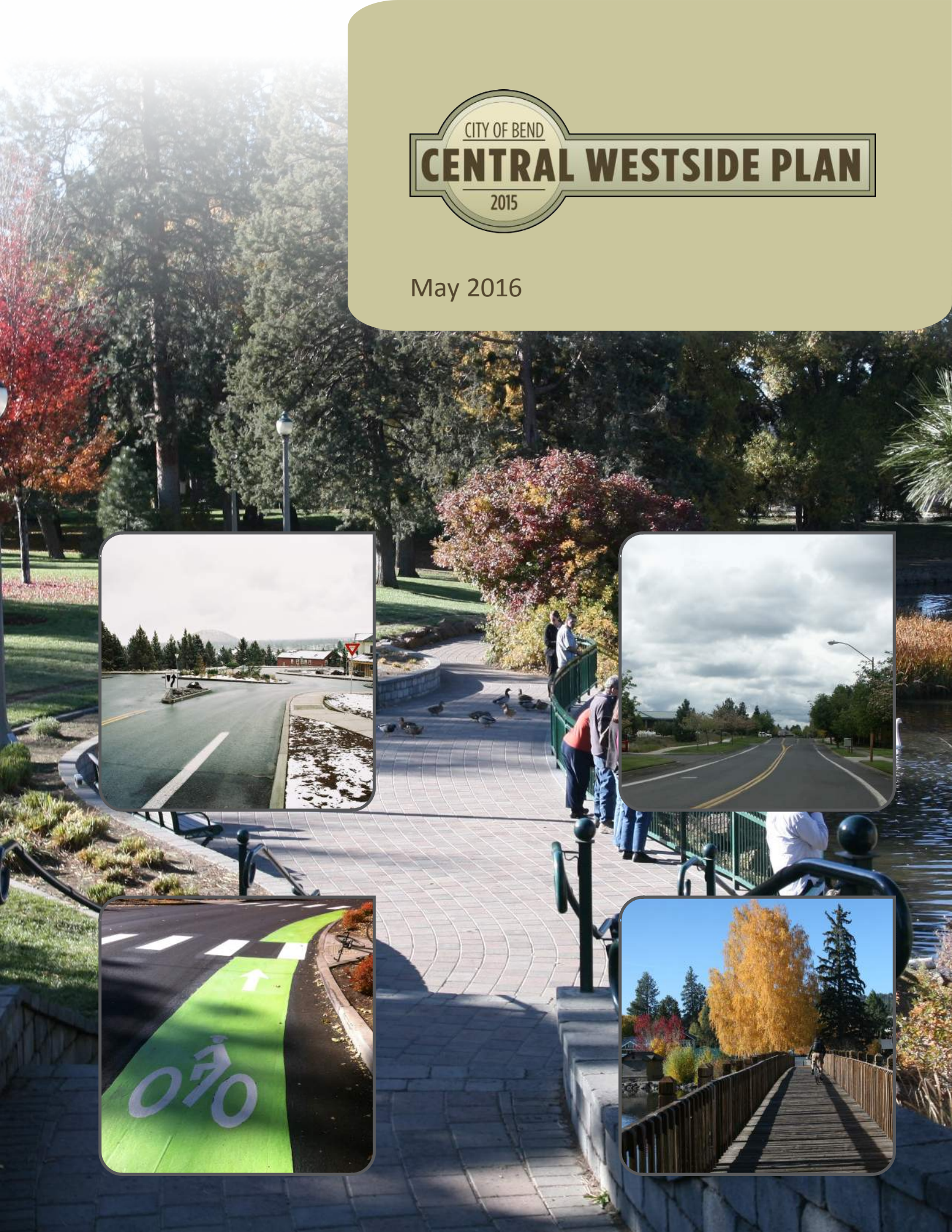
CITY OF BEND

CENTRAL WESTSIDE PLAN

2015

May 2016



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Prepared for:

City of Bend

Prepared by:

Kittelson & Associates, Inc.

CH2M

Fergonese Associates, Inc.

Angelo Planning Group

Leland Consulting Group

SERA Architects

Anne George

May 2016

Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic formats and audio cassette tape please contact Karen Swirsky at kswirsky@bendoregon.gov, 541-323-8513.

This Project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Moving Ahead for Progress in the 21st Century (MAP-21), local government, and the State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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00 Executive Summary

WHAT IS THE CENTRAL WESTSIDE PLAN?

The Central Westside Plan (CWP) was created in response to on-going development and transportation issues. The objective of the Central Westside Plan (CWP) is to create a future land use and transportation vision for Bend's central westside. The plan directly acknowledges the link between land use and transportation system planning. The Plan emphasizes a mixed use land use pattern, which results in fewer and shorter motor vehicle trips and increases the use of other modes, among other positive benefits such as reducing household transportation costs and greenhouse gas production. Specific project results to achieve this objective include:

- **Preferred Land Use Plan** – This is a community generated plan that identifies recommended land use changes within the study area.
- **Transportation Performance Measures** –The measures considers the broad function of the transportation system to connect a community and provide travel options for all users.
- **Recommended Transportation Projects and Policies** – The Preferred Land Use Plan was evaluated based on the identified transportation performance measures. The outcome of that analysis was a list of recommended transportation projects and policies to support the Preferred Land Use Plan.

KEY OUTCOMES

The CWP is the result of a robust planning effort with many exciting outcomes. The following summarizes the major outcomes recommended by the CWP:

- **Change the General Plan Map Designation of the southern study area to Mixed Use Urban.** This change is recommended by the CWP, and will occur as part of the Urban Growth Boundary expansion effort.
- **Modest density increases along Newport Avenue and 14th Street.** This includes residential density increases in a small area between Newport and Portland avenues and directly along 14th St. All other residential neighborhoods would remain unchanged.
- **No land use changes along Galveston Avenue.**
- **A broad set of transportation performance measures that focus on connectivity and mobility for all users.** These measures include system completeness, safety, capacity, and travel time reliability. A priority set of transportation improvements were developed based on these measures.

HOW WAS THE CENTRAL WESTSIDE PLAN DEVELOPED?

The CWP was developed through active engagement with a community advisory committee, the general public, and key stakeholders. These groups reviewed technical material and provided input that informed the ultimate recommendations. The following summarizes engagement efforts conducted.

Community Advisory Committee

The advisory committee for this effort consisted of a broad range of stakeholders. The 22-member committee met 9 times from January 2015 – April 2016. This group reviewed technical information, developed land use plans, and provided input on all project material.

Public Open Houses

Three public outreach events were held at different project milestones. These were:

- Land use scenario development (in-person and online)
- Land use scenario evaluation and selection (online)
- Transportation investment identification (in-person and online)

Over 200 community members attended in-person meetings and over 1,300 comments were submitted in person or online.

NEXT STEPS

While the community vision developed by this plan is comprehensive, more is needed to implement this vision. The following are key next steps needed to advance the CWP:

- **Development of a transportation overlay district or area.** This will create a process to fund and build the transportation improvements through future development.
- **Policy and code development.** This will create detailed code language that will consider buffers to existing areas, implementation, the transportation overlay district, and other issues.
- **Implement the land use plan changes for the Newport Ave. and 14th St. areas.** This would result in mixed use and higher density residential in a limited area along Newport, as well as increased residential density along 14th St.
- **Conduct studies for Columbia Street/Harmon Blvd., and Portland, Simpson, and Chandler avenues.** These studies would determine the appropriate streetscape and intersection treatments for these important corridors.
- **Ongoing community dialog**. The community will continue to be actively involved in next steps.

City Council will determine the scope and timing of this additional work.

01 Introduction

SECTION 1 – INTRODUCATION

Bend is expected to continue to grow over the next 25 years. Recent reports indicate that the Bend Metro area was the 7th fastest growing metro area in the country in 2014. This trend is expected to continue with a 2016 resident population of over 80,000 that is expected to grow to 115,000 by 2028. The City's current project to expand its Urban Growth Boundary (UGB) has forecasted a need for 17,234 housing units and 21,943 new jobs from 2014 to 2028. The central westside of Bend is anticipated to continue to play a key role in facilitating economic development, ensuring neighborhood vitality and providing the multimodal transportation infrastructure needed to support area residents, jobs, and visitors as they travel about their daily life. To plan for the future, the City of Bend has teamed with a Community Advisory Committee (CAC) to create a vision for how the central westside of the City can grow in a way that meets community goals and values. The area included in this Central Westside Plan is shown in Figure 1.

Background

Historically, the Central Westside of Bend was the location of two large lumber mills; the Brooks-Scanlon Mill on the east side and the Shevlin-Hixon Mill on the west side. A brief history of how the Central Westside's land uses and transportation system has evolved overtime was produced by members of the CAC and is found in Appendix A. This understanding of our history has helped shape the overall direction of the Plan.

Within the Central Westside, the streets, parcels and land uses were developed as a typical turn of the century grid pattern. In the early and mid-20th century, the City's boundaries were essentially defined as 14th Street to the west and Portland Avenue to the north. As the timber trade diminished, mixed uses such as the "Old Mill District," a successful brownfield re-development, have emerged. West of the Old Mill District, across the river, the Shevlin-Hixon area has developed into a mix of industrial zoned land and large vacant parcels, most notably the closed Deschutes County Landfill site and an inactive pumice mine site. These properties, combined with the existing low intensity industrial uses, provide a significant opportunity to enhance the already vibrant and livable neighborhoods.

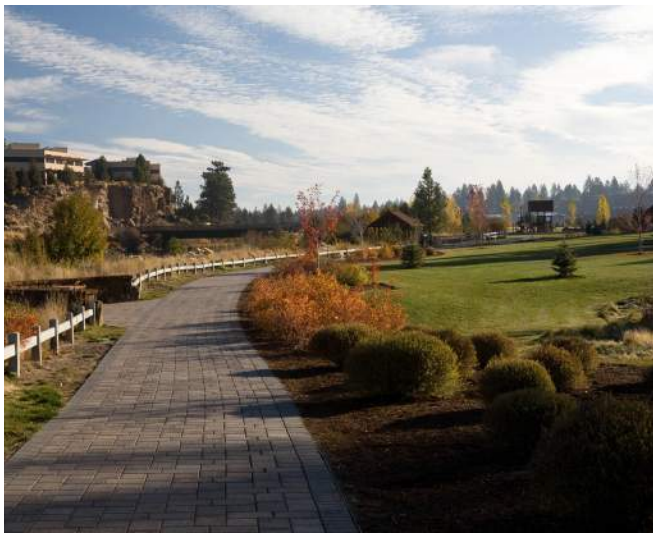
Today, areas in the northern portion of the Central Westside (north of Simpson Avenue and Commerce Avenue) are nearly fully developed with primarily low-density residential uses. These neighborhood blocks have been home to many residents of Bend for over 100 years. Protecting and enhancing this place of community is a key objective of the Central Westside Plan (CWP).

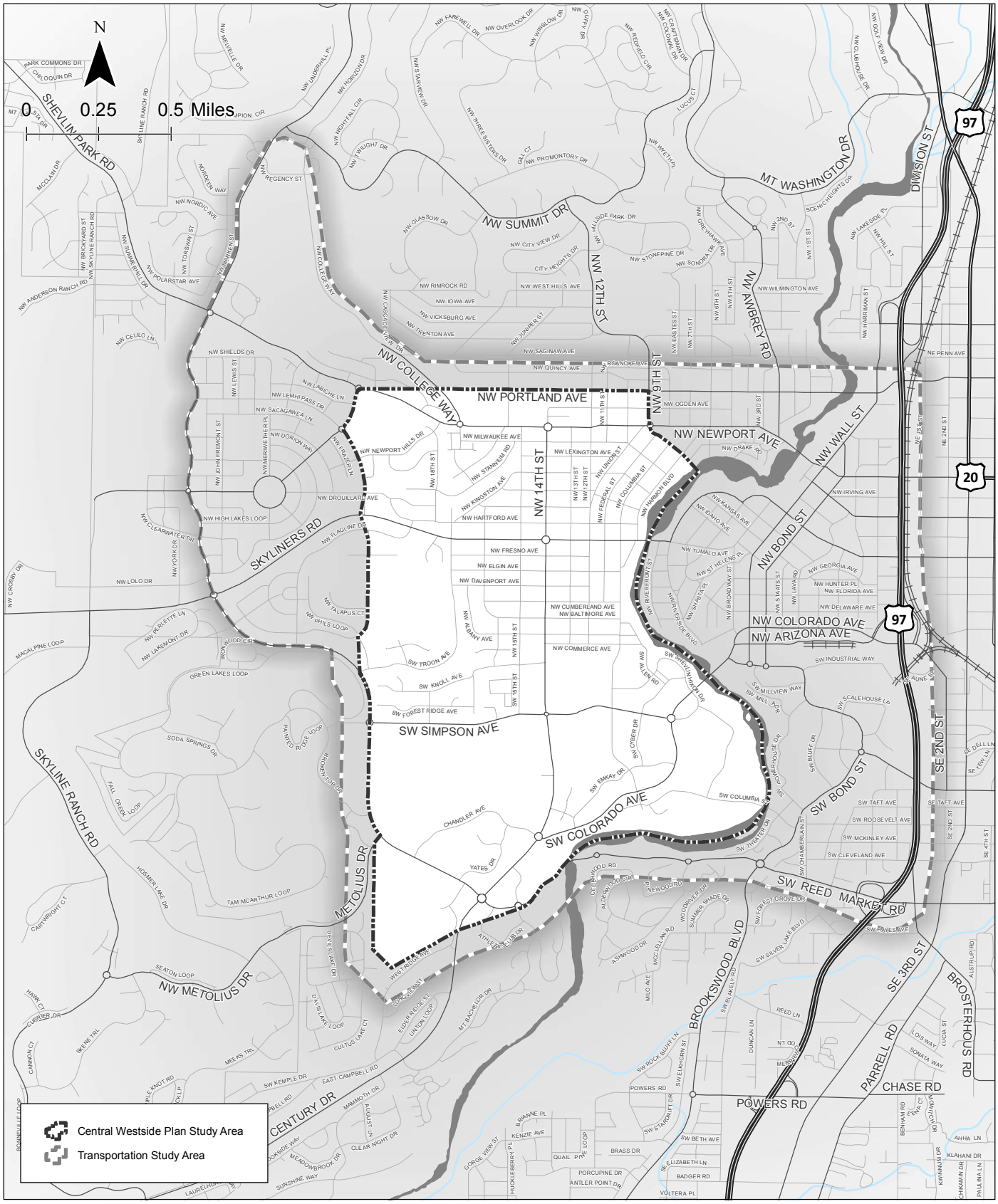
Over the years, the area south of Simpson Avenue and Commerce Avenue has developed from an industrial area to offices, retail, and commercial uses. However, the City's planning documents, policies, and codes have not kept pace with the changes, which has inhibited successful redevelopment of the area. Part of the constraints on redevelopment is a result of the significant transportation infrastructure that would be needed to facilitate continued economic growth in a manner that meets existing city transportation-related code requirements. Instead, proposed land use changes have needed to be limited in scope as compared to the original intent in order to ensure transportation infrastructure is operating in a manner consistent with code expectations. In other instances, the transportation improvements would have required removal of existing small scale commercial uses, the very type of land uses the City was planning for the area. Over time, it has been shown that the City's current methods and approaches for measuring and assessing traffic impacts are centered

on a limited type and duration of motor vehicle impacts, frequently to the determent of other land use goals. This issue is further explored in Section 5 of this report.

There are a number of other factors affecting the future of the Central Westside of Bend, making it an opportune time to take a fresh look at land use and transportation needs for the future. As an example, Deschutes County approached the City in 2012 about planning for their large, no longer operational, landfill site along Simpson Avenue. Redevelopment of this site would require comprehensive plan changes and likely significant transportation analysis. Additionally, OSU-Cascades is building a new campus on the westside and contemplating a master plan process for their future campus area, which will include, at a minimum, a large former pumice mine. Finally, the City's UGB process has identified the southern portion of the Central Westside as an "opportunity area" for land use in-fill and development for housing and employment. These redevelopment opportunities have prompted the City to review its planning codes and requirements for the area and to explore alternative methods and practices for the community and developers to support economic development and neighborhood livability over time.

In response to these issues, staff formulated a broad work plan and approach to evaluate the existing land uses and how these uses could be modified and adjusted to match community and economic development expectations. At the same time, staff began to re-think and implement a set of transportation performance standards that supported the needs of all travelers, regardless of mode, age or ability. These type of performance standards are a departure from a traditional measure of motor vehicle congestion at intersections during one period of the day. Instead, these standards consider how land use interacts with the entire transportation system. The result was an application and subsequent grant to develop the Central Westside Plan that included funding contributions from OSU-Cascades, Bend Parks and Recreation District, and Deschutes County.





CITY OF BEND CENTRAL WESTSIDE PLAN 2015

Study Area Bend, OR

Figure **1**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl
Data Source: City of Bend, Deschutes County

K:\H_Portland\profile\17841 - City of Bend West Side TGM\gis\01 Study Area.mxd - agriffin - 3:15 PM 4/22/2016

Project Objective & Outcomes

The objective of the Plan is to create a community vision for the future of the lands and transportation system included in Central Westside study area. In creating that vision, this plan directly acknowledges the inherent link between land use and transportation system planning. By doing so, the CWP results in a land use plan that is supported by a connected and functional transportation system that is able to serve users via a variety of modes into the future.

Specific project outcomes to achieve this objective include:

- **Preferred Land Use Plan** – This plan is a community generated land use plan that identifies recommended land use changes within the study area. This plan reflections direction from the community on what should change and what should not.
- **Transportation Performance Measures** – These measures support a community-driven approach to assessing and planning the multimodal transportation system. The measures are intended to consider the broad function of the transportation system to connect a community and provide travel options for users.
- **Recommended Transportation Projects and Policies** – The transportation effects of implementing the Preferred Land Use Plan was evaluated based on the identified transportation performance measures. The outcome of that analysis was a list of recommended transportation projects and policies to support the Preferred Land Use Plan.

Each of these is discussed further in the following sections.

The CWP provides a community vision for residents, businesses, and future developers (both public and private). This plan clearly states desired outcomes in terms of land use patterns and a transportation system that is reflective of a broad community discussion. This vision provides a blueprint that the community can build toward and, in doing so, achieve the values, goals, and objectives established by this plan. The purpose of the CWP at this stage is to serve as a direction and framework for the creation of land use and transportation policies and codes in the subsequent implementation phases of the project.

Project Goals

The CWP was guided by the project CAC, which provided review and feedback throughout the development of the plan. An initial task of this group was to establish goals for the CWP. The intent of these goals is to define the vision for the study area and to be used as a reminder of the intent and purpose of the plan as implementation moves forward. The goals formed the basis and grounding for the land use proposals and the transportation performance measures. The identified goals are:

- Support livable neighborhoods with access to nature, parks and open spaces and a small town feel
- Create and maintain well-planned, attractive neighborhoods
- Develop a safe, convenient multimodal transportation system
- Identify a land use and transportation plan that is financially feasible

These goals were applied throughout the development of the plan presented. As the plan moves forward through implementation, these goals will continue to direct outcomes and actions.

02 Project Background

SECTION 2 – PROJECT BACKGROUND

The CWP exists within a broad planning and policy context within the City of Bend. Much work has been completed, is being completed, or will be completed that informs the approach and outcomes of this effort. The following sections describe the most significant pieces of that context.

Relevant City of Bend Code, Policies, and Standards

Consistent with the objectives of the CWP, the City has long recognized that increasing mixed uses and encouraging complete neighborhoods can provide people with choices about how they travel and result in fewer automobile trips. Some steps that Bend has taken over the last decade include:

- Adopting goals and polices in the Transportation System Plan (TSP) that encourage mixed use development, reduced reliance on the automobile, and seek a balance across all modes of travel.
- Establishing minimum densities for all residential zones.
- Establishing parking maximums.
- In all commercial zones, allowing the maximum height to be increased by 10 feet above what's allowable by code when residential uses are provided above the ground floor.
- Focusing medium and high density zoning near major employment and retail shopping areas and in proximity to transit corridors.
- Completing the Central Area Multimodal Plan to bring a greater mix of uses to the core of the City.
- Allowing small neighborhood commercial services in residential areas as a permitted use.

The City also recognizes the value of managing transportation system needs and providing options for all travelers through the implementation Transportation Demand Management (TDM) measures. The City contracts with Commute Options for implementing a volunteer TDM program (Drive Less Connect), which includes education and outreach about transportation options such as walking, biking, and includes a ridesharing matching tool. Commute Options directs its efforts toward larger employers, and currently has approximately 50 businesses in Bend participating. In addition, Cascades East Transit and Commute Options offer a group bus pass program. The cities policies support continued implementation of TDM over time to ensure multimodal travel options are available for all users.

To enhance livability and community, the City understands that widening streets to increase capacity can have significant adverse impacts on neighborhoods and safety; therefore City's General Plan includes a policy that minor arterials may not be widened for additional travel lanes without first evaluating whether the need can be met through certain transportation demand management and transportation system management measures[1]. This is intended to emphasize community and streetscape design that will continue to foster non-automobile modes of travel. In the text of the TSP, specific minor arterials are identified as "not authorized for lane expansion" unless the TSP is amended by Council action.[2] This policy applies to three minor arterials within the CWP area:

1 Bend Area General Plan, Chapter 7, policy 6.9.6.21.

2 Bend Transportation System Plan, Section 6.5.1.4

- NW 14th Street between Newport Avenue and Galveston Avenue
- NW Newport Avenue between 14th Street and Wall Street
- NW Galveston Avenue between 14th Street and Riverside Avenue

Other relevant existing policies in the TSP and General Plan include:

- *The City shall adopt land use regulations to limit the location and number of driveways and access points, and other access management strategies on all major collector and arterial streets. (6.9.2.1)*
- *The City and State shall implement transportation system management measures to increase safety, reduce traffic congestion to improve the function of arterial and collector streets, and protect the function of all travel modes. (6.9.2.3)*
- *Access control shall be part of the design standards for major collectors, arterials, principal arterials and expressways to ensure that adequate public safety and future traffic carrying capacity are maintained while at the same time preserving appropriate access to existing development and providing for appropriate access for future development. … (6.9.6.6)*

The City standards and specifications also include Roundabout Design Guidelines, which encompass a comprehensive approach to intersection design. The Guidelines focus on roundabouts as the preferred intersection form in the City. Roundabouts have been shown to reduce the occurrence of injury and fatal crashes, lower carbon emissions, and provide efficient movement of people.

Finally, the City of Bend has a program for identifying pedestrian and bicycle improvement priorities[3]. There is $3-5 million for design and construction of pedestrian and bike improvement projects in the current Capital Improvement Program. The City has a list of priority safety crossing projects identified in the 2012 Bend Safety Implementation Plan and another priority list for walking and bicycling corridors, and bicycling and walking structures found in the 2014 Strategic Implementation Plan for Pedestrian and Bike Infrastructure.

Relationship to Other Planning Efforts

The CWP is focused on the land uses and the

3 See "Safety Implementation Plan" 2014; "2014 Strategic Implementation Plan for Walking and Biking"

multimodal transportation system to support those uses within the Central Westside of the city. Other studies have, are, and will be conducted that address the City's land use and associated transportation needs at a more regional or citywide scale.

Metropolitan Transportation Plan (Year 2040)

Most recently, the Bend Metropolitan Planning Organization (MPO) updated its Metropolitan Transportation Plan (MTP). The MTP evaluated the transportation system within the MPO boundary (roughly aligned with the City's boundary and including Deschutes River Woods area) at a regional scale.[4] The findings and needs identified in the MTP for the CWP area are comparable to those presented in this plan, even with the intensified uses assumed by the CWP. Plainly stated, the findings of this plan show that the intensified land uses identified as part of the CWP result in citywide transportation needs that remain the same as those documented in the MTP. As such, the MTP needs and priorities of regional needs remain the same. The CWP focuses on more localized needs than the MTP is able to accomplish.

Urban Growth Boundary Analysis

The City's ongoing Urban Growth Boundary (UGB) expansion effort is evaluating land use and transportation needs at a city-wide level. The UGB is focusing on a 2028 horizon due to State direction. The CWP is focused on a 2040 horizon to reflect a long-term vision for the area. Despite the different horizon year, the CWP is closely coordinated with the UGB efforts to ensure the more near-term UGB makes sense in the context of the more long range CWP. Consistent with state land use law for UGB boundary expansions, the UGB expansion analysis identified areas called "opportunity areas" within the existing UGB boundary that could accommodate some of the expected housing and employment needs by 2028. A significant portion of the CWP area includes one of these opportunity areas (SW Century Drive), and with the adoption of the direction from the UGB Remand, the land use designations within that area will change to mixed use. The CWP's preferred land use scenario has been incorporated into the UGB planning efforts to identify regional implications. The UGB analysis also assumes other mixed-use areas within the city similar to the CWP.

In addition, another requirement of the UGB expansion project is the creation and implementation of an Integrated Land Use and Transportation Plan. The purpose of that plan is to reduce vehicle miles travelled (VMT). Opportunity areas, central core locations and transit corridors offer the greatest possible reductions for VMT; the CWP is one of these areas that have the greatest likelihood for reducing VMT.

City Transportation System Plan

The City of Bend maintains a Transportation System Plan (TSP), documenting relevant projects and policies related to the transportation system needed to support buildout of the Comprehensive Plan land uses within the UGB. The TSP is scheduled to be updated following adoption of the UGB effort, and will incorporate the work of previously completed efforts, including the CWP. The updated TSP will

4 Though the MTP was completed prior to the current City of Bend Urban Growth Boundary (UGB) expansion effort, the MTP did make broad assumptions about growth external to the UGB, including lands west of the CWP area.

address transportation policies and projects needed to support the Comprehensive Plan through the year 2040. The CWP is supportive of these efforts. Phase 2 of the CWP will include goals and policies in the TSP that support and implement the CWP.

03 Public Involvement

SECTION 3 – PUBLIC INVOLVEMENT

The CWP was developed through an extensive public involvement process that included a Community Advisory Committee (CAC), online and in-person meetings, public information, and ongoing discussions with neighborhood and community groups. The CWP Public Involvement Plan outlined the following objectives:

- Provide early and ongoing opportunities for stakeholders to raise issues and concerns that can be considered through equitable and constructive two-way communication between the project team and the public.
- Encourage the participation of all stakeholders regardless of race, ethnicity, age, disability, or income by offering alternative accommodations, as needed (e.g. activities for children at community meetings, accessible meeting facilities).
- Promote fair treatment so that no group of people (racial, ethnic, or a socioeconomic group) bears a disproportionate share of the negative environmental consequences resulting from a program or policy.
- Ensure that public contributions are considered in the decision making process and can influence the agency's decision.
- Build on information gathered through related planning processes and ensures effective coordination and consistency with those efforts.

Public involvement activities were centered on three major milestones:

- Land use scenario development
- Land use scenario evaluation and selection
- Transportation investment identification

Each milestone included CAC activities and other public involvement activities aimed at gathering input from a broad range of community members and stakeholders.

Decision making

The project decision structure includes the Bend City Council, Bend Planning Commission, Project Management Team and Community Advisory Committee. The project decision making structure is shown in Figure 2 and is described below.

Figure 2. Decision-making structure

Decide: Bend City Council

The Bend City Council makes final decisions on land use and transportation strategies after review by the Bend Planning Commission.

Recommend: Bend Planning Commission

The Bend Planning Commission makes a recommendation to City Council on a final land use and transportation strategy. The Planning Commission received updates at key milestones. In addition, the Planning Commission and City Council appointed liaisons who participated in the CAC as ex-officio members.

Advise: Project Management Team and Community Advisory Committee

The Project Management Team, comprised of staff from the City of Bend, ODOT, and the consultant team made recommendations to the Planning Commission and City Council. The Project Management Team considered CAC input in developing their recommendation. The Project Management Team also was responsible for providing day-to-day guidance to the project manager and consultant team.

The 22 member Community Advisory Committee (CAC), formed by City Council, synthesized public input and provided input to the Project Management Team throughout the project and provided recommendations on the final land use and transportation strategy. The CAC met nine times during the development of the plan.

CAC members:

- Jeanne Berry
- Brooke Bilyeu
- Perry Brooks
- Garrett Chrostek
- Casey Davis
- David Gurule
- Mollie Hogan
- Sarah Kelly
- John Kelly
- Kimberly Kinney
- Sean Lipscomb
- David McGee
- Kimberly McNamer
- Michael McLandress
- Adam Michell
- Moey Newbold
- Heather Hansen
- Richard Ross
- Kirk Schueler
- Madeleine Simmons
- Glenn Van Cise
- Tammy Wisco

Ex-Officio members

Planning Commission:

- Bill Wagner
- Karon Johnson
- Laura Fritz

City Council:

- Doug Knight

Input: Primary Stakeholder Group

The Primary Stakeholder Group, an informal sounding board comprised of institutions and public agencies who own land or are advancing related projects, was consulted throughout the process.

The Primary Stakeholder Group included representatives from Bend Park and Recreation, Deschutes County, OSU-Cascades, Cascades East Transit, Commute Options, the Oregon Department of Land Conservation and Development, COCC and the Oregon Department of Transportation.

Milestone 1: Scenario Development

The first public involvement milestone, scenario development, was aimed at developing a range of land use scenarios for the central westside. The CAC began this work with a workshop on March 20, 2015. Working in small groups, CAC members developed land use plans for the Central Westside using a variety of development types such as Main Street, Neighborhood Commercial, Mixed Use Center/Neighborhood and Compact Neighborhood (see Appendix F). The Envision Tomorrow land use and transportation model was used to create the land use scenarios. This process is described further in Section 4. CAC members also indicated needed transportation improvements including sidewalks, bike facilities, transit and roadways. Using CAC developed plans, staff developed three scenario alternatives that reflected the range of ideas developed by CAC members.

Once the ideas were developed into draft land use scenarios, the project team conducted an online and in-person open house in April 2015. More than 65 people attended the open house and 11 people provided comments through the online open house.

The online open house and in-person open house were advertised throughout the community through social media, organization and traditional media press releases, email lists, community fliers, and an interested parties list. To ensure that the City reached traditionally underrepresented communities, the project team included representatives of organizations that serve minority and low-income residents on the interested parties list and had a broad outreach for public events.

The project team used input gathered through the open house and online open house to refine the three draft land use scenarios. The CAC approved the draft scenarios at their May 7, 2015 meeting.

Milestone 2: Scenario Evaluation and selection

The second public involvement milestone, scenario evaluation and selection, focused on sharing the evaluation of the land use scenarios and selecting a preferred scenario. Public involvement during this milestone included several CAC meetings and an online tool to gather input from the public.

In June 2015, CAC members reviewed how each scenario performed on measures like housing affordability, walkability and land use mix. Specific performance measures are discussed further in Section 5. After the CAC reviewed this information, the project team developed an online tool using the MetroQuest platform to gather input on the three scenarios from the public. The MetroQuest tool allowed community members to learn about the three scenarios, provide input about their priorities, and provide input about needed transportation improvements to support the proposed scenarios.

The online tool was advertised throughout the community through social media, organization and traditional media press releases, email lists, community fliers, letters to all businesses in the study area, and an interested parties list. The project received extensive media coverage during the survey period, including an article in the Bend Bulletin and a news story on KTVZ. To further encourage participation, the participants were invited to enter a raffle. To ensure that the City reached traditionally underrepresented communities, the project team included representatives of organizations that serve minority and low-income residents on the interested parties list and had broad outreach that included media coverage and feedback solicitation from specific groups. Participants were invited to participate in the survey online at their convenience. In addition, information kiosks with active iPad tablets were located at various public locations throughout Bend where community members could participate in the survey. Kiosk locations included the Deschutes Public Library in downtown Bend and the Central Oregon Community College Library on the westside of Bend, as well as Starbucks coffee shops in downtown Bend and on the central westside of Bend. City staff also hosted a table at CityQuest (a city-sponsored area of Bend's annual Summer Fest).

The online tool resulted in 1,325 comments about the draft scenarios. Survey results were collected from June 30 to August 10, 2015. Input gathered through the online tool was used to inform the selection of a preferred land use scenario.

MetroQuest Survey Screenshot

The CAC met in September and October to develop a preferred land use scenario which was subsequently shared with City Council and Planning Commission. The recommendation described the preferred land use scenario that was advanced through the process as well as some items for future consideration. The content of this recommendation is described in Section 4.

City staff met with a targeted selection of larger property owners in the study area to review the preferred scenario in January 2016. The purpose of these check-ins were to get general feedback about the preferred scenario from property owners whose properties have redevelopment potential and were not intended to be an extensive property owner and business outreach effort. Property owners generally supported the preferred scenario and the opportunities that come with a Mixed Use plan designation and zoning. However, the owners did have some concern about possible reductions in parking and a possible requirement to include upper-story residential uses. They were especially interested and supportive of establishing a transportation funding district to share the infrastructure costs.

Milestone 3: Transportation Investment Identification

The final public involvement milestone focused on identifying needed transportation investments to support the preferred land use scenario. The CAC met in January 2016 to review a preliminary set of transportation investments and performance measures. After review by the CAC, the project team hosted an online open house and two in-person open houses in March 2016 to gather input on the proposed transportation investments. More than 150 people attended the two in-person open houses, and about 25 participated in the online open house. The open houses and online open house were advertised through a city email blast, social media notices, a press release, and a postcard mailed to around 1,000 addresses in the study area.

In April 2016, the CAC met to review input gathered from the public and develop a final recommendation on the CWP. The CAC endorsed the CWP. Their recommendation was shared with Planning Commission and City Council to inform the decision making process.

Public Involvement Documentation

The Public Involvement Plan for the project is included in Appendix B. Individual comment reports from the public events are included in Appendix C. CAC meeting summaries are included in Appendix D.

04 Preferred Land Use & Transportation Scenario Development


Photo Credit: Alpen Exposure

SECTION 4- PREFERRED LAND USE & TRANSPORTATION SCENARIO DEVELOPMENT

A key component of the CWP is the development of the Preferred Land Use and Transportation Scenario. This section provides an overview of the:

- Benefits of developing a preferred land use scenario
- Relationship of the preferred land use scenario to the transportation system
- Tools used to evaluate land use scenarios
- Proposed changes of the Preferred Land Use Scenario
- Expected outcomes of the Preferred Land Use Scenario

Overview of Approach

Land use and transportation planning are inherently linked. Most notably, the proximity of services impacts a user's travel choice. If desired destinations are far apart, users must travel longer distances. If a diversity and density of uses are closer together, users can make shorter trips and non-auto modes become more viable. The conditions have a direct impact on the size and form of the built transportation system to support a given land use pattern.

These realities are critical to the development of the CWP. The transportation effects of land use patterns were directly considered during the evaluation of different land use scenarios. The Preferred Land Use Scenario itself is very much part of the transportation solution that is discussed in Section 6.

Envision Tomorrow

A scenario planning tool called Envision Tomorrow was used to evaluate the effects of initial land use scenarios developed by the CAC to help inform the development of the Preferred Land Use Scenario. This tool allowed the CAC to develop different land use concepts and receive input on potential outcomes including:

- Potential housing type mix
- Redevelopment potential
- Effect on travel mode choice
- Effect on vehicle miles traveled
- Effect on housing costs
- Effect on household transportation cost

The following subsection describes Envision Tomorrow and its application to the CWP.

Description of Envision Tomorrow

Envision Tomorrow is an open-access scenario planning package that was employed to analyze future growth patterns and policy decisions impacting growth within the Central Westside. The software, comprised of an ARC/GIS extension and a Microsoft Excel model, develops estimates of how these patterns and policies will impact a range of measures, including growth capacity to travel behavior.

Envision Tomorrow is a suite of planning tools that includes analysis and scenario design tools. The analysis tool allows the use of GIS data, such as tax assessor parcel data, the General Plan, and Census data. The scenario design tool was used to "paint" a series of alternative future development scenarios on the landscape within Bend's Central Westside. For each scenario considered, the entire study area was painted with a set of assumptions related to the mix of uses, housing and/or job density, building heights, parking requirements, land and construction costs and residential and commercial rents.

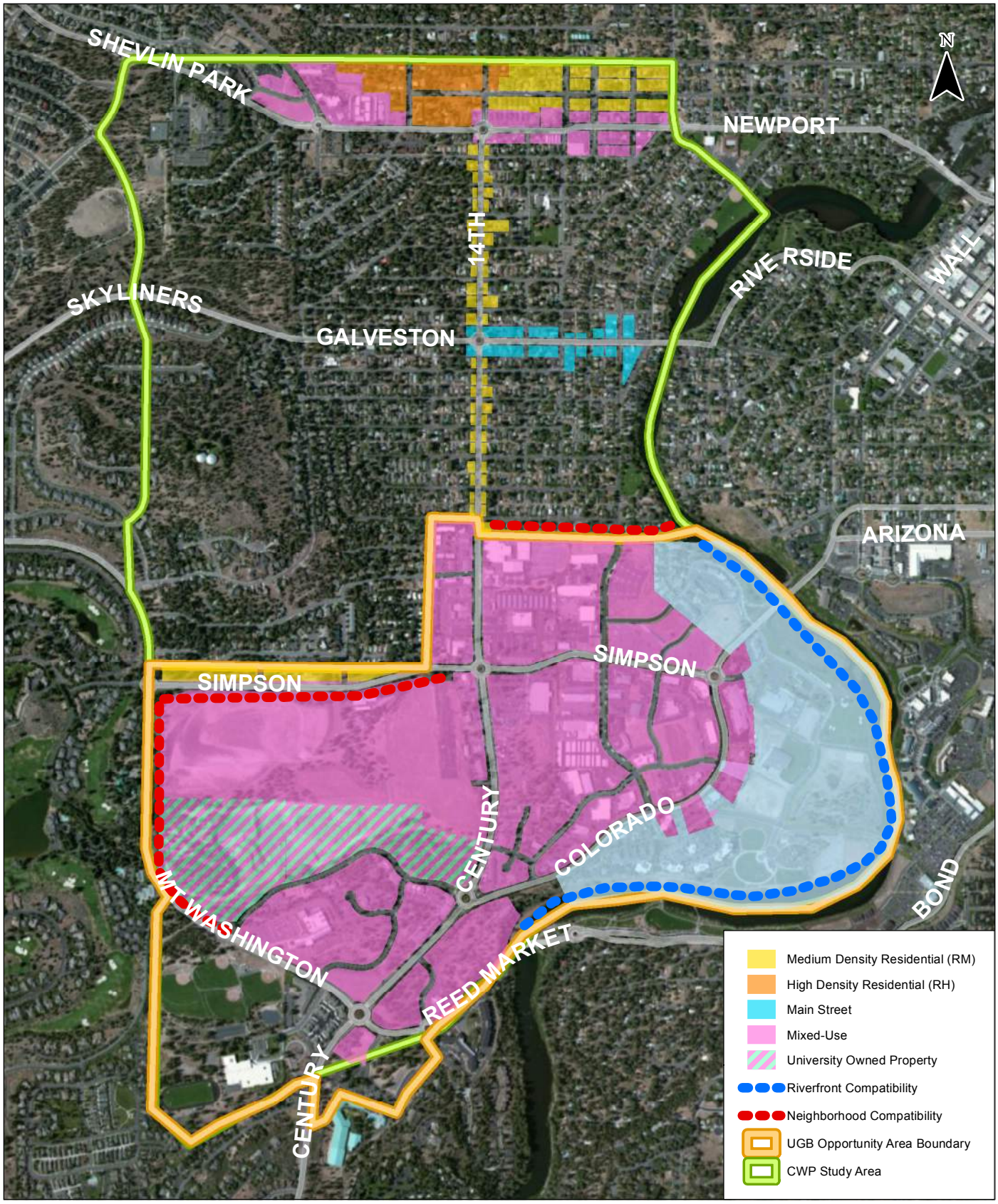
The outcomes of Envision Tomorrow are intended to help inform planning efforts based on predictive modeling. The model should not be interpreted as a site-specific prediction of how development will occur over the planning period. As such, the model must be interpreted as a prediction of different land use patterns as a whole. Individual property and business owners will respond to specific market conditions and circumstances that the model is unable to predict at each parcel level.

Preferred Land Use Scenario

The Preferred Land Use Scenario was developed based on a focused scenario development process that is described more fully in Appendix E. This section focuses on the Preferred Land Use Scenario that is an outcome of that scenario development process and recommended by the CAC.

The Preferred Land Use Scenario is shown in Figure 3. This scenario map is based on the Development Types used in Envision Tomorrow, not General Plan land use designations. The descriptions of the individual development types are included in Appendix F. A land use map that is translates the General Plan development types to City of Bend land use designations is included in Appendix G.


Photo Credit: Alpen Exposure



CITY OF BEND
CENTRAL WESTSIDE PLAN
2016

Preferred Land Use Scenario
Bend, Oregon

Figure
3

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Community Advisory Committee Recommendation

In support of the preferred land use map, the CAC also recommended written descriptions of subareas with the study boundary to provide additional context related to the group's intent. Update after CAC meeting.

Northern neighborhoods including the Galveston, Newport and 14th Avenue corridors

The CAC agreed that land use designations in most of these residential neighborhoods should remain as they are today, which includes a mix of standard and medium density residential. The CAC considered the Newport Avenue, Galveston Avenue and 14th Street corridors separately and recommended some changes to allowed land uses in two of those corridors.

The 14th Street corridor from Commerce to about Mt. Washington will be given a Mixed Use plan designation as part of the UGB process

Per the CAC, the Newport Corridor should have a Mixed Use designation, as well as some increases to allow for slightly higher residential densities. The process for implementing these plan designations on Newport Avenue will occur during the proposed Phase 2 of the CWP (described in Section 7).

Per the CAC, Galveston Avenue will remain a Commercial Convenience zone (this zoning designation is generally consistent with the main street development type shown in Figure 3). A subsequent parking study may result in some changes to related city code language in this corridor.

When these changes are implemented, the CAC recommended carefully considering design guidelines to ensure that redevelopment along corridors are compatible with adjacent neighborhoods.

Southern industrial area

The CAC recommended major changes to land use designations in this area. As shown in Figure 3, the recommendations focus on creating a mixed use designation throughout this area. As changes are implemented, the CAC recommended considering the following:

- Protections along the river to maintain views to the river and from the river. The existing zone along the river in the study area accounts for this buffer.
- Including neighborhood buffer or transition zones between existing residential neighborhoods and new mixed use areas. These areas are shown on the map with a dashed red line.
- Allowing additional buildings of up to five stories in some parts of this area.

Campus and County landfill site

The CAC recommended showing the County landfill site with similar mixed use zoning as identified in the Southern Industrial Area. The CAC acknowledged that the site may require remediation prior to development. When development does occur, the CAC recommended creating buffer or transition zones along Mt. Washington Drive and Simpson Avenue to create a seamless transition between these redevelopment areas and neighborhoods to the north and west.

Photo Credit: Alpen Exposure

The future university site is shown extending to the pumice mine property because OSU owns that parcel. The CAC did acknowledge that the exact extent of the campus is unknown at this time and will be determined through future land use actions, potentially including a Master Plan that would require extensive public involvement. Based on information provided by OSU-Cascades, the CAC assumed that a 5,000 student campus would be located within the area defined by Simpson Avenue, Mt. Washington Drive, Chandler Drive, and 14th Street by 2040. The remaining land in this area was assumed to be mixed use, which also would allow a university use.

Expected Rate of Development

The CWP assumes a horizon year of 2040. Buildout of the study area is not expected by that time. Most development predicted to occur by the Envision Tomorrow model is on vacant land. A map showing the assumed development and redevelopment through 2040 is included in Appendix H. As noted above, the rate of housing development per the model was estimated at about 2 percent per year, which amounts to roughly 42 units per year. These modeled rates of development are only intended to be for planning level analysis across the study area and will likely fluctuate overtime. The Envision Tomorrow model was also used for the UGB process to estimate rates of development. The same method and approach was applied to the CWP as used in the UGB process.

Relationship to Urban Growth Boundary Expansion Process

The southern portion of the Central Westside Area is identified as an "Opportunity Area" within the ongoing Urban Growth Boundary (UGB) Expansion effort within the City of Bend. Opportunity areas were selected by the UGB Technical Advisory Committee as places within the City that should support additional development, particularly employment and residential uses. These areas must be included in the UGB study to meet the Remand requirements. This portion of the CWP will be part of the UGB adoption process. The remaining land of the CWP will follow a separate and independent adoption process that is proposed for Phase 2 of the CWP. In addition, the CWP and the UGB have similar goals and outcomes related to land use and transportation planning, including reliance of new mixed-use land use designations and meeting the UGB Remand requirements to reduce vehicle miles travelled (VMT).

05 Performance Measures

SECTION 5 – PERFORMANCE MEASURES

The CWP relied on a host of land use and transportation performance measures to evaluate land use scenarios and the transportation system needed to support them. This section describes the development of those performance measures and key findings.

Performance Measures Overview

Transportation and land use are inherently related. Sprawling land use has been demonstrated to result in more vehicles on roadways because people are required to drive the longer distances between their destinations, while mixed-use land use generally results in more people cycling, walking or taking transit between their residences, offices, and other nearby destinations.

In general, performance measures help communities, decision-makers, engineers, and planners understand the benefits and trade-offs of alternatives being considered and compared. They are useful to:

- Compare alternatives: Performance measures provide a standard unit by which alternatives can be compared.
- Communicate technical information: Technical analyses can be easily communicated to non-technical individuals through metrics that are understood by most.
- Provide clear and discrete decision points: Performance standards are very easy to understand and clearly communicate when action is needed.

A key outcome of the CWP was to develop new performance measures that could more holistically consider the Preferred Land Use scenario and thereby more effectively plan the transportation system needed to support all users, regardless of age, ability, income or access. The CWP performance measures reflect those that are:

- **Easy to Understand**: Performance measures should be intuitive and use common terms that are readily understood by the public.
- **Easy to Implement**: Performance measures should include a clear framework or method for evaluation and rely on data that is easily obtained or readily available. In addition, measures should be able to be monitored over time.
- **Reflect User Experience**: Performance measures should reflect how the user perceives the function of the transportation system and/or desired vision for the land uses.
- **Useful for Prioritization**: Performance measures should allow the prioritization of transportation improvement projects within the study area. This will be done in Phase 2 of the CWP.
- **Useful as a Threshold or Standard**: Performance measures should clearly indicate when additional transportation improvements and/or changes to land use designations are needed.
- **System Completeness**: Performance measures should inform needs or priorities to build a complete mixed-use neighborhood and the corresponding transportation system needed to support a variety of mode and route choices for users.
- **Safety**: Performance measures should provide information on the likelihood and severity of crashes throughout the transportation system.
- **Multimodal Transportation System**: Performance measures should provide information on the experience of freight, passenger autos, cyclists, pedestrians, and transit.
- **Adaptable**: Performance measures should be easily modified or implemented for use in different subareas around the City for future projects.

With these goals in-mind, the CAC established specific objectives for defining performance measures, including:

- Support livable neighborhoods with access to nature, parks, and open spaces and a small town feel;
- Create and maintain well-planned, attractive neighborhoods;
- Develop a safe, convenient multimodal transportation system; and
- Identify a land use and transportation plan that is financially feasible.

Performance measures were applied at several points throughout the CWP to evaluate progress towards these goals:

- Land use performance measures were applied during the land use scenario development process using the Envision Tomorrow model. These metrics were high level measures that indicated general progress towards goals such as increasing pedestrian, bike, and transit mode split and reducing the amount of household budget spent on transportation costs.
- Transportation performance measures were applied to the evaluation of the Preferred Scenario to identify transportation projects,

Table 1. Scenario Planning Performance Measures

Goal	Indicator	Notes
Support livable neighborhoods with access to nature, parks and open spaces and a small town feel	Housing costs/housing match to future population	How well does the new housing in a scenario match the expected future population's income and preferences?
	New housing and jobs within ¼ mile of parks or trails	How does the scenario's design increase or decrease access to parks and trails?
	Jobs-Housing Balance	How does the balance of jobs and housing in an area influence transit ridership, walking and biking?
	Building scale	How does the scale of buildings change?
Create and maintain well-planned, attractive neighborhoods	Housing mix by building type	A detailed breakdown of the types of new housing in each scenario by type (multifamily, townhome, single family) but also by building, such as apartment, cottage, skinny lot single family units.
	Housing affordability	How does the mix of housing in each scenario influence the prices for those units (rents and sales prices)?
	Mix of uses	How diverse are the land uses from area to area across the scenarios?
	Acres of impervious surface	Quantifies area of impervious surface., such as traditional asphalt or concrete
Develop a safe, convenient multimodal transportation system	Walk and bike trips	How does the land use pattern in each scenario impact the amount of walking trips?
	Transit ridership	How does the land use pattern in each scenario impact the amount of transit trips?
	VMT per capita	How does the land use pattern in each scenario impact the amount of driving and "vehicle miles traveled," or VMT per person?
	Crash rates per capita	How do land use and transportation changes impact traffic safety?
Identify a land use and transportation plan that is financially feasible	Household Transportation Costs	How much does the average household spend on transportation?

programs, and policies needed to support the transportation system. The performance measures applied at this stage in the process included output from the travel demand model and other measures to account for multimodal transportation, safety, and livability.

Land Use Performance Measures: Envision Tomorrow

Land use has the ability to influence transportation patterns and therefore has a significant impact directly on transportation performance. For example, mixed-use land use patterns promote walkable communities in which people can easily walk short distances from their home to the store or the office[1]. Land use can encourage better jobs-housing balance within areas, resulting in shorter commutes and often increasing pedestrian, bicycle, and transit mode split.

The Envision Tomorrow model was used to evaluate the land use scenarios during the project. The tool provided estimates on how the changes in land use impacted transportation choices, transportation costs, and other trip characteristics in the study area. The model allows a look at the difference between the results of the current planning for the area, and how that would change under the preferred scenario.

Table 1 identifies key indicators used to evaluate land use scenarios (organized by identified goal) during the scenario planning process.

Overview of Envision Tomorrow Outputs

The following figures illustrate several of the outputs from the Envision Tomorrow model related to the performance measures. These measures were used to compare the three scenarios with the Preferred Scenario identified through the CWP process. A complete set of outputs relative to the performance measures is included in Appendix I.

Each figure shows the expected 2040 conditions based on growth within either the current land use scenario or the preferred land use scenario.

Figure 4 shows the housing mix makeup of each scenario. As shown, the preferred scenario reflects an increase in the overall percentage of multifamily units in the study area. This is mostly due to the housing that would be provided within the mixed use area in the southern portion of the study area.

1 Driving and the Built Environment, Transportation Research Board, 2009 http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf

Figure 4. Housing Mix

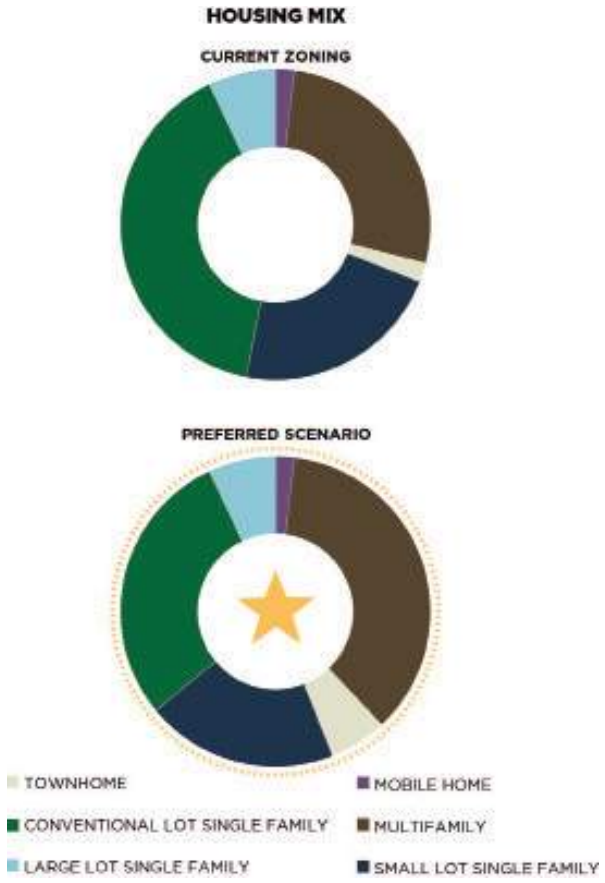


Figure 5 illustrates the number and percentage of daily trips that are contained within the CWP study area (these are often referred to as “internal trips”). These types of trips are typically shorter in distance and often times can be made via walking or cycling. As shown, the percentage of internal trips is expected to increase with the preferred land use scenario relative to the other scenarios analyzed. This increase in frequency of internal trip making also can lead to lower vehicle-miles-traveled (VMT) per capita results. .

Figure 5. Daily Internal Trips

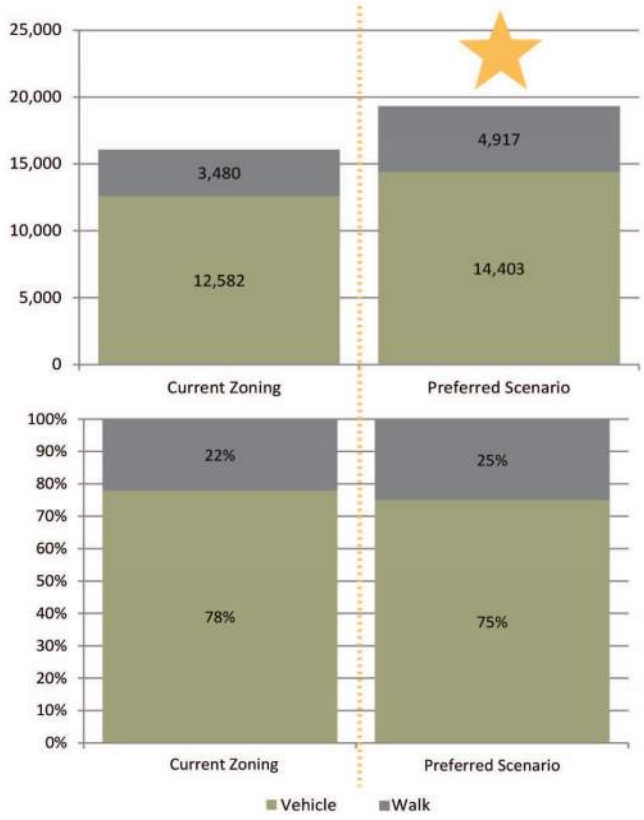


Figure 6 further illustrates this result by showing the expected daily VMT per capita decreasing in the preferred scenario.

Figure 6. Change in Daily VMT

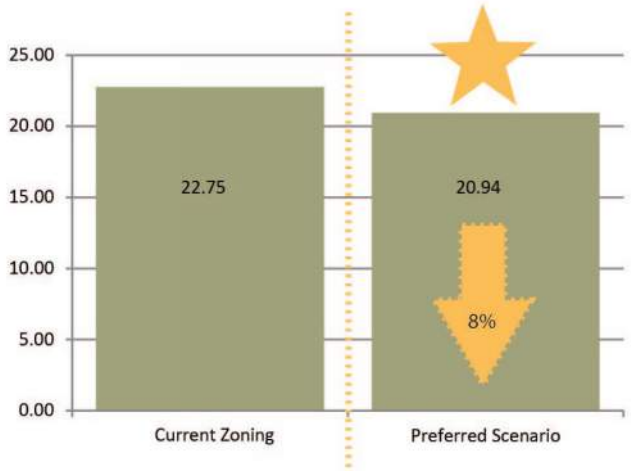


Figure 7 illustrates the expected change in transit trips per unit after the preferred scenario is implemented. A higher number of transit trips are expected per household unit under the preferred land use scenario when compared to the existing land use scenario.

Figure 7. Change in Transit Trips

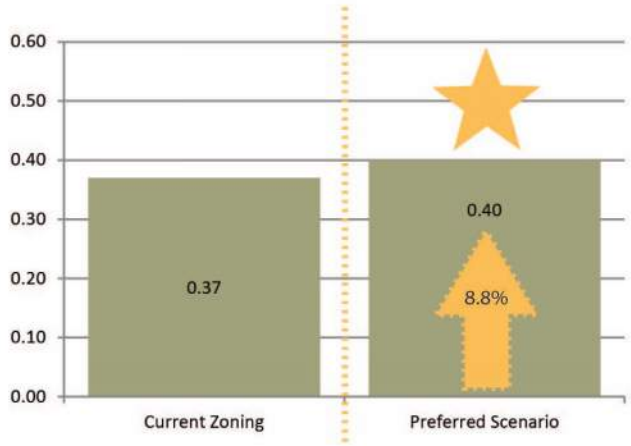


Figure 8 illustrates the expected transportation costs per household under the preferred land use scenario. The transportation costs are expected to decrease by approximately 6.7 percent from the existing transportation costs per household, likely due to the shorter trips and the increased ability to walk, bike, or take transit.

Figure 8. Change in Household Transportation Costs

Collaboration of Bend Travel Demand Model

One of the tools that the City of Bend and the MPO use for understanding how land use affects transportation is a travel demand model. This model is used to estimate future traffic volumes on primarily arterial and collector streets within the UGB. The inputs to this tool include information about existing and future land uses, by geographical location and existing and future transportation facilities. The outputs are estimations of year 2040 traffic volumes that can be used as one measure to identify and appropriately plan improvements and modifications

to the transportation system. This model can also be used to calculate other measures related to VMT, air quality emissions, transit forecasting, etc.

Outputs from both the Bend Travel Demand Model and Envision Tomorrow were used to evaluate the transportation effects of the Preferred Land Use Scenario. The results from that model support the findings of the Envision Tomorrow model. Specifically, the Bend Travel Demand Model found that VMT would be reduced 1-3 percent as a result of the CWP Preferred Land Use Scenario.

Overview of Effect of the Preferred Land Use Scenario

Based on the findings from Envision Tomorrow and the Bend Travel Demand Model, the Preferred Land Use Scenario was found to:

- Reduce single occupancy vehicle usage and increases the viability of walking, biking, and transit as available mode choices
- Reduce the length of vehicular trips associated with residents, employees, and shoppers in the study area
- Reduce vehicle miles travelled per capita citywide. This measure evaluates both the frequency and length of trips made by each person within the UGB.

Transportation Performance Measures

Transportation performance measures were used to assist in developing a vision for a multimodal transportation system that supports the preferred land use scenario. These performance measures were developed with input from the CAC. Appendix J provides more information on the development of the transportation performance measures.

The transportation performance measures that were used are summarized in Table 2. The specific application and outcomes of these performance measures are described in the Transportation Analysis Memorandum included in Appendix K.

Section 6 describes the resulting projects, policies, and programs that were developed based on these performance measures.

What are Typical Transportation Performance Measures?

Since the 1950s and the construction of the national freeway system, engineers and communities have looked for ways to evaluate how well the transportation system is operating relative to user expectations. This has led to community adoption of transportation performance standards that define what is and is not acceptable. Today, the City of Bend, like other cities around the country, relies on a driver's experience at intersections to determine the adequacy of the transportation system.

What Typical Intersection-Based Performance Measures Don't Tell Us?

While much useful information can be taken from the typical performance measures, much information is missing. These measures are not useful to:

- **Describe the function of non-auto modes**: While some information about pedestrian, bicycles, transit, and other users can be gleaned from volume-to-capacity ratios and control delay, the measures were not designed to provide an insightful look at modes beyond the auto mode. Typically, this multimodal information is only used to further quantify the impact of other modes on automobile travel.
- **Comprehensively consider tradeoffs:** While the typical measures can describe trade-offs from the perspective of auto performance, those measures alone do not consider impacts to other modes, costs, or safety, among others.
- **Evaluate the completeness of the transportation system**: An important aspect of the function of the transportation system is how complete the system is (i.e., roadway connectivity, pedestrian/bicycle networks, etc.). A complete transportation system generally provides options to users that can address spot intersection congestion.
- **Evaluate the transportation system over a broad period of time**: The typical measures are most commonly used to report the function of the auto system during relatively narrow windows of time. For example, a single volume-to-capacity analysis result may tell the reader about a single movement during a single hour on a single day of the year.
- **Evaluate the interaction of land uses and transportation system**: As mentioned above the way a street is designed and used with the adjoining land uses is not easily measured by the v/c or LOS measurements.

How Are Transportation Performance Measures Used By The City Today?

Depending on intersection type, the city evaluates either volume-to-capacity ratio (V/C) or delay at

intersections to determine the adequacy of the transportation system. The following provides an overview of these measures:

- **Volume-to-Capacity Ratio:** This measure describes the observed or projected traffic volume relative to the calculated capacity for a movement or the intersections as a whole. The city calculates this ratio for an hourly period.
- **Control Delay**: This measure reports the estimated delay experienced by drivers on a given movement or for the intersection as a whole. Delay is based on observed or projected traffic volume and the type of intersection control in use. This measure is typically reported in seconds per vehicle and is calculated for a 15-minute or hourly period.
- **Level-of-Service (LOS)**: LOS is another common metric. It rates the delay experienced by drivers on a scale from A through F.

Table 2 shows what performance standards the City of Bend currently requires for intersections under City jurisdiction.

City of Bend performance standards are further influenced by concurrency requirements. Concurrency requires that mitigation is in place when an intersection exceeds the applicable performance standard, regardless of the level of impact a development contributes or the cost of the mitigation. This can result in a "last man in" scenario where development incrementally erodes system capacity until potentially major and unaffordable improvements are required. The City code does allow the developer to make incremental payments to meet the concurrency requirements but it is difficult to administer and must be legally consistent with the System Development Charge (SDC).

Recommended Performance Measures

Table 3 summarizes the recommended performance measures for the CWP. The application of these performance measures is described in the Transportation Analysis included in Appendix K. The table describes each performance measure and the goals the performance measures evaluate. The green, yellow, and red circles contained in the table have the following meaning;

Performance measure satisfies objective.

Performance measure somewhat satisfies objective.

Performance measure does not satisfy/address objective.

Table 2. City of Bend Intersection Performance Standards

Control Type	Performance Measure	Performance Standard	Analysis Period	Notes
Two-Way Stop-Control	Control Delay	50 seconds for the highest delay movement at the intersection (typically a stop-controlled left-turn)	Highest traffic hour between 4:00 and 6:00 p.m. on a weekday	For side-street approaches with 100 or more peak trips during the peak hour
All-Way Stop-Control	Control Delay	80 seconds average delay per vehicle	Highest traffic hour between 4:00 and 6:00 p.m. on a weekday	Average for intersection as a whole during peak hour
Roundabout	Volume-to-Capacity	1.0 for the approach with the highest delay (critical movement)	Highest traffic hour between 4:00 and 6:00 p.m. on a weekday	For intersection as a whole during the peak hour
Traffic Signal	Volume-to-Capacity	1.0 for the intersection as a whole.	Highest traffic hour between 4:00 and 6:00 p.m. on a weekday	Analysis period depends on conformity with the Bend Urban Area Transportation System Plan and location of intersection.

Table 3 Recommended Performance Measures

Measure	Description of Measure	Goals Addressed[1]	Modes	Understandability	Ease of Implementation	Reflective of User Experience	Useful for Prioritization	Useful as Threshold or Standard	System Completeness	Safety	Multimodal Transportation System	Adaptable	Notes
Mode Share	Percentage of trips made via each mode, also calculated in aggregate (single occupancy vehicle vs non-single occupancy vehicle mode share).	• Livable neighborhoods • Well-planned, attractive neighborhoods • Safe, convenient multimodal system	Auto Transit Bike Ped Freight	🟢	🟡	🔴	🟡	🟡	🟡	🔴	🟢	🟢	Measure will be implemented based on assumed changes in mode share due to planned improvements, location of development, etc.
Sidewalk Completeness	Percent of priority pedestrian facilities or improvements that are built.	• Livable neighborhoods • Well-planned, attractive neighborhoods • Safe, convenient multimodal system	Ped	🟢	🟢	🟡	🟢	🟢	🟢	🟡	🟢	🟢	Implementation of measure will likely include identifying needed sidewalk improvements to achieve a complete system.
Crossing Completeness	Crossings Completeness is the percentage of priority pedestrian crossings or improvements that are built. This measure includes improved intersection crossings and midblock crossings.	• Livable neighborhoods • Well-planned, attractive neighborhoods • Safe, convenient multimodal system	Ped	🟢	🟢	🟡	🟢	🟢	🟢	🟢	🟢	🟢	Implementation of measure will likely include identifying needed crossing improvements to achieve a complete system.
Bicycle Facility Network Completeness	Percent of priority bicycle facilities or improvements that are built.	• Livable neighborhoods • Well-planned, attractive neighborhoods • Safe, convenient multimodal system	Bike	🟢	🟢	🟡	🟢	🟢	🟢	🟡	🟢	🟢	Implementation of measure will likely include identifying needed bicycle improvements to achieve a complete system.
Intersection Completeness	Percent of intersections of arterials/ collectors that have capacity enhancements (signals, roundabouts, etc.) and meet minimum spacing requirements for a connected network.	• Livable neighborhoods • Well-planned, attractive neighborhoods • Safe, convenient multimodal system	Auto Transit Bike Ped	🟢	🟢	🟡	🟢	🟢	🟢	🟡	🟢	🟢	Implementation of measure will likely include identifying needed intersection improvements (collector & arterial intersections) to achieve a complete system.
Crash Frequency	The number of crashes occurring at a site, facility, or network in a one year period. Can be differentiated by severity.	• Safe, convenient multimodal system	Auto Transit Bike Ped Freight	🟢	🟢	🟡	🟢	🟡	🔴	🟢	🟡	🟢	This measure is reactive to crash history; it does not account for crash prediction or risk.
Predicted Crash Frequency	The predicted (or expected) number of crashes expected to occur at a site, facility, or network in a one year period. Can be differentiated by severity.	• Safe, convenient multimodal system	Auto Transit Bike Ped Freight	🟢	🟡	🟡	🟢	🟡	🔴	🟢	🟡	🟢	Accounts for crash prediction but would require additional information on geometric characteristics.

Measure	Description of Measure	Goals Addressed[1]	Modes	Understandability	Ease of Implementation	Reflective of User Experience	Useful for Prioritization	Useful as Threshold or Standard	System Completeness	Safety	Multimodal Transportation System	Adaptable	Notes
Transit Accessibility	Percent of population/employees and retail living/existing within "X" miles or "Y" minutes that can access fixed-route transit. Could also be defined for a specific site -- whether that site is within a certain distance or time of fixed-route or high-frequency transit. (..."and the service at these stops meets a minimum level")	• Safe, convenient multimodal system	Transit	🟢	🟢	🟡	🟡	🟡	🟢	🔴	🟢	🟢	Measure will be implemented based on relative change in access to transit via modal or infrastructure improvements.
Vehicle Hours of Delay per Trip	Vehicle hours of delay per trip during 2-hour weekday p.m. peak period, per trip	• Livable neighborhoods • Safe, convenient multimodal system	Auto Freight	🟢	🟡	🟡	🟢	🟢	🔴	🔴	🟢	🟢	Based on travel demand model outputs.
Average Travel Time	Average travel time is a relatable measure to the public and a good indicator of the system or individual corridor performance. (travel time: travel time required to traverse a segment)	• Livable neighborhoods • Safe, convenient multimodal system	Auto Transit Bike Ped Freight	🟢	🟡	🟢	🟢	🟡	🟡	🔴	🟢	🟢	Implementation of measure will require identification of key travel corridors to evaluate.
Demand to Capacity Ratio	Ratio of the forecast future demand of a segment or intersection to its capacity	• Livable neighborhoods • Safe, convenient multimodal system	Auto Freight	🟡	🟢	🟡	🟢	🟢	🟡	🟡	🟢	🟢	This could be implemented at an intersection and/or segment level. It could reflect the peak hour or the 2nd highest peak hour, etc. Note that additional data collection would be required if it went beyond the peak hour.

The goal to identify a land use and transportation plan that is financially feasible is not directly achieved by a single measure. Rather, the projects necessary to meet the objectives of these measures will be compared against financial realities.

06 Recommended Transportation Projects and Policies

SECTION 6 – RECOMMENDED TRANSPORTATION PROJECTS & POLICIES

The purpose of this section is to document the recommended transportation projects, programs and policies to support the Preferred Land Use Scenario. These projects and policies were developed based on the performance measures described in Section 5 and significant public outreach and input described in Section 3.

The intent of the recommended transportation projects and polices is to support the Preferred Land Use Scenario in a manner that is consistent with the identified goals of this plan and the values of the community.

The recommended projects are not prioritized. That process and more refined cost estimates will be completed as part of Phase 2 of the CWP. These efforts will inform how a potential transportation district is implemented and managed. At this time the project descriptions are very general, such as calling out corridors to be studied or possible intersections to be improved.

Specific projects and polices are described herein. The transportation analysis memorandum is included in Appendix K. The data collection effort and review of existing transportation operations is described in Appendix L.

Priority Pedestrian Network

The priority pedestrian network is intended to provide complete north/south and east/west sidewalk corridors throughout the study area. A complete network will provide network connectivity and increase the viability of walking trips.

Pedestrian Corridors

The priority pedestrian network identified on Figure 10 will be prioritized for sidewalk improvement or gap filling projects. The pedestrian corridors, pedestrian crossings and bike priority networks were reviewed against the existing bike and pedestrian city priorities as well as the existing multi-modal safety priorities.

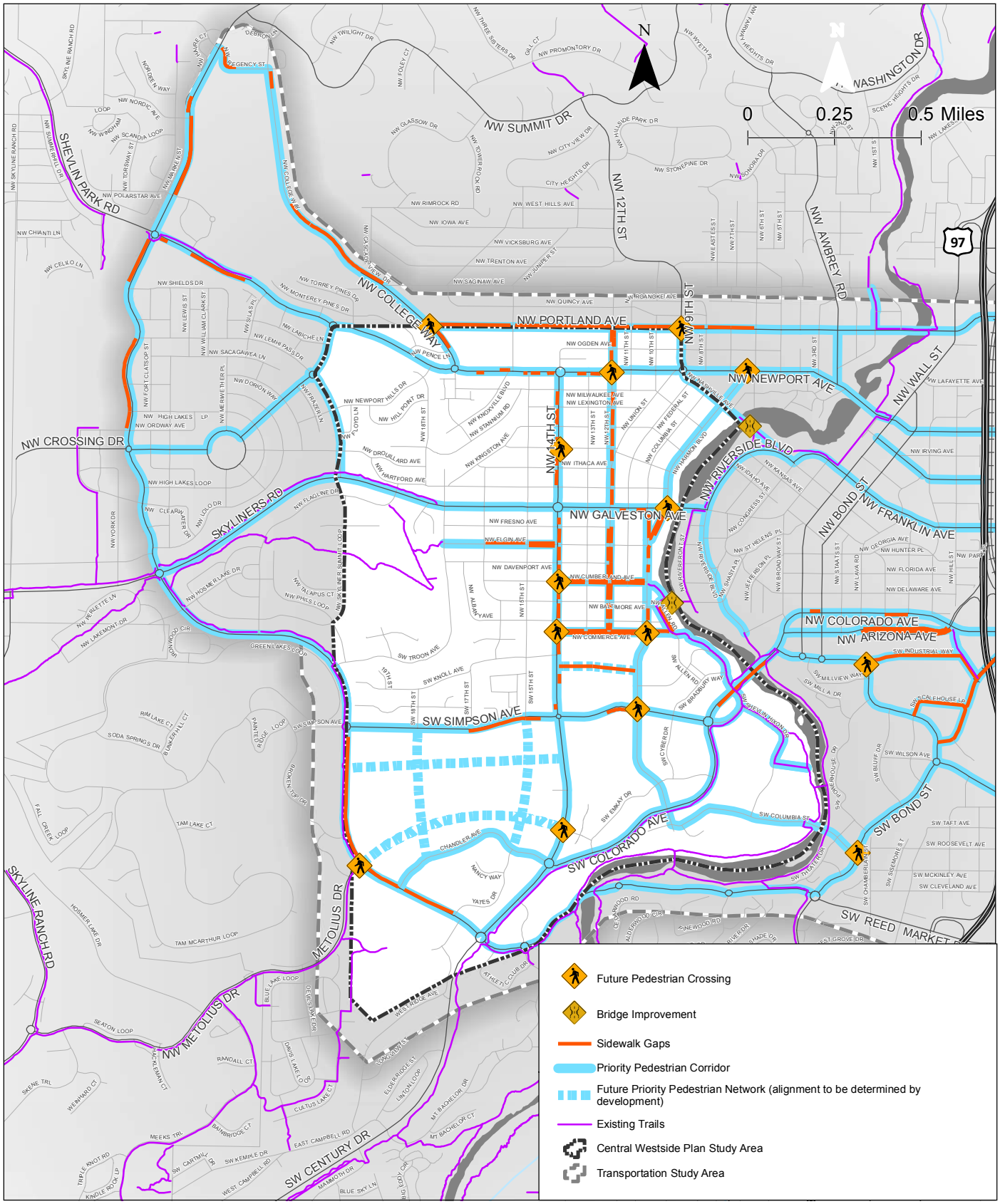
Improvements to arterial and collector roadways should be prioritized over local streets.

Future connections across the currently undeveloped parcels between Mt. Washington Drive, Simpson Avenue, 14th Street, and Chandler Avenue are noted. The exact location of such connections will be further evaluated based on future mater plans or site plan applications.

Pedestrian Crossings

Key locations where improved pedestrian crossings should be considered are identified. These are generally along priority pedestrian corridors and particularly across 14th Street, Columbia Street, Galveston Avenue, Newport Avenue, and Mt. Washington Drive. For many of the streetscape or corridor improvements, there will be pedestrian crossings included in the projects. The specific design and location of these crossings will be determined at the time of design. Options may include:

- Marked Crosswalks
- Medians/Pedestrian Crossing Islands
- Active Beacons



CITY OF BEND CENTRAL WESTSIDE PLAN 2015

Future Priority Pedestrian Networks and Gaps Bend, OR

Figure **10**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl
Data Source: City of Bend, Deschutes County

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Priority Bicycle Network

The priority bicycle network provides a mix of on-street bicycle lane facilities and shared roadway routes. On-street bicycle lanes are generally identified along arterial and collector roadways where right-of-way exists and separation from vehicles provides for a comfortable, convenient and safe cycling environment. Shared roadway routes are identified along local streets where vehicular speeds and volumes are typically lower and vehicle and bicycle mixing is more achievable. The following describes these bicycle corridor types in more detail. This network is shown in Figure 11.

On-Street bicycle Lanes

These facilities are intended to provide space that will separate bicycle from motor vehicles. In most cases, this will be in the form of dedicated bicycle lanes. However, where feasible, other on-street facilities should be considered, such as:

- Buffered bicycle lanes
- Separated bicycle lanes
- Multi-use paths

Future connections across the currently undeveloped parcels between Mt. Washington Drive, Simpsons Avenue, 14th Street, and Chandler Avenue are noted. The exact location of such connections will be further evaluated based on future master plans or site plan applications.

Shared Roadways

These facilities are intended to provide a more comfortable environment for bicycle and vehicles to share a common lane of travel. These types of facilities are often implemented by constructed bicycle boulevards. The following describes bicycle boulevards as defined in City of Bend's "A Complete and Attractive System of Bikeways Tool Box"[5]

The main feature of a Bike Boulevard is a formal and systematic implementation of speed and volume management. To this end, these roadways typically have frequently spaced traffic calming devices to regulate motor vehicle speeds and reduce cut through traffic; no stop signs (in order to keep people moving on their bicycles); and enhanced crossings of busier streets. Speed management devices need to be developed with emergency service provider input.

Bicycle Crossings

Bicycle crossing locations are identified where generally where priority bicycle facilities cross a higher order roadway, such as arterials and collectors. Specific bicycle crossing treatments should be further evaluated at the time of design. As identified in City of Bend's "A Complete and Attractive System of Bikeways Tool Box" options for such crossing may include at a minimum:High Visibility Pavement Markings and Signage

- Medians/pedestrian crossing islands
- Active Beacons
- Roundabouts (including mini-roundabouts)
- Routing out of direction to a nearby crossing

Bridge Crossings

Improvements to the City-owned bridges across the Deschutes River in Drake Park and Columbia Park should be considered.

Drake Park Bridge – Consider bridge widening, deck smoothing, and other improvements to make the bridge more conducive to bicycle use as well as wheelchairs and strollers.

Columbia Park Bridge – Consider deck smoothing improvements to make the bridge more conducive to bicycle use as well as wheelchairs and strollers.

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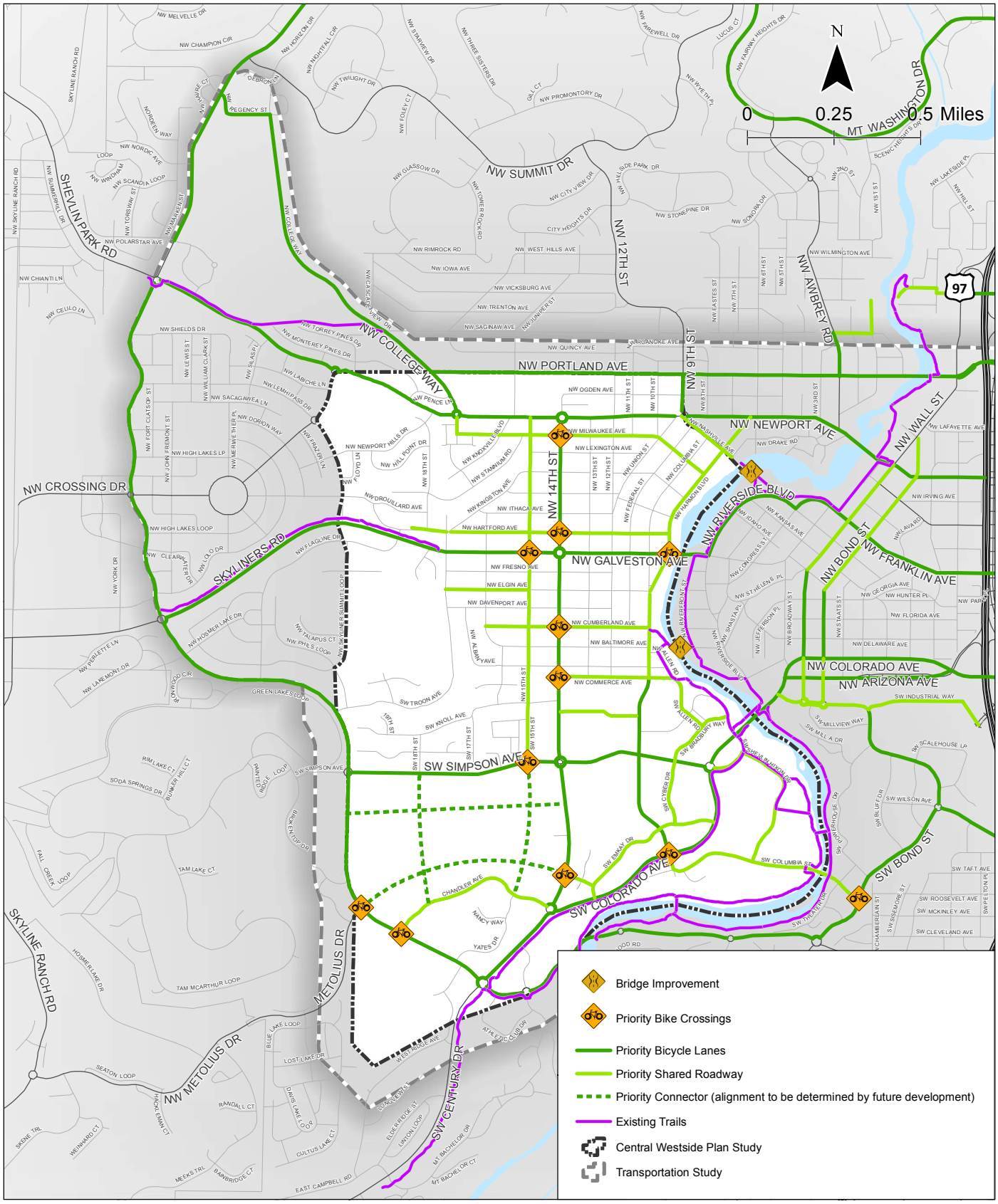

CITY OF BEND CENTRAL WESTSIDE PLAN 2015

Future Priority Bicycle Networks Bend, OR

Figure **11**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl
Data Source: City of Bend, Deschutes County

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Multi Modal Capital Improvement Projects

The following projects represent improvements that will have the most significant effect on mobility for all users including vehicles. Other projects not listed here will be needed to achieve the priority bicycle and pedestrian networks discussed previously. These projects are shown in Figure 12.

Intersection Enhancements

Improved intersections provide opportunities for all users to turn at, cross, or traverse a particular location. This improved access results in better connectivity for users and can allow for more route choices and more efficient travel. The following subsection describes specific intersection enhancements identified within the CWP area. For every intersection enhancement, the City will conduct an intersection design analysis and evaluation consistent with the Roundabout Intersection Design Guidelines. The Guidelines evaluate the need and benefits of different intersection forms. The analysis for higher volume intersections generally focuses on roundabouts and traffic signals.

Identified Roundabouts

Roundabouts are currently identified at the following intersections within the City's current System Development Charge (SDC) project list:

- Columbia Street/Simpson Avenue
- Columbia Street/Colorado Avenue

These projects should remain a citywide priority. The intersections are identified as roundabouts in the SDC list but will be evaluated using the Roundabout Design Guidelines during the project development and design.

Additional Intersection Enhancements

The following intersections are identified for future enhancements to improve connectivity or address existing or future capacity constraints. Each is described briefly.

- **Metolius Drive/Mt. Washington Drive:** This intersection currently operates with stops signs on Metolius Drive. This intersection is a key connection between these two important roadways for both the City and County transportation systems. The location of a future connection west of this intersection into the currently undeveloped pumice mine site is currently shown to be the east leg of this intersection. However, the exact location of access to this property should be evaluated as part of a specific site plan application.
- **Chandler Avenue/Mt. Washington Drive:** The need for improvements at this intersection is tied closely to the changing context of Chandler Avenue due to future development along the facility. Specific improvements at this intersection should be coordinated with the corridor study planned for that facility.
- **Columbia Street Enhancements:** Intersections along Columbia Street will require enhancements as identified in the planned Columbia Street Corridor Study. The outcomes of that study will determine the type of intersection design that is most appropriate. A specific outcome of this study will be to determine the appropriate design for the Harmon Boulevard/Galveston Avenue intersection, as recommended through the Galveston Corridor Study. This design will be based on the north/south mobility needs along Harmon Boulevard in the vicinity of as determined by the study (i.e., pedestrian and bicycle focused or vehicular mobility).

Bond Street/Reed Market Roundabout

This intersection experiences regular demand and congestion during peak periods. Traffic is funneled to this roundabout from the Reed Market corridor from the east, Mt. Washington corridor from the west, employment and retail uses within the Old Mill from the north, and the Brookswood corridor from the south. The capacity constraints observed at this location are symptomatic of limited roadway connectivity and route choices more than the physical intersection configuration. This condition is expected to continue into the future with or without the land use changes proposed by the CWP. In 2007 a concept design to improve the flow of the intersection found that adding lanes to the roundabout resulted in significant construction and right-of-way issues and consequently significant costs. Any further studies should assess at a minimum the cost effectiveness and benefits of any improvements.

The following actions are recommended to address the constraints at this location:

- Identify opportunities to enhance capacity and/or efficiency at the intersection
- Identify roadway connectivity improvements to disperse traffic volumes across multiple corridors. The City's upcoming TSP provides the appropriate forum to address this systematic need as these

routes are likely to be outside of the CWP study area.

Old Mill Connection

Traffic into and out of the Old Mill area is constrained by the limited east-west connections, funneling much of the area traffic to the congested intersections of Reed Market Road/Bond Street, Reed Market Road/3rd Street, Wilson Avenue/3rd Street, and the Arizona Avenue/Colorado Avenue corridor.

Aune Street provides an alternate undercrossing of the Parkway today, but is underutilized due to the roadway configuration, the existing Hooker Creek facility, and private road ownership along Industrial Way. In the event that property redevelops, a new connection could be constructed that would reduce traffic demand at the congested intersections by providing an alternate route to 3rd Street. The Hooker Creek facility, KorPine, is identified as an Opportunity Area within the Bend UGB Expansion process.

Main Street Example

Commerce Street Upgrade

Commerce Street is currently an unimproved gravel road. Upgrades should be planned for this facility, given its potential effectiveness as an east/west connection for all users and the proposed land use changes on the south side of the roadway. As mentioned in the Columbia Street Corridor discussion earlier in this section, the intersection of Commerce Street and Columbia Street is an important gateway and should be evaluated and designed to serve as a transition between the neighborhood of single family homes and the proposed mixed use area. Upgrades may include but are not limited to:

- Reconstruction of roadway to an asphalt surface with dedicated bicycle and pedestrian facilities.
- Enhanced landscaping, lighting, and drainage that could also serve as buffers between land uses.

Mixed-Use Urban Example

Bicycle Boulevard Upgrades

Three bicycle boulevards are planned within the CWP area. These facilities are classified as "Shared Roadways" within the Priority Bicycle Network. Each is described in more details in the following subsections.

The purpose of these facilities is to provide an alternate north/south and east/west route to 14th Street and Newport Avenue, respectively. These bicycle boulevards will require specific design considerations to implement, but are generally assumed to be constructed mostly within the existing right-of-way.

Mixed-Use Neighborhood Example

Specific design considerations for the bicycle boulevard upgrades will include:

- Cross-section of roadway
- On-street parking
- Roadway markings
- Street lighting
- Intersection control type and/or orientation

15th Street

15th Street would be upgraded as a bicycle boulevard from Milwaukee Avenue to Simpsons Avenue. The section of 15th Street north of Lexington Avenue and south of Milwaukee Avenue is currently unimproved. This section should be upgraded to allow for bicycle and pedestrian travel. Right-of-way exists for a complete public street section. Such a connection should be evaluated in the future in the event adjacent properties redevelop.

Improved crossings should be provided at Galveston Avenue and Simpson Avenue.

Milwaukee Avenue

Milwaukee Avenue would be upgraded as a bicycle boulevard from College Way to Harmon Boulevard. An intersection improvement may be required at Milwaukee Avenue/10th Street/Union Street intersection.

An improved crossing of 14th Street should be provided.

Columbia Street/Harmon Boulevard

The corridor follows the river with the southern end point being the Old Mill District and the northern point connecting with Portland Avenue. It allows safe and convenient access to existing neighborhoods, new mixed use areas, and downtown. Another important aspect of the corridor is that it accesses the two existing bike and pedestrian bridges across the Deschutes River.

This upgrade should be coordinated in conjunction with the planned street study for this segment described in a subsequent subsection.

New Roadway Crossings

Several new roadway crossing locations are identified to improve the connectivity of the pedestrian and bicycle system. The specific configuration and design of each should be individually considered. The identified location of new crossings is shown on Figure 12.

Street Studies and Projects

The corridors listed below have been identified as facilities that should be further evaluated for ways to improve vehicular, pedestrian, bicycle, or transit mobility. Each corridor has particular attributes that should be incorporated into the ultimate concept and design. Phase 2 of the Plan will focus on refining the projects and costs for the corridors for the transportation district. These attributes are identified for each corridor.

Columbia Street/Harmon Boulevard

Columbia Street provides a connection into the study area from Bond Street via the Columbia Bridge. The corridor is identified as a high priority bike boulevard in the existing City bike and pedestrian priorities. Two roundabouts along Columbia Street at Colorado Avenue and Simpson Avenue have been identified within the City of Bend System Development Charge program.

Between Bond Street and Simpson Avenue, Columbia Street serves as a major vehicle connection even though it is classified as a Local Road in the Bend Transportation System Plan and the portion south of Colorado Avenue is privately owned. This section of Columbia Street will also provide a major north-south connection through the proposed Mixed Use area identified within the Preferred Land Use Scenario.

North of Commerce Street, Columbia Street transitions to an established neighborhood. As a result, pedestrian and bicycle mobility and local vehicle access should be prioritized over regional vehicular connections. The future study of Columbia Street should consider this context.

Intersection enhancements are identified on Columbia Street north of Simpson Avenue. The Commerce and Columbia intersection has over the years been identified as needing a gateway type treatment into the neighborhood. This intersection is an important transition point between the urban mixed use area in the Plan and the neighborhood. These enhancements should be evaluated based on the identified purpose of Columbia Street in the vicinity of each enhancement. For example, if vehicular mobility or circulation are identified needs, roundabouts may be an option. If north-south pedestrian and bicycle connectivity is the need, improved crossings may be considered. This also includes an intersection enhancement at Harmon Boulevard and Galveston Avenue where a mini-roundabout was identified as an improvement in the Galveston corridor study.

In that study the intersection was evaluated by using the Roundabout Design Guidelines and it was determined that a roundabout form was the most appropriate intersection improvement.

Portland Avenue

Portland Avenue is a significant east-west connection within the Central Westside, as it connects via Olney to the east side of the City. The corridor within the study area is today served by a combination of sides-street stop-controlled intersections and all-way stop controlled intersections. It is very unlikely that most of these intersections meet stop control warrant analysis. This configuration results in inefficient east-west travel for all users and creates challenges for vehicles, including bicyclists, attempting to turn onto or traverse across Portland Avenue from side-streets.

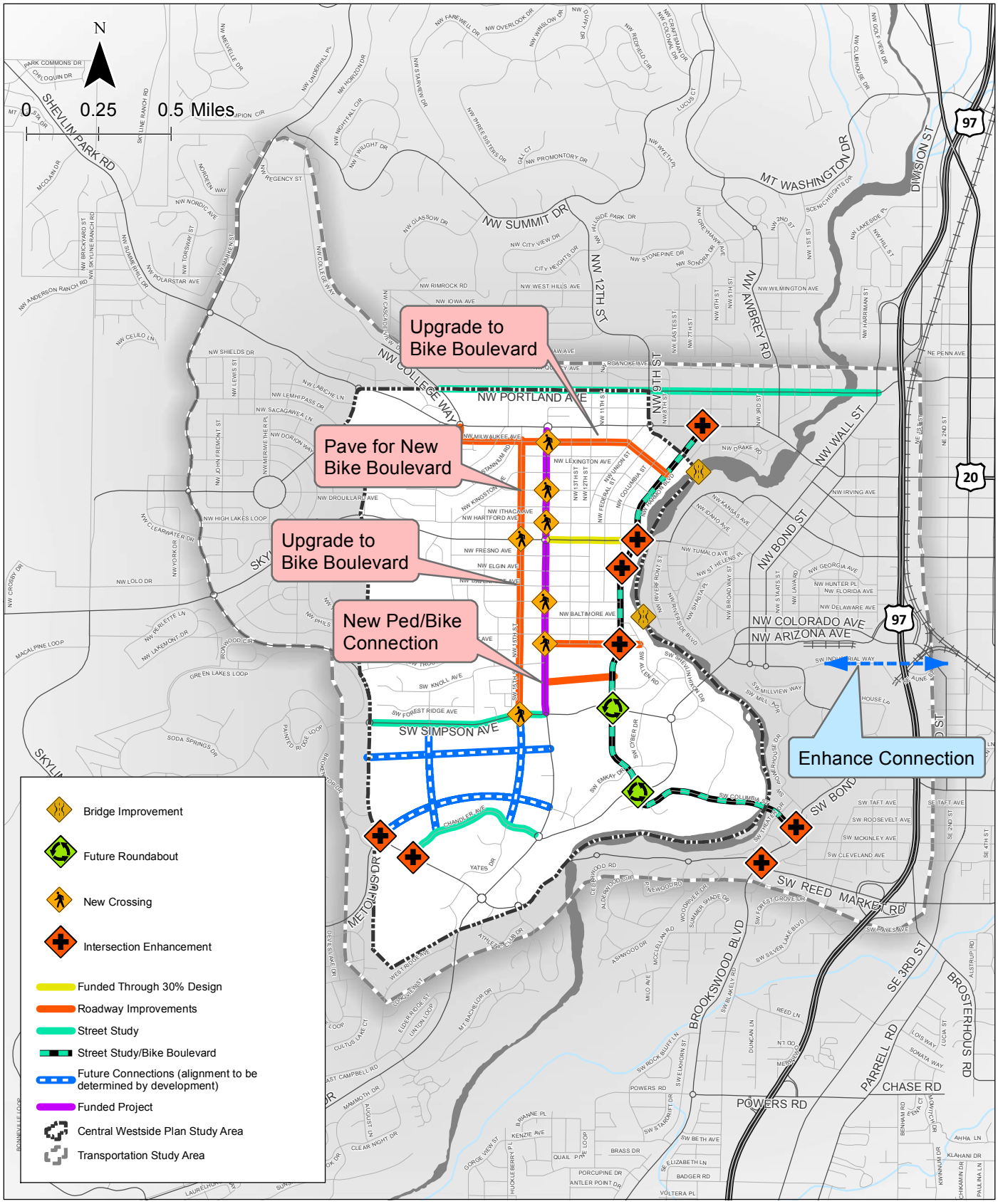
This corridor should be evaluated for ways to improve efficiently for all users of Portland Avenue. Specific consideration should be given to compatibility with existing residential uses along the corridor.

Simpson Avenue

Today, Simpson Avenue between 14th Street and Mt. Washington Drive is bordered by mostly undeveloped land. As development occurs in the future, most notably on the Deschutes County Landfill site to the south and the County-owned property to the north, the context of this section of road will change dramatically. A study should be conducted to determine the appropriate roadway improvements or modifications that would be necessary to support access to those sites for all users. Speed management should also be evaluated.

Chandler Avenue

Chandler Avenue extends between 14th Street and Mt. Washington Drive. It is currently classified as a Local Road. The south side of the facility is developed with a range of office and restaurant uses. The north side of Chandler Avenue fronts the current and future OSU-Cascades site. As the University develops, the context of Chandler Avenue may change. Chandler Avenue should be reevaluated to determine the appropriate roadway cross-section and classification to support the existing and future users along the facility.



CITY OF BEND CENTRAL WESTSIDE PLAN 2015

Corridor and Intersection Improvement Projects Bend, OR

Figure **12**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl
Data Source: City of Bend, Deschutes County

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Transit Enhancements

Transit improvements have been a priority within the City of Bend and specifically within the Central Westside area. Recent improvements have improved transit access within the study area. In particular, the recent improvements have decreased headways between buses, expanded service hours, and provided more north-south and east-west connections, most notably between COCC and the OSU-Cascades campus, as well as to downtown Bend and the Hawthorne Station transit hub. These transit improvements help increase person-capacity along key corridors within the Central Westside while maintaining local street character.

Even with the recent improvements, transit needs remain within the CWP area. The identified preferred land use plan makes this area well poised to implement further transit projects. Specific projects that should be evaluated include:

Feasibility and location of a transit center: The presence of two higher education facilities, popular retail corridors, and a proposed mixed-use area make the Central Westside a prime candidate to support a secondary transit hub. The feasibility and location of such a center should be further evaluated.

Feasibility of transit priority lanes: These lanes should be evaluated particularly along east-west corridors to help improve capacity into and out of the CWP area.

Enhanced transit stops: Identify locations of potentially high use that would benefit from additional features such as a transit shelters, bicycle storage, expanded platforms/sidewalks, or improved crossings nearby.

Improved headways: Identify funding to further improve transit headways (more bus frequency) with the CWP area.

Transportation Demand Management

Part of the long-term vision for the CWP will be to identify ways to actively reduce vehicular demand into and out of the area and to provide choices for all travelers.

To help with this vision, the City plans to conduct and area-wide parking study that will:

- Quantify current parking demand
- Strategize options accommodate or reduce demand in the future, particularly along 14th Street and Galveston Avenue.

Several additional options to achieve this vision will be further explored as the plan moves into implementation phase. Below are some initial ideas for consideration. These should be further evaluated as the CWP advances.

- Develop a transportation management association which would work to promote non single occupancy vehicle trips
- Work with local schools and employers on schedules to maximize system efficiency

Street Maintenance Projects

Maintaining the bike and pedestrian projects such as crossings, bike lane markings, and bike boulevards will be important over time in order to support the safety, access and mobility benefits of the projects. Depending on how the transportation overlay district created in Phase 2 will determine whether an impact fee could be used for street maintenance projects. Depending on the final district and funding structure, the following street maintenance projects for funding should be considered:

- Bike lane signing and striping
- Bike and pedestrian crossings and intersection enhancements
- Street overlays
- Bike lane and sidewalk street sweeping and minor repairs

07 Next Steps

SECTION 7 – NEXT STEPS

This phase of the CWP included significant public involvement and community visioning. The outcome is a focused land use plan and supporting set of transportation performance measures and projects that support that land use plan. These two things combined will help to ensure than the area and transportation system develops in a way consistent with the community vision

While the community vision developed by this plan is comprehensive, more is needed to implement this vision. The following subsections describe the next phases that include defining better the land use and transportation program types of actions that are needed to implement the CWP.

Transportation Overlay District or Area

The current land use code and General Plan (includes the TSP) do not contain the basis for implementing the CWP. The next phase of the CWP will require some form or type of district or program to implement the transportation and land use outcomes of the plan. For this current discussion, a transportation overlay district is being used as the terminology that most resembles these kinds of plans. Phase two will decide the actual language, terms, and definitions that implement the intent of the plan.

The transportation projects and policies identified in this plan represent local improvements intended to support the Preferred Land Use Plan by enhancing the areas transportation system. Funding these improvements is expected to create new city finance and revenue codes. Additional work is needed to develop a funding program that achieves the goals of the CWP. The intended outcomes of this funding program are to:

- Create legal strategies and the program that funds and implements the CWP and transportation district
- Develop a strategy that provides a reasonable nexus between future development and local improvement contributions
- Develop a simplified develop application process that provides a clear path for developers and assurance to community members
- Consider a wide-range of district funding strategies to raise revenue
- A more detailed location and cost estimate for the transportation projects
- Cost estimates for the possible transportation programs (transit, maintenance, demand management and parking)
- A process and prioritized list of transportation projects and programs

A more detailed overview of options for this process is included in Appendix M. Also included are possible funding strategies, implementation considerations for each strategy, and case study examples of similar funding strategies employed by other communities.

Policy and Code Development

The implementation of the CWP will require specific policy and code development within City of Bend Code and General Plan. For instance, the TSP will need goals and polices that recognize and provide a legal basis for the implementation of the CWP. The transportation district or overlay areas must be defined, created and adopted into the TSP and land use code. As noted, the southern portion of the study area is identified as an Opportunity Area with the ongoing City of Bend UGB Expansion process. Adoption of proposed plan amendments within that area will occur as part of the UGB process.

Photo Credit: Alpen Exposure

The remaining changes will require a separate and independent land use analysis and adoption process. The improvements identified in the CWP along Newport Avenue and parts for 14th Street will require further planning work to define the mixed use area and apply a new planning designation on that area.

In either case, the policies and code associated with the CWP area should consider the local compatibility issues identified by the CAC members. These include:

- Neighborhood compatibility with proposed plan amendments. Specifically, the transition area between existing neighborhoods and mixed-use areas should be addressed.
- Specific parking requirements within the mixed-use areas. The UGB process, and Citywide and Central Westside parking studies will help inform this outcome.

Ongoing Community Dialog

The remaining tasks of the CWP will require continued and regular community engagement to ensure the outcomes meet the community's vision. Based on specific goals, the structure of this engagement may differ from advisory committee model employed during the development of this plan. Nonetheless, community input is and will continue to be essential to the success of the CWP.

Process, Timing and Estimated Implementation Costs

Based on the direction from the City Council, staff will create a scope of work to implement the CWP. As part of the scoping, it will be necessary to prioritize what steps should go before other types of work. For instance, creating and implementing the transportation overlay district should occur first as opposed to perhaps a longer land use plan designation process. The City will seek further funding from the state for the code sections of the next phase.