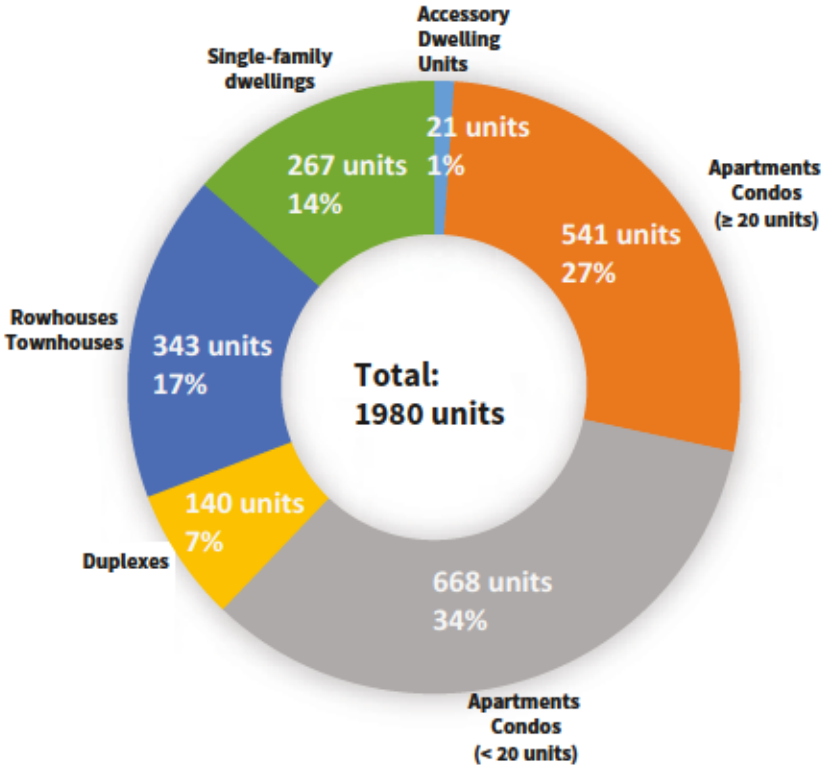


Mid-rise apartments (more than 20 units)

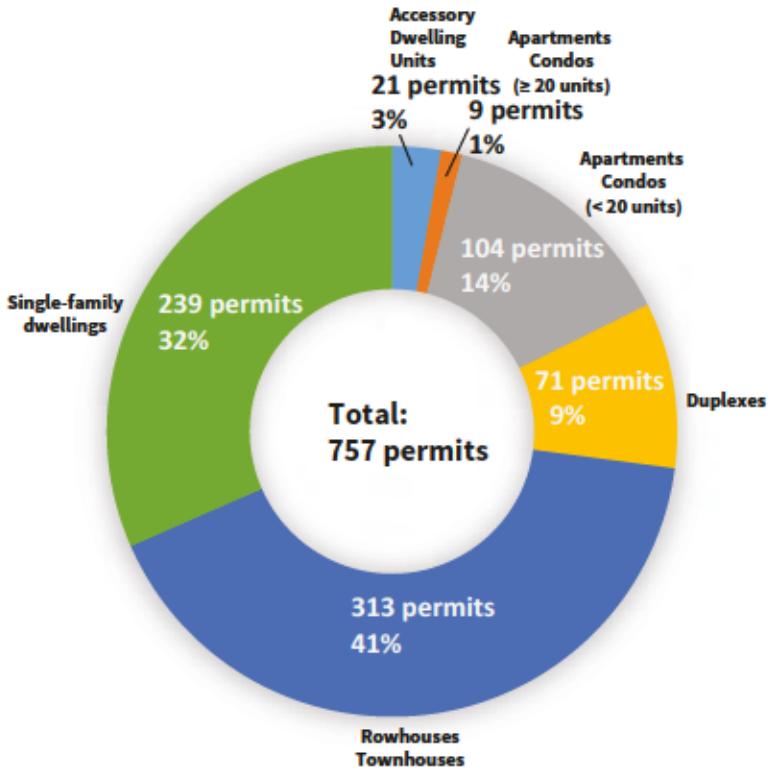
What is the data telling us?

- Over the last 10 years, apartment / condo complexes accounted for the most units (1209).
- A smaller number of larger buildings (just 9 permits) accounted for over 25 percent of total units.
- New single-family dwellings are less prevalent then in the R2 zone.

Number of units by zone and typology [2006 - 16]



Number of permits by zone and typology [2006 - 16]



RH: High Density Residential

Summary

RH is a high density multi-dwelling zone located in or within close proximity to the Central City or along frequent transit corridors. Housing is characterized by buildings up to six or seven stories and high building coverage. Often the types of new development will be medium and high-rise apartments and condominiums. Density is not regulated by a maximum number of units per acre. Rather, the maximum size of buildings and intensity of use is regulated by floor area ratio (FAR) limits and other site development standards. Generally, the density will range from 80 to 125 units per acre.

Community Examples

Examples of recent development in RH zones throughout the city.

Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **87**

Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **6**

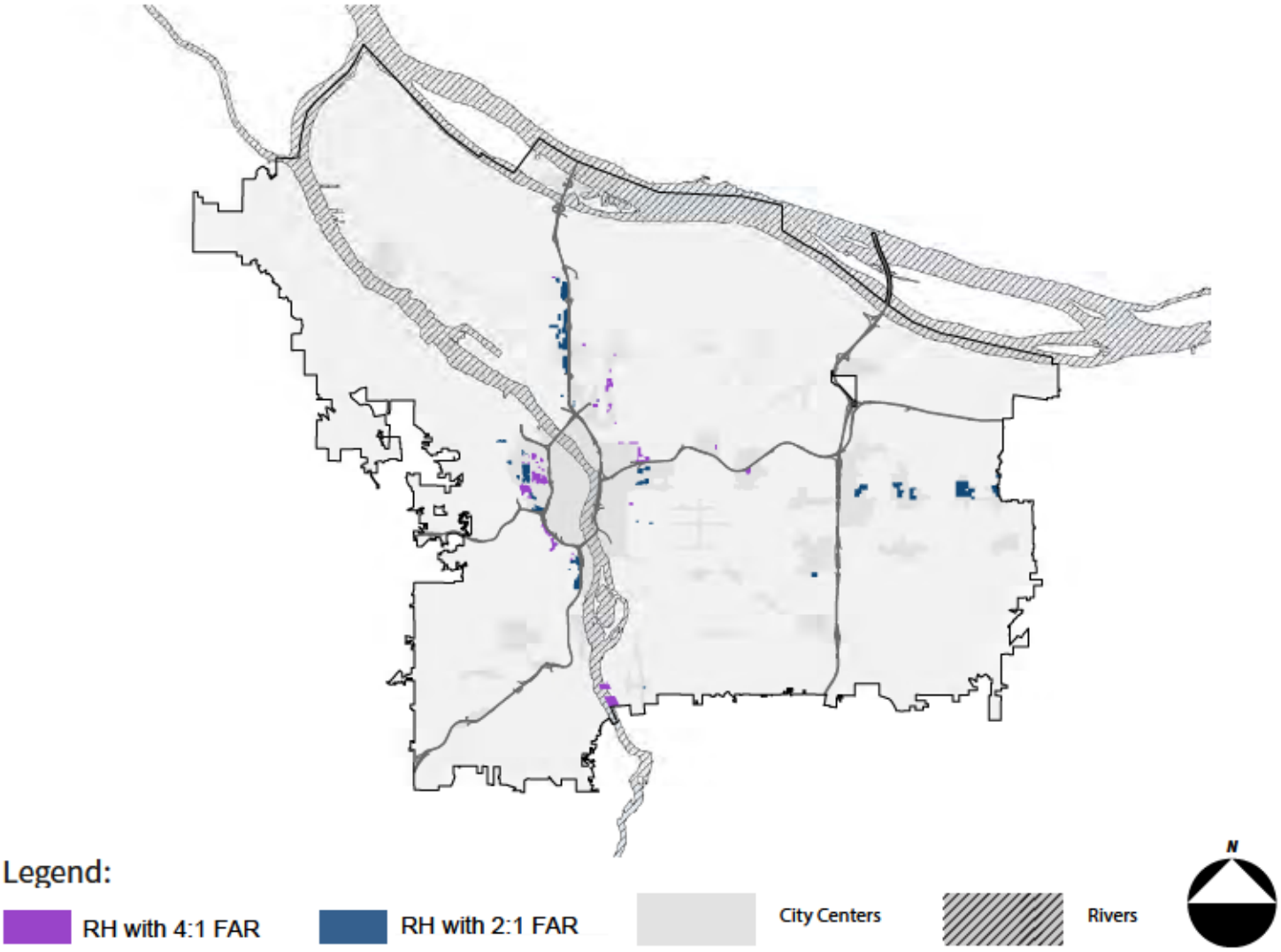
Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **19**

Pattern Area: **Western**
Housing Type: **Apartments**
Number of Units: **22**

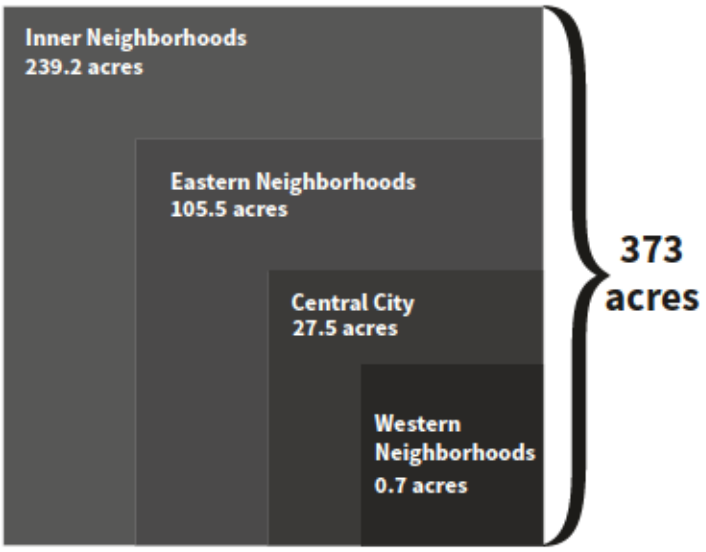
Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **12**

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **61**

Map of RH Zone



Land Area

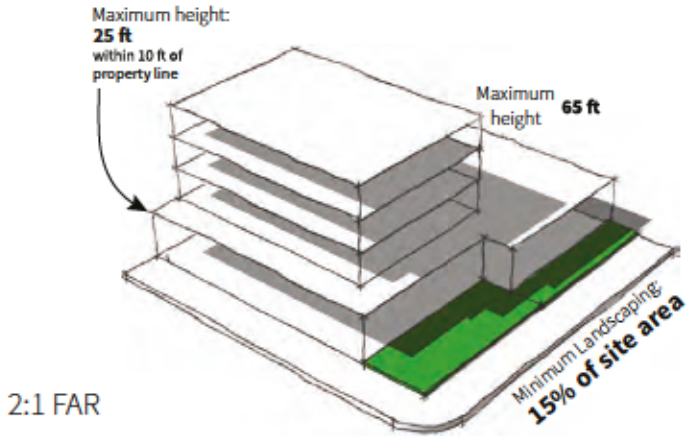


A total of 373 acres of RH is concentrated around select centers, corridors, and light rail stations across the city. According to the City's Buildable Land Inventory, the RH zone will grow by roughly 7,228 units over the next 20 years.

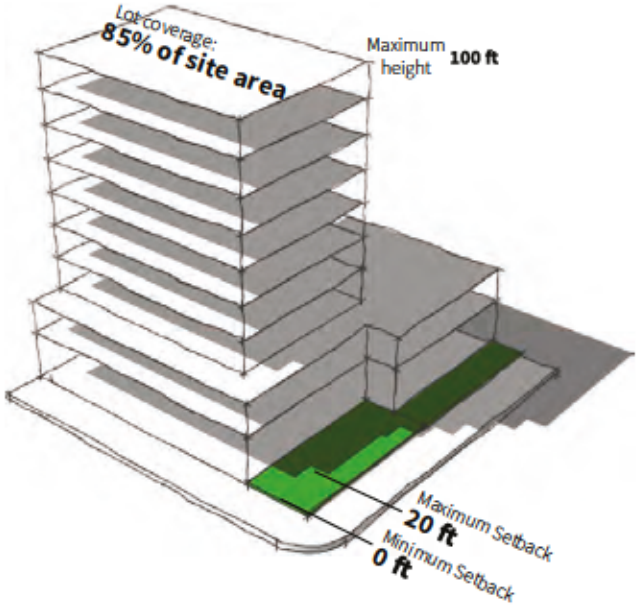
RH: Building and Site Requirements

Primary permitted uses	**Residential**
Height*	**65 ft / 75 ft / 100 ft**
Maximum density*	**2:1 / 4:1 FAR**
Minimum density	**1 unit / 1000 ft^2**
Maximum front setback	**20 ft**
Minimum front setback	**0 ft**
Maximum lot coverage	**85% of site area**
Maximum building length	**None**
Minimum Landscaping	**15% of site area**
Required outdoor area	**None**

* Varies by mapped location

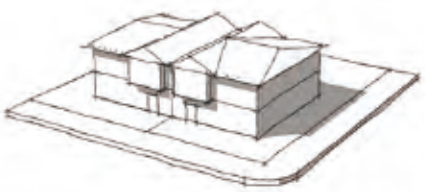


2:1 FAR

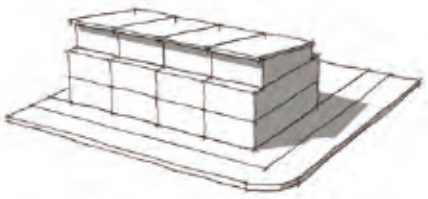


4:1 FAR

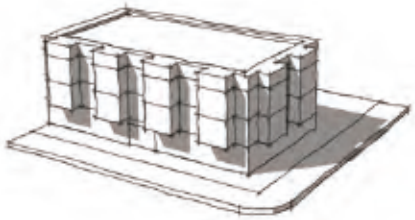
What housing types are found in the RH Zone?



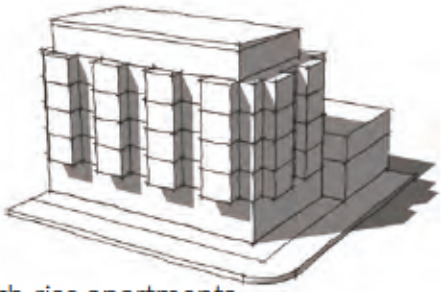
Duplex



Rowhouses / Townhouses



Mid-rise apartments
(fewer than 20 units)

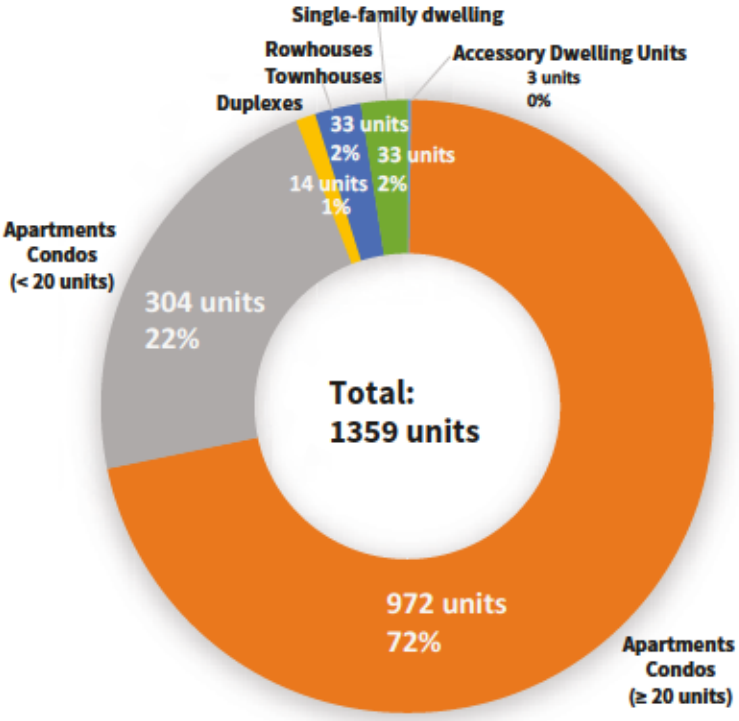


High-rise apartments
(more than 20 units)

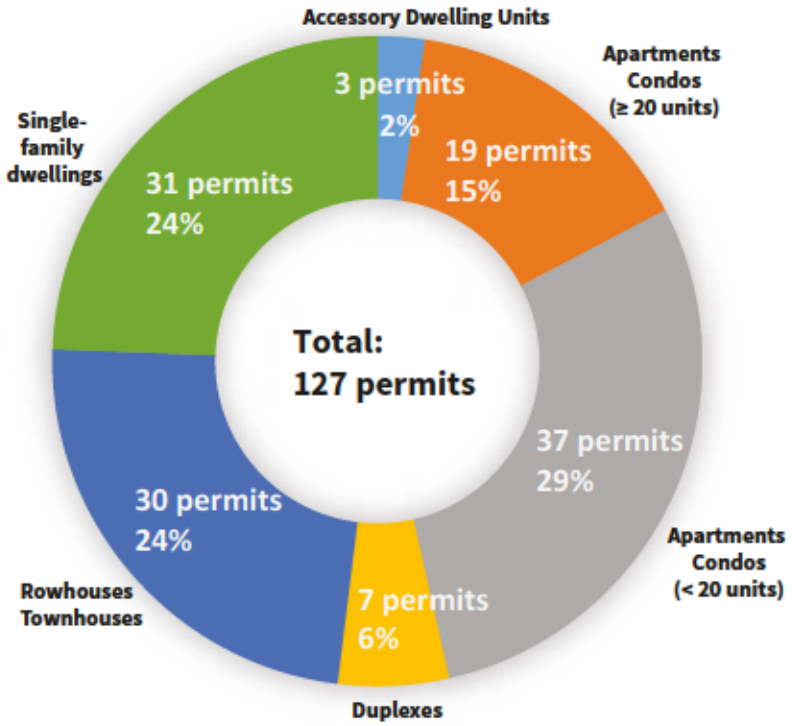
What is the data telling us?

- Over the last 10 years, apartment / condo buildings accounted for the most units (1,276).
- A relatively small number of permits (56) are producing the vast majority of new units.
- Lower density housing such as duplexes, rowhouses, and single-family homes were still built, but only account for 5% of total units.

Number of units by zone and typology [2006 - 16]



Number of permits by zone and typology [2006 - 16]



RX: Central Residential

Summary

RX is a high density multi-dwelling zone for locations in the Central City and the Gateway Regional Center. Housing is characterized by nine to ten story buildings and high building coverage. Often the types of new development will be medium and high-rise apartments and condominiums. Density is not regulated by a maximum number of units per acre. Rather, the maximum size of buildings and intensity of use are regulated by floor area ratio (FAR) limits and other site development standards. The RX zone will not be a focus of the Better Housing by Design project, as regulations for this zone are to a large extent shaped by plan district regulations that apply in the Central City and Gateway.

Community Examples

Examples of recent development in RX zones throughout the city

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **45**

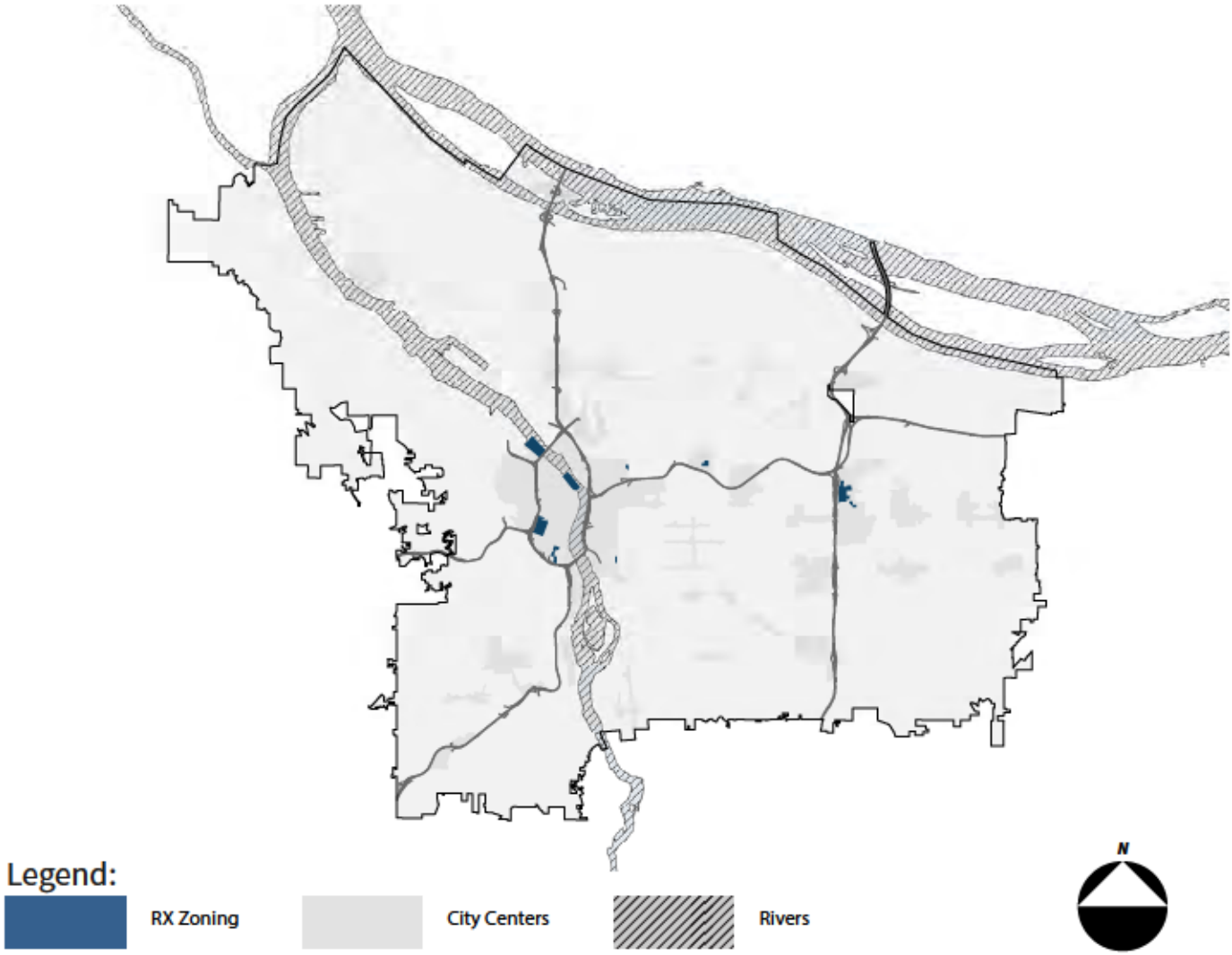
Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **104**

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **67**

Pattern Area: **Eastern**
Housing Type: **Apartments**
Number of Units: **60**

Pattern Area: **Inner**
Housing Type: **Apartments**
Number of Units: **211**

Map of RX Zone



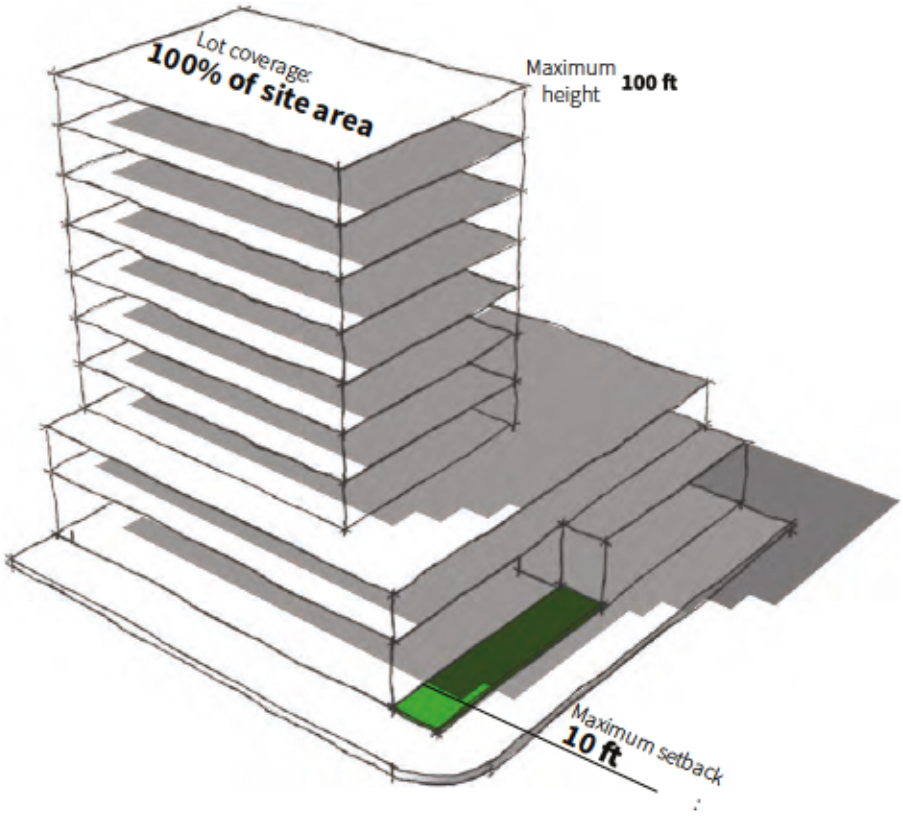
Land Area

A total of 111 acres of RX is concentrated primarily in the Central City and Gateway Regional Center. According to the City's Buildable Land Inventory, the RX zone are anticipated to grow by 2,838 units outside of the Central City over the next 20 years, primarily in Gateway.

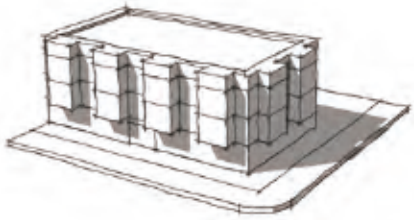
RX: Building and Site Requirements

Primary permitted uses	**Residential Limited Commercial**
Height *	**100 ft.**
Maximum density *	**4:1 FAR**
Minimum density	**1 unit per 500 ft^2**
Maximum building setback	**10 ft**
Minimum building setback	**0 ft**
Maximum lot coverage	**100% of site area**
Maximum building length	**None**
Minimum Landscaping	**None**
Required outdoor area	**None**

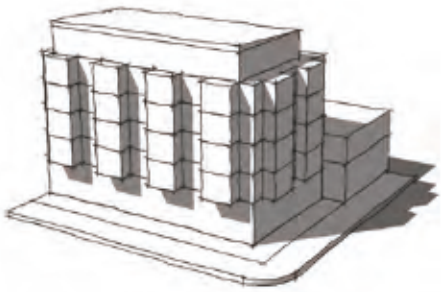
* Varies by plan district



What housing types are found in the RX Zone?



Mid-rise apartments
(fewer than 20 units)

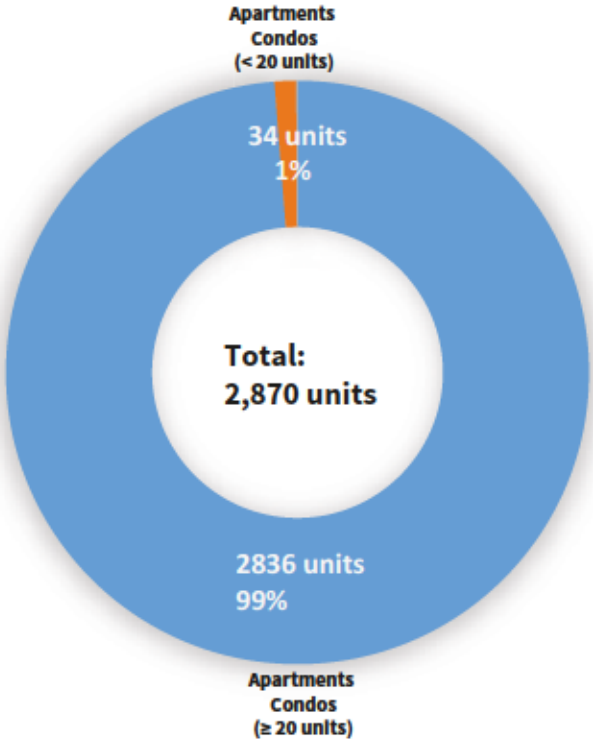


High-rise apartments
(more than 20 units)

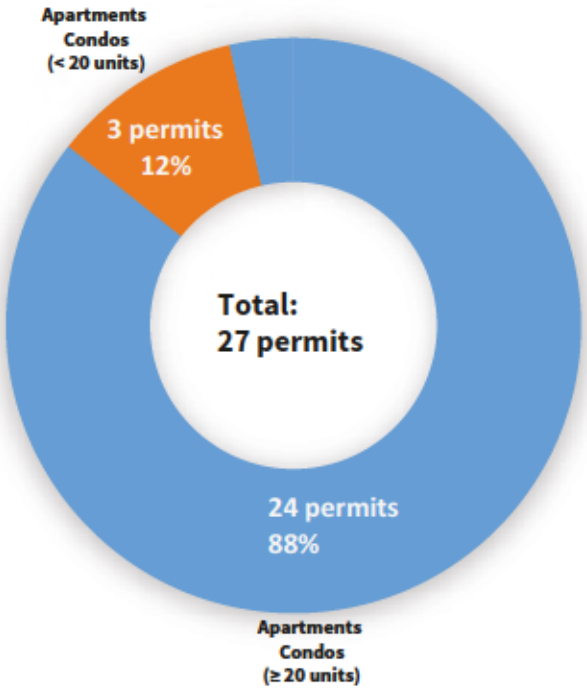
What is the data telling us?

- Over the last 10 years, large apartment / condo buildings with 20 or more units were the predominate housing type for the RX zone, primarily located in the Central City.
- A small number of large buildings (24 permits) in the RX zone have provided over a third of all units built in the multi-dwelling zones.

Number of units by zone and typology [2006 - 16]



Number of permits by zone and typology [2006 - 16]



Design and Development Issues

The first portion of this section summarizes some of the design-related standards that are part of the existing multi-dwelling Zoning Code regulations. This is followed by an assessment of design and development issues, not fully addressed by these regulations, that have been identified by BPS staff through analysis of projects built in the multi-dwelling zones over the past 10 years. Identification of these design and development issues was informed by Comprehensive Plan policy direction and community input from past projects.

Summary of Existing Design-Related Zoning Code Standards

Most of the development standards in the Multi-Dwelling Zones (Chapter 33.120, also known as the "base zone" regulations) play a role in shaping the design, form and characteristics of development. The following is a summary of a subset of design-related development standards that play key roles in shaping building form, street orientation, and residential amenities such as open space.

Building massing and location

The maximum building heights, required building setbacks, and maximum building coverage allowances in the base zones set basic parameters that guide the scale and location of buildings on a site (see Profile of the Base Zones section). More detailed regulations that shape building form include the following:

In the R1 zone and some of the RH zoning, buildings are limited to a height of 25 feet within 10 feet of front property lines, while greater height (45 feet and 65 feet) is allowed beyond this distance. This limits buildings to a lower scale close to street frontages, which can be more in keeping with the scale of existing, lower-density.

Limits on building length. In the R2 and R1 zones, buildings are limited to a maximum length of 100 feet close to street lot lines. This requires larger buildings to be divided up into smaller components that are reflective of the fine-grain development patterns of residential neighborhoods.

R1 zone project with lower height close to the street frontage and building mass divided into two smaller components.

Minimum front setbacks. In the lower density multi-dwelling zones (R3 and R2) minimum required front setbacks of 10 feet guide development to include landscaped front setbacks that continue established patterns in residential neighborhoods. The high-density zones (R1, RH, and RX) require no or minimal front setbacks, acknowledging the more intensely urban characteristics intended for these zones.

Maximum setbacks. Along transit streets and in pedestrian districts, maximum buildings setback regulations require buildings to be located close to street lot lines (usually within 20 feet) to encourage building to be oriented to streets and contribute to the pedestrian environment of sidewalks.

Landscaped front setbacks, required in the lower density multi-dwelling zones, help continue established neighborhood patterns.

Limitations on front parking and garages

The Zoning Code includes regulations in the multi-dwelling zones that place limits on the location of parking areas and front garages to promote pedestrian-oriented street frontages, with requirements such as the following:

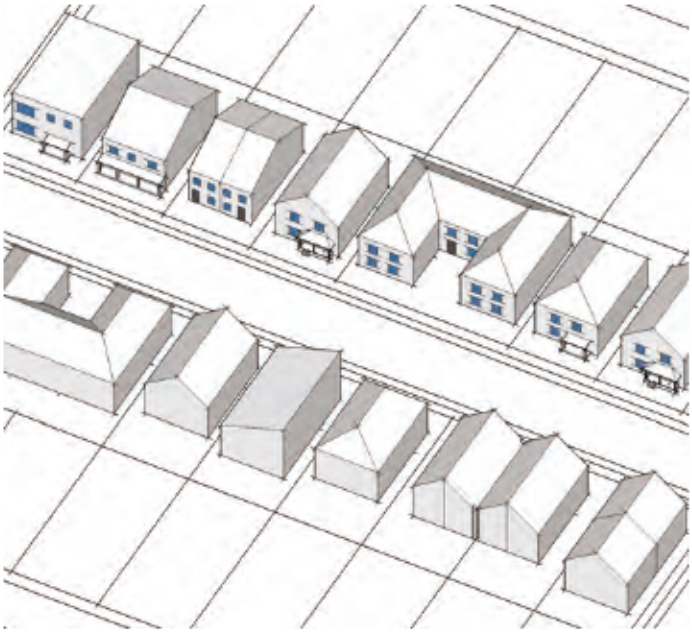
Vehicle area surfaces, including parking and driveways, are limited to 50 percent of the street frontage.

Front garages are limited to 50 percent of the length of street-facing facades for detached houses and duplexes, although an exception to this is that narrow houses are allowed to have a front garage of up to 12' wide (which can occupy more than 50 percent of the façade). Also, there are no limits to the width of front garages or ground-level structured parking for attached houses, townhouses, apartment buildings, or other multi-dwelling structures.

Street-oriented windows and front entrances

Residential buildings are required to have at least 15 percent of street-facing facades be windows or main entrance doors, in order to foster street-oriented buildings.

Houses, attached houses, and duplexes are required to have main entrances oriented to streets. However, multi-dwelling development, such as apartment buildings, townhouses, and clusters of detached houses on shared lots do not have requirements for street-oriented main entrances.



Residential outdoor spaces

48 square feet of outdoor area is required for each residential unit in the low- to medium-density zones (R3, R2, R1). This outdoor area can be in the form of private outdoor spaces (such as patios or balconies), or can be combined into shared outdoor spaces (such as courtyards or play areas), or can be a combination of private and shared outdoor spaces.

No outdoor space is required in the higher-density residential zones (RH and RX).

Landscaping and trees

Most of the multi-dwelling zones (all except for the RX zone) require some landscaping. The percentage of site area that must be landscaped ranges from 35 percent in the R3 zone to 15 percent in the RH zones (see Profile of the Base Zones section for more detailed information). Required landscaping must be at ground level. Raised landscaping, such as ecoroofs or landscaping in raised courtyards, do not count toward meeting these requirements.

Allowances for commercial uses in higher-density zones

Ground floor commercial uses are allowed by right in the RX zone, subject to size limitations. In the RH zone, commercial uses can be included as part of new development within 1,000 feet of a transit station when approved through a conditional use review. These allowances provide opportunities for needed commercial services and provide ground level activity in locations where close proximity to busy sidewalks can be problematic for ground floor residential units.

Multi-dwelling development with ground floor commercial space in the RH zone along NE Martin Luther King, Jr. Boulevard.

Pedestrian connections

The base zone regulations include requirements for pedestrian circulation systems within a development proposal. However, the Zoning Code does not include a requirement for the provision of public pedestrian connections or streets providing through connections when a development proposal does not involve a land division (the majority of proposals for multi-dwelling development do not involve a land division). For proposals for land divisions (such as rowhouses and houses on individual lots), approval criteria related to transportation impacts serve as a regulatory trigger for street connections. See the Connectivity Tools Analysis section of the Appendix for more information on issues related to street and pedestrian system connectivity.

Examples of design and development issues

The following are examples of design and development issues identified through analysis of multi-dwelling zones development built over the past 10 years, informed by Comprehensive Plan policy direction and community input from past projects. The issues identified through these representative examples reflect situations in which there are gaps between policy objectives and implementing regulatory tools (see the Policy Analysis section of the Appendix for a listing of Comprehensive Plan policy topics). Sta anticipates that these issues will be among the topics to be addressed by the Better Housing by Design project.

Site Design and Healthy Active Living

Residential outdoor spaces

Policies call for housing to include features supportive of healthy living, such as usable outdoor spaces that provide opportunities for activities such as recreation or gardening. The minimum requirement of 48 square feet per unit that applies in most multi-dwelling zones, such as shown in this example, may be insu icient for medium density development. Also, the high-density zones (such as RH) do not have any requirements for outdoor spaces (the Mixed Use Zones project added requirements for residential outdoor areas to comparable residential development in the mixed-use zones).

Urban green options

Policies call for integrating natural and green infrastructure, such as ecoroofs and trees, into the urban environment. Existing multi-dwelling zone regulations do not allow many types of urban green approaches that can be useful as part of compact development, such as ecoroofs or plantings in raised courtyards, to count toward meeting landscaping requirements.

Large paved vehicle areas

Policies call for minimizing impervious surfaces and avoiding urban heat island impacts that can result from large amounts of pavement. Zoning Code regulations limit proportions of sites that can be covered with buildings, but do not directly limit impervious surfaces. Multi-dwelling zone projects with large portions of site area devoted to paved vehicle areas are especially common on the deep sites of East Portland.

Physically-accessible housing

In the lower- and medium- density multi-dwelling zones, the most common types of development include houses, rowhouses, and townhouses, which usually feature multiple levels and stairs. This project will consider possibilities for incentives and other regulations that could increase the amount of housing that is designed to meet the needs of people with disabilities and older adults, for whom housing units with stairways can pose significant problems. See also Amenity Bonuses.

Rowhouses with tall entrance stairways in the R2 zone.

Building Design and Scale

Front garages

Street frontages dominated by front garages compromise policy objectives for pedestrian-oriented street environments, but Zoning Code regulations do not limit front garages for most types of development, including rowhouse, townhouse, and apartment projects.

Front entrances

Policies call for street-oriented development to enhance the pedestrian environment. While street-oriented entrances are required for single-dwelling development and duplexes, multi-dwelling projects (including townhouses and apartments) are not required to have street-oriented entrances.

Front setbacks and landscaping

Development in the medium- and higher-density R1 and RH zones allow for no or minimal front setbacks. This can compromise privacy for the residents of ground level units located next to sidewalks, especially along corridors with heavy traffic (along busy streets, policies encourage landscaped front setbacks and other approaches to buffer residents from street traffic). Landscaped setbacks can also help integrate higher-density development into the context of residential neighborhoods, which typically feature landscaped setbacks.

Urban form and context - differences between corridors and neighborhood side streets.

Policies call for focusing growth along corridors, while encouraging a greater degree of continuity with established characteristics and development patterns in residential areas. However, multi-dwelling zoning regulations do not differentiate between corridors and locations on neighborhood side streets.

For example, the same R1 zone regulations, such as 45-foot height, apply in both types of context. Along a neighborhood side street, the R1 zone provides the primary opportunity for triplexes and fourplexes, which have historically been of a house-like scale of 2-3 stories (see Historic Precedents section of the Appendix). While, along a transit corridor, the R1 density requirements (limited to 10 units on a 10,000 square foot site) often result in 3-story townhouse units, and do not allow for the continuation of historic types of multifamily housing common along transit corridors, such as Streetcar Era corridor apartments that were of similar 3-story scale, but often featured stacked units (frequently ranging from 20 to 30 units on a 10,000 square foot site). A potential approach to address these issues and opportunities could be to revise zoning code regulations so that they can be used to shape development to be more responsive to the differing contexts of corridors and neighborhood side streets.

Neighborhood infill-recent fourplex (R1 zone). Continues a historic middle-density housing type that provides density within a house-like form and scale.

Corridor apartments – historic examples (R1 zone). The R1 zone is often applied along transit corridors, where these historic examples are located. Although within the 45-height limit of the R1 zone, their densities exceed what is currently allowed.

Corridor townhouses (R1 zone). Current R1 density limits often result in townhouse-type development, such as these 3-story examples, which limits opportunities for accessible, single-level units.

Allowances for commercial uses near light rail stations and along corridors

Recent Zoning Map changes, which changed zoning from RX to RH outside the Central City and Gateway, reduced the flexibility for including ground-floor commercial uses as part of multi-dwelling zone development near light rail stations and along corridors (in the RH zone, commercial uses in locations near light rail stations [but not corridors] can be approved through a Conditional Use review, providing less certainty than the more liberal RX zone allowances). Past projects in East Portland have identified community interest in facilitating commercial development near light rail stations. In other multi-dwellings zones, limited ground-floor commercial uses, such as live-work spaces (allowing residents to have a business space in a portion of their unit), could also provide an opportunity to address the negative impacts to residents of housing in the multi-dwelling zones located along East Portland's multi-lane corridors. This project could reconsider allowances for limited commercial uses near light rail stations and along corridors.

Multi-dwelling development near the 148th Avenue light rail station (RH zone)

Housing along SE Division in East Portland.

Scale transitions

Policies call for transitions in scale when higher-density zoning is adjacent to smaller-scale, single-dwelling zoning. Currently, higher-density multi-dwelling zoning (allowing 4 to 6 stories) is sometimes located adjacent to single-dwelling zones, with no requirements for transitions in building scale. A potential approach is to apply requirements for buildings to step down in height adjacent to single-dwelling zones (see image), an approach that was recently adopted for the mixed use zones.

Street Connectivity

Multi-dwelling zoning is a key part of many centers, such as the St. Johns Town Center and the Jade District, providing opportunities for housing that makes it possible for more people to live close to shopping and community services. Policies call for fostering centers as places with frequent street connections that make it easy to walk and bike to local destinations. However, in some centers that currently lack good street connectivity, especially in East Portland, new multi-dwelling development has often not been contributing to the creation of a well-connected street and pedestrian system. New implementation approaches are needed to ensure that, as development continues to occur in and around centers, they contribute to creating centers with good street and pedestrian connectivity that makes it easier to reach local destination and transit (see the Block Patterns and Connectivity section of the Appendix for more detail on this topic).

The Better Housing by Design project is being coordinated with the Bureau of Transportation's Connected Centers Street Plan project, which is creating street plans for the Jade District and Rosewood/Glenfair centers in East Portland. An objective of this coordinated approach is to create new implementation approaches for achieving greater street and pedestrian connectivity that can be used citywide, not only in East Portland, but in other areas such as Southwest Portland that also lack good street connectivity.

Dead end accessways

This detail of the circulation system in the Jade District shows accessways (dark dashed lines, a mix of driveways and private streets) that fail to provide additional connectivity in an area where some blocks are over 1,000 feet in length.

Driveway design

Many detached house and townhouse projects in the medium-density zones in East Portland are served by dead-end driveways, such as this, that do not contribute to connectivity. This example is directly adjacent to commercial services, but residents must make a quarter-mile detour to access the adjacent retail. Such driveways look similar to streets, but are not required to have features such as street trees that are expected components for both public and private streets.

East Portland Issues

The Better Housing by Design Project will include a major focus on multi-dwelling design and development issues in East Portland for reasons such as the following:

- East Portland has large amounts of multi-dwelling zoning, especially in and around its light rail station areas; centers such as the Jade District, Division-Midway, and Rosewood-Glenfair; and along its major street corridors, such as 122nd Avenue, Division, Powell, and Stark.

- Portland's Zoning Code standards have evolved over the past decades to a large extent in response to the development patterns of the inner neighborhoods (such as patterns of 5,000 square foot residential lots on relatively small blocks). They are less calibrated toward the very different development patterns of East Portland, much of which did not become part of the City of Portland until the 1980s.

- Many areas in East Portland with multi-dwelling zoning have large blocks with deep lots (the latter often ranging from 180 feet to over 300 feet deep), creating challenges to the design of development, fire access, and street connectivity. In the Rosewood-Glenfair center and light rail station area (primarily RH zoning), for example, blocks are typically over 600 foot wide by over 1,000 feet long. These areas also typically lack continuous sidewalks.

- East Portland's centers include larger proportions of families with children, lower-income households, and multi-family units than Portland as a whole (see the Demographics and Housing Market Conditions section of the Appendix). This means that the design of multi-dwelling development, such as the availability of outdoor spaces and pedestrian connections, has disproportionate impacts on these populations, which also include higher proportions of communities of color than the rest of Portland.

Apartment building and Douglas Firs near the Division Midway town center.

- East Portland has distinct characteristics, such as groves of Douglas Firs, that are valued; while its large blocks could provide opportunities for open spaces that are difficult to achieve on the small blocks of Portland's inner neighborhoods. However, it is less clear as to how the design of multi-dwelling dwelling development can be guided to enhance the area's positive characteristics and better meet the needs of residents. Also, a large amount of the area's multi-dwelling zoning is located along street corridors with heavy vehicle traffic, creating challenges to providing quality living environments for residents.

East Portland Examples

As indicated above, many of the design and development issues identified in this section are of particular relevance to East Portland, especially those issues related to street connections and design along busy corridors. Below are some additional examples of East Portland design and development issues.

Development on deep lots

This development in the Jade District is representative of a common medium-density configuration in East Portland. Built in the R2 zone on a residential lot over 200 feet deep, it features a pre-existing house preserved at the front of the lot and closely spaced, newer detached houses filling in toward the rear of the lot, served by a driveway (typically 20-feet wide, required in part for fire access) and parking that occupies much of the rest of the site. Relatively little site area is left for usable outdoor space or for trees. Narrow sites, such as this, often have insufficient site area to provide space for a street connection, meaning that additional street connections are not provided in conjunction with new development on these small sites.

Side-by-side driveways

When each lot develops independently, each with its own driveway, an outcome that results in multiple separate driveways, typically separated by a narrow strip of required landscaping, as in this example. The combined driveway width of 40 feet is wider than would typically be required for a street roadway, with the end result of multiple similar developments over time creating large areas of paved surfaces. A potential solution, supported by Comprehensive Plan polices for East Portland, is to require small properties to be combined into larger sites before development can occur, providing opportunities for street connections and improved site design. An alternative approach for small sites could be to require accessways to be shared by adjacent properties to minimize the creation of driveways and paved areas.

Detached house development along SE 122nd Avenue (R1 zone)

This development consists of detached houses on a shared lot oriented to a private driveway system. This example highlights a number of issues related to development in East Portland:

Unbuilt space is primarily devoted to driveways and small setbacks between houses, leaving little usable outdoor space (green rectangle is a fenced-off stormwater facility).

Fronts of houses and their entrances all face away from 122nd Avenue, not contributing to fostering a transit- and pedestrian-oriented street environment. The multi-lane street configuration is common on East Portland's major corridors, raising questions regarding how multi-dwelling zone housing along such streets can be designed to provide a quality living environment for residents.

Because the development did not involve a land division and its circulation system is a private driveway rather than a street, it was not subject to requirements for street trees, which could otherwise have contributed to a greener "street" environment. A potential approach is to regulate lengthy driveways to provide design elements, such as street trees, similar to what would be required for streets.

Amenity Bonuses

The Multi-Dwelling chapter of the Zoning Code (Title 33, 33.120) provides a range of amenity bonus that allow for increased density for projects that include specified features that improve the livability of multi-dwelling development. These bonuses include a variety of options, which can be packaged together or used individually. The types of bonuses range from unit size, to health and sustainability benefits, to recreational areas. The bonuses are available to projects of various sizes, but are generally more feasible for larger projects because of the small percentage of bonus density provided for each type of amenity (see list below).

As part of the update to the Multi-Dwelling Zoning Code, the Amenity Bonuses section of the code will be examined closely to ensure their effectiveness and to assess whether they meet current priorities. As part of the Inclusionary Housing Zoning Code Project, the development bonuses for the multi-dwelling zones were revised to provide incentivizes for development that includes affordable housing units, including but not limited to development that will be subject to Portland's mandatory Inclusionary Housing Program.

The recently adopted Inclusionary Housing regulations require new development with more than 20 dwelling units in one building to provide either 20 percent of the dwelling units to be affordable at 80 percent of median family income (MFI) or 10 percent of the dwelling units to be affordable at 60 percent MFI (or pay a fee-in-lieu). Besides affordable housing, another priority from the updated Comprehensive Plan that is not addressed by the current amenity bonuses or any other incentive is physically-accessible housing. Policies call for the provision of accessible housing to meet the needs of older adults and people with disabilities, especially in centers and other locations close to services and transit. The amount of the bonus currently provided for each option is a result of balancing several factors. These include the likelihood that the amenity will be provided without the use of incentives; the potential cost to the developer; and the importance of the amenity. Existing amenity bonus options are summarized below (the percentage of additional density provided for each option is indicated in parentheses):

- **Outdoor recreation facilities (maximum of 10 percent).** Outdoor recreational facilities may include a tennis or basketball court, ball field, swimming pool, horseshoe pit, gazebo, permanent picnic tables, and similar items.
- **Children's play areas (5 percent).** The bonus must meet certain size requirements, containing specific play equipment, along with fencing.
- **Three bedroom units (5 – 10 percent, depending on number of three bedroom units).** Bonuses are allowed if 10 to 20 percent of units in a building contain three bedrooms.
- **Storage areas (5 percent).** The bonus is allowed if all units are provided with interior storage and additional storage for large items.
- **Sound insulation (10 percent).** To qualify for this bonus, the interior noise levels of residential structures must be reduced in three ways. The reductions address noise from adjacent dwellings and from outdoors, especially from busy streets.
- **Crime prevention (10 percent).** The bonus is allowed if all units have security features which comply with Portland Police Bureau Residential Security Recommendations.
- **Solar water heating (5 percent).** The bonus is allowed if solar-heated water is provided to all units. Systems may be active or passive.
- **Larger required outdoor areas (5 percent).** To qualify for this amenity, at least 96 square feet of outdoor area is required for each dwelling unit.
- **Tree preservation (5 percent per each additional preserved tree).** Development proposals that preserve more than the required number or percentage of the trees on the site may use this amenity bonus option.

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Better Housing by Design:

Appendix

- Policy Analysis
- Zoning History
- Summary of Related Projects
- Block Patterns and Street Connectivity
- Focus Area Demographics and Housing Market Conditions
- Study Areas
- Historic Examples of Multi-Dwelling Development
- Recent Multi-Dwelling Case Studies
- Best Practices Research

Policy Analysis: Comprehensive Plan Policies

This section focuses on the goals and policies of Portland's new Comprehensive Plan and assesses the performance of current zoning tools in terms of achieving the goals and policies. The purpose of this analysis is to document areas in which the current regulatory tools perform well and areas in which they need change to better meet new policy objectives. Overall, major policy directions for development and design in multi-dwelling zones are to:

- Accommodate housing growth, especially in and around centers, corridors, and transit station areas;
- Contribute to providing a diversity of housing types, including an adequate supply of affordable housing and physically-accessible housing;
- Provide healthy and safe environments for residents, with design that supports active living;
- Design buildings to enhance the pedestrian environment on streets;
- Contribute to providing a network of safe and accessible street and pedestrian connections, especially around centers and transit stations;
- Use design that responds to and enhances the positive qualities of context, including the distinct characteristics of Portland's five neighborhood pattern areas;
- Integrate nature and green infrastructure into the urban environment, avoid environmental impacts, and reduce impervious surfaces and urban heat island effects; and
- Use resource-efficient design and development approaches.

Policy-Zoning Summary Assessment

The following is a listing that provides a summary assessment of existing Zoning Code implementation of new Comprehensive Plan policy direction. This listing focuses on policies related to Zoning Code multi-dwelling development standards and street connectivity. As a summary listing, the policy directions paraphrase policy language and often combine multiple policies that provide similar direction (refer to the 2035 Comprehensive Plan for actual policy language).

The existing regulations for multi-dwelling zones (R3, R2, R1, RH, RX) do not generally present barriers to development and design that can contribute to meeting policy objectives and often help implement them. However, in some case, regulations may allow for outcomes that can contribute to meeting these policy objectives, but do not always require or incentivize these outcomes . Some examples include:

- Regulations do not always ensure that new street or pedestrian connections will be created in conjunction with new development.
- The same regulations mostly apply citywide, which does not ensure that development is responsive to context or to the distinct characteristics of the neighborhood pattern areas.
- Regulations do not include regulations specific to major corridors and do not ensure that residential development along busy corridors is designed to mitigate impacts to residents.
- Requirements for features supportive of healthy active living, such as spaces for outdoor recreation or for growing food, are limited and do not apply in higher-density zones.
- There are some gaps in requirements for pedestrian-oriented design, such as allowances for garages to be the primary ground-floor, street-facing elements of narrow-lot attached or detached houses.
- There are few incentives or requirements that implement policy objectives for accessible units (the building code requires adaptable units in some situations, but not for multi-floor units).

• Regulations do not allow for many urban green infrastructure approaches, such as ecoroofs or plantings in raised courtyards, to count toward landscaping requirements; and do not ensure that sufficient space is provided for mature tree canopy.

• Regulations do not do much to discourage large areas of impervious paving or to ensure that design minimizes urban heat island effects.

Policy Directions and Assessment of Zoning Code Implementation

Policy Direction	Policy Numbers	Zoning Code Implementation
Urban Form Policies (Chapter 3)		
Focus housing growth in and around centers, corridors, and transit station areas.	Goal 3.C, policies 3.2, 3.13	**Implements.** The majority of multi-dwelling zoning is located in and around these areas.
Provide a diversity of housing types and options in and around centers and corridors.	Goal 3.D, policies 3.33 and 3.37	**Implements.** The combination of multi-dwelling, mixed-use, and single-dwelling zoning in and around centers and corridors provides opportunities for a diverse range of housing.
Foster a built environment that provides a safe, healthy, and attractive environment for people of all ages and abilities.	Policy 3.4	**Some requirements.** Supported by building code and sidewalk accessibility standards, but some gaps in residential requirements for accessibility.
Create connected centers and transit station areas with safe and accessible pedestrian connections and bicycle routes, and prepare and adopt future street plans for centers that currently have poor street connectivity.	Policies 3.20 and 3.55	**Partially implements.** Street connectivity standards exist, but existing implementation tools are limited and street plans do not exist for most centers.
In the Inner Ring Districts, provide for a diversity of housing opportunities in residential areas, encouraging approaches that preserve or are compatible with existing historic properties and development patterns.	Policy 3.43	**Partially implements.** Multi-dwelling zoning contributes to housing diversity in Inner Ring Districts, but regulations do not ensure compatibility with existing characteristics.
Enhance Civic Corridors as distinctive places with transit-supportive densities of housing and that provide quality living environments for residents. Development is intended to be up to mid-rise in scale (typically up to 5 to 7 stories).	Policies 3.49 and 3.50	**Partially implements.** Multi-dwelling zoning along Civic Corridors helps implement, and mid-rise RH zoning applies along some corridors. Regulations do not include design approaches that mitigate negative impacts of corridor traffic on residents.
Enhance Neighborhood Corridors as places with quality multi-family housing.	Policy 3.53	**Partially implements.** Multi-dwelling zoning along Neighborhood Corridors help implement, but regulations do

Policy Direction	Policy Numbers	Zoning Code Implementation
		not ensure quality environments for residents along often busy corridors.
Transit Station Areas. Encourage transit-supportive concentrations of housing adjacent to high-capacity transit stations, especially in locations within centers and transit neighborhood station areas.	Policies 3.54, 3.57, 3.59	**Implements.** Multi-dwelling zoning provides opportunities for transit-supportive densities near many transit stations.
Integrate transit stations into surrounding communities and enhance pedestrian and bicycle facilities to provide safe and accessible connections to key destinations beyond the station area.	Policy 3.55	**Partially implements.** Regulations do not always result in street connections where greater street connectivity is needed.
Pattern Areas. General - encourage development and design approaches that respond to the distinctive, positive characteristics of Portland's pattern areas, including the Inner, Eastern, and Western neighborhoods. Within the Inner Neighborhoods this means continuity with Streetcar-Era development patterns, while the Eastern and Western neighborhoods have a greater emphasis on trees, landscaping, and response to natural features.	Policies 3.70 - 3.103	**Allows.** However, the same development standards apply across the city, with few requirements for area-specific variation.
Inner Neighborhood Residential Areas. Continue the patterns of small, connected blocks, regular lot patterns, and streets lined by planting strips and street trees in Inner Neighborhood residential areas.	Policy 3.92	**Allows.** However, development is not required to continue prevalent lot or development patterns, and narrow lot development with front driveways can limit opportunities for planting streets and street trees.
Eastern Neighborhoods Pattern Area. Guide the evolving street and block system in the Eastern Neighborhoods in ways that build on positive aspects of the area's large blocks, such as opportunities to continue mid-block open space patterns and create new connections through blocks that make it easier to access community destinations.	Policy 3.93	**Allows.** However, no regulations are specific to the area's block structure and do not require mid-block open spaces and usually do not result in new connections.
Require that land be aggregated into larger sites before land divisions and other redevelopment occurs. Require site plans which advance design and street connectivity goals.	Policy 3.94	**No requirements.** Regulations to do not require that small sites be combined before development can occur.
Encourage development and right-of-way design that preserves and incorporates Douglas fir trees and groves, and that protects the area's streams, forests, wetlands, steep slopes, and buttes.	Policy 3.95	**Partially implements.** Zoning code environmental regulations protect streams and steep slopes, but are lest oriented to protecting groves of trees in East Portland's flat lands.
Encourage landscaped building setbacks along residential corridors on major streets in Eastern Neighborhoods.	Policy 3.97	**Allows**, but not required.
Enhance access to centers, employment areas, and other community destinations in Eastern Neighborhoods by ensuring that	Policy 3.98	**Partially implements.** PBOT has jurisdiction over corridor improvements, but regulations do not

Policy Direction	Policy Numbers	Zoning Code Implementation
corridors have save and accessible pedestrian and bicycle facilities and creating additional secondary connections that provide low-stress pedestrian and bicycle access.		always ensure that new secondary connections will be created.
Western Neighborhoods Pattern Area. Increase opportunities for more people to live within walking distance of the area's small commercial districts, create additional pedestrian and trail connections, and encourage development and infrastructure to be designed to minimize impacts on the area's streams, ravines, and forested slopes.	Policies 3.99, 3.100, 3.101, 3.103.	**Partially implements.** Multi-dwelling zoning provides housing opportunities in and around centers, environmental regulations limit development impacts on streams and slopes, but regulations do not always ensure that additional public pedestrian connections will be created.
Design and Development Policies (Chapter 4)		
Context-Sensitive Design and Development. Encourage new development to be designed to respond to and enhance the distinct physical, historic, and cultural qualities of its location, while accommodating growth and change.	Goal 4.A; policies 4.1 - 4.3	**Allows.** However, the same development standards apply across the city, with few requirements for area-specific variation and no incentives for historic preservation.
Historic and Cultural Resources. Encourage the preservation of historic and cultural resources, including those in centers and corridors, and encourage development that fills in vacant and underutilized gaps within the established urban fabric.	Goal 4.B; policies 4.28, 4.46, 4.48	**Some requirements.** Regulations protect designated historic resources and allowances for transfer of development rights provide an incentive for preservation. However, regulations do not clearly guide development to underutilized sites, versus redevelopment of older buildings that are not designated historic resources.
Human and Environmental Health and Active Living. Encourage development designed to enhance human and environment health, encourage building and site design that promotes a healthy level of physical activity, and provide opportunities for growing food.	Goal 4.C, policies 4.10 and 4.87	**Some requirements.** Human health is supported by building code requirements, and the Zoning Code requires on-site pedestrian connections, but not all multi-dwelling zones require outdoor spaces for residents.
Integrate natural and green infrastructure, such as trees, green spaces, ecoroofs, gardens, green walls, and vegetated stormwater facilities, into the urban environment.	Policy 4.4	**Some requirements.** Multi-dwelling zones require some landscaping; BES regulations require on-site stormwater management. No incentives for ecoroofs or for providing additional greenspace beyond minimum requirements.
Manage building massing to provide for public access to light and air, and encourage building design that considers privacy and solar access for residents and neighbors.	Policies 4.11 and 4.12	**Some requirements.** Zoning regulations manage building mass and setbacks, but do not directly address privacy or solar access.
Encourage building and site design that helps prevent crime and improves fire prevention and life safety.	Policies 4.13 and 4.14	**Some requirements.** Some zoning regulations encourage design supportive of "eyes on the street,"

Policy Direction	Policy Numbers	Zoning Code Implementation
		but fire and life safety mostly addressed by building code.
Pedestrian-Oriented Design. Encourage pedestrian-oriented design that is accessible to people of all abilities.	Policy 4.5	**Some requirements.** Supported by building code and sidewalk accessibility standards, but some gaps in pedestrian-oriented standards and residential requirements for accessibility.
Encourage development designed with windows and entrances oriented to the street, and with building that frame, shape, and activate the public space of streets and parks.	Policy 4.6 and 4.7	**Some requirements.** Multi-dwelling zones require entrances and windows oriented to the street in most situations, but regulations allow front-facing garages to dominate the ground levels of narrow lot houses and rowhouses.
Encourage the continued use of alleys for parking access, while preserving pedestrian access.	Policy 4.8	**Allows**, but alley access for parking is not required in most areas that have existing alleys.
Residential areas. In areas outside of centers, encourage a diversity of housing options that accommodate a wide range of households, while encouraging design that complements the general scale and character of neighborhoods.	Policies 4.15 and 4.16	**Partially implements**. Medium-density multi-dwelling zones provide some of the housing diversity in residential area, but citywide regulations are not always responsive to differing neighborhood characteristics.
Encourage compact single-family homes and resource-efficient, healthy building design.	Policies 4.18 and 4.19	**Partially implements**. Medium-density multi-dwelling zones provide opportunities for compact houses and multi-dwelling housing is relatively resource-efficient, although there are no incentives for building small houses or highly resource-efficient buildings.
Centers and Corridors. Encourage centers and corridors as places with higher-density housing close to services, with amenities that create a pedestrian-oriented environment.	Policies 4.20 and 4.21	**Implements**. Multi-dwelling zoning allows for higher-density housing in and around centers and include requirements for pedestrian-oriented design.
Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors.	Policy 4.23	**Some requirements.** Zoning code standards address pedestrian access and bicycle parking, but do not always result in new street connections in centers that lack street connectivity.
On busy streets, encourage design approaches that buffer residents from street traffic, such as through the use of landscaped front setbacks, street trees and other design approaches.	Policy 4.25	**Allows**, but regulations do not require design approaches that are responsive to locations on busy street corridors.
Transitions. Create transitions in development scale between higher-density areas and adjacent single-dwelling zoning.	Policy 4.30	**Some requirements.** Zoning providing scale transitions apply in some, but not all, areas.

Policy Direction	Policy Numbers	Zoning Code Implementation
Resource-Efficient Design. Encourage rehabilitation and adaptive reuse of buildings, especially those of historic or cultural significance, promote seismic and energy retrofits, and encourage compact housing.	Policies 4.60 - 4.62	**Allows**, but no requirements or incentives. Multi-dwelling zones support the creation of attached homes and multi-family housing that are inherently resource efficient.
Encourage development approaches and building materials and technologies that result in the least environmental impact, are resource efficient, and that produce energy on site.	Policies 4.63 - 4.72	**Allows**, but few requirements or incentives, other than building code requirements.
Designing with Nature. Encourage design and site development practices that avoid impacts on watershed and ecosystem health, and encourage low-impact and habitat-friendly development.	Policies 4.73, 4.74, 4.75, 4.77	**Some requirements,** particularly in areas with environmental overlay zoning.
Limit use of and strive to reduce impervious surfaces.	Policy 4.76	**Few requirements**. Multi-dwelling zones limit building coverage but not other types of impervious surfaces, such as vehicle areas, which can occupy large portions of site area.
Hazard-Resilient Design. Limit development in or near area prone to natural hazards and encourage development approaches that enhance the ability to respond to natural disasters.	Policies 4.79 and 4.81	**Requires**. Implemented through environmental overlays, and location of most multi-dwelling zoning avoids sensitive environmental areas.
Encourage development designed to reduce urban heat island effects.	Policy 4.83	**Few requirements** or incentives, other than some landscaping/tree requirements.
Housing Policies (Chapter 5)		
Diverse Housing Supply. Encourage a diversity of housing types that can support a broad range of households and contribute to income diversity, including in and around centers.	Goal 5.A., policies 5.4, 5.5, 5.7, 5.31, 5.32	**Implements**. The combination of multi-dwelling, mixed-use, and single-dwelling zoning in and around centers provides opportunities for a diverse range of housing.
Enable and encourage development of middle housing, such as multi-unit or clustered residential building that provide relatively smaller, less expensive units, and a scale transition between the core of centers and surrounding single-family areas.	Policy 5.6	**Partially implements**. Medium-density, multi-dwelling zoning provides middle housing opportunities around many centers, although this zoning is less extensive than single-dwelling zoning.
Support a diverse supply of affordable and physically-accessible housing that can meet the needs of older adults and people with disabilities, especially in and around centers and other locations close to services and transit.	Policies 5.8, 5.9, 5.19	**Allows**, but few requirements or incentives, other than building code accessibility requirements that apply to some multifamily development.
Housing Location. Locate higher-density and affordable housing in and around centers and other locations with good access to services, employment and amenities.	Goal 5.C, policies 5.22 and 5.23, 5.31, 5.32, 5.38	**Partially implements**. Multi-dwelling zoning provides opportunities for higher-density housing, but there are no incentives for affordable housing

Policy Direction	Policy Numbers	Zoning Code Implementation
		(until Inclusionary Housing requirements are adopted).
Housing Affordability. Provide an adequate supply of affordable housing units to meet the needs of residents vulnerable to increasing housing costs, utilizing a variety of regulatory and programmatic approaches, including inclusionary zoning.	Goal 5.D, multiple policies	**Allows**. Multi-dwelling zoning provides opportunities for affordable housing, but there are no requirements or incentives (until Inclusionary Housing requirements are adopted).
Evaluate how existing and new regulations affect private development of affordable housing, and minimize negative impacts.	Policy 5.36	Will be a consideration in the Improving Multi-Dwelling Development Project.
Encourage preservation of mobile home parks as a low/moderate-income housing option.	Policy 5.37	**Allows**, but no requirements for preservation of mobile home parks.
Encourage a variety of home ownership opportunities, including compact single-family options and a range of ownership arrangements.	Policies 5.39 and 5.43	**Allows**. Multi-dwelling zoning allows a variety of ownership opportunities, including land divisions that support "fee-simple" individual lots, and multiple other ownership arrangements.
Health and Safety. Encourage housing designed to: protect residents' health and safety, support active living, provide energy efficiency, incorporate green building strategies, provide indoor air quality, and that supports active living by providing usable open areas, recreation areas, community gardens, pedestrian and bicycle amenities, etc.	Goal 5.C, policies 5.47 - 5.54	**Some requirements**, notably building code and pedestrian/bicycle requirements, but some multi-dwelling zones have no requirements for open spaces for residents.
Transportation Policies (Chapter 9)		
Modal Policies - pedestrian transportation and networks. Encourage walking as the most attractive mode of transportation for most short trips, within neighborhoods and to centers, corridors, and major destinations, and as a means for accessing transit; creating more complete networks of pedestrian facilities, and improving the quality of the pedestrian environment.	Policies 9.17 and 9.18	**Partially implements**. Some centers, notably in Eastern and Western neighborhoods, lack frequent street or pedestrian connections, compromising the ability to walk to local destinations. Regulatory tools have had limited success in creating new connections.
System Management - Connectivity. Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district-specific street plans found in the Transportation System Plan.	Policy 9.47	**Partially implements**. See comments above.
Parking management. Reduce parking demand and manage supply to improve pedestrian, bicycle and transit mode share, neighborhood livability, safety, business	Policy 9.55	**Allows**, but no requirements for parking demand management related to development in the multi-dwelling zones.

Policy Direction	Policy Numbers	Zoning Code Implementation
vitality, vehicle miles traveled (VMT) reduction, and air quality.		
Off-street parking. Limit the development of new parking spaces to achieve land use, transportation, and environmental goals, especially in locations with frequent transit service. Regulate off-street parking to achieve mode share objectives, promote compact and walkable urban form, encourage lower rates of car ownership, and promote the vitality of commercial and employment areas. Use transportation demand management and pricing of parking in areas with high parking demand. Strive to provide adequate but not excessive off-street parking where needed.	Policy 9.59	**Partially implements.** Zoning code regulations include maximum parking ratios for the multi-dwelling zones, and have no or low minimum parking requirements in areas close to transit, although multi-dwelling zones do not have requirements for transportation demand management.

Zoning History

This section provides a brief history of zoning in Portland, focusing primarily on the zones that have evolved into today's Multi-Dwelling Residential zones. The City's first zoning code was implemented in 1924. Prior to 1924, the building code contained regulations that limited where certain uses, including apartment houses, could locate without first securing the approval of City Council. The City's building code contained height limitations beginning in 1911. Frame buildings were limited to two stories or 42 feet in height; ordinary construction was limited to four stories or 60 feet in height; semi fire-proof buildings were limited to six stories or 85 feet in height; and absolutely fire-proof buildings were limited to 12 stories or 160 feet in height. After the 1924 Zoning Code, major updates of the Zoning Code were implement in 1959 and 1991. Below is a brief overview of the evolution of the City's multi-dwelling zones since 1924.

Zoning and the Comprehensive Plan

Zoning can be characterized as a set of land use regulations that establish parameters for the current use and development of property, including all new construction, most alterations, commercial occupancy changes, property line changes and most site development activity including some tree cutting and landscaping.

In Portland, zoning is a regulatory tool used to help implement land development components of the Comprehensive Plan, which articulates the long range aspiration and direction for development of the city. The Comprehensive Plan includes a long-range map indicating what will be allowed up to 20 years from now, while the zoning map indicates what is allowed now. The Comprehensive Plan map may be more generalized than the zoning map. There may also be places in the city where the Comprehensive Plan map designates land uses and intensities different from what is allowed currently by the zoning map. These places may be subject to zoning changes either through future legislating planning/zoning processes, or by future quasi-judicial land use reviews initiated by the property owners/interests.

1924 Zoning Code

Portland's first zoning code was adopted by the Portland City Council on September 3, 1924, and was passed by the voters of Portland on November 4, 1924.
The 1924 zoning code contained four zones:

- Zone I – Single-Family
- Zone II – Multi-Family
- Zone III – Business-Manufacturing
- Zone IV – Unrestricted

Zone II – Multi-Family served as a general residential zones and was mapped very broadly in Portland. Most residential areas of the city, except for those of the "highest quality," and all vacant sections of the city were placed in Zone II. The large amount of multi-family zoning reflected expectations for Portland's rapid growth (the 1912 Bennett Plan was based on the assumption that Portland would have a population of two million people by 1940). A 1934 land use survey indicated that 15,440 acres were zoned for multi-family housing, compared to 6,195 acres zoned for single-family housing. This early extensive mapping of multi-family zoning, as well as the period before zoning was adopted in 1924, explains the diverse array of apartment buildings (such as duplexes, fourplexes and courtyard apartments) sometimes found in older neighborhoods that currently have single-dwelling zoning (see the Historic Examples sections of the Appendix).

The regulations for Zone II had few restrictions on the types or characteristics of residential development allowed. The zoning regulations did not control for density, included no requirements for front or rear yards, and did not differentiate between areas for tall or low-rise apartments. However, the zoning code was supplemented by Portland's housing code (first adopted in 1919), which placed limits on lot coverage (75 to 85 percent maximum coverage, reduced in 1933 for Zone II to 45 to 55 percent coverage for buildings two-stories or taller) and set requirements for side yards based on the depth of adjacent rooms. The 1924 Zoning Code also provide a Local Option, which allowed some uses normally prohibited in Zone II (such as hotels, commercial uses, and filling stations) when the applicant obtained approval from 75 percent of owners of property within 200 feet.

In the 1930s and 1940s, several large areas were taken out of the Zone II and put into the single-family zone (Zone I), including areas around Mt. Tabor and in North Portland. One reason for the rezoning was to ensure that homeowners and buyers could obtain Federal Housing Administration (FHA)-insured loans without penalty, as it was the practice of the FHA to reduce the size of mortgages provided for houses located in apartment zones (such approaches were also linked to racially-discriminatory policies). By 1951, while the amount of land in Zone II had been reduced, 50 percent of Portland's residential land remained in Zone II (currently about 14 percent of Portland's residential zoning is in the multi-dwelling zones). The area within Zone II included most of the eastside residential areas extending out to 39th Avenue, from SE Holgate north to Killingsworth (exceptions included Alameda and most of Irvington).

In 1945 a subcommittee of the Planning Commission proposed substantial changes to the Zoning Code. The proposed code included seven zones rather than four:

- Three residential zones,
- Two commercial zones, and
- Two industrial zones

The proposed code also included standards for lot size, setbacks, lot coverage, and height. This draft code was not adopted. Rather, the Planning Commission requested that City Council employ a professional planner to prepare a new code. City Council indeed hired a professional planner, and the subsequent process to develop a new code took 13 years, with the bulk of the time being focused on the proposed zoning map rather than the text of the zoning code. The new code was finally adopted in May, 1959, and became effective July 1, 1959.

1959 Zoning Code

The 1959 Zoning Code implemented a new numbering system and structure. Many of the zoning symbols, and to some degree the regulations, were revised to provide consistency between the City and County zoning codes, and to solve problems created by the 1924 code. The 1959 Zoning Code contained 14 zones:

- Three one-family zones,
- Three apartment zones,
- Four commercial zones, and
- Four manufacturing zones.

The multi-family zones, now termed Apartment Residential zones, consisted of the following:

- A2.5: duplexes and garden apartments
- A1: low-rise apartments
- A0: tall apartments in the central part of Portland

1959 Zoning Code - Apartment Residential Zones			
	A2.5	A1	A0
Housing Types	Single-family dwellings, duplexes, apartment buildings	Single-family dwellings, duplexes, apartment buildings, boarding and rooming houses, hotels/motels (when abutting a highway)	Single-family dwellings, duplexes, apartment buildings, boarding and rooming houses, hotels/motels
Maximum Density	1 unit per 2,500 square feet of site area	1 unit per 1,000 square feet of site area	Limited by floor-to-area ratios, which varied from 3:1 up to 6:1, depending on site size
Maximum Height	2 ½ stories or 35 feet	3 stories or 45 feet	No height limit
Maximum Lot Coverage	45%	45%	No limit for multi-family buildings.
Setbacks	15-foot front, side/rear 5-7 feet depending on building height	15-foot front, side/rear 6-9 feet depending on building height	10-foot front, side/rear setbacks from 6 feet and upwards, depending on number of stories
Parking	1 space per unit	1 space per unit	Varied: for apartment buildings of 5 or more units, ranged from 1 space per 5 units for small units to 2 spaces per 3 units for large multi-bedroom units); 1 space per unit for most other housing types.

A significant change undertaken in conjunction with the adoption of the 1959 Zoning Code was that the area zoned for multi-family development was greatly reduced to correspond to the predominance of single-family housing that had been built within most of Zone II. In the years between 1924 and 1959, roughly 7 ½ square miles had been taken out of Zone II and moved primarily into the single-family zone. With enactment of the 1959 Zoning Code, another 6 ¾ square miles were changed from Zone II and rezoned to R5, R7, or R10 single-family zoning. Areas that were changed from Zone II to the new single-family zones included most of the North Portland peninsula and large parts of southeast and northeast Portland.

1981 Zoning Code Rewrite

The 1981 Zoning Code followed from the adoption of Portland's first Comprehensive Plan, adopted in October 16, 1980. The 1981 Zoning Code expanded the multi-family zones to four zones, with labels similar to corresponding current zoning:

- R2 Multi-Family Residential Zone
- R1 Multi-Family Residential Zone
- RH High Density Multi-Family Residential Zone
- RX Downtown Multi-Family Residential Zone

(the new zoning code also introduced the R2.5 zone, similar in density to the former A2.5 zone, but classified as a one-family residential zone and limited to houses and attached houses, with duplexes or apartments not allowed)

1981 Zoning Code - Multi-Family Residential Zones				
	R2	R1	RH	RX
Housing Types	Single-family dwellings, duplexes, multi-family buildings	Single-family dwellings, duplexes, multi-family buildings, boarding and rooming houses	Single-family dwellings, multi-family buildings, boarding and rooming houses	Single-family dwellings, duplexes, multi-family buildings, boarding and rooming houses, hotels, commercial uses limited by size
Maximum Density	1 unit per 2,000 square feet of site area	1 unit per 1,000 square feet of site area (additional density provided for listed amenities)	Limited by floor-to-area ratios (FAR), which were generally 2:1, but with 3:1 and 4:1 in mapped locations.	Limited by floor-to-area ratios, prescribed in the Downtown Development Zone
Maximum Height	4 stories or 45 feet	4 stories or 45 feet	65 feet for areas with 2:1 FAR, and up to 460 feet for locations with higher FARs.	Varied, as prescribed in the Downtown Development Zone
Maximum Lot Coverage	45%	45%	80%	No limit
Setbacks	15-foot front, side/rear 5-12 feet depending on number of stories	15-foot front, side/rear 6-12 feet depending on number of stories	No front setback, side/rear setbacks from 5 feet and upwards, depending on number of stories	No base zone requirements
Parking	1 space per unit	1 space per unit	1 space per unit for buildings with 1-3 units. 1 space for every 2 dwellings for multi-family buildings.	No minimum off-street parking requirements

1991 Zoning Code Rewrite

The 1991 Zoning Code was a major reorganization, and was the result of a four year effort to update and make the regulations easier to read and understand. The 1991 Zoning Code achieved an organization and palate of zones essentially similar to what currently is in effect today. The multi-family zones were renamed as Multi-Dwelling Zones and retained a similar structure to what was included in the 1981 Zoning Code, with the addition of the R3 zone (which corresponded to a Multnomah County zone that applied to areas recently added to the City of Portland, primarily in what is now East Portland). The densities and regulations for heights, setbacks, and lot coverage were similar to current requirements (see Profiles of the Base Zones)

Evolution of Portland's Multi-Dwelling Zones from 1924 to 2016

1924	1959	1981	1991 - 2016
Zone II - Multi-Family	A2.5	R2 - Multi-Family Residential	R3 - Residential 3,000
	A1	R1 - Multi-Family Residential	R2 - Residential 2,000
	A0	RH - High Density Multi-Family Residential	R1 - Residential 1,000
		RX - Downtown Multi-Family Residential	RH - High Density Residential
			RX - Central Residential

Summary of Related Projects

The following recent past projects addressed issues related to multi-dwelling development and street connections. Some of these projects, such as the East Portland Action Plan and the "Healthy Housing" related projects, were the result of extensive community outreach and identified a range of issues related to multi-dwelling development, but were not regulatory projects and did not involve Zoning Code amendments. These past projects play a key role in identifying issues the Improving Multi-Dwelling Dwelling Development will address through implementation of Zoning Code regulations.

Infill Design Project (2008)

The Infill Design Project's objective was to improve the design of multi-dwelling and row-house development in neighborhoods outside Portland's Central City, focusing on development in the low- and medium-density multi-dwelling zones (R1, R2, and R3). Among the topics this project identified as key issues and sought to address were:

- Compatibility and desired community character;
- Differing patterns in inner neighborhoods versus eastern neighborhoods;
- Street frontages dominated by vehicle facilities;
- Scale contrasts between new and existing lower-density development;
- Desires for additional housing diversity, including courtyard options;
- Competing City regulations related to issues such as requirements for wide paved areas to accommodate vehicle and emergency access versus objectives for minimizing impervious surfaces.

The Infill Design Project emphasized facilitative approaches. It included prototypes and regulations that encouraged attached houses with rear parking (lower image), but did not prevent front garages (upper image).

The project's outcomes included a range of regulatory and non-regulatory implementation approaches that included Zoning Code amendments, an Infill Design Toolkit that highlighted strategies for achieving better infill design, a collection of "approvable" housing prototypes, and the Portland Courtyard Housing Design Competition, which explored how density, families, outdoor space and sustainable design could be accommodated on small infill sites in the form of courtyard housing.

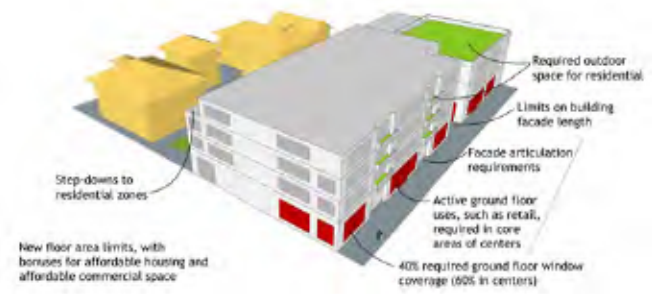
The emphasis of the Infill Design Project's Zoning Code amendments was on reducing barriers to desirable design features, such as regulations that facilitated courtyard housing arrangements and compact ownership housing, changes that allowed for narrower driveways to facilitate access to rear parking, and allowances for "shared" courts and driveways that accommodate pedestrians and vehicles within the same space. With this facilitative emphasis, the project did not do as much to prohibit less desirable configurations that do not meet the City's design priorities. Among the multi-dwelling zone topics the community identified as needing to be addressed, but that the Infill Design Project did not regulate, were:

- Di ering development standards reflecting the distinct, positive characteristics of the Western, Inner, and Eastern neighborhoods.
- The prominence of front garages at the ground-level of rowhouses and narrow lot houses.
- The possibility of requiring front landscaped setbacks in the higher-density zones (such as R1 and RH) to provide greater continuity with existing patterns.
- Mid-block open space patterns (backyards) - should they be required to be continued?
- Large areas of paved surfaces - should they be limited?
- Design supportive of privacy and livability for ground-floor residents along busy corridors (including ideas for allowing small commercial or live/work uses in these locations).
- Shared open space (such as courtyards) – should this be required in larger projects, not just encouraged?

The Better Housing by Design project provides an opportunity for revisiting the possibility of creating regulations to address these issues.

Mixed Use Zones Project (2015 - 2016)

The Mixed Use Zones Project focused on revising Portland's Zoning Code for commercial/mixed use zones in centers and corridors outside of the Central City. Many of the code amendments address the fact that higher-density multi-dwelling housing has become a large part of the development taking place in the commercial zones, which was not the case when the zones were created more than 20 years ago. The project is introducing new Zoning Code regulations intended to help achieve Comprehensive Plan goals for a ordable housing, pedestrian-oriented design, and green infrastructure. This project also addresses issues that arise with more intensive mixed use buildings, including building massing and design, transitions to lower density residential areas, and active ground floor uses. Some of the Zoning Code provisions that may be relevant for the multi-dwelling zones include:



- New requirements for residential outdoor space (36 to 48 square feet per unit) for projects that include residential units (among the multi-dwelling zones, the High-Density Residential [RH] zone currently has no requirements for residential outdoor space).
- Requirements that support privacy for the ground-floors of residential buildings – with options for units to have landscaped setbacks, raised above grade, or to have non-residential ground-floor spaces (these approaches were recommended by the Infill Design Toolkit for the multi-dwelling zones, but were not adopted as regulations).
- Requirements for front setbacks along major Civic Corridors in Eastern and Western neighborhoods.
- Allowances for "green options" that serve as alternatives to more conventional landscaping requirements, including ecoroofs, raised landscaped areas, tree courts, and pervious paving.
- A ordable housing bonuses.

East Portland Action Plan (2009)

The East Portland Action Plan (EPAP) was designed to identify gaps in policies, services and improvements in the East Portland area, and to identify opportunities to address these gaps. EPAP was the result of eight months of work by the East Portland Action Plan Committee, which worked to identify ways to strategically address community-identified issues and to allocate resources to improve livability for neighborhoods in the East Portland Neighborhood Office coalition area. EPAP includes a listing of strategies and specific actions to support the overall goals of the plan to improve the quality of life, help foster strong community connections, increase the area's regional significance, and improve equity for East Portland residents.

The following is a listing of strategies **(bold)** and accompanying actions especially relevant to multi-dwelling zoning development standards and street connectivity:

Housing and Development Policy

HD.1 Improve the design and quality of new housing structures

HD.1.1 Explore design tools and update Community Design standards tailored to East Portland development styles and neighborhoods.

HD.1.2 Explore design requirements and/or mandatory design overlays for multi-dwelling development in high-impact infill areas.

HD.1.3 Explore code provisions to improve corner-lot building orientation.

HD.1.4 Initiate pilot projects for development of high-quality housing compatible with existing development and natural features.

HD.1.5 Implement Courtyard Design Competition ideas and standards.

HD.1.6 Explore financial incentives or other mechanisms to upgrade materials and design quality of multi-dwelling development (MFR façade program).

HD.5 Improve regulations and implementation of City code to increase benefit and reduce impacts of new housing

HD.5.1 Explore mechanisms to provide on-site play areas and open space in multifamily housing developments.

HD.5.2 Amend zoning code to improve flag lot development and privacy issues.

HD.5.3 Improve/institute a tree preservation and replacement code.

HD.5.4 Review relationship of zoning density and lot size to address East Portland infill context.

HD.5.5 Develop better guidelines and regulations for transitions between relatively high and moderate intensity zones to mitigate decreased sunlight access and privacy impacts.

HD.5.6 Provide community amenities and improve design to encourage housing that is attractive to households with a range of incomes.

Transportation

T.2 Increase safety and convenience of walking throughout East Portland

T.2.3 Review policies and procedures to ensure pedestrian improvements concurrent with all new development.

T.2.4 Review policy: prioritize adding sidewalk connections over expanding/widening existing connections.

T.2.5 Improve landscaping, cleanliness, and patrolling of multi-use paths and neighborhood pedestrian paths.

T.6 Improve connectivity throughout East Portland

T.6.1 Develop a complete and more well-defined future street plan for East Portland.

T.6.2 Develop priorities for decision-making on transportation improvements; consider connections to parks/open space/schools, "green street" design, public safety needs.

T.6.3 Initiate a Powellhurst-Gilbert connectivity and urban form study.

T.6.5 Institute policy and develop plan to provide accessible transportation options (sidewalks, streets, connections) for people with physical disabilities.

T.6.6 Acquire property and develop streets in Central Gateway.

Eastside MAX Station Community Project (2009)

This report documents concepts for land use, urban design, and transportation system approaches for each of the Eastside MAX station areas (from the 60th Avenue to the 162nd Avenue station areas), and summarizes community responses to these concepts. The following summarizes concept components that are particularly relevant to multi-dwelling zoning and street connectivity issues in the station areas.

60th Avenue

- The Vision statement calls for new higher-density residential development to be designed to blend in with the surrounding established Rose City Park and North Tabor neighborhoods.
- There is a need to improve the quality of new infill development, including the use of better materials and design features to promote compatibility with the existing neighborhood as the area transitions to higher density housing types. Community input included suggestions for applying the Design Review overlay zone to enhance design quality.
- Provide a wider set of pedestrian and bicycle improvement through the area, and reconnect the street grid with new streets through the light industrial area near the station.

82nd Avenue

- The Vision statement relates that, while mixed-use development around the station should be tall and distinctive, new residential development should be designed to scale down in height to blend in with the established Montavilla and Madison South single-family neighborhoods.
- The scale of development in the multi-dwelling zones should provide a better transition to lower-density areas, and the Design Review overlay zone should be applied to higher-density areas.
- The primary transportation emphasis is for improving conditions on 82nd Avenue, but parallel bicycle routes are also needed.

Parkrose/Sumner

- The Vision statement calls for greater development intensity and a mix of uses close to the station, with well-designed townhomes and apartments further to the south located along improved neighborhood streets with sidewalks.
- Residential areas close to the station to the south should have higher-density zoning (R1), while residential areas further away should be designed to be more compatible with the surrounding single-family residential area.
- Transportation improvements are needed to existing streets, which sometimes are not fully improved or lack quality sidewalks.

122nd Avenue

- The Vision statement anticipates the commercial/mixed use areas around the station developing into an intensely urban hub with concentrations of community-serving business and housing.
- Nearby residential areas are expected to continue to develop and intensify, providing high density housing with quality building design.
- The transportation concept calls for a street master plan and the creation of new street connections to improve pedestrian and bicycle access, as well as improvements to existing substandard streets.

148th & 162nd Avenue

- The Vision statement anticipates having mixed use development clustered at the 148th and 162nd Avenue stations. Nearby residential areas include a diversity of housing, ranging from high-rise condos to townhouses and single-family homes. New housing is most intensely concentrated adjacent to the stations, transitioning to lower-scale apartment buildings and townhouses further from the station.
- The development framework for the station area identifies high-density density housing, up to 7-10 stories, as appropriate near the station. Further away, medium-density housing of 3-4 stories provides a transition to surrounding single-family (R5) neighborhood areas. The concept suggests that landscaped setbacks in the higher-density residential areas could help maintain some of the character of the existing neighborhood.
- The transportation concept calls for a street master plan that would identify new street connections that would be required concurrent with redevelopment in the area. The transportation diagram for the area illustrates ideas for creating an additional north-south connection through the existing 600-foot block widths, along with multiple east-west connections through the lengthier 1,000-foot dimensions of the blocks. The concept also identifies the need for a strategy for improving existing substandard streets, in order to avoid a disconnected patchwork of sidewalk and curbs.

Southeast 122nd Avenue Study (2010)

This study was a pilot project of the Portland Plan. The study's objective was to explore what a convenient, livable, and healthy community might be for a portion of the SE 122nd Avenue corridor, an area with large amounts of multi-dwelling zoning. The study built on the directions set out in the East Portland Action Plan. It also explored Portland Plan concepts for complete neighborhoods in the context of the 122nd Avenue Corridor, and included a focus on the health implication of planning issues. The study included four key topic areas, three of which are related to multi-dwelling development and connectivity. Listed below these topics are recommendations related to multi-dwelling development and street connections:

Topic 1: Accessibility, Connections, Pedestrian Comfort and Safety

Street Connections – Recommendations

1I — Support and ensure the creation of planned local street and pedestrian connections during the land development process.

1J —Study and implement a better mechanism to ensure street connections for new development that does not go through the subdivision process.

1K — Consider a larger minimum lot area threshold for residential subdivisions, to improve opportunity for connectivity and improve urban form.

Topic 3: Residential Infill Development and Design

Residential Land Use

3A — Explore alternative site development standards, or consider alternatives to the R1 multi-dwelling residential zone to improve the interface between development and busy streets. See also Recommen dation 2A.

3B — Consider changes to zoning map designations in areas over 400 feet away from arterial streets to reduce development impacts, improve compatibility, and preserve trees in neighborhood areas.

3C — Explore changes to minimum density and other development standards in R2 and R1 zones to improve compatibility and reduce impact of new development.

Residential Site Design

3D — Preserve a greater number of large trees in the development process: implement the Tree Code improvement project for this area.

3E — Develop and test special site development regulations for multi-dwelling residential development that require more usable open space, landscaping, and HEAL (healthy eating/ active living) amenities, such as bike storage, connections to larger pedestrian/bicycle network, and gardening opportunities.

3F — Consider larger mandatory landscaped building setbacks from major city traffic streets for multi-dwelling residential development.

Residential Building Design

3G — Improve residential design: explore use of the design overlay zone or special development design standards appropriate for R1 and R2 zone multi dwelling areas along and near SE 122nd Avenue.

Topic 4: Community Amenities and Livability

4C — Balance the mix of households in new development by encouraging smaller units as well as family-sized units in future developments.

4I — Coordinate green infrastructure with planned land uses and future parking needs, as well as pedestrian and bicycle safety plans, in the study area.

Healthy Active Communities for Portland's A□ordable Housing Families Initiative (2010)

In 2010, the Oregon Public Health Institute led the "Healthy Active Communities for Portland's A□ordable Housing Families" initiative. OPHI convened a consortium of partners, including Hacienda Community Development Corporation, Rose CDC, Community Cycling Center, Janus Youth Programs, Oregon Opportunity Network, Kaiser Permanente, the Northwest Health Foundation, and the Bureau of Planning and Sustainability to examine healthy eating and active living in a□ordable housing communities managed by community development corporations.

The goal of the OPHI led project was to enhance multi-family a□ordable housing sites to accommodate Healthy Eating Active Living (HEAL) amenities, increase connected pedestrian and bicycle networks in lower-income communities, and enhance healthy food retail options near multi-family housing sites. Under the Active Living category, bicycle storage, moving around the site, playing outdoors at the site, and indoor exercise was discussed; under the Healthy Eating category, food storage and preparation, vending machines, and gardening opportunities were examined.

In conversations about what HEAL meant to them, a□ordable housing residents identified the following topics and features in housing developments: Play and Physical Structures, Sidewalks and Connectivity, Bike Storage, Open Spaces, Lighting and Safety, Vandalism and Garbage, Negative Messages. Analysis of these elements and a scan of the Portland Zoning Code led to the following conclusion.

Different needs for HEAL features. Multi-family housing sites vary greatly in size, design and resident demographics. Understanding residents' concerns and priorities and how they would like to use their physical space is important for the design of new housing as well as upgrades/modifications to existing housing.

Safety. Lack of safety was identified as a significant barrier to physical activity. Inadequate lighting, speed of nearby tra□c, and the condition of play equipment were also identified in this category.

Style of play equipment. The type of play equipment and whether it was perceived as safe for small children is of significant concern to families. The desire for equipment designed for all ages was also cited.

Property maintenance and management. The presence of a HEAL amenity may not be su□cient for ensuring that residents make the best use of it. Resident comments indicate that shared features such as long-term bicycle storage and play areas need to be managed or monitored to make sure they are used properly. If the site is not maintained (e.g., sidewalks repaired, trash removed, light bulbs replaced), zoning code requirements that encourage outdoor activity in the zoning code may not be e□ective.

Competing needs for outdoor space. Housing developers must accommodate site elements that compete with outdoor health-promoting features such as outdoor play areas and well-designed, pleasant pedestrian walkways. Some of the most significant competing features include required stormwater facilities, minimum parking areas (although o□en developers provide more parking than required by zoning code), required setbacks and required loading spaces. In residential zones, minimum density standards (that ensure Portland's land supply can meet its share of the regional housing needs) may limit site area that is available for usable open space.

Nonconforming development. Many of the city's affordable multi-dwelling sites have nonconforming development that does not meet the current zoning regulations. Common examples are substandard pedestrian walkways or a lack of bicycle parking. If a property owner makes a modification or improvement on a site (over an annually adjusted amount), then items out of compliance may need to be brought up to new standards.

Amenity bonuses for HEAL and crime prevention features are not widely used. Although there are many amenity bonuses in the City's zoning code today that encourage health-promoting features, historically developers have not taken advantage of them, more commonly outside of the Central City and in the outer neighborhoods. Often, the benefit of providing the amenity (usually additional development potential) is not needed in the project.

Promoting Health Through Multi-Family Housing Project (2013)

Recognizing that the non-profit community development corporations that were the focus of the previous project have a community mission and are charged with improving residents' lives, BPS then turned its attention to privately owned rental apartments, with the idea that improving renters' health and learning about issues in private rentals might be a different and greater challenge. The Community Alliance of Tenants, the Center for Intercultural Organizing (now Unite Oregon), Housing Development Center, OPHI, and BPS came together to examine housing design, construction and maintenance practices.
This partnership intensively engaged low-income refugee and immigrant renters to learn about what issues impacted them the most and assisted them in advocating to address safety hazards in their homes. Another distinguishing focal point of this project was that it centered on examining and analyzing how apartments could be retrofitted to better meet the health needs of renters. In addition to engaging renters, the project team convened private property owners, developers, and managers to collect their thoughts as well.

Renters from five apartments in East Portland emphasized overarching barriers in the physical and cultural infrastructure of their neighborhoods that made emotional, physical, and community health challenging. A deficiency of neighborhood parks, poor neighborhood pedestrian connectivity, few supermarkets, farmers' markets and culturally specific food centers, a lack of cultural and social amenities, like libraries, community centers and performance venues, and development pattern that prioritizes vehicles were some of the major concerns. The organizers and project team narrowed their concerns to six housing related health challenges that were of most concern to renters, that also met project goals:

Open Space. Youth expressed trepidation about using their schools and/or neighborhood parks as play areas or spaces to hang out. They also expressed unease when visiting local neighborhood parks adjacent to their homes because they were often harassed by other youth or people. Those that did play offsite found that there were often not enough parks for recreation. When youth did play onsite, often the only spaces available were unused parking lots and driveways. This situation made it common for balls to hit windows. Youth found that playing in, around, and between cars could also be a safety hazard.

Food Security. Families found it hard to find culturally specific food at grocery stores. In addition, food stamps are not always enough to feed an entire family. Therefore, many renters started gardens, sometimes with seeds they brought from their homeland. Many renters had small gardens either in their apartment complex or nearby, at community gardens. However, there was not always enough space to grow food and some landlords were not in favor of allowing tenants to garden onsite.

Safety and Security. In addition to limiting their time in public space due to safety concerns, parents did not want their children far away from home. Older children oftentimes had the responsibility of watching their younger siblings. Even if there was a space for kids to play onsite, this interfered with the older child's ability to do homework. The interstitial spaces where children could play were not near areas where older children could study.

Relieving Overcrowding. Due to limited income, many families shared living quarters with two families sometimes living in a one bedroom. With tight indoor living conditions, outdoor space, especially with cover from the rain, became an even more important commodity. To avoid conflict, additional space proved to be very valuable. This was essential from both a physical and mental health perspective. Relieving overcrowding facilitates healthy sleep and good household hygiene.

Mold and Moisture Control. All of the apartment buildings in this project (as is common in East Portland) were built sometime between 1970 and 1990. Many of the materials and construction methods used during that time have not held up over time. For example, properties constructed during this period used aluminum windows and baseboard heating. These materials are prone to produce mold and moisture conditions. These conditions result in poor indoor air quality, which has oftentimes resulted in causing asthmatic condition in children.

Pest Management. Site design and building construction can have additional health impacts on residents. Renters identified pest infestation as a significant problem. Cockroaches and other insects can exacerbate asthma and spread disease. Building-envelope cracks, plumbing penetrations, and holes in outer walls and between separate units are spaces where insects can easily access. Additionally, holes and depressions in paved areas pose both safety hazards and are places where pests, such as mosquitoes can breed.

Division-Midway Neighborhood Street Plan (2015)

The Division-Midway Neighborhood Street Plan was intended to provide a framework for improving street connectivity in East Portland Neighborhoods. The plan was drafted by the staff of the Portland Bureau of Transportation, in conjunction with community stakeholder groups and local neighborhood residents. The area that was targeted by the project was located east of the Jade District, and southwest of the Rosewood Neighborhood, which are the Neighborhood Centers that are being studied in the Better Housing by Design Project and the Connected Centers Street Plan.

The primary focus of the plan was to identify locations of existing right of way that had not been improved to the standards of the City Code. The plan recommended a series of improvements that could be made; these improvements included paving gravel and dirt streets, widening road surfaces and constructing sidewalks on streets that had been paved, but which had substandard facilities, and building roads in segments of right-of-way that were currently being utilized as footpaths, but which had not been built into roadways.

The plan prioritized the recommended right-of-way improvements into three tiers based on their relative level of importance. The criteria that were used to prioritize improvements included:

- Whether they enhanced pedestrian or bicycle connections to transit stops.
- Whether they improved Neighborhood Greenways or Safe Routes to School, or provided a connection to one.
- Whether they provided service to underserved communities or neighborhoods with a high demand for active transit.

While the Division-Midway Neighborhood Street Plan was primarily focused on building new street connections in existing right-of-way, the plan also made recommendations for creating new street connections across properties that are currently owned privately. The plan envisioned that these new connections would be created gradually, over time, through the use of the City's development review process, as new properties are reviewed for redevelopment.

Tryon-Stephens Headwaters Neighborhood Street Plan (2015)

The Tryon-Stephens Headwaters Neighborhood Street Plan was a collaboration between the Portland Bureau of Transportation and the Bureau of Environmental Services. The plan was intended to provide innovative solutions that simultaneously address street connectivity and stormwater mitigation issues in Southwest Portland neighborhoods. While the geographic location of the area studied in the plan is removed from the areas that are being targeted in the BHD Project and the Connected Centers Neighborhood Street Plan, there are features of this plan which can help to inform strategies that can be implemented to address street connectivity issues in East Portland.

The plan included recommendations for a variety of different roadway footprints that incorporated paved surfaces of a variety of different widths. The various different street treatments allow for context dependent street designs that minimize the paved surface area, allow for the preservation of existing street trees and other natural features, and meet the needs of pedestrians, bicycles, and motor vehicles.

The types of street designs that were recommended in the plan may be useful templates for the types of private through-streets that could be implemented in new multi-dwelling developments in East Portland. Residents who are concerned that improving gravel and dirt streets could increase cut-through traffic in their neighborhoods might prefer roadways with reduced footprints. Other concerns, such as the preservation of large Douglas fir trees, which give character to many historical East Portland neighborhoods, can also be addressed through flexible street designs.

Concurrent Projects and Coordination

Better Housing by Design Project will be coordinated with several ongoing and related public planning projects, including:

Connected Centers Street Plan
This PBOT project will develop street access/circulation plans for two designed centers east of 82nd Avenue, the Jade District and Rosewood, to improve the ability of residents to reach local businesses, transit stops, schools and other neighborhood destinations. The plans and related implementation approaches will serve as models for subsequent street plans for other centers citywide. This project will be undertaken in conjunction with BPS's Improving Multi-Dwelling Development Project and will utilize the same public involvement opportunities.

Design Overlay Zone Assessment
BPS, in collaboration with the Bureau of Development Services (BDS), is undertaking a consultant-led assessment of Portland's Design Overlay zone. The project, called Design Overlay Zone Assessment (DOZA), is documenting and assessing how the tools that carry out the (d) overlay a ect the outcomes for discretionary and nondiscretionary reviews. The final deliverable is a set of recommendations for practically and e ectively improving the system.
The assessment has looked at several examples of projects throughout the city, including mixed use and multi-dwelling development. Though final recommendations will not be available until spring 2017, initial findings suggest some key takeaways for multi-dwelling projects, which are not necessarily limited to those within the d-overlay. Initial findings related to multi-dwelling development include the following:

- There is a need for criteria that address the ground level of residential-only buildings, as ground-floor windows close to sidewalks can create privacy issues for dwelling units.

- Many of the site examples evaluated did not exhibit a great level of concern for the public realm of streets. Nor did the context seem to influence the design greatly. This suggests that something may be lacking in the design guidelines to encourage design outcomes responsive to context.

A topic related to both the DOZA and the Better Housing by Design projects is determination of what types of standards are appropriate as base zone regulations, such as within the Multi-Dwelling Zoning Code chapter, versus what types of standards might be most appropriate as design standards applicable within the Design overlay zone (the Community Design Standards).

Growing Transit Communities Plan
This is a PBOT project, funded by a Transportation Growth Management Grant administered by the Oregon Department of Transportation (ODOT) in partnership with TriMet. The Plan is an e ort to identify and prioritize the most beneficial improvements that would make getting to the bus and using the bus, a safer and more convenient option along sections of bus lines 87, 77, and 20, which includes the Rosewood area and connections to the Jade District.

Inclusionary Housing Zoning Code Project
This project is a collaborative eort between BPS and the Portland Housing Bureau to help meet the need for aordable housing in the city. This project is creating new Zoning Code regulations that address inclusionary housing requirements, following from recent state law that allows local jurisdictions to require that a portion of housing units in new buildings with 20 or more units to be aordable to households earning no more than 80% of area median family income. The Zoning Code amendments include density bonuses for development in the multi-dwelling zones to help oset the cost of providing the aordable units.

The Powell-Division Transit and Development Project
This is a multi-jurisdictional eort to bring enhanced bus-transit services and investments to the Powell-Division corridor. Besides transit enhancements, project goals are also about community well-being—growing healthier and safer neighborhoods and improving access to a broader range of opportunities; equity—ensuring that transit investments benefit current residents and businesses and enhance existing neighborhoods; eiciency—that this investment in enhanced bus-transit service is implemented and ultimately operated with ingenuity and flexibility and within a relatively constrained budget. The project also helped orchestrate a strategy for strengthening key places in the corridor. For Portland, this resulted in the Portland Local Action Plan. The Improving Multi-Dwelling Development Project shares the Jade District with this project as a focus area, which will necessitate close coordination.

Residential Infill Project
This BPS project is revising Zoning Code regulations for the single-dwelling zones and considering regulatory approaches to managing the scale of development in these zones and expanding housing options in areas close to centers and corridors. Some of the single-dwelling zones share characteristics and issues with the lower- and medium-density multi-dwelling zones. Improving Multi-Dwelling Development Project staf will coordinate with this project on regulatory approaches.

82nd Avenue Study – Understanding Barriers to Development Project
This BPS-led project, funded in part by a Metro grant, will investigate opportunities for development and improved outcomes along the 82nd Avenue corridor, including adjacent multi-dwelling zoned areas. The study area for this project includes portions of the Jade District, which will necessitate close coordination with the Improving Multi-Dwelling Development Project.

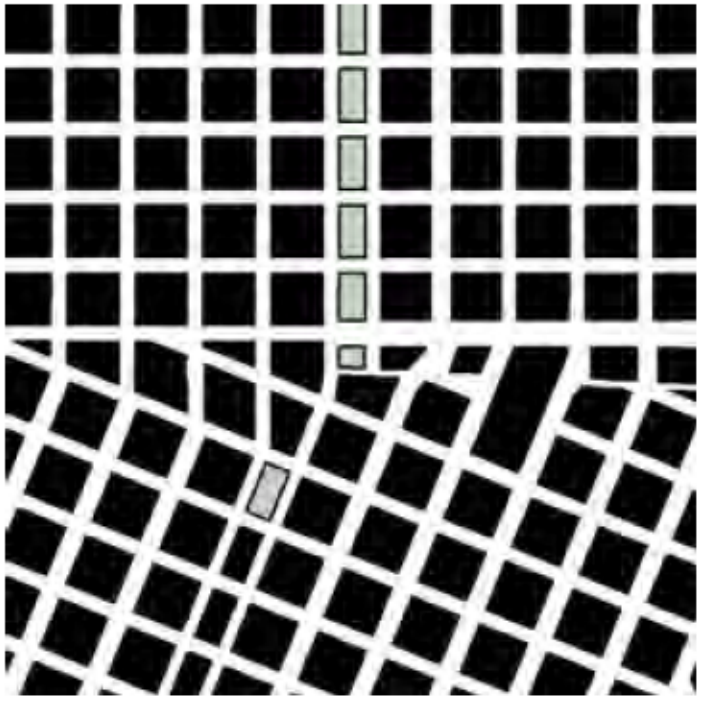
Block Patterns and Street Connectivity

This section provides examples that document the block structure and street connectivity in East Portland, with a focus on areas with multi-dwelling zoning. Together with the Connectivity Requirements section that follows, it provides background on some of the East Portland street connectivity issues that the Better Housing by Design Project and the Connected Centers Street Plan projects are intended to help address.

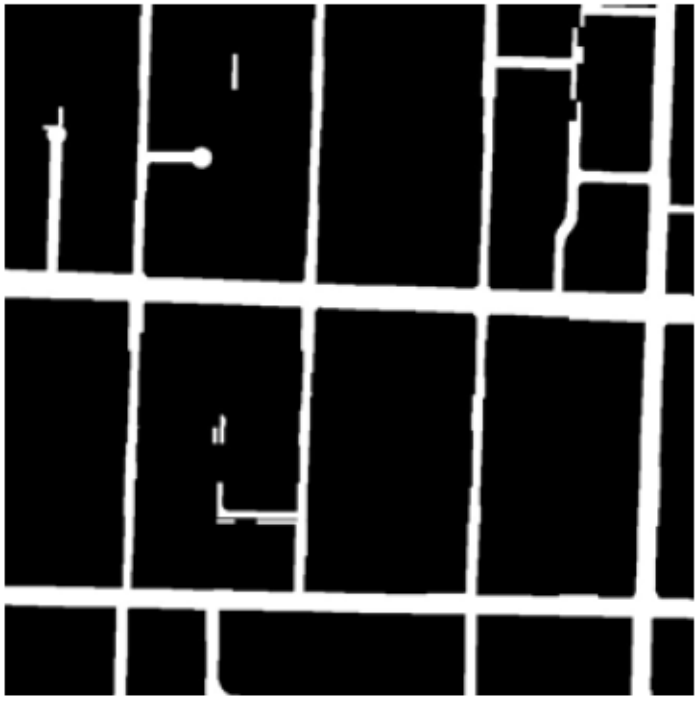
The City's Block Patterns

Block patterns noticeably vary from the Central City to East Portland. In downtown, the typical block pattern consists of 200' X 200' blocks. Across the river, in the inner neighborhoods that mostly developed during the streetcar era (early 1900s to 1940s), most blocks retain the pattern of 200'-deep blocks, at least along one edge of the block, providing a fine-grained grid pattern of development and connectivity. Further east from downtown and inner neighborhoods, generally beyond 82nd Ave, but especially east of I-205, a coarser-grained development pattern emerges.

The following images compare the typical block patterns of downtown and of East Portland. Each image represents a ½-mile square area.



Downtown



East Portland

Timing of Development in East Portland

The difference in the pattern of development in East Portland can be attributed to the timing of development in the area. Much of East Portland developed during the post-war period while still under Multnomah County jurisdiction. Development under the regulations of the time prioritized bigger blocks with little street connectivity, concentrating traffic on major arterial streets and limiting cut-through traffic in neighborhoods. Unlike within Portland, sidewalks were not required on secondary streets.

East Portland was not annexed into the city until the 1980s. With it came a pattern that lacked finer-grained connectivity for people walking or biking.

In subsequent years, in an era of regulation that has required more connectivity for people walking and biking, achieving a finer-grained system of connections via piecemeal private property development has yielded mixed results. In the three decades since annexation, much of East Portland still retains its auto-oriented development pattern that is dependent on a relatively small number of major streets for circulation, with few secondary connections to local destinations for pedestrians and bicycles. Private development, including within the multi-dwelling zones, continues to provide little additional pedestrian connectivity.

The following set of images focuses on that lack of connectivity in East Portland, a by-product of the automobile mobility that had been prioritized in that area in the post-war era. Many of these examples show that East Portland has been the location of a significant amount of development in its multi-dwelling zones, but has not been achieving the street and pedestrian connectivity intended for centers, light rail station areas, and other more urban locations.

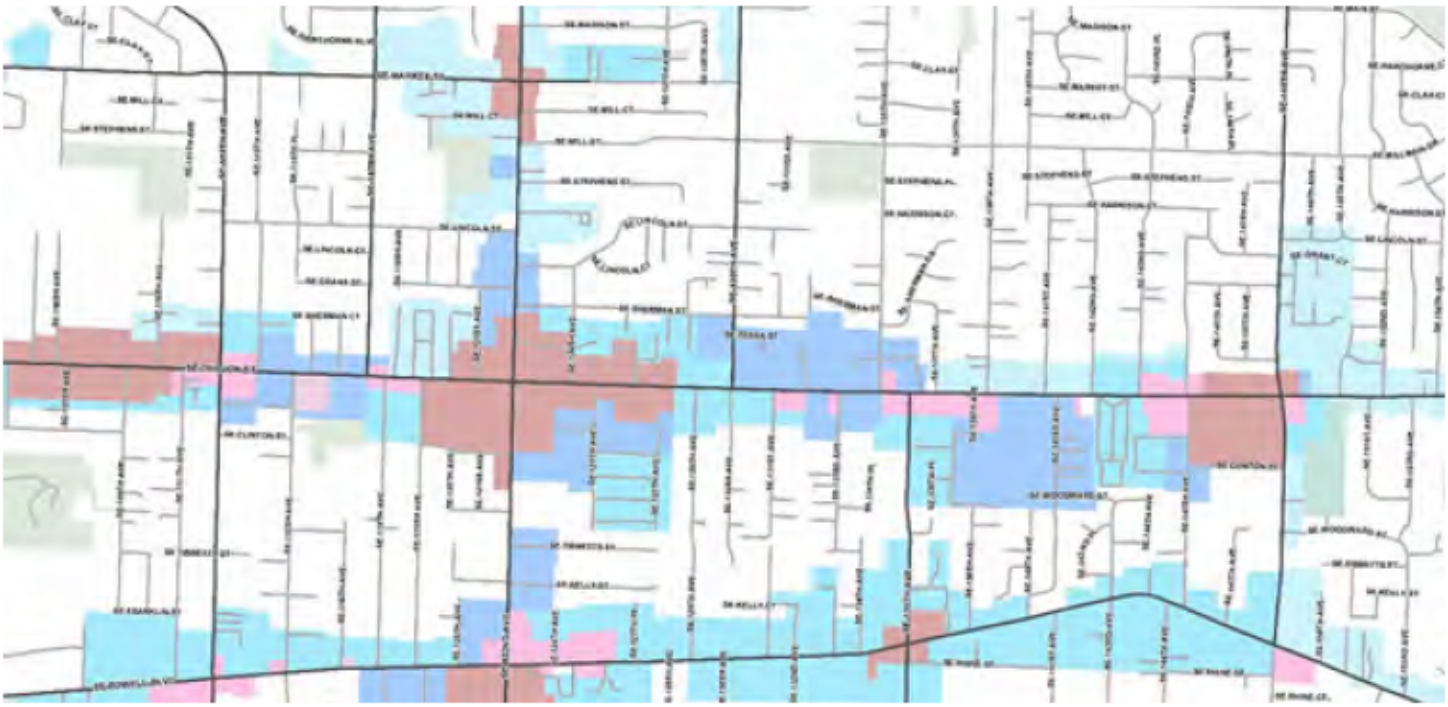
Lack of Connectivity in the Multi-Dwelling Zones in East Portland

Citywide, most multi-dwelling zones exist as narrow bands adjacent to major arterial streets or commercial streets. At a macro level, they create a linear form of multi-dwelling zones.

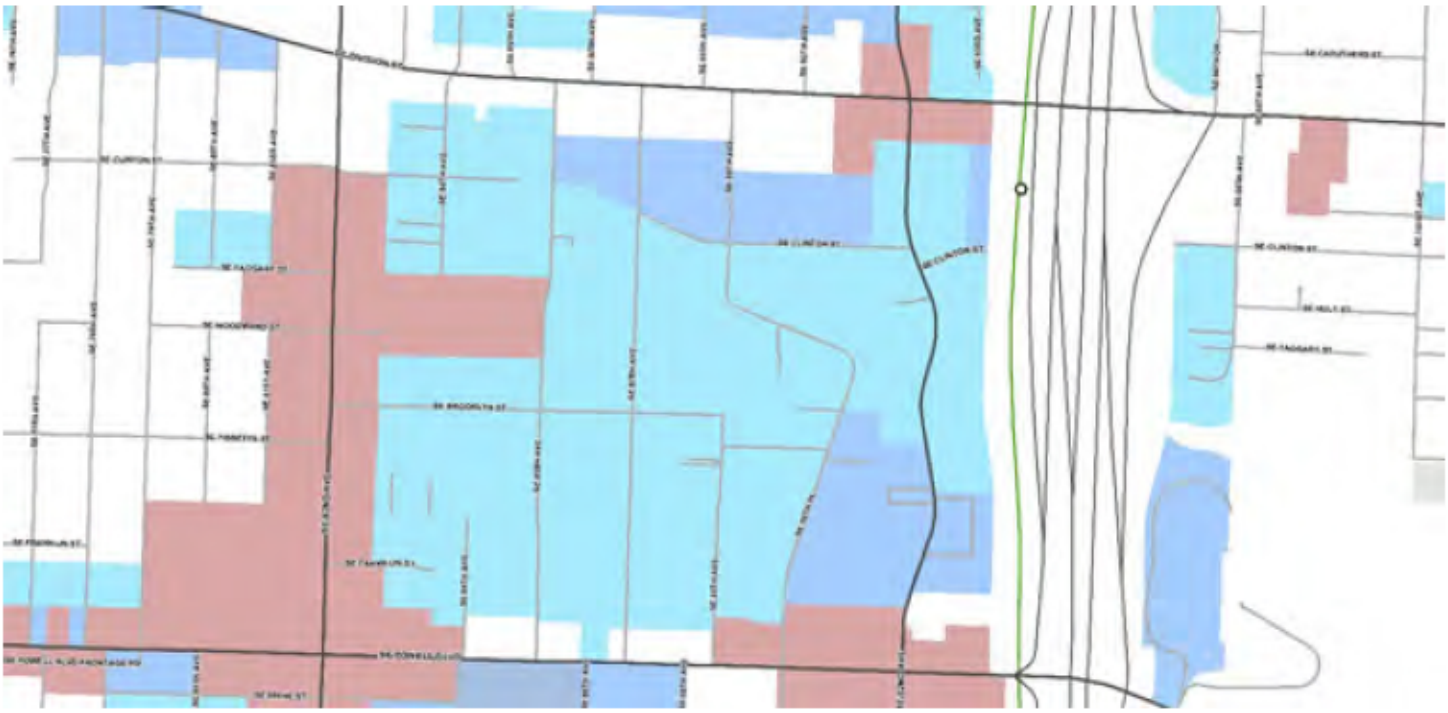
In East Portland, this linear pattern of multi- dwelling zones is starkly evident along east-west arterials. But several stretches can also be found on north-south arterials, especially on the southern end of 122nd Avenue, and several segments along 148th and 162nd Avenues between Division and Sandy. Notable east-west stretches of multi-dwelling zoning line Division Street, in and near the Midway town center; and also along Powell Blvd; Stark Street; Burnside; and Sandy Blvd.

The Jade District reflects an unusual pattern: It is one of the largest contiguous areas in the city of multi-dwelling zones—mostly R1 and R2—bounded by major arterial commercial streets, rather than bisected by one.

SE Division Street, in the Midway town center – linear band of multi-dwelling zones.



The Jade district – broad area of multi-dwelling zones.



The following set of images focuses on that lack of connectivity in East Portland, a by-product of the automobile mobility that has been prioritized in that area since the post-war era.

The Jade District encompasses a large area of R1 and R2 zoning bounded by SE Division Street and Powell Blvd and 82nd Ave to the west and I-205 to the east. The area contains several unpaved streets and numerous dead-end private streets or driveways (red). Development of multi-dwelling projects that require automobile access often result in dead-end private driveways—not optimal for connectivity.

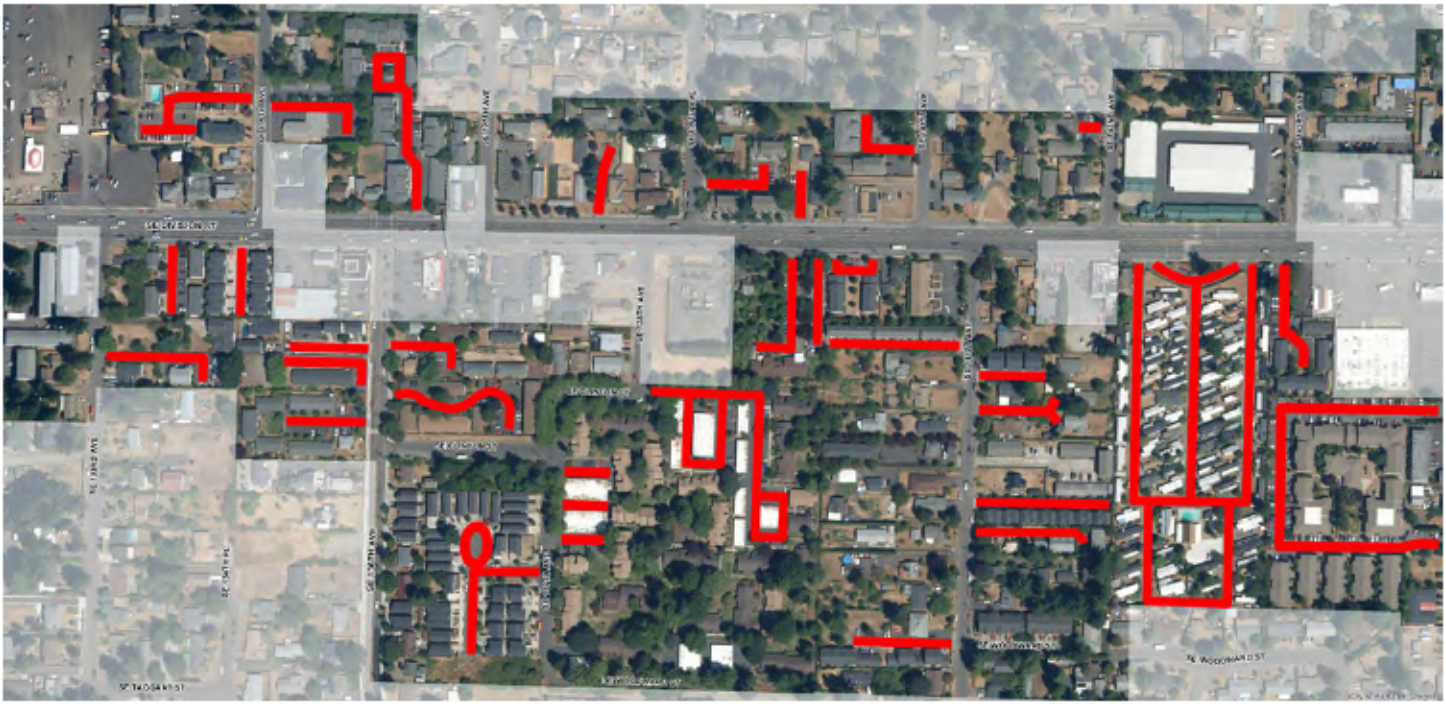
Near Powell Blvd at 136th Avenue, large properties developed into multi-dwelling projects lack connectivity. Without a street plan, development of deep lots often results in a large portion of the property devoted to automobile access and circulation (also often required for fire access). As in the Jade District, this usually results in dead-end private streets or driveways.

Burnside and Stark near 148th Avenue, the dead-end driveway pattern often repeats itself with each multi-dwelling project.

Along 162nd Avenue in R3 zones, the pattern is familiar: disconnected private driveways.

At 122nd Avenue near Main and Salmon Street, a private street stops short of connecting to a public street. It forms a daisy chain of de facto cul-de-sacs. And not unlike other neighborhoods of East Portland, the majority of multi-dwelling projects in this area result in dead-end private driveways.

125th Ave, just south of Division Street, serves as the only access to multiple blocks of multi-dwelling units. These multi-dwelling units face either a public street or private street. But it is difficult to tell the difference between the public and private street here; they essentially look and feel the same. Altogether, these properties essentially comprise one large disconnected multi-dwelling development complex.



Near 136th Avenue, just south of Division Street, access to multi-dwelling housing is typically in the form of a dead-end private driveway. Larger multi-dwelling properties often have loops within the property, but generally still only one entrance/outlet from the property.

Connectivity Requirements

There are a number of provisions that require the establishment of a connected street network in Portland City Code, the Portland Transportation Plan, which is part of the Portland Comprehensive Plan, and in the Metro Regional Transportation Functional Plan (RTFP). In practice these rules are most often implemented in one of the following ways:

1. When new developments or land divisions are proposed, the creation of new street connections may be required through the development review permitting process.
2. Local Improvement District projects may create new street connections. While these projects most commonly are used to pave or improve existing streets that do not meet stormwater, pedestrian, or width standards, they can also be used to construct new streets.

In the Portland City Code, Title 17.88 and Title 33.654, specifically dictate the spacing of street connections. Title 17.88 focuses on ensuring that there is an adequate level of street connections to serve a variety of functions. It mandates that all buildings must be built in close proximity to through streets, or that they have access to streets through roadway connections. This chapter requires that new residential developments must provide for the establishment of full street connections that are spaced no further than 530 feet apart. Pedestrian and bicycle connections are also required with a spacing of no greater than 330 feet in areas where full street connections are not possible. This chapter also requires that new developments limit the use of cul-de-sacs or closed street systems.

Title 33.654 of the Portland Zoning Code mandates the establishment of a connected street grid for development proposals that include land divisions. It requires that streets provide for the movement of pedestrians, bicycles, and motor vehicles. Title 33.654 also includes the requirement for spacing of through streets that are no further than 530 feet apart and pedestrian connections that are no more than 330 feet apart. This chapter also requires that new developments must adopt the street pattern of the surrounding area if the existing street pattern meets connectivity standards. It states that dead-end streets should be no greater than 200 feet in length, and that they should serve no more than 18 dwelling units.

Under Title 33.654, land divisions must meet a variety of criteria for connectivity and/or location of rights-of-way. These regulations are intended to provide "efficient access to as many lots as possible, and enhance direct movement by pedestrians, bicycles, and motor vehicles between destinations"— provided in some cases by new public or private rights-of-way. Rights-of-way that provide connections between streets must be dedicated to the public. Various types of rights-of-way that are typically created with land divisions include:

1. Standard street
2. Dead-end street (may be private when abutting eight or fewer units)
3. Partial street
4. Easement
5. Common green
6. Shared court
7. Pedestrian connection
8. Alley

However, properties that do not go through a land division are not subject to the rights-of-way regulations in Title 33.654. In the multi-dwellings zones, many types of projects are developed without a land division, such as apartment complexes, townhouses, or clusters of detached houses built on a single property. Instead, on-site vehicle access for these developments are provided by private driveways, courts, or parking lots. In some situations, private driveways are extensive, serving multiple buildings and providing the appearance of streets.

Without the clear requirements of Title 33.654 that serve as a regulatory trigger for street connectivity, few multi-dwelling development projects have resulted in new public street or pedestrian connections. When public street connections have been provided as part of multi-dwelling development, this has typically been for large, multi-acre development projects. It has proven problematic to obtain street connections for multi-dwelling development on small sites, especially since small sites often do not have enough site area to provide space for new street connections.

At the regional level, The Metro RTFP contains street connectivity standards in chapter 3.08. The requirements for the spacing of full street connections is identical to that which is mandated in the Portland City Code; 530 feet between full street connections and 330 feet between bicycle and pedestrian connections. Chapter 3.08 also prohibits cul-de-sacs or other dead-end streets that are greater than 200 feet in length.

Street Plans

Through the planning process, neighborhoods and locations that are substandard in terms of street connectivity are identified. Master street plan maps are created to prioritize the locations where new street connections are needed. These maps are utilized by the Portland Bureau of Transportation during the permit review process to determine when new street connections should be required.

The application of these connectivity standards has led to the establishment of a compact street grid in the Portland Central City, with street spacing at intervals of 200 feet. Inner neighborhoods also typically achieve the street connectivity standards that are required in the City Code, though many blocks are larger than those of the Central City. But many blocks in outer East Portland neighborhoods have spacing of through-street connections that greatly exceed the City's connectivity standards.

The lack of street connectivity in outer neighborhoods, both eastern and western, is largely a remnant of the pattern of development that occurred there. Much of East Portland was not annexed by the City until recent decades. In these areas, development was governed by Multnomah County regulations, rather than the more stringent Portland regulations. The Jade District and Rosewood/Glenfair centers are examples of relatively recently annexed areas that have poor street connectivity. Figure 1 is representative of the existing street grid in the Jade District. The figure is intended to highlight the large number of private driveways and private streets that serve multiple dwelling units. The figure also features the construction dates of many of the driveways and private streets, demonstrating that despite the fact that the inadequate street grid is a legacy of historical development patterns, many recently developed properties have also been built as cul-de-sacs or flag lots, which exacerbates the street connectivity issues.

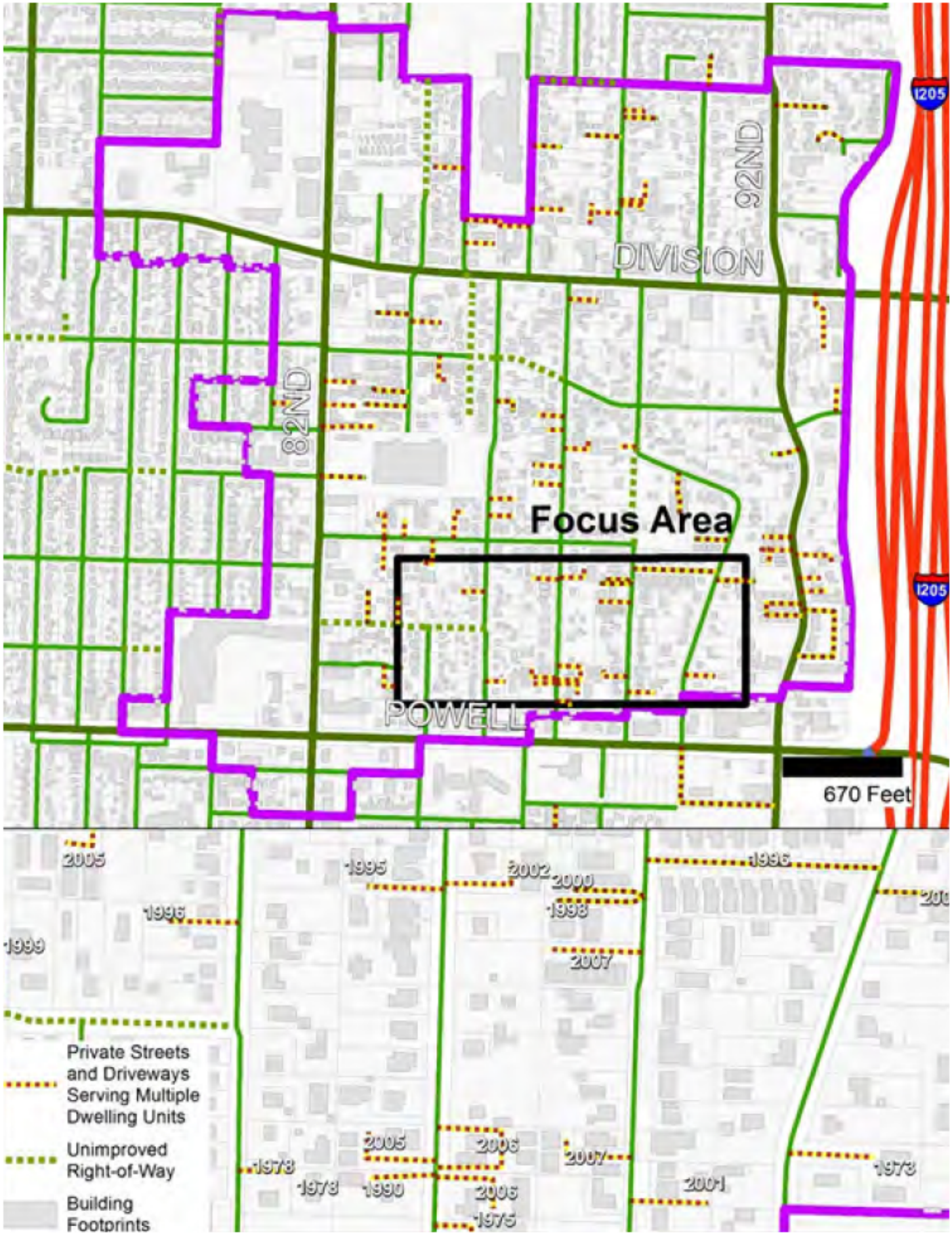


Figure 1. Jade District street grid, highlighting private streets and driveways that serve multiple dwelling units

The following diagrams, figures 2 through 5, are intended to illustrate the lack of connectivity that exists in the street networks of the Jade District and the Rosewood/Glenfair areas, both of which are designated Neighborhood Centers in East Portland. The highlighted properties in these maps are all located more than 265 feet away from either a connector street that is running in the North-South direction, or the East-West direction. These highlighted parcels represent priority locations for future street connections in the respective neighborhoods.

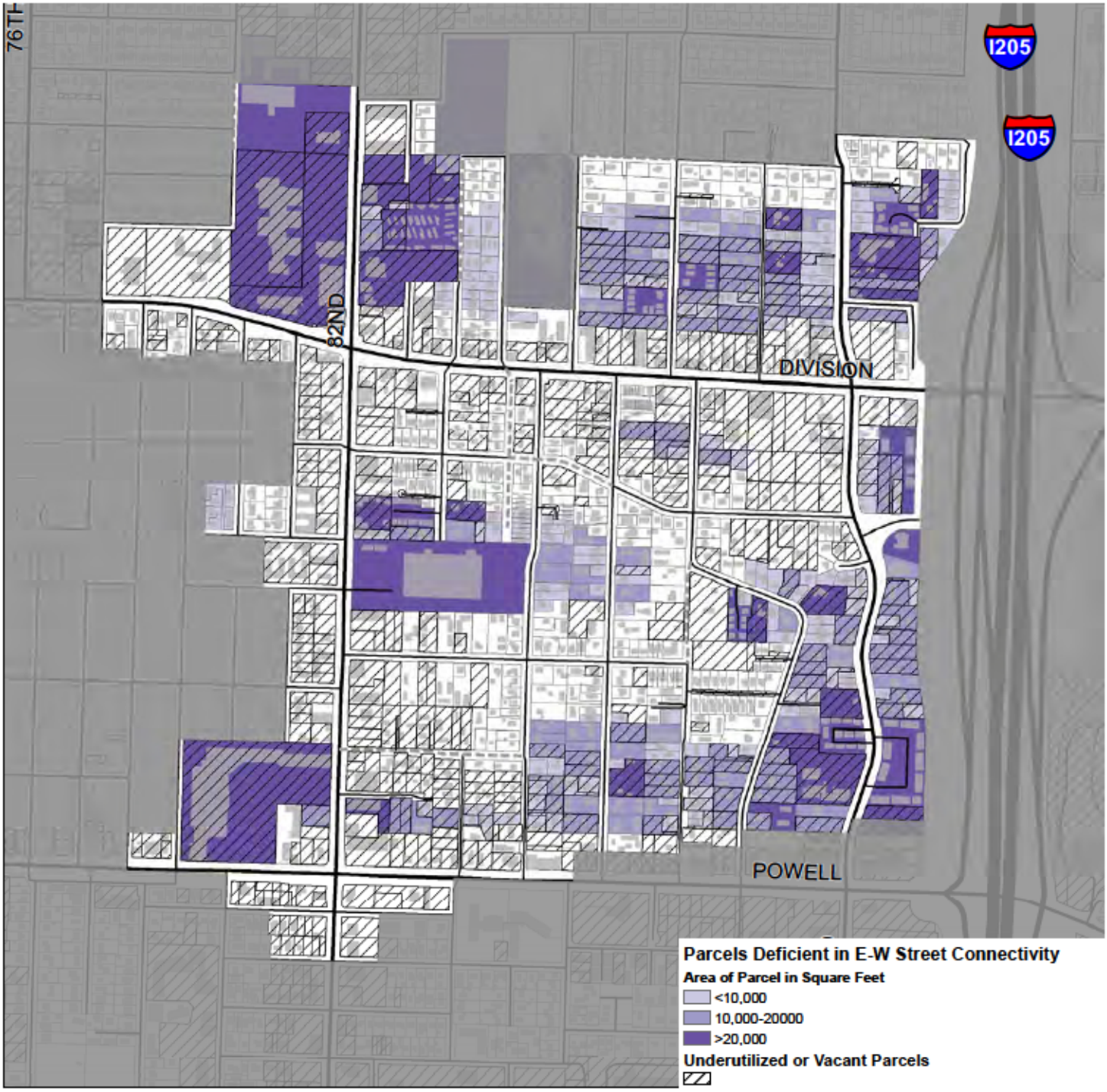


Figure 2. Deficiencies in connectivity of East-West through-streets in the Jade District.

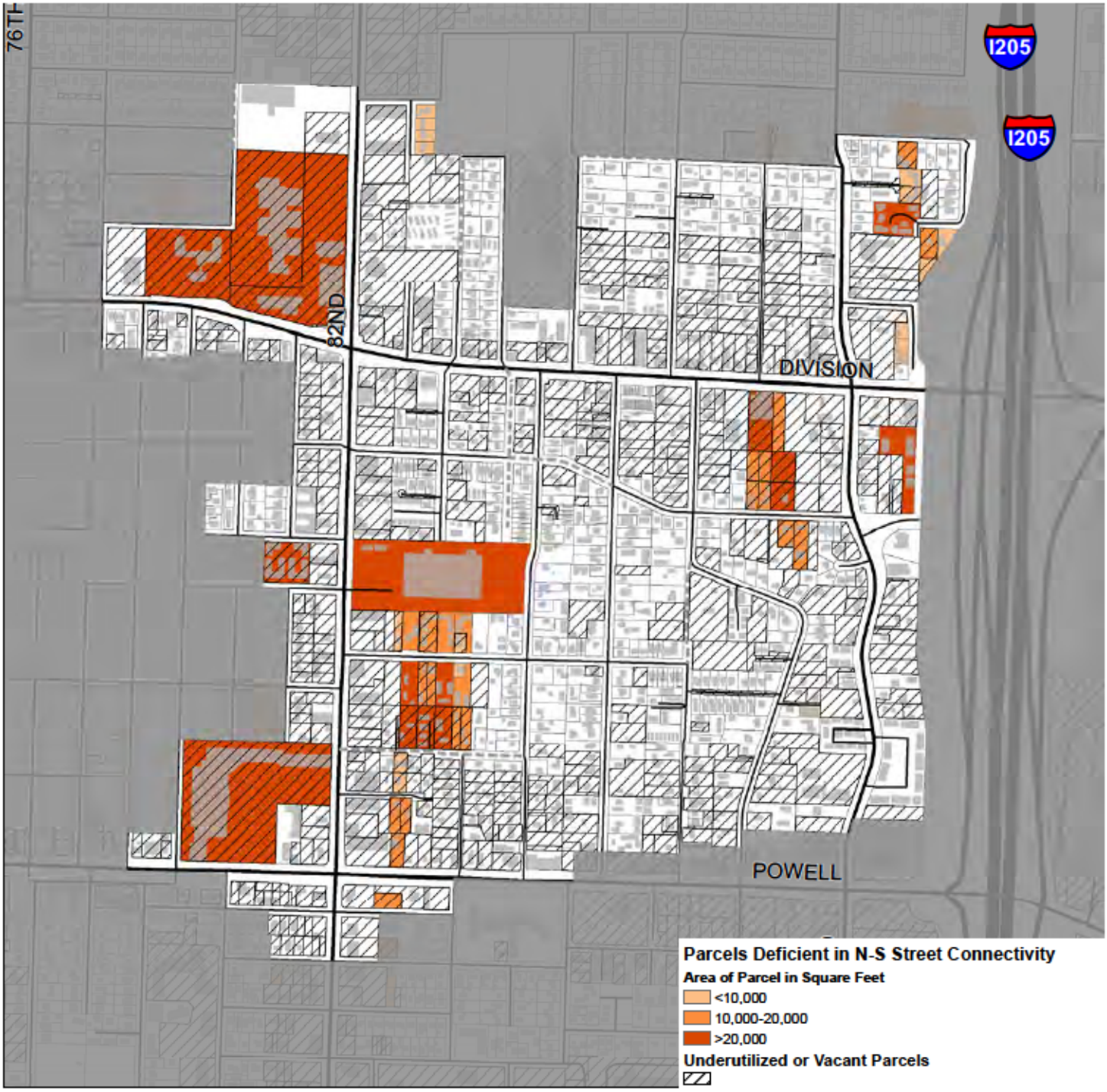


Figure 3. Deficiencies in connectivity of North-South through-streets in the Jade District.

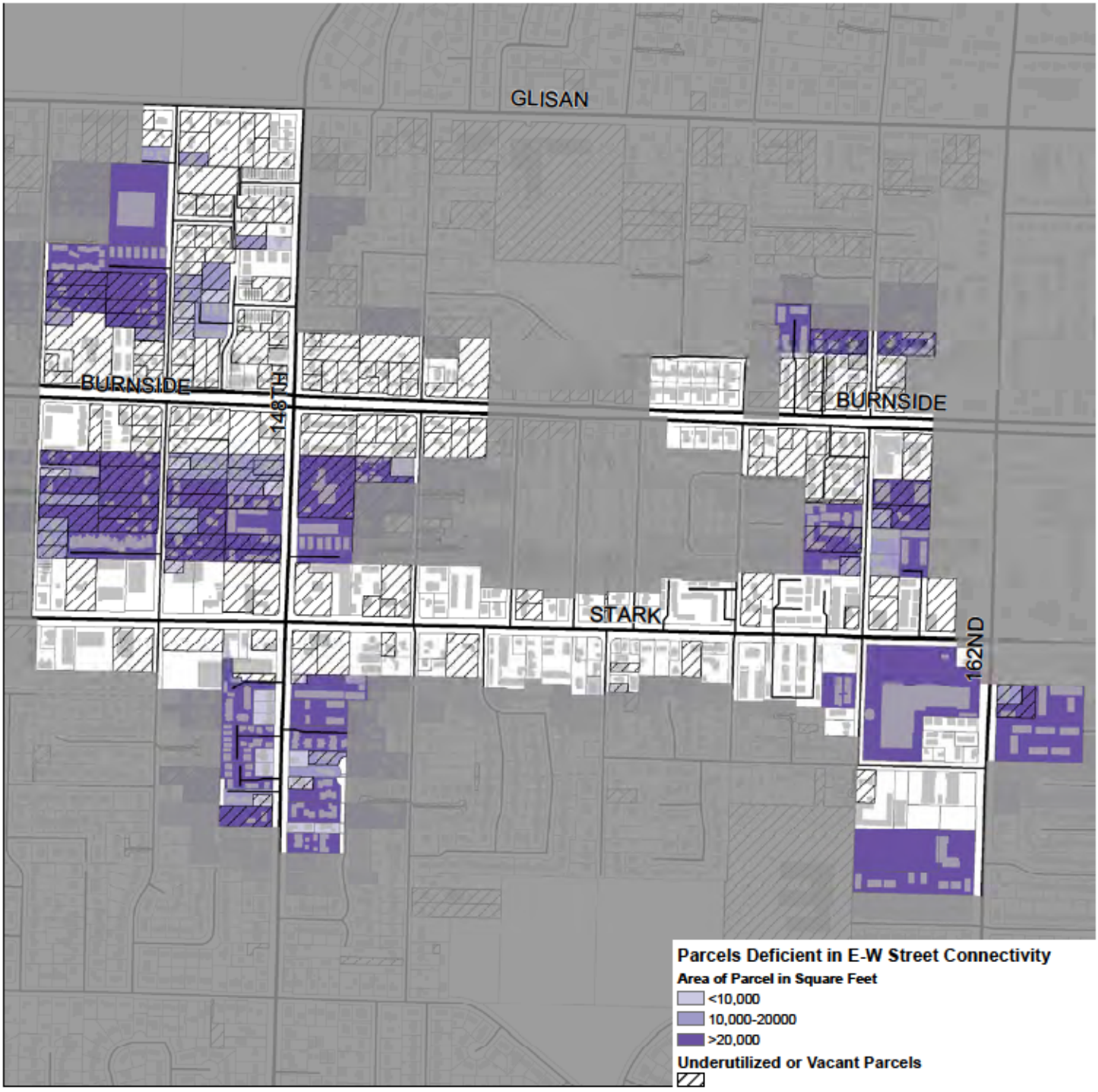


Figure 4. Deficiencies in connectivity of East-West through-streets in the Rosewood/Glenfair area.

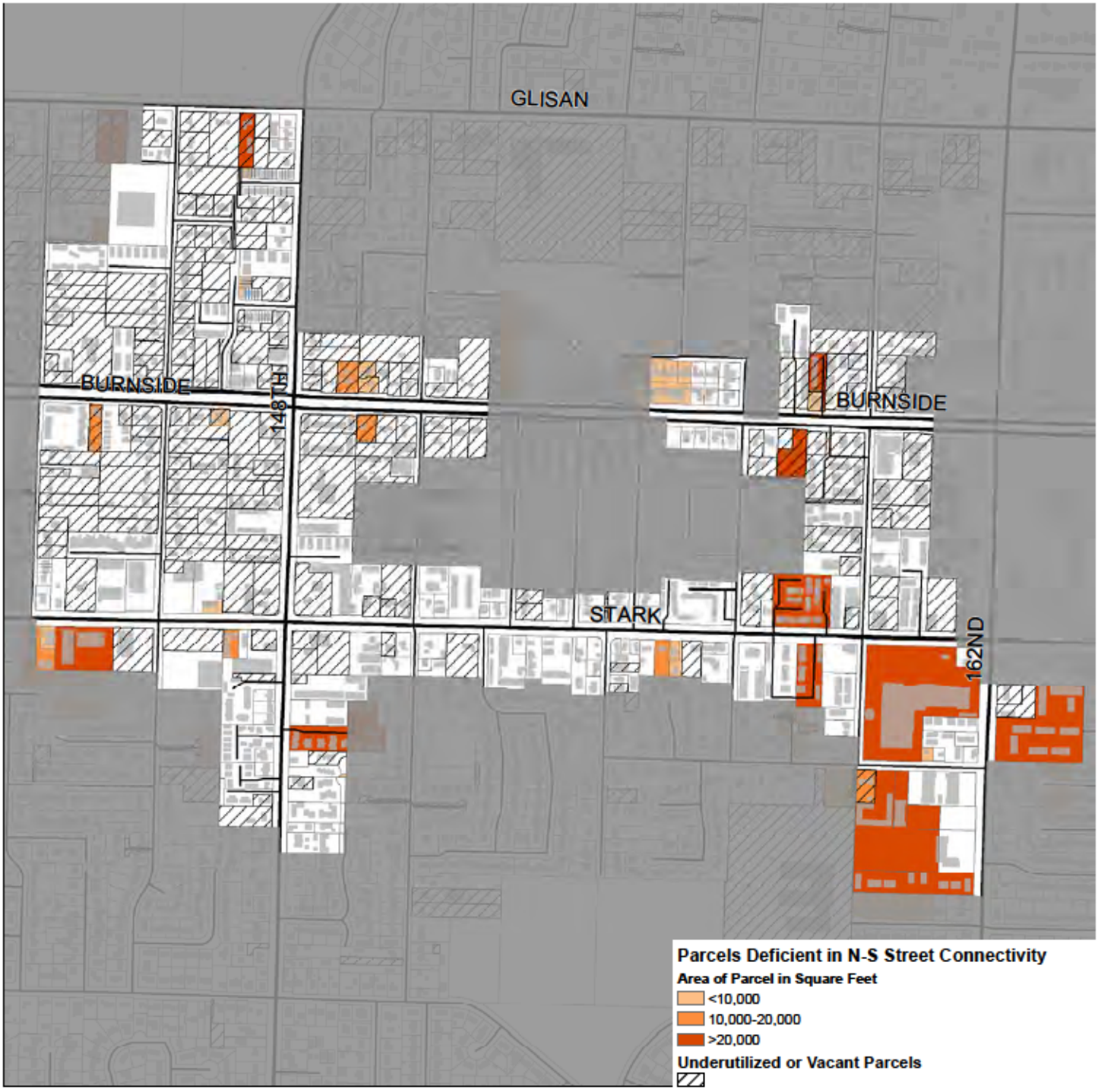


Figure 4. Deficiencies in connectivity of North-South through-streets in the Rosewood/Glenfair area.

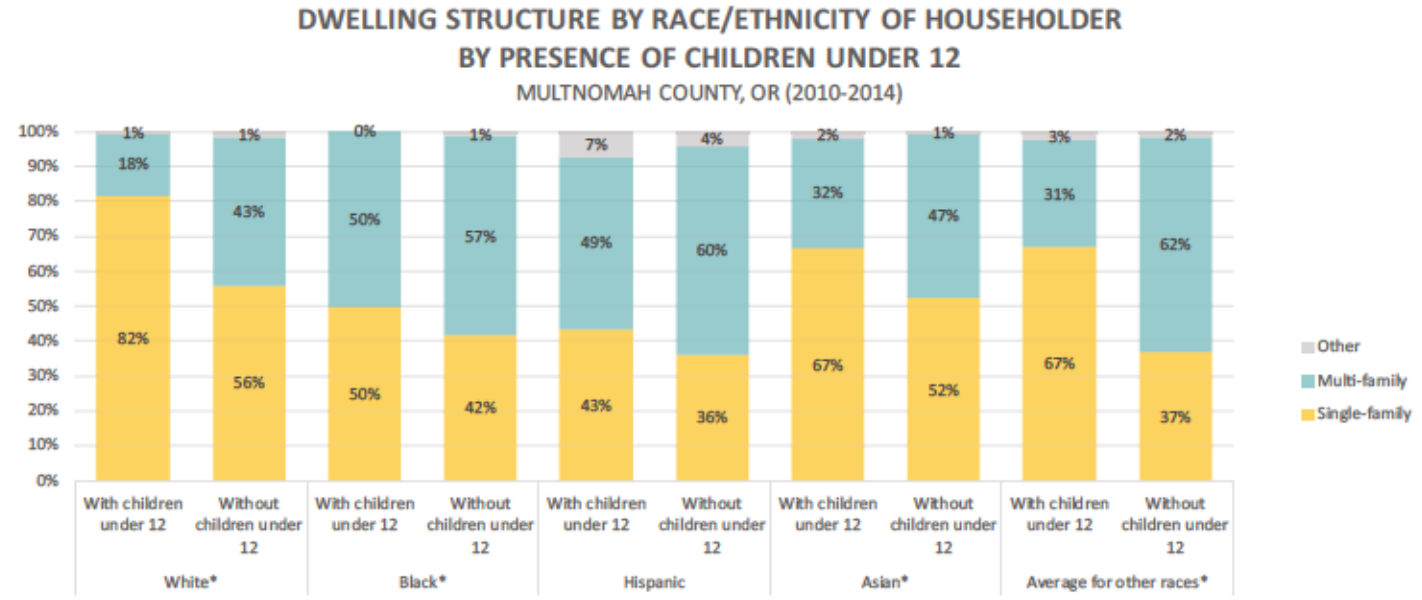
Focus Area Demographics and Housing Market Conditions

This section includes demographic and housing market information for a number of study areas that include large amounts of multi-dwelling zoning (center designation indicated in parentheses):

- **122nd and East Burnside (neighborhood center)**
- **NE 60th & Glisan (neighborhood center)**
- **Jade District (neighborhood center)**
- **Killingsworth-Interstate (town center)**
- **Midway – SE 122nd & Division (town center)**
- **Northwest District (town center)**
- **Rosewood-Glenfair (neighborhood center)**
- **St. Johns (town center)**

Two of these areas, the Jade District and the Rosewood-Glenfair areas, will be a focus of the Better Housing by Design project and of street plans to be undertaken through PBOT's Connected Centers Street Plan Project.

The East Portland centers tend to have larger proportions of families with children, as well as larger proportions of rental housing and multi-family housing, than the citywide average. This, together with the greater proportions of communities of color and lower-income households in these areas, highlights that multi-dwelling housing serves as family housing for many of Portland's communities. The chart below indicates how the percentage of households living in multi-family housing varies by race/ethnicity. For some populations, the majority of households live in multi-family housing, in contrast to the situation for white households, for whom single-family housing is the predominant housing.



* Denotes not Hispanic or Latino.
Source: IPUMS-USA, University of Minnesota. 2010-2014 ACS 5-year estimates. Portland Bureau of Planning and Sustainability.

SE 122nd Avenue and East Burnside Street

This neighborhood center, focused around the 122nd Avenue transit station, contains a large area of commercial/mixed use zoning and substantial amounts of higher-density multi-dwelling zoning (primarily R1 and RH).

Table 1: Demographic snapshot, 122nd & East Burnside.

	122nd & E Burnside					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	N/A	N/A	5,972	6,381	1.1%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	N/A	N/A	7,559	8,077	1.1%	3,578	3,649	4,026	4,280	1.0%
Households	N/A	N/A	2,295	2,423	0.9%	206,105	223,737	248,551	261,709	1.0%
Average household size	N/A	N/A	2.50	2.54	0.3%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	N/A	N/A	N/A	$39,333	N/A	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	N/A	N/A	N/A	$21,107	N/A	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	N/A	N/A	25.8%	25.0%	-0.5%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	N/A	N/A	13.3%	14.7%	1.7%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	N/A	N/A	68.7%	66.8%	-0.5%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	N/A	N/A	7.5%	7.3%	-0.4%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	N/A	N/A	1.4%	1.3%	-1.1%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	N/A	N/A	8.7%	9.8%	2.2%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	N/A	N/A	1.0%	1.2%	3.2%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	N/A	N/A	7.5%	7.9%	0.9%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	N/A	N/A	5.3%	5.8%	1.3%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	N/A	N/A	16.0%	16.9%	0.9%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	N/A	N/A	84.0%	83.1%	-0.2%	96.8%	93.2%	90.6%	90.0%	-0.2%

†Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016, except for two centers at 122nd/Burnside and 60th/Glisan, which are for 2010-2016.

Source: U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

Historic demographic data for this geography is not available prior to 2010 (N/A in Table 1). In 2016, there were about 6,400 residents, which has grown by about 400 residents since 2010. The average household size of 2.5 is larger than the citywide average, which is reflective of the higher presence of children under 20 in this area. The median household income is also considerably lower than the citywide average. This area is also more racially diverse, with a third of residents identifying as a person of color. Relative to other centers, this area has a slightly higher share of residents over 64.

Table 2: Housing profile, 122nd & East Burnside.

	122nd & E Burnside	City of Portland
Total housing units (2010)	2,458	265,444
Vacancy rate	6.6%	6.4%
Occupied units	2,295	248,551
Owner-occupied	47%	54%
Renter-occupied	53%	46%
Multi-family share of units	54%	40%
Current rental market (Nov 2016) †		
1-bedroom	$900	$1,150
2-bedroom	$1,223	$1,310
3-bedroom	$1,695	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$215,000	$285,992
2011 (trough)	$148,275	$243,900
2016 (current/peak)	$269,950	$375,000
Annual growth rate 2007-2016	2.6%	3.1%
Median price per square foot		
2007 (peak)	$168	$194
2011 (trough)	$103	$150
2016 (current/peak)	$191	$253
Annual growth rate 2007-2016	1.4%	3.0%

All dollar amounts are in current dollars. † Rental market for Portland reflects stable rates for Q3 2016. ‡ Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

Housing values are generally more affordable in this area than in the rest of the city and other Centers, but appreciation coming out of the recession has been lower-than-average at 2.6% (Table 2). There are also fewer occupied housing units in this area, and vacancy rates are higher relative to other centers (about 6.6% in 2010). The current rental market for 1- and 2-bedroom units are lower, but asking rent for two-bedroom units has increased considerably starting 2014 (Figure 1).

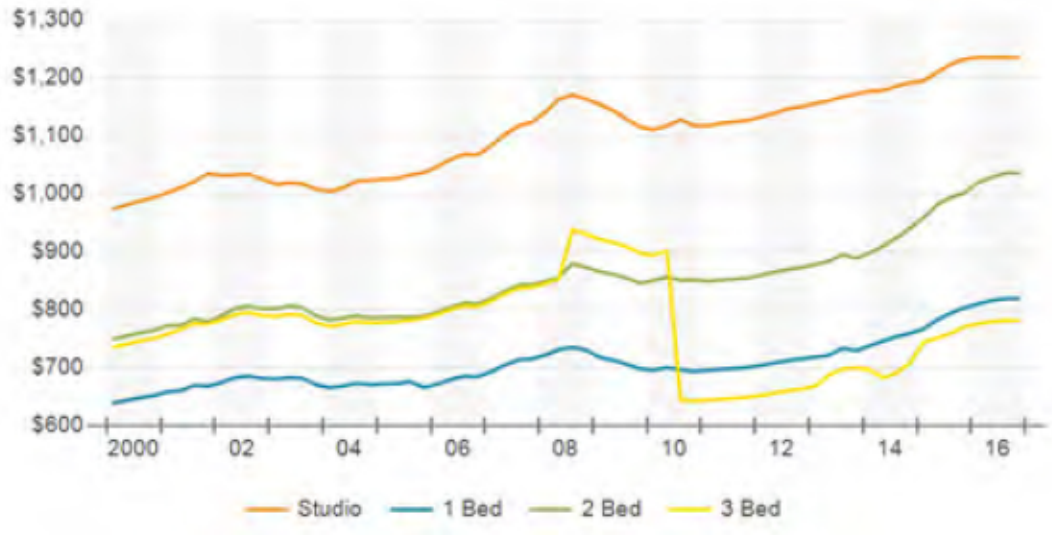


Figure 1: Asking rent by number of bedrooms, 122nd & East Burnside. Source: CoStar, PDC.

NE 60th Avenue and Glisan Street

The 60th Avenue neighborhood center is focused around a light rail station and includes large amounts of medium-density multi-dwelling zoning (R2 and R1). A major employer, Providence Medical Center, is located adjacent to the area.

Table 3: Demographic snapshot, Center (NE 60th & Glisan).

	Center (NE 60th & Glisan)					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	N/A	N/A	6,519	6,691	0.4%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	N/A	N/A	8,252	8,470	0.4%	3,578	3,649	4,026	4,280	1.0%
Households	N/A	N/A	3,174	3,214	0.2%	206,105	223,737	248,551	261,709	1.0%
Average household size	N/A	N/A	2.02	2.05	0.2%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	N/A	N/A	N/A	$49,206	N/A	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	N/A	N/A	N/A	$30,051	N/A	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	N/A	N/A	17.9%	17.3%	-0.5%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	N/A	N/A	9.8%	11.5%	2.8%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	N/A	N/A	80.3%	79.0%	-0.3%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	N/A	N/A	5.6%	5.4%	-0.6%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	N/A	N/A	1.2%	1.2%	-0.6%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	N/A	N/A	5.5%	6.4%	2.4%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	N/A	N/A	0.1%	0.2%	3.0%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	N/A	N/A	2.5%	2.7%	1.1%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	N/A	N/A	4.8%	5.2%	1.4%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	N/A	N/A	6.7%	7.2%	1.3%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	N/A	N/A	93.3%	92.8%	-0.1%	96.8%	93.2%	90.6%	90.0%	-0.2%

† Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2010-2016

Source: U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

Historic demographic data for this geography is not available prior to 2010 (N/A in Table 3). In 2016, there were about 6,700 residents, which has grown by about 200 residents since 2010. The average household size of 2.0 is smaller than the citywide average. The area has slightly lower-than-average median incomes and has slightly less racial diversity (compared to the city as a whole). Relative to other Centers, this area has a slightly higher share of residents over 64.

Table 4: Housing profile, Center (NE 60th & Glisan).

	Center (NE 60th & Glisan)	City of Portland
Total housing units (2010)	3,313	265,444
Vacancy rate	4.2%	6.4%
Occupied units	3,174	248,551
Owner-occupied	43%	54%
Renter-occupied	57%	46%
Multi-family share of units	37%	40%
Current rental market (Nov 2016) †		
1-bedroom	$1,129	$1,150
2-bedroom	$1,468	$1,310
3-bedroom	$2,029	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$279,000	$285,992
2011 (trough)	$252,400	$243,900
2016 (current/peak)	$399,500	$375,000
Annual growth rate 2007-2016	4.1%	3.1%
Median price per square foot		
2007 (peak)	$222	$194
2011 (trough)	$178	$150
2016 (current/peak)	$284	$253
Annual growth rate 2007-2016	2.8%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡ Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

Home values and trends in this area are similar to the citywide average, but they have appreciated faster from 2007 to 2016 at 4.1% per year (Table 4). The vacancy rate is much lower than other Centers at 4.2%, and the share of multi-family units is also lower at 37%. Rents are more expensive than the citywide average, and they have spiked starting 2015 (Figure 2).

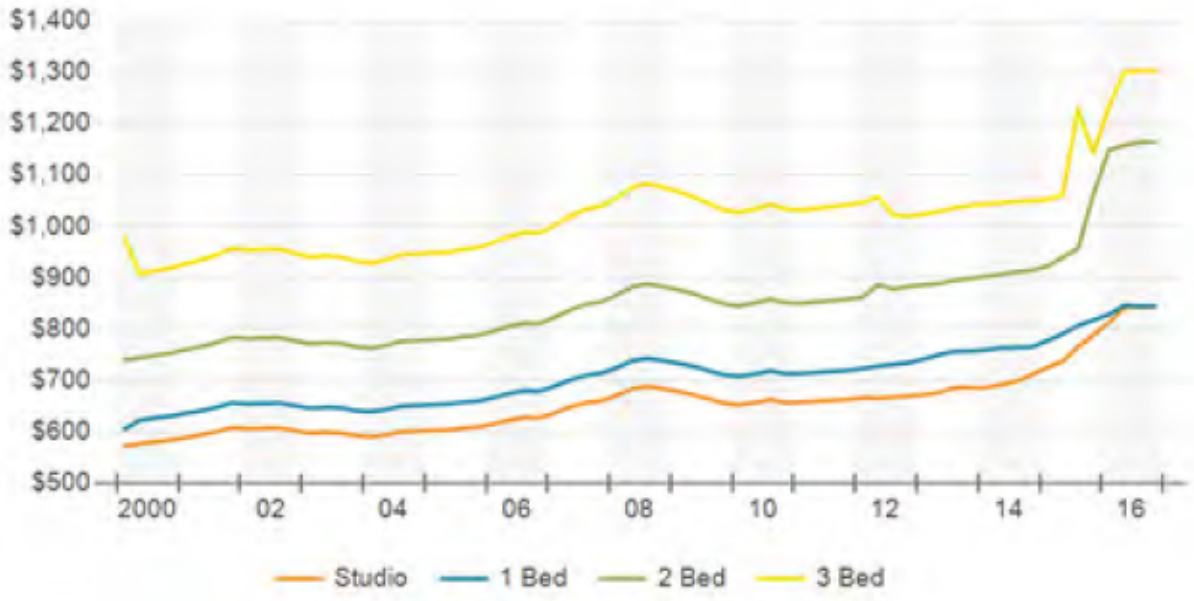


Figure 2: Asking rent by number of bedrooms, Center (NE 60th & Glisan). Source: CoStar, PDC.

Jade District

The Jade District neighborhood center, anchored by commercial areas along its major corridors, is marked by higher rates of population growth and considerable diversity, with a relatively large Asian population. The area includes large amounts of medium-density multi-dwelling zoning (R2 and R1)

Table 5: Demographic snapshot, Jade District.

	Jade District					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	4,276	4,967	6,681	6,859	2.0%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	5,413	6,287	8,457	8,682	2.0%	3,578	3,649	4,026	4,280	1.0%
Households	1,812	2,022	2,629	2,654	1.7%	206,105	223,737	248,551	261,709	1.0%
Average household size	2.29	2.41	2.54	2.58	0.4%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$39,392	$48,527	$44,847	$33,103	-2.4%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$19,570	$23,095	$20,935	$17,842	-1.6%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	23.9%	24.6%	25.5%	25.0%	0.1%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	21.1%	14.8%	11.6%	12.9%	-0.8%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	83.3%	69.4%	55.1%	52.6%	-1.7%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	1.3%	2.8%	8.1%	7.6%	6.4%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	1.3%	1.1%	1.6%	1.4%	1.6%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	10.9%	18.1%	22.9%	25.4%	2.1%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.1%	0.4%	1.3%	1.5%	8.1%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	1.1%	3.5%	6.0%	6.2%	3.6%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	2.1%	4.7%	5.0%	5.3%	0.8%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	2.9%	8.0%	11.5%	11.9%	2.5%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	97.1%	92.0%	88.5%	88.1%	-0.3%	96.8%	93.2%	90.6%	90.0%	-0.2%

† Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

The Jade District is most notable for its racial and ethnic diversity, with almost half of all residents identifying as a person of color in 2016 (Table 5). The area has seen a moderate increase in diversity since 1990, with over 2,500 persons of color moving to the area by 2016, about half of whom were Asian or Asian American. The Jade District is also lower income, and the median household income is $20,000 less per year than the citywide average.

Table 6: Housing profile, Jade District.

	Jade District	City of Portland
Total housing units (2010)	2,764	265,444
Vacancy rate	4.9%	6.4%
Occupied units	2,629	248,551
Owner-occupied	43%	54%
Renter-occupied	57%	46%
Multi-family share of units	45%	40%
Current rental market (Nov 2016) †		
1-bedroom	$925	$1,150
2-bedroom	$1,100	$1,310
3-bedroom	$1,560	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$234,000	$285,992
2011 (trough)	$180,000	$243,900
2016 (current/peak)	$320,000	$375,000
Annual growth rate 2007-2016	3.5%	3.1%
Median price per square foot		
2007 (peak)	$171	$194
2011 (trough)	$129	$150
2016 (current/peak)	$229	$253
Annual growth rate 2007-2016	3.3%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

The value of single-family homes in the Jade District is slightly less than the citywide average, but it has appreciated at a slightly faster rate since 2007 (Table 6). Rents in the area are low, but there are few available units, which is confirmed by its high vacancy rate. Asking rent for two-bedroom units has increased considerably starting in 2015 (Figure 3).

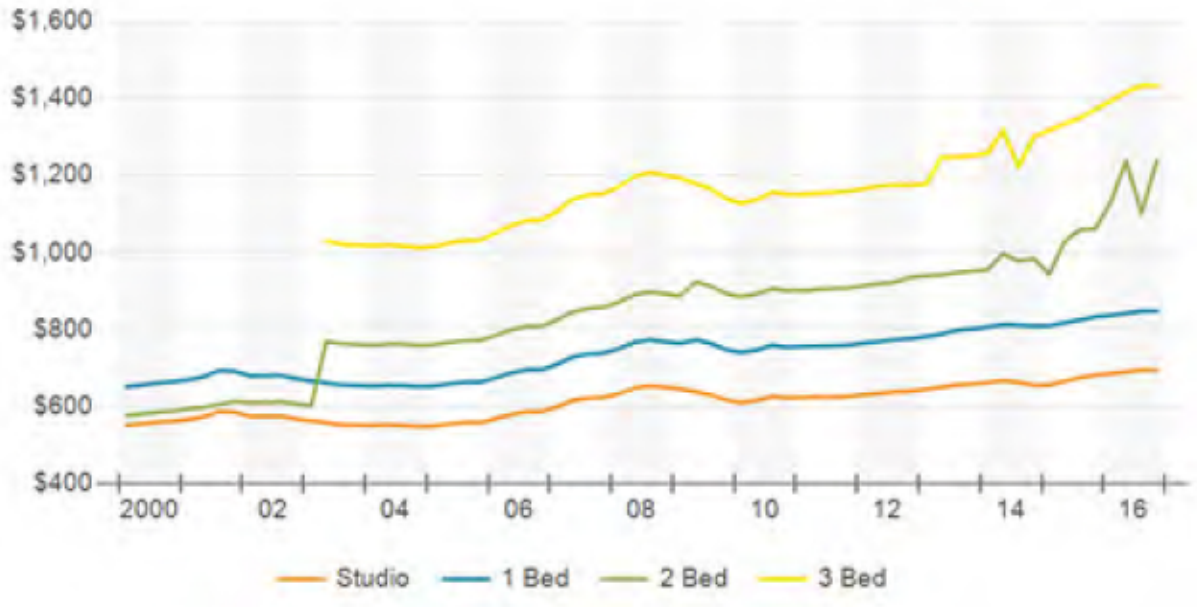


Figure 3: Asking rent by number of bedrooms, Jade District. Source: CoStar, PDC.

Killingsworth-Interstate

The Killingsworth-Interstate town center, centered around the Killingsworth commercial corridor and a Portland Community College campus, has been experiencing gentrification since the 1990s, particularly since installing the Yellow MAX line. The area includes large amounts of high-density multi-dwelling zoning (primarily RH) along the Interstate light rail corridor.

Table 7: Demographic snapshot, Killingsworth-Interstate.

	Killingsworth-Interstate					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	6,460	6,631	6,577	7,218	0.5%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	8,177	8,394	8,325	9,137	0.5%	3,578	3,649	4,026	4,280	1.0%
Households	2,449	2,587	2,903	3,146	1.2%	206,105	223,737	248,551	261,709	1.0%
Average household size	2.59	2.54	2.24	2.28	-0.7%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$31,471	$41,380	$39,028	$46,509	0.7%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$18,433	$21,957	$22,481	$28,516	1.6%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	31.8%	29.2%	20.7%	20.9%	-2.1%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	11.7%	7.4%	6.8%	8.3%	0.7%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	52.6%	47.0%	63.7%	62.9%	1.8%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	35.5%	33.0%	20.6%	20.1%	-3.0%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	1.7%	1.4%	1.3%	1.3%	-0.4%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	4.5%	3.8%	3.6%	4.2%	0.7%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.8%	1.0%	0.6%	0.6%	-2.8%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	2.3%	6.5%	4.4%	4.7%	-2.1%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	2.6%	7.3%	5.7%	6.2%	-1.1%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	5.9%	11.4%	10.6%	11.3%	-0.1%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	94.1%	88.6%	89.4%	88.7%	0.0%	96.8%	93.2%	90.6%	90.0%	-0.2%

† Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

The Killingsworth-Interstate area was identified as having ongoing gentrification and displacement pressures. Indeed, between 1990 and 2016 the area lost over 800 Black residents while it gained over 1,100 white residents (Table 7). Despite the loss in diversity, the area is still a strong Black community, with 20% of the population identifying as Black. The area has few older adults, at only 8% over 64.

Table 8: Housing profile, Killingsworth-Interstate.

	Killingsworth-Interstate	City of Portland
Total housing units (2010)	3,043	265,444
Vacancy rate	4.6%	6.4%
Occupied units	2,903	248,551
Owner-occupied	43%	54%
Renter-occupied	57%	46%
Multi-family share of units	35%	40%
Current rental market (Nov 2016) †		
1-bedroom	$1,328	$1,150
2-bedroom	$1,629	$1,310
3-bedroom	$1,962	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$298,500	$285,992
2011 (trough)	$252,500	$243,900
2016 (current/peak)	$427,500	$375,000
Annual growth rate 2007-2016	4.1%	3.1%
Median price per square foot		
2007 (peak)	$211	$194
2011 (trough)	$171	$150
2016 (current/peak)	$298	$253
Annual growth rate 2007-2016	3.9%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

The Killingsworth-Interstate housing market is characterized by low vacancy rates (4.6%) and a much higher share of single-family units at 65% (Table 8). Home values have increased faster here than other places coming out of the recession, growing at 4.1% per year between 2011 and 2016. For two-bedroom units, stable asking rents increased almost $200 in two years (Figure 4).

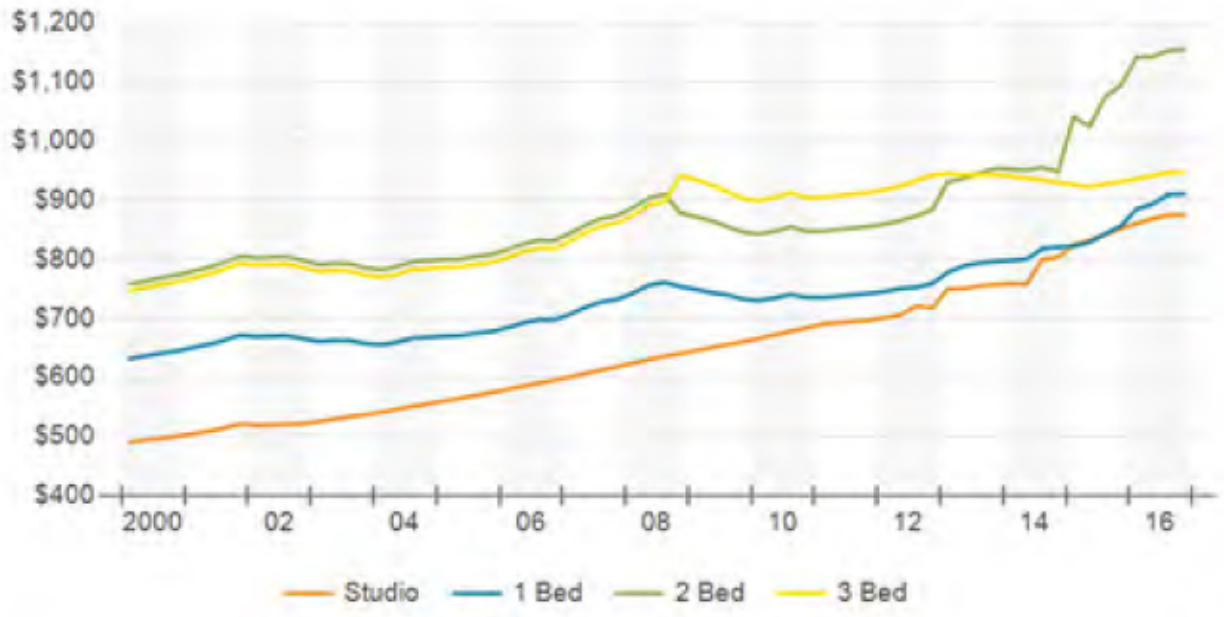


Figure 4: Asking rent by number of bedrooms, Killingsworth-Interstate. Source: CoStar, PDC.

Midway [SE 122nd and Division]

The Midway town center lies east of I-205 and is anchored by shopping centers at SE 122nd and Division. This area has become increasingly diverse since 1990 and includes substantial amounts of medium-density multi-dwelling zoning (R2 and R1). along its major corridors

Table 9: Demographic snapshot, Midway (SE 122nd & Division).

	Midway (SE 122nd & Division)					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	5,085	6,242	8,055	8,661	2.1%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	6,437	7,901	10,196	10,963	2.1%	3,578	3,649	4,026	4,280	1.0%
Households	2,098	2,281	2,771	2,931	1.6%	206,105	223,737	248,551	261,709	1.0%
Average household size	2.38	2.70	2.85	2.90	0.4%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$39,953	$46,255	$43,109	$37,106	-1.4%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$18,406	$20,664	$19,742	$16,099	-1.5%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	28.9%	31.8%	31.7%	30.4%	-0.3%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	13.0%	10.2%	8.8%	10.1%	0.0%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	87.9%	75.7%	62.5%	60.2%	-1.4%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	1.2%	3.1%	7.7%	7.4%	5.5%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	1.4%	1.1%	1.2%	1.1%	0.1%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	4.9%	8.6%	12.7%	14.5%	3.3%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.1%	0.3%	1.2%	1.4%	11.2%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	1.5%	6.7%	9.9%	10.3%	2.7%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	3.0%	4.5%	4.8%	5.1%	0.8%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	3.4%	11.2%	17.6%	18.3%	3.1%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	96.6%	88.8%	82.4%	81.7%	-0.5%	96.8%	93.2%	90.6%	90.0%	-0.2%

† Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

Midway is a quickly growing center, adding over 3,000 residents between 1990 and 2010 (Table 9). The area has a much higher average household size (2.9 in 2016) and share of children (30% in 2016). Median household income is slightly lower in this area, at $37,000 in 2016. Midway is more diverse than other centers, with about 40% persons of color. There is a higher share of Asians/Asian-Americans (15%) and those identifying with some other race (10%).

Table 10: Housing profile, Midway (SE 122nd & Division).

	Midway (SE 122nd & Division)	City of Portland
Total housing units (2010)	2,930	265,444
Vacancy rate	5.4%	6.4%
Occupied units	2,771	248,551
Owner-occupied	42%	54%
Renter-occupied	58%	46%
Multi-family share of units	56%	40%
Current rental market (Nov 2016) †		
1-bedroom	$800	$1,150
2-bedroom	$1,115	$1,310
3-bedroom	N/A	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$224,000	$285,992
2011 (trough)	$150,000	$243,900
2016 (current/peak)	$258,000	$375,000
Annual growth rate 2007-2016	1.6%	3.1%
Median price per square foot		
2007 (peak)	$149	$194
2011 (trough)	$108	$150
2016 (current/peak)	$169	$253
Annual growth rate 2007-2016	1.4%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

The housing market in Midway is undervalued compared to the citywide average as well as other centers, with the current 2016 market for single-family detached homes at $258,000—over $100,000 less than Portland overall (Table 10). The rate of annual appreciation in Midway is also about half of the citywide average. A two-bedroom unit costs between $950 and $1,120 per month (Table 10 & Figure 5).

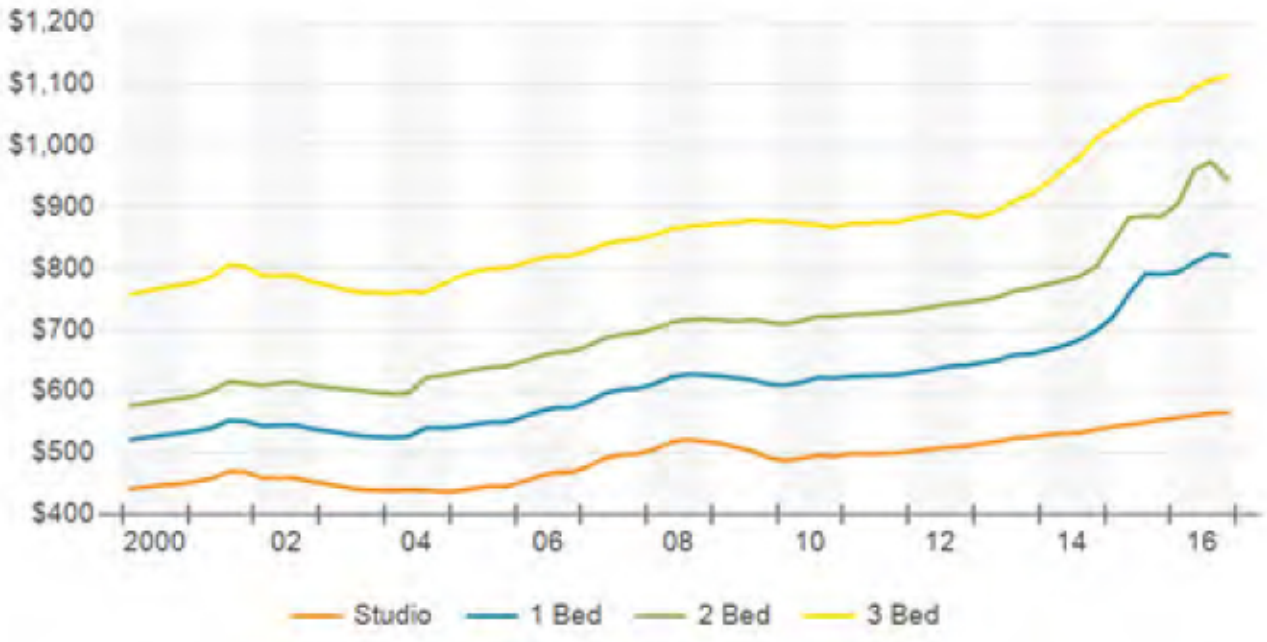


Figure 5: Asking rent by number of bedrooms, Midway (SE 122nd & Division). Source: CoStar, PDC.

Northwest District

The Northwest District town center is the densest part of Portland outside the Central City. The area is anchored by a series of main street commercial corridors and includes concentrations of older apartment buildings, with a large amount of high-density multi-dwelling zoning (primarily RH).

Table 11: Demographic snapshot, Northwest District.

	Northwest District					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145 sq.mi.	
Population	9,355	9,648	11,129	12,157	1.5%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	11,842	12,213	14,087	15,389	1.5%	3,578	3,649	4,026	4,280	1.0%
Households	6,184	6,535	7,336	7,921	1.2%	206,105	223,737	248,551	261,709	1.0%
Average household size	1.43	1.45	1.49	1.51	0.3%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$32,244	$43,012	$42,703	$51,894	1.2%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$36,097	$45,335	$47,094	$53,060	1.0%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	8.7%	7.9%	7.8%	8.2%	0.3%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	16.4%	10.0%	10.5%	12.3%	1.3%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	91.0%	88.9%	87.3%	86.0%	-0.2%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	2.5%	2.2%	1.5%	1.5%	-2.2%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	1.0%	1.1%	0.6%	0.6%	-4.1%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	2.4%	3.7%	4.9%	5.7%	2.6%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.2%	0.2%	0.2%	0.2%	1.1%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	0.7%	1.4%	1.6%	1.7%	1.0%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	2.4%	2.6%	4.0%	4.4%	3.4%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	2.7%	3.9%	5.2%	5.6%	2.3%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	97.3%	96.1%	94.8%	94.4%	-0.1%	96.8%	93.2%	90.6%	90.0%	-0.2%

†Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

Northwest District's demographic profile is characterized by a high population density (about 15,400 people per mi2, which compares to San Francisco at 17,200), very little diversity (about 9 out of 10 people are white), many one- and two-person households, and very few children (less than 9% of the population is a child under 20) (Table 11). The number of people and households moving to the area is increasing faster than the citywide average, and there are more retired persons in this area.

Table 12: Housing profile, Northwest District.

	Northwest District	City of Portland
Total housing units (2010)	8,093	265,444
Vacancy rate	9.4%	6.4%
Occupied units	7,336	248,551
Owner-occupied	23%	54%
Renter-occupied	77%	46%
Multi-family share of units	87%	40%
Current rental market (Nov 2016) †		
1-bedroom	$1,527	$1,150
2-bedroom	$2,350	$1,310
3-bedroom	$2,463	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$754,311	$285,992
2011 (trough)	$681,250	$243,900
2016 (current/peak)	$975,000	$375,000
Annual growth rate 2007-2016	2.9%	3.1%
Median price per square foot		
2007 (peak)	$303	$194
2011 (trough)	$230	$150
2016 (current/peak)	$378	$253
Annual growth rate 2007-2016	2.5%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

Northwest District has a very expensive real estate market (Table 12 & Figure 6). The median sale price of single-family homes in 2016 was almost $1 million, and the price per ⊠2 was about $380. The area has a high vacancy rate (9.4%) and there are many new developments that have broken ground in the past two years. A two-bedroom unit will cost a renter between $2,000 and $2,400 typically. The area also has a very high share of renters (77%) and of multi-family units (87%).

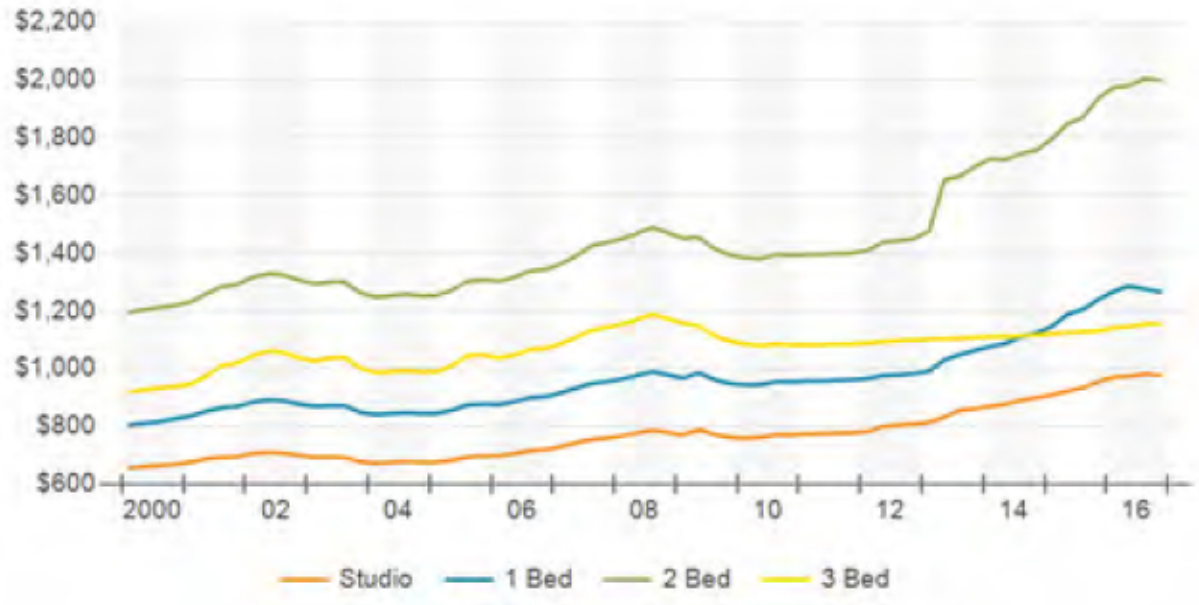


Figure 6: Asking rent by number of bedrooms, Northwest District. Source: CoStar, PDC.

Rosewood-Glenfair

The Rosewood-Glenfair neighborhood center has a diverse population and is located at the edge of Portland's eastern boundary with Gresham. The area's high-density residential zoning (primarily RH) is centered around the 148th Avenue and 162nd Avenue light rail stations.

Table 13: Demographic snapshot, Rosewood-Glenfair.

	Rosewood-Glenfair					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145	sq.mi.
Population	5,204	6,562	8,062	8,478	1.6%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	6,587	8,306	10,205	10,732	1.6%	3,578	3,649	4,026	4,280	1.0%
Households	2,084	2,453	2,885	2,993	1.3%	206,105	223,737	248,551	261,709	1.0%
Average household size	2.50	2.67	2.74	2.78	0.3%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$44,524	$47,322	$44,549	$31,766	-2.5%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$19,685	$21,968	$20,341	$16,025	-2.0%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	29.5%	31.5%	31.8%	30.7%	-0.2%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	9.7%	8.6%	7.6%	8.5%	-0.1%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	89.2%	71.6%	59.0%	57.1%	-1.4%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	1.2%	3.5%	9.9%	9.5%	6.4%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	1.2%	1.6%	1.9%	1.8%	0.6%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	2.7%	7.2%	7.7%	8.6%	1.1%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.3%	0.3%	0.8%	0.9%	7.6%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	2.1%	10.6%	14.7%	15.6%	2.4%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	3.3%	5.0%	6.0%	6.4%	1.5%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	6.0%	17.5%	26.3%	28.0%	3.0%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	94.0%	82.5%	73.7%	72.0%	-0.8%	96.8%	93.2%	90.6%	90.0%	-0.2%

†Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

Rosewood has undergone significant change in the past 20 years, which can be characterized by a high population growth rate (1.6% per year since 2000), a larger household size (2.8 in 2016), a high proportion of the population under 20 (31% in 2016), and considerable racial/ethnic diversity (more than 43% persons of color) (Table 13). The area has a very high Hispanic/Latino population—almost one in three people—as well as a higher share of Native Americans—about 2%.

Table 14: Housing profile, Rosewood-Glenfair.

	Rosewood-Glenfair	City of Portland
Total housing units (2010)	3,080	265,444
Vacancy rate	6.3%	6.4%
Occupied units	2,885	248,551
Owner-occupied	35%	54%
Renter-occupied	65%	46%
Multi-family share of units	61%	40%
Current rental market (Nov 2016) †		
1-bedroom	$893	$1,150
2-bedroom	$1,164	$1,310
3-bedroom	$1,499	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$258,000	$285,992
2011 (trough)	$160,474	$243,900
2016 (current/peak)	$250,000	$375,000
Annual growth rate 2007-2016	-0.3%	3.1%
Median price per square foot		
2007 (peak)	$153	$194
2011 (trough)	$107	$150
2016 (current/peak)	$180	$253
Annual growth rate 2007-2016	1.9%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

The housing market in Rosewood-Glenfair has struggled relative to other parts of the city. This is one of only a few parts of the city where home prices actually decreased between 2007 and 2016 (Table 14). However, the cost per ☒2 of homes increased by 2%. Rents are relatively a☒ordable, and a three-bedroom unit costs between $1,000 and $1,500 (Table 14 & Figure 7).

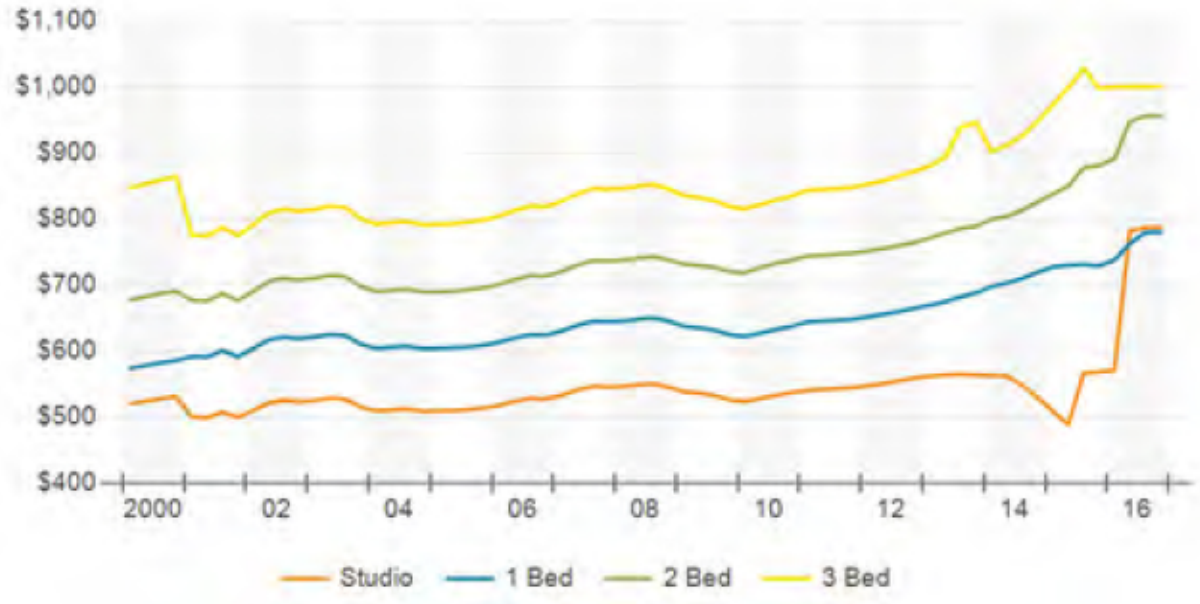


Figure 7: Asking rent by number of bedrooms, Rosewood-Glenfair. Source: CoStar, PDC.

St. Johns

The St. Johns town center, anchored by its commercial main street, is located on the far northwest part of the North Portland peninsula. Its demographic and housing profile trends are generally representative of the city as a whole. The area's medium-density multi-dwelling zoning (primarily R1) is focused around its core commercial area.

Table 15: Demographic snapshot, St. Johns.

	St. Johns					City of Portland				
	1990	2000	2010	2016	CAGR	1990	2000	2010	2016	CAGR
Area	0.79 sq. mi.					136	145	145	145 sq.mi.	
Population	4,773	5,243	5,509	6,070	0.9%	486,600	529,121	583,794	620,564	1.0%
Density (per sq. mi.)	6,042	6,637	6,973	7,684	0.9%	3,578	3,649	4,026	4,280	1.0%
Households	2,080	2,211	2,528	2,756	1.4%	206,105	223,737	248,551	261,709	1.0%
Average household size	2.29	2.37	2.18	2.20	-0.5%	2.30	2.30	2.28	2.31	0.0%
Income										
Median household †	$32,970	$42,301	$39,269	$41,967	0.0%	$47,310	$55,855	$54,422	$53,733	-0.2%
Per capita income	$18,186	$21,441	$23,424	$27,170	1.5%	$26,291	$31,500	$32,557	$33,118	0.3%
Age characteristics										
< 20	28.0%	27.4%	20.7%	20.3%	-1.9%	24.9%	23.7%	21.5%	21.0%	-0.8%
> 64	14.6%	10.5%	8.5%	9.5%	-0.6%	14.4%	11.6%	10.4%	12.6%	0.5%
Race										
White	84.4%	72.8%	77.1%	76.0%	0.3%	82.9%	77.9%	76.1%	74.7%	-0.3%
Black	4.4%	8.2%	6.4%	6.2%	-1.7%	6.9%	6.6%	6.3%	6.1%	-0.5%
Native American	2.8%	2.2%	1.3%	1.3%	-3.4%	1.2%	1.1%	1.0%	1.0%	-0.5%
Asian	1.8%	3.9%	2.4%	2.8%	-2.0%	4.8%	6.3%	7.1%	8.0%	1.5%
Hawaiian/Pacific Islander	0.4%	0.6%	0.9%	1.1%	3.7%	0.3%	0.4%	0.5%	0.6%	3.3%
Some other race	2.1%	5.8%	6.9%	7.2%	1.4%	1.1%	3.5%	4.2%	4.5%	1.5%
Multi-racial	4.1%	6.4%	5.0%	5.4%	-1.1%	2.7%	4.1%	4.7%	5.1%	1.3%
Ethnicity										
Hispanic/Latino	4.9%	11.8%	13.6%	14.4%	1.2%	3.2%	6.8%	9.4%	10.0%	2.4%
Not Hispanic/Latino	95.1%	88.2%	86.4%	85.6%	-0.2%	96.8%	93.2%	90.6%	90.0%	-0.2%

†Median household income and per-capita income reflect estimated 2012 values for 2010. All dollar amounts are adjusted for inflation in 2015 chained dollars. CAGR is compound annual growth rate for 2000-2016. *Source:* U.S. Census Bureau; Esri Business Analyst, 2014 & 2016; Analysis by Bureau of Planning and Sustainability, 2016.

St. Johns serves as a good representation of the "average" neighborhood in terms of its current demographic composition (Table 15). Its population of 6,100 has grown at 0.9% per year since 2000, while its household size has decreased at about 0.5% per year since 2000, currently at 2.20 persons per household. The neighborhood is becoming more racially diverse. The population of color in 1990 was 15.6% of the total population. This increased to 24.0% of the population in 2016.

Table 16: Housing profile, St. Johns.

	St. Johns	City of Portland
Total housing units (2010)	2,689	265,444
Vacancy rate	6.0%	6.4%
Occupied units	2,528	248,551
Owner-occupied	54%	54%
Renter-occupied	46%	46%
Multi-family share of units	39%	40%
Current rental market (Nov 2016) †		
1-bedroom	$1,361	$1,150
2-bedroom	$1,448	$1,310
3-bedroom	$1,613	$1,420
Single-family residential market ‡		
Median sale price		
2007 (peak)	$233,450	$285,992
2011 (trough)	$190,375	$243,900
2016 (current/peak)	$345,000	$375,000
Annual growth rate 2007-2016	4.4%	3.1%
Median price per square foot		
2007 (peak)	$180	$194
2011 (trough)	$141	$150
2016 (current/peak)	$283	$253
Annual growth rate 2007-2016	5.1%	3.0%

All dollar amounts are in current dollars. †Rental market for Portland reflects stable rates for Q3 2016. ‡Single-family home market captures annual sales, except for 2016, which captures sales through October 2016. Grayed text reflects low sample size and should be used with caution. *Source:* U.S. Census Bureau, Census 2010; Esri Business Analyst, 2016; Trulia.com, 2016; CoStar Realty & Portland Development Commission, 2016; City of Portland and Multnomah County Assessment and Taxation, October 2016; Buildable Lands Inventory (BLI); Analysis by Bureau of Planning and Sustainability, 2016.

The housing market in St. Johns is hot. The value of single-family detached homes has increased considerably faster here than other parts of the city (4.4% vs 3.1% per year citywide between 2007 and 2016), and the price per ⊠2 has increased even faster at 5.1% and remains at $280 per ⊠2 (Table 16). There is little variation by number of bedrooms for asking rents in St. Johns, and a two-bedroom unit will cost between $875 and $1,450 per month (Table 16 & Figure 8).

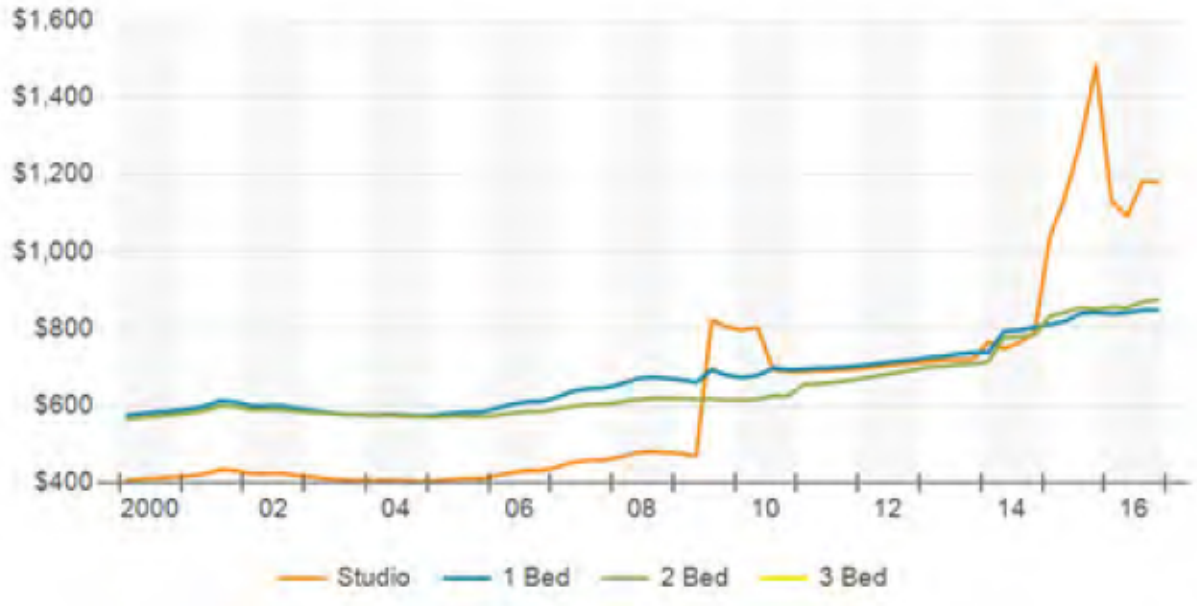


Figure 8: Asking rent by number of bedrooms, St. Johns. Source: CoStar, PDC.

Study Areas

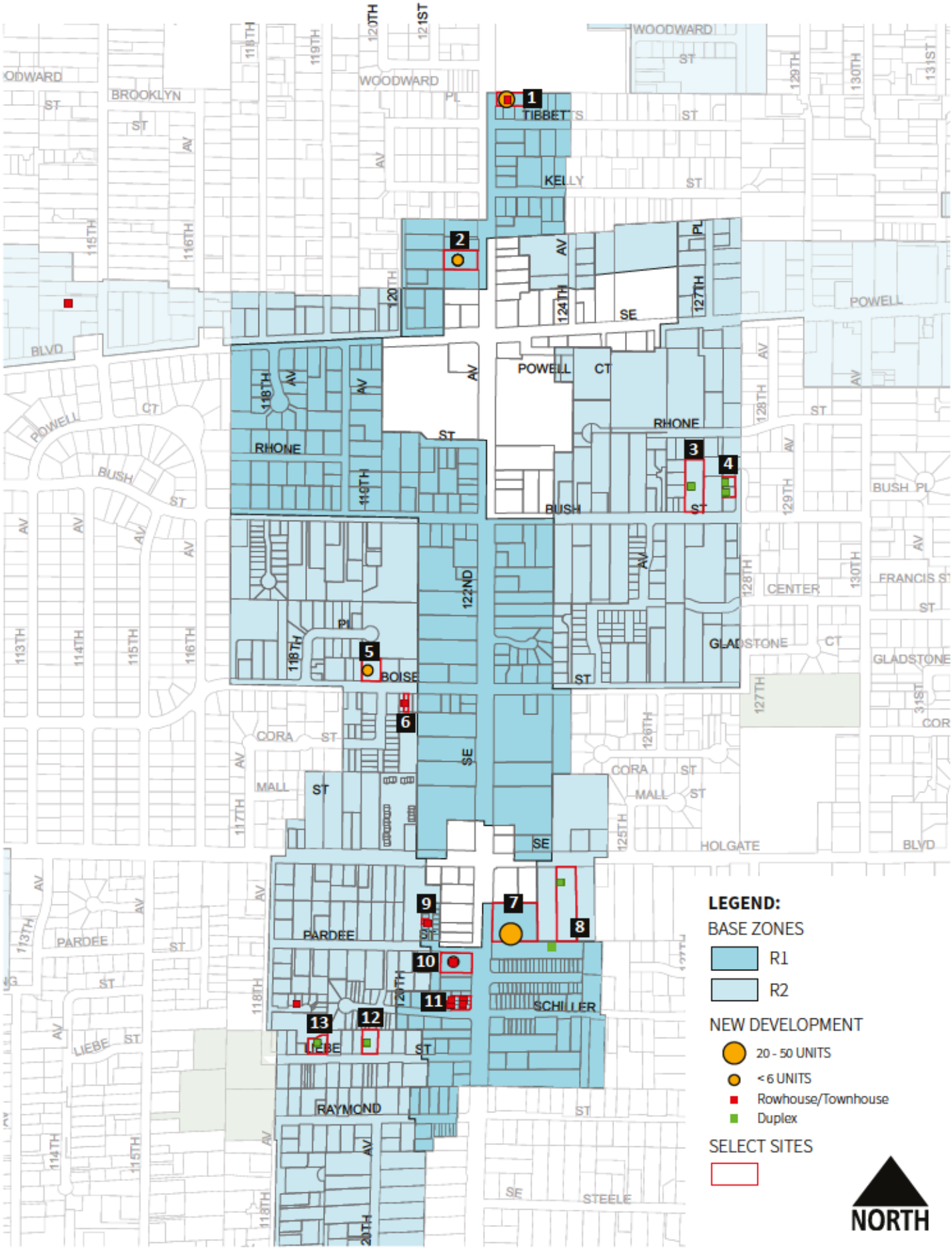
This section shows development activity that has taken place over the past 10 years (2006 - 16) within the multi-dwelling zones of several study areas that include relatively large areas of multi-dwelling zoning. For each study area, this section provides examples of recent development to support the analysis and assessment of built outcomes (summarized in the Development and Design Issues section of the Project Summary). The study areas' designations in the Comprehensive Plan Urban Design Framework are indicated in parentheses.

- **122nd Avenue (civic corridor)**
- **Gateway and 122nd & East Burnside (regional center and neighborhood center)**
- **Interstate Avenue (civic corridor/town center)**
- **Jade District (neighborhood center)**
- **Martin Luther King, Jr. Blvd (civic corridor/neighborhood center)**
- **Rosewood-Glenfair (neighborhood center)**
- **St. Johns (town center**)

2

Note on figures for maximum units allowed: For RH and RX zones, based on assumption of 1 unit per 1000 ft of maximum allowed floor area, since densities in these zones are based on floor-to-area ratios, not unit density.

122nd Avenue: Study Area Map



122nd Avenue: Select Sites

1

Address: 3010 SE 122nd Ave.
Zone: R1
Number of Units: 7
Maximum Units Allowed: 10
Year: 2006

2

Address: 3317 SE 122nd Ave.
Zone: R1
Number of Units: 6
Maximum Units Allowed: 17
Year: 2006

3

Address: 12625 SE Bush St.
Zone: R2
Number of Units: 12
Maximum Units Allowed: 13
Year: 2007

4

Address: 3745 SE 127th Ave.
Zone: R2
Number of Units: 2
Maximum Units Allowed: 2
Year: 2008

5

Address: 11943 SE Boise St.
Zone: R2
Number of Units: 4
Maximum Units Allowed: 4
Year: 2006

6

Address: 12028 SE Boise St.
Zone: R2
Number of Units: 2
Maximum Units Allowed: 2
Year: 2009

7

Address: 4620 SE 122nd Ave.
Zone: R1
Number of Units: 37
Maximum Units Allowed: 46
Year: 2006

8

Address: 12332 SE Holgate Blvd.
Zone: R2
Number of Units: 6
Maximum Units Allowed: 24
Year: 2006

9

Address: 4552 SE 121st Ave.
Zone: R1
Number of Units: 10
Maximum Units Allowed: 18
Year: 2011

10

Address: 12132 SE Pardee St.
Zone: R1
Number of Units: 11
Maximum Units Allowed: 16
Year: 2008

11

Address: 4778 SE 121st Ave
Zone: R1
Number of Units: 8
Maximum Units Allowed: 10
Year: 2009

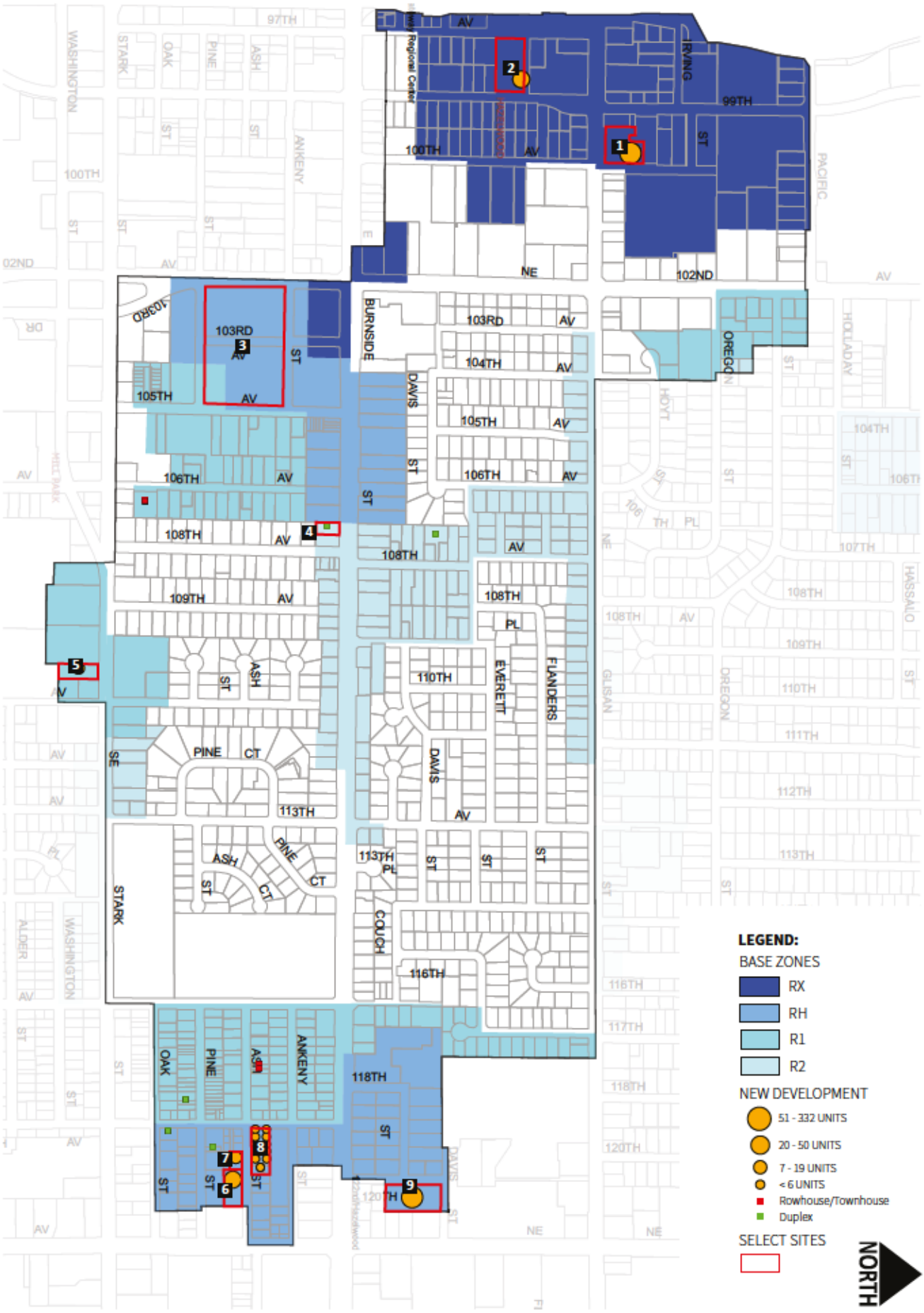
12

Address: 11945 SE Liebe St.
Zone: R2
Number of Units: 4
Maximum Units Allowed: 4
Year: 2008

13

Address: 11853 SE Liebe St.
Zone: R2
Number of Units: 4
Maximum Units Allowed: 4
Year: 2014

Gateway and 122nd and East Burnside Street: Study Area Map



Gateway and 122nd and East Burnside Street: Select Sites

1

Address: 555 NE 100th Ave.
Zone: RX
Number of Units: 67
Maximum Units Allowed: 145
Year: 2012

2

Address: 9850 NE Everette Pl.
Zone: RX
Number of Units: 45
Maximum Units Allowed: 176
Year: 2014

3

Address: Russellville
Zone: RH
Number of Units: 100+
Maximum Units Allowed: 100+
Year: Various

4

Address: 1074 E Burnside
Zone: R2
Number of Units: 3
Maximum Units Allowed: 4
Year: 2006

5

Address: 11016 SE Stark St
Zone: R1
Number of Units: 13
Maximum Units Allowed: 17
Year: 2006

6

Address: 12026 SE Ash St
Zone: RH
Number of Units: 47
Maximum Units Allowed: 78 Units
Year: 2010

7

Address: 11940 SE Ash St.
Zone: RH
Number of Units: 12
Maximum Units Allowed: 28
Year: 2008

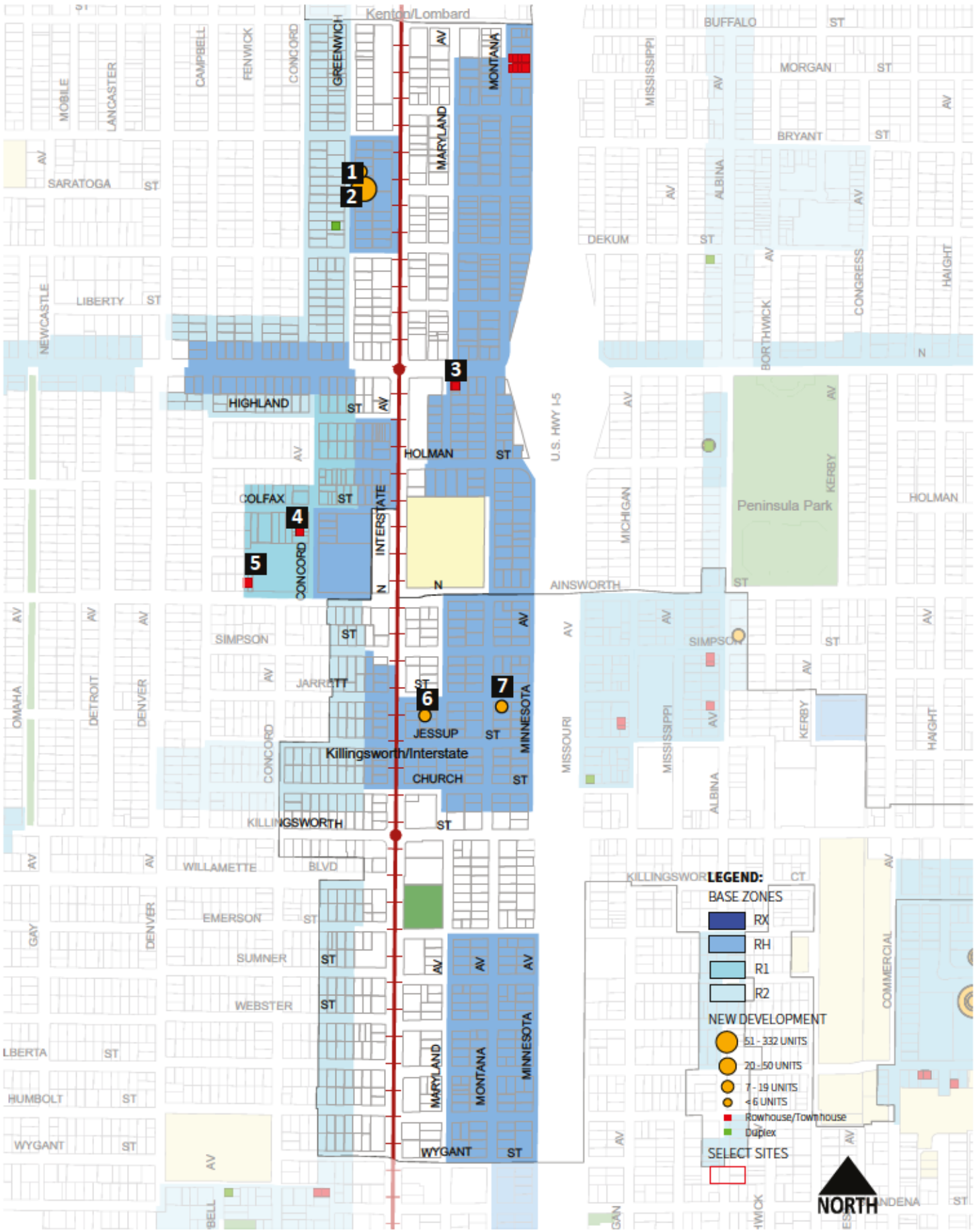
8

Address: 11935 SE Ash St.
Zone: RH
Number of Units: 33
Maximum Units Allowed: 102
Year: 2007

9

Address: 100 NE 120th Ave
Zone: RH
Number of Units: 61
Maximum Units Allowed: 88
Year: 2009

Interstate Avenue: Study Area Map



Interstate Avenue: Select Sites

1

Address:	6928 N Greenwich Ave
Zone:	RH
Number of Units:	5
Maximum Units Allowed:	21
Year:	2011

2

Address:	6906 N Greenwich Ave
Zone:	RH
Number of Units:	23
Maximum Units Allowed:	84
Year:	2014

3

Address:	1346 N Rosa Parks Way
Zone:	RH
Number of Units:	5
Maximum Units Allowed:	19
Year:	2013

4

Address:	6113 N Concord Ave
Zone:	R1
Number of Units:	2
Maximum Units Allowed:	2
Year:	2015

5

Address:	1777 N Ainsworth St.
Zone:	R1
Number of Units:	2
Maximum Units Allowed:	2
Year:	2013

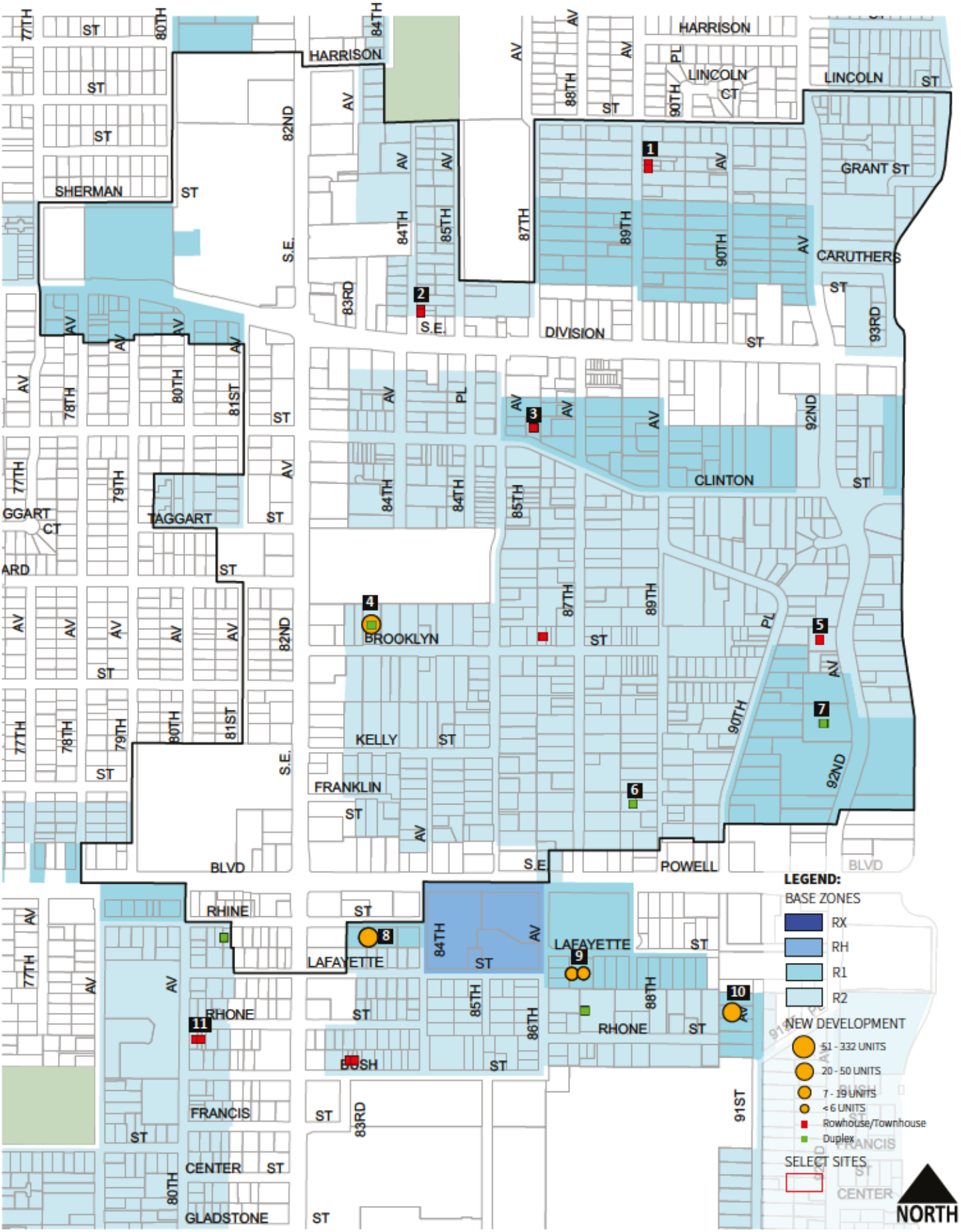
6

Address:	5727 N Maryland Ave
Zone:	RH
Number of Units:	5
Maximum Units Allowed:	18
Year:	2009

7

Address:	5734 N Montana Ave
Zone:	RH
Number of Units:	6
Maximum Units Allowed:	20
Year:	2015

Jade District: Study Area Map



Jade District: Select Sites

1

Address: 2208 SE 89th Ave
Zone: R2
Number of Units: 2
Maximum Units Allowed: 2
Year: 2012

2

Address: 2456 SE 84th Ave
Zone: R2
Number of Units: 2
Maximum Units Allowed: 2
Year: 2006

3

Address: 8535 SE Clinton St.
Zone: R1
Number of Units: 7
Maximum Units Allowed: 7
Year: 2015

4

Address: 8307 SE Brooklyn St.
Zone: R2
Number of Units: 12 (Amenity Bonus)
Maximum Units Allowed: 8
Year: 2015

5

Address: 2959 SE 92nd Ave
Zone: R2
Number of Units: 12
Maximum Units Allowed: 16
Year: 2008

6

Address: 3313 SE 89th Ave
Zone: R2
Number of Units: 6
Maximum Units Allowed: 6
Year: 2014

7

Address: 3107 SE 92nd Ave
Zone: R1
Number of Units: 24
Maximum Units Allowed: 47
Year: 2008

8

Address: 8324 SE Rhine St.
Zone: R1
Number of Units: 30
Maximum Units Allowed: 25
Year: 2008

9

Address: 8614 SE Lafayette
Zone: R1
Number of Units: 12
Maximum Units Allowed: 17
Year: 2007

10

Address: 3659 SE 91st Ave
Zone: R1
Number of Units: 7
Maximum Units Allowed: 10
Year: 2007

11

Address: 8629 SE Rhone St.
Zone: R2
Number of Units: 12
Maximum Units Allowed: 12
Year: 2008

Martin Luther King Blvd: Study Area Map

Martin Luther King Blvd: Select Sites

1

Address: 375 NE Shaver St.
Zone: RH
Number of Units: 87
Maximum Units Allowed: 87
Year: 2008

2

Address: 3918 NE Garfield Ave
Zone: RH
Number of Units: 2
Maximum Units Allowed: 14
Year: 2015

3

Address: 3650 NE Mallory Ave
Zone: R1
Number of Units: 48
Maximum Units Allowed: 48
Year: 2014

4

Address: Ivy St./Rodney St.
Zone: R2
Number of Units: 18
Maximum Units Allowed: 18
Year: 2015

5

Address: 3250 NE MLK Blvd
Zone: RH
Number of Units: 50
Maximum Units Allowed: 91
Year: 2008

6

Address: 3225 NE MLK Blvd
Zone: RH
Number of Units: 14
Maximum Units Allowed: 30
Year: 2013

7

Address: 312 NE Monroe St.
Zone: RH
Number of Units: 12
Maximum Units Allowed: 20
Year: 2008

8

Address: 3035 NE MLK Blvd.
Zone: RH
Number of Units: 46
Maximum Units Allowed: 46
Year: 2013

9

Address: 313 NE Morris St.
Zone: RH
Number of Units: 11
Maximum Units Allowed: 48
Year: 2016

10

Address: 2955 NE MLK Blvd.
Zone: RH
Number of Units: 14
Maximum Units Allowed: 35
Year: 2007

11

Address: 2845 NE MLK Blvd.
Zone: RH
Number of Units: 2
Maximum Units Allowed: 25
Year: 2007

12

Address: 614 NE Graham St.
Zone: R2
Number of Units: 3
Maximum Units Allowed: 3
Year: 2012

13

Address: 617 NE Knott St.
Zone: R2
Number of Units: 2
Maximum Units Allowed: 3
Year: 2006

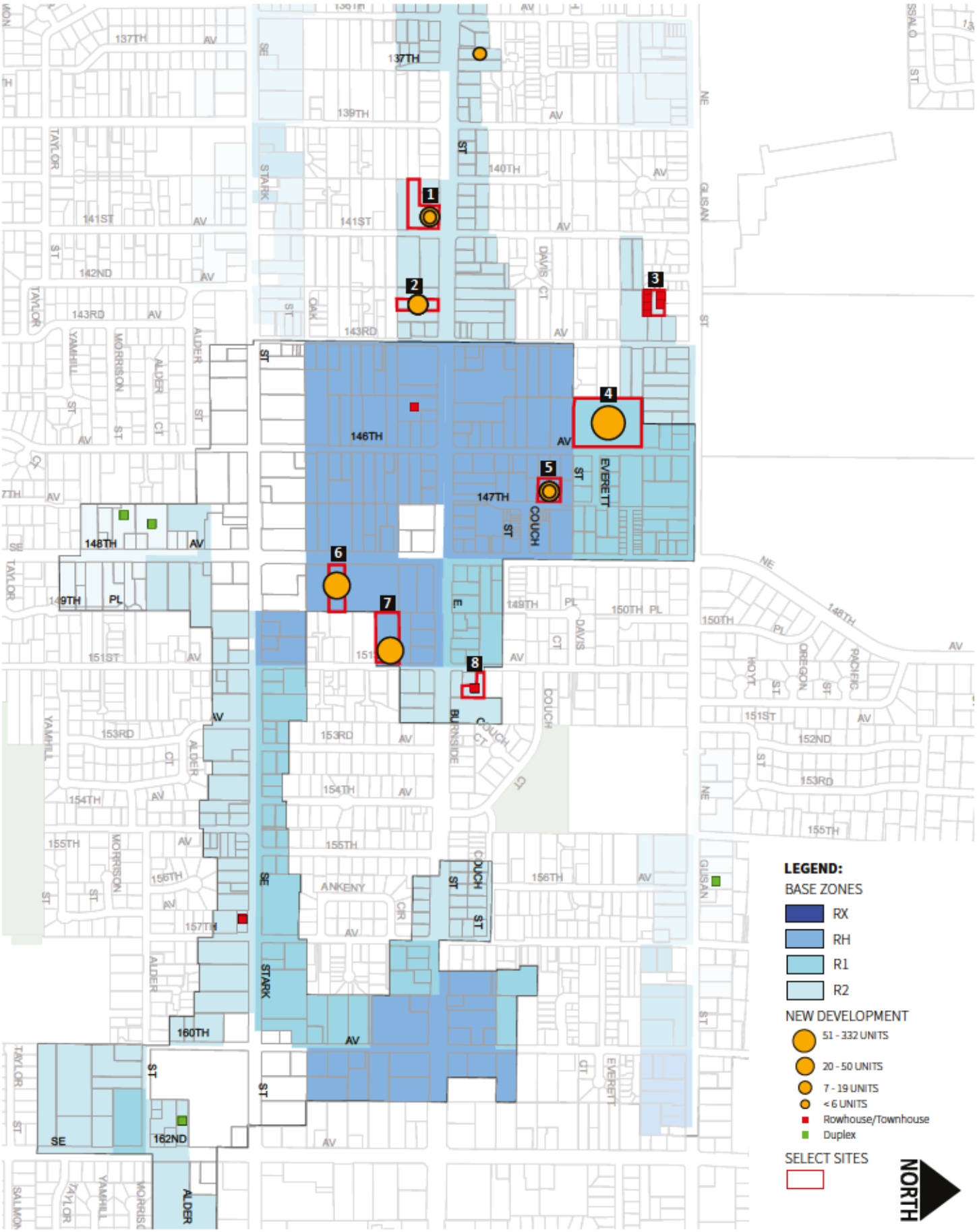
14

Address: 2645 NE 7th Ave
Zone: RH
Number of Units: 13
Maximum Units Allowed: 50
Year: 2012

15

Address: 2621 NE 7th Ave
Zone: RH
Number of Units: 68
Maximum Units Allowed: 73
Year: 2016

Rosewood / Glenfair: Study Area Map



Rosewood / Glenfair: Select Sites

1

Address:	14050 E Burnside St.
Zone:	R2
Number of Units:	27 (Amenity Bonus)
Maximum Units Allowed:	19
Year:	2014

2

Address:	141 SE 143rd Ave
Zone:	R2
Number of Units:	32 (Amenity Bonus)
Maximum Units Allowed:	21
Year:	2015

3

Address:	14163- 14176 NE Flanders St.
Zone:	R2
Number of Units:	12
Maximum Units Allowed:	12
Year:	2013

4

Address:	333 NE 146th Ave
Zone:	R1
Number of Units:	112
Maximum Units Allowed:	125
Year:	2014

5

Address:	177 NE 147th Ave
Zone:	RH
Number of Units:	38
Maximum Units Allowed:	80
Year:	2015

6

Address:	300 SE 148th Ave
Zone:	RH
Number of Units:	30
Maximum Units Allowed:	50
Year:	2010

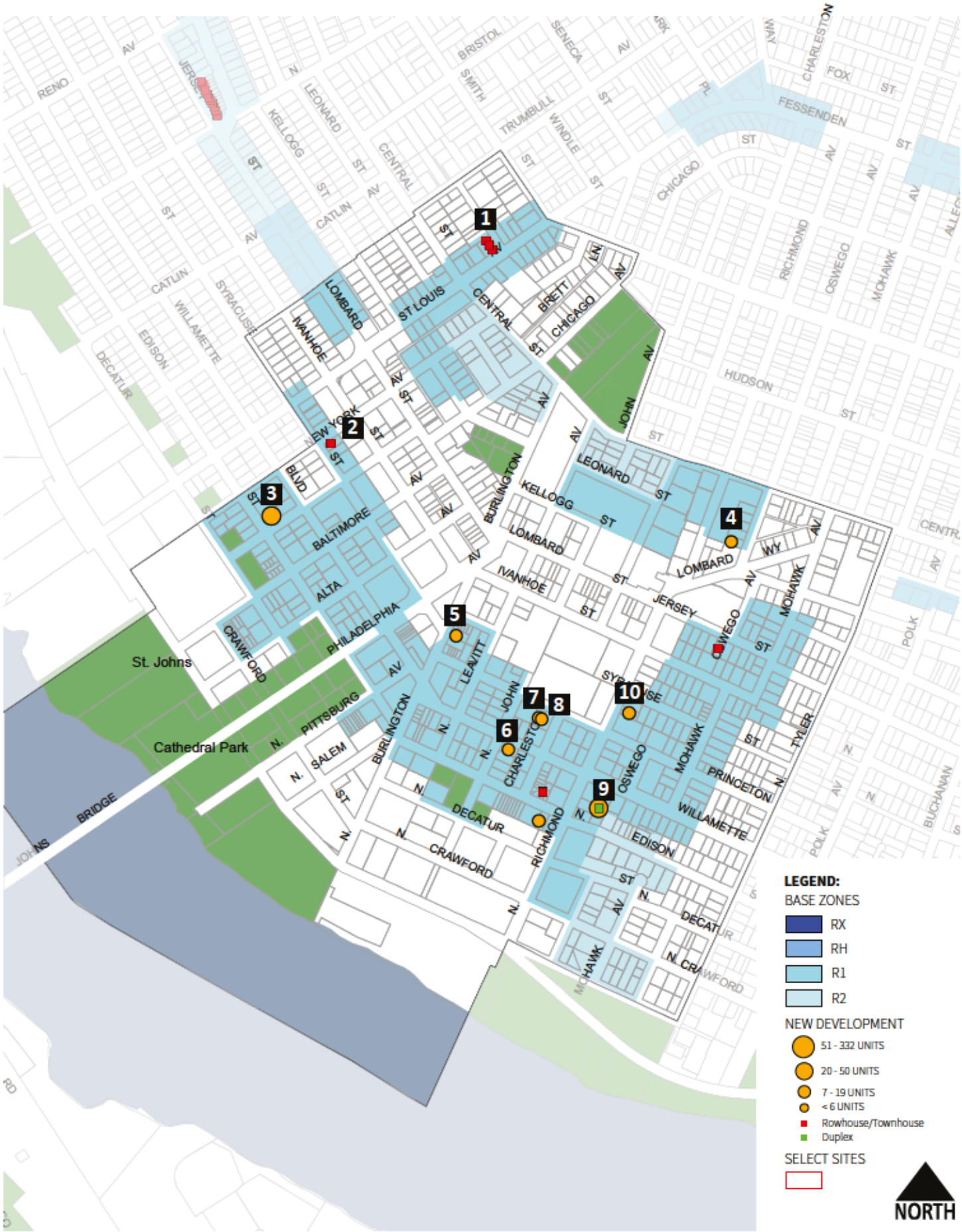
7

Address:	117SE 151st Ave
Zone:	RH
Number of Units:	27
Maximum Units Allowed:	30
Year:	2012

8

Address:	28 NE 151st Ave
Zone:	R2
Number of Units:	6
Maximum Units Allowed:	6
Year:	2013

St. Johns: Study Area Map



St. Johns: Select Sites

1

Address: 9112 N Hudson St
Zone: R1
Number of Units: 3
Maximum Units Allowed: 3
Year: 2013

2

Address: 7216 N New York Ave
Zone: R1
Number of Units: 4
Maximum Units Allowed: 4
Year: 2011

3

Address: 8905 N EDISON ST
Zone: R1
Number of Units: 7
Maximum Units Allowed: 7
Year: 2014

4

Address: 7529 N Oswego Ave
Zone: R1
Number of Units: 4
Maximum Units Allowed: 5
Year: 2010

5

Address: 7150 N Burlington Ave
Zone: R1
Number of Units: 4
Maximum Units Allowed: 5
Year: 2008

6

Address: 8332 N Willamette Blvd
Zone: R1
Number of Units: 6
Maximum Units Allowed: 6
Year: 2016

7

Address: 8320 N Princeton St
Zone: R1
Number of Units: 8
Maximum Units Allowed: 10
Year: 2013

8

Address: 690 N Charleston Ave
Zone: R1
Number of Units: 8
Maximum Units Allowed: 8
Year: 2006

9

Address: 8114 N Willamette Blvd
Zone: R1
Number of Units: 2
Maximum Units Allowed: 2
Year: 2006

10

Address: 7128 N Richmond Ave
Zone: R1
Number of Units: 6
Maximum Units Allowed: 6
Year: 2014

Historic Examples of Multi-Dwelling Development

Numerous Comprehensive Plan policies and adopted neighborhood plan policies call for infill development to complement the general scale and characteristics of residential neighborhoods, especially in locations outside of centers and corridors. Accommodating density to help meet Portland's housing needs is an important policy objective that is a core part of the policy basis for multi-dwelling zoning. The additional scale often associated with greater density can present challenges to meeting policy objectives for contextual development, especially given that single-family homes and duplexes remain the predominant context in the lower- and medium-density multi-dwelling zones.

This section presents historic examples of multi-dwelling development that can serve as precedents for how higher density development can be integrated with the scale of residential neighborhoods. Most of these examples are two, and sometimes three stories, not very different in height from that of large houses. In many cases, these low-rise multi-dwelling examples have densities that could only be built today in the R1 or RH zones, which – especially the RH zone – are mapped in relatively limited locations (the latter currently allows building heights of 65 feet). These examples date from the Streetcar-Era before World War II, when most residential neighborhoods were zoned to allow multi-family development (see Zoning History section). They are also located in the close-in "Inner Ring Districts," whose Comprehensive Plan policies call for providing a diversity of housing opportunities that preserve or are compatible with existing historic characteristics and development patterns.

Many of the historic examples located on neighborhood side streets included house-like features, such as landscaped setbacks and porches, while some of the examples along corridors (such as SE Hawthorne and SE Belmont) contribute to a more urban street edge with minimal setbacks and larger building massing.

Mix of duplexes and single-family houses on a southeast Portland street.

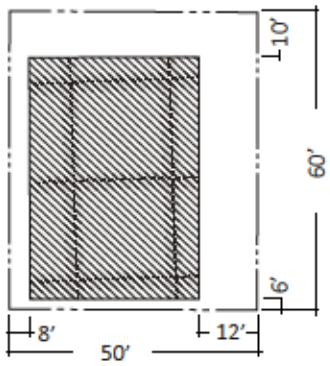
Pair of duplexes on a site smaller than 5,000 square feet (R1 density, but current zone is R5)

Type Stacked Duplex - Small Lot

Description

Housing Type: Stacked Duplex
Frontage: Projecting Porch
Lot Size: 3,000 SF
Zoning: R1
Units/Acre: 28
Year Built: 1910

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	35 ft
Density	2 units
Front Setback	6 ft
Side/Rear Setback	5-10 ft
Lot Coverage	45%
Building Length	28 ft
Landscaping	55%
Outdoor Area	100 sq ft/unit

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X		X		X		X	
	X		X	X		X	
	X		X	X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	

Summary

This stacked duplex on a small lot achieves a density of 28 units per acre. The small lot is zoned single-family and was created by splitting a standard 100' deep corner lot at the 60/40' mark, a common condition in Portland. The unit utilizes a two-story projecting porch frontage type with a small setback. The projecting front porch also acts as the primary outdoor space for residents. No on-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

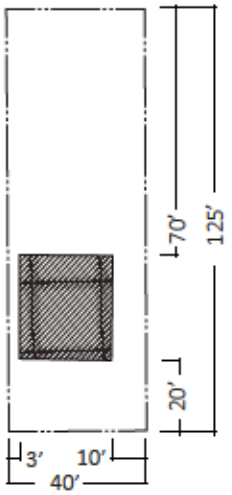
A similar project could only be built in the R1 zone. General scale is allowed in the R2 and R3 zones, but exceeds allowed density. This project would not meet minimum density requirements for the RH zone.

Type Side-by-Side Duplex - Standard Lot

Description

Housing Type:
Side-by-Side Duplex
Frontage:
Landscape/Stoop
Lot Size: 5,000 SF
Zoning: R5
Units/Acre: 17
Year Built: 1927

Lot Disposition



General Zoning Code Criteria

	Existing Condition	Yes	No	Yes	No	Yes	No	Yes	No
Height	20 ft	X		X		X		X	
Density	2 units		X	X		X		X	
Front Setback	20 ft	X		X		X		X	
Side/Rear Setback	3-10 ft	X		X		X		X	
Lot Coverage	16%	X		X		X		X	
Building Length	27 ft	X		X		X		X	
Landscaping	84%	X		X		X		X	
Outdoor Area	2100 sq ft/unit	X		X		X		X	

Summary

This side-by-side duplex on a standard lot zoned single-family achieves a density of 17 units per acre. Although slightly deeper and more narrow, it is a standard 5,000 square foot lot. The unit utilizes a shared stoop frontage type with a medium setback. The projecting front porch also acts as the primary outdoor space for residents. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

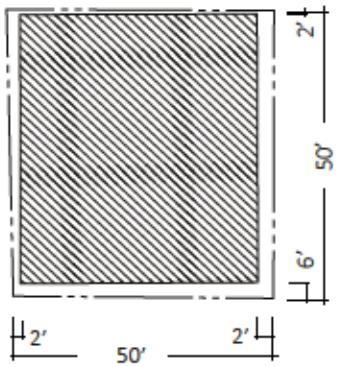
Considering mainly density and scale, a similar project could only be built in the R2 zone. Building height and lot coverage are allowed in all the multidwelling zones. While meeting general zoning criteria, this project would not meet minimum density requirements for the R1 and RH zones.

Type Fourplex - Small Lot

Description

Housing Type: Fourplex
Frontage: Engaged Porch
Lot Size: 2,500 SF
Zoning: R2
Units/Acre: 70
Year Built: 1886

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	25 ft	X		X		X		X	
Density	4 units		X	X		X		X	
Front Setback	6 ft		X		X	X		X	
Side/Rear Setback	3-5 ft	X		X		X		X	
Lot Coverage	82%		X		X		X	X	
Building Length	42 ft	X		X		X		X	
Landscaping	5%		X		X		X		X
Outdoor Area	0 sq ft/unit		X		X		X	X	

Summary

This stacked fourplex on a small lot achieves a density of 70 units per acre. The small lot was created by splitting a relatively standard corner lot, as commonly found in Portland. The unit utilizes a single-story engaged porch frontage type with a very small setback. The engaged front porch also acts as covered entry space for residents. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

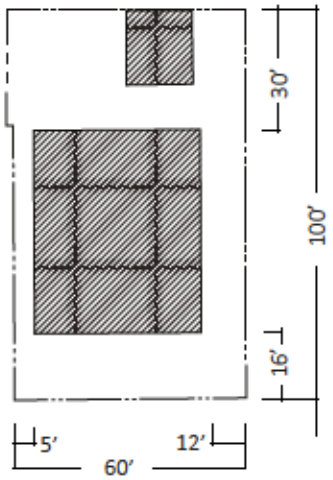
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in the R1, R2, and R3 zones, but exceeds allowed density and lot coverage.

Type Fourplex- Standard Lot

Description

Housing Type: Fourplex
Frontage: Stoop
Lot Size: 5,750 SF
Zoning: R1
Units/Acre: 30
Year Built: 1923

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	30 ft
Density	4 units
Front Setback	16 ft
Side/Rear Setback	5-10 ft
Lot Coverage	37%
Building Length	42 ft
Landscaping	52%
Outdoor Area	325 sq ft/unit

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X		X		X		X	
	X		X	X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	

Summary

This fourplex on a fairly standard lot achieves a density of 30 units per acre. The 5,750 square foot lot is standard in depth and slightly larger in width. The building type utilizes a shared stoop frontage type with a medium setback of 16 feet. The shared stoop is elevated above the sidewalk to ensure privacy at the ground floor. Some off -street garage parking is provided at the rear of the lot and is accessed by the side street.

Could a project of similar density and scale be built today in the multi-dwelling zones?

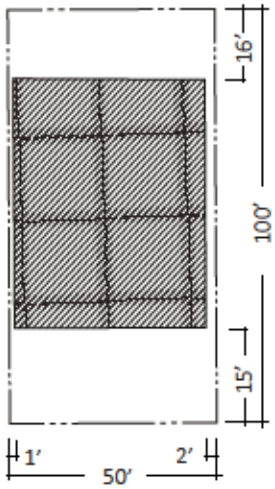
Considering mainly density and scale, a similar project could only be built in the R1 zone. Building height is allowed in the R1, R2, and R3 zones, but exceeds allowed density in the R2 and R3 zones. While meeting general zoning criteria, this project would not meet minimum density requirements for the RH zone.

Type Apartment House

Description

Housing Type:
Apartment House
Frontage:
Landscape Projecting Porch
Lot Size: 5,000 SF
Zoning: R5
Units/Acre: 52
Year Built: 1910

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	40 ft		X	X		X		X	
Density	6 units		X		X		X	X	
Front Setback	15 ft	X		X		X		X	
Side/Rear Setback	2-5 ft		X		X		X		X
Lot Coverage	56%		X		X	X		X	
Building Length	47 ft	X		X		X		X	
Landscaping	40%	X		X		X		X	
Outdoor Area	188 sq ft/unit	X		X		X		X	

Summary

This apartment house, sometimes called mansion apartments due to the building looking like a large house, achieves a density of 52 units per acre. The lot is a standard 5,000 square foot lot yet contains six units. The building utilizes a 3-story projecting front porch frontage type with a medium setback. The projecting front porches offer substantial outdoor space. No off street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

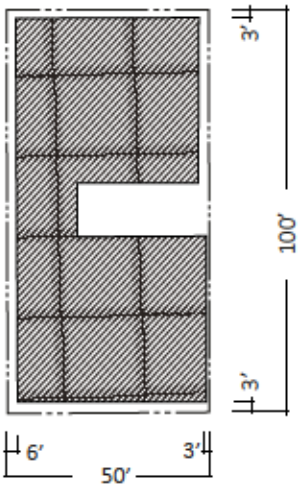
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in the R1 and R2 zones, but exceeds allowed density in the R1, R2, and R3 zones.

Type Stacked Flats- Standard Lot

Description

Housing Type: Stacked Flats
Frontage: Engaged Stoop
Lot Size: 5,000 SF
Zoning: RH
Units/Acre: 78
Year Built: 1913

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	30 ft	X		X		X		X	
Density	9 units		X		X		X	X	
Front Setback	3 ft		X		X	X		X	
Side/Rear Setback	3-6 ft		X		X		X		X
Lot Coverage	80%		X		X		X	X	
Building Length	40 ft	X		X		X		X	
Landscaping	8%		X		X		X		X
Outdoor Area	22 sq ft/unit		X		X		X	X	

Summary

These stacked flats on a standard 5,000 square foot lot achieves a density of 78 units per acre. The building type utilizes an engaged stoop frontage type with a very small paved setback. The engaged stoop is elevated above the sidewalk to ensure privacy at the ground floor and provide access to the units through a central corridor. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

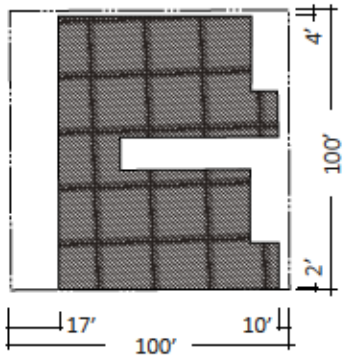
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in the R3, R2, and R1 zones, but exceeds allowed density in these zones.

Type Stacked Flats- Large Lot

Description

Housing Type:
Stacked Flats
Frontage:
Landscape/Projecting Porch
Lot Size: 10,000 SF
Zoning: R1
Units/Acre: 39
Year Built: 1913

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	30 ft	X		X		X		X	
Density	9 units		X		X	X		X	
Front Setback	10 ft	X		X		X		X	
Side/Rear Setback	4-17 ft	X		X		X		X	
Lot Coverage	65%		X		X		X	X	
Building Length	26 ft	X		X		X		X	
Landscaping	30%		X	X		X		X	
Outdoor Area	0 sq ft/unit		X		X		X	X	

Summary

These stacked flats on a large 10,000 square foot lot achieves a density of 39 units per acre. The building type utilizes a projecting stoop frontage type with a medium sized landscaped setback. The projecting stoop is elevated above the sidewalk to ensure privacy at the ground floor and provide access to the units through a central corridor. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

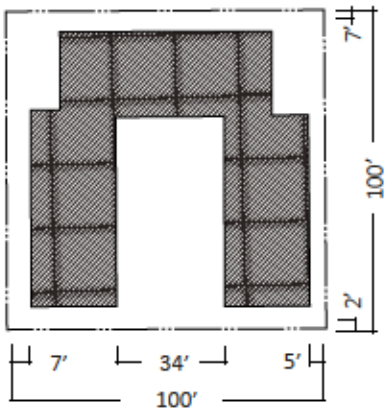
Considering mainly density and scale, a similar project could only be built in the R1 and RH zones. Building height is allowed in all the multidwelling zones, but exceeds allowed density in the R3 and R2 zones.

Type Stacked Courtyard Apts - Large Lot

Description

Housing Type: Stacked Flats
Frontage: Courtyard
Lot Size: 10,000 SF
Zoning: R2.5
Units/Acre: 52
Year Built: 1947

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	25 ft
Density	12 units
Front Setback	2 ft
Side/Rear Setback	5-7 ft
Lot Coverage	50%
Building Length	27 ft
Landscaping	20%
Outdoor Area	167 sq ft/unit

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X		X		X		X	
	X		X		X	X	
	X		X		X	X	
X		X		X		X	
	X	X		X		X	
X		X		X		X	
	X		X	X		X	
X		X		X		X	

Summary

These stacked flats on a large 10,000 square foot lot achieve a density of 52 units per acre. The building type utilizes a courtyard entry frontage type with a small setback. The courtyard is elevated above the sidewalk to ensure privacy at the ground floor. The units are accessed through a central corridor. Four off-street parking spaces are provided and accessed via the side street.

Could a project of similar density and scale be built today in the multi-dwelling zones?

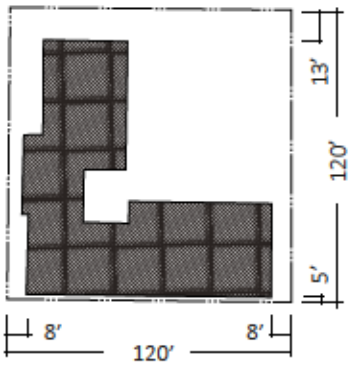
Considering mainly density and scale, a similar project could only be built in the RH zone. Overall, building height is allowed in all multi-dwelling, but exceeds allowed density in all but the RH zone.

Type Townhomes- Large Lot

Description

Housing Type: Townhomes
Frontage:
Landscape/Stoop
Lot Size: 14,000 SF
Zoning: R5
Units/Acre: 37
Year Built: 1929

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	25 ft
Density	12 units
Front Setback	5 ft
Side/Rear Setback	8-23 ft
Lot Coverage	43%
Building Length	100 ft
Landscaping	30%
Outdoor Area	213/unit sq ft

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X		X		X		X	
	X		X	X		X	
	X		X	X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	
	X	X		X		X	
X		X		X		X	

Summary

These townhomes, located on a transit street, on a very large 14,000 square foot lot zoned single-family achieves a density of 37 units per acre. The building type utilizes a projecting stoop frontage type with a medium sized landscaped setback. The projecting stoop is elevated above the sidewalk to ensure privacy at the ground floor. Eight off-street surface parking spaces are provided at the rear of the lot.

Could a project of similar density and scale be built today in the multi-dwelling zones?

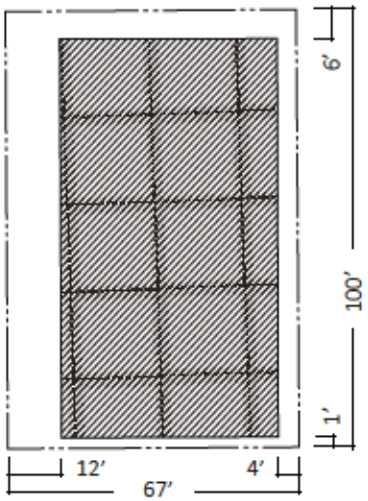
Considering mainly density and scale, a similar project could only be built in the R1 zone. Overall, building height is allowed in all multi-dwelling zones, but exceeds allowed density in the R3 and R2 zones. While meeting general zoning criteria, this project would not meet minimum density requirements for the RH zone.

Type Corridor Apartments

Description

Housing Type: Corridor Apts
Frontage: Engaged Stoop
Lot Size: 6,700 SF
Zoning: R2.5
Units/Acre: 93
Year Built: 1928

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	35 ft
Density	14 units
Front Setback	1 ft
Side/Rear Setback	4-7 ft
Lot Coverage	67%
Building Length	50 ft
Landscaping	<1%
Outdoor Area	0 sq ft

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X		X		X		X	
	X		X		X	X	
	X		X		X	X	
	X		X		X		X
	X		X		X	X	
X		X		X		X	
	X		X		X		X
	X		X		X	X	

Summary

Corridor apartments are so called because the individual units are accessed by a common interior hallway corridor. This corridor apartment building on a 6,700 square foot lot zoned single-family, achieves a density of 93 units per acre. The building type utilizes an engaged stoop frontage type with a very small setback. The first floor of residential units sit over tuck-under parking garages. Having these units raised offers increased privacy. Nine off-street tuck-under parking spaces are provided and accessed via the side street.

Could a project of similar density and scale be built today in the multi-dwelling zones?

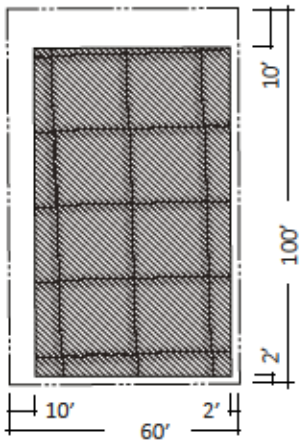
Considering mainly density and scale, a similar project could only be built in the RH zone. Overall, building height is allowed in the R1 and R2 zones, but exceeds allowed density and lot coverage.

Type Corridor Apartments

Description

Housing Type: Corridor Apts
Frontage: Engaged Stoop
Lot Size: 6,000 SF
Zoning: R2.5 (CM2)
Units/Acre: 114
Year Built: 1927

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	35 ft	X		X		X		X	
Density	16 units		X		X		X		X
Front Setback	2 ft		X		X		X		
Side/Rear Setback	10 ft	X		X		X		X	
Lot Coverage	70%		X		X		X	X	
Building Length	87 ft	X		X		X		X	
Landscaping	4%		X		X		X		X
Outdoor Area	0 sq ft		X		X		X	X	

Summary

Similarly, these corridor apartments, located on a transit street, are accessed by a common interior hallway corridor. These apartments on a relatively standard 6,000 square foot lot achieve a density of 114 units per acre with a 2.3:1 FAR. The building type utilizes an engaged stoop frontage type with a very small setback. The ground floor units are not elevated and windows are at eye level of passerbys. No off-street parking spaces are provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

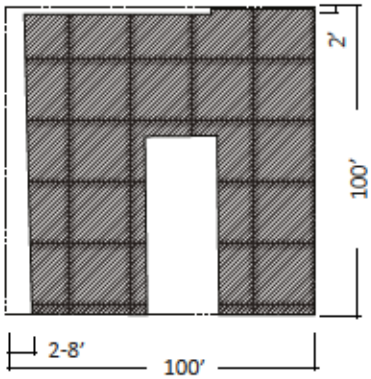
Considering mainly density and scale, a similar project could not be built in any of the multidwelling zones. This project in particular exceeds the assumption of the RH limit of 2:1 FAR. Overall, building height is allowed in all the multi-dwelling zones, but it exceeds lot coverage in all but the RH zone.

Type Stacked Courtyard Apartments

Description

Housing Type: Corridor Apts
Frontage: Courtyard
Lot Size: 10,000 SF
Zoning: RH
Units/Acre: 74
Year Built: 1930

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	25 ft	X		X		X		X	
Density	17 units		X		X		X	X	
Front Setback	2 ft		X		X		X	X	
Side/Rear Setback	2-8 ft		X		X		X		X
Lot Coverage	80%		X		X		X	X	
Building Length	87 ft	X		X		X		X	
Landscaping	14%		X		X		X		X
Outdoor Area	82 sq ft/unit	X		X		X		X	

Summary

These courtyard apartments on a 10,000 square foot lot achieve a density of 74 units per acre. The building type utilizes a landscaped courtyard frontage type and little to no setback with the first floor units utilizing projecting stoops within the courtyard. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

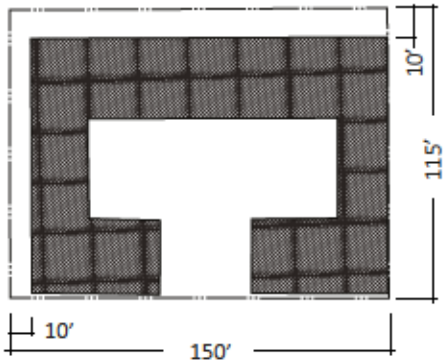
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in all the multi-dwelling zones, but exceeds allowed density and lot coverage in all but the RH zone.

Type Courtyard Townhomes

Description

Housing Type:
Courtyard Townhomes
Frontage: Courtyard
Lot Size: 17,000 SF
Zoning: R1
Units/Acre: 47
Year Built: 1928

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	35 ft
Density	19 units
Front Setback	0 ft
Side/Rear Setback	10 ft
Lot Coverage	70%
Building Length	40 ft
Landscaping	25%
Outdoor Area	95 sq ft/unit

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
X			X	X		X	
	X		X		X	X	
	X		X		X	X	
	X		X		X		X
	X		X		X	X	
X		X		X		X	
	X		X	X		X	
X		X		X		X	

Summary

These courtyard townhomes are accessed by a common landscaped courtyard. These apartments on a very large 17,000 square foot lot achieve a density of 47 units per acre. The building type utilizes a raised courtyard frontage type with no setback. The ground floor units are elevated over tuck-under garages.

Could a project of similar density and scale be built today in the multi-dwelling zones?

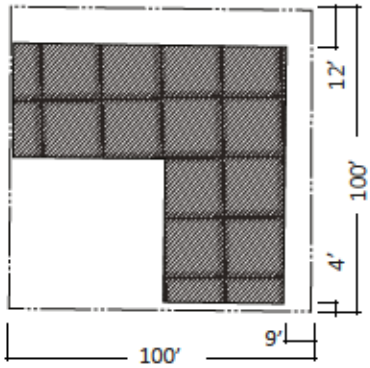
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in the R2 and R1 zones, but exceeds allowed density and lot coverage in all but the RH zone.

Type Courtyard Corridor Apartments

Description

Housing Type: Corridor Apts
Frontage: Courtyard
Lot Size: 10,000 SF
Zoning: R2 (RH)
Units/Acre: 95
Year Built: 1929

Lot Disposition



General Zoning Code Criteria

	Existing Condition
Height	40 ft
Density	22 units
Front Setback	4 ft
Side/Rear Setback	9-12 ft
Lot Coverage	54%
Building Length	40 ft
Landscaping	46%
Outdoor Area	114 sq ft/unit

R3		R2		R1		RH	
Yes	No	Yes	No	Yes	No	Yes	No
	X	X		X		X	
	X		X		X	X	
	X		X	X		X	
	X		X		X		X
	X		X	X		X	
X		X		X		X	
X		X		X		X	
X		X		X		X	

Summary

These courtyard corridor apartments on a 10,000 square foot lot achieve a density of 95 units per acre. The building type utilizes a raised and landscaped courtyard frontage type with a small setback. Some first floor units have doors opening directly onto the courtyard. Privacy is offered by the ground floor units being raised to the same elevation as the courtyard. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

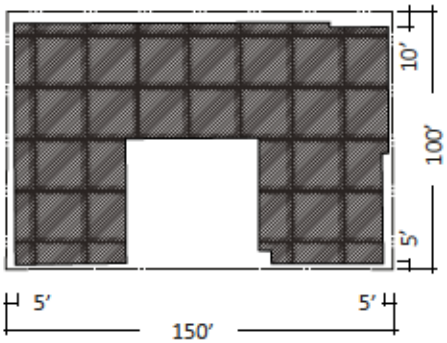
Considering mainly density and scale, a similar project could only be built in the RH zone. Building height is allowed in the R2 and R1 zones, but exceeds allowed density in all but the RH zone and lot coverage in the R3 and R2 zones.

Type Large Lot Courtyard Apartments

Description

Housing Type:
Courtyard Apartments
Frontage: Courtyard
Lot Size: 15,000 SF
Zoning: RH
Units/Acre: 114
Year Built: 1926

Lot Disposition



General Zoning Code Criteria

	Existing Condition	R3		R2		R1		RH	
		Yes	No	Yes	No	Yes	No	Yes	No
Height	32 ft	X		X		X		X	
Density	39 units		X		X		X	X	
Front Setback	5 ft		X		X		X		X
Side/Rear Setback	5-10 ft		X		X		X		X
Lot Coverage	70%		X		X		X	X	
Building Length	44 ft	X		X		X		X	
Landscaping	20%		X	X		X		X	
Outdoor Area	64 sq ft/unit	X		X		X		X	

Summary

This large lot coutyard apartment building contains 39 stacked units. The ground floor is partially submerged resulting in the 3-story building only reaching a height of 32 feet. The building wings have minimal setback, but the courtyard landscaping helps to provide privacy. No off-street parking is provided.

Could a project of similar density and scale be built today in the multi-dwelling zones?

Considering mainly density and scale, a similar project could only be built in the RH zone. Overall, building height is allowed in all the zones, but exceeds allowed density and lot coverage in all but the RH zone.

Recent Multi-Family Case Studies (built in the last 10 years)

The purpose of the following case studies is to provide a snapshot description of various projects that have been built within the last ten years under Portland's current zoning code regulations. This selection focuses on examples of developments that contribute to city policy goals for housing supportive of healthy active living, such as by including spaces for recreation or growing food, contributing to pedestrian connections, and other HEAL (Healthy Eating Active Living) approaches.

R2 Zoning

Name:	**Miraflores**
Address:	**8901 N. Newell**
Developer:	**Hacienda CDC**
Pattern Area:	**Inner**
Neighborhood:	**Portsmouth**
Typology:	**Stacked Courtyard Multiplex**
Height:	**Three Stories**
Market Rate or Affordable:	**Affordable**
Tenure:	**Rental**
Number of Buildings:	**3**
Number of Units:	**32**
Lot Size:	**1.15 ac (50,094 sf)**
Density:	**28 u/ac**
HEAL Amenities:	**Courtyard, Play Area, Connection to active transportation**
Parking:	**Off-street, Surface**

Miraflores, Portsmouth Neighborhood, Portland, Oregon.

Planning Context

Miraflores is an affordable housing multi-plex development consisting of 32 stacked units on an R2 zoned lot in the Portsmouth neighborhood. This development sits on a mostly square lot slightly larger than an acre at the end of a cul-de-sac and achieves a density of 28 units per acre.

Site Configuration and Amenities

The site plan wraps three buildings around a central L-shaped courtyard providing active, outdoor space for residents. The short leg of the courtyard provides the primary access from the surface parking lot found along the edge of the property to the interior of the project. The long leg of the courtyard terminates at an improved pedestrian connection providing access to the Peninsula Crossing Multi-Use Trail. Each entry to the courtyard is punctuated with wooden arbors and the most centrally located feature is child play equipment.

The courtyard space, including walking paths, is 33 feet across with the structures setback behind landscaping 8-15 feet depending on façade articulation. This condition works to improve privacy for ground floor units. The number of units and outdoor amenities on this size of lot is mainly accomplished by stacking the units.

R1 Zoning

Name:	**Kah San Chako Haws or "East House"**
Address:	**9707 SE Holgate Blvd**
Developer:	**Rey Espana, NAYA Family Center**
Pattern Area:	**Eastern Neighborhoods**
Neighborhood:	**Lents**
Typology:	**Stacked Courtyard Apartments**
Height:	**Three Stories**
Market Rate or Affordable:	**Affordable**
Tenure:	**Rental**
Number of Buildings:	**1**
Number of Units:	**9**
Lot Size:	**0.19ac (8,139 sf)**
Density:	**47 u/ac**
HEAL Amenities:	**Courtyard, Bike Storage**
Parking:	**No off-street parking provided**

Planning Context

Kah San Chako Haws, or “East House” is a single 9-unit stacked affordable housing apartment building on an 8,139 square foot lot zoned R1 in the eastern Portland neighborhood of Lents.

Site Configuration and Amenities

The site plan places the structure to the east side of the lot in order to provide additional common courtyard space on the west. Access to the units is provided through paved and landscaped walkways on each side of the building that lead to open air covered stairways. A landscaped 15-foot setback makes room for a rain garden stormwater facility that is traversed by a bridge. This creates a sense of entry that also identifies the transition from the public street to semi private zones within the lot.

R1 Zoning

Name:	**Stephens Creek Crossing**
Address:	**6715-6861 SW 26th Way**
Developer:	**Home Forward**
Pattern Area:	**Western Neighborhoods**
Neighborhood:	**Multnomah Village/Hillsdale**
Typology:	**Large Multi-plex**
Height:	**Three Stories**
Market Rate or Affordable:	**Affordable**
Tenure:	**Rental/Ownership**
Number of Buildings:	**20**
Number of Units:	**122**
Lot Size:	**6.6 ac (287,436 sf) over 3 lots**
Density:	**19.5 u/ac**
HEAL Amenities:	**Courtyard/Play Space/Child Care**
Parking:	**Off-street, Surface**

Planning Context

Stephens Creek Crossing is a large scale complete redevelopment of a previous affordable housing development that had suffered from significant deferred maintenance. This redevelopment resulted in an increase of total number of dwelling units and a broader mix of incomes.

The R2 zoning across the three lots that comprise the project allows 143 units by-right. It is worth noting that the lot abutting the main entrance corridor is used for community uses, including a community center and children's center.

Stephens Creek Crossing, Hillsdale Neighborhood, Portland, Oregon.

Site Configuration and Amenities

The site is ringed with buildings facing onto a private loop drive that provides access and parking. In the interior of the block created by the loop drive are four buildings arranged in a canted position perpendicular to the perimeter buildings. These canted buildings frame five individual courtyard spaces. Each courtyard space is programmed differently with two offering child play equipment where the remaining three are open sodded areas acting as attached greens. The buildings demonstrate a preferred arrangement as they face many of the windows and doors onto the loop road and internal courtyards offering supervision of the outdoor spaces from residents within. A large community garden space is offered in partnership with the neighboring church.

The various courtyards offer ample opportunity for pedestrian connectivity within the site itself. While pedestrian connections create access to streets beyond the project site, the cul-de-sac was not connected to the adjacent street grid network, a missed opportunity for improved connectivity.

Detailing of the buildings and use of color are consistent based on placement within the project. This helps create a sense of place and contributes to wayfinding and mental mapping. The open air stairwells of the outer perimeter buildings are punctuated by using a bold color. The inner perimeter buildings are detailed such that the façade facing into the courtyards present a similar bold color that surrounds private patio space and the second floor. The remaining canted buildings are relatively muted in comparison, yet offer dynamism and movement to the properly sized courtyard spaces.

R1 Zoning

Name:	**Daybreak Cohousing**
Address:	**2525 N. Killingsworth**
Developer:	**Multiple Partners**
Pattern Area:	**Inner Neighborhoods**
Neighborhood:	**Overlook**
Typology:	**Stacked Courtyard Housing**
Height:	**Two to Four Stories**
Market Rate or Affordable:	**Market Rate**
Tenure:	**Rental/Ownership**
Number of Buildings:	**4**
Number of Units:	**30**
Lot Size:	**0.62ac (27,000 sf)**
Density:	**48.4 u/ac**
HEAL Amenities:	**Courtyard/Play Space/Secure Bike Storage/Community Center/Guest Room/Gardens**
Parking:	**One ADA Off-Street Space**

Daybreak Cohousing, Arbor Lodge Neighborhood, Portland, Oregon.

Planning Context

Daybreak is a stacked unit courtyard cohousing development consisting of 30 units on a lot zoned R1. This lot was created by aggregating multiple lots.

Site Configuration and Amenities

Stacking the units allowed the creation of a central courtyard that preserves a large maple tree. The units vary from one, two, and three bedrooms. One configuration o☒ers a two-story arrangement with bedrooms upstairs like that of a townhouse.

The ground floor and basement of one of the buildings is the Common House, which o☒ers a variety of community amenities. The basement of the Common House o☒ers utilitarian space, such as additional storage, secure bicycle storage and repair, a general workshop, and laundry room. The ground floor provides large group meal prep and eating space, a great room, a family room, a kid's room, spiritual space, and two guest rooms which residents of the development may reserve.

RX Zoning

Name:	**The Rose Apartments**
Address:	**9850 NE Everett**
Developer:	**Gordon Jones, Rose Holdings LLC**
Pattern Area:	**Eastern Neighborhoods**
Neighborhood:	**Hazelwood**
Typology:	**Large Lot Multiplex**
Height:	**Four Stories**
Market Rate or Affordable:	**Market Rate / Affordable**
Tenure:	**Rental**
Number of Buildings:	**2**
Number of Units:	**45**
Lot Size:	**1.02ac (44,431 sf)**
Density:	**44u/ac**
HEAL Amenities:	**Bike Storage, Raised Garden Beds**
Parking:	**Off-street, Surface**

The Rose Apartments, Gateway Regional Center, Portland, Oregon.

Planning Context

The Rose Apartments are two buildings totaling 45 units on a lot slightly larger than an acre in the Gateway Regional Center. This large lot was created by assembling a handful of smaller lots.

Site Configuration and Amenities

The lot that the two buildings sits on extends through the block the full depth. The structures on the lot are positioned with a reduced setback in order to front the adjacent streets and screen the surface parking lot. The landscaped setback offers some separation from those passing by on the sidewalk. The interior of the lot is raised garden beds and bike storage facilities. The project provides easy access with a crosswalk to connect across the street to the I-205 Multi-Use Path. A one-way private street (from NE 97th to 99th) provides vehicular and bicycle/pedestrian access to the parking lot.

Best Practices Research

Highlights

The purpose of the following best practices research is to gather ideas, strategies, and policies applicable to the physical development of new multifamily zoning code regulations and that have demonstrated, or have the potential to produce desirable results, in regards to the Better Housing by Design topic areas.

- **Missing Middle Housing** is a range of multi-unit building types that can fit seamlessly into residential neighborhoods.
- **Form-Based Codes** regulate by desired built form outcomes, instead of focusing on uses or density.
- **Lean Development Codes** look to reduce barriers to economic, community, and real estate development.
- **Cottage Cluster** housing arrangements offer an innovative housing model that creates the potential for homeownership in medium density development.
- **Courtyard housing** is a development model that often complements the built and natural context while accomodating density and providing amenities desired by potential tenants.
- **Development oriented to pedestrian streets** provide opportunity for necessary pedestrian connections without the level of engineering and cost of a standard street.
- **Individual projects of note** demonstrate creative and positive design outcomes by private design practitioners.

Missing Middle Housing

Current best practices regarding multi-dwelling regulations tend to revolve around Form-Based Codes (see section below) and modifying regulations to allow a broader range of multi-dwelling building types that fall into the 'Missing Middle' housing category.

Daniel Parolek, of Opticos Design, coined the term '"Missing Middle' Middle" and defines it as as, "a range of multi-unit or clustered housing types compatible with single-family homes that help meet the growing demand for walkable urban living." Missing Middle building types range from duplexes, tri-plexes and four-plexes to courtyard apartment and bungalow courts, to townhouses, multi-plexes, and live-work buildings. They tend to be built within an existing or newly created walkable urban context. The buildings often fall into a medium-density range, between 16 dwelling units per acre (du/acre) up to 35 du/acre, but visually fit into the neighborhood. These densities correspond to what is allowed in Portland's R3, R2, and R1 multi-dwelling zones. An area of middle-density-housing that provides 16 du/acre tends to be the bare minimum density needed to be transit-supportive and help make neighborhood-serving, walkable commercial areas attainable. At 16 du/acre, off-street parking may need to be limited to one parking space per unit.

Missing Middle Housing types diagram (via Opticos Design, Berkeley, CA)

Form-Based Codes

Around the country, Form-Based Codes are increasingly being applied to deliver more "predictable built results and high-quality public realm by using physical form rather than focusing on separation of uses as the organizing principle for the code." (Form-Based Code Institute). Form-Based Codes are also helping to generate more and better middle housing building types that could be appropriate in Portland's multi-dwelling zones and that accommodate a broad diversity of household types.

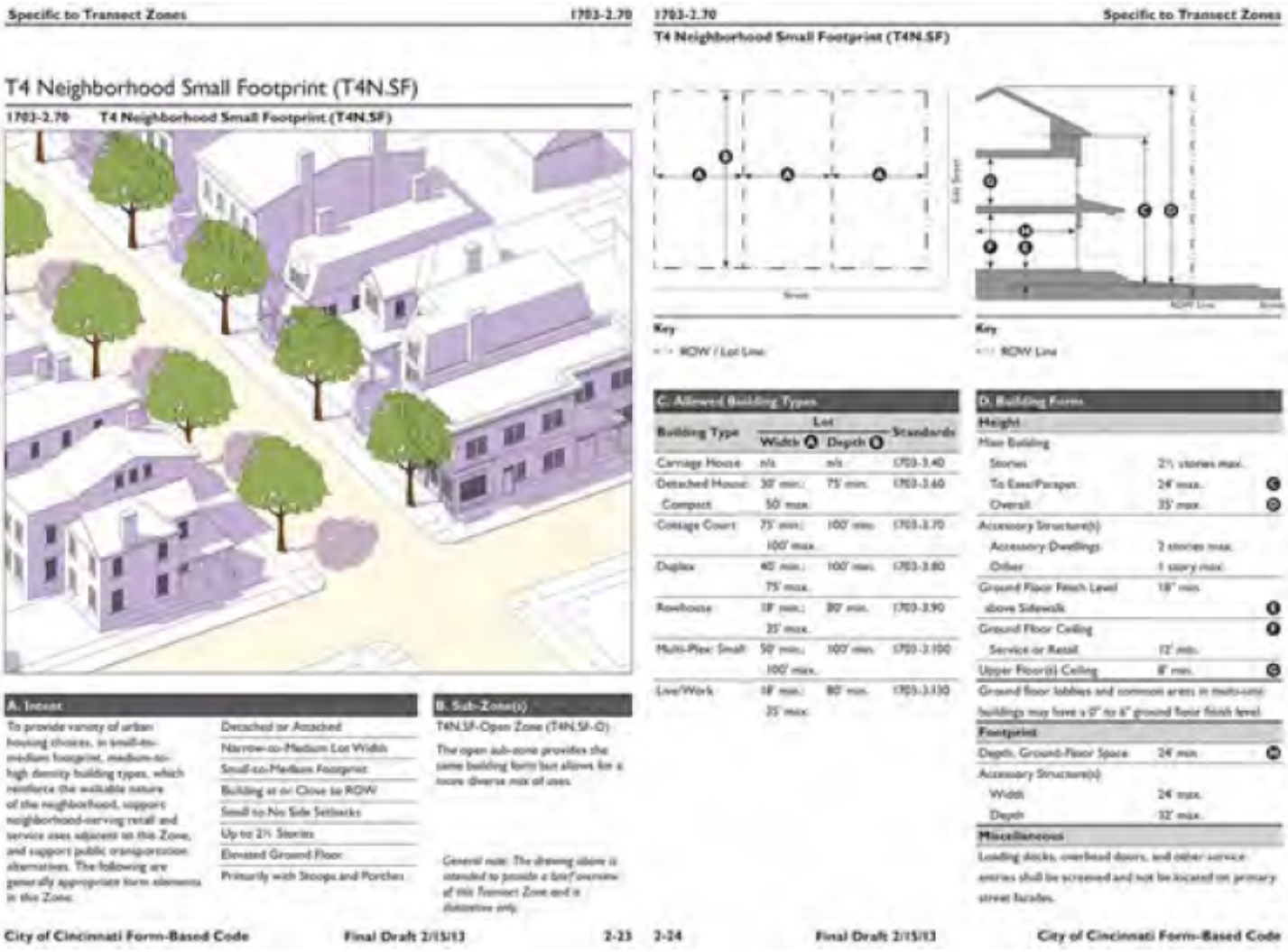
In contrast, many existing current zoning tools—Euclidean zoning tools that define and sometimes separate zones by use - utilize approaches originally based on auto-oriented, suburban development. Not surprisingly, these tools often produce auto-dependent patterns of development and often tend to undermine communities' and cities' climate and social equity policies.

In contrast to conventional zoning codes that focus on the separation of land uses and the control of development by regulating out undesirable conditions, Form-Based Codes often tend to lean focus on preferred outcomes, determined by the community and the context of new development, and use visual guides to provide clarity regarding intended outcomes.

Responses from private developers and builders are have generally been positive toward Form-Based Codes, due in part to their reliance on graphic communication to set clear expectations. Site constraints and preferred outcomes are readily ascertained in one or two locations within the code.

Though Form-Based Codes have been around since the 1980s, very few jurisdictions have adopted a complete city-wide Form-Based Code approach. Generally, most municipalities that have implemented this approach have done so in smaller areas that require heightened sensitivity due to historic or predominantly single-family character, where architecture and scale/density transitions are of high importance. It is more common for codes to include a mix of form-based and use-based regulations.

An example of the visual quality of form-based code prepared for the City of Cincinnati by Opticos Design can be seen below:



Example of visual format of form-based code (via missingmiddlehousing.com)

Form-Based Codes used around the country; some locations include:

- Nashville, TN
- Cincinnati, OH
- Livermore, CA
- Ithaca, NY
- Denver, CO
- Fremont, CA

The Community Character Manual in Nashville, Tennessee, provides detailed policy guidance for the built environment with design principles to address access, building form and site design, connectivity (for pedestrians, bicycles, and vehicles), landscaping and lighting, parking, and signage and wayfinding.
In Cincinnati, Ohio, the city's Form-Based Code, regulates for placemaking rather than for separate uses. This Form-Based Code includes a palette of preferable building types for a range of place contexts, from more urban to less urban. For each context area, visual details of lot depth and width, building orientation and placement, height, setbacks for various building types complement the narrative describing intent and desired forms.
Similarly, in Livermore, California, on the eastern edge of the San Francisco Bay Area, the city's Form-Based Code graphically describes a palette of preferable or allowable building types. A range of multi-dwelling types are described, from duplexes to multi-plexes—the full range of missing middle housing types.

In Ithaca, New York, the Form-Based Code for the Collegetown Area similarly regulates form, but also addresses activation of the street—street façade standards, location and number of doors and entry-ways.
In 2010, Denver, Colorado adopted a new form-based zoning code applied city-wide. This new zoning code is based on a series of contexts where form-based elements regulate all building types. The Denver Zoning Code is organized by neighborhood contexts which sets standards for compatible development. The neighborhood contexts are distinguished from one another by their physical and functional characteristics including but not limited to:

- Street, alley and block patterns
- Building placement and height
- Diversity, distribution and intensity of land uses
- Diversity of mobility options

The neighborhood contexts are categorized as: Suburban Neighborhood, Urban Edge Neighborhood, Urban Neighborhood, General Urban Neighborhood, Urban Center Neighborhood, Downtown Neighborhood, and Special Context & Districts.

Fremont, California applied a Form-Based Codes approach specifically to areas surrounding Downtown called City Center Sub-Areas and as a supporting Multi-Family Design Guidelines document. These efforts are relevant to the Better Housing by Design Project focus areas in Portland's eastern neighborhoods, as Fremont similarly has a stated goal of evolving from an "auto-oriented suburb into a sustainable, strategically urban, modern city".

Lean Development Codes

The Department of Housing and Urban Development has found that unnecessary government regulations increase the cost of constructing housing by up to 25 percent. The Project for Lean Urbanism, a cadre of practitioners and governmental and private organizations, looks to make small-scale development and entrepreneurship faster and more affordable by providing tools and reducing the burden of government regulations.

According to this website, Lean Urbanism is an approach to community-building that requires fewer resources and reduces obstacles to economic, community, and real estate development. It is a response to the requirements, complexities and costs that disproportionately burden small-scale developers, builders, and entrepreneurs.

In an attempt to encourage infill development in targeted areas, some municipalities are working to reduce barriers to development by reducing the amount of "red tape" in the code and application processes through the creation of what are being called Pink Zones. Pink Zones are an area where the red tape is reduced and where new protocols are pre-negotiated and experiments are conducted, all with the goal of removing impediments to economic, community, and real estate development.

Suggestions for creating leaner codes include:

- Adopt simplified codes that enable small-scale development and business and that demystify and simplify requirements.

- Lean Reuse and Renovation: Identifying and removing barriers to bringing abandoned or ill-used buildings back to productive life, avoiding the trap of spending more to meet building codes than the rehabbed value of the building.

- Cities that use the International Building Code can adopt the Existing Building Code to encourage renovation.

- Live-Work – Make provisional changes to existing codes that can facilitate the building of live-work units as a flexible, low-cost way to provide housing and work space in combination.

- Lean Code Tool: When overhaul of a city's zoning code is not an option, this tool can be used to identify how the code addresses issues that a□ect Lean Urbanism, such as maximum lot size, building height and size, fees, and parking. The tool then advises tweaks that will allow small-scale development.

- Neighborhood Code Generator: A forthcoming tool to be developed with a Knight Cities Challenge grant that allows neighborhood groups to create locally determined overlays that define and protect neighborhood character and provide guidance and certainty to developers.

Large municipalities experimenting with this approach include Phoenix and Detroit. In addition, four small to mid-size cities have been selected to implement pilot projects where the project team will work with city authorities, entrepreneurs, activists, and nonprofits to select a neighborhood, identify impediments to small-scale projects, create an action plan of projects to begin the revitalization, and develop a custom kit of tools to make them possible. These cities include Lafayette, Louisiana; Chattanooga, Tennessee; Saint Paul, Minnesota; and Savannah, Georgia.

Locally, Tigard, Oregon is employing this process in the revitalization of Tigard Triangle, a 450-acre area within the city that lacks a clear identity. The goal is to reposition this area as a vibrant, mixed-use district.

Cottage Cluster Housing Codes

Another set of codes, Cottage Housing Zoning Codes, have generated opportunities for higher-density housing developments that do not necessarily fit the traditional mold of multi-dwelling building types. The cottage housing type preserves the personal space and privacy of a detached house, but in a smaller and less costly unit. These smaller units, o□en between 700 sf and 900 sf, are usually clustered around a shared or common open space feature or in the form of a shared parking court. This approach serves as another way to integrate higher-density with a lower profile into a predominantly single-family residential neighborhood context.

Cottage Clusters, sometimes called Pocket Neighborhoods, have proved a desirable arrangement in allowing opportunity for home ownership in areas zoned for multifamily by providing more housing choice. The smaller footprints of the units allow for increased density over single-family homes, yet o□er a tradeo□ by providing child play space, gardens, and sometimes a common house for communal activities. A large number of these types of developments are found in the Puget Sound area where new codes have been developed specifically to address and encourage these housing types. In Washington, cottage cluster zoning codes have been implemented in

larger cities (Seattle) to smaller suburban cities (Kirkland) and town and villages (Langley). It should be noted that units may be detached or attached.

In Kirkland's planning processes, these types of developments showed the most promise as models for garnering community support while also providing additional housing choice. As a result of this, the Kirkland Planning Commission adopted an interim ordinance to test these ideas (which later became permanent).

The goals of this cottage cluster ordinance were to:

- Increase the housing supply and housing style choices in ways that are compatible with existing single-family communities
- Promote housing affordability by encouraging smaller homes
- Amend codes with language that encourages innovative housing projects, and to
- Regulate innovative housing projects through a permanent ordinance

Code specifics vary across jurisdictions in the Puget Sound Region, but key commonalities include minimum lot sizes, variability in allowable density, architectural design guidelines, and open space requirements. The amount of required open space across jurisdictions is comparable at 400 square feet per unit. Additional incentives and bonus units are often provided for the creation of an affordable unit within the project. These cottage cluster codes typically apply as options in single-family zones, providing greater allowances for density in exchange for limits on the size of the cottage units.

Danielson Grove Site Plan (via The Cottage Company) shows home clustered around central open space.

Homes clustered around shared open space in Kirkland, WA (via The Cottage Company)

Third Street Cottages, Langley WA cluster around common green. (Image via The Cottage Company)

High density apartments in Pasadena, CA are arranged around a central courtyard. (Image via HotPads.com).

Courtyard Housing Ordinance

Concerned about the type of multi-family being built, in 1989, the City of Pasadena, California implemented the "City of Gardens" Ordinance. This approach was intended to break a pattern of long, narrow multi-family units built in rows, with asphalt dominating the open space.

This ordinance was intended to respond to the most noticeable and important qualities of Pasadena neighborhood character, identified as being courtyards, lawns, and flowers.

The standards require all new multi-family projects consisting of three or more units to have a garden or landscaped court as their focus. This main garden takes up 17-20 percent of a lot. To offset the increase in open space requirements, the standard allows buildings in some cases to be constructed at the side and rear property lines without a setback.

The City of Gardens standards only apply in the city's medium to high density multi-family zones. It does not apply to downtown districts or to mixed use zones. Contemporary reviews of the decades old code update have been positive. Reviews state that the development built under the ordinance has successfully mediated the differing residential densities of the single-family house and the stacked flat apartment building through an urban form focused on human scale and gardens, and that the code has revived a traditional courtyard dwelling type.

Housing oriented to a pedestrian street in Gresham, Oregon.

Pedestrian Streets

A pedestrian street, sometimes called a Rosewalk, is a pedestrian-only street defined by building frontages and providing the primary pedestrian access to those buildings. This typology could be considered a derivative of courtyard housing, but where cottage clusters and courtyard housing tend to be insular, pedestrian streets serve a connectivity function. A pedestrian street may be formal with a central focal point and seating area, or may be more naturalistic in design. Pedestrian streets present builders and developers the opportunity to improve pedestrian connectivity and reduce the need for vehicular right-of-ways. Additionally, these connections can serve to provide linkages that offer connections between larger community open or civic spaces. In a location with steep topography, the units can be arranged to step up the slope with a pedestrian staircase in the center.

Narrower pedestrian streets are sometimes called Paseos. The difference between a Rosewalk and a Paseo is largely the width and number of homes facing the space. A Paseo is likely to be narrower and more functional in how connectivity is provided. Paseos are narrow pedestrian ways that cut through blocks offering an opportunistic pass through, shortening a route in a location containing longer vehicular blocks. The treatment and landscaping of a Paseo vary based on context.

A local example includes the pedestrian street found within the Belmont Dairy Townhomes in inner southeast Portland (see image). This pedestrian accessway provides connection through to a shared parking court from surrounding streets.

Belmont Dairy Townhomes Pedestrian Street, Portland, Oregon.

Innovative Design Solutions

While the variety of innovative new housing codes may not resolve the all the challenges Portland encounters related to multi-dwelling development, especially in East Portland, there are promising new tools and opportunity to regulate for better multi-dwelling outcomes. At the design level, some private design practitioners have successfully demonstrated an ability to rethink lot configurations through site and building design, particularly by having elements of the site plan perform multiple functions.

Living Streets and Shared Space

Recent notable multi-dwelling development projects, both internationally and nationally, provide examples of how parking access, common space, and stormwater functions might take place within the same space.

Wallingford Townhomes, Seattle, WA. A cluster of townhomes around a garden courtyard. (Image via b9 Architects).

Wallingford Townhouses, Seattle, Washington

The Wallingford townhome project has multiple "fronts"- to Wallingford Avenue, internally between the structures, and to each side along the shared parking access. The true front of the project is the one internal to the site, defining a centrally located outdoor space that is terraced and sheltered with direct views to and from each of the eleven homes. Accessed between the structures, the courtyard space connects to the lower outdoor shared parking access.

A variety of paving types for various functions within a singular shared space. (Image via Payton Chung, ULI.)

Sofia Lofts, San Diego, California

The Sofia Lofts, in the Golden Hill neighborhood in San Diego, California, integrates contemporary design with an historic three-bedroom house on the site. It consists of 16 units varying from studios, to one- and two-bedroom rentals, to the three-bedroom house. Its common areas serve primarily as social spaces—BBQ grill area, a lounge area, and space for outdoor movies and other activities—and secondarily as driveway access to several garages.

Blackbirds, Echo Park, California

Blackbirds, in the Echo Park neighborhood in Los Angeles, California, is a cluster of 18 homes (attached and detached) built around a "living street", an interior courtyard that is made up of landscaping and parking areas yet still provides space for a variety of social and play functions.

2/3rds Project site plan via Guerilla Development, interlocking courtyards colored green.

2/3rds Project, St. Johns, Portland, Oregon

The 2/3rds Project is a mixed-use development that integrates open space and private, semi-public courtyard spaces into the design. Each dwelling unit has direct access to outdoor courtyard space and pavers are used to delineate primary site circulation area.

Parking Lot Conversion

New paving material provides permeability for rain water runoff and turns an auto-dominated parking lot into shared courtyard space. Portland, Oregon.

This 1960's apartment building in Portland's Northwest District was originally fronted by an asphalt parking lot. The asphalt was replaced by permeable pavers, and highlights possibilities for converting surface parking lots into spaces that can provide a stormwater management function, while potentially serving as multi-functional courtyard space. The courtyard perimeter has been reconfigured with wood slat screens to delineate circulation paths, create zones of semi-private space, and add warmth to the palate of materials.

This project was also provided additional architectural interest and functionality through a zinc rain screen cladding system. Windows were enlarged to provide better daylight, while the interiors feature sliding translucent glass doors to both allow for light and to provide privacy when needed.

A Pedestrianized Village in a Suburban Context

The NaerHeden master planned community offers housing choice, car-share, and common use parking courts.

The residential master planned community of NaerHeden is 20-minutes by train outside of Copenhagen Denmark. It was designed to reframe suburban living by giving residents opportunities for affordable housing, with individuality, diversity, and community. The project contains a variety of housing choices, private gardens, public spaces, and walking paths.

Common use parking courts enable better use of limited ground area by efficient grouping of parking at the project perimeter, leaving the interior of the project prioritized for pedestrians and community space. The project partnered with a car-share company to eliminate the need for private automobile storage for households that only drive occasionally. Nearby transit also allows residents the option to live without needing to own an automobile.

EXHIBIT B

Appendix F
Better Housing by Design - Displacement Risk Analysis

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

MEMO

DATE: May 31, 2018

TO: Bill Cunningham

FROM: Nick Kobel
Tom Armstrong

SUBJECT: Better Housing by Design displacement risk analysis

The 2035 Comprehensive Plan policy 5.15 directs City agencies to evaluate new plans and investments for the potential to cause displacement or increase housing costs in vulnerable communities. This analysis presents the methodology and findings to evaluate the potential for increased risk of displacement due to the proposed changes to the multi-dwelling zones in the Better Housing by Design project.

Key findings

- The most significant proposed change is in the R3, R2, R1 (RM1 and RM2) zones to move from regulating development intensity by unit density (units per acre of site area) to building scale (floor-area ratio, or FAR) that will allow for a broader range of housing types and potentially more units.
- Most of the development capacity in the multi-dwelling zones is through redevelopment of existing development. Only 16% of the future development capacity is on vacant land.
- The proposed changes could trigger a minor increase in redevelopment sites, especially in vulnerable communities, which could increase the risk of displacement.
- Most of the additional redevelopment sites are single-family houses, where about 60% are owner-occupied.
- The greatest risk for displacement would be with the redevelopment of multi-dwelling structures, but the analysis indicates that very few properties (10 to 24 sites with up to 67 units) have low enough values to be feasible for redevelopment.
- In addition, few (6 to 16) of these multi-dwelling structures are in vulnerable communities on larger lots (greater 8,000 square feet) that might be at greater risk of increased redevelopment.

Summary of proposed changes

The Better Housing by Design project is revising the design and development standards in Portland's multi-dwelling residential base zones outside the Central City. The proposed changes address four key concepts:

- Expand diversity of housing options and affordability
- Enhance outdoor space and green elements
- Adjust building design and scale
- Focus on East Portland standards and street connections

Multi-dwelling zones provide affordable housing opportunities. A large portion of Portland's new affordable housing is developed in the multi-dwelling zones. These medium- and higher-density zones will continue to play a critical role in providing a broad range of housing to meet the needs of all Portlanders.

The livability and quality of multi-dwelling housing has a disproportionate impact on the quality of life of people of color and low-income households because larger proportions of these populations live in multi-dwelling housing than the general population.

In general, the Better Housing by Design proposal promotes equity by providing incentives for the creation of new affordable housing and for preserving existing affordable housing. The proposals also contribute to equity through requirements for "visitable" housing that is physically-accessible to people with a range of abilities, provisions that address the need for street connections and outdoor spaces in East Portland.

The most significant change from current regulations is a proposal in the R3, R2, R1 (RM1 and RM2) zones to move from regulating development intensity by unit density (units per acre of site area) to an approach that regulates by building scale - primarily floor-area ratios (FAR) in combination with building height limits and other development standards. [1] Generally, the new zones continue the current zones' basic development parameters, such as building height, building coverage, and landscaping, but the shift to regulate by building scale creates more flexibility to develop a range of housing options, and potentially more units. Consequently, the ability to develop more units or a different housing type (townhouse versus apartments) could lead to more redevelopment which would increase the risk of displacement in vulnerable communities.

[1] The intensity of development in each zone is regulated by floor-area ratio or "FAR" (an FAR of 1 to 1 means 5,000 square feet of building floor area is allowed on a site with 5,000 square feet of land). Each zone includes a base FAR that will apply to most development, as well as a bonus FAR for projects that provide community benefits, such as affordable housing. The RH zone currently regulates intensity/density in this way.

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Methodology and results

This analysis used a four-step approach to analyze the displacement risk of the Better Housing by Design project:

1. Identify recent development trends in multi-dwelling zones to derive a strike price (land valuation) for new development.
2. Model the proposed changes in the Buildable Lands Inventory (BLI) development capacity model.
3. Identify new sites that would be more likely redevelop from the BLI model results.
4. Analyze those sites by location, site size, tenure, and existing economic vulnerability.

This approach considers the redevelopment potential of a parcel based on the cost to purchase the land and the intensity of the existing use on the site. It is focused on identifying situations where displacement might occur if the redevelopment parcel is a renter-occupied home or multi-family unit. It is less concerned with homeowners, who could voluntarily sell their home.

Step 1: Developing a strike price using pre-development transactions

The change to the floor-area ratio (FAR) allowances in R3, R2, and R1 zones might make sites more attractive to redevelopment. This is because developers are generally able to pay a higher price to acquire the land due to the fact that more units could be developed.

With this logic in mind, BPS staff needed to understand what developers have been willing to pay to acquire land for multi-dwelling redevelopment. Staff first looked at all recent residential development permits that occurred in multi-dwelling zones since 2014. There were 606 new construction permits issued in multi-dwelling zones (R3, R2, R1 and RH) between January 2014 and January 2018 for multi-dwelling projects. These project types include duplexes, townhouses and apartments. Staff researched the sales history of each individual permit to determine the site purchase price prior to development. In cases of multiple transactions prior to permit issuance, care was taken to select the appropriate pre-development transaction that reflected what the developer paid for the parcel (land and existing structures). All transaction values were adjusted for inflation to 2017 dollars using CPI-U West. The resulting dataset contains 342 transactions.

Because the housing market varies across different parts of the city, the multi-dwelling zones were divided into ten subareas that have similar market characteristics. Staff then analyzed the pre-development transaction values in each market area (Figure 1). Due to sample size issues and the variability of values within the dataset, staff constructed a margin of error (at 90% confidence level) around the average transaction values. The upper and lower bounds of the margins of error were used to assess the redevelopment potential, discussed in Step 3 below.

In general, citywide transaction values ranged from $25-$75 per square foot of site area. As shown in Figure 1, these values vary by location and base zone. In general, inner Portland locations and higher density zones have higher transaction values. East Portland and along 82nd Avenue tend to have lower values in the $30 range. To put it another way, developers are willing to pay up to $100 per square foot for sites in Inner Portland, but less than $25 per square foot in East Portland.

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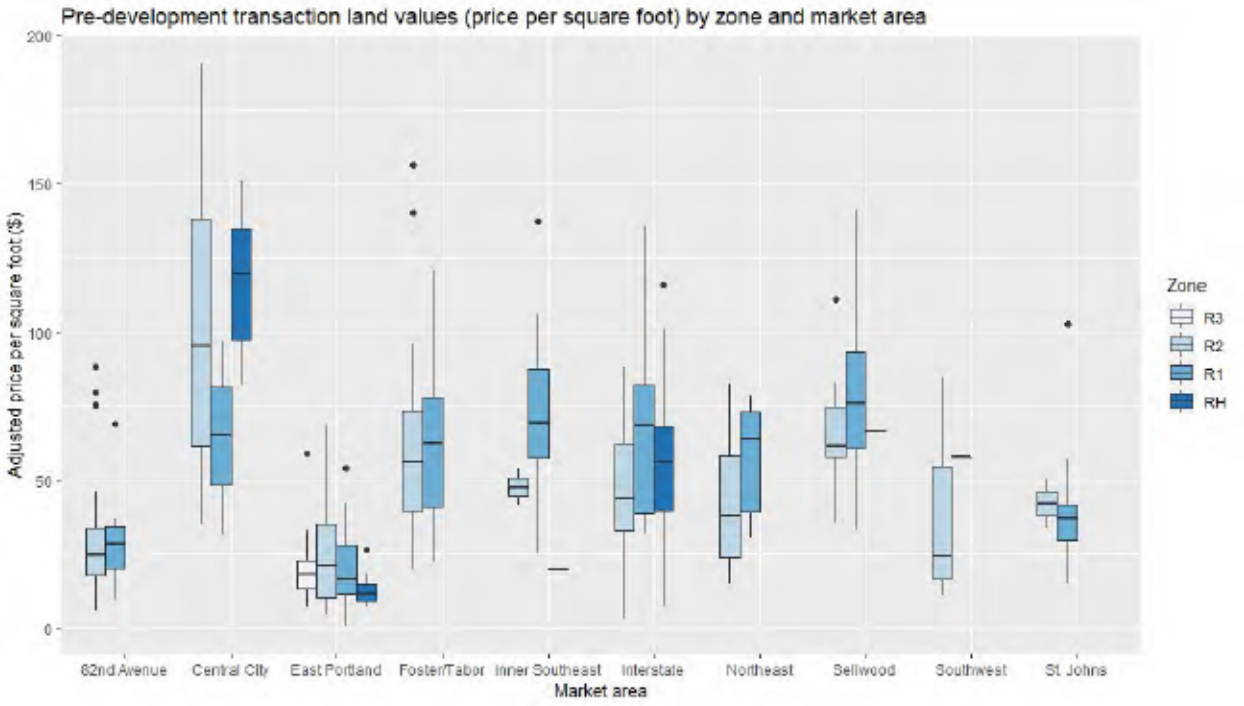

Figure 1: Distribution analysis of pre-development transaction land values by multi-dwelling zone and by market subarea. The shaded bars are the interquartile range (the 25th through the 75th percentile), the solid lines within each shaded box are the median of the distribution, the dots are outliers in the distribution, and the "whiskers" or line segments show the range of the data (minimum and maximum) excluding the outliers.

Step 2: Buildable Lands Inventory (BLI) capacity model output

The Buildable Lands Inventory (BLI) development capacity analysis is a GIS model that quantifies the future development capacity in Portland under current or proposed zoning regulations. It identifies sites that are vacant or developed that significantly underutilize their allowed development capacity. This model was used throughout the 2035 Comprehensive Plan process to assess alternative development standards. The model consists of three steps:

1. **Calculate existing development and allowed development limits.**
2. **Identify constrained properties that are not likely to develop (e.g., natural or historic resources).**
3. **Identify development parcels that significantly underutilize their allowed development capacity.**

Using the proposed development standards in the Better Housing by Design project, staff identified sites that significantly underutilize their allowed development capacity. These sites are compared to sites that are identified as likely to redevelop under the adopted 2035 Comprehensive Plan. The difference between these two model outputs served as the basis for analysis in Step 3. In other words, this exercise identified the *new* sites that were flagged as underutilized under the proposed development standards.

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Step 3: Apply the strike price analysis to the BLI capacity model output

With the land values for market subareas established in Step 1 and the underutilized sites identified in Step 2, staff were able identify the sites that were more likely to redevelop under the proposed development standards. If the real market value (RMV) per square foot of an underutilized site (Step 3) in a given zone and market area was below the land value strike price (Step 1), then the site was flagged as more likely to redevelop under the proposed development standards. For example, consider R2-zoned land in East Portland. The average strike price was $24 per square foot. If the RMV per square foot of a parcel identified as underutilized from Step 3 fell below $24 per square foot, that parcel was flagged as more likely to redevelop under the proposed development standards of the Better Housing by Design project.

Because of the variability in the dataset, staff used the margins of error from Step 1 to construct a confidence interval showing the reasonable range of the number of parcels that are more likely to redevelop under the project's revised standards. This method allows the measurement of displacement risk to be more sensitive to variations within the data, and it is a more conservative approach that helps mitigate potential under-counting.

Step 4: Deeper dive into redevelopable parcels

Once parcels were identified as having an increased risk of redevelopment, staff looked more closely into the sites. They examined the property type (e.g., single-family, multi-family, or another use), the probable tenure (i.e., renter- or owner-occupied houses), site sizes, the number of units in multi-family developments, and the demographic composition (i.e., economic vulnerability) of the areas that were affected most.

	Owner-occupied single-family			Rented† single-family			Multi-dwelling sites		
	LB	Est.	UB	LB	Est.	UB	LB	Est.	UB
82nd Avenue	8	27	47	7	29	44	0	1	2
Central City	1	3	4	1	6	7	1	2	5
East Portland	1	17	68	2	13	37	0	3	12
Foster/Tabor/Powell	3	15	26	2	11	19	0	1	2
Inner Southeast	0	0	0	0	0	0	0	0	0
Interstate/MLK	0	1	4	2	2	4	0	0	0
Northeast	1	5	12	4	8	12	0	1	1
Sellwood	0	0	1	0	0	2	0	0	0
St. Johns/Peninsula	0	0	2	0	0	1	0	0	0
Westside	1	2	10	1	5	13	0	1	1
Grand Total	15	70	174	19	74	139	1	9	23

Table 1: Lower-bound (LB) and upper-bound (UB) estimates for the number of sites that would be at increased risk of redevelopment under the proposed Better Housing by Design development standards, disaggregated by building type and market subarea. † Rented single-family units may include vacant units and those whose homeowners have a PO box.

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Table 1 above shows the number of residential parcels with an increased risk of redevelopment by property type and tenure. Overall, it shows that single-family homes are more likely to redevelop. It shows that between 19 and 139 renter-occupied homes have land values low enough that make it attractive for redevelopment. It also shows that up to 23 multi-dwelling structures have low enough values to support redevelopment.

Economic vulnerability

Staff also looked at the results based on the economic vulnerability of the neighborhood in which the parcel is located. Economic vulnerability is measured across four variables: households that rent; people who identify with a community of color; people without four-year degrees; and low-income households. These socioeconomic factors indicate a reduced ability to withstand housing market price increases caused by gentrification, making them more vulnerable to displacement.

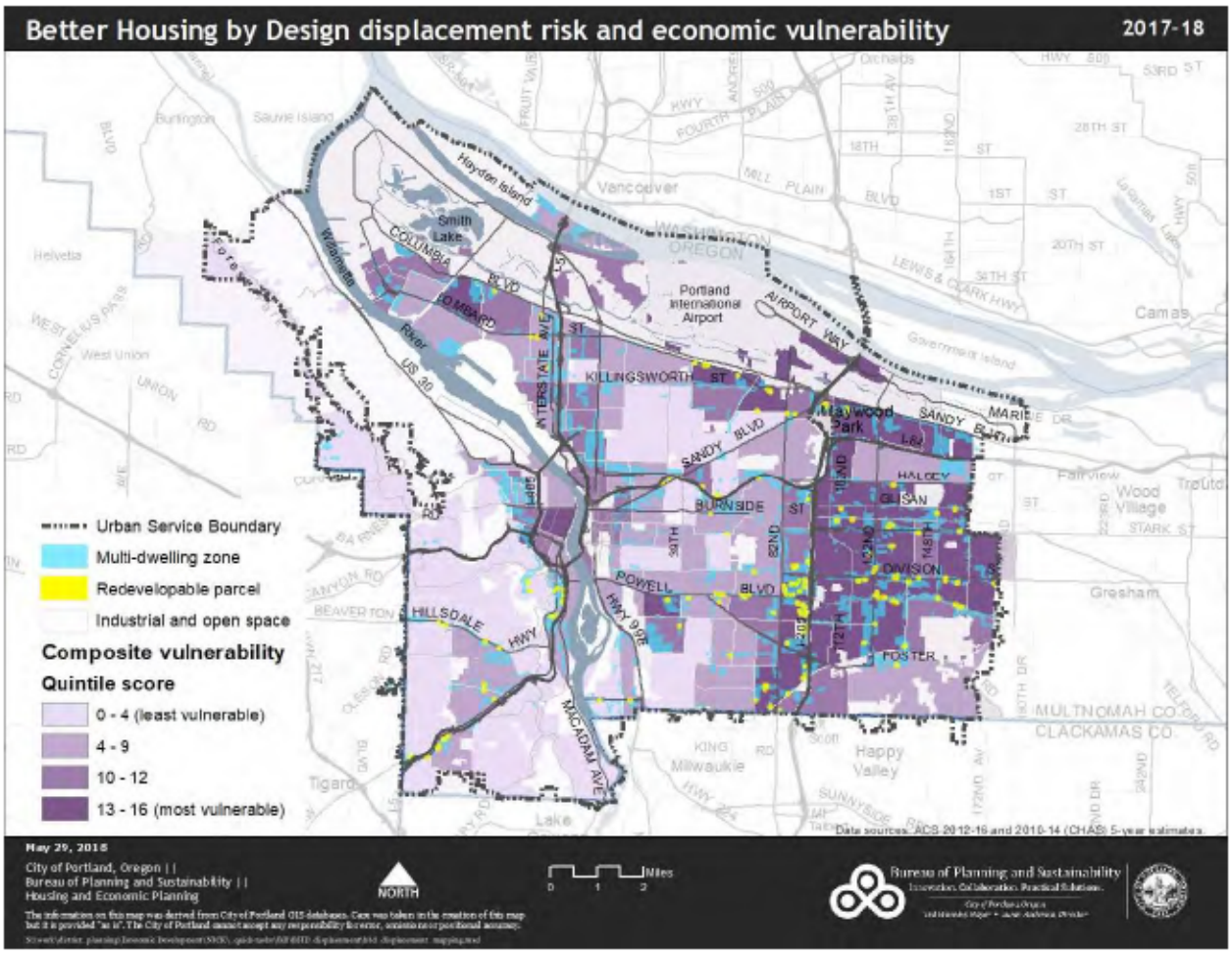

Figure 2: Parcels at risk for redevelopment and displacement in multi-dwelling zones under proposed Better Housing by Design project, with economic vulnerability shown in purple. Included are multi-dwelling unit types and single-family rental units. The conservative, upper-bound estimate is depicted here.

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Figure 2 above shows the distribution of parcels that are at risk for redevelopment relative to vulnerable areas in the city. It shows that the highest concentration of parcels is in more vulnerable areas, primarily East Portland, 82nd Avenue, Foster-Powell, and parts of Cully.

Finally, staff looked at site size. Sites larger than 8,000 square feet offer potential developers more flexibility and increase the likelihood that a site would be redeveloped. The number of single-family rental units that are on larger lots that are in tracts identified as vulnerable range from 10 to 55, while the share of multi-family structures ranges from 1 to 16 (Table 2).

Site size > 8,000 ft^2	In a vulnerable community			Not in a vulnerable community		
	LB	Est.	UB	LB	Est.	UB
Multi-dwelling structures	1	6	16	1	4	5
Single-family rental	10	35	55	3	6	10
Single-family ownership	8	37	77	4	9	15
Total	19	78	148	8	19	30

Table 2: Lower-bound (LB) and upper-bound (UB) estimates for the number of parcels identified as redevelolpable on sites larger than 8,000 square feet.

In conclusion, the proposed changes to development standards from the Better Housing by Design project will have a minimal increase in displacement risk. Although most of the likely redevelopment potential falls within vulnerable communities (70% to 83%), the magnitude of the impact is not significant (up to 65 single-family rentals on large lots and up to 67 multi-dwelling units). The increased affordable housing development bonuses in the Better Housing by Design proposal helps to mitigate this increased risk.

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EXHIBIT B
Appendix G

CONNECTED CENTERS STREET PLAN

A strategy for improving street and pathway connectivity in centers

Focus on Jade District and Rosewood/Glenfair Neighborhood Centers

SEPTEMBER 1, 2019

PORTLAND BUREAU OF TRANSPORTATION

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PREFACE

PBOT is undertaking the Connected Centers Plan (the Plan) to examine regulatory and implementation measures that will improve street connectivity and create more attractive and integrated neighborhoods and community spaces. Using the Jade District and Rosewood neighborhood as case studies, the Plan aims to achieve new connections and in turn improved access for walking, bicycling and motor vehicles.

The Plan is a strategy to realize new street and pathway connections as sites develop on blocks that do not meet existing connectivity requirements. Portland's long-range planning policies call for safe and accessible street and pedestrian connections, especially within centers, where more concentrated services and housing are intended. In order to achieve these goals, the Portland Bureau of Transportation (PBOT) is working with the Bureau of Planning and Sustainability (BPS) to improve street connectivity in Jade and Rosewood, explore revisions to the City's zoning code development standards, and revise design standards that shape development in Portland's multi-dwelling zones.

BPS is undertaking the Better Housing by Design (BHD) project, which is updating multi-dwelling zoning code regulations to improve development outcomes outside Portland's Central City. The project is revising regulations for multi-dwelling zones (RH, R1, R2, and R3), typically located in and around centers and corridors, and includes a focus on East Portland to foster development outcomes that reflect the area's distinct characteristics and needs. PBOT staff have worked with the BHD team to ensure that the new zoning code provisions complement the Connected Centers Plan and support the goal of improving street connectivity in eastern centers. The Jade and Rosewood neighborhoods were selected as case study areas for both BHD and Connected Centers project because both have areas that are broadly zoned multi-dwelling and both have poor street connectivity.

PLAN OVERVIEW

"The Plan aims to achieve new connections and in turn improved access for walking, bicycling and motor vehicles"

Good street connectivity is the backbone of safe, vibrant and healthy communities. More compact and connected street networks provide greater accessibility through more direct routes and shorter trip distances that generally result in more people walking, biking and taking transit.

Several parts of Portland do not meet the City's street spacing standards due to established development and street grid patterns. Most Eastern Neighborhoods were developed after the Second World War prior to annexation into the City of Portland and were built with large blocks, deep lots, and many lack basic infrastructure such as sidewalks. Short of clearing the established neighborhood and starting over, the city must rely on new street connections being built through infill development.

Since the Jade District and Rosewood areas are already established neighborhoods, this plan seeks to increase the feasibility of building new street connections as infill development occurs (or at a minimum, preventing sites being built in a manner that precludes a potential connection in the future). The plan proposes allowing new streets to be built incrementally (or phases) in locations where sites are narrow, and the right-of-way needed for a full width street is not available. Due to the lack of narrower street improvement options, often opportunities to build streets on these sites are missed even if the site does not meet the City Code required street spacing standards. The Connected Centers Street Plan proposes allowing the requirement to be split across multiple properties. This would allow adjacent properties to share the responsibility of building a street and only requires a fraction of the space and cost, e.g. as little as 20 feet of right-of-way, from each site.

The Plan proposes to complement Better Housing by Design zoning amendments, such as calculating development allowances before street dedication (so that new street connections do not cause the loss of development opportunity), combined with new types of narrower connections proposed in the Connected Centers Street Plan, to make a substantial difference in reducing the disincentives and the costs to developers of providing new public street connections rather than simply building a private driveway.

While successfully achieving new street connections will remain opportunistic and incremental, this is of necessity. PBOT does not currently have a funding source available to purchase properties or acquire private property and remains dependent on connections being made as infill development occurs. In order to further increase the feasibility of new connections in the Jade District and Rosewood area, the Connected Centers Street Plan proposes a Transportation System Development Charge (TSDC) project to provide a way for a city to contribute to a portion of the cost of a public connection and to allow for credits/discounts to the required TSDC for a given development.

INTRODUCTION

Portland aims to create safe and accessible street and pedestrian connections, especially within centers, where more concentrated services and housing are located.

Growth in Centers

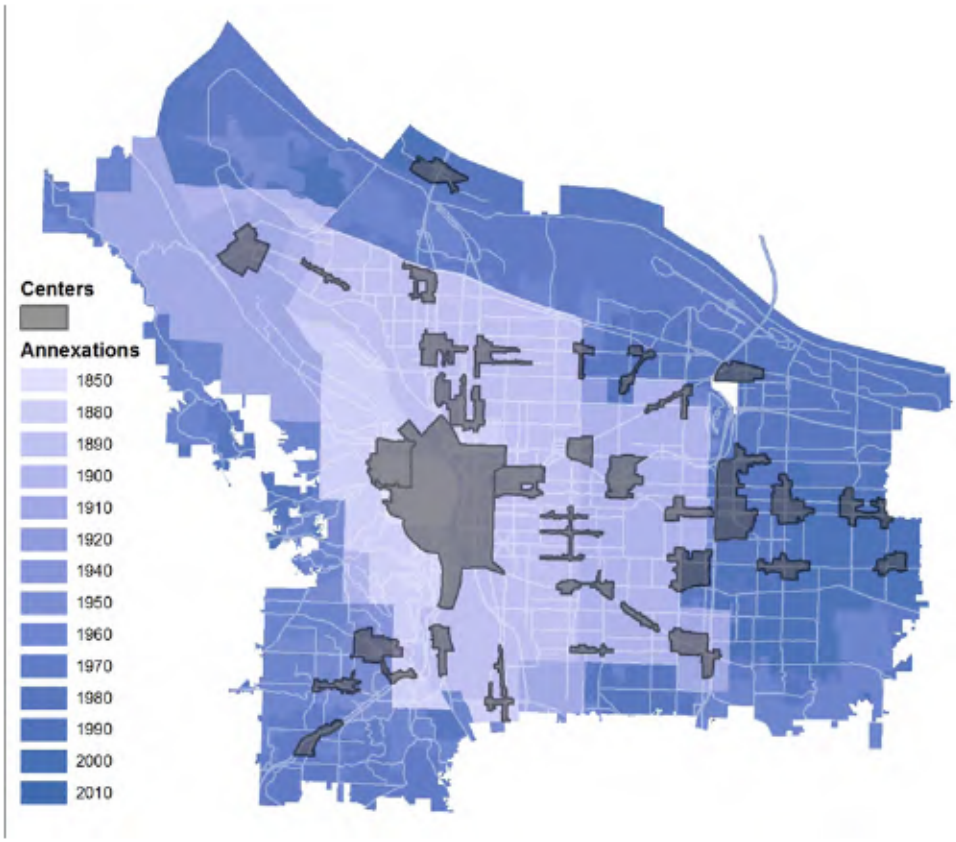
Portland is expected to continue growing rapidly over the next 20 years. According to projections, 260,000 new residents will be added to the 620,000 people who currently live here by the year 2035. The 2035 Comprehensive Plan, the City's guide for accommodating this growth, aims to focus 80% of the growth in centers (including downtown) and along corridors in an effort to increase density where there are destinations, services and good access to transit, bike and pedestrian infrastructure.

Portland's centers, including the Central City, Gateway Regional Center, Town Centers and Neighborhood Centers, are envisioned as walkable places with dense concentrations of housing and commercial destinations, easy access to well-connected transit, and street and utility infrastructure that can support dense, growing communities. However, in many cases the existing conditions still do not reflect this vision.

Historical Context

Portland's boundaries have not always extended as far as they currently do. Over the last century, Portland has expanded by annexing unincorporated land from Multnomah County. Most of the annexed area had already been developed under County standards prior to being added to the City with low density housing on large parcels, connected by a sparse and car-centric street network that does not meet Portland connectivity standards. Many of these areas still retain some of their rural character, and they continue to have insufficient infrastructure to meet the needs of residents in regard to walking, bicycling, and traffic circulation. As a result, many residents don't currently have good access to transit and have few options for getting around other than driving in private vehicles.

The figure on the following page illustrates that several Centers are located in relatively recently annexed Eastern Neighborhoods of Portland. Though the Comprehensive Plan envisions eastern



Portland Centers and Annexation Dates

centers as dense, walkable communities, their level of street connectivity is amongst the lowest in the City of Portland. Street connectivity is a measure of the frequency and number of intersections in an area. Routes between destinations are more direct, there are more route options and it's easier to get around in neighborhoods with good connectivity.

The locations of the designated Centers were officially adopted by City Council through the passage of the Comprehensive Plan. The boundaries of the Centers contain residential areas that are primarily zoned multi-dwelling, as well as concentrated areas zoned commercial/ mixed-use. But many of the parcels in eastern neighborhoods that are zoned for higher density housing still retain single-dwelling houses; many of which were built prior to annexation when they were subject to different zoning designations. The fact that the zoning allows for higher density development than currently exists in many centers in the annexed eastern neighborhoods is one of the reasons that so much of the future population growth is expected to occur there. As population density increases in centers, there will be greater demands on the transportation system, and a need for more street connections to make it easier for people to get to destinations.

Given the expected increase in density, it is essential that new street and pathway connections are developed as these Centers grow. New connections will serve to better disperse neighborhood traffic, increase connectivity, and improve the walkability and bikability of these growing communities. New tools and processes to help facilitate the creation of new connections are needed to ensure that they are built in time to match the pace of redevelopment.

Highly Connected
Central City block pattern

Well Connected
Inner neighborhood block pattern

Poorly Connected
East Portland block pattern

Importance of Connectivity

Street connectivity refers to the density of connections in street and non-motorized pathway networks. A well-connected network is characterized by many short blocks, more intersections and minimal dead-ends (culs-de-sac). **As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations and creating a transportation system that is more accessible, especially for pedestrians and people using bicycles.**

In essence, better connectivity makes it easier to walk or bicycle to places within the neighborhood. Increased street and non-motorized pathway connectivity also reduces per capita vehicle travel and improves overall accessibility, particularly for non-motorists. Poorly connected streets force more trips, whether by car, foot or bicycle onto arterial streets, including trips that both begin and end within the neighborhood. **In East Portland, these busy streets are often on the high crash network, which includes some of the most dangerous streets in Portland for any mode—motor vehicle, pedestrian, and bicycle.**

This private drive was built with a development in an eastern neighborhood of Portland. With sidewalks on both sides and pavement wide enough for a 2-way vehicle travel lane, it has the outward appearance of a public street. But it was built as a fenced dead end, and does not provide any connectivity to the rest of the neighborhood or local destinations.

BACKGROUND

Currently, some East Portland Centers lack connectivity, making it difficult to increase walking, biking and transit use in these areas.

Challenge in Achieving New Connections

The City anticipates continued growth within the designated centers, making them attractive to a wide range of residential and commercial developments. More residents will be walking, bicycling and taking transit in Centers for everyday activity. Today's transportation networks are not fully suited to meet community interests. New streets, walking and cycling connections are needed within and around Centers to meet the mobility and safety needs of current and future residents.

Centers in East Portland have particularly large blocks, deep lots, and wide gaps in street and pathway connectivity. There are few vacant lots in these Centers; however, infill development is filling in gaps adding new buildings on underutilized sites. **Since these areas are not a blank slate, the completion of the street grid must work with the infill pattern** incrementally building out new connections wherever feasible as part of development.

According to Portland City Code (33.654.110 and 17.88.040), streets must be spaced at maximum intervals of 530 feet. If development occurs in a location where the street spacing exceeds this standard, a new street must be built. Historically, new streets have been dedicated and built by developers at the time of development. But despite the relatively high rate of redevelopment that is currently occurring in East Portland, many opportunities for building new street connections and filling gaps in the street network are being missed.

If developments involve a land division, Development Review staff have an opportunity to review site plans to determine if street spacing in the area of the development is in compliance with City standards. Other developments occur in planned districts, or involve special use permits. These situations represent circumstances in which Development Review staff have an opportunity to get needed new connections built as a condition of permit approval. However, many developments in multi-dwelling zones are not located in planned districts and don't involve land divisions. In these situations, there is no clear step in the permit process to trigger City code requirements for developers to build dedicated public streets in locations where they are needed, even though they are technically required to do so if street spacing exceeds 530 feet. Small sites have proven especially problematic for getting new connections. When the City has been successful in getting required new connections built, it has often been in situations where large, multi-acre development has occurred.

Problem Statement

Many areas of East Portland were platted with long, narrow parcels. Developers report that it is difficult to fit developments in small or narrow parcels that achieve required density, setbacks, open space requirements and a new public street connection.

Public streets are expensive, so developers may be avoiding building multi-dwelling units on lots where new public street connections are needed. Further, under existing code, rights-of-way dedications are deducted from the parcel (lot) area, thus reducing the development density allowances, which reduces the amount of profit that can be generated by a development.

The cost of building public streets is of particular concern for developers of non-profit and other affordable housing developments. Many of these types of projects have lower profit margins, and their viability may be more sensitive to the added expense. Portland City Council has declared that there is a housing emergency, as the cost of renting and buying housing has increased rapidly in recent years.

The issue of developers avoiding lots where new connections are needed is illustrated in the Gateway Town Center, where master street plans show the location of several needed new street connections. Despite fourteen years of development that has occurred since the first Gateway master street plan was adopted, only one new connection has been built.

A deep, narrow development in an eastern neighborhood. Constrained lot dimensions make it difficult to build new connections on lots of this type.

In conjunction with the Better Housing by Design Plan, The Connected Centers Plan is making a specific range of recommendations to:

1. Allow street improvements that require less space, including pathways and phased street improvements that can be built incrementally by adjoining developments over time.

2. Require new developments in specific, connectivity deficient East Portland Centers to only occur on parcels with a minimum frontage width. Narrower parcels may be consolidated with others to meet this requirement. (This proposal is contained in the BHD plan).

3. Identify potential incentives, specifically Transportation System Development Charge projects and credits, to increase feasibility of new connections and remove disincentives to developers.

Portland's Policies and Code Requirements for Street Connectivity

Street Connectivity Policies within the Portland 2035 Comprehensive Plan and Transportation System Plan (TSP)

Portland's Comprehensive Plan and TSP contain specific policies supporting and requiring appropriate spacing of public streets and pedestrian and bicycle connectors, especially within priority Centers and Corridors:

- Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district- specific street plans found in the Transportation System Plan. (Policy 9.47)

- Establish a safe and connected rights-of-way system that equitably provides infrastructure services throughout the city. (Policy 8.39)

- Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors. (Policy 4.23)

- Require private or public entities whose prospective development or redevelopment actions contribute to the need for public facility improvements, extensions, or construction to bear a proportional share of the costs. (Policy 8.29)

Building and Land Use Permit Requirements in Portland City Code

City Code establishes regulations affecting public street, pedestrian and bicycle facility improvements (Title 17) and public rights-of-way and street spacing requirements (Title 33) within and through land division requirements. The purpose of the City Code is "to ensure an adequate level of street connections to serve land uses, and to ensure that improvements to these streets are made in conjunction with development consistent with fire, life safety, and access needs" (Title 17.88.001). The following City Code sections are central to the Connected Centers objectives:

TITLE 17 PUBLIC IMPROVEMENTS

Property Owner Responsibility for Streets (17.42)

- Streets are constructed at the expense of abutting property owners. (17.42.010 A.)

Land Divisions (17.82)

- Public streets and public alleys within or adjacent to land divisions shall be improved in accordance with requirements of the City Engineer. (17.82.070 A)

- Public pedestrian and bicycle connections, within the Land division site and located in public right-of-way or easements dedicated to the City shall be improved in accordance with the requirements of the City Engineer. (17.82.070 A)

Street Access (17.88)

- Developments or redevelopments must include through streets as required by the Director of the Bureau of Transportation connecting existing dedicated streets or at such locations as designated by the Director of PBOT. (17.88.040 A.)

- New residential or mixed-use developments or redevelopments must build streets to respond to and expand on the adopted street plans, or in the absence of such plan, as directed by the Director of PBOT. (17.88.040 C. 1.)

- New residential or mixed-use developments or redevelopments must build street connections that are spaced no further apart than 530 feet, except when prevented by barriers. (17.88.040 C. 2.)

TITLE 33 PLANNING AND ZONING

Land Divisions - Rights-of-Way (33.654)

- Rights-of-way should be located to ensure provision of efficient access to as many lots as possible, and enhance direct movement by pedestrians, bicycles, and motor vehicles between destinations. (33.654.110 A)

- Through streets should be no more than 530 feet apart and pedestrian connections should be no more than 330 feet apart. Approval of land division permits is conditional upon developers dedicating and building right-of-way to conform with street spacing standards. (33.654.110 B. 1. a.)

- Where the existing street spacing in the immediate area surrounding the site is no greater than 530 feet, the existing street pattern should be extended into the site. Approval of land division permits is conditional upon extension of streets into the site. (33.654.110 B. 1. b.)

U.S. Supreme Court Rulings

ESSENTIAL NEXUS (NOLLAN)

In Nollan, the U.S. Supreme Court held that a permit condition subject to scrutiny under the Takings Clause must have an "essential nexus" to "legitimate state interests." The "essential nexus" evaluates the nature of an exaction. According to the ruling, "an exaction condition on development permission must substantially advance a government purpose that would justify denial of the permit."

ROUGH PROPORTIONALITY (DOLAN)

In Dolan, the Court held that requirements imposed on a development must be "roughly proportional" to the impacts of that development. Dolan requires that the City enumerate the potential impacts of the proposed development here and demonstrate that the potential requirements would be related to those impacts.

APPLICATION OF NOLLAN/DOLAN (KOONTZ)

In Koontz, the Supreme Court held "that the government's demand for property from a . . . permit applicant must satisfy the requirements of Nollan and Dolan . . . even when its demand is for money."

NE Everett Ct: new one-way street connection built with development in the Gateway Regional Center

Why Require ROW Dedication With New Connections?

The City of Portland requires right-of-way dedication when new connections are built. Right-of-way dedication is preferred over public access easements for a number of reasons, including the following:

- Consistency with Zoning Code, Land Division and Planned Development - Title 33.654, Rights-of-Way provisions:
  - 33.654.150.B. Ownership

    1. Through streets. Through streets must be dedicated to the public.

    2. Partial streets. Partial streets must be dedicated to the public.

    6.a. Pedestrian connections that connect or are intended to eventually connect two through streets, must be dedicated to the public.
- It fosters consistency in design and ensures access for all users.
- It provides clear public ownership and eliminates the perception of trespassing. This also provides wayfinding benefits.
- The City has control over closures, and there is less risk of property owners blocking access.
- The City assumes the responsibility of maintenance given the importance of public access.
- The City can provide public safety and emergency access

OPPORTUNITY ANALYSIS

"In places that lack basic public facilities or services and also have significant growth potential, invest to enhance neighborhoods, fill gaps, maintain affordability, and accommodate growth."

-2035 Portland Comprehensive Plan Policy 8.22.b

Street Networks in Jade and Rosewood Neighborhoods

The Jade District and Rosewood neighborhoods were chosen as case studies to represent street connectivity issues in Eastern Neighborhood Centers. Their street networks were the subjects of a detailed analysis, focusing on connectivity. They both have disjointed and poorly connected street networks, but the conditions in each area are not identical.

Jade District Neighborhood Center

The Jade District is generally bound by Harrison Street (north), Powell Boulevard (south), 80th Avenue (west), and I-205 (east). Key arterial streets in the study area include 82nd Avenue (north-south), and Division Street and Powell Boulevard (east-west). These streets are generally very wide and difficult to cross, even in those cases where crosswalks exist.

The internal study area consists of a series of blocks that are elongated in the north-south direction. Spacing of north-south streets between Division Street and Powell Boulevard is relatively regular, but east-west street connectivity is very

limited. Connectivity issues are exacerbated by the fact many of the primary connections through the middle of the neighborhood are unpaved or unimproved.

Only Clinton St creates a link through the Jade District between 82nd and 92nd Avenues. East of 84th Avenue, Clinton Street is an unimproved street, lacking curbs or sidewalks. There are few arterial pedestrian crossings.

Jade District Neighborhood Center

Rosewood Neighborhood Center

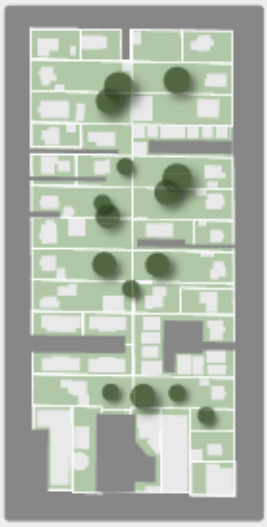
Rosewood Neighborhood Center

The Rosewood Neighborhood Center is generally bound by Glisan Street (north), Alder Street (south), 144th Avenue (west), and 162nd Avenue (east). Key arterial streets the study area include 148th and 162nd Avenues (north-south), and Glisan, Burnside and Stark Streets (east-west). Burnside Street includes the center-running MAX Blue line, with stations at 148th and 162nd Avenues. There are off-set designated pedestrian crossings along Burnside at several key intersections, including 146th, 151st, 154th, 157th and 160th Avenues. There are fewer segments of unimproved right-of-way in and around the Rosewood Neighborhood Center than there are in the Jade District, but there are fewer, more widely spaced through-streets in Rosewood, in general. Most blocks in Rosewood are 600 x 1000 feet. This means that street spacing is out of compliance with City Code in both the east-west direction and the north-south direction throughout the neighborhood.

Like the Jade District, the blocks in the Rosewood Neighborhood Center are also elongated in the north-south direction. There are limited local street connectors that link the mix of residential, commercial and school uses within the neighborhood. There is very limited east-west connectivity aside from Burnside and Stark.

East Portland Block - Future Possibilities

These graphics show potential long-term outcomes for East Portland blocks. The second graphic shows a continuation of current trends, with development – often on narrow sites – built to the rear of each site. The third graphic shows how a potential new street connection could be built mid-block with new development, as well as a few bike/ped connections to other sites.



Existing

Continuation of current trends

Potential connections under new standards

Identifying Where Connections are Needed

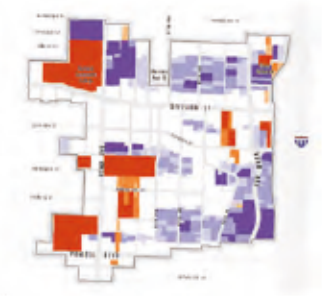
Blocks where new connectivity is most deficient were identified as Connection Opportunity Areas within the Jade District and Rosewood neighborhoods. These Connection Opportunity Areas are based on two discrete mapping measures: street buffering and parcel-level connectivity (PRDI analysis). The age of residential and non-residential buildings within each neighborhood and frontage length analysis also provided helpful indication of those land parcels more apt to redevelop sooner, in consideration of real estate market forces.

Measuring Connectivity

Highly connected neighborhoods and Centers typically contain street patterns of relatively small blocks and networks of connected streets and good sidewalks. Within these neighborhoods people can walk, bike, ride transit and even drive to destinations, along multiple routes. If the street network has many unconnected dead-ends or other travel barriers and blocks are large, people must travel farther, and are often reliant on driving rather than walking, bicycling or riding transit.

By using a buffering analysis and Pedestrian Route Directness analysis broad swaths of area where new connections are needed could be identified in the Rosewood and Jade neighborhoods. Within these areas, a further understanding of the construction year (building age) and platting of parcels helps to identify the locations where it might be the most feasible to get new connections through blocks in future development.

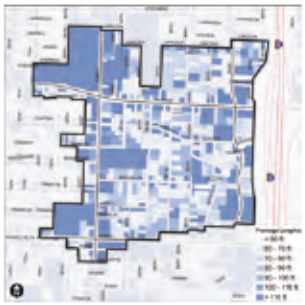
Steps to Measuring Street Connectivity



STREET BUFFER ANALYSIS

PEDESTRIAN ROUTE DIRECTNESS INDEX (PRDI)

BUILDING AGE



FRONTAGE LENGTHS

Connection Opportunity Analysis

Street Buffer Analysis

Mapping analysis of the study neighborhoods was completed by applying a 530-foot buffer to the streets bordering each block, both north-south and east-west. The analysis identifies gaps in connectivity of streets running in each direction and combines the overlapping results to identify connectivity opportunity areas. City Code Title 17 requirements will apply in these areas for land owners seeking new development or redevelopment of parcels, through the permit application review and approval process. See the following pages for maps of these analyses

JADE DISTRICT STREET CONNECTIVITY

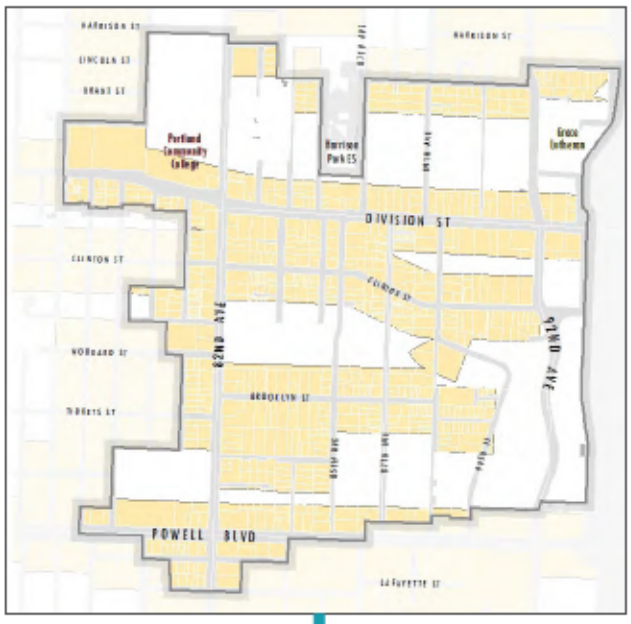
Most blocks in the Jade District are elongated in the north-south direction. Because of this, gaps in the east-west street network are large. South of Clinton Street the buffering identifies two primary corridors lacking east-west street connectivity: east of the Fubonn Shopping Center and east of Kelly Street to SE 92nd Avenue. North of Division Street the gaps in east-west street connectivity are further complicated by the location of Harrison Park Elementary School.

The map also indicates significant gaps in north-south street connectivity through several commercial and institutional sites, including the Fubonn Shopping Center, Winco Shopping Center and Portland Community College (PCC). PCC has multiple internal, private driveway and sidewalk connectors that makes for good and practical north-south and east-west connectivity not accounted for in the street buffering analysis.

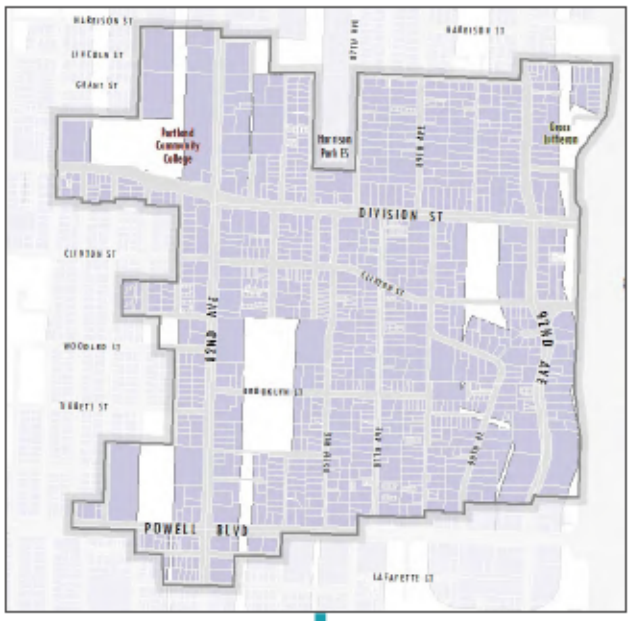
ROSEWOOD STREET CONNECTIVITY

Like the Jade District, long north-south blocks are also characteristic of the Rosewood Neighborhood Center. Burnside and Stark Streets run through the middle of the Center. But there is very little east-west street connectivity other than these major arterial streets. The spacing of streets that run in the north-south direction is not as great as the spacing between east-west streets, but large commercial buildings and parcels on either side of 162nd Avenue cause gaps in north-south street connectivity.

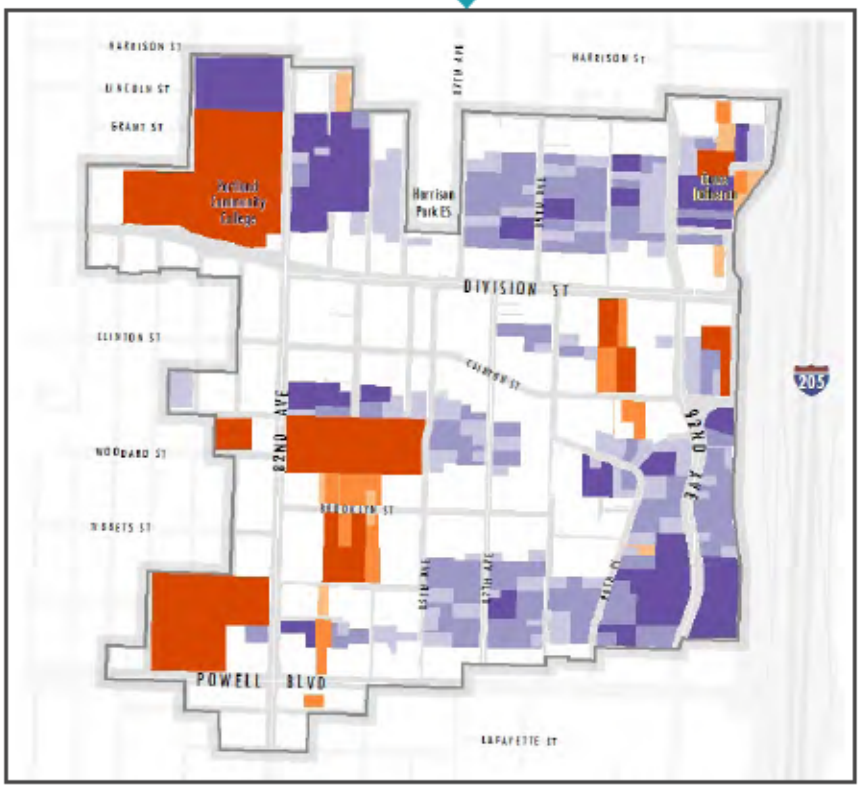
JADE DISTRICT STREET CONNECTIVITY ANALYSIS



East-West Buffer



North-South Buffer



Jade Opportunity Areas

Legend

Parcels Deficient in NS Street Connectivity

Area of Parcel in Square Feet

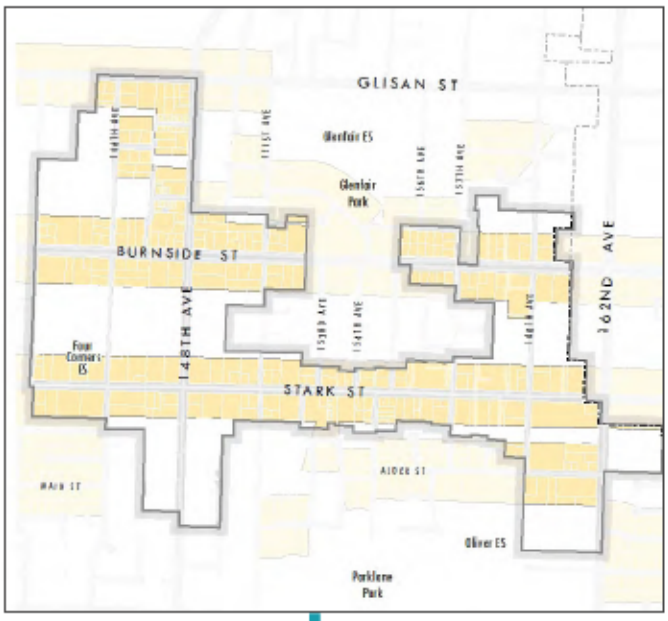
- <10,000
- 10,000-20,000
- >20,000

Parcels Deficient in EW Street Connectivity

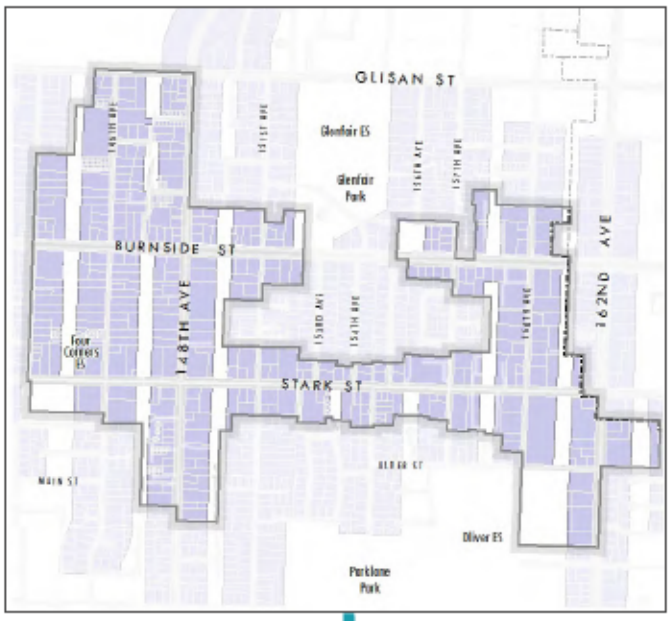
Area of Parcel in Square Feet

- <10,000
- 10,000-20000
- >20,000

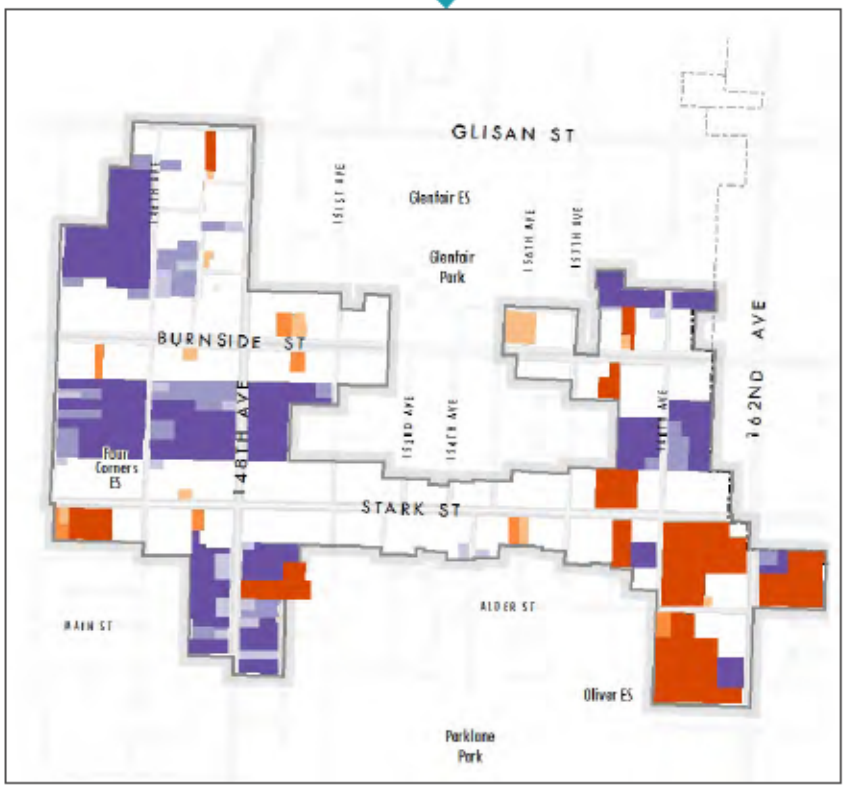
ROSEWOOD STREET CONNECTIVITY ANALYSIS



East-West Buffer



North-South Buffer



Rosewood Opportunity Areas

Legend

Parcels Deficient in NS Street Connectivity

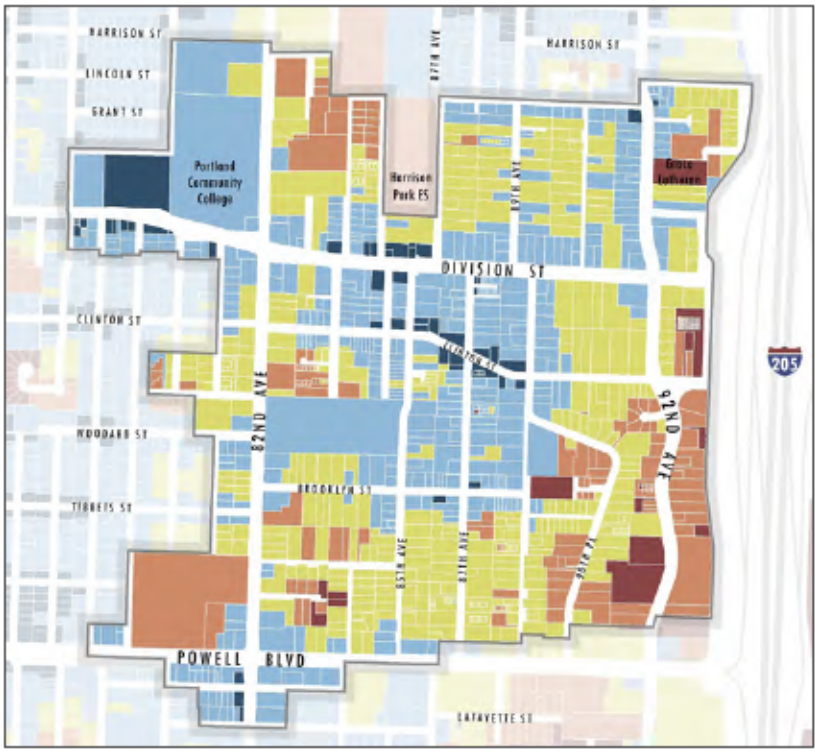
Area of Parcel in Square Feet

- <10,000
- 10,000-20,000
- >20,000

Parcels Deficient in EW Street Connectivity

Area of Parcel in Square Feet

- <10,000
- 10,000-20000
- >20,000



Jade Parcel Connectivity

Pedestrian Route Directness Index

The Pedestrian Route Directness Index (PRDI) is calculated and mapped to reflect the relative connectedness of each individual land parcel. PRDI is scored at the individual land parcel level, and directly accounts for the presence of nearby dead-end streets or other barriers that prohibit or diminish direct walking opportunity. The analysis measures the difference between the straight line distance between a parcel and adjacent parcels and the distance that would need to be traveled to get to those parcels using the existing street network.

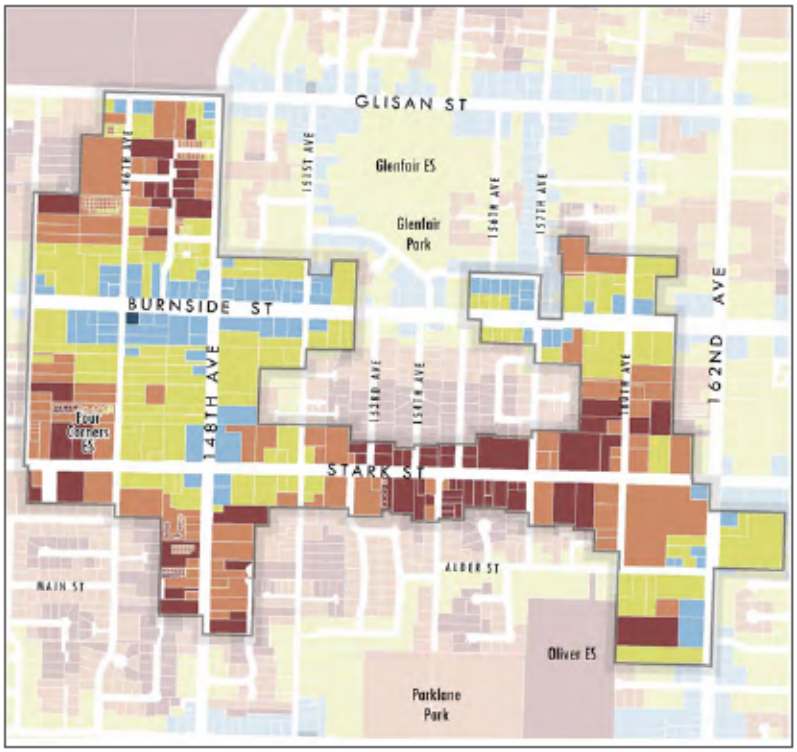
JADE PARCEL CONNECTIVITY

There are some pockets of good connectivity within the Jade District, given the smaller block sizes and street network surrounding the western section of Clinton Street. Fubonn is rated with good connectivity due to the small pedestrian access pathway at its eastern edge on 85th Avenue. However, the connection has poor visibility, poor lighting, is too narrow for strollers or wheelchair access and the rear of the shopping center does not have a public entrance. There are also 2 streets that dead end into the north end of the Fubonn property, which do not provide access.

PCC is also rated with good connectivity given its extensive internal pathway connectors and sidewalk linkages to 82nd Avenue, Division Street and 80th Avenue. While both Fubonn and PCC have internal pedestrian circulation systems, the system on the PCC property is vastly superior because it is open, well lit, accessible to all users, and provides access from all sides of the property.

JADE DISTRICT CONSTRAINTS

- Numerous dead-end streets
- Limited crossings of Division Street, 82nd Avenue, Powell Boulevard and I-205
- Discontinued and disconnected streets
- Long street blocks (lacking internal, pedestrian-bike connectors)



Rosewood Parcel Connectivity

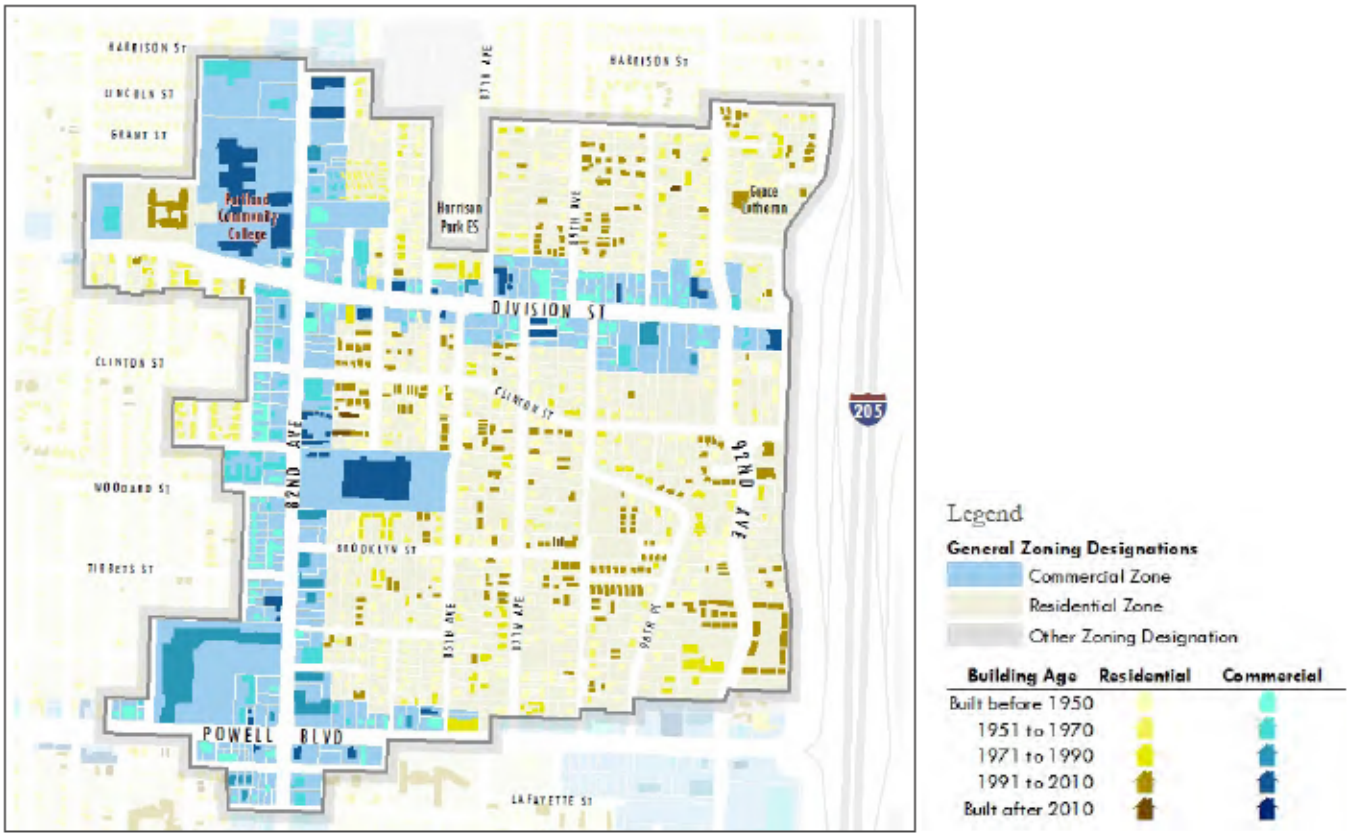
ROSEWOOD PARCEL CONNECTIVITY

There are some pockets of good connectivity within the Rosewood Neighborhood, given the relatively smaller block size and street network between Stark and Burnside Streets and 147th and 148th Avenues. The eastern portion of the Stark Street corridor has some of the poorest connectivity scores measured in the study. The largest blocks of bad scores are along a long stretch of Stark that completely lacks pedestrian crossings. The blocks along Burnside score better because there are relatively frequent pedestrian crossings.

Much of the remaining areas within the Rosewood Neighborhood are rated from fair to poor connectivity, due to a number of prevailing factors.

ROSEWOOD DISTRICT CONSTRAINTS

- Numerous dead-end streets
- Discontinued and disconnected through-streets
- Long street blocks (lacking internal, pedestrian-bike connectors)
- Limited crossings along Stark Street



Jade Building Age

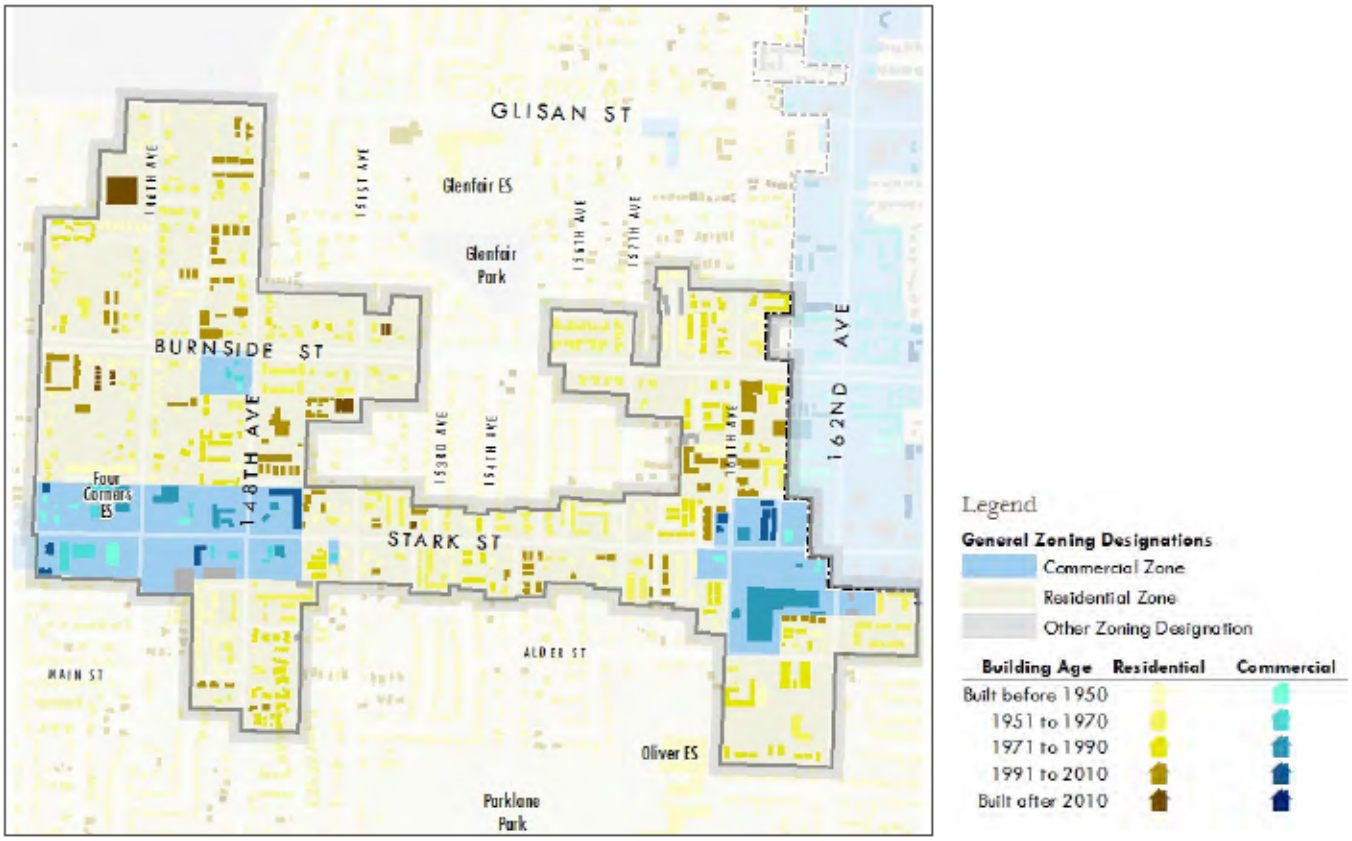
Building Age

Lots within East Portland's Centers that contain older structures and homes predating the 1960s and 1970s are considered to be more likely to redevelop sooner than more recently developed lots. Real estate market forces, guided by the City's prevailing zoning code, may precipitate developments of higher density residential and mixed-uses within the Connection Opportunity Areas.

Parcel size and configuration is also a crucial factor in determining what type of connection is feasible on a given lot, whether it be a full street or pathway.

JADE DISTRICT BUILDING AGE

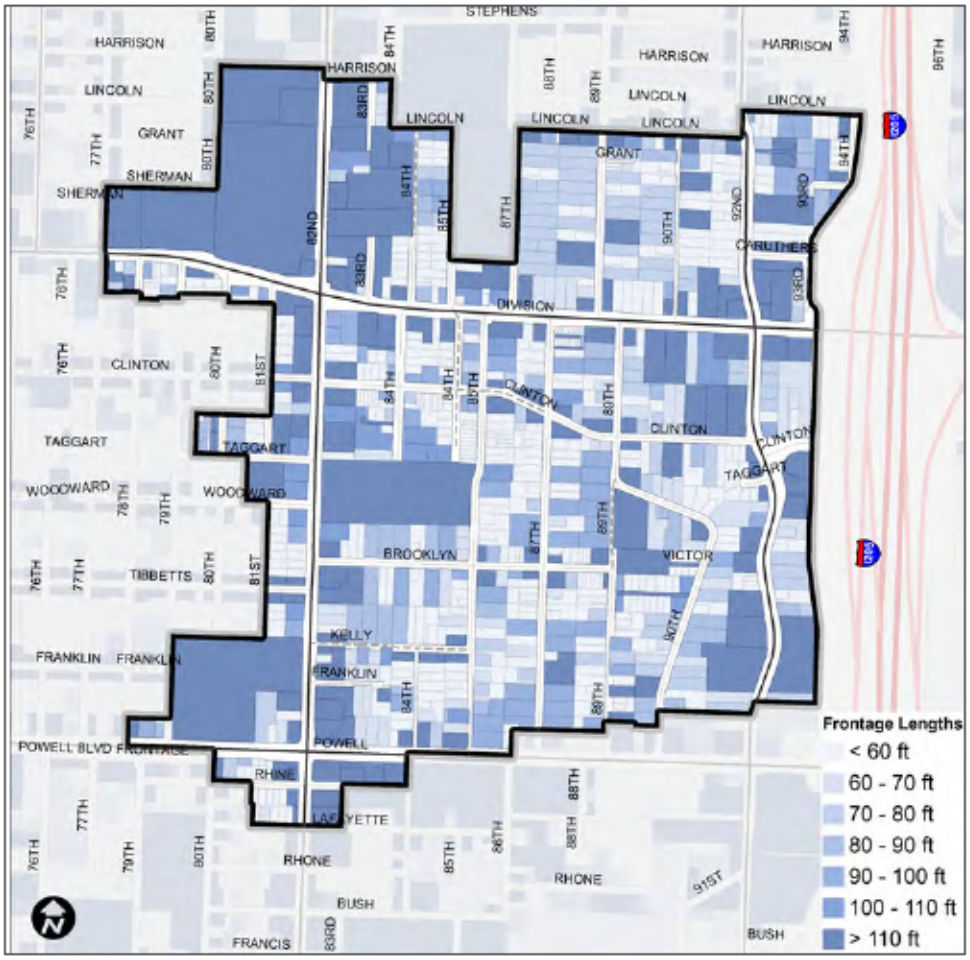
In mid-block areas of north and south Jade District, the construction dates of residential buildings range from the 1950s to after 2010. There are multiple lots with older structures that may see re-development over the coming years in areas where the street network lacks connectivity.

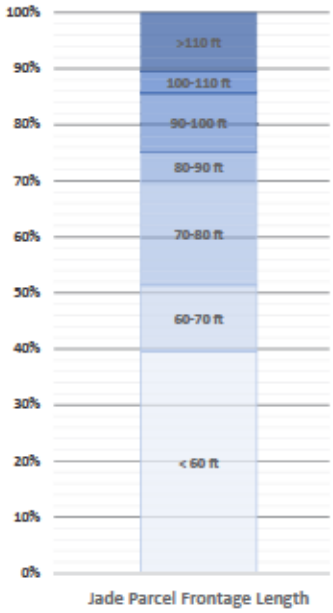


Rosewood Building Age

ROSEWOOD BUILDING AGE

The recent residential development that has occurred in the Rosewood Neighborhood Center has occurred in relatively small clusters. There remain large swaths of area that haven't been redeveloped in decades and may be good candidates for redevelopment and construction of new street connections. There are many relatively large parcels that are likely to see re-development over the coming years in locations that are most lacking in street connectivity.





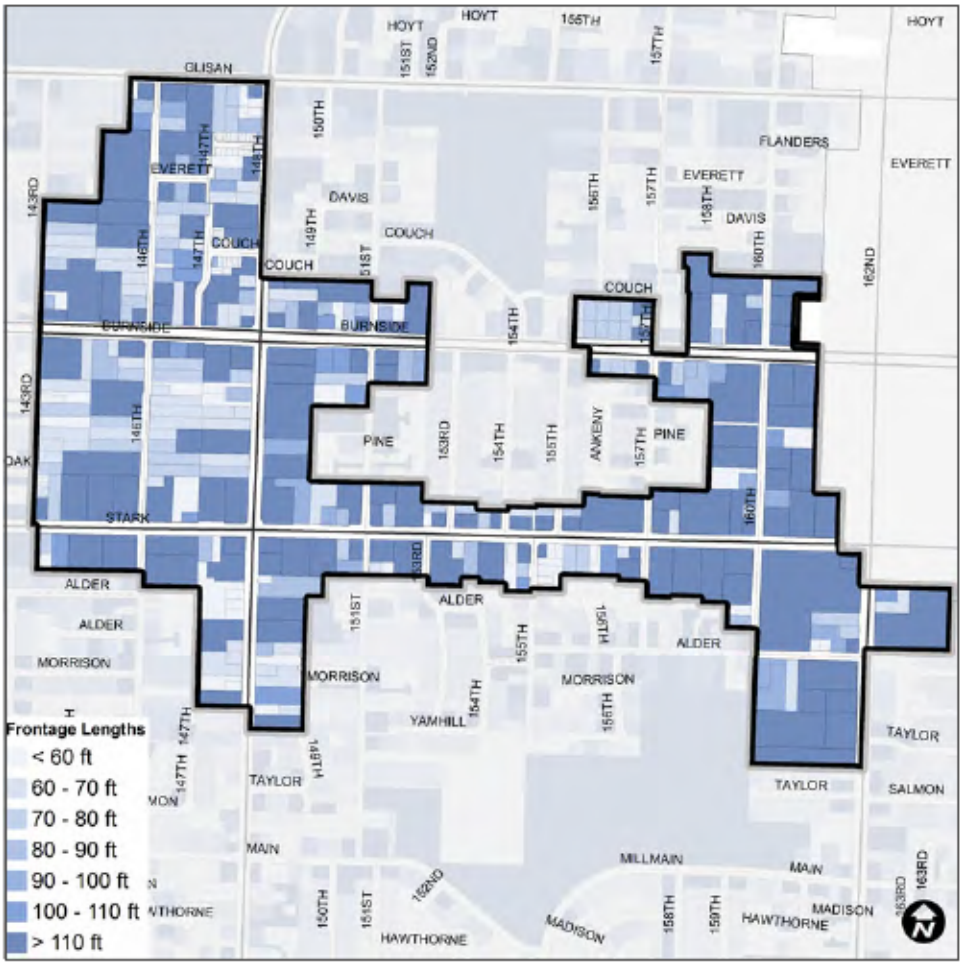
Jade Frontage Lengths

Frontage Lengths

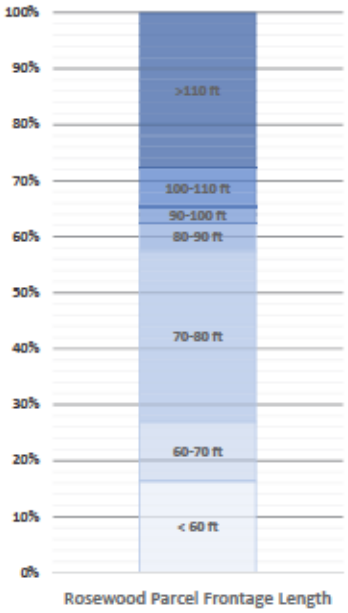
A frontage length analysis was performed to determine the location and number of deep, narrow sites in Jade and Rosewood. Analysis of parcel frontage lengths compared with the sizes of multi-family development that is typical in East Portland indicates that it would be difficult to fit buildings and new connections while complying with setbacks, building coverage and open space requirements. It is unlikely new connections will fit on lots developed at minimum required density on the narrowest lots. Analysis by the BHD team also shows that deep, narrow lots suffer from other site inefficiencies, such as higher utility costs and larger portions of site area devoted to vehicle circulation and parking.

JADE PARCEL FRONTAGE LENGTHS

Parcels in the Jade District were platted with very narrow frontages. Around 70% of parcels in the Jade District are less than 80 feet in width. These narrow parcels are typically concentrated together in areas with very low connectivity. If something isn't done to combine parcels or find ways to build street connections, these areas may redevelop without through streets, perpetuating the existing problems for years to come. It may not be possible to get needed new connections unless narrower lots are consolidated prior to development.



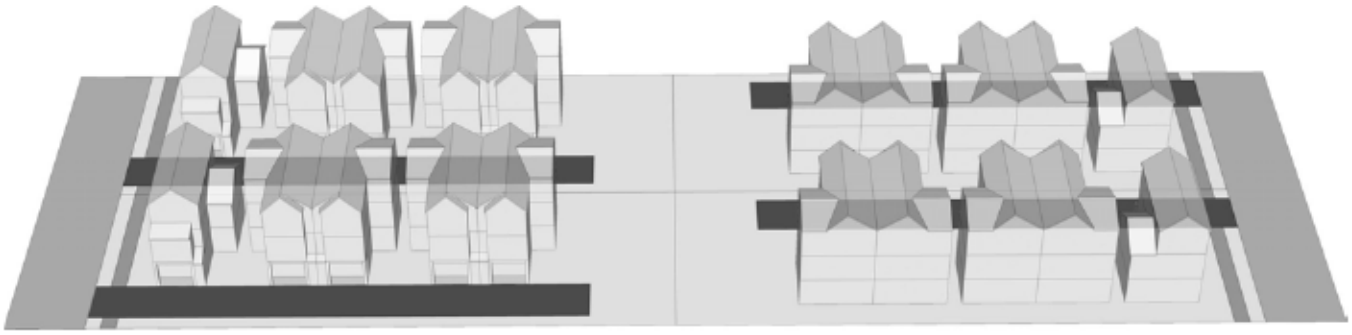
Rosewood Frontage Lengths



ROSEWOOD PARCEL FRONTAGE LENGTHS

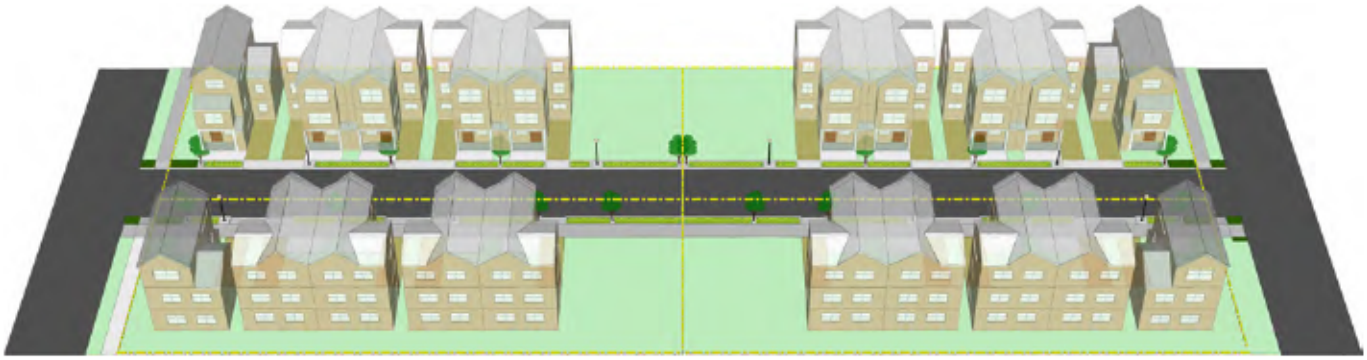
Parcels in the Rosewood Neighborhood were platted with slightly wider frontages than those in the Jade District. Nonetheless, nearly 58% of the parcels have frontages that are less than 80 feet in width. Rosewood parcels are also, in many cases, much deeper than those in the Jade District. Many Rosewood parcels are around 300 feet in depth, compared to Jade District parcels, which typically range between 160-250 feet in depth. Many of the narrowest and deepest lots in the Rosewood Neighborhood are located in areas that have been identified in both the buffer and the PRDI analysis as needing new connections, such as the blocks that are bounded by Burnside, Stark, 143rd, and 148th.

Existing Development Patterns



Piecemeal infill of multi-dwelling developments in the deep narrow lots of Eastern Neighborhoods often results in site designs that include long driveways that dead end. The driveways provide access and circulation within the site, but they don't contribute to the connectivity needs of the surrounding neighborhood. The above image represents typical infill development in East Portland. Long driveways occupy large amounts of space on these sites.

Proposed Development Patterns



If the sites were to instead develop around a new public street, a similar amount of site area would need to be devoted to vehicle circulation, but the new street would serve as a connection for pedestrians, bicycles and vehicles from around the neighborhood, and it would help to make routes between people and destinations shorter and more direct. The above image represents an alternate site layout. In four separate developments, a similar amount of area is devoted to vehicle circulation and parking as in the above example. But instead of long driveways, a new street provides street connectivity and access to residents.

The following section features recommendations for narrow local streets that are tailored to the context of infill development in East Portland. The reduced cross sections of the proposed rights-of-way are intended to be fit into typical multi-dwelling developments that are being built in Eastern Neighborhoods without the need for substantial changes to site layouts. Though it is often more expensive for developers to build streets to City standards than it is to build driveways, some incentives are being proposed to partially offset the increased cost of building required connections.

PLAN RECOMMENDATIONS

Objective: Provide more feasible options to achieve needed street and pedestrian connections when development occurs.

This section outlines new approaches to creating much needed street connections in outer Portland neighborhoods. Recommendations outlined in the following pages include;

- A process for determining right of way widths,
- A variety of street type options for development,
- A method for phasing construction of a new street connection as development occurs, and
- Other considerations that may arise as these recommendations are implemented.

Steps for Determining Connections Required With Development

1. SITE PROPOSED FOR REDEVELOPMENT

2. CONNECTION REQUIRED IF

Existing street/pathway spacing requirements are not met pe
Title 17.88.040.

3. FACTORS TO DETERMINE DEVELOPMENT IMPACTS

- Number of dwelling units
- Number of new trips generated
- Impacts on transportation system

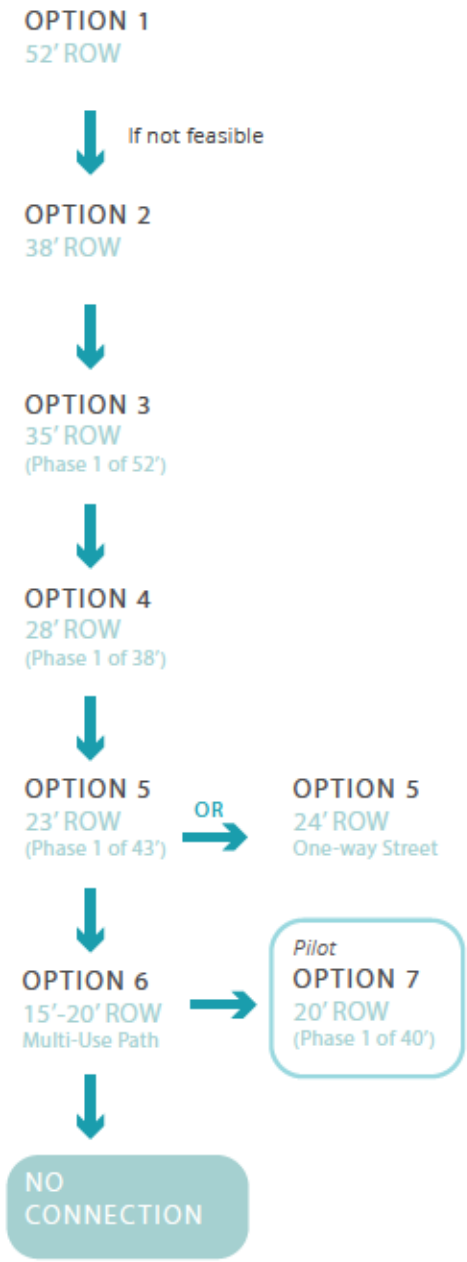
4. ELIGIBILITY FOR TSDC SUPPORT

- On TSDC project list
- TSDC credit
  - Percentage of credit eligible based on estimated fee (or exemption status)

5. FACTORS TO DETERMINE ROW DEDICATION

- Total site area
- Frontage length
- Dedication required/site area ratio
- ROW options 1-7 (widest feasible)

Selecting Right-of-Way Dedication Options



Selecting New Connections

A variety of right-of-way widths, from a full 52' street to a 15'-20' multi-use path, are described in detail on the following pages. **The graphic above shows the order in which these options should be considered, as well as steps to determine whether a connection is required with development.**

Currently, local streets are typically either built as 38'/50' full streets or 28'/35' partial streets (depending on provisions of on-street parking) on one lot or no connection is provided. This approach allows narrower streets to be built in the interim while awaiting adjoining lots to develop and complete the full build-out of a more complete street.

Overview of options for new connections

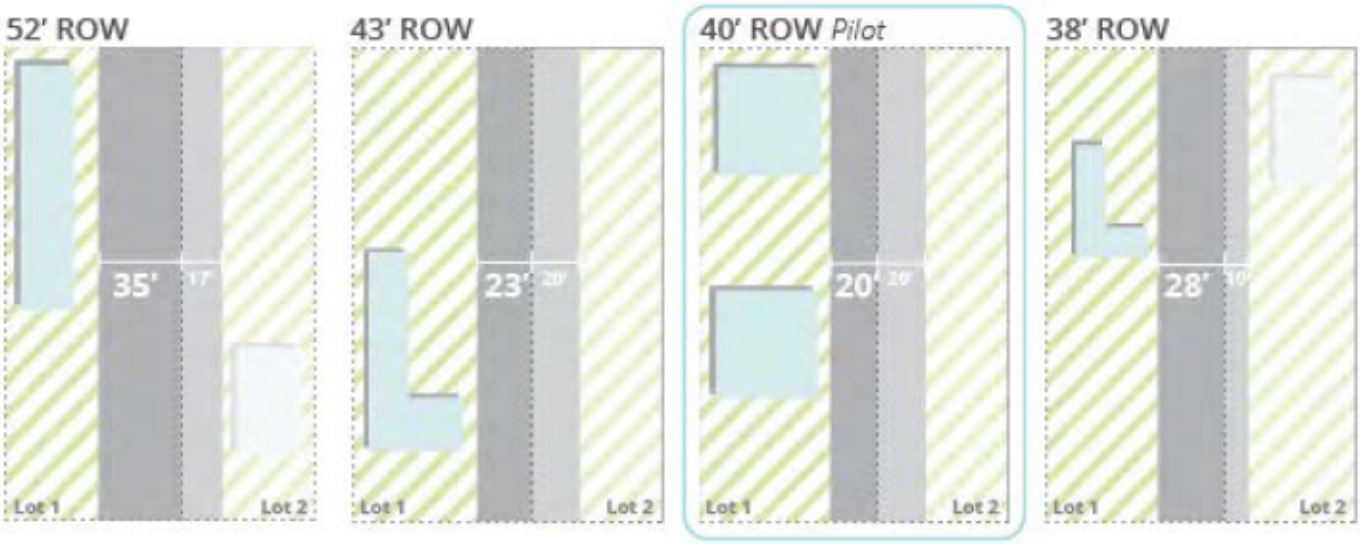
Options for New Connections

The following options for new local street or pathway connections should be considered where sites do not currently meet the 530' spacing requirements. Right of way dimensions should be considered based on feasibility with the underlying lot dimensions and orientation or other factors affecting site development. A lower priority option should only be pursued if the option requiring a greater amount of right-of-way does not appear to be proportional to the scale of the proposed development.

In order to meet the growing demands and overall City policy objectives for the Jade District and Rosewood neighborhoods, a street in public right-of-way is preferred over a path or a private street in a public access easement for the following reasons:

- Full public streets provide access for all transportation modes, allowing traffic to be dispersed throughout the neighborhood.
- Full public streets ensure access for all at all hours.
- Public input in these neighborhoods showed that individuals from communities of color may feel excluded, unwelcome or uncomfortable when using narrow paths or private connectors due to the perception of trespassing.

These new street connections will be classified as local service streets for all modes in the Portland Transportation System Plan. New pathways may be given pedestrian and bicycle classifications.



Examples of how the burden of building a full street can be phased between two lots. In these examples, Lot 1 is the first to be developed, leaving the remaining right-of-way to be built when Lot 2 gets developed.

Phased Street Division Between Two Lots

In locations where lots undergoing development are of sufficient size and scale to fit a full street connection on a single parcel, **the preferred option is to require the construction of a full street** that can accommodate two way traffic for all travel modes, and includes parking, stormwater management, street lighting and street trees.

The following section uses several terms to describe elements of the right-of-way, defined below;

- **Pedestrian zone:** the area intended to provide for pedestrian movement, generally improved as a sidewalk.

- **Buffer:** a linear portion of the pedestrian corridor, adjacent to the curb often referred to as the furnishing zone, which contains elements such as street lights, street trees, planting strip, stormwater planters, hydrants, traffic signs, street furniture, etc.

    - Stormwater management may be implemented in planters or swales in the buffer.

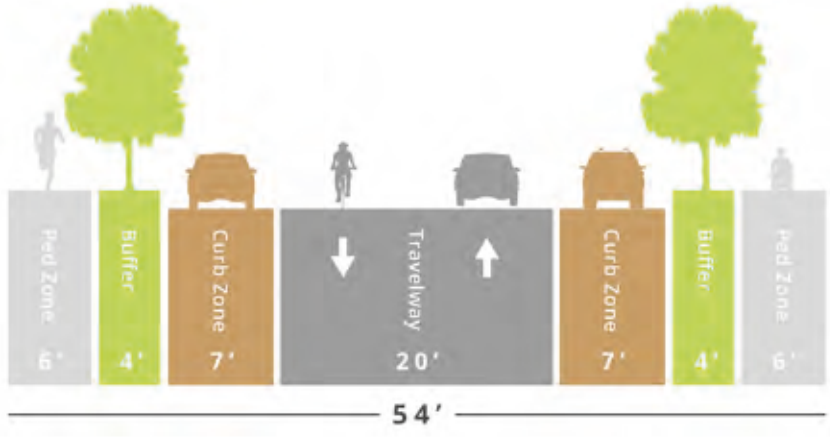
- **Curb zone:** the area adjacent to the curb that can be used for a wide variety of mobility and access functions, including but not limited to on-street parking, curb extensions, street trees, etc.

    - Stormwater management may be implemented in planters or swales in the curb zone as along as fire access requirements are met.

- **Travelway:** the area intended to provide for the movement of traffic, including bicycles and motor vehicles.

Street Cross Section Options

Current Standards: Full Street or No Street



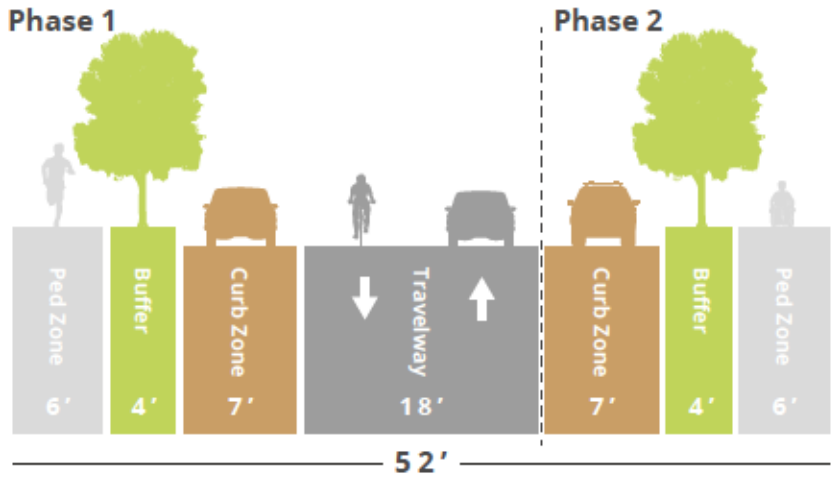
Current standards call for a build-out of a roughly 54' right-of-way or "three quarter" partial improvement. By offering a variety of street types and options at various right-of-way widths, there will be a better chance of some sort of connection happening, as opposed to no connection.

Assumptions For All Cross Section Options

The following cross sections detail various options for building street connections through right-of-way dedication when development occurs. For each of these options, the following standards will apply.

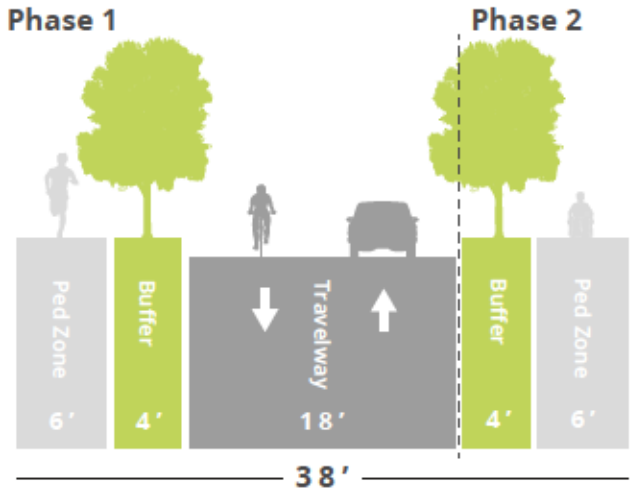
- Build out of a full street as part of a single development is preferred, where possible. Otherwise a partial ("three quarter") street improvement can be built in phase 1.
- Street lighting will be installed in both phases for each option.
- A full street connection will be completed with through access for all modes when adjoining and back-to-back lots are developed.
- Green street facilities can manage some stormwater in the buffer and/or curb zone.
- Addressing stormwater requirements as part of construction can be done in one of the following ways, as approved by BES:
  - In Underground Injection Control Areas: use UIC's, such as sumps, to manage stormwater.
  - Dedicate additional right-of-way at the rear or front of the lot for placement of a vegetated stormwater facility per the Stormwater Management Manual.
  - Expand the buffer/planter strip to 7 feet wide to allow for green street facilities, where feasible.

52′ Right-of-Way



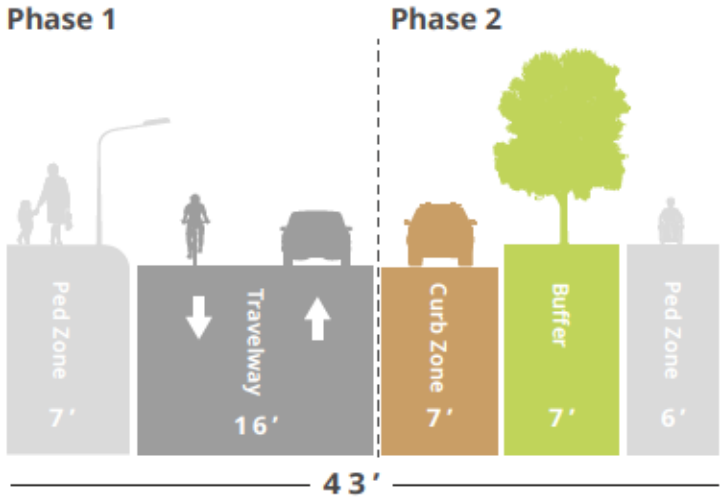
- Full low-traffic street with access for all modes, including parking, stormwater treatment, and street lighting

38′ Right-of-Way



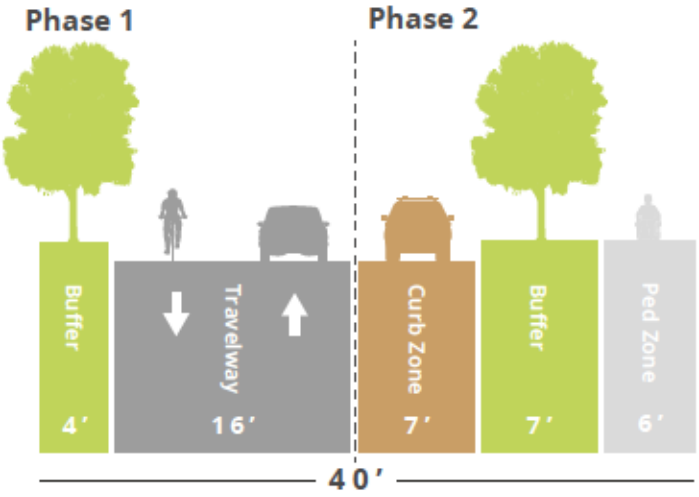
- No street parking provided

43′ Right-of-Way



- Phase 1 is only permissible if underground injection control stormwater management is feasible and sidewalk is built with a mountable curb for fire department access

40' Right-of-Way *Pilot*

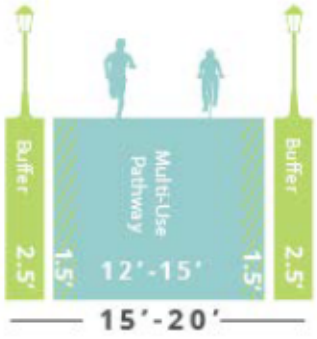


- In phase 1, an interim dead-end accessway is built to meet shared street standards, including necessary traffic calming features. This street can be signed 15 mph and the narrow (18 ft max.) roadway may include speed bumps
- Sidewalk and curb zone only provided in phase 2

24' Right-of-Way One-Way Street

- Dedicated rights-of-way and partial, one-way street and sidewalk connection.
- 2 way bicycle travel may be provided by the addition of a contra-flow bicycle lane in 30' of right-of-way.

Multi-Use Path



A multi-use pathway may be an option if a full or partial street connection is not feasible. Due to the length of blocks and multi-use access, a wider pathway is preferred to provide a safe and secure connection with adequate space for lighting and other amenities. Pathways should be a minimum of 12' with 1.5' buffers or 15' with 2.5' buffers

- Dedicated right-of-way (20 feet) for new bicycle-pedestrian pathway is preferred over a private path with public access easement
- Public pathway connection is completed through the block when adjoining, back-to-back lots are developed, rights-of-way are purchased by the City and pathway funded and constructed.
- Wide pathways may accommodate water or sewer utility connections, where necessary.
- Vehicles may access buildings through a separate private driveway.

Public Street Through Phased Development

Conceptual layout of a street built incrementally by 4 contiguous developments.

Phased Street Improvement

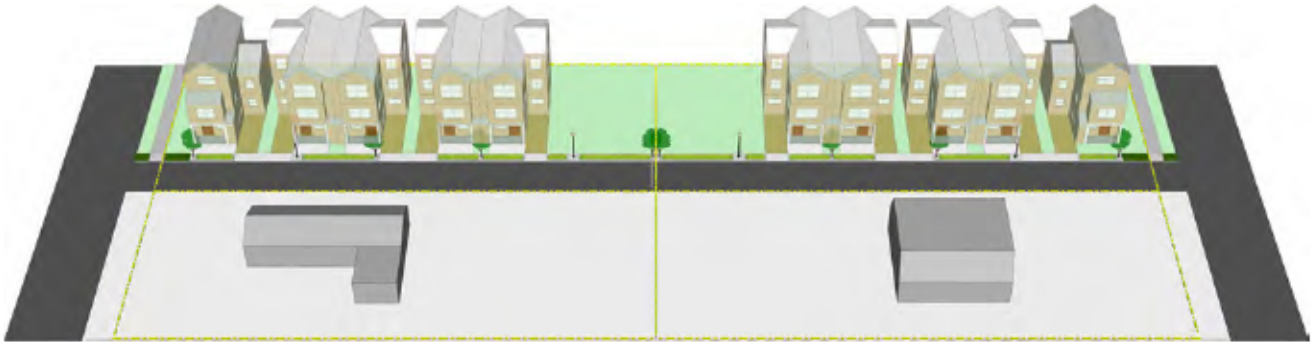
Based on the analysis of existing connectivity and public input on connection options, new connection options were developed for building new streets in increments or phases. This approach is intended to increase the feasibility of obtaining new connections in locations where sites are narrow, and where current standards for wider street dimensions often result in no connection being created through redevelopment.

The complete street connection and the right-of-way needed to accommodate it are split across multiple properties. This allows adjacent properties to share the responsibility of creating the street and only requires a fraction of the space, e.g. as little as 20 feet of right-of-way, from each site. Conceptually, the phasing of development of four neighboring parcels illustrates interim through-connections for pedestrians and bicyclists.

Construction of public streets through phased private development can help to achieve street spacing standards over time.
The feasibility of completing all phases of the phased street must be confirmed for a site to be eligible for the phased street option. This will provide confidence that the sidewalk will be constructed before the street is opened to through traffic.

Phase 1

- Interim shared accessway within public rights-of-way.
- Partial street improved to provide access for cars, bicycles and pedestrians.
- No through connection. A traffic barricade is installed at the dead end on the rear lot line.
- **For 40' ROW** - Buffer strip with stormwater, street lighting and street tree features.
- **For 43' ROW** - curb-tight sidewalk installed.
- In Underground Injection Control Drainage Areas (including portions of Eastern Neighborhoods), sumps might replace green streets. In these areas a 7' curb tight sidewalk with street lighting is an option in the first phase.

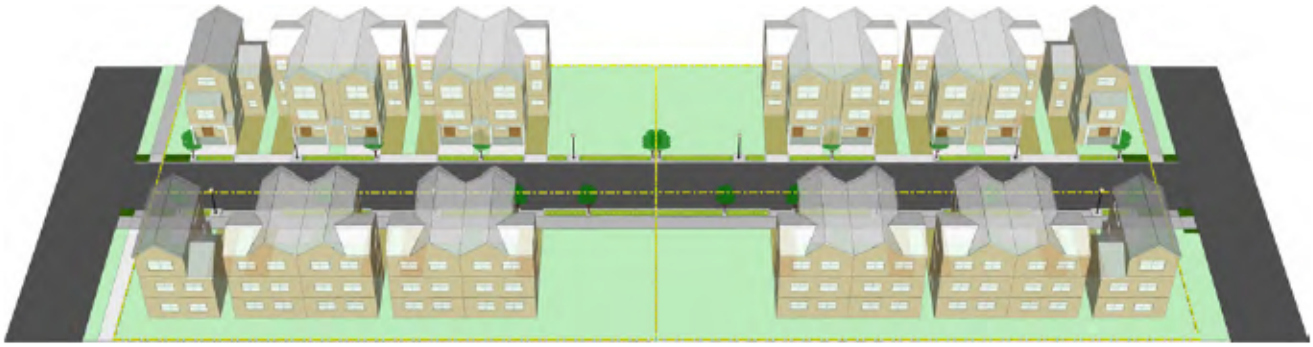


Phase 2

- Improvements in Phase 1 continued
- **40' and 43' ROW** - Through-connection for pedestrians and bicyclists only - barricades are installed to prohibit vehicle through-traffic.
- **38' and 52' ROW** - Barricade is removed to allow through connection for all modes
- Buffer strip with stormwater, street lighting and street tree features installed
- In Underground Injection Control Drainage Areas (including portions of Eastern Neighborhoods), sumps might replace green streets. In these areas a 7' curb tight sidewalk with street lighting is an option in the first phase.

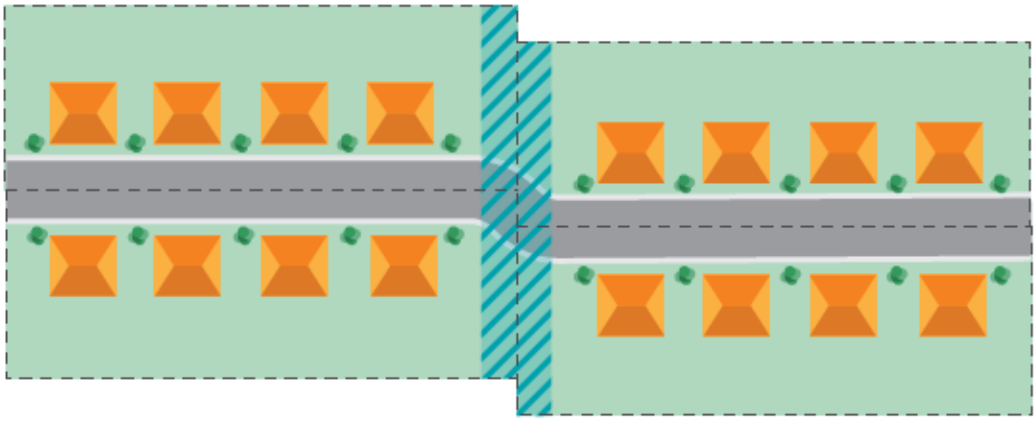
Phase 3

- Partially completed Public Street and completed street section within public rights-of-way added with new development.
- **40' and 43' ROW** - Through-connection for pedestrians and bicyclists only - barricades are installed to prohibit vehicle through-traffic.
- Buffer strip with stormwater, lighting and street tree features.



Phase 4

- Completed public street section added with new development.
- Interim signing and barricades are removed to allow through connection for all modes.
- Buffer strip with stormwater, lighting and street tree features.



Parcels dedicate extra ROW to allow street to jog

Other Considerations

Parcel Dedication for Street Jogs

In practice, lot lines may not align, or development may occur in a different sequence than the steps that were outlined in the previous example. The dedication of an extra segment of right-of-way at the rear lot line can allow for the street to jog when it is completed. If paved at the time of development, the extra right-of-way can be used for turn around space needed for fire access until the street is completed. The rear lot dedication may also be used for stormwater management or parking, depending on site configuration and needs.

Other Street Features

- **Stormwater management** consistent with Portland's Stormwater Management Manual is required for development and redevelopment projects on both private property and public right-of-way. The manual emphasizes the use of vegetated surface facilities, often swales for existing neighborhood redevelopment, fit within the buffer (planter) or in parking zones. In Underground Injection Control Drainage Areas (including portions of Eastern Neighborhoods), sumps might replace green street surface stormwater management.
- **Street trees** should be planted in the buffer (planter) or in planters located in the curb zone.
- **Street lighting** is an essential feature of new street and pathway connections.
- **Traffic calming** is an optional upgrade for street connections, based on the desires of the adjacent property owners and City Traffic Engineer approval.

Private Street or Pathway with Public Access Easement

Private streets or pathways may be considered in situations where dedicated public streets or dedicated public pathways are not feasible and the only other alternative is no connection. Public access easements would be obtained to ensure that connectivity needs are still addressed. Pathways on a public access easement may be approved through a permit or land use process while private streets are only created through a land division. If an easement is obtained, signage and design elements should indicate that the connection is accessible to the public. Street light is an essential feature, whether the connection is public or private. Public, dedicated rights-of-way are always preferable to private streets, even if a full-width street is not feasible.

SAFE ROUTES TO CENTERS

"Connect centers to each other and to other key local and regional destinations, such as schools, parks, and employment areas..."

-2035 Portland Comprehensive Plan Policy 3.19

Identifying Needed Connections

Safe Routes to Centers is a systematic approach for identifying needed improvements and gaps in the active transportation networks that allow those who live in surrounding neighborhoods to access Centers. Active transportation routes include the primary walking and biking routes that run from adjacent neighborhoods and through Centers. The major walking routes designated as Major City Walkways are often on busy arterial streets. Bike routes include streets on the Bikeway Network, that have separated biking facilities or neighborhood greenways on quiet neighborhood streets.

Connection options were presented in the preceding sections of this report that are tailored to the context of new local streets or pathway connections, and will primarily serve local, neighborhood trips. The improvements that are proposed through the Safe Routes to Centers analysis will help to address gaps in the active transportation networks needed to link neighbors to the Centers.

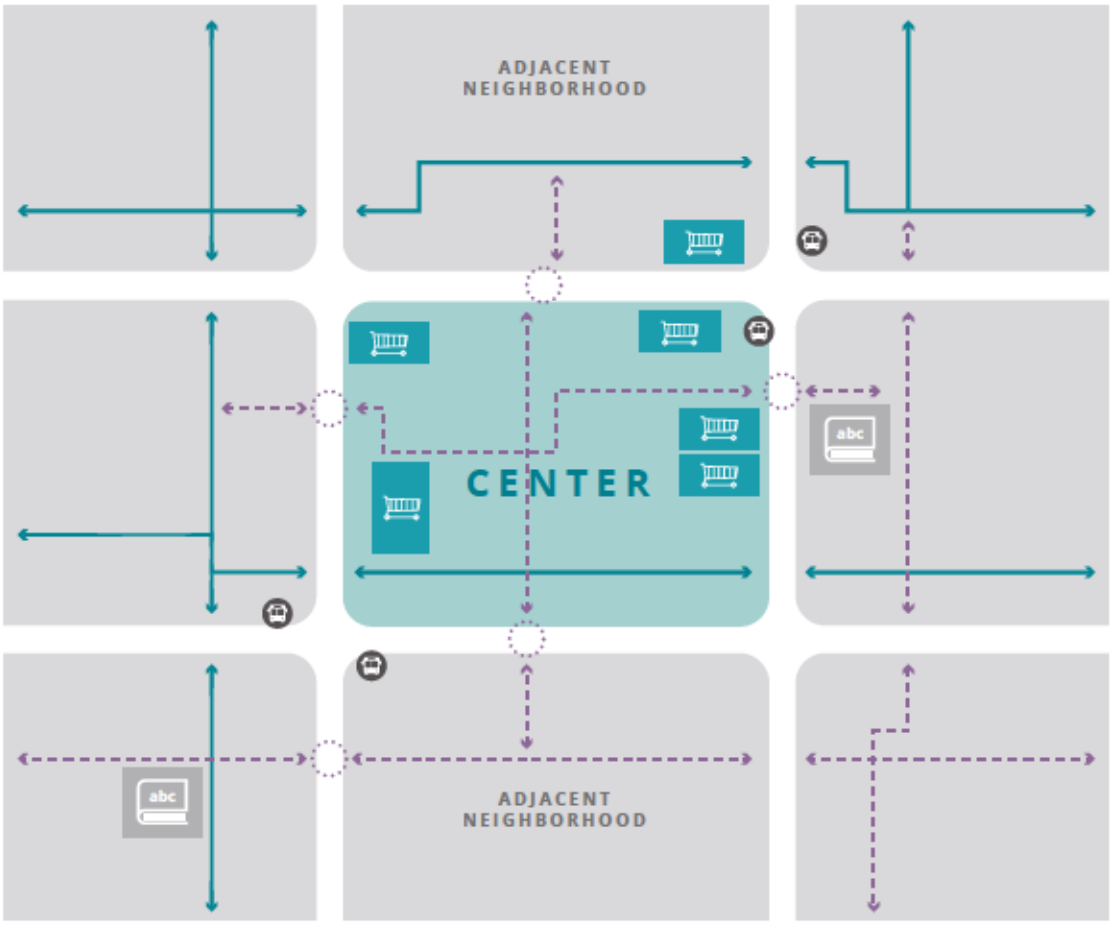
The Safe Routes to Centers analysis is intended to complement the new approaches for creating new street connections that are recommended in this Plan. The goal of this analysis is to create a reproducible process for identifying new routes and crossings that can be applied to other Centers to create healthy connected neighborhoods throughout the City.

The following section includes a Safe Routes to Centers analysis of the Jade District and Rosewood neighborhoods, which were selected as the first case studies for this type of analysis. This methodology will be replicated for other centers in future PBOT street plans.

Process

1. **Identify major destinations:** Destinations include parks, schools, commercial properties, and stops on frequent service transit routes. For this study, destinations were mapped and input was gathered at community outreach events. Concentrations of destinations within each Center were identified.

2. **Define the walkshed (service area):** ¼ mile buffers were created around each Center. The area encompassed by the buffers represents the destination walksheds, including neighborhoods surrounding the Center.



3 **Map the active transportation (pedestrian and bike) networks:** The pedestrian and bicycle networks are designated within the Portland Transportation System Plan (TSP).

4 **Identify improved active transportation routes:** Map the existing active transportation routes and identify missing connections.

5 **Define projects:** For the missing connections, describe the project extents, proposed improvements and determine the cost to fill gaps in the active transportation network. Prioritize the major capital projects for grant funding or minor projects for program implementation .

Partial street build with development in SW Portland

Jade District Safe Routes to Centers

Existing Conditions

Current conditions in the Jade District include an existing bike network on Division and Mill Streets in the east/west direction and 85th and 92nd in the north/south direction. The Woodward/Tibbetts/ Brooklyn bikeway is a bit disjointed, as Woodward ends at 75th Ave, making for a less than optimal path to the Center. An east/west connection south of this bikeway is lacking, as Powell does not have bike facilities.

There are generally sidewalks along the major arterials, with only a few missing gaps encountered occasionally. Sidewalks within the residential neighborhood to the east of 82nd Ave are greatly lacking, as are east/west roadways, resulting in large, long blocks.

Major arterials have relatively frequent crossings, when compared to similar East Portland neighborhoods, but these crossings do not meet City of Portland crossing spacing standards for roadways on the Pedestrian Network and many more are still needed.

Jade Existing Conditions

Plans and Recommendations

There are plans for improved bikeways on Division, and along the 79th/80th Ave bikeway, as well as recommended bikeways on Powell, and the 70's neighborhood greenway. These are shown on the map on the following page, where planned bikeways are projects that have identified funding sources, and are planned to be built in the next 10 years. Recommended Bikeways have been identified in the TSP or other planning documents, but do not have an identified funding source. Proposed Bikeways are new recommendations from the Connected Centers Plan.

Through this analysis, two possible alignments for an east/west neighborhood greenway connection were identified. Option 1 would utilize Woodward, crossing 82nd Avenue at the existing signal at the entrance to the Fubonn Shopping Center. This alignment would rely on recommendations that were proposed in the EPA funded Jade Greening Project for changes to the south side of the Fubonn Shopping Center. The recommendations include building a through-street connection to SE 85th Avenue, and creating a more pedestrian oriented streetscape on the south side of the building. Option 2 would divert the neighborhood greenway south at the intersection of Woodward and 79th Avenue to Tibbets St. The greenway would cross 82nd Avenue at a new pedestrian crossing at the intersection of Tibbets and 82nd. A new connection from Clinton to the I-205 path is also recommended, which would provide more direct access from the Jade District to the MAX light rail station.

Several new crossings of Powell and Division are also recommended to support these bikeways and major walkways, including crossings at Division and 77th, Division and 79th, Powell and 79th, Powell and 80th, Powell and 85th, Clinton and 92nd, and Tibbets and 82nd. These recommendations will greatly improve access to the commercial centers along these arterials.

Twelve additional crossings are proposed to bring the spacing of crossings on City Walkways within the 800 foot spacing standards that are currently being proposed. These crossings are proposed at the following general locations: Division between 72nd and 74th, Powell and 84th, Powell and 90th, 82nd and Harrison, 82nd and Clinton, 82nd and Franklin, 82nd and Rhone, 92nd and Lincoln, 92nd and Caruthers, and two crossings on 92nd between Clinton and Powell.

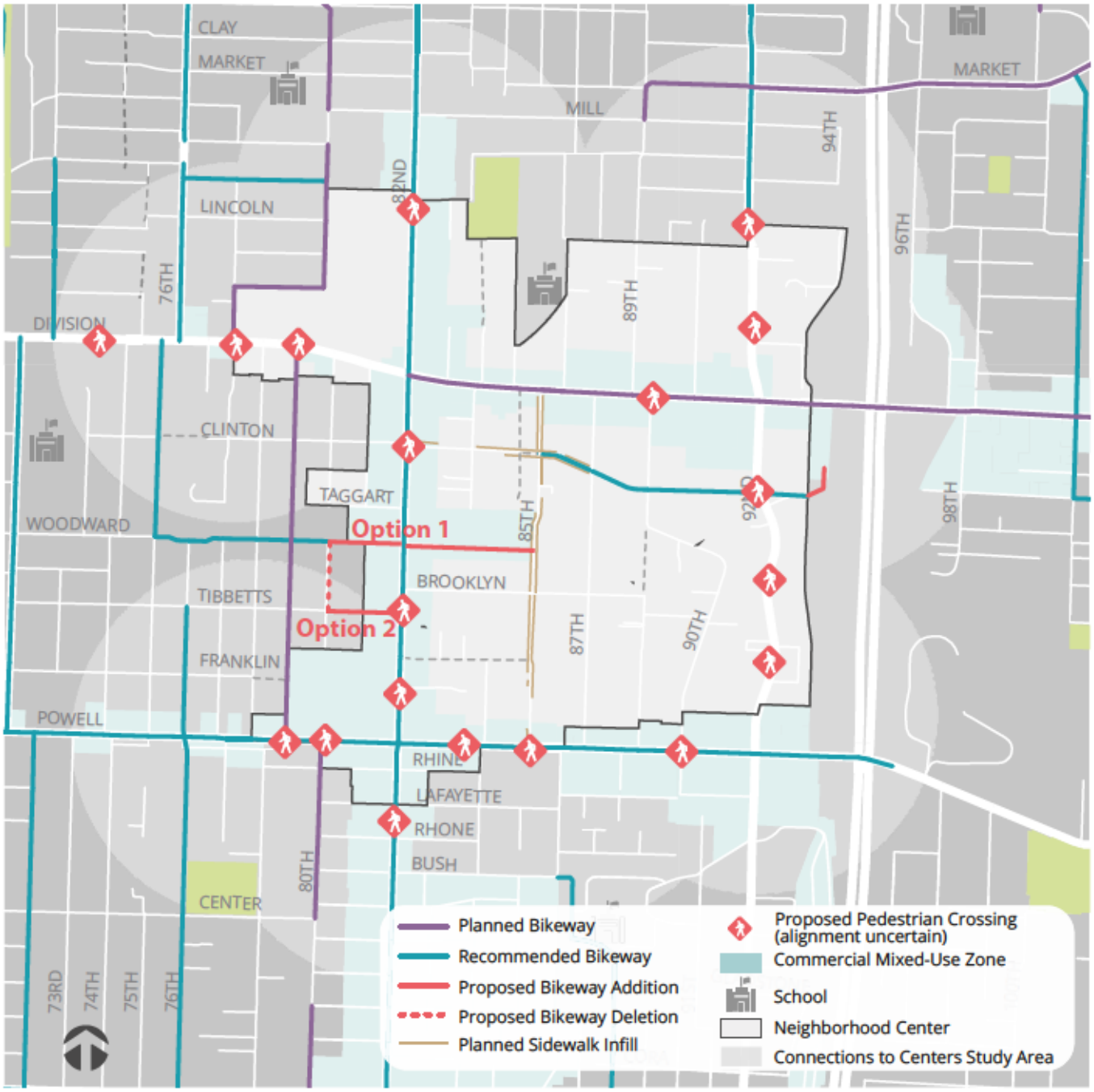
Project Definition

The 4 new pedestrian crossings on Division St are recommended to be built as part of either the Division St Transit Improvement TSP project (70015) or the Inner Division Corridor Improvements, Phase 3 TSP project (70014). Both of these projects are projected to built in the 11-20 year time frame.

The 5 new pedestrian crossings on 82nd Ave are recommended to be built as part of the 82nd Ave Corridor Improvements TSP project (40013). This project is projected to be built in the 1-10 year time frame.

The 5 new pedestrian crossings on Powell Blvd are recommended to be built as part of the Inner Powell Bikeway TSP project (70046). This project is projected to be built in the 11-20 year time frame.

The 5 new pedestrian crossings on 92nd Ave are not aligned with any existing TSP projects. These projects should be constructed through either the Pedestrian Network Completion Program, Vision Zero, or Safe Routes to School.



Jade Planned

Between SE 85th Ave and I-205, Clinton St is designated as a Major City Bikeway. In this area, much of Clinton St is unimproved right-of-way, and the street comes to a dead end between 92nd and the I-205 pathway. A new TSP project is recommended to be created, which would complete the bikeway on Clinton St, and create a new bikeway/walkway to connect Clinton St to the I-205 pathway and the SE Division St MAX Green Line station.

Pathway Connection in Gresham

Rosewood Safe Routes to Centers

Existing Conditions

In Rosewood, the bike network is centered around the major arterials: 148th, 162nd, and Burnside. There are currently no designated bikeways outside of these arterials, creating a cycling environment that is not comfortable for people of all ages and abilities.

The arterial sidewalk network is relatively filled out, with the exception of small gaps where newer development has not yet occurred and two big gaps on the north side of Glisan along the frontage of the Glendoveer Golf Course, which together, represent a gap of nearly one half mile in the sidewalk network on a designated City Walkway. There are abundant crossings of Burnside, where the MAX line runs, but additional crossings are needed along Stark, Glisan, 148th, and 162nd to meet crossing spacing guidelines.

Rosewood Existing Conditions

Plans and Recommendations

In the map on the following page, planned bikeways are projects that have identified funding sources, and are planned to be built in the next 10 years. Recommended Bikeways have been identified in the TSP or other planning documents, but do not have an identified funding source. Proposed Bikeways are new recommendations from the Connected Centers Plan.

There are already planned bikeways along Glisan and Main Streets, making a more comfortable all ages and abilities network available in this Center. Several bikeways are planned and recommended along 151st, 154th, and 155th Avenues. The Growing Transit Communities plan identified several new crossings on Stark St to improve access to transit stations.

This plan proposes that the 151st and Yamhill connections be removed in favor of a more direct route on 154th or 155th and through Parklane Park to the south. This analysis recommends a crossing at Stark and 155th and 154th to accommodate pedestrian and bike traffic across this busy corridor. Crossings are also recommended on Glisan at 146th, 155th, and 156th Avenues to facilitate these new bikeways.

Twelve additional crossings are being recommended to bring the spacing of crossings on City Walkways within the 800-foot spacing standards that are being proposed in the Pedestrian Master Plan update. These crossing are recommended at the following locations: Glisan and 136th, Glisan and 143rd, Glisan and 146th, Glisan and 151st, Glisan and 160th, 148th between Couch and Flanders, 148th between Burnside and Stark, 148th and Alder, 148th and Taylor, Stark and 157th, 162nd and Alder, 162nd and Taylor, Main and 151st, and Main and 164th.

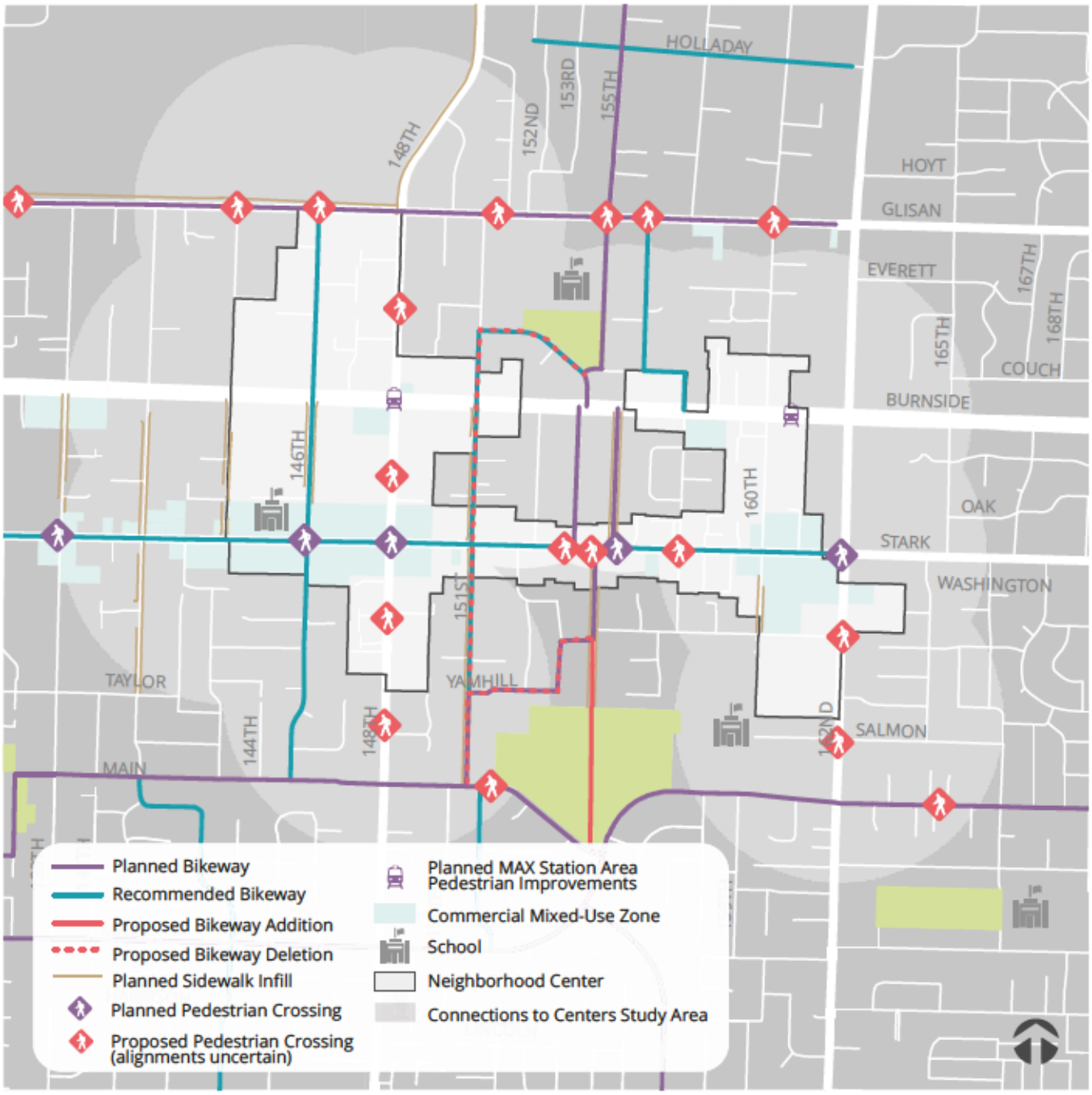
Sidewalk infill is recommended on the north side of Glisan St, east of 148th Ave. There is currently no sidewalk along the frontage of the Glendoveer Golf Course between the bus stop at 148th, and the golf course entrance at 141st Pl. Sidewalk infill is also needed along the frontage of the golf course between 140th Ave and 134th Pl. A project is on the current TSP project list to build the sidewalk and bike lane that are needed on Glisan St.

Project Definition

The 7 new pedestrian crossings on Glisan St are recommended to be built as part of the Outer Glisan Safety and Streetscape Improvements TSP project (50025). This project is projected to be built in the 11-20 year time frame.

The 3 new pedestrian crossings on Stark St are recommended to be built as part of the Outer Stark Ped/Bike Improvements TSP project (80017), in addition to the pedestrian crossings that have already been identified in the Growing Transit Communities plan. This project is projected to be built in the 1-10 year time frame.

The 4 new pedestrian crossings on 148th Ave are not aligned with any existing TSP projects. These projects should be constructed through either the Pedestrian Network Completion Program, Vision Zero, or Safe Routes to School.



Rosewood Planned Network

PLAN IMPLEMENTATION

"Guide development and land use to create the kinds of places and street environments intended for different types of streets"

-Portland Transportation System Plan Policy 9.13

Incentives

The following concepts were considered to improve the feasibility of new connections in Centers with poor street connectivity. These concepts would complement and supplement the proposals that are presented in this plan:

1. **Incentives for connection opportunity areas:** Based on the "Connection Opportunity" Analysis, the Connected Centers Street Plan identified the blocks that are most crucial for connectivity and seeks to help reduce the burden on sites where a new public street or pathway is required by providing Transportation System Development Charge (TSDC) incentives, specifically potential TSDC credit and TSDC capital funding. These opportunity areas are outlined on the following pages.

   TSDC credit: A proposed credit for TSDC charges to developments that are required to build new street connections would help to offset the cost of building new connections, and it would recognize the important contribution that new connections make to local street connectivity. This credit will be geographically focused in the Jade and Rosewood neighborhood centers

2. **Calculate development allowances prior to dedication of right-of-way:** Calculate development allowances prior to the dedication of right-of-way for new street connections, i.e. when the developer is proposing multi-dwelling development through a permit or land use review process. This would allow developers to build up to the density or floor area ratio that would be allotted to the parcel if no dedication was required. Under current rules, density is calculated after parcel area is deducted for frontage improvements and new public street connections. Calculating parcel area prior to dedication would remove a disincentive to create new street connections (Proposal is included in the Better Housing by Design Discussion Draft).

3. **Explore a new funding source:** A new funding source to consider could be a fund for property acquisition or a charge on development similar to the Local Transportation Infrastructure Charge (LTIC). This would implement a charge to all developments in areas not meeting street spacing standards, which would be collected and distributed to help offset the costs incurred by those specific developments that are required to build new connections.

Incentives for Connection Opportunity Areas

TSDC Incentives

The Connection Opportunity Areas were identified by selecting parcels whose centers do not fall within 265 feet of a street connection, and thus don't meet Portland's connectivity standards. Parcels highlighted in blue represent the parts of the East Portland blocks that are out of compliance with the street connectivity standards. Areas that are outlined in black and numbered are Connection Opportunity Areas where TSDC incentives for building street connections can be provided. For both the Jade and Rosewood neighborhoods, East-West connectivity is lacking much more than North-South connectivity, so the Connection Opportunity Areas identified here focus on incentives for East-West connections. Private driveways and off-street parking are commonly built for access and circulation on these sites when a public street is not required. The TSDC incentives are intended to help offset some of the additional costs from building a public street to city standards.

Jade District Connection Opportunity Areas

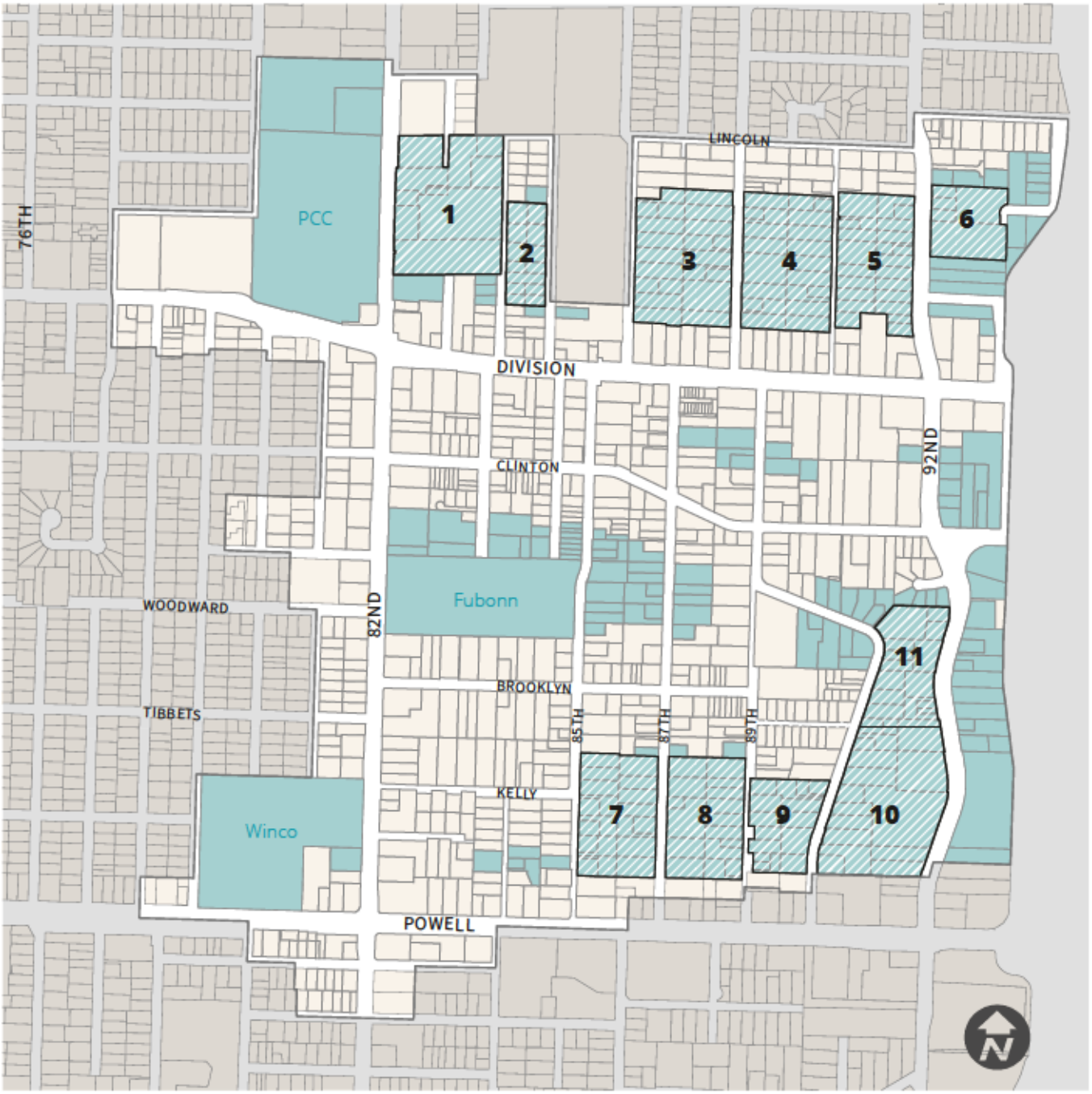
The Jade District Map on the following page identifies eleven Connection Opportunity Areas that would be eligible for TSDC incentives for required East-West connectivity. If street connections are built in each of the 11 blocks, this would equate to roughly 4,200 centerline feet of new roadway constructed. The cost to build these 11 blocks is roughly $5M, based on the rate charged to developers on under-improved local traffic streets without a curb for frontage is consistent with PBOT's Local Transportation Infrastructure Charge. Based on prior development trends over the past decade, it is anticipated that a small percentage of these sites will redevelop over the next ten years.

This Plan proposes a $1.26M TSDC capital project for the Jade District along with a TSDC credit to reduce costs for developers on sites the build a public connection. This would assume roughly half of these sites develop over the next 10 years and the TSDC project would cover half the cost for the developer to build the street.

Rosewood Connection Opportunity Areas

The Rosewood Area Map identifies seven Connection Opportunity Areas that would be eligible for TSDC incentives for required East-West connectivity. If street connections are built in each of the seven blocks, this would equate to roughly 3,225 centerline feet of new roadway constructed. In some cases, specifically Connection Opportunity Area #2 and #3, the required connection would include a rear-lot dedication and street improvement to link two dead-end public rights-of-way. The cost to build these seven blocks is roughly $3.87M (based on the LTIC rate).

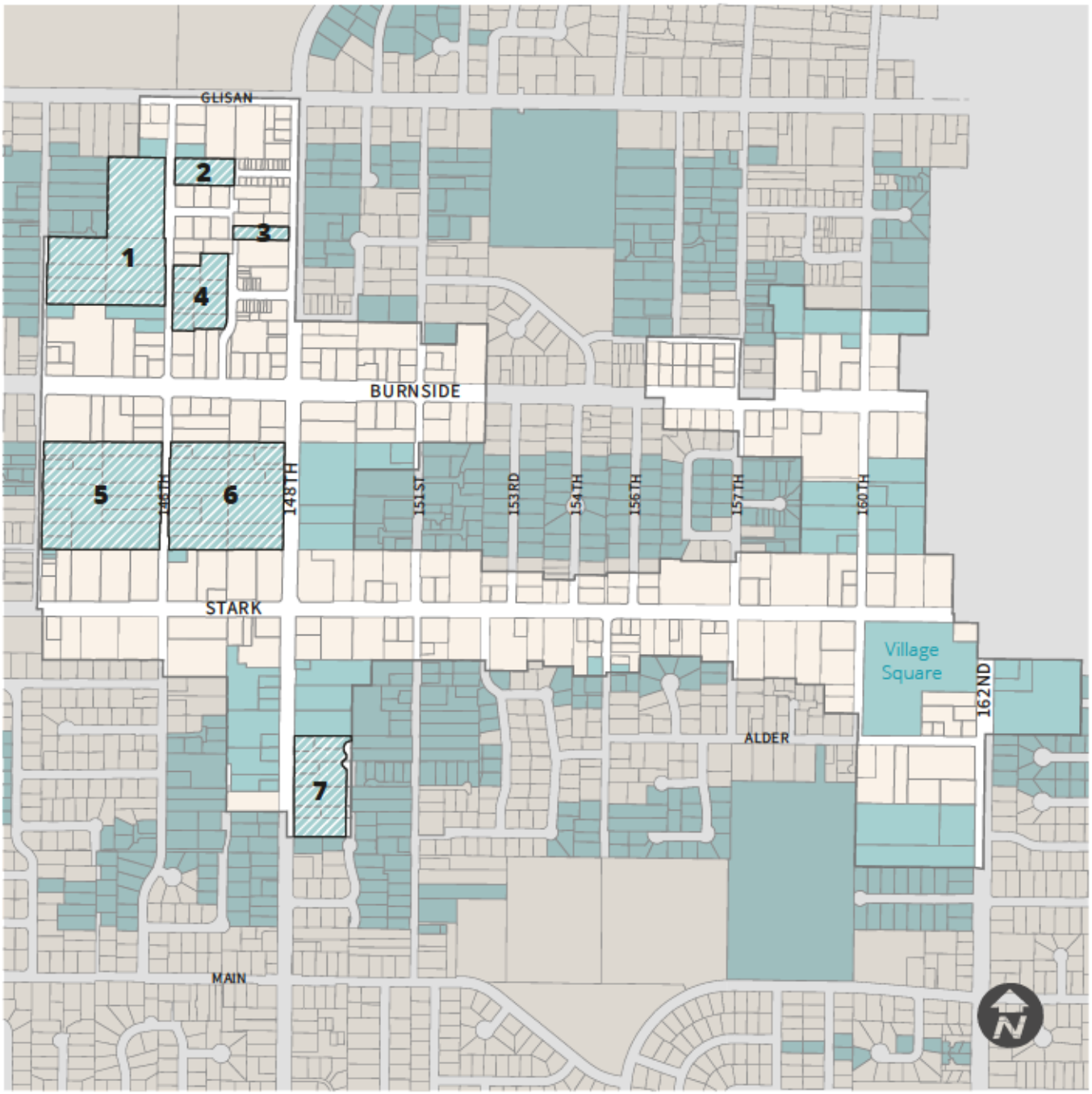
This Plan proposes a $967,500 TSDC capital project for the Jade District along with a TSDC credit to reduce costs for developers on sites the build a public connection. This would assume roughly half of these sites develop over the next ten years and the TSDC project would cover half the cost for the developer to build the street.



Jade Opportunity Areas Map

Sites not meeting east-west connectivity requirements

Opportunity areas targeted for east-west connectivity



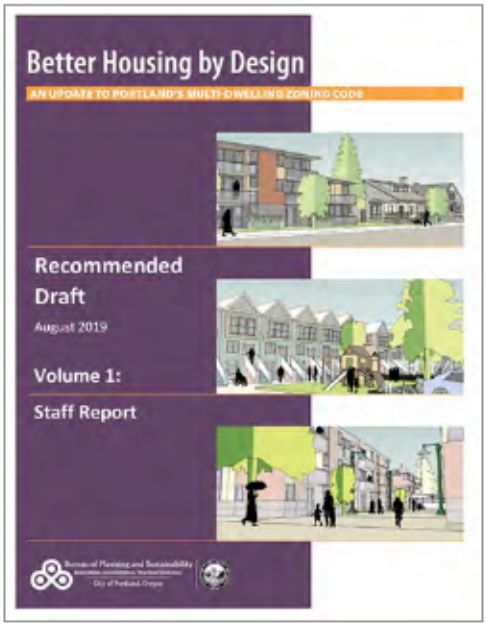
Rosewood Opportunity Areas Map

Sites not meeting east-west connectivity requirements

Opportunity areas targeted for east-west connectivity

Better Housing by Design Code Provisions (DRAFT)

The following is a summary of proposed Title 33 changes to the multi-dwelling zoning code included in the Bureau of Planning and Sustainability Better Housing by Design Plan. These provisions will help to support the creation of connections in new developments.



Properties in the multi-dwelling zones in East Portland are often both narrow and very deep (sites 60-feet wide and 200-feet or more in depth are common), making it difficult to achieve quality site design. In recognition of some of the design challenges related to development on East Portland's narrow sites, Comprehensive Plan Policy 3.94 calls for land in Eastern Portland to be combined into larger sites before development occurs.

Require street frontages wide enough for quality site design and to provide space for new street connections in East Portland centers.

This Title 33 proposal will apply to sites with multi-dwelling zoning located in the Jade District, 122nd/ Hazelwood, Rosewood/Glenfair neighborhood centers and in and around the Midway town center. Within these areas, for multi-dwelling zone sites more than 160-feet deep, the proposal requires a minimum street frontage of 90 feet for development of new units to take place. Exceptions are provided for projects approved through a Planned Development Review or that are surrounded by fully-developed properties.

This minimum street frontage width will provide enough space for a variety of site configurations, more efficient site design and partial street connections (if needed), as well as allow for driveways to take up less than a quarter of the site width. While there are many benefits to larger sites, a tradeoff is that requiring narrow sites to be combined adds time, cost, and complexity to development.

Calculate development allowances prior to street dedication to facilitate street connections.

This proposal will apply citywide. It allows FAR to be calculated before street right-of-way is dedicated, to reduce disincentives to providing street connections.

Summary of Recommendations

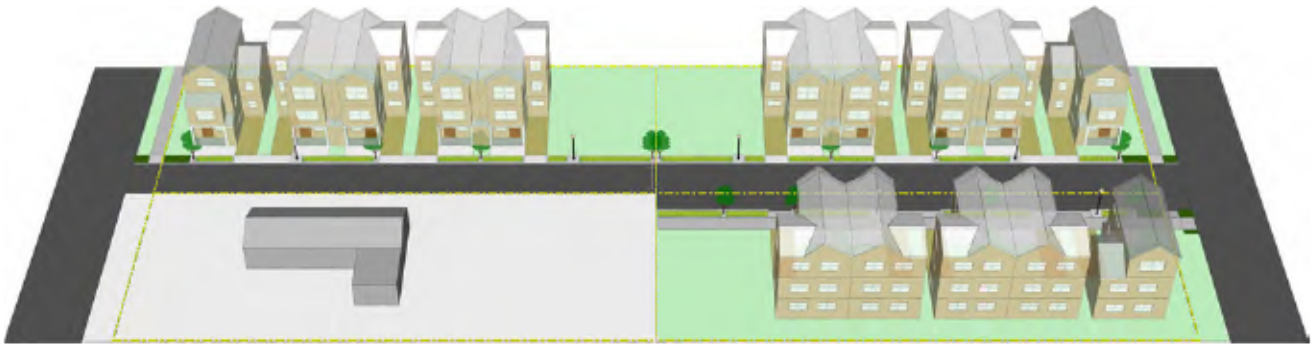
This Connected Centers Street Plan establishes a strategy for attaining new street and pathway connections where blocks do not meet existing connectivity requirements. The recommendations contained in this plan will be applied in the following areas: I) Citywide, II) Focus Area, III) Multifamily Zones.

I. CITYWIDE

1. **Retain Existing Street Spacing Requirements**
   The Plan does not propose a change to the minimum street spacing standards that are currently set in City Code, and which are in alignment with the Metro Regional Transportation Plan spacing standards. These requirements are 530' for streets and 330' for pathways.

2. **New Options to Phase Street Improvements**
   In locations where new connections are needed, but it is not feasible to build a street on a single parcel, streets may be built in phases, across multiple parcels.

   - When phased street connections are required in locations where lot lines are not aligned, new developments may be **required to dedicate right-of-way on the rear lot line** to allow the street to jog and connect through the block when future development provides the remaining connection.



II. FOCUS AREAS: JADE DISTRICT AND ROSEWOOD NEIGHBORHOOD CENTERS

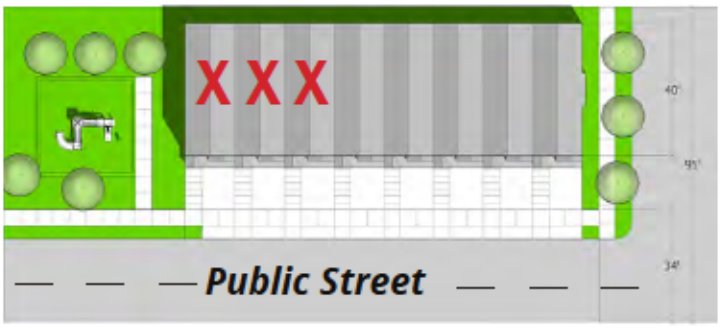
3. **Provide Financial Incentives to Offset Cost of Street Construction**
   Incentives, such as TSDC credits, provided to developers would offset the difference between the cost of building a driveway and the cost of building a new connection to City standards.

4. **Safe Routes to Centers**
   Complete active transportation connections and new crossings to support pedestrian and bicycle access to destinations within the Jade and Rosewood Centers from surrounding neighborhoods.

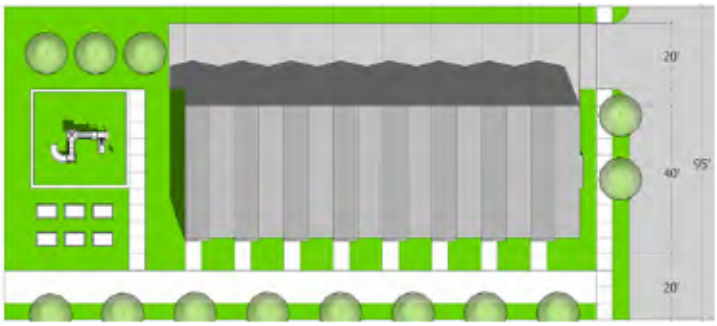
5. Calculate Development Capacity Prior to Dedication of Right-of-Way

The Plan proposes that development allowances for multi-dwelling developments be allowed to be calculated prior to the dedication of right-of-way. This would eliminate disincentives to creating new connections.

Currently, development that provides a public street connection loses development allowances.



While a development that only includes a private driveway has no such penalty.



6. Minimum Frontage Length (East Portland Centers)

Require street frontages wide enough for quality site design to provide space for new connections in East Portland Centers. Within the multi-dwelling zoning in the Jade District, 122nd/Hazelwood, Rosewood/Glenfair neighborhood centers, and in and around Midway town center, for multi-dwelling zone sites more than 160-feet deep, the proposal would require a minimum street frontage of 90 feet for development of new units to take place.