

Section 11 of Ordinance 2271

Exhibit K

New Urban Form Report, Appendix M to the Bend Comprehensive Plan



URBAN FORM BACKGROUND REPORT

July 2016





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1. PURPOSE

The Urban Form Background Report describes Bend's present urban form as a supplement to and in support for the Bend Urban Growth Boundary (UGB) Remand Project (the Project). This report summarizes work completed during Phase 1 of the Project. It outlines important causes and relationships to help inform how the city will grow and change in the coming years based on the desires of the community. The Urban Form Background Report is intended to:

- Document the urban form analysis that was completed as part of the initial phase of the project;
- Help understand how factors influencing past development have shaped Bend;
- Characterize the city's urban form today; and
- Provide a reference document to inform aspirational discussions of Bend's future urban form through the comprehensive planning process that is currently underway.

Document Organization

This document is organized in the following four sections, beginning with an overview of Bend's urban form context, followed by a summary of the existing urban form typologies, concluding with ideas for future growth and integration with further planning.

- **Section 2:** Urban Form and Complete Neighborhoods, provides a definition of the important concepts used to define and apply the urban form typologies.
- **Section 3:** Community Identity and Urban Form Context, provides a physical description of Bend today, focusing on the elements that influence its urban form, including natural features, public spaces, the transportation network, and existing neighborhoods.
- **Section 4:** Development Typologies, defines each typology, consisting of neighborhoods, centers and corridors, employment districts and public facilities.
- **Section 5:** Future Growth Considerations, presents implications of Bend's existing urban form on future development as it relates to the project.

TERMS USED IN THIS DOCUMENT

- **UGB Remand Project (the Project):** The City of Bend's Urban Growth Boundary (UGB) Remand Project.
- **The Project Team:** The consultant team responsible for carrying out the project. This includes individual consultant firms led by Angelo Planning Group (APG), and City staff involved in managing the project.
- **Urban Form:** The study of the city's physical design, use of space and arrangement of land uses.
- **Typologies:** A classification system used to describe and organize commonalities among a larger and more complex system.

Project Goals

The UGB Steering Committee approved Project Goals to provide comprehensive direction for the overall planning effort and its desired outcomes, and to address the overarching question: “How should the city grow?” Each goal informs a range of concepts that will shape Bend’s future urban form.

Project Goals*	Urban Form Concepts
A quality natural environment	<ul style="list-style-type: none"> Nature frames and weaves through the city
Balanced transportation system	<ul style="list-style-type: none"> Streets, paths, bikeways and places for people The city’s street system is connected and legible
Great neighborhoods	<ul style="list-style-type: none"> Walkable neighborhoods define residential areas of the city Small mixed-use neighborhood centers and activity centers are integral to every neighborhood
Strong active downtown	<ul style="list-style-type: none"> Downtown is Bend’s best mixed-use center—the heart of the city
Strong diverse economy	<ul style="list-style-type: none"> Employment areas are identifiable districts within the city
Connections to recreation and nature	<ul style="list-style-type: none"> Connections to recreation and nature weave throughout, and outside of, the city
Housing options and affordability	<ul style="list-style-type: none"> Many housing types are integrated into neighborhoods throughout the city High density housing is focused in areas with transportation options and access to services
Cost effective infrastructure	<ul style="list-style-type: none"> Growth is focused in areas where it can be efficiently served with infrastructure, including areas with existing services and capacity

* Approved by Urban Growth Boundary Steering Committee in September 2014

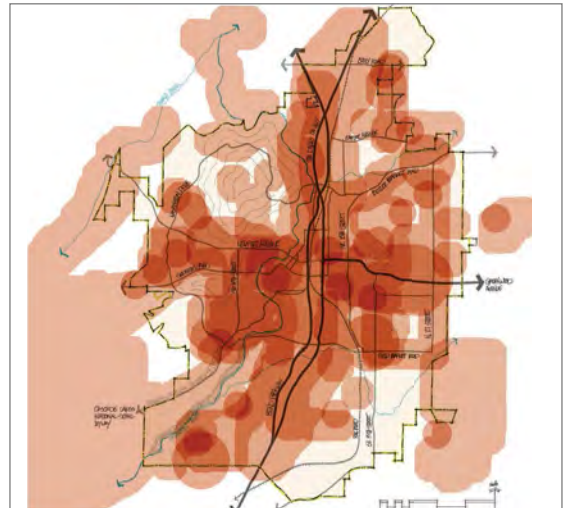
Approach

The approach to characterizing Bend's existing urban form consisted of three general steps. During each step, the planning team worked collaboratively with the City to verify on-the-ground conditions and fact check locations and descriptions as typologies emerged.

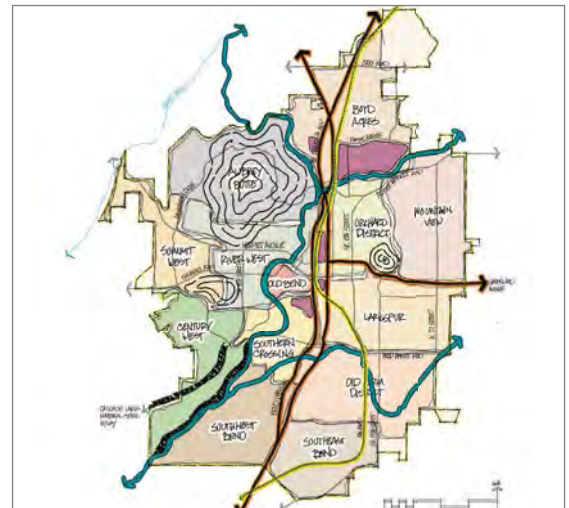
- 1. Project Goals and Data Gathering:** The Project Goals served as an initial guiding framework toward developing both the urban form study and the criteria used in the urban form analysis. Using recent GIS data, the planning team then generated layers of city-wide information, including land use and zoning, employment type and property ownership. The larger project team helped to identify data related to the existing transportation network, development opportunities (Buildable Land Inventory), future growth (Housing Needs Analysis), and review of existing plans, policies and systems (parks and schools, public facilities, etc.).
- 2. Analysis and Preliminary Typologies:** The urban form analysis was built on an iterative discussion with the project team, City staff, and project committees. A closer look at Bend's existing neighborhoods reveals unique patterns and characteristics across the City. The project team studied Bend's existing urban form through a range of conditions depicted in these map examples. This analysis formed the basis of the typologies described in Chapter 4.

MIG provided frequent updates to inform the team, then incorporated feedback and additional research to refine and improve the analysis. During this step, the preliminary urban form typologies were used to identify opportunity areas for redevelopment within the UGB, and to inform the development of the Efficiency Measures; two tasks that occurred later in the process.

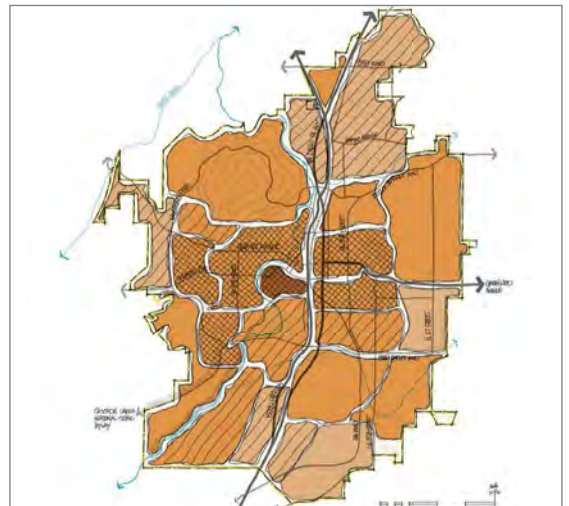
AMENITIES AND WALKING/BIKING DISTANCES



CONNECTIVITY BARRIERS



CONNECTED AND COMPLETE NEIGHBORHOOD TYPOLOGIES



3. Review and Refinement: The project team presented preliminary urban form factors and typologies to the technical advisory committees for review and refinement, followed by additional discussion at the Current UGB Workshop in December 2014. The workshop served to test and confirm final changes to the urban form typologies within the existing UGB.



The Current UGB Workshop event held in December 2014

2. URBAN FORM AND COMPLETE NEIGHBORHOODS

What is Urban Form?

The process for examining Bend's existing land uses and neighborhoods included a study of its existing urban form. Urban form encompasses the physical shape and design of a city, comprising both natural and built environments. The layout of Bend's streets, location and design of homes and businesses, and distances between destinations all inform the city's urban form and directly affect the quality of life for residents. Urban form influences land values; where residents live, work, shop and relax; everyday travel choices; and whether commute trips can be made by walking or biking, using transit, or driving.

Everyone experiences urban form of a city in different ways. A small group of shops and cafes centered on a street intersection or along a street corridor can define an entire street or business district. The sidewalk cafe provides a convenient place to eat. Outdoor seating becomes an opportunity to meet and talk with friends or conduct business. Storefronts and sidewalk displays provide advertising and also serve as landmarks for orientation. All of these characteristics combine to create a place that is active, welcoming, and memorable.

Bend's urban form also directly affects natural systems such as air and water quality, health, and diversity of plants and wildlife. Street trees, landscaped medians and roundabouts provide a green and living contrast to the street and building facades. Impervious surfaces such as streets, parking lots, and rooftops require design solutions and space that store and treat water run-off before it is conveyed to streams and rivers. While an integrated natural and built urban form can create sustainable, memorable, and lasting places, development choices that result in greater distances between homes, jobs, and services can increase travel distances, increase traffic congestion, and negatively affect air and water quality.



Top: Central Bend's street network and connectivity
Bottom: Downtown Bend and Mirror Pond

Complete Neighborhoods by Design

The planning process also included an assessment of efficiency measures for maximizing the use of land with an emphasis on creating complete neighborhoods. Complete neighborhoods are a characteristic of good urban form. They have many of the essential services and amenities needed for daily living, all within a convenient walking or biking distance (generally defined as a ¼- to ½-mile distance). Complete neighborhoods include quality public schools and varied housing options. Existing complete neighborhoods in Bend include the tight-knit collections of homes, shops, parks, and schools that form the Old Bend or River West neighborhoods. These neighborhoods are highly regarded by residents and visitors alike for their compact, walkable nature and their easy access to parks, trails, natural areas, neighborhood-oriented shops, and restaurants.

Convenient access to public transportation is another key ingredient of a complete neighborhood. Transit oriented development featuring a mixture of housing and retail near public transit corridors, or development areas with shorter distances to nearby services and amenities can result in entire neighborhoods that are transit supportive. For example, locating a major new employment center within a ¼ to ½-mile from parks, trails, and services would encourage active transportation for workers to make quick trips by walking, biking, or transit.



Top: Mirror Pond provides nature within proximity to Downtown
Middle: Attached townhomes allow for moderate density housing
Bottom: Dining options create a complete neighborhood

3. COMMUNITY IDENTITY AND URBAN FORM CONTEXT

Bend's identity and unique urban form context stem from the city's evolution of natural and constructed forces. Natural features such as the Deschutes River and Pilot Butte create inherent boundaries for growth, limiting where and how development can occur while creating opportunities for scenic and recreational resources. Natural features can also provide opportunities to define a positive urban form as Bend has done by integrating residential areas within and near parks, open spaces and trails. While a river is still a barrier for travel, its positive impact and potential as a defining resource within a community provide a strong identity and potentially beneficial constraint within Bend's urban form.

Constructed features, including busy arterials such as Highway 97 or the city's many irrigation canals strongly influence the pattern and design of city streets, allowing new growth to occur in areas that were previously inaccessible. These same elements can also create barriers in and through the city that limit transportation access and connectivity, generate noise or visual blight, or cause fragmented or isolated development patterns. The composition of Bend's neighborhoods are also central to the city's identify, livability, and quality of life. Each neighborhood has a unique story based on a combination of natural and built forces, leading to a patchwork of places with different architectural styles and shapes, street designs, and densities.

The following provides a more detailed overview and discussion of how topography and natural form, public realm, transportation and connectivity, and existing neighborhoods and density influence Bend's urban form and community identity.



Top: Mixed-use development with office, retail and residential
Bottom: Attached townhomes oriented towards street front

Topography and Natural Features

Bend's changing topography and abundant natural features are major influences in its existing urban form and identity as a city. In many ways, the city's rapid growth is a direct result of its natural and scenic beauty and proximity to the outdoors. Bend is uniquely situated between the Cascade Mountain Range and Deschutes National Forest to the west, and high desert plains to the east. The area of the city that falls on the eastern side of the Deschutes River is generally level, while land west of the Deschutes has more varied topography.



Mt. Bachelor and the Three Sisters create a scenic backdrop of snowcapped peaks, separated from the city by only about 20 miles and a relatively gradual change in elevation from 3,600 feet to 10,000+ feet. When entering Bend from the north, Aubrey Butte can be seen rising above the surrounding landscape, serving as a focal point and organizing feature: its presence serves as a visual gateway to Bend and a wayfinding landmark to navigate around the city. The gradual slope of the butte has allowed for surrounding housing development. As a contrast, Pilot Butte—an extinct volcano east of Bend—is protected as state park land, limiting development potential along its base.

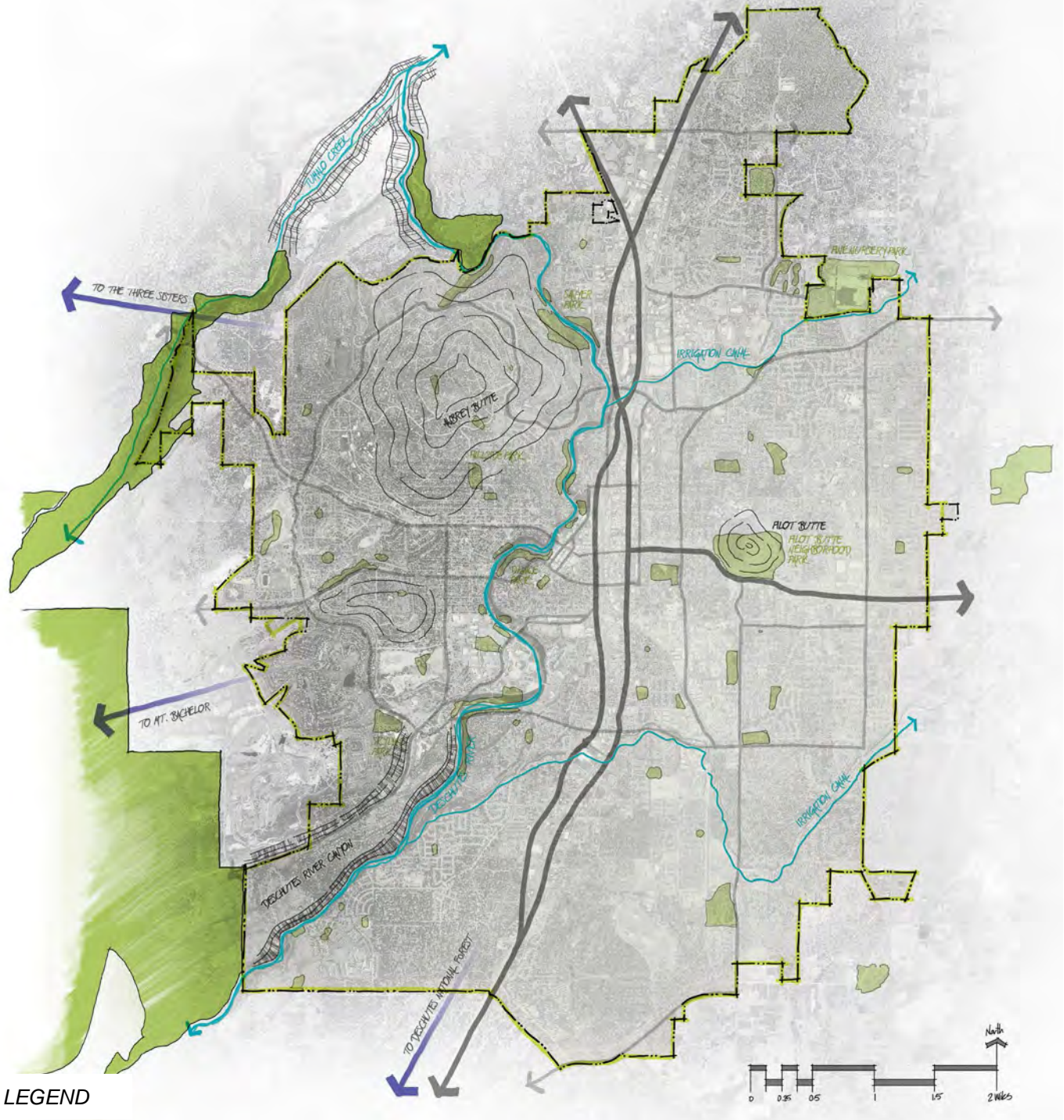


The Deschutes River meanders its way north through the center of the city, eventually forming a wide and slow moving water body (known as Mirror Pond) due to a hydropower dam to the west of Downtown. At its southern extent within the city limits, the river canyon is steep, with dramatic, terraced rock outcroppings along its western edge. Along its eastern edge, the river bank is more gradual and has allowed for lower density residential development in the southern portion of the city. To the northwest of Bend, Tumalo Creek runs just outside of the city limits before its confluence with the Deschutes River to the north of Bend. The City of Bend preserved a section of the creek within the 652-acre Shevlin Park.



Top: View of Sisters Mountains from Bend
Middle: View of Pilot Butte in eastern Bend
Bottom: Rafters on the Deschutes River

TOPOGRAPHY AND NATURAL FEATURES



- LEGEND**
- City Limits
 - Urban Growth Boundary
 - River/Stream
 - ==== Rail Road
 - Major Arterial/Highway
 - Minor Arterial
 - Major Topographical Features
 - Viewshed Lines
 - Park/Open Space
 - Deschutes National Forest

Bend's natural waterways are complemented by the irrigation canals, diverted from the Deschutes River and running north and east of the city. The system consists of two main canals: the Pilot Butte Canal (running north) and the Central Oregon Canal (running east). The canal system was designed to convey water to municipal and industrial users throughout the region and is managed by the Central Oregon Irrigation District. Dating back to the early 20th Century, the canals are an intact part of Bend's early history and continue to operate today.

Public Realm

Spaces that fall within the public realm provide defining attributes of Bend's urban form and key ingredients of complete neighborhoods. Parks, trails, open spaces, public streets, and sidewalks shape the physical environment and provide places to play, recreate, connect, learn, and socialize. Parks and open spaces bring nature into the city by providing green areas for public enjoyment, protecting valuable wildlife habitats, and strengthening natural system functions that improve air and water quality. Public streets, sidewalks, and trails provide corridors for transportation, as well as areas for celebrations and gatherings such as parades and demonstrations, community events, temporary markets, and neighborhood block parties.

Bend's unique setting and topography have shaped many of its most important and iconic public spaces, including Riverbend Park along the Deschutes River and Pilot Butte State Park, a highly visible landmark that adds to a sense of place throughout the city. The size and scale of Bend's public places vary widely, from the sprawling Pine Nursery Park in northeastern Bend, to the public art installations in many of the city's round-abouts. Larger community spaces like Pine Nursery Park draw a wider range of users, creating traffic, noise, and crowds during peak use times. Smaller neighborhood spaces like Bend's neighborhood parks attract nearby residents and create informal places to play and gather in small groups.



Top: Event at Drake Park
Middle and Bottom: Using streets as places for public gathering

PUBLIC REALM



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network
- Park/Open Space
- Golf Course
- Trails
- Deschutes National Forest

One of Bend's most popular and iconic parks, Drake Park, is a major focal point of the city and central to community life. The park's proximity to Downtown provides a unique backdrop and asset, creating a unique sense of place while adding to the range of amenities and attractions all within a short walk from the city's core. Sites with private or semi-public uses can complement the the public realm, drawing visitors and attracting new residents while providing outdoor activities and contributing to the local economy. Local examples include Bend's many golf courses, as well as the Les Schwab Amphitheater, which is built along the Deschutes River Trail and attracts thousands of visitors through music and art, providing a nexus of public activity during many events throughout the year.



While Bend's streets move thousands of people through the city each day, their interface with the private realm—the street front—can advance or hinder the creation of welcoming and walkable places. Busy arterials such as NE 3rd St., with set-back buildings and narrow, curb-tight sidewalks can create noisy and unwelcoming environments for pedestrians and cyclists. In Downtown, streets such as Wall and Bond, where buildings are closer to the street, offer a more pleasant environment for pedestrians, with tree lined sidewalks, slower vehicle speeds, and a concentration of retail, shopping, and nightlife. In many of Bend's neighborhoods, local streets are quieter than main streets, and are more often used for walking, biking, and playing. Bend's alleys are also part of the public realm, and are often underutilized spaces, mainly relegated for trash collection and garage or service and delivery access.

Top: Small and large private plazas and facilities add to offerings of the public realm
Bottom: Miles of trails extend into surrounding forests in and around Bend

Bend's interconnected system of trails provides a convenient and safe way to walk or bike across the city. Trails take two general forms in Bend: natural surface trails that exist in many of Bend's parks and extend along the Deschutes River, leading into the surrounding forests; and paved pathways found along side streets or that depart from the street grid to create pedestrian and bike friendly connections between neighborhoods and destinations.

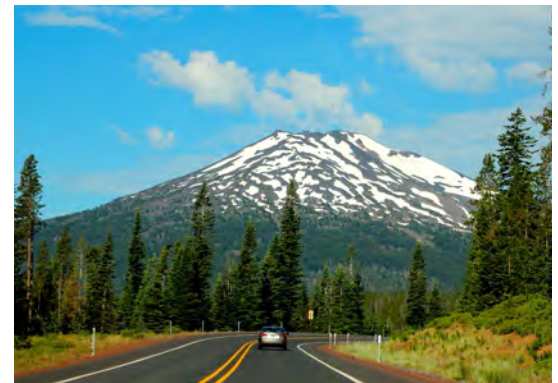
TRANSPORTATION NETWORK & CONNECTIVITY

Key transportation thoroughfares designed to carry large vehicle volumes connect Bend with other major regional destinations. They also have a major influence on Bend’s identity, as they offer views of the surrounding peaks along the Cascade Range as one travels through the city. Highway 97 is a major north-south highway that carries thousands of people in and around Bend every day. Highway 20 is another major highway that generally runs east and west. Within Bend, it digresses from its usual east-west course to travel alongside US 97 for several miles before heading west again. Within Bend, Highway 97 and Highway 20 have lower posted speed limits than outside the city limits. Rail lines carrying freight trains also run parallel to Highway 97.

As physical elements in the urban landscape, highways consume large amounts of space—with their combined right-of-way, access ramps, and landscaped buffers, they reduce pedestrian and habitat connectivity across east and west Bend. This barrier is more pronounced in places where Highway 97, Highway 20 and the rail line run parallel for at least three miles before reaching Downtown. While the highways have played a major role in urban form by attracting concentrations of commercial development, as seen with retail and employment uses all along Highway 97 within the city limits of Bend, many of those uses are auto-dependent.

Arterials

Arterial roads such as Reed Market Road, 27th Street, Newport Avenue and Butler Market Road collect traffic from highways and funnel them to other smaller streets. Several arterial corridors in Bend are distinctive due to the access they provide to surrounding recreational destinations and the signature views they offer of the surrounding Cascades. Century Drive (Cascade Lakes National Scenic Byway) provides views of Mount Bachelor, with access to the many lakes along the Cascades and also to reservoirs along the upper Deschutes River. Several smaller and local streets create a unique and memorable sense of place.



Top: Public art at the Butler Market Road and 8th Street round-about
Bottom: View of Mount Bachelor from the Cascade Lakes Highway

The city's roundabouts are a very distinctive feature that create identity in the landscape and help shape the urban form of Bend. Roundabouts like those along Newport Avenue and Reed Market Road calm traffic while also serving as neighborhood gateways and community focal points with public art installations. Green street designs like 27th Street have medians that provide additional landscape and stormwater mitigation benefits. Mount Washington Drive in west Bend and Butler Market Road in east Bend are distinctive due to their "off the grid" alignment or meandering configurations. These streets, with their substantial traffic volumes, varied configurations, and unique designs offer wayfinding functions in addition to their transportation service.

Public Transit

Bend's bus routes and future transit development will play an important role in enhancing connectivity and providing additional organizing elements for the city's evolving urban form. At present, Cascade East Transit routes radiate from Downtown Bend along north-south and east-west directions along 3rd Street, 27th Ave, Newport Avenue, Franklin Avenue and Reed Market Road. The public transportation system also enhances community livability and supports neighborhood centers. Complete neighborhoods and future commercial centers and corridors should be linked to public transit routes to support desired urban form typologies.

Non-Motorized Trails

Bend's trail system is essential to creating complete and connected neighborhoods because it provides recreation opportunities and non-auto transportation options, and contributes to the economical vitality of a community. Bend has over 65 miles of trails that consist of bike routes, on- and off-street paths, and wide sidewalks. Together, these different types of trail facilities create a network that makes neighborhoods walkable and bikeable and ultimately reduces reliance on driving, in addition to providing a recreational amenity. Bend's trails guide both visitors and residents through different neighborhoods, to employment districts and commercial areas, and towards the surrounding parks and natural areas.



Top: Cascade East Transit provides convenient public transportation service in Bend
Bottom: The Deschutes River Trail is a popular destination for residents and visitors

Rail

The BNSF rail line is the primary rail line in Bend, paralleling Highway 97. There are rail spurs serving local industries and businesses west of NE 1st Street and along SW Industrial Way before turning east towards the industrial zone. Additional spurs serve industries and businesses along SE 9th and also south of Reed Market Drive. There are also several at grade crossings and a few grade separated crossings where the rail line intersects with the roadways.

Safety issues, walkability issues, and traffic delays are generally associated with intersections of rail lines and roadways. For the most part, grade separated crossings are preferred so as to provide sufficient safety and eliminate large traffic delays. Some of the major at-grade crossings in Bend occur on Reed Market Road, Revere Avenue, and Butler Market Road. As traffic volumes increase, train crossings may contribute to increased traffic interruptions, specifically on arterial roads. Potential solutions include coordination with railroad authorities to minimize crossings during peak driving periods or grade separation.



Top: Railroad spurs near SW Industrial Way
Bottom: A rail crossing can lead to traffic congestion during train crossings
Right: View of Greenwood Avenue from Pilot Butte



EXISTING NEIGHBORHOODS, DENSITY & STREET ORIENTATION

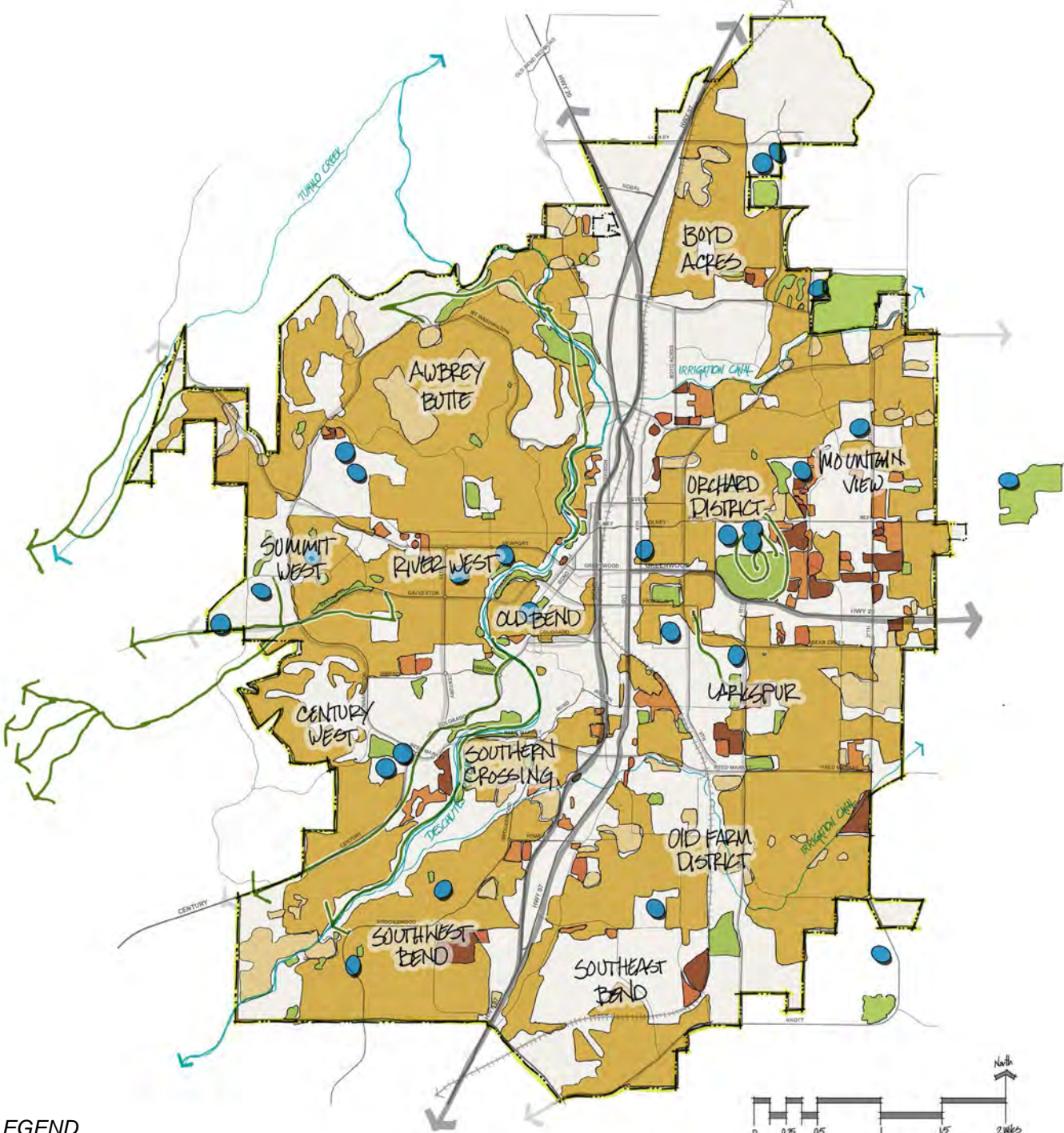
Bend has thirteen recognized neighborhoods that each have a unique geographic setting with a mixture of old and new building types and mixture of uses. Together, Bend's neighborhoods form the foundation of its urban form, influencing future development patterns, land uses, and potential growth opportunities. Different neighborhoods in Bend offer different housing options, from larger lots and suburban living with detached single family homes, to smaller and more compact development patterns with attached or multi-family homes. Development densities, street designs, and proximity to amenities such as parks and schools determine how complete and livable each neighborhood can be. The Existing Neighborhood Densities and Amenities Map on the following page shows Bend's existing neighborhoods, their permitted range of residential density (zoning), and locations of parks, open spaces, and schools.

Bend's earliest neighborhoods evolved from the area's prominence as a logging town and related mill operations. Today, the Southern Crossing neighborhood showcases the former mill. The site has been repurposed as an iconic symbol of the city's past, into a retail development and mixed-use neighborhood. The Old Bend neighborhood's gridded street system and short block lengths provide a pedestrian oriented setting, with detached single family homes, parks, and schools. Several homes have rear accessed alleys that reduce the number of driveways at the front of homes while bringing homes closer to the street. West of Old Bend and Downtown, the connected street grid continues in the Riverwest neighborhood until meeting one of the city's newest neighborhoods, Summit West. Here, newer housing radiates from a central park (Compass Park), situated near schools, restaurants and services. Many Riverwest homes also take access from a rear alley.



Top, Middle and Bottom: Different housing options in different neighborhoods across Bend

EXISTING NEIGHBORHOODS AND DENSITY



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network
- Non-Residential Use

- Residential Density**
- Single Family*
- Greater than 1 Acre
 - Less than 1 Acre
- Multi-Family*
- Up to 6 Units
 - 7 to 49 Units
 - 50 to 204 Units

- Amenities**
- Park/Open Space
 - Trails
 - Schools



To the north, the Aubrey Butte neighborhood has a contrasting layout and street pattern due to the hilly terrain. The neighborhood is characterized by lower density housing served by curvilinear streets, with many ending in cul-de-sac or forming loops. To the east, the Mountain View neighborhood has a greater amount of multi-family housing, and attached single family homes. The development pattern is more segmented, with several housing developments served by a single street access, or homes that front along a dead-end street. Along the periphery of the city, in several different neighborhoods, the city's lowest density development is formed with larger, one-acre and greater lot sizes.

4. DEVELOPMENT TYPOLOGIES

Development typologies provide a standardized system for organizing and classifying different development patterns around the city. These typologies help the City understand the current mixture of land uses and to create a palette to describe the desired future urban form of Bend. Typologies provide a general definition based on common attributes and a common language to help further analysis and discussion with public officials and staff, planners and designers, members of the public, and the development community.

The process for defining the typologies began early in the Bend UGB Remand planning process, starting with a preliminary assessment of major existing land use categories within the city. These consist of residential neighborhoods, commercial and employment areas, and public/semi-public lands including parks and open spaces, schools, and civic uses. From these initial categories, the project team identified general land use patterns where development typologies with common characteristics began to emerge.

OVERVIEW OF TYPOLOGY INDICATORS

The planning process involved several different sources of information to identify the typologies.

- **Primary land use:** predominant land use based on zoning and available parcel data
- **Employment type:** major employment types based on parcel data
- **Residential density:** range of permitted dwelling units per acre based on zoning
- **School access:** proximity to schools based on a ¼- ½-mile walking/biking distance
- **Park, open space and trails access:** proximity to parks, open space and trails based on a ¼- ½-mile walking/biking distance.

NEIGHBORHOODS

The neighborhood typologies describe the residential urban form that exists today. These typologies transcend the city-identified neighborhoods described previously, with several different types of residential development that exist within any one particular neighborhood. Typologies are based on a range of factors discussed in Chapter 3, including age and location, permitted zoning density (dwelling units per acre), block layout, connectivity and proximity to amenities such as parks and schools. Pedestrian and transit connectivity also inform the different neighborhood typologies.

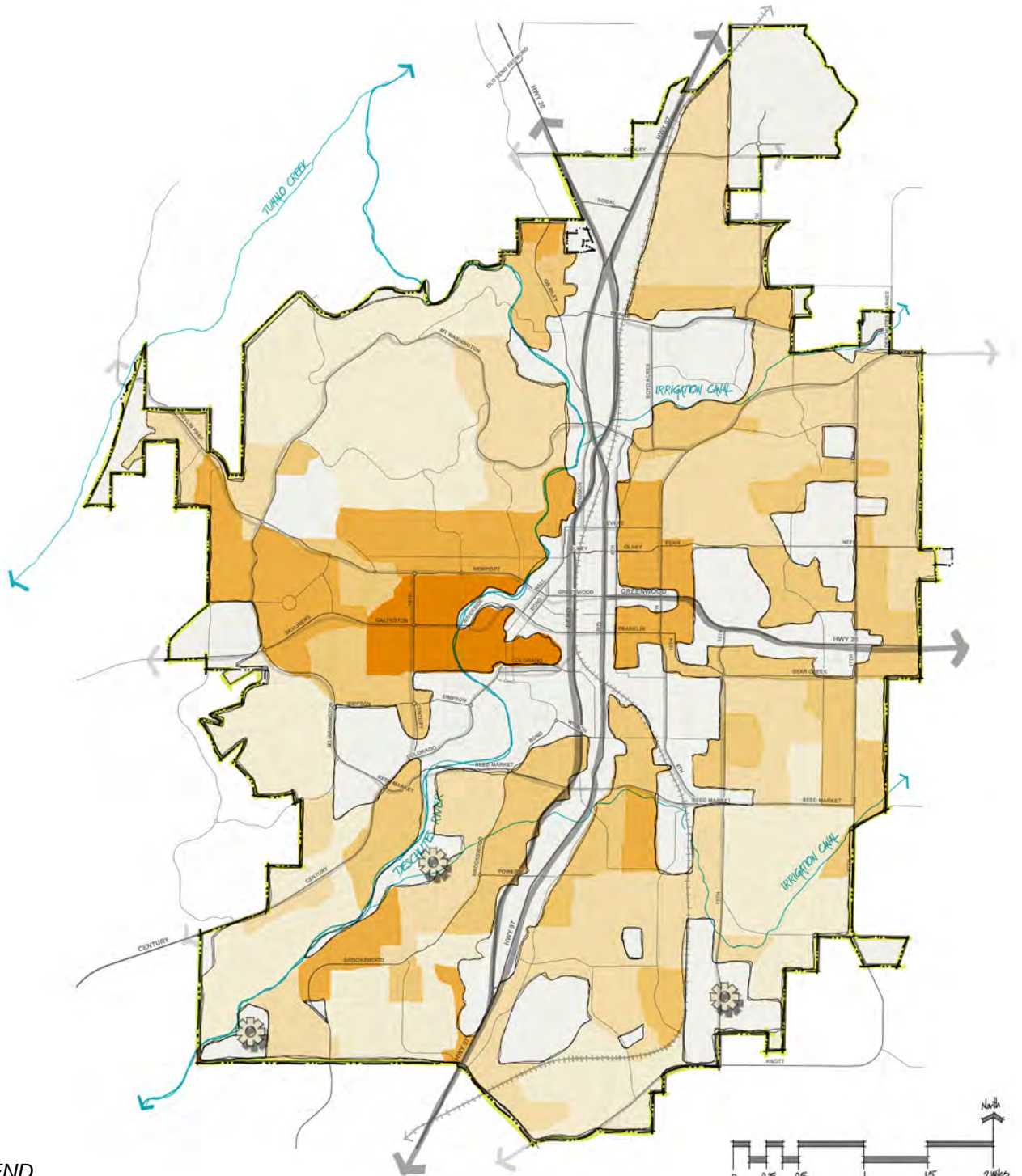
The predominant housing type in Bend’s neighborhoods is single family detached homes with some variations in density and functionality. For instance, neighborhoods such as Mountain View, Southeast Bend and Larkspur feature moderate residential densities and offer a mix of housing types ranging from single family homes to townhomes to apartment complexes. Other neighborhoods, such as Century West and Awbrey Butte consist of larger-lots with single family homes.

Based on the existing urban form, the following pages describe the five neighborhood typologies and include: Early Bend, Traditional, Mixed Suburban, Single Family Suburban and Large Lot.



Top: The Old Bend Neighborhood is a mixture of shopping, dining, entertainment and historic homes
Bottom: Northwest Crossing in the Summit West Neighborhood has a unique radial street pattern and is close to parks and schools

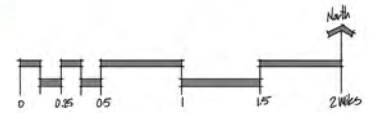
EXISTING NEIGHBORHOOD TYPOLOGIES



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network
- Non-NBHD Typology

- Neighborhoods**
- Early Bend
 - Traditional
 - Mixed Suburban
 - Single Family Suburban
 - Large Lot
 - ⊗ Vacant Residential



EARLY BEND

This typology includes neighborhoods that have a close association with the early development of Bend such as the Drake Park Historic District and other neighborhoods platted early in Bend's history that may not have a historic designation. In general, these neighborhoods have some of the city's earliest buildings that may have architecture with unique cultural or historic value. Local streets in a typical grid pattern provide good connectivity in these areas. This neighborhood typology is fairly transit-supportive.

Residential development generally consists of detached single family homes, some small apartments and townhomes, ranging in scale from one to two stories and moderate density. Employment uses consist of limited small-scale service or offices within the neighborhood. Many of the properties in these neighborhoods have the Standard Density Residential and the Medium Density Residential zoning designations.



TRADITIONAL

This typology includes detached single family homes in small to medium size lots, some duplexes or triplexes and a few apartment complexes. Residential development is characterized by low to moderate densities. Traditional neighborhoods often have commercial nodes or corridors within walking or biking distance, and may be located closer to other employment areas. A portion of Riverwest Neighborhood north of Newport Avenue is an example of this neighborhood typology.

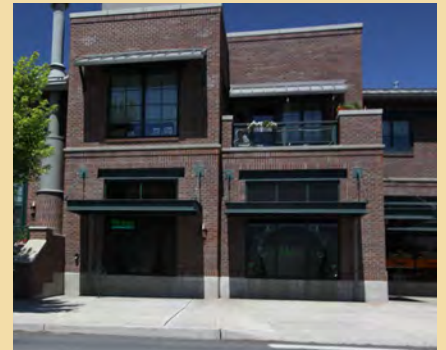
A large portion of central Summit Neighborhood also features traditional residential neighborhood typology. Local streets in a typical grid pattern provide good connectivity in these areas. This neighborhood typology is fairly transit-supportive. Many of the properties in these neighborhoods are one to two stories tall and have the Standard Density Residential and the Medium Density Residential zoning designations.



MIXED SUBURBAN

This typology has varying intensities of suburban development patterns. In general, these neighborhoods portray development ranging in scale from one to two stories and moderate residential densities. Residential development usually includes detached single family homes with medium to large lot sizes, some apartment complexes and townhomes. Employment uses are generally limited and include small-scale service or offices.

Mountain View and Orchard Districts are examples of existing Bend neighborhoods that exhibit some of the typical mixed suburban neighborhood typology's characteristics. Local street patterns are often meandering rather than a grid layout, which can reduce connectivity if pedestrian and bicycle connections are not provided. This neighborhood typology may be transit-supportive when development intensification occurs at the higher end of the density range. This neighborhood typology may include a mix of zoning designations, including Standard Density Residential, Medium Density Residential, and/or High Density Residential zoning designations.



SINGLE FAMILY SUBURBAN

This neighborhood typology consists of largely low to moderate-density single-family residential development. Buildings are one or two story single-family homes on medium to large lots. Local streets patterns are often meandering rather than a grid layout, which can reduce connectivity if pedestrian and bicycle connections are not provided. This neighborhood typology is not transit-supportive.

A large section in the Boyd Acres Neighborhood falling east of the railroad tracks and bound by NE 18th on the east and Yeoman Road on the south would exemplify this typology. Another example would include a portion of Orchard Neighborhood that falls within north of Penn Avenue and south of Butler Market Road. Many of the properties have the Standard Density Residential zoning designation.



LARGE LOT

This neighborhood typology is characterized by one or two story single-family home, acreages or ranchettes on large lots. In general, these neighborhoods represent largely very low density residential development. Winding local streets with private drives or secluded, winding driveways are typical in these areas. The nature of development makes these neighborhoods generally more auto-oriented and not very transit-supportive.

A large portion of the Awbrey Butte Neighborhood west of NW Mount Washington Drive would exemplify this typology. Other examples would include portions of Old Farm Neighborhood east of 15th Avenue. A large portion in western Century West Neighborhood also falls under this typology. Many of the properties fall under the Standard Density Residential or Low Density Residential zoning designations.



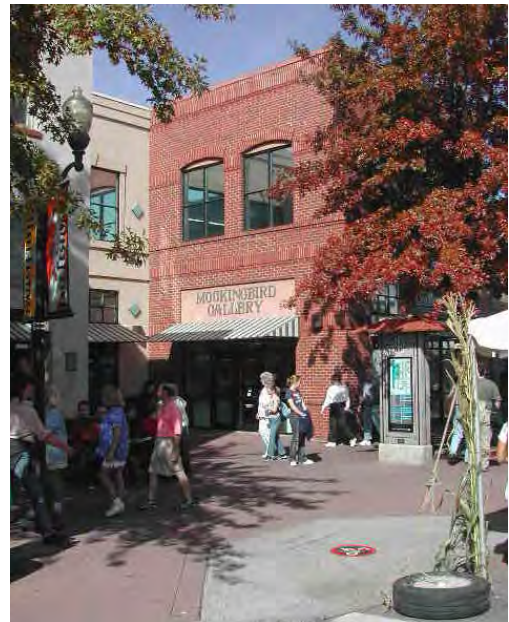


CENTERS & CORRIDORS

Bend's commercial areas tend to take one of two general shapes: centers, or concentrations of commercial uses at an intersection, or contained within one or more blocks; or corridors, following a linear shape of commercial uses typically along a busy street. Both shapes can be activity hubs with concentrations of neighborhood businesses or community services. Concentrations of commercial uses within compact, walkable centers or along major transportation corridors makes access by transit, walking, and bicycle more practical and reduces the amount of driving needed to access services.

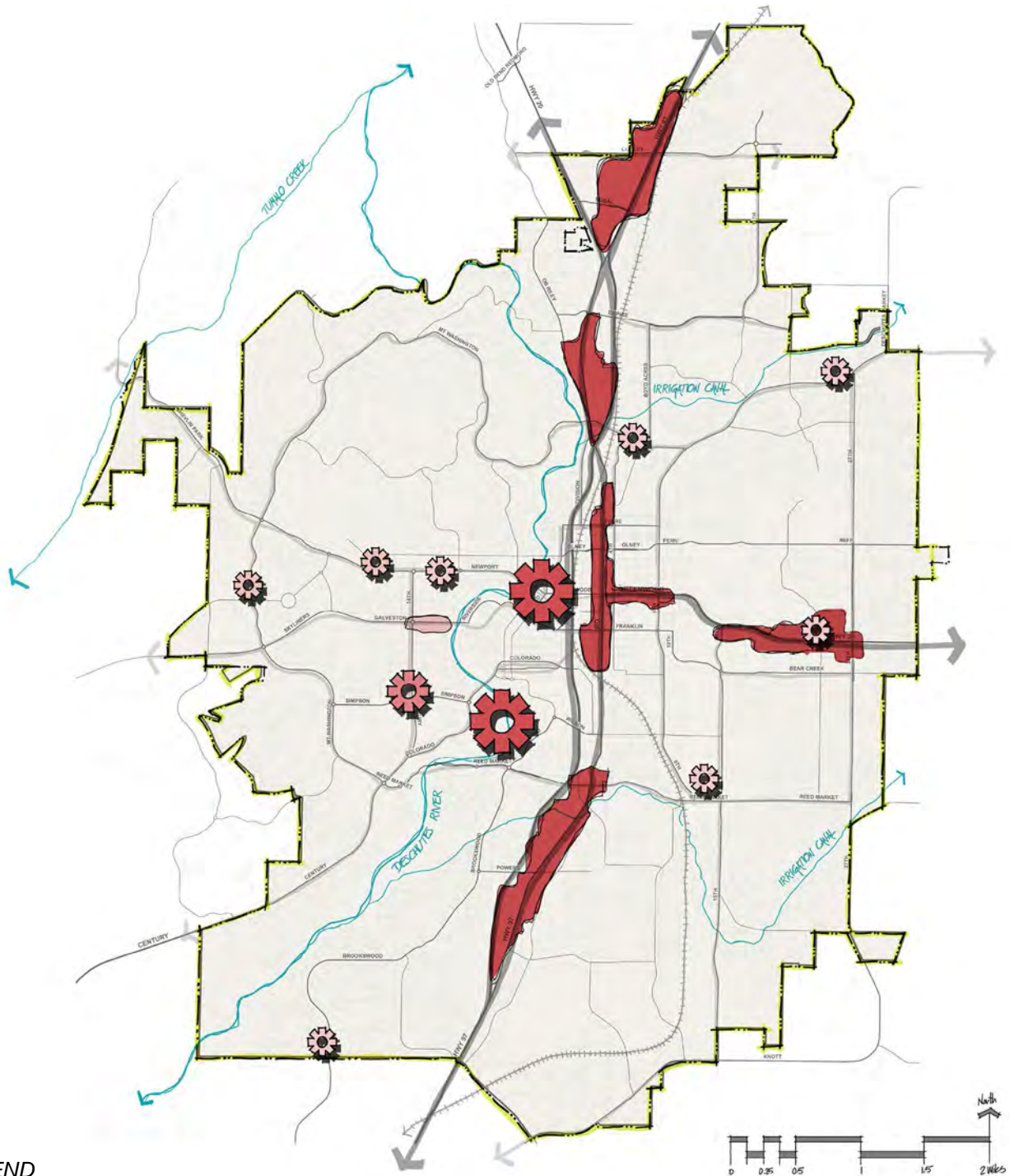
Not all of Bend has convenient access to local services such as a neighborhood grocery store. Fostering a network of mixed-use centers across Bend includes focusing activity, services, housing, and employment growth around walkable commercial centers and corridors. When services and other destinations are clustered in these compact centers, economic viability is strengthened and walking, biking, or transit use becomes much easier.

There are four different commercial center and corridor typologies in Bend today: Urban Mixed Use Center, Major Commercial Corridor, Community Commercial Center or Corridor, and Local Community Center or Corridor. The centers and corridor typologies vary in the intensity of commercial development and also the scale of area they serve. For example, the Urban Mixed Use Center typology consists of a wide mix of commercial uses and attracts users from the entire city and region. The Local Commercial Center typology serves residents of the surrounding neighborhood and correspondingly features small-scale retail uses or services such as pet grooming or daycare.



Top: A neighborhood-scale market on Newport Avenue in the Riverwest Neighborhood
Bottom: A mixed-use building in Downtown Bend

EXISTING CENTERS AND CORRIDORS TYPOLOGIES



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network
- Non-Centers and Corridors

Centers and Corridors

- Urban Mixed Use Center
- Community Commercial Center
- Major Comm. Corridor
- Community Commercial Corridor
- Local Commercial Center
- Local Commercial Corridor

URBAN MIXED USE CENTER

Urban Mixed Use Centers are the largest scale of commercial typology, serving the entire city and region. They provide hubs of commercial, employment, and community services. Relatively high job and housing densities can be found within this typology with a mix of uses such as retail, offices uses, hospitality, and services. Development densities are relatively high and buildings range from one to five stories or greater. Residential use is usually in the form of attached single family development or multi-family development, ranging in scale from apartments or condos over retail to townhomes.

Downtown Bend serves as the region’s primary Urban Mixed Use Center. Another example of an Urban Mixed Use Center is the Old Mill District in the South Crossing Neighborhood. Urban Mixed Use Centers are pedestrian-oriented and transit-supportive and are generally making them well-connected with rest of the city. Urban Mixed Use Centers generally have mixed use or Central Business District zoning designations.



MAJOR COMMERCIAL CORRIDOR

Major Commercial Corridors are located along some of Bend’s busy transportation routes and feature some of the most active commercial and business activities. Commercial uses are typically large retail, shopping malls, hotels, offices, and businesses that thrive on high-visibility.

Places with some characteristics of a Major Commercial Corridor include NE 3rd Street, the Bend River Promenade, and Cascade Village near Highways 97 and 20. Residential uses are limited in these areas. Development within this commercial typology is primarily auto-oriented with convenient access to major arterials and highways. Transit access is generally good. Most buildings are one or two stories and have General Commercial or Limited Commercial zoning designations.



COMMUNITY COMMERCIAL CENTER/ CORRIDOR

Community Commercial Centers/Corridors serve surrounding neighborhoods. These areas have a range of commercial and community services, and/or office uses, and limited residential development. When these activity hubs are more compact, they are termed Community Commercial Centers. On the other hand, if these activity hubs occur along a neighborhood main street or along a transportation corridor, they are identified as Community Commercial Corridors.

Places with some characteristics of Community Commercial Centers and Corridors include SW 14th Street within the Southern Crossing Neighborhood and at the intersection of Highway 20 and SE 27th Street. Development within this commercial typology can be auto-oriented or pedestrian-oriented and varies depending on the context. Transit access is desirable to effectively serve surrounding neighborhoods. Many of the properties within this commercial typology have General Commercial, Limited Commercial and Convenience Commercial zoning designations.



LOCAL COMMUNITY CENTER/ CORRIDOR

Local Commercial Centers/Corridors are smaller centers or corridors that serve as anchors to complete neighborhoods. They provide concentrations of small-scale retail including grocery stores, markets and local services such as daycare. Employment uses occur in moderate densities as small-scale offices or shops and are generally surrounded by neighborhoods. Residential uses are generally limited within the center or corridor, though they may be adjacent, and range from some single family homes to two-story residential properties. When these activity hubs are more compact, they have a local commercial centers typology designation. If they occur along a neighborhood main street, they are termed local commercial corridors. Places with some characteristics of local commercial centers and corridors include NW Crossing within Summit Neighborhood and along Galveston Street (NW 15th to NW Federal St). Development within this commercial typology is primarily pedestrian-oriented and has easy access to collector streets. This typology is transit-supportive. Many of the properties within this commercial typology have Limited Commercial and Convenience Commercial zoning designations.



EMPLOYMENT DISTRICTS

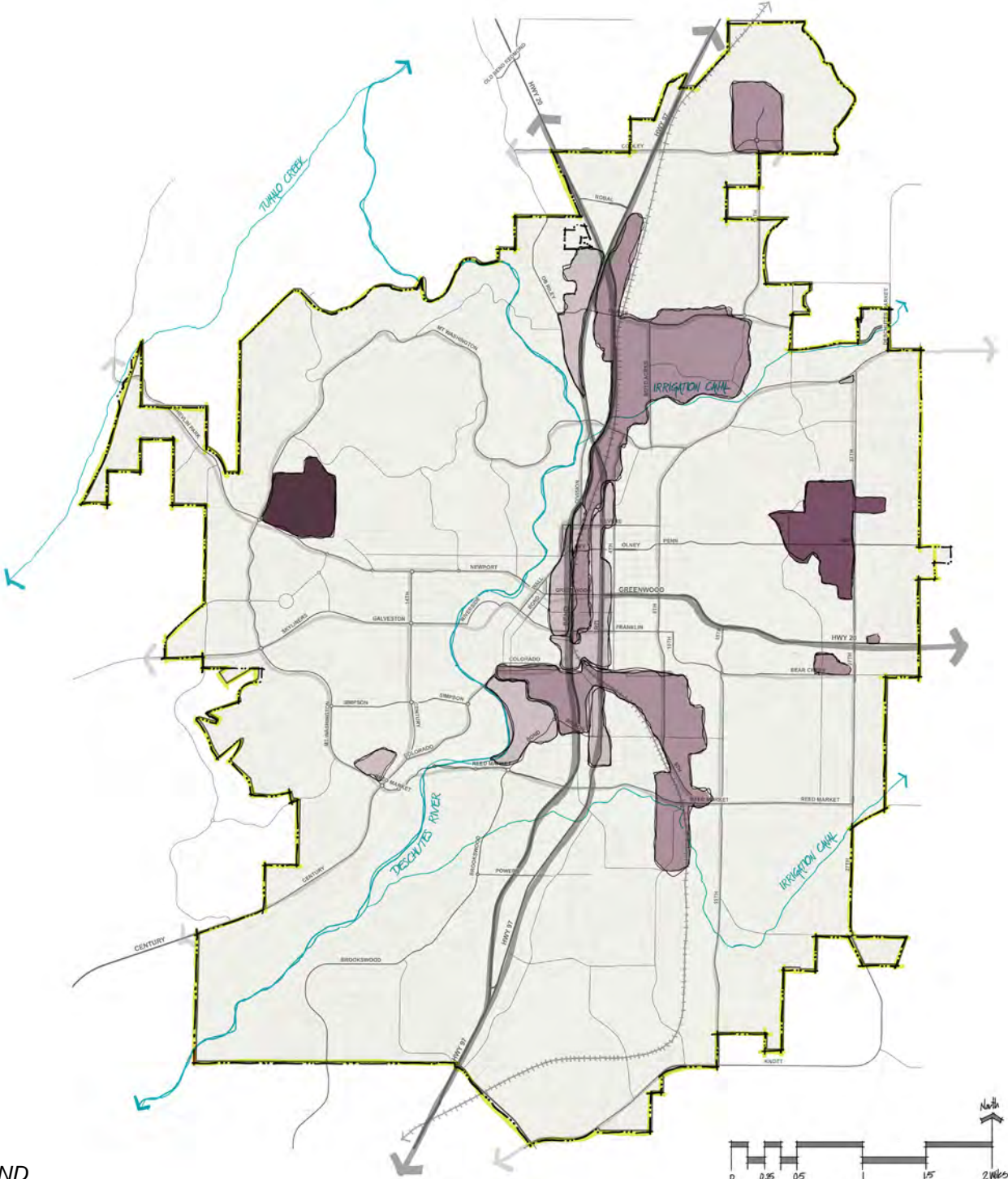
As Bend grows over the next 20 years, the city will have to support a range of diverse jobs and industries. Employment areas, large and small, must be sited in areas that can provide convenient access to a well-connected transportation system. Bend’s Employment District typologies allow a wide range of employment opportunities and typically limit potential conflicts from interspersed residential uses. The emphasis is on concentrating uses generating moderate to high job densities including industrial uses, manufacturing uses, offices, higher education uses and other related uses.

There are four different typologies of Employment Districts in Bend—Higher Education, Medical Center, Industrial or Professional Office and Mixed Employment. These typologies vary mainly in their functionality or the mix of employment uses. For example, Higher Education Districts offer campus or educational services with limited student housing. The Industrial or Professional Office typology emphasizes manufacturing, industrial, and professional office uses. The street networks and connectivity patterns vary according to the different uses within these districts and their development densities.



Top: The Old Mill District is surrounded by a Mixed Employment District
Bottom: The Empire Corporate Park is located in an Industrial/ Professional Office District

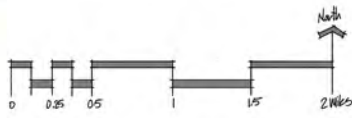
EXISTING EMPLOYMENT DISTRICTS



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network
- Non-Employment

- Employment Districts**
- Higher Education
 - Medical Center
 - Industrial/Professional Office
 - Mixed Employment



HIGHER EDUCATION

Higher Education District typologies typically consist of educational institutions and campuses and offer low to medium job densities. Limited residential uses in the form of student housing can be found in these areas. Building scales vary from two to eight story properties that generally have Public Facilities zoning designation. Development patterns within the Higher Education Districts are typically pedestrian-oriented with few concentrations of off-street parking areas. This development typology is transit-supportive and transit access becomes important due to transit-dependent populations using these facilities.

The Central Oregon Community College campus features typical characteristics of a Higher Education District.



MEDICAL CENTER

Areas within the Medical Center typology generally feature high density employment uses in the form of hospitals, medical offices, and other related facilities. Residential uses are generally limited to group homes with some multi-family development. Building scales vary from one to six stories and fall within the Medical District Overlay Zone. Development within this district is typically pedestrian-oriented in the core with large parking areas in the periphery. Transit access is important in these districts and development densities are fairly transit-supportive.

Places with typical characteristics of a Medical Center Employment District include the St. Charles Health System campus located within the Mountain View Neighborhood and medical offices located along SW Chandler Avenue within Century West Neighborhood.



INDUSTRIAL/ PROFESSIONAL OFFICE

Industrial/ Professional Office typology includes manufacturing, industrial and office uses. Typically these developments feature low job densities with few pockets of higher densities. Residential uses are limited. Building scales vary from one to three story properties that have General Industrial, Light Industrial and Mixed Employment zoning designations. Development patterns within the Industrial/Professional Office Districts are typically auto-oriented with large parking areas and transit access is not a priority. Streets are oriented for freight and truck circulation.

A large area bound by Highway 97 in the west, railroad tracks in the south and SE 9th Street in the east within the Larkspur Neighborhood that includes a variety of building and construction manufacturers is an example of this typology. Similar, manufacturing and industrial uses in North Bend near Boyd Acres Road would be another example of this typology.



MIXED EMPLOYMENT

Mixed Employment typology includes a mix of retail and community services, office uses, manufacturing and light industrial uses such as creative and flexible work spaces. Typically these developments feature varying job densities depending on the mix of uses. Residential uses are minimal and generally multi-family if developed at all. Building scales vary from one to three story properties and have Light Industrial, Mixed-use Riverfront District and Mixed Employment zoning designations. Development patterns within the Mixed Employment Districts vary from pedestrian to auto-oriented depending on their location and context. Transit access is not a priority, although areas with higher development densities are fairly transit-supportive.

The Century Drive area between Simpson and Colorado is an example of a mixed employment district today.



PUBLIC FACILITIES

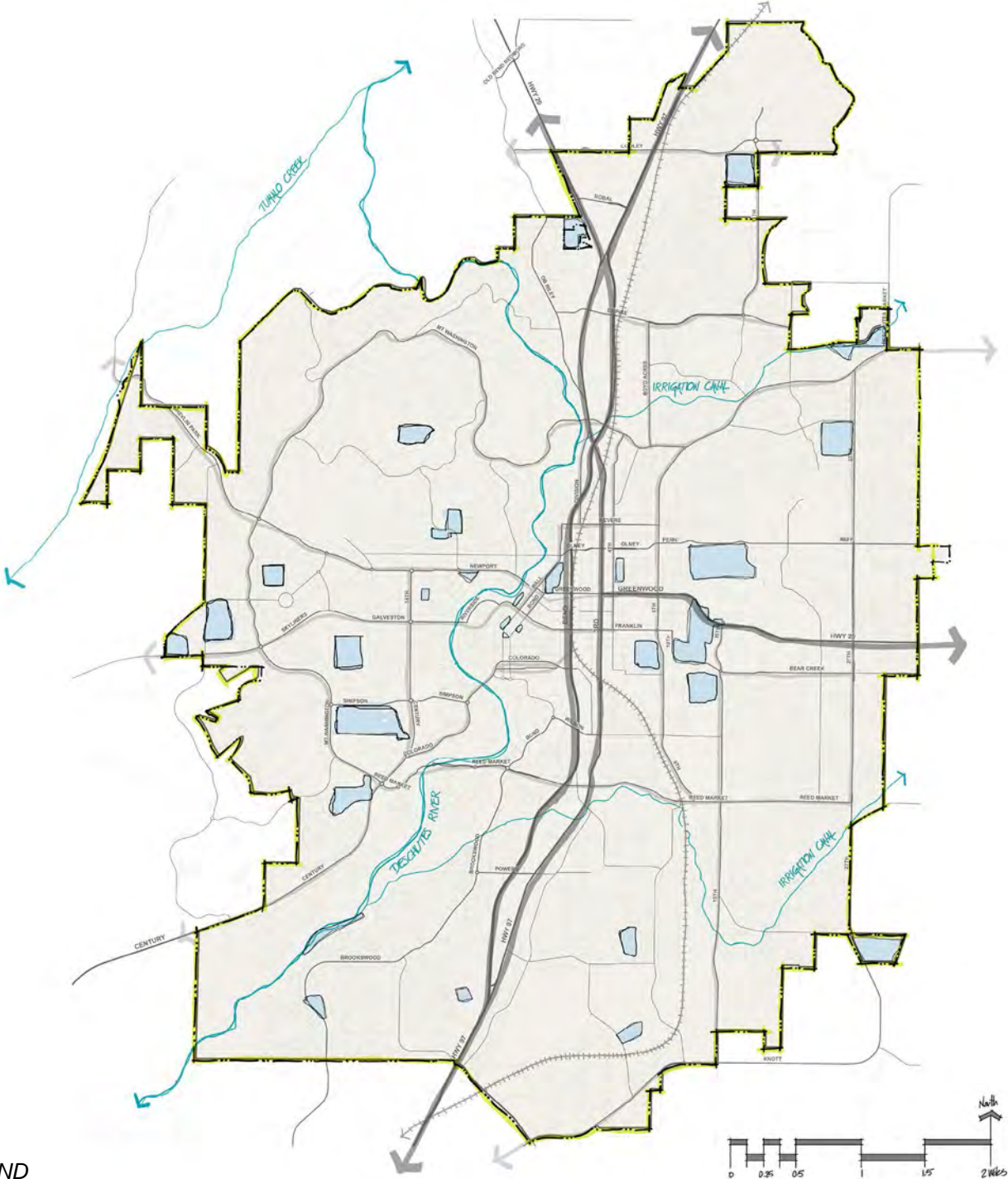
The provision of public services and facilities in the urban environment is an essential function of the city, and a primary requirement that determines where and how the city will grow. Services must be available to serve new growth as a condition of development. There is one public facilities typology used to describe the range of civic, educational, and public infrastructure facility or use that exists in Bend.

The Public Facilities typology includes sanitary and sewer management/ treatment facilities, surface water plants, wastewater recycling plants, stormwater infrastructure, and schools and educational institutions. The typology does not include linear infrastructure such as water, sewer, or power utility lines. As Bend grows over the next 20 years, its urban form has to support a range of public facilities being extended to newer neighborhoods and addressing deficiencies in existing neighborhoods.



Top and Bottom: Public Facilities typologies include schools and civic uses such as the Bend Senior High School and the Deschutes County Offices

EXISTING PUBLIC FACILITIES



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- ==== Rail Road
- Major Arterial/Highway
- Minor Arterial
- Street Network

Public Facilities
 Public Facilities

5. FUTURE GROWTH CONSIDERATIONS

Overview

The primary goal of the Bend UGB Remand project is to identify how and where the city will grow over the next 20 years. Over the past several years, Bend has undergone one of the highest growth rates in the state. Future growth will require more housing options, jobs, parks, services, and streets and infrastructure. To accommodate these needs, Bend will have to maximize use of land within its current boundary, as well as grow in targeted and efficient ways outside of the current UGB. The urban form typologies presented in this document should serve as guide to inform these future decisions.

Opportunity Sites

Through discussions with the advisory committees for the Bend UGB Remand project, the City identified several areas within the current UGB where there is potential for future development at a higher intensity or with a broader mix of uses than the existing plans and regulations would allow. Enabling these areas to reach their full potential maximizes use of land while complimenting adjacent land uses.

Near Downtown, there are several opportunity sites that will strengthen the existing economic center of the city, with new and expanded uses adjacent to existing commercial services, housing options, parks and schools. These core opportunity areas offer a way to increase the availability of housing in an area with excellent access to all modes of transportation as well as excellent access to services. Bringing housing into largely commercial / employment areas will also reinforce pedestrian-oriented development by providing more potential customers who can reach existing businesses on foot. Along SW Century Drive, the planned siting of Oregon State University's new four-year campus offers an opportunity to create a new mixed use center anchored and supported by the new Higher Education District.

Vacant opportunity sites in outlying areas of the city offer potential for new development to be designed with efficient land use and good urban form in mind.

Expansion Areas

Phase II of the project focused on suitable areas for expansion outside of the current urban growth boundary. The planning team conducted a rigorous and detailed analysis to determine suitability for new growth areas, including street capacity and connectivity, existing public infrastructure and utility needs and other factors that relate to the community outcome goals.

The city's existing urban form and its setting and context help inform both the locations and uses that are most suitable for expansion areas. Urban form considerations for expansion areas include:

- Growth potential on the west side of the city is limited in the long term by the Deschutes National Forest and Tumalo Creek, which serve as natural barriers to growth and are also sensitive natural areas that require thoughtful buffering and transitions.
- Growth on the northern end of the city may be limited by transportation capacity until major highway improvements can be built.
- Long-term growth potential in the northeast is high, in part due to the fact that is efficient to serve with infrastructure.
- The central west part of the city is an existing complete community that can be extended in ways that will support the existing neighborhood.
- There is a need for a greater diversity of uses, including more services and employment opportunities in the southern and eastern part of Bend.