

Urban Design Guidebook

Beef Bend South | King City, Oregon

November 2020

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Introduction

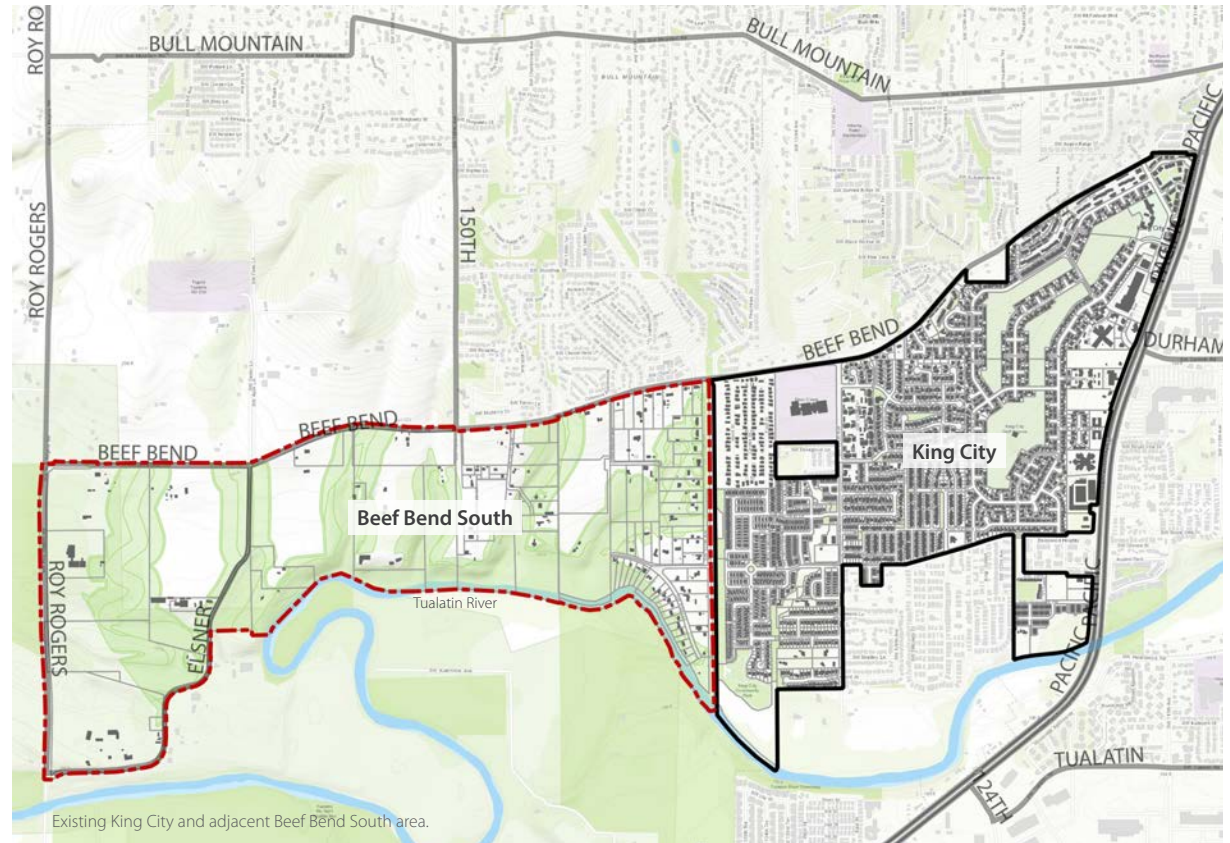
Purpose of the guidebook

This guidebook is part of the King City Transportation System Planning process. It is intended to serve as a bridge between the URA 6D Concept Plan, the City's first Transportation System Plan, and the forthcoming Beef Bend South Master Plan. It builds on comparable developments (case studies) evaluated as part of the 2020 Market Analysis report to understand details around land use, transportation, urban design, and implementation. The case studies provide lessons learned and recommended actions for King City.

King City Beef Bend South Vision

The 2018 Concept Plan for King City articulated a community vision for the area called Urban Reserve Area 6D (URA 6D). In 2019, based on its review of the Concept Plan, the Portland Metro Regional Government approved King City's application for an expansion to the Urban Growth Boundary (UGB) to create an extension of King City.

URA 6D, also known as Beef Bend South, is 528 acres located to the west of King City, at the foot of Bull Mountain, on the north shore of the Tualatin River. For this new area, King City envisions a community of distinct neighborhoods tucked between the five stream corridors that carry water from the mountain to the river. The highest density neighborhood with the greatest mix of uses will be located closest to Roy Rogers Road, at the western edge of the city (and the UGB). This neighborhood is envisioned to be home to a new town center with a main street, which will include commercial and civic uses, and employment uses.



The other three neighborhoods will vary in density but all will accommodate a full range of middle housing types, offering a variety of sizes and affordability intermixed within small urban-scaled blocks. Just north of Beef Bend Road, the City of Tigard is planning a series of new neighborhoods (South River Terrace) with a similar vision for mixed housing neighborhoods. In the future, several streets running north-south—River Terrace Boulevard in Tigard and Elsnor Road in Beef Bend South—could connect these two communities to each other.

At its narrowest, the area between Beef Bend Road and the Tualatin River is about 3,000 feet and interrupted by streams. Creating an east-west street connection is

necessary but it will be challenging. The purpose of this east-west street will be to accommodate local traffic and to provide a link between the four neighborhoods. It will be a King City signature street that changes character from east to west, reflecting the personality of each neighborhood it serves, while protecting each stream it traverses or crosses.

The street and path network will be a fine-grained network of local streets, green streets, alleys, and paths. The network will provide seamless connections for community, accessing services, shopping, recreating, and experiencing nature; it will do so in a way that works for people on foot, in a car, on a bike, or in small electric-powered vehicles.

Relationship of this document to the TSP

This document flags several design strategies that are important for the Beef Bend South Master Plan to follow up on in order to achieve the goals and vision of the community and to fulfill earlier planning efforts such as the URA 6D Concept Plan. Detailing specific design approaches within the context of the King City Transportation System Plan will help ensure that the TSP does not preclude these actions or strategies from being implemented in the future; it may in fact promote some of these concepts.

Relationship of this document to other documents

2020 King City Market Analysis

The 2020 King City Market Analysis for Urban Reserve Area 6D was conducted in an earlier TSP task. For the three case studies— Villebois, NorthWest Crossing, and Bethany—the market analysis quantified the amount of existing residential development and commercial and industrial square footage. As a complement to the market analysis, this document details *where and how* the residential, commercial, and industrial development are arranged and configured. It also details other aspects of the development, such as the integration of open space, walkability, street network, access, and visibility of commercial uses. It analyzes how all these characteristics work together and how well each case study performs when compared with goals for Beef Bend South.

Metro's State of the Centers 2011 Report

In 1995 Metro adopted the 2040 Growth Concept to guide growth and development in the Portland metropolitan area. It designates regional and town centers, in addition to downtown Portland, as the focus for redevelopment and concentration of homes and jobs. The Metro 2040 system categorizes these mixed use areas as main streets, town centers, regional centers, and station communities. In 2011 Metro updated their State of the Centers report with analysis measuring the performance of more

than 40 of these centers in terms of vibrancy, economic prosperity, and equity, among other measures (<https://www.oregonmetro.gov/state-centers-report>).

Together these metrics indicate development patterns that combine households, jobs, walkability, and transit supportive development. Similar performance metrics were selected to evaluate the case studies for this document and allow the reader to compare the case study communities with each other.

It is interesting to compare the case studies with Metro-designated activity centers, which use similar performance metrics. For example, the table to the right compares the dwelling densities for two Metro activity centers (Hillsdale and Northwest Portland Nob Hill), with the three case studies.

Dwelling Density Comparison Table

Metro-designated activity center	
Activity center	Dwelling units per acre (average density)
Hillsdale	6
Northwest Portland Nob Hill	27
Case Study planned dwelling unit density	
Case Study	Dwelling units per acre (average density)
Villebois	4.6
NorthWest Crossing	3
North Bethany	4.6

“A city is not an accident but the result of coherent visions and aims.”

Leon Krier, “Architecture of Community”

Why these case studies

Three case studies similarly-scaled, master-planned communities were used for a comparative analysis of land use, urban design, transportation networks, and implementation strategies. The objective in studying these case studies was to identify characteristics that made them successful. The three case studies examined were Bethany and Villebois in the Portland metro area and NorthWest Crossing in Bend, Oregon.

Each case study represents a planned community that employed one or more specific planning or urban design techniques. These planning techniques are derived from timeless urban design principles and traditional town planning and were established in reaction to suburban sprawl and to mitigate the domination of the automobile.

The planning and design of each of the case studies required applying alternative planning techniques to large areas of land (500 - 875 acres). Given the scale of these planned areas compared to smaller projects, the traditional tools of default Euclidean zoning (addressing land use) and county or rural highway standards (addressing street network and streetscape) were not preferred. Instead alternative techniques, including zoning overlays, zoning districts, and/or other zoning mechanisms such as new rules and alternative rules, were used to replace or augment the typical planning and regulatory approach.

Two case studies—Villebois and NorthWest Crossing—are on land owned by a single property owner, and the master plan was executed by a single developer. North Bethany was rural land under multiple ownerships that was brought into the county through an urban growth boundary expansion. The county has overseen master planning, and development has been executed by different developers. It is more similar to what is expected to occur in King City Beef Bend South (formerly Urban Reserve Area 6D).

In each case, however, the same master planning design principles have been used. Together the case studies represent a number of exemplary approaches to planning a new community, from the layout of neighborhoods, to the design of streets, blocks, and lots; from mixing land uses and housing types to the integration of natural areas.



Terms and concepts referred to in this document

- » Urban design metrics
- » Ecological site planning and design
- » New urbanism
- » Context sensitive design
- » Master Plan

Urban design metrics

Urban design metrics are measurements used to characterize the built environment, e.g. the qualities that make one street more inviting than another or one mixed-use center more economically vibrant than another. A useful reference is "Measuring Urban Design: Metrics for Livable Places," written by Reid Ewing and Otto Clemente, and published by Island Press in 2013.

Ecological site planning and design

Ecological site planning and design is the practice of planning for cities in collaboration with nature in order to avoid overloading the limits of land, air, and water resources. This a very broad and evolving practice incorporating the mid-century work of landscape architect Ian L. McHarg (author of *Design with Nature* originally published in 1969) and continuing today with efforts to incorporate more recent definitions of environmental sustainability into urban development. One such effort is LEED-ND (Leadership in Energy and Environmental Design for Neighborhood Development).

New urbanism

New Urbanism is an urban design movement that promotes walkable environments, mixed-use communities, middle housing, and the use of form based codes. The main organizing body for the movement is the Congress for the New Urbanism (CNU) founded in 1993 (<https://www.cnu.org>). In the early 2000s, the CNU joined forces with the Institute of Transportation Engineers (ITE) and drafted the first document devoted to reforming engineering practice and standards so that federal highway standards could be customized within urban areas. This document (*Designing Walkable Urban Throughfares: A Context Sensitive Approach*) initiated a new movement picked up by other organizations such as NACTO (National Association for City Transportation Officials). New approaches allow cities to give equal or greater priority to transit serviceability, walking, and biking while engineering major streets with federal highway funding. (See also: Context sensitive design.)

Context sensitive design

Functional Classification of "roads," or streets, was a system established in the 1960s and '70s, through the Federal-Aid Highway Act. It required the classification of all roads in the country in order to establish funding priorities. Functional Classification tells planners and engineers what types of roads to design and how they should or should not connect, e.g. that Collectors can only connect to Arterials for example. Functional Classification is based on the philosophy of "mobility," which is prioritized for motor vehicle drivers. Highways have limited access, arterial roads have fewer intersections, and local roads are considered optimal when they are cul-de-sacs.

In 2006, CNU worked with ITE to create the manual "*Designing Walkable Urban Throughfares: A Context Sensitive Approach*." In contrast with the Functional Classification system, the CNU ITE manual emphasizes connectivity and placemaking; intersections are encouraged; narrow traffic lanes and on-street parking are permitted; and walkable, multimodal streets are favored over maintaining high-grade Level of Service (LOS), which rewards the free flow of the automobile.

Download and read about the CNU ITE document at <https://www.ite.org/pub/?id=E1CFF43C-2354-D714-51D9-D82B39D4DBAD>, and <https://www.cnu.org/our-projects/cnu-ite-manual>. Another helpful reference is *Street Design, The Secret to Great Cities and Towns*, by Victor Dover and John Massengale, (Wiley, 2014).

Master Plan

A master plan is both a planning process and a document that provide comprehensive guidance on policies and design actions that can be taken over time to lead to a particular, physical outcome.

DOCUMENT ORGANIZATION

Each case study gives an overview of the history of the development and provides maps and metrics that can be compared across case studies. Key design and implementation features are highlighted along with lessons learned.



1 | Case Study: Villebois

Section 1 is a case study of the Villebois development in Wilsonville, Oregon.



2 | Case Study: NorthWest Crossing

Section 2 is a case study of the NorthWest Crossing development in Bend, Oregon.

DOCUMENT ORGANIZATION



3 | Case Study: Bethany

Section 3 is a case study of the Bethany development in unincorporated Washington County, Oregon.



4 | Critical Success Factors

Section 4 builds upon lessons learned from the case studies and details urban vitality elements that work together to create a successful community, neighborhood, and main street or town center.

Critical success factors are organized around four major categories— whole community design, planning at the neighborhood scale, neighborhood design, and main street and town center design—each with a checklist of primary success factors.

INTRODUCTION TO CASE STUDY METRICS

Case studies by the numbers. A successful, vibrant center needs a critical mass of people, both residents and workers to sustain local business and support efficient transit and other services. For each case study several common metrics demonstrating urban vibrancy have been assembled.

Sample Page



NETWORK

INTERSECTIONS PER ACRE
35

ALLEYS, THROUGH CONNECTIONS, OR PATHS
16 - 18 foot alleys throughout; pocket parks and linear paths throughout

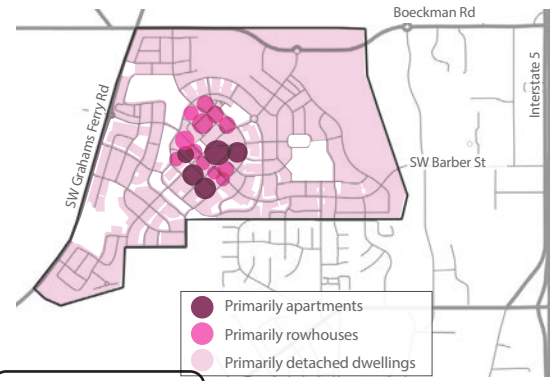
Street network metrics

More compact and **connected street networks** tend to have significantly higher levels of people walking and biking and fewer vehicle miles traveled as compared to sparser, tree-like designs, such as those dictated by functional classification hierarchy.

Intersection density is commonly measured by number per square mile, as in Reid Ewing and Robert Cervero's studies for transit and walkability.

American street network intersection densities typically range from as little as 60 intersections per square mile (as in downtown Salt Lake City) to more than 500 (such as the network in downtown Portland, Oregon).

For more information, see <https://www.cnu.org/our-projects/street-networks/street-networks-101>



DWELLINGS

PLANNED DWELLINGS
2,300 minimum

DWELLING DENSITY
4.6

HIGH DENSITY
50

LOW DENSITY
50

HIGH DENSITY
50

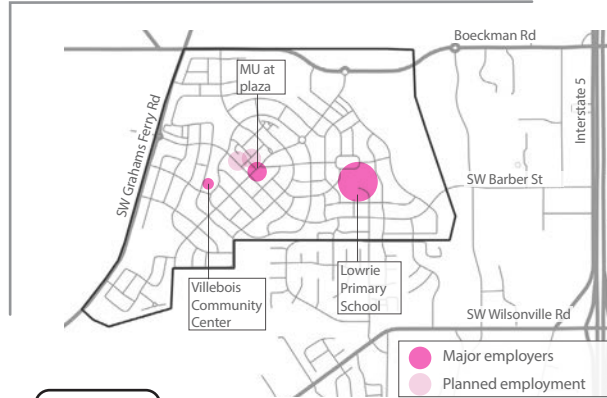
LOW DENSITY
50

Dwelling metrics

Dwelling density, or the number of dwelling units per acre, is helpful in understanding both the number of households that can support commercial and civic uses and the potential activity level of public amenities, such as parks and schools.

For reference, Metro's approval of the URA 6D urban expansion area stipulated that the new Metro designated neighborhood would ultimately be home to 3,300 dwelling units, at a minimum.

Sample Page



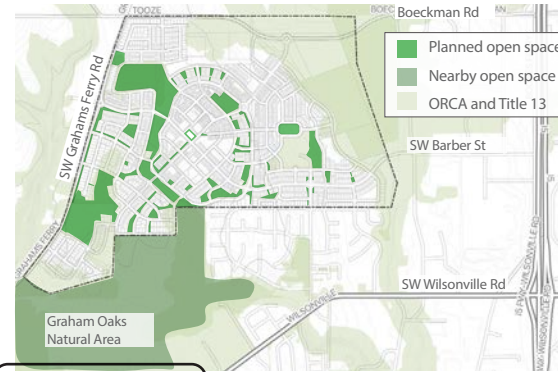
JOB

COMMERCIAL
15,000 square feet

LIGHT INDUSTRIAL
square feet

Jobs metrics

The **number and distribution of jobs** is a measure of economic prosperity and urban vibrancy. For reference, the 2017 King City market analysis projected that 54,000 to 85,000 square feet of commercial uses were possible within 10 years as part of a neighborhood retail center. The 2020 market analysis identified about 55,000 square feet as more realistic, and recommended a “development scheme consistent with the form, scale, and type of commercial development in Northwest Crossing is advised. From a market perspective, Northwest Crossing is the most analogous case study area to the future realities of URA 6D.”



OPEN SPACES

PLANNED OPEN SPACE
60.5

OPEN SPACE TYPES
Trail, linear, community, neighborhood, private, pocket

Open space metrics

The URA 6D Concept Plan and King City community vision prioritize the **integration of open spaces** and a variety of open spaces throughout the Beef Bend South area. Programming, variety and physical distribution of open space and natural resource areas is a major differentiating characteristic in each case study, and these metrics and diagrams are intended for comparison purposes.

Villebois

Location: Wilsonville, Oregon

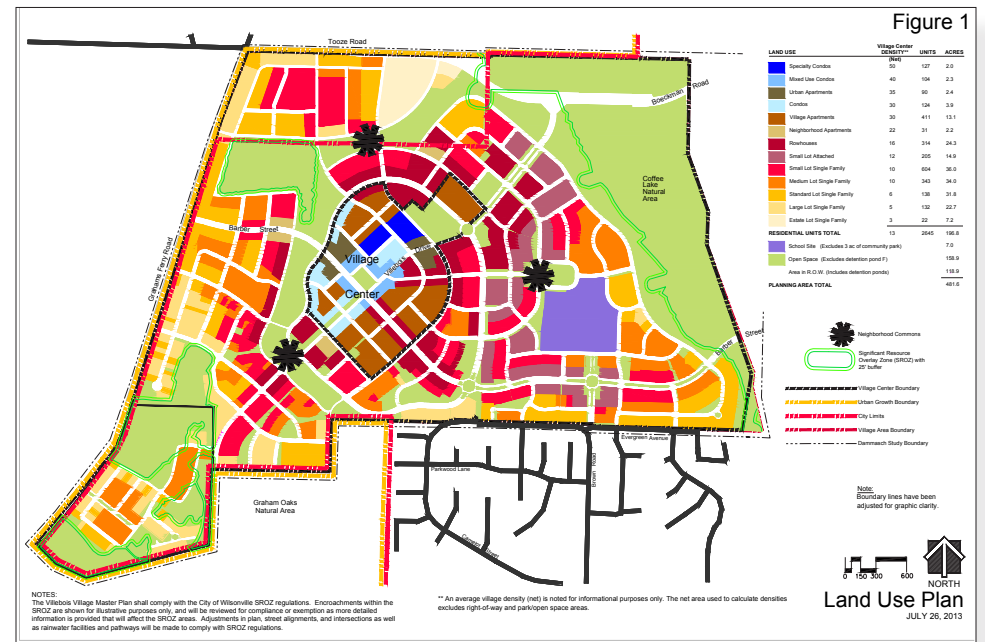
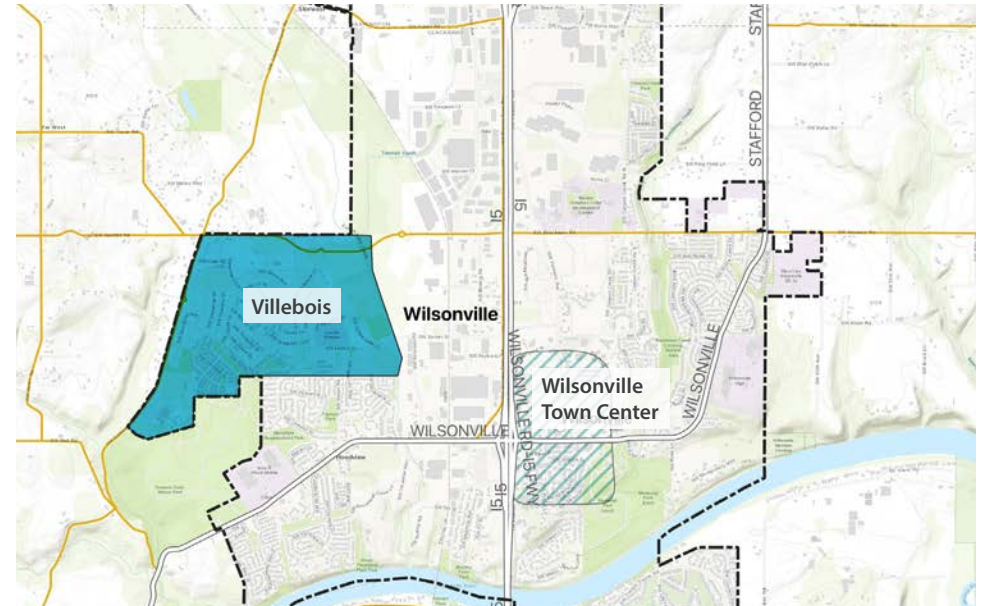
Size: 500 Acres

Context: Geographically separated from major streets and employment areas. Surrounding areas are rural or natural in character.

Housing mix: Main street apartment over retail, apartment, boulevard apartment, rowhouse, detached dwelling

Neighborhood design: Interconnected roads and trails link range of housing styles with ample open spaces, protected natural resources, and commercial/employment core

Character of main street / town center: Limited mixed use commercial and higher density residential surrounding an urban plaza.



Introduction

Initial Planning

The Villebois development was the result of city and community advocacy to re-appropriate land slated for a new prison as a planned residential development with small scale commercial. Villebois sits on the site of the former Dammasch State Hospital, which was in operation from 1961 to the mid-90s. After the closure of the hospital the site was identified by the state as the site of a new prison. After pushback from the community due to its close proximity to existing residential neighborhoods and Wilsonville's town center, the prison's location was moved north to what is now the Coffee Creek Correctional Facility. In its place a vision emerged for a mixed-use development integrated into the existing natural areas that surround the site. As part of an inter-governmental agreement with the state, 10 acres were reserved for community housing for people with mental illness.

From the beginning, urban renewal was a major driver of funding and development of Villebois. In 2003, voters overwhelmingly approved the new urban renewal district created by the city. The new district, called the West Side Plan, integrated the majority of the Villebois site and helped fund development and infrastructure improvements. Costa Pacific, the sole developer, had a vision for a mixed-use community with diverse housing types that was well connected to nature and open space. Modeled after designs of European villages, Villebois was planned with a central plaza with commercial uses and dense residential living at the core, surrounded by larger lots towards the edges.

Concept Plan

The planning of Villebois began in 2003 when Costa Pacific produced the concept plan. Shortly after the master plan and architectural pattern book, which specifies architectural styles and suitable site and building designs, were produced. These documents built on the initial vision and detailed a diverse community with a mix of housing types at different income levels and the incorporation of nature throughout. A mixed use, dense village center with ground floor commercial spaces surrounding an urban-style plaza was to be the heart of the community. The integration of nature and a connected system of trails and paths was baked into the development concept from the beginning. Villebois sits just north of Graham Oaks Nature Park, a 250-acre regional park with miles of trails which was purchased by Metro just before development of Villebois began. Within Villebois there are a variety of types of open spaces, from pocket parks that help preserve mature trees to a linear park and, most recently, a skate park with linkages to Graham Oaks.

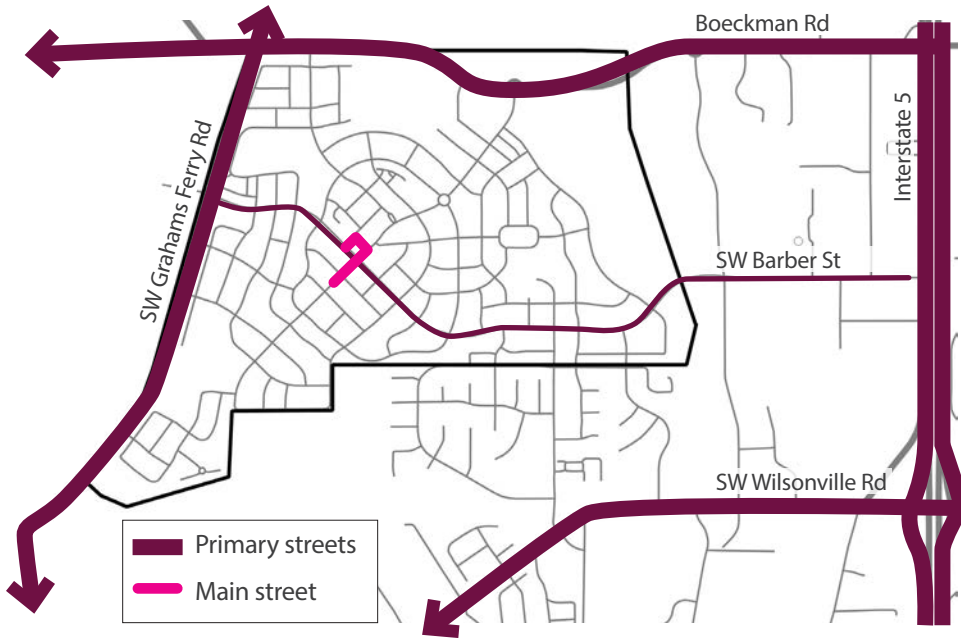
Villebois is mostly built-out, though mixed use commercial development at the Village Center has never been fully realized. By 2010, 700 homes had been built. Though there was some slowing during the 2008 recession, the development has been largely built-out to 2,600 homes.

While residential development succeeded, commercial development has been slow. Villebois has struggled to attract mixed use development in part because the

Village center is disconnected from main arterials and lacks visibility from any major street.

To help incentivize development around the plaza, the City of Wilsonville is considering adopting a Vertical Housing Development Zone program which would provide developers with a 10-year partial property tax exemption for mixed use developments. Costa Pacific is hoping to build three mixed use buildings that include ground floor retail and affordable housing above. Villebois has struggled to attract mixed use development in part because the Village center is disconnected from main arterials and lacks visibility from any major street.

Despite the undeveloped commercial areas, Villebois is seen as a desirable place to live. The combination of well-designed streets and homes, and the preservation and incorporation of trees and natural areas have made for a successful development.



NETWORK

INTERSECTIONS PER SQUARE MILE (APPROX.)
200

BLOCK LENGTH
240 x 300 feet average

BLOCK PERIMETER
1,080 feet

WALK SCORE*
36

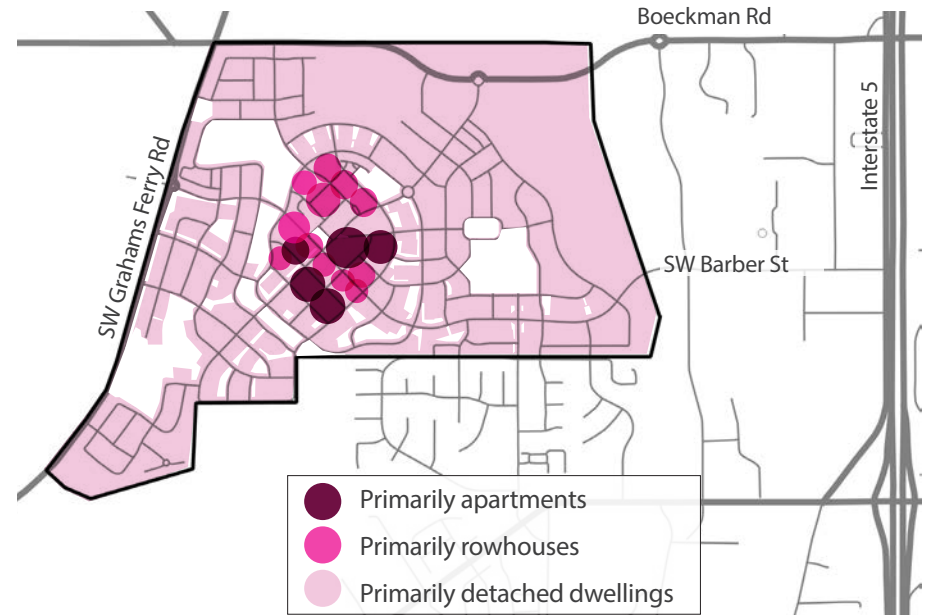
*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS
16 - 18 foot alleys throughout; pocket parks and linear paths throughout

ARTERIALS
SW Grahams Ferry Road (west boundary); Boeckman Road (north boundary)

ARTERIAL CHARACTER
One lane in each direction with intermittent median. Roundabouts and bike lanes on Boeckman Road.

TRANSIT SERVICE
South Metro Area Regional Transit (SMART); one bus line with frequent AM/PM weekday service to transit center



DWELLINGS

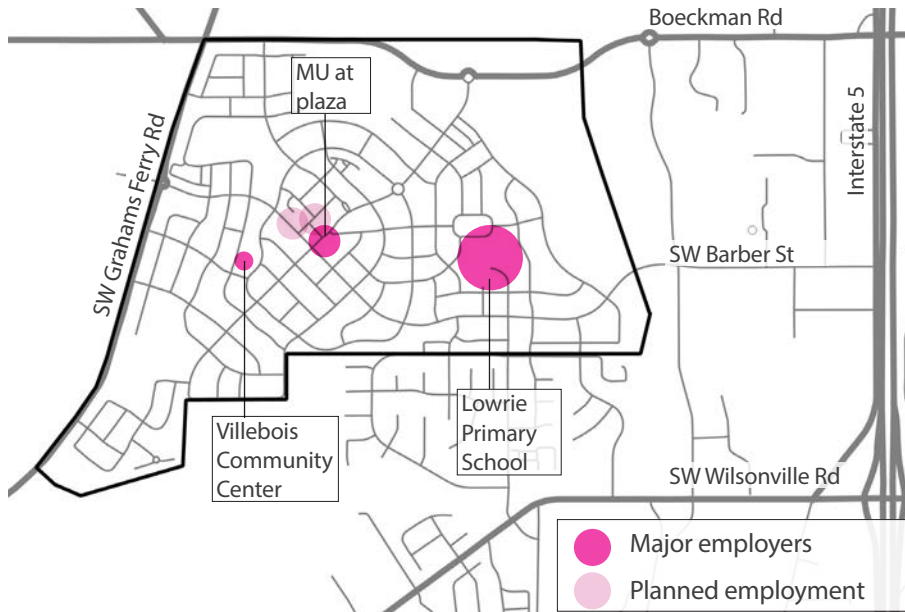
PLANNED DWELLINGS
2,300 minimum

DWELLING DENSITY PLANNED
4.6 dwelling units per acre

HIGHEST DENSITY PLANNED
50 dwelling units per acre

LOWEST DENSITY PLANNED
5 dwelling units per acre

HOUSING MIX
Main street apartment over retail, apartment, boulevard apartment, rowhouse, detached dwelling



JOBS

COMMERCIAL

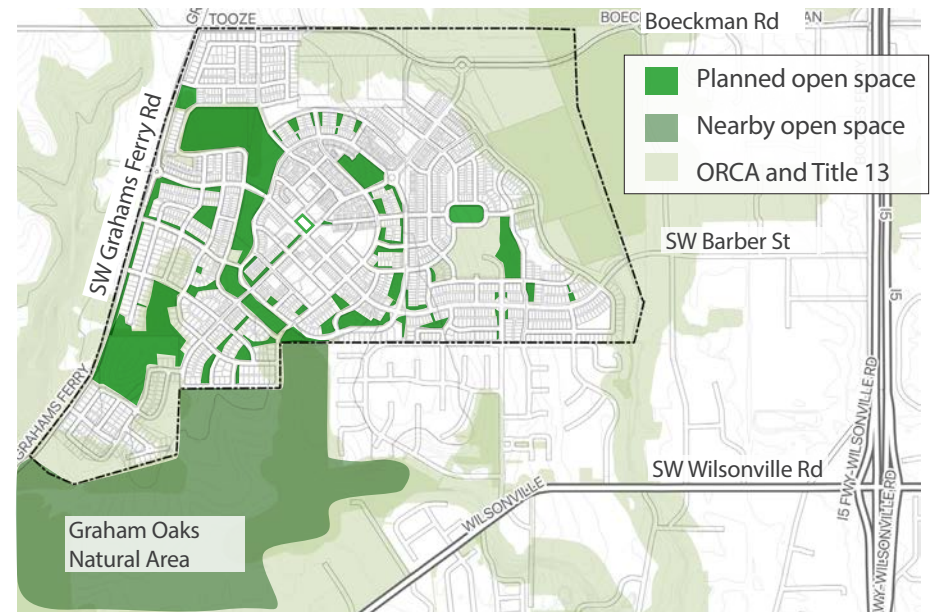
15,000 square feet

LIGHT INDUSTRIAL

0 square feet

CIVIC USES AND MAJOR EMPLOYERS

Lowrie Primary School (10 acre site)



OPEN SPACES

PLANNED OPEN SPACE

60.5

OPEN SPACE TYPES

Trail, linear, community, neighborhood, private, pocket, and urban parks

MUNICIPAL CONTROL

City of Wilsonville, Wilsonville School District, Homeowner's Associations

NEARBY OPEN SPACE

Graham Oaks Natural Area, Tonquin Regional Trail, and Coffee Creek Wetlands

Design



Incorporation of natural areas

Open space is a critical element and defining aspect of vision. Linear parks surround the village center and connect significant open spaces within and adjacent to plan area. Open spaces range from urban style parks to wooded natural areas.



Connectivity to surrounding areas

The Villebois Greenway connects regionally significant open spaces in Coffee Creek Wetlands and Graham Oaks Natural Area, forming the Tonquin Regional Trail. The entire development has 130-acres of trails and open green spaces that function as a linked network.



Diversity of housing

A broad range of homes are permitted to offer residents choice in housing type, style, and price. Housing types include single dwellings of various sizes, attached/cottage dwellings, rowhouses, and neighborhood, village, and urban apartments. High-quality of designs stem from architectural pattern book.



Varied housing design

Homes have compatible yet varied designs. An architectural pattern book details design features and standards establish elements of architectural styles. All buildings are reviewed by the Planning Director. The Pattern Book addresses the appearance of dwellings from the street and open spaces and includes rules on the scale and proportions for adjacent land uses.



Rigorous streetscape standards

Multiple sources contribute to attractive and functional streets including city zoning regulations, the Villebois Pattern Book and the Community Elements book. The Community Elements book provides the most fine-grained detail by establishing type and location of elements including lighting, street trees, site furnishings, and tree protection standards. Arterial designs include roundabouts, bike lanes, sidewalks, and on-street parking to slow traffic and prioritize a range of users. Neighborhood streets are alley-loaded, allowing for a continuous green strip with regular street trees and on-street parking.



Festival street at the town center

A festival (curbless) street surrounds a central plaza and can serve as a seamless gathering space. During special events the street can be closed to car traffic, allowing activity to spill into the street. This special street is delineated by bollards and pavers to set it apart from nearby streets.



Town Center

A central urban-style plaza sits at the heart of the town center. The plaza functions as the social center of the village with an inviting festival street (described on previous page). Large canopied trees provide shade and desirable places to gather, complete with benches, a fountain, and bocce ball court. In the summer concerts and other small community festivals bring larger groups. A mixed use development with ground floor retail and apartments above creates an enclosure on one side of the plaza. Two blocks of diagonal parking allow for easy access to the site while pedestrian-scaled lighting and ample street trees create a walkable urban environment. Housing is most dense at the village center, with a combination of stacked flats and townhomes in the blocks surrounding the center.



The mixed use development at the plaza.

Higher density apartments are a block from the plaza.

Modern rowhouses leading to the town center and plaza.

Implementation

Urban Renewal

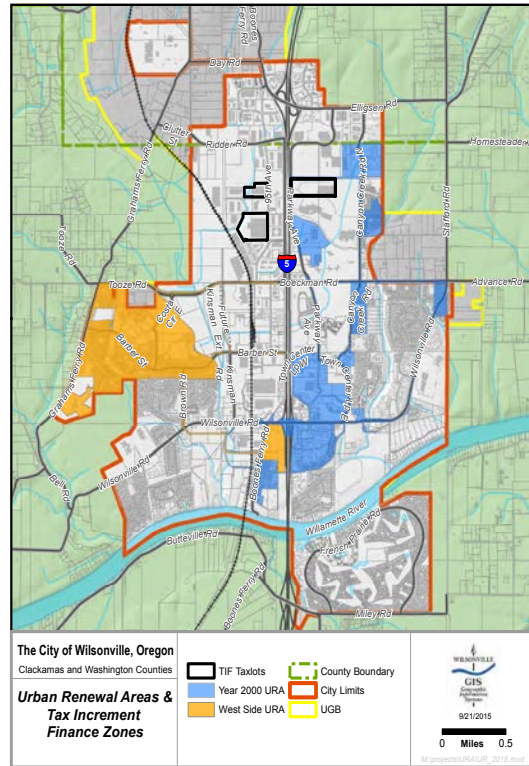
From the beginning, urban renewal was an integral tool for the development of Villebois, making it possible to pay for infrastructure improvements. The West Side Urban Renewal Plan which encompasses almost all of Villebois, was created in 2003 after voters approved the development of the community. Primary goals of the West Side Plan included creating a robust transportation network that was internally connected and connected to rest of the city; supporting diverse housing types; and robust natural areas and parks. The district was so successful that in 2016 the area was expanded to include additional lands.

This public/private partnership model added substantial value with the assessed value of the area increasing 22-fold in its first thirteen years. The city anticipates that the West Side Urban Renewal Area will close by 2024.

Development and Design

Villebois has its own zoning designation in Wilsonville's development code. Zone "V" permits many housing types including cottage clusters, row houses, duplex, accessory dwelling units, community housing, apartments, and single dwellings. Commercial uses are permitted in the village center, and more limited commercial uses are permitted in "neighborhood centers".

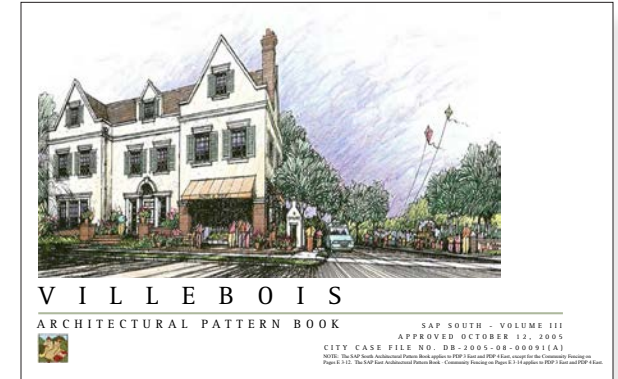
Neighborhood and building design is seen as a success in Villebois, in part because of the cohesive



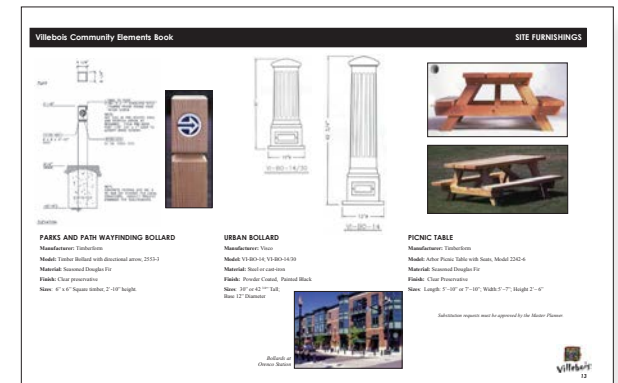
Wilsonville's urban renewal map showing the West Side URA in gold.

design elements. Two design manuals help ensure high-quality design that meets the goals and vision for Villebois: the Architectural Pattern Book and Community Elements book.

The Architectural Pattern Book includes guidance on site design, how buildings face the street, scale and proportions, as well as a list of appropriate architectural styles. The land use patterns chapter covers land use types and specifies setbacks and building placement by land use type. The architectural styles section illustrates examples from a range of historical and modern styles including French Revival to American Modern. It has detailed imagery of specific exemplary buildings that



Villebois Architectural Pattern Book



Community Elements Book detailing streetscape furnishings.

show how to achieve the required diversity established for the development. A compliance checklist is included to help builders and city officials determine if the building meets all required standards.

The Community Elements Book is created for each Specific Area Plan, of which there are four total. It serves as the plan for neighborhood design by addressing elements such as street trees, tree preservation, site furnishings and play structures, curb extensions and lighting. These elements establish a cohesive identity and fulfill the goals of diversity, connectivity, and sustainability set forth in Villebois' Master Plan.



- » The commercial portion of a development needs to be easily visible and accessible from a major arterial to attract users beyond residents or supported with additional users from nearby employers.
- » Consider adaptability of retail spaces so they don't sit vacant. For example, design retail spaces so they can be subdivided (or enlarged) to meet the needs of retailers or office tenants over time. Common service areas, e.g. restrooms, can serve multiple tenants, lower improvement costs, and enable small or startup businesses to establish a presence. Don't preclude office uses in early phases; encourage low or no rent pop-up businesses; occupy storefront spaces with city offices or civic uses (like a library), or developer showrooms.
- » Achieving higher density mixed use development at the center may require developer incentives.
- » Rigorous tree preservation standards lead to pocket parks that homes can front. These pocket parks provide shade, places to recreate, and increase the overall desirability of the development.
- » Urban renewal is a powerful tool that secures funding for regionally significant infrastructure such as street improvements and utilities without burdening developers or homeowners with these costs.

Incentivizing Commercial Development

While the Villebois Master Plan intended for dense mixed use development surrounding the central plaza, it has yet to take off. High construction costs, low foot-traffic, and lack of visibility from any major arterials are factors that have made mixed use development difficult. The city is still strategizing about ways to realize the initial vision for the Village Center. As part of the Equitable Housing Strategic Plan released in June 2020, the city is considering tax abatement programs that would incentives developers to build affordable housing. A Vertical Housing Development Zone is recommended for the Villebois Village Center to create affordable housing and ground floor retail all at once.

LESSONS LEARNED

- » A broad range of natural areas, parks, and trails increases livability, mobility, and home values.
- » Connect trails and open spaces to surrounding trails and open spaces to integrate new development with existing region.
- » Alleys improve walkability, create opportunities for more street trees, give residents front yards, and allow for more on-street parking for residents and visitors.

NorthWest Crossing

Location: Bend, Oregon

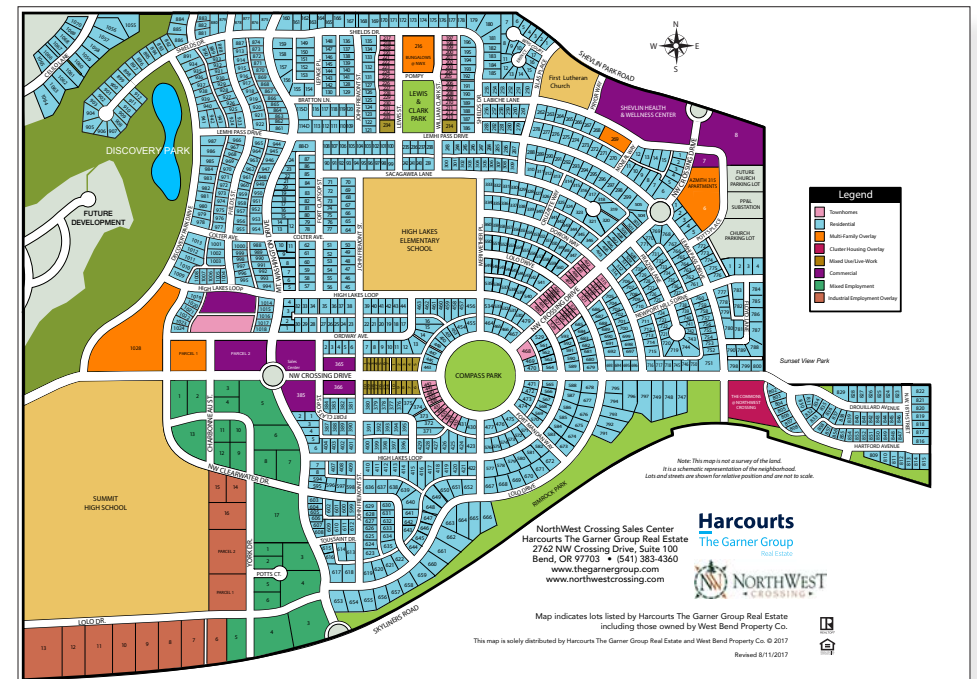
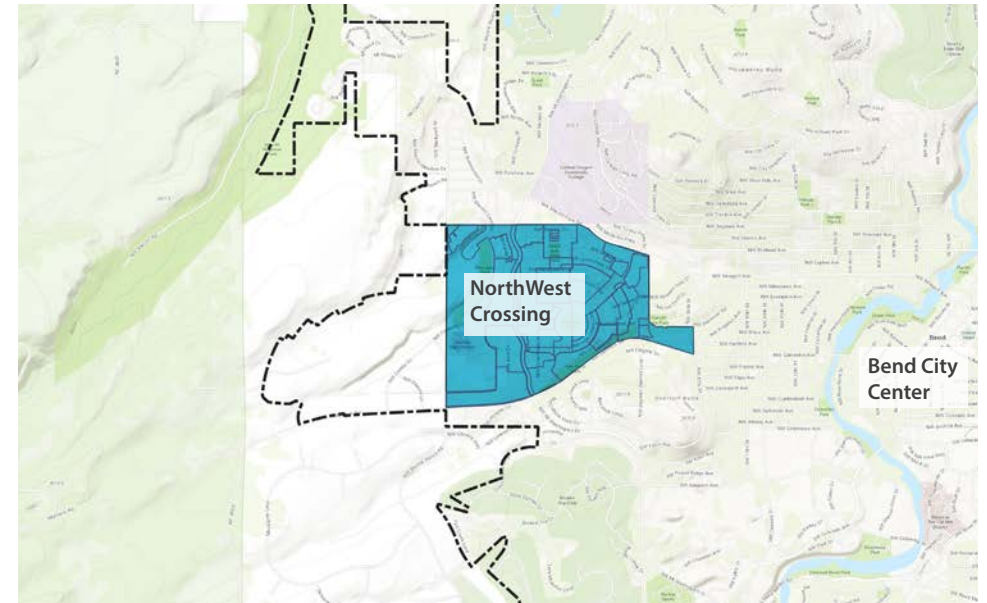
Size: 486 acres

Context: Connected to adjacent residential areas and the commercial/employment areas of west Bend.

Housing mix: Detached dwellings, cottages, cottage cluster, duplexes, live/work units, main street apartment over retail, boulevard apartment, apartment

Neighborhood design: Large range of dwelling types spread throughout connected network of preserved high desert landscapes with town center and employment/light manufacturing uses and neighborhood schools.

Character of main street / town center: Limited mixed use commercial and higher density residential.



Introduction

As private landowners closed the last of their timber mills, they looked to capitalize on the large population growth underway in Bend, Oregon to retain value for their land. Beginning in 1998 the West Bend Property Group (West Bend PC) advocated for a new neighborhood as development extended outward from Bend. They engaged consultants to develop a concept plan and began conversations with the city and community. In the early stages the developer identified the need to design a community of the highest quality to not only differentiate their product in a highly competitive residential market but also to ensure approval from the city and the community. Facing initial stiff resistance to perceived “suburban sprawl,” West Bend PC sponsored lectures by national speakers on smart growth topics and a public charrette to gather input.

Design Vision

A design vision emerged for a concept building off the existing character of the high desert landscape. A mixed-use neighborhood was laid out based on the mapping of large ponderosa pines and outcroppings of rimrock with the locations of roads, lots, and sidewalks determined by these preserved natural elements. Another defining feature is its radial layout. In response to concerns over the speed and character of large regional connectors linking NorthWest Crossing to Bend, the developer worked with city engineers to design roundabouts. Three roundabouts control the flow and speed of traffic into and out of NorthWest Crossing; there are no stop lights in the development, and even the largest streets have parallel parking, street trees, and bike lanes.

The overall vision for NorthWest Crossing is a mixed-use community that looks and functions like a complete community. A broad range of uses including two schools, open spaces, employment uses, commercial spaces, and a mixed-use town center are connected with a mile and a half of paved trails that also link in to surrounding regional open spaces and trails. All roads (including alleys and mid block crossings) and parks were developed by West Bend PC and dedicated to the City of Bend. An overlay zone was approved by the city to permit a broader range of uses, special street standards, and consolidated parking for employment uses.

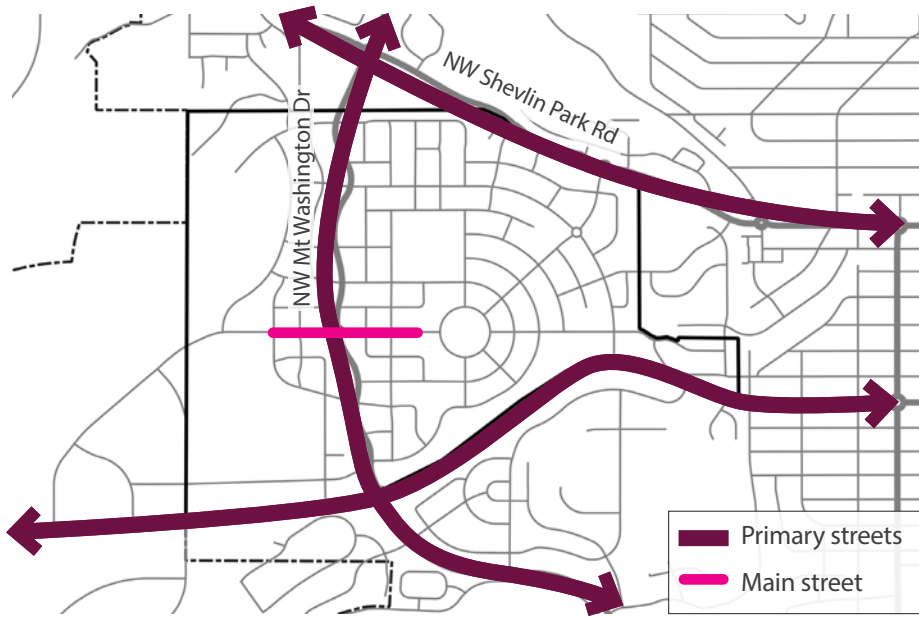
Master Planning

Fundamental to the vision was the desire to have a development that did not look like it was built by one builder. The master plan arrayed different housing types using a transect concept that arrays housing types from most dense in and adjacent to the town center to least dense along the edges of the rural surrounding land. Lots were auctioned off in small phases to pre-approved builders in a lottery system. Detailed development guidelines and design standards for residential and commercial uses and a prototype book based on historic catalog plans guide builders’ designs. An architectural review committee designated by West Bend PC reviews all designs. The building quality and diversity is a key feature of NorthWest Crossing.

The town center with main street surrounded by employment uses, commercial buildings, two-story mixed-use buildings with ground floor retail, and attached dwellings at higher densities. Fundamental

to its success are the design of its streetscapes and the large number of adjacent office uses. West Bend PC sold several lots to another developer who built office spaces and marketed them based on the lifestyle of NorthWest Crossing. Several high profile light industrial and software companies have located there, including the head quarters of HydroFlask and Ruffwear. Other commercial development includes a communal office space targeted to the high rate of people working from home in Bend, professional offices within and adjacent to the town center, and a large medical campus at the NE entry to the neighborhood.

The last phases of construction at NorthWest Crossing are being developed this year with construction spanning from 2001 to 2021. The final phase of the town center is being constructed with a public market hall, mixed-use commercial building, and 33-unit building. This is on the heels of the development of 132 apartment units, a cottage cluster, and other narrower-lot detached dwellings. Building off the success of NorthWest Crossing, the West Bend Property Co. is planning to develop an additional 1,750 housing units to the west as a second development. The development has been very successful with homes retaining high values even during the height of the recession.



NETWORK

INTERSECTIONS PER SQUARE MILE (APPROX.)

225

BLOCK LENGTH

230 x 320 feet average

BLOCK PERIMETER

1,100 feet

WALK SCORE*

47

*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS

14 - 16 foot alleys throughout; pocket parks and linear paths throughout

ARTERIALS

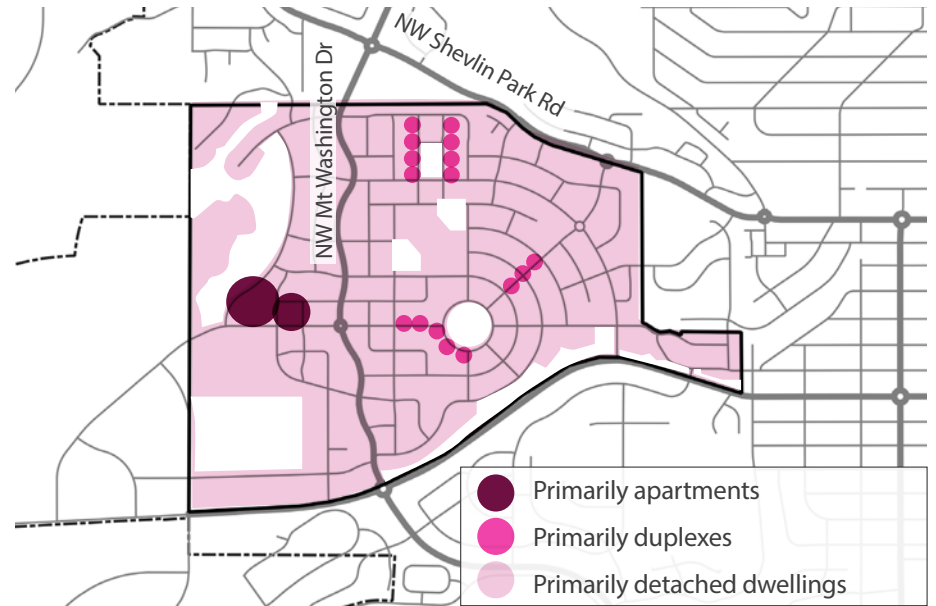
NW Shevlin Park Rd (partial north boundary); Skyliners Rd (south boundary); NW Mount Washington Drive (bisect)

ARTERIAL CHARACTER

Roundabouts throughout. Bike lanes and on-street parking on NW Mount Washington Drive.

TRANSIT SERVICE

Cascades East Transit (CET); one bus line along Shevlin Park Rd with frequent service to transit center.



DWELLINGS

PLANNED DWELLINGS

1,500

DWELLING DENSITY PLANNED

3 dwelling units per acre

HIGHEST DENSITY PLANNED

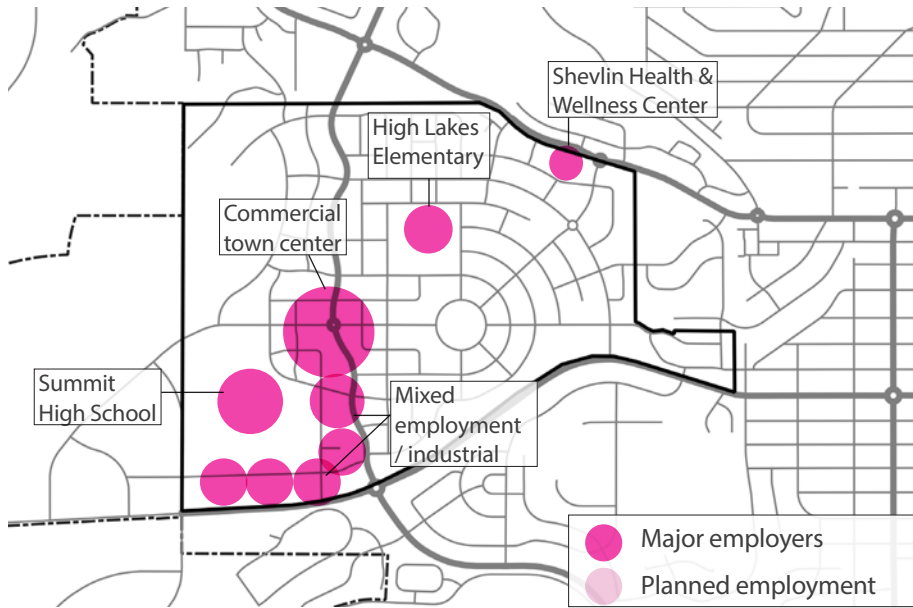
19 dwelling units per acre

LOWEST DENSITY PLANNED

7.2 dwelling units per acre

HOUSING MIX

Main Street apartment over retail, boulevard apartment, apartment, live/work units, duplex, cottages, cottage cluster, detached dwelling



JOBS

COMMERCIAL

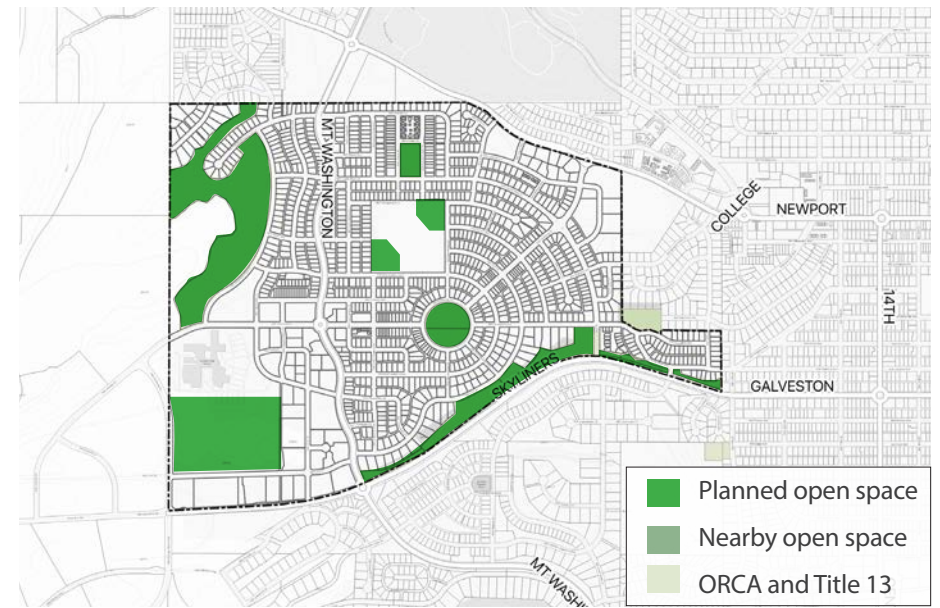
55,400 square feet

LIGHT INDUSTRIAL

43,000 square feet

CIVIC USES AND MAJOR EMPLOYERS

Summit High School (48 acres), High Lakes Elementary School (15 acres)



OPEN SPACES

PLANNED OPEN SPACE

75 acres

OPEN SPACE TYPES

Trail, linear, community, neighborhood

MUNICIPAL CONTROL

City of Bend, Bend School District

NEARBY OPEN SPACE

Shevlin Park, Deschutes National Forest, Phil's Complex

Design



Varied housing design

By pre-approving builders and distributing lots through a lottery system, the developers dispersed building styles throughout the community. Widely varying housing styles make NorthWest Crossing look and feel like an established neighborhood rather than a subdivision. This approach also increased competition among builders to differentiate their product to increase sales. Builders submit individual designs to an Architectural Review Committee that reviews designs using the Residential and Commercial Architectural Standards.



Preserved high desert landscape

The design started with detailed mapping of natural resources and significant trees. Streets, sidewalks, and lots were laid out to preserve and showcase these elements as resources. The high desert landscape is a defining attribute of the design of NorthWest Crossing.



Diversity of housing

A broad range of housing types are dispersed throughout the neighborhood using a transect of established prototypes. Higher density housing is located near the two commercial centers or adjacent to parks. Detached housing has varying lot sizes with different prototypes intermixed throughout the district in subdistricts based on setbacks and lot widths. The range in housing types translates into choice, a range of price points, and the ability to age in place.



Mix of uses

The neighborhood was designed with a full range of uses, 15-acres of mixed-use employment, 40-acres of industrial uses, and the high school are clustered south of the town center. The added activity of people who work and go to school in NorthWest Crossing translates into a viable town center that is a functional center of gravity for the community.



Circulation/Roundabouts

Four roundabouts define the layout of streets and blocks in NorthWest Crossing. There are no streetlights needed in the neighborhood. The roundabouts slow down cars while handling traffic safely and efficiently. Their design and use were critical in winning public support for the project, and the city has subsequently adopted their use in other neighborhoods. Additionally blocks were designed to be small with frequent intersections including mid-block crossings and alleys. The block size in neighborhoods ranges from 300 to 500 feet with block sizes decreasing to roughly 275 feet in the town center.



Network of connections

The neighborhood is designed with a dense network of intersections and narrow neighborhood streets with curb extensions, sidewalks, street trees, and on-street parking. All blocks are alley-loaded. Mid-block pedestrian crossings and a mile and a half of paved trails offer alternate ways to connect through the neighborhood and are linked to surrounding regional trails/resources and a network of mountain bike trails. Slower traffic speeds and attractive streetscapes with street trees, grates, seating, and lighting reinforce the pedestrian orientation of streets.



NW Crossing

Town Center

A four-block concentrated mixed-use center of retail, commercial, and second floor residences and offices is located on the western edge of the neighborhood. Wide sidewalks with attractive streetscapes frame a narrow main street lined with 2-3 story buildings. More dense types of housing including apartments and live/work units surround and support activity in the town center. Buildings form a streetwall with mid-block pedestrian passageways. Outdoor dining and plazas are located in setback areas. The intersection frequency, mid-block passageways, and appealing streetscapes translate into high levels of activity within and leading to the town center. Parking is available on-street and in shared lots behind buildings that are managed collectively. The focus of retail uses is on community-serving uses, with no large anchors. Main Street hosts a weekly farmers market and other events throughout the year and functions as a heart of the neighborhood.



Buildings in town center form street wall or are set back for plazas/outdoor dining



Employment uses adjacent to the town center have attracted a range of tenants including anchor tenants such as HydroFlask.



Higher density apartment and mixed-use projects in the town center were built in later phases.

Implementation

Public engagement

The developer sponsored public charrettes to present concepts and solicit feedback. There was significant opposition to perceived suburban sprawl of new development. The developer responded to these concerns by engaging in conversations and sponsoring lectures by national leaders in Smart Growth to educate about design concepts. A turning point was the design of roundabouts to lessen traffic speeds and avoid large, regional connector roads. The developer partnered with city engineers to design a solution that would meet dual objectives. The roundabouts in NorthWest Crossing were the first roundabouts constructed in Oregon.

Overlay zone

The master plan was adopted and codified in an overlay zone. The NorthWest Crossing Overlay Zone permits different densities and a mix of uses. It also permits consolidated parking (particularly for employment uses) and limits industrial uses to light manufacturing. Smaller lots were permitted to increase density levels and additional types of housing were allowed.

Use of prototypes

The master plan is zoned according to four prototypes that determine scale, character, use, and construction type along a transect from urban to less urban.

- » Town Prototype – 2-3 story façade built to sidewalk line; attached commercial, mixed-use, apartment or townhome; 12 - 19 duu
- » Village Prototype – 2-3 story façade permits 10-foot landscaped dooryard setback; ; attached commercial, mixed-use, apartment, townhome, duplex or cottage; 12 - 19 duu
- » Neighborhood Prototype – detached dwellings with range of lot sizes (4,000 – 8,000 SF) mixed throughout the district in subdistrict with alley-loaded parking; permits ADUs; 7.3 max duu
- » Edge Prototype – irregular or extra deep lots or near designated natural areas; detached residential or industrial; max 2 duu

A Prototype Handbook provides detailed development standards for both residential and commercial development. These development standards are codified in the City's overlay zone. Architectural standards for residential and commercial uses address topics including decks and porches, driveways, duplication of building designs, exterior colors and design treatments, lighting, walls and trims, fences, garages, landscaping, and tree preservation. A pattern

book of preferred architectural styles based on historic catalog of plans helps builders interpret traditional styles while meeting the design standards. Together, these regulatory tools establish a rhythm and scale for buildings while promoting both overall harmony and distinction between individual buildings.

Street types

The neighborhood was designed with small blocks and frequent intersections. Street types from the master plan were codified as Special Street Standards in the Overlay Zone. Street types tentative locations and alignments were mapped with standards corresponding to street types. Alternate standards are permitted through an approval process. Language permits the use of any lesser street standards adopted later. Street tree guidelines apply to designated areas defined by distinct types of trees.

Employment and light industrial

Commercial development includes a communal office space targeted to the high rate of people working from home in Bend, professional offices within and adjacent to the town center, and a large medical campus at the NE entry to the neighborhood.



LESSONS LEARNED

- » Excellence in the overall neighborhood design and design of open spaces and streetscapes and range of housing types has translated into market value. Sales have remained strong, even during the 2008 recession, with steady home values.
- » Compared to Villebois, the town center has succeeded due to high visibility from a primary arterial and roundabout, limited number of commercial spaces phased over time, and close proximity of employment uses.
- » All parks and streets (including alleys) were developed by the developer but transferred to the City of Bend for public ownership. There is no homeowners association.
- » More intensive mixed-use development and higher density residential uses were not developed until the final phases. This minimized the amount of time spaces sat empty.
- » Using roundabouts to reduce the traffic speed on arterials allowed design that emphasizes other modes and avoids the use of street lights and regional connector lane widths. Even arterials have a pedestrian-oriented character with street trees, green strip, bike lane, and on-street parking. Frequent intersections and shorter block lengths improve walkability and prioritize pedestrians over vehicles.
- » Shared parking district for commercial uses reduces the amount of area needed for off-street parking. Community commercial uses limited to 5 parking spaces.
- » Architectural Review Committee established to review and approve all development for consistency with residential architectural standards.
- » Lottery system for allocating lots to builders promoted authentic variety in building forms and promoted competition for higher quality products.
- » Phases were small and discrete so construction zones were confined. Any inconveniences to residents was reduced. Potential buyers could see how development would look and feel given incremental progress toward achieving the vision.
- » Affordable housing was not identified as a critical need in early stages of development. As a result, there is a limited amount of affordable housing. Average home prices for single dwellings range from \$465,000 - \$895,00. A recent workforce housing project attempts to address this lack with 50 new apartment units. The developer has also donated eight lots to a local land trust and developed 53-unit senior apartment building.
- » Planning for two schools (elementary and high school) improved marketability of development.
- » Design for transit even if transit service does not yet exist. Densities in NorthWest Crossing are between 10 and 20 dwelling units per acre. Over the years a few transit service agencies have provided fixed route service to NorthWest Crossing. In early 2020, the OSU-Cascades Microtransit Pilot Project started serving the portion of NorthWest Crossing east of Mt Washington Drive on an app-driven, on-demand basis. When the region permanently addresses transit service, NorthWest Crossing will continue to accommodate transit.

Bethany

Location: Unincorporated Washington County, Oregon

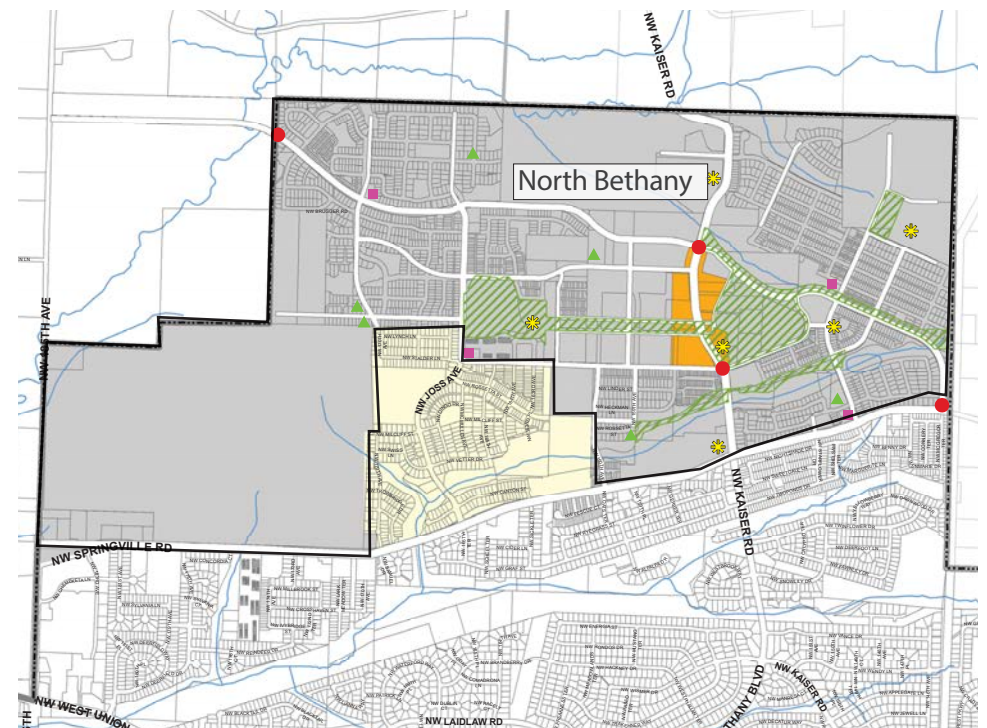
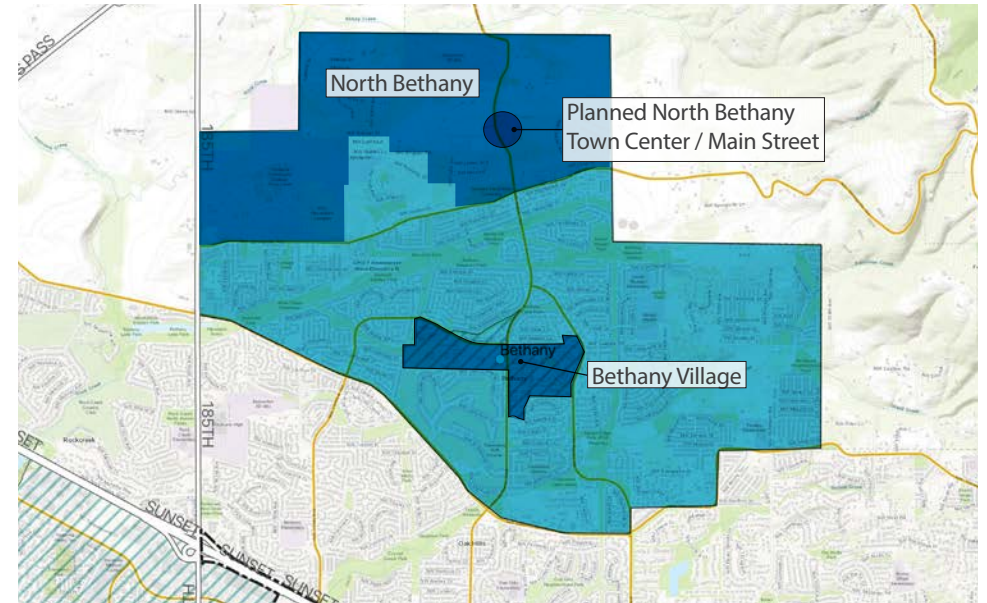
Size: 1,936 acres (875 acre North Bethany subarea)

Context: Geographically separated from Bethany Village. Surrounding areas to the north, east, and west are undeveloped and rural in character.

Housing mix: Detached dwellings, duplexes, rowhouses, main street apartment over retail, apartments

Neighborhood design: Different housing types centered around neighborhood town centers with focal points of civic uses and large natural stormwater treatment areas and powerline corridors.

Character of main street / town center: Limited mixed-use retail with apartments above surrounded by larger retail uses. North Bethany planned for mixed-use retail/commercial linking higher-density housing with parks/park block.



Introduction

Bethany Community Plan

The 1,936-acre Bethany subarea was added to the UGB in several installments to address the need for more housing in Washington County. The initial Bethany Community Plan identified five subareas within Bethany and designated a town center. The Community Plan designated comprehensive plan policies with maps and land uses for each of the five areas. Adopted in 1983, the Community Plan served as the basis for UGB expansions in 1992, 2000, and 2002. The County subsequently adopted a Unified Capital Improvement Plan to direct investments in public facilities and services to support new growth. A second community planning effort for the 875-acre North Bethany Subarea took place between 2006 – 2010 and was adopted as an additional chapter to the Bethany Community Plan in an effort to update the original vision and planning practices.

The vision for development identified residential neighborhoods set in the context of a few key natural features (Rock Creek, Bronson Creek, and Bales Pond). Primarily detached residential uses were spread throughout subareas, with a smaller concentration of commercial and retail uses and higher density attached dwelling units in the town center. Broad guidelines called for pedestrian and bicycle pathways allowing public access through neighborhoods. Individual design elements for each subarea articulated aspects of the vision.

Construction began in the 1990s. Since then the area has gone from 554 residents to roughly 22,350 residents. Washington County is the approval body,

using Comprehensive Plan land use designations, the Community Development Code, and the Community Plan vision to guide development. As part of their projects, developers funded and constructed needed road improvements. Land was annexed by the Beaverton School District and Tualatin Parks and Recreation District to provide services to new residents.

Bethany Village Town Center

The 16.46-acre town center was developed in 2002 by Central Bethany Development Company. Construction has continued until 2016 with one vacant lot remaining at a prime corner. The core of the town center is a block and a half main street lined with 3-story mixed-use buildings and a plaza with a fountain and tiered seating. The vision was of a walkable center with an urban lifestyle in a small-town atmosphere. The anchor tenant is the public library with a cluster of supportive educational and after-school uses in adjacent commercial spaces. Surrounding the main street are commercial and retail uses, including large format retail spaces and small commercial spaces. Higher density projects surround the main street, bridging NW Bethany Boulevard. The Town Center is served by one bus line offering weekday service. While the Bethany Village Town Center does serve as the civic core of the larger subarea, its prime function is as a regional shopping and service destination.

North Bethany Subarea Plan

Given that several different private developers built parts of Bethany with limited design guidance, the primary form of development has been isolated suburban neighborhoods. In response to these limitations, Metro sponsored the North Bethany Subarea Plan. Given the state of urban design practice, we have focused our analysis primarily on North Bethany.

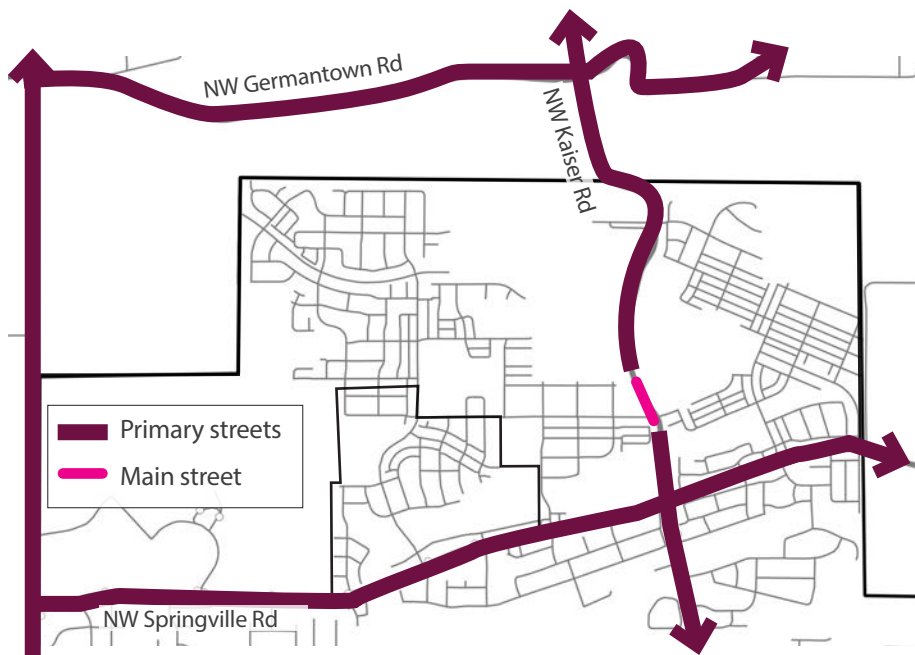
Located in the NE corner of Bethany, the vision for North Bethany is a more densely developed complete community with urban services. This includes several neighborhoods arrayed based on landforms (primarily

hilltop ridges) organized around two community parks and a neighborhood center. The design takes advantage of natural features and integrates stormwater treatment areas as defining open spaces that connect residents and users.

Key to the vision for North Bethany is a neighborhood center as a center of gravity along NW Kaiser Road. This 4-block long node is envisioned as a dense commercial district. The main street will be lined with mixed-use and high-density residential buildings. Prominent corner design elements will frame gateways, and a planned park block leading to a large community park will link residents through the neighborhood to the center. Given the importance of the center to the vision and its location on a high-speed regional arterial, the county led an urban design plan for the main street. Through several public charrettes the county developed detailed guidance that was amended to the North Bethany Plan. No retail has been constructed yet. It is anticipated that construction will begin in the next several years. Any new development will need to meet design standards for the main street area.

The vision is for 10,000 residents living in 4,000 dwellings. A range of housing types are permitted in base zones with minimum and maximum densities that include a bonus in the main street area of up to 32-40 units per acre. Development and design standards address building location and design. Standards are limited in scope though and no pattern books or typologies are used to implement the vision for a broad range of housing types and price points.

Construction began in 2013, with the first subdivisions beginning construction in 2015 and 2017. New street cross sections were adopted as part of the North Bethany Plan to introduce additional streetscape amenities while still meeting the minimum width of County Road Standards. Some developments have private streets however. The majority of neighborhoods are alley loaded with parallel parking on all roads but arterials. Bike lanes are limited to a few areas.



NETWORK

INTERSECTIONS PER SQUARE MILE (APPROX)

NA

BLOCK LENGTH

220 x 400 feet average

BLOCK PERIMETER

1,240 feet

WALK SCORE*

NA

*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS

18 - 20 foot alleys throughout; pocket parks and linear paths throughout

ARTERIALS

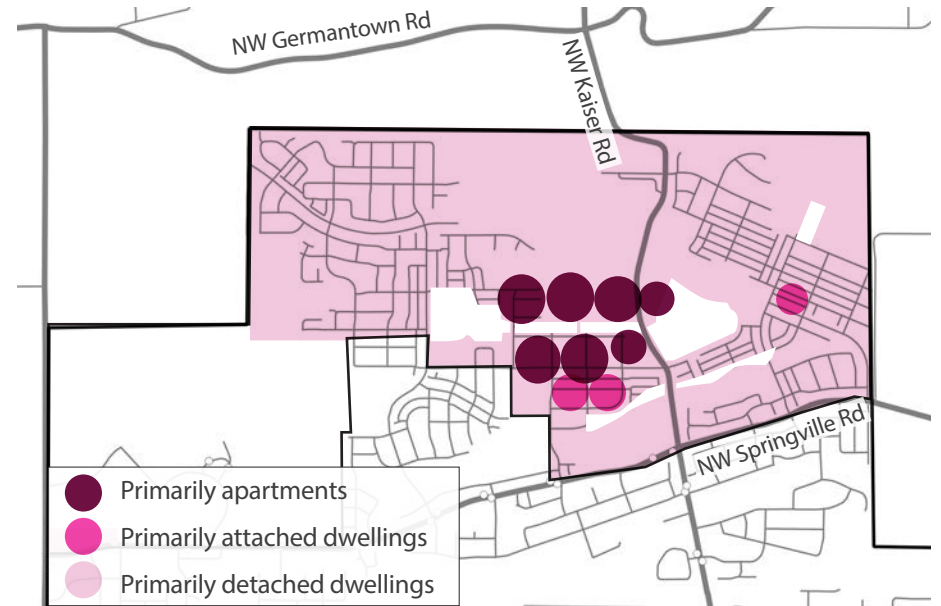
NW 185th Avenue (west boundary); NW Springville Road (south boundary); NW Kaiser Rd (bisect)

ARTERIAL CHARACTER

One lane in each direction with no shoulder. Bike lanes on NW Springville Road

TRANSIT SERVICE

Trimet Service Line 67 with frequent service to PCC along NW Springville Rd



DWELLINGS

PLANNED DWELLINGS

4,000

DWELLING DENSITY PLANNED

4.6 dwelling units per acre

HIGHEST DENSITY PLANNED

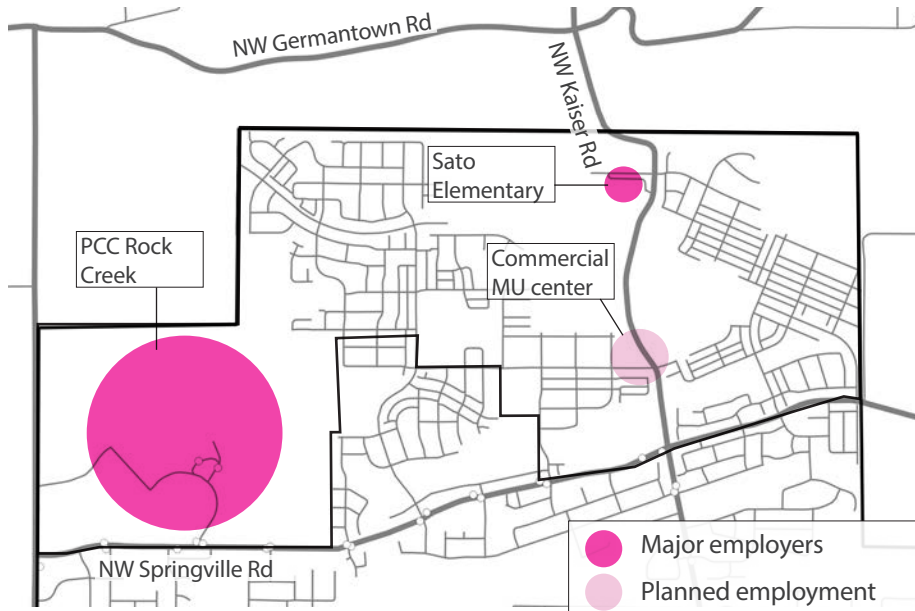
24 dwelling units per acre

LOWEST DENSITY PLANNED

5 dwelling units per acre

HOUSING MIX

Apartment, boulevard apartment, rowhouse, detached dwelling

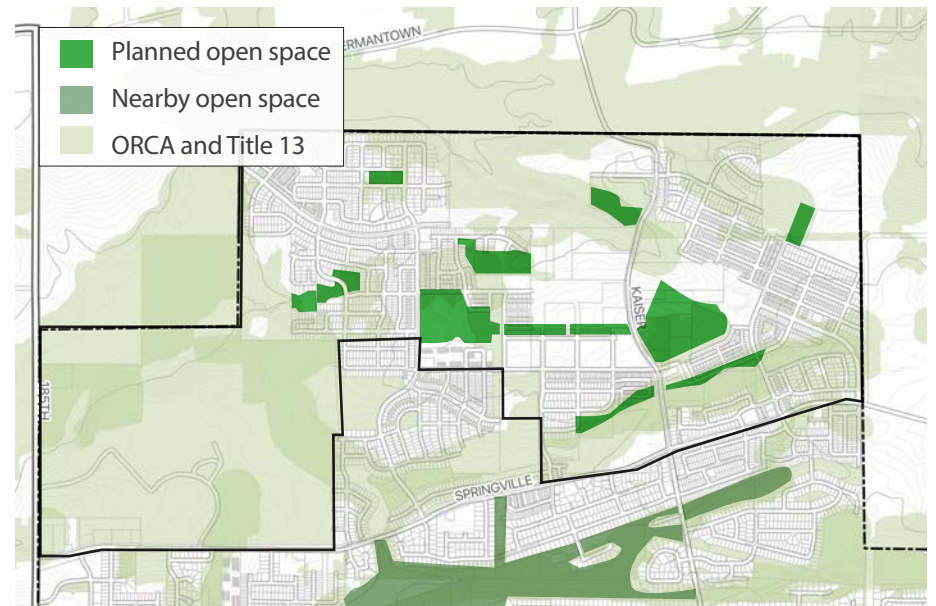


JOBS

COMMERCIAL
0 square feet

LIGHT INDUSTRIAL
0 square feet

CIVIC USES AND MAJOR EMPLOYERS
 PCC Rock Creek (260 acres), Sato Elementary School (9.5 acres)



OPEN SPACES

PLANNED OPEN SPACE
29 acres minimum

OPEN SPACE TYPES
 Open space, trail, linear, community, neighborhood

MUNICIPAL CONTROL
 THPRD

NEARBY OPEN SPACE
 Forest Park, Rock Creek, Bethany Lake Park

Design



Incorporation of natural areas

Critical to the design vision is the integration of “natural” open areas and parks and trail corridors. These pre-planned elements are two-fold - treating stormwater and offering open space areas. Large stormwater facilities buffer neighborhoods from one another while also functioning as secondary pathways. Links across arterials are limited however, as are connections to other regional trails and natural areas.



Diversity of housing

A broad range of housing types offer residents choice. Different types are designated through different land use zones with minimum and maximum densities. Density bonuses are available in the North Bethany neighborhood center. Housing types include detached homes (including narrow lots), duplexes, triplexes, quadplexes, rowhouses, and apartments. Variations in the placement and design of different types is primarily dictated by private developers.



Walkable, pedestrian-oriented streets

Streets are planned in a connected network. Neighborhood streets are alley-loaded with a continuous green strip, street trees, and parallel parking buffering the sidewalk. Adopted street design cross sections identify how to meet pedestrian and bicycle needs while still meeting county standards around travel width.



Focused community points of activity

Civic uses including the library, elementary schools, and parks serve as nodes. They define the center of activity in different neighborhoods while also serving as points where different areas are connected to make a larger community.



Connecting trail corridors

Multi-use trail corridors provide a secondary way for residents to connect between different neighborhoods east/west. They also offer a valuable recreational asset. New development in North Bethany will add additional trails, although connections to the existing system are limited given development patterns.



Parking design and amount

Parking for new higher density developments is located behind buildings. Development standards require separated pedestrian pathways that connect to entries. Parking standards are 1 per detached unit and 1.5 spaces per 2 or more bedroom units. Parallel parking is provided on all neighborhood streets.



Bethany

Town Center

The Bethany Town Center is a Metro-designated Town Center with retail and commercial uses serving the entire community of 22,000+ residents as well as the larger region. Large anchors include QFC and Walgreens. The town center was envisioned as a walkable village with a small town character. The core is a block-long main street lined with 3-story mixed use buildings with Main Street apartments over retail spaces. The town center serves as a civic heart with the library and plaza and fountain as gathering places. The development bridges both sides of NW Bethany Boulevard with commercial, retail, and residential spaces. Additional open spaces are planned for the west side of the town center. A wide range of housing types are provided. Roughly 1,500 residents live in the town center while 1,125 people work there. Despite its main street design, the primary function of the town center is as a retail destination.

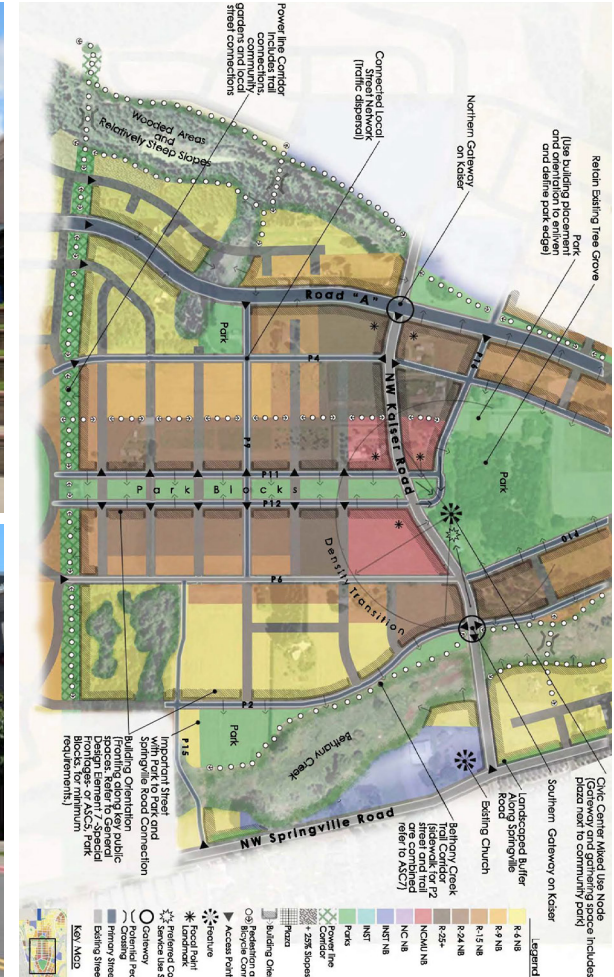
In contrast, the North Bethany Neighborhood Center is envisioned as a community-serving center connected to the surrounding neighborhoods. Community destinations include a park block, civic spaces/buildings, and high-quality pedestrian environment. The commercial center will be located in a highly visible spot along the arterial NW Kaiser Road. Smaller retail and office uses will fill mixed-use buildings and apartment buildings in a density range of 19 – 50 DUA. Key to implementation are adopted street sections for the main street area with wide sidewalks, bike lanes, and attractive streetscapes to mitigate the 102-foot width of NW Kaiser Road and facilitate crossing. A transit service plaza has been identified for future development if TriMet extends service.



Mixed-use buildings form a limited dense core in Bethany Town Center.



The plaza serves as a civic gathering space. Paths of all users cross, sometimes in competition with one another.



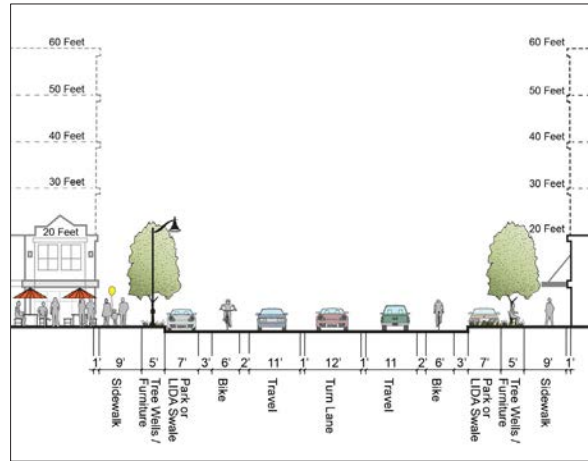
Plans for North Bethany's neighborhood center include linear park blocks and a revised cross section for the arterial serving as its spine.

Implementation

Adopted Street Cross Sections

The vision for North Bethany is a highly walkable and bikeable neighborhood with wide sidewalks, bike lanes, and attractive streetscapes. The plan balanced accommodating vehicles by targeting priority streets for the most pedestrian friendly design. These include the main street spine along NW Kaiser Road, the east-west streets running through the park blocks, NW Brugger Rd, and two future roads adjacent to the planned community park. A street design plan keys planned streets to specific design cross section types that were approved for the entire subarea. These cross sections meet the dual goals of the design vision for North Bethany and Washington County engineering concerns about public streets. They incorporate Low Impact Development Approaches (LIDA) to emphasize the role of stormwater treatment and green spaces throughout the subarea. A street tree program was also developed for all streets in the subarea with street trees classified based upon each neighborhood.

Fundamental to the success of the main street is a cross section that humanizes and bridges the large regional arterial. Cross sections for NW Kaiser Rd show a total right-of-way width of 102 feet. Different cross sections in the core of the neighborhood center, at the park, and on the periphery show variations in minimum building



Adopted Main Street cross section

height to frame the space. Setbacks to accommodate plazas and building entrances to stacked apartments are also shown.

Main Street Urban Design Plan

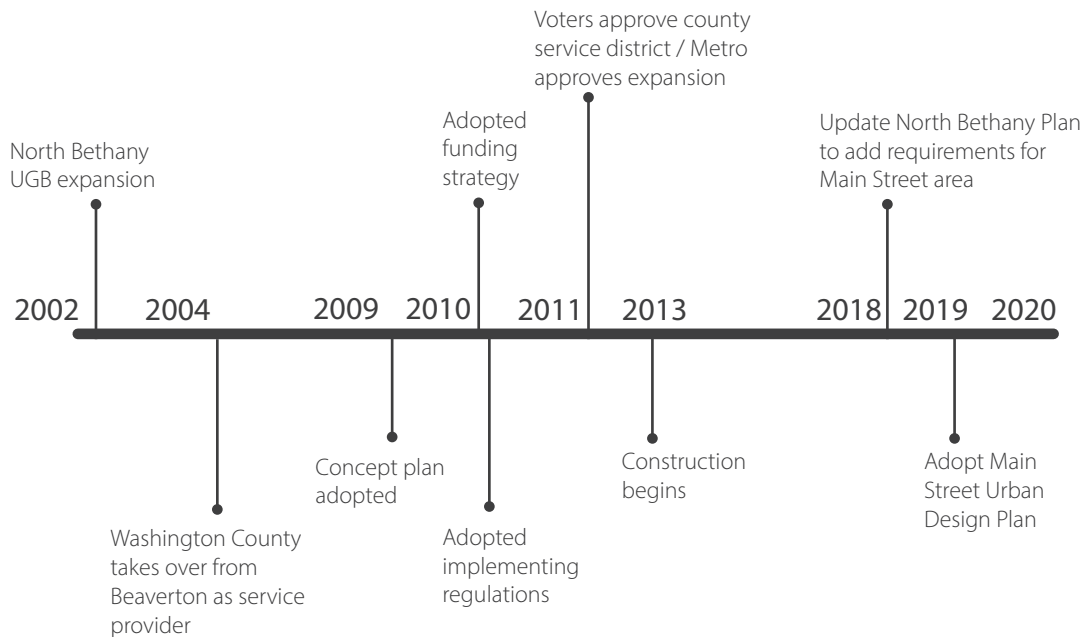
Through a planning effort that included several public charrettes, the county led an urban design plan for the North Bethany Main Street area. The intent was to guide how future development in this mixed-use area will look, feel, and function. As an outcome of this planning process, an urban design plan was adopted to amend the North Bethany Subarea Plan. Clear and objective design standards support zoned areas of Neighborhood Commercial Mixed Use (NCMU NB) and multi-dwelling zones (R-25+ and R-24) along designated priority streets. Development and design standards require buildings more urban in character that frame the street and encourage pedestrian



Land use zones and designated priority streets subject to design standards

activity. Buildings must have minimal setbacks, meet street frontage requirements, locate parking behind the building, have high levels of transparency, and driveways are limited or prohibited.

Urban design guidance recommends street design elements including a street furnishing palette, gateway treatments, and trail and park design. Cross sections (discussed above) illustrate what development could look like and include design guidelines. All development within the Main Street area will be reviewed at a public hearing and require at least one public design workshop.



Funding Strategy

Given the enormous increase in residents in North Bethany, the County faced the challenge of how to fund new infrastructure and services such as upgrading rural roads and extending water and sewer lines. According to an economic study, the estimated capital costs for North Bethany are \$520 - \$540 million in capital costs. After using bonds, grants, SDCs, and dedications by developers, a \$320 million gap remained. The County adopted a funding strategy establishing four revenue sources: 1) a county service district; 2) System Development Charges (SDCs); 3) a transportation development tax; and 4) a countywide property tax. This strategy splits the responsibility for costs across the county government, new residents, and private developers. The County subsequently adopted a Unified Capital Improvement Plan to direct investments.

THPRD waives SDC fees for developers building public park and trail facilities at their cost. The County likewise waives SDC fees for transportation upgrades. There has been some dissatisfaction expressed by developers that they are not reimbursed adequately. Developers and lenders have perceived this lack of certainty negatively and argue that SDC fees have been quite high per housing unit. Initial estimates by ECONorthwest put the cost at \$93,000 in SDC fees per house compared to average SDC fees in Washington County of \$14,600. These increases in costs to developers, along with higher property taxes for owners, have driven up the cost of individual homes and impacted affordability.

LESSONS LEARNED

- » If affordable housing is a desired outcome; targets and funding strategies must be identified and implemented to support its development.
- » Zoning for different densities does not ensure a range of housing types spread throughout a district. More specificity may be required by using prototypes or another tool.
- » A network of trails and paths needs to be connected throughout an entire development and to adjacent existing neighborhoods in order to successfully offer an alternative means to traveling by car.
- » Despite rigorous guidelines and development standards, it is challenging to create a main street spine along a regional connector given its width and traffic speeds.
- » Lacking more frequent intersection spacing, private development will continue to turn inward away from regional connectors.
- » Critical to town center success is a knowledgeable partner who has developed mixed-use centers
- » If parking for retail and commercial uses is not centrally managed and used as a shared resource, off-street parking may exceed the actual need and define the built form as auto-centric.
- » Stormwater management facilities can function as natural open areas and linear connections if integrated with trail system. Such a design not only provides a high quality public realm but also a distinctive identity for development.

Critical Success Factors

Purpose of this section

All of the case studies are examples of critical success factors at work. This section details several critical success factors and how they improve the performance of the case studies.

Whole community design

When planning the entire community and connecting it to the surrounding context, there are a number of larger networks or patterns to consider. The three most commonly considered ones are the street network, the natural systems network, and the scale of nearby or historic patterns of development. Connecting to the adjacent network, whatever it is, is key to having the planned development look, feel, and function as an extension of what is already there. This is key to creating a new development that is rooted to the location and feels like a place, not a project.

Planning at the neighborhood scale

When neighborhood blocks are smaller and woven together with a fine-grained network of streets, alleys, and paths, the walkability quotient goes up. This is a “metric for livability” that has been quantified by Walkscore and real estate professionals for the value that it adds to development. It has been codified by others, such as LEED for Neighborhood Development (a sustainability rating system managed by the US Green Building Council). Walkability is often measured by the number of intersections per square mile. Beyond the quantifiable value it adds to development, it also makes it possible to achieve a number of other goals such as: incorporating a wide variety of housing types, serving neighborhoods with transit, and increasing the number of street trees and citywide tree canopy. When jobs, housing, and open spaces are arranged within a walkable block-street structure, other urban vibrancy measures increase as well.

Neighborhood design

A critical success factor realized by all three case studies, but exemplified in Villebois and NorthWest Crossing, is the harmony achieved when there is an intentional relationship between buildings and nature, and when cars are present, but don’t dominate. There are a number of building, site, and urban design moves that can make a neighborhood feel more timeless. One is varied housing designs. Likewise preserving trees can make a new neighborhood feel like it has always been there. The value of mature trees has been measured by data experts in a wide variety of disciplines, from those in health and equity to real estate experts.

Main Street and Town Center design

As with neighborhood design, there are a number of building, site, and urban design moves that can make a main street or town center feel more timeless. These include traditional storefront design, pedestrian-oriented street design, care about where parking is located, and coordinated streetscape and street furniture. The importance of managing parking in a town center or main street cannot be overstated. Every extra place for a car means less space for people. In a town center the majority of public space should be dedicated to use by people, or the level of urban vitality goes down. More people attract more people. Managing parking means housing can be more affordable, as can retail spaces, and mixed-use development becomes financially feasible. As cities have discovered through the COVID-19 pandemic, flexible street space that can be converted from use by automobiles to use by people and businesses can help the local economy while keeping people healthy.

Whole community design

- » Bringing nature in
- » Integration of open space
- » Feathering of edges
- » Neighborhood units
- » The way housing faces major streets (doesn't turn its back)
- » Context sensitive design of major streets
- » Variety of street types and a context sensitive design approach
- » A complete street and path network
- » Prioritizing non-auto modes of travel
- » Accommodating regional transit

Main Street and Town Center design

- » Main street character
- » Managing parking
- » Signage, lighting, street furniture and town center identity

Neighborhood design

- » Varied designs of housing
- » Preserving older trees
- » Alleys
- » Universal block (to accommodate all forms of middle housing)
- » Feels like a neighborhood not a subdivision
- » Natural environment reflected in the materials and design of the public realm

Planning at the neighborhood scale

- » Block size, block permeability
- » Walkability (and universal design)
- » Arrangement of land uses
- » Vital uses in proximity
- » Mix of housing / housing choice
- » Considering the entire tree canopy

Critical success factors:

- » Main street character
- » Block size, block permeability
- » Walkability (and universal design)
- » The way housing faces major streets (doesn't turn its back)
- » Context sensitive design of major streets
- » Variety of street types and a context sensitive design approach
- » A complete street and path network
- » Prioritizing non-auto modes of travel
- » Accommodating regional transit

Variety of street types and a context sensitive design approach

Each of the case studies employs the technique of creating a network of new streets and paths within the planned development that are not subject to the state or county regulations. State and county regulations tend to prioritize auto and transit travel on regional arterials and highways. They are often at odds with local goals for walkability; bikeability; small block size; use of curb space for parking; and sidewalks for retail, outdoor dining, or merchandising. Since internal street types are not subject to the same rules which apply to arterials, they are able to accommodate frequent intersections, frequent pedestrian crossings, continuous plant strips and streets trees, and even on-street parking.

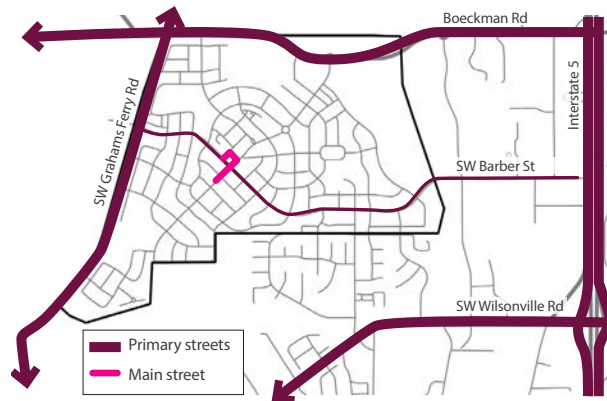
In each Case Study one of these interior streets functions as a community oriented "main street." In North Bethany it is NW Kaiser Rd; in NorthWest Crossing it is NW Crossing Drive; and in Villebois it is Villebois Drive.

Typically the main street design looks and feels like a traditional small town downtown street, and everything about the scale of the streetscape is designed with the pedestrian in mind. The Villebois main street goes further and employs a curbless street design where the plaza and the street blend seamlessly, and bollards, not curbs, mark off the area for cars. The exception to this practice is North Bethany, where the "main street" is roughly a quarter mile-long segment of NW Kaiser Road, which is a Washington County Arterial.

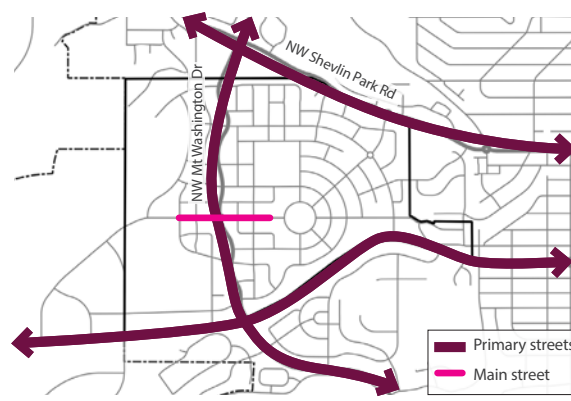
When a street is subject to county or state regulations, strive to make the street a connection rather than a barrier. In NorthWest Crossing, Mt Washington Drive is a good example of a major region-serving thoroughfare that has a human scale and is walkable and attractive. High value real estate addresses Mt. Washington rather than backing on to it. In King City, SW Beef Bend Road may never be a "main street," and it may serve high volumes of traffic, however it can still be designed to connect Tigard River Terrace South and King City rather than separate them.

Keep vehicle speeds low through design measures, not by posting speed limits. Provide frequent protected crossings for pedestrians and bicyclists, create an environment that development is interested in facing, rather than turning away from, and provide generous landscape buffers, including street trees. Separate and buffer the walking and bicycle lanes from the vehicle lanes. Where there is a center turn lane, minimize the lane length at intersections. Landscape or eliminate the center lane when there is no need for turning movements. When crossing a slope, separate and terrace paved lanes to minimize cut and fill. The URA 6D Concept Plan promoted a number of context sensitive design strategies for SW Beef Bend Road. These are equally applicable to SW Roy Rogers Road within the vicinity of King City and Tigard future urban areas.

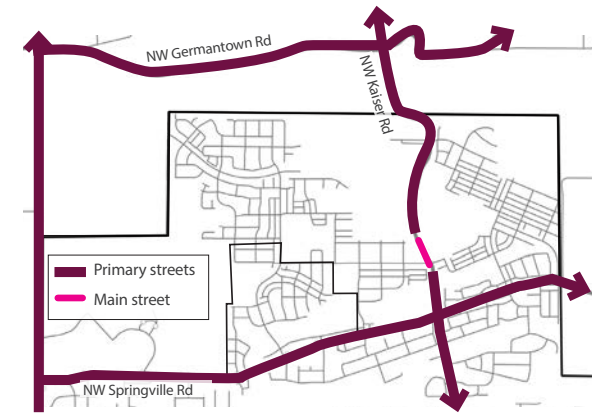
Villebois Drive (Villebois)



NW Crossing Drive (NorthWest Crossing)



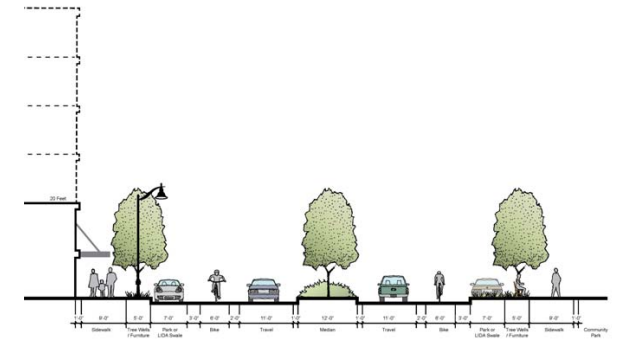
NW Kaiser Road (North Bethany)



Villebois' main street employs a curbsless street design where the plaza and the street blend seamlessly and bollards, not curbs, mark off the area for cars.



NorthWest Crossing's main street looks and feels like a traditional small town downtown street, designed with the pedestrian in mind.



In North Bethany, the planned "main street" is a roughly quarter mile-long segment of NW Kaiser Road, which is a Washington County Arterial.

Critical success factors:

- » Integration of open space
- » Feathering of edges

Bringing nature in

Each of the case studies incorporates natural areas into the planned development. North Bethany, with its promenade park along the stormwater facility, is an especially good example of making natural systems a focus of the community. However, the best example of full integration of natural areas is Villebois. The development is designed around a flowing series of open spaces that connect to the larger regional natural areas such as Coffee Creek and Coffee Lake wetlands. Of all the green space that has been incorporated into the community, the greatest share is in natural areas.

“While restoring the historic drainage pattern of the predevelopment site, the plan also adapts the form and organization of the landscape and urban design elements (e.g., parks, street medians, and planting strips) and natural areas to serve stormwater management functions, including conveyance, infiltration and detention.”

(Skinny Streets & Green Neighborhoods, Design for Environment and Community, Cynthia Girling and Ronald Kellett, 2005)

One of the key features of Villebois are the common greens. Homes front onto and share a green space rather than a street. This was considered a highly unusual design at the time of development in the mid-2000's. Homebuilders overcame their skepticism and common greens are now found in many new subdivisions and neighborhoods, and cities have amended land division requirements to permit them.



Villebois



Villebois



NorthWest Crossing



NorthWest Crossing



Villebois

Bringing nature in



Bethany



Bethany



NorthWest Crossing

Critical success factors:

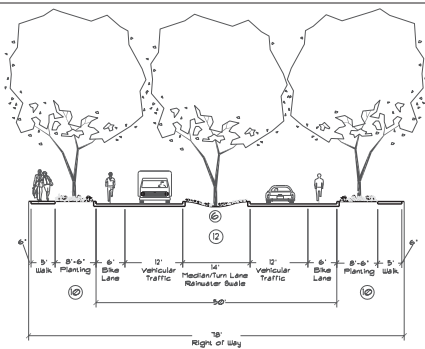
- » Context sensitive design of major streets
- » The way housing faces major streets (doesn't turn its back)

Major streets are attractors not barriers

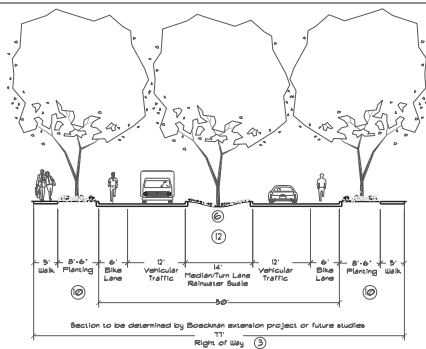
In each Case Study, communities' major streets — where they run along or within the planned development — are designed like streets rather than highways. They become a contributing part of the neighborhood and city rather than an impassible barrier or border. Housing and active retail front on and are oriented toward the street, instead of turning away.

A major region-serving street in Bend, Mt Washington Drive, runs north-south through NorthWest Crossing. The design of the street makes it possible for homes to front on the arterial. Enfronting blocks have alleys rather than driveways. Each block face on Mt Washington has a parking pocket that allows limited on-street parking. In addition, regular intersections and pedestrian crossings are essential in preventing this major street from acting as a barrier. Intersections are every 300 - 500 feet and mid block crossings with protected places to stand at the median create safe options for pedestrians.

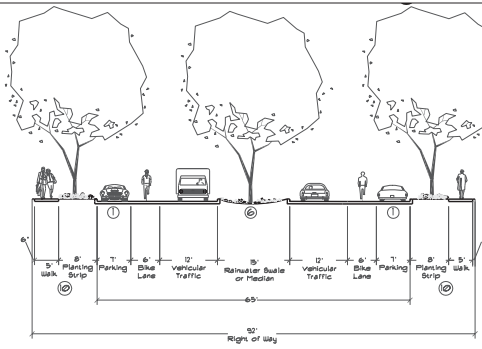
Arterials and collectors in Villebois have a planted median, full sidewalks, plant strips, and bike lanes. In certain areas the street design trades the planted median for on-street parking. In both Villebois and NorthWest Crossing where major streets intersect, roundabouts are used to manage auto traffic instead of signalized intersections.



A. Minor Arterial with Median
Scale: 1" = 20'
(TSP Figure 4.20)



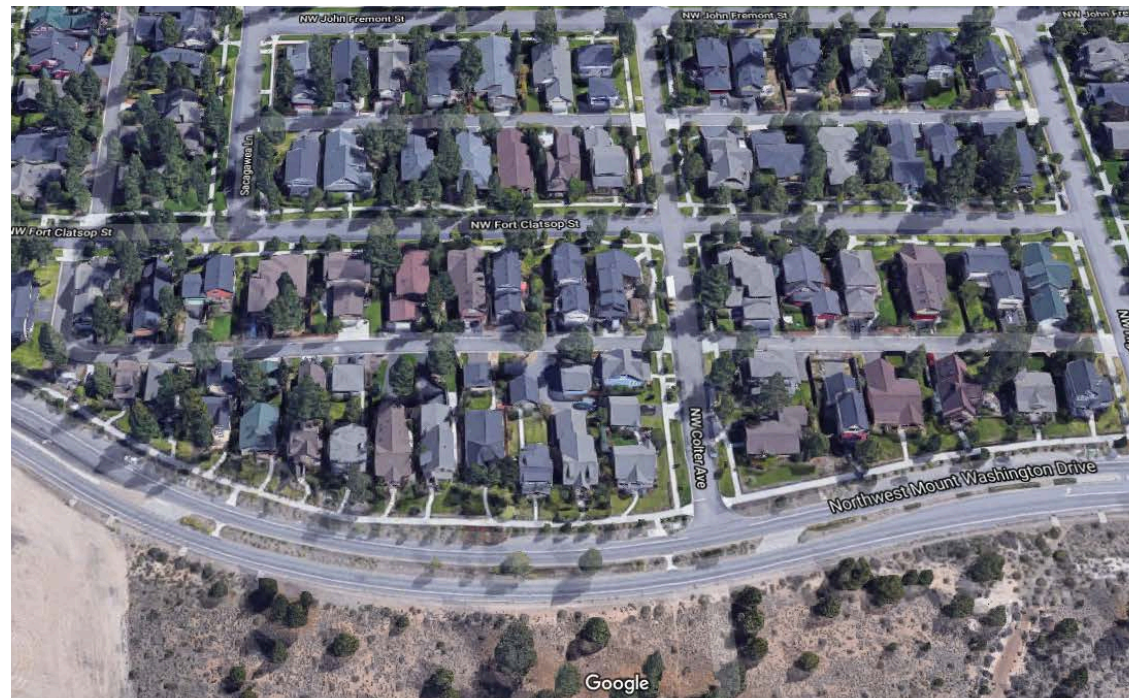
B. & C. Minor Arterial / Major Collector
Scale: 1" = 20'
(TSP Figure 4.20 & 4.18)



D. Major Collector with Median
Scale: 1" = 20'
(TSP Figure 4.19)



Arterial and collector street sections, Villebois.



Houses fronting on Mt. Washington Drive, NorthWest Crossing.

Street variety

Variety of street types and context sensitive design approach



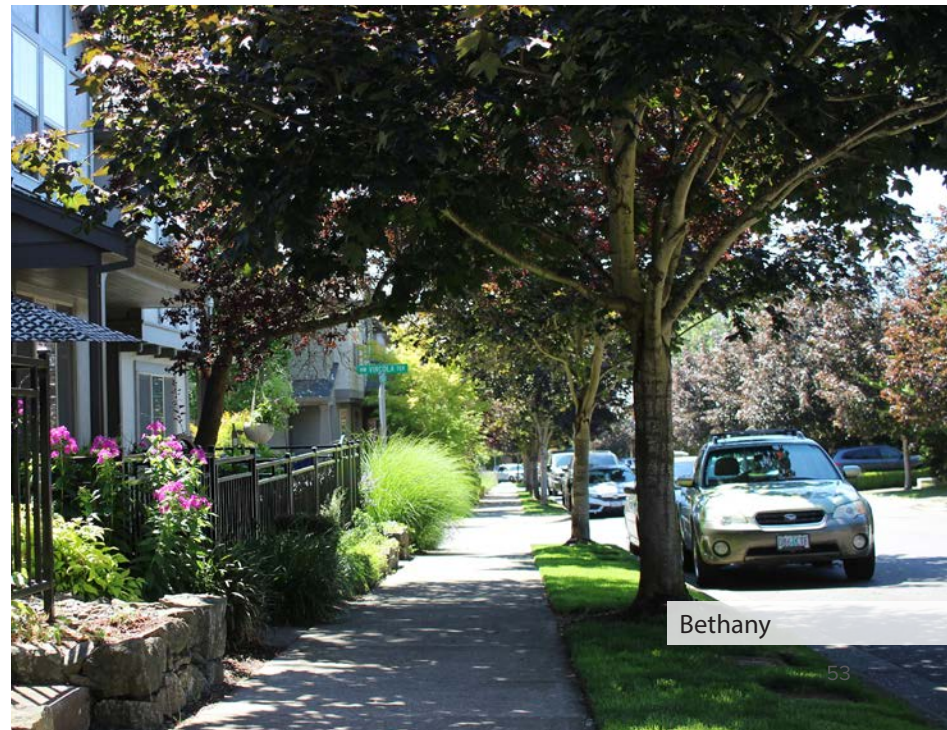
Villebois



NorthWest Crossing



NorthWest Crossing



Bethany

Town Center identity



Bethany



NorthWest Crossing

Signage, lighting, street furniture and town center identity



NorthWest Crossing



NorthWest Crossing



Villebois



Villebois



NorthWest Crossing

Housing variety



Villebois



Bethany



Bethany

A mix of housing types and varied designs of housing



NorthWest Crossing



NorthWest Crossing



NorthWest Crossing