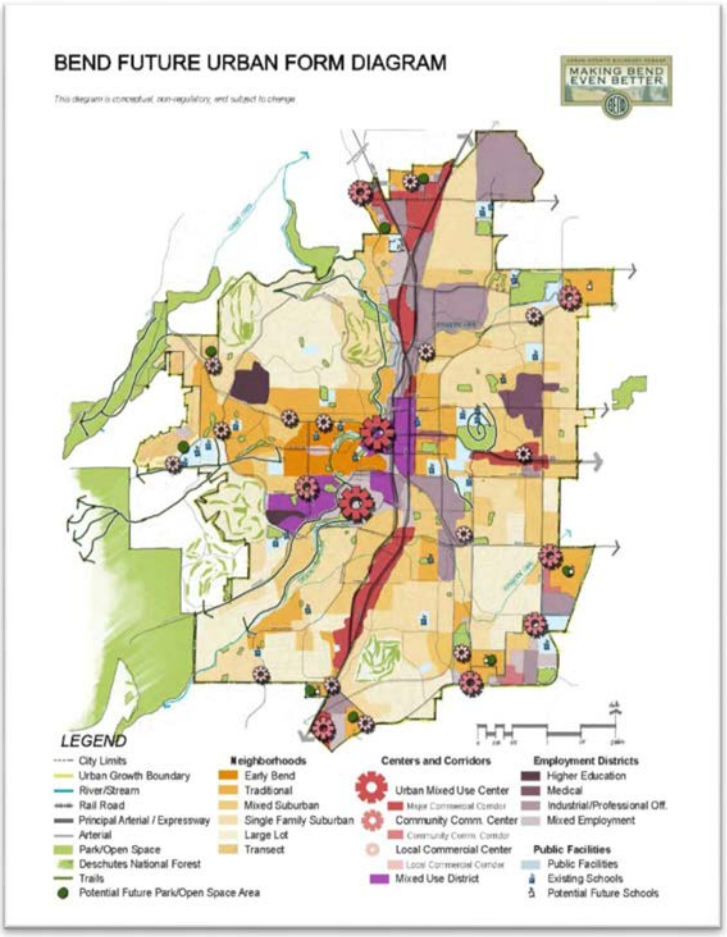
BEND URBAN GROWTH BOUNDARY IMPLEMENTATION

RETURN ON INVESTMENT ANALYSIS AND NEXT STEPS



BEND GROWTH MANAGEMENT DEPARTMENT IN COLLABORATION WITH ANGELO PLANNING GROUP, ECONORTHWEST, CASCADIA PARTNERS, DKS ASSOCIATES, AND MURRAYSMITH

APRIL 26, 2018

Accommodation Information for People with Disabilities
To obtain this information in an alternate format such as Braille, large print, electronic formats, etc. please contact Cassie Walling at cwalling@bendoregon.gov, (541) 323-8514.

LIST OF ACRONYMS

AID Arnold Irrigation District

ADU Accessory Dwelling Unit

AV Assessed Value

BCD Bend Central District

BLPSD Bend-LaPine Schools District

BPRD Bend Parks and Recreation District

BURA Bend Urban Renewal Agency

CIP Capital Improvement Program

COID Central Oregon Irrigation District

DKS DKS Associates

DPLD Deschutes Public Library District

DSL Department of State Lands

EOA Economic Opportunities Analysis

FYE Fiscal Year Ending

GTAC Golden Triangle Area Consortium

HB Housing Bill

HNA Housing Needs Assessment

IAV Incremental Assessed Value

ILUTP Integrated Land Use and Transportation Plan

INFRA Infrastructure for Rebuilding America

LID Local Improvement District

MMA Multi-modal mixed use area

MPO Metropolitan Planning Organization

MTP Metropolitan Transportation Plan

MUPTE Multiple-Unit Property Tax Exemption

OAR Oregon Administrative Rule

ODOT Oregon Department of Transportation

ORS Oregon Revised Statutes

OSU Oregon State University

PCI Pavement Condition Index

PFP Public Facility Plan

ROI Return on Investment

ROW Right of Way

SDC System Development Charge

SID Swalley Irrigation District

TIF Tax Increment Financing

TSP Transportation System Plan

UGB Urban Growth Boundary

UR Urban Renewal

URA Urban Renewal Area

URD Urban Renewal District

URSA Urban Renewal Study Area

US United States

VHDZ Vertical Housing Development Zones

VMT Vehicles Miles Traveled

Table of Contents

Tables

Table of Figures

Executive Summary

Purpose & Background

This analysis is intended to inform City Council (Council) decisions on actions and next steps to support Urban Growth Boundary (UGB) implementation and further Council's goals and actions.

The 2016 UGB decision included designating ten expansion areas (see Figure 1), of which four require "Area Plans" to coordinate infrastructure and development plans across multiple property owners and support complete and cohesive new communities. These and all the UGB expansion areas also need significant infrastructure investments, particularly in transportation and sanitary sewer facilities.

The UGB decision designated nine "opportunity areas" (see Figure 2) inside the prior UGB where development and/or redevelopment could help meet housing and employment needs. These include five opportunity areas in the core of the City where land use designations were changed to enable mixed-use redevelopment. While these areas now have the ability to redevelop consistent with those land use designations, they still face a number of hurdles. The most significant include streets and sidewalks that were not built for pedestrian safety and comfort, few comparable recent developments to build investors' confidence in proposed mixed use projects, and (for some areas) the need for a zone change to match the new mixed use Comprehensive Plan designation. There are actions the Council could take to reduce or eliminate these obstacles and support these areas in achieving their potential as vibrant, walkable, transit-supportive mixed-use neighborhoods.

This analysis is intended to assist the Council in making informed and strategic decisions about where to focus staff time, political will, planning energy, and infrastructure investments in the starting now to achieve the greatest return on that investment across a range of benefits. Given limitations on staff resources, consultant budgets, and infrastructure funding, the City can only do so much in any given year. In order to deploy City resources in the most cost-effective and impactful way, it is critical to understand the impact of those resources, particularly how to use them to supplement private development's ability to accomplish City goals in any given area. While all the expansion and opportunity areas are important to meeting the City's goals and land needs, some are more "ripe" to move forward with new development at this time.

Given this context, the specific questions before the Council are:

- Should the Council authorize a first Area Plan, and if so, for which UGB expansion area?
- What actions, if any, should the City take to facilitate and guide development within the core opportunity areas?
- What types of housing incentives could be adopted to increase the supply of housing and affordable housing?

The intended process with Council is to answer those questions in two steps: (1) a workshop on the issues, costs and benefits regarding UGB implementation actions; and (2) Council deliberations and decisions.

Overview & Approach

The analysis summarized in this report includes the following:

- Introduction, overview, and Council Goals (Section 1)
- Growth Area Yield and Benefits (Section 2):
    - Estimates of the number of housing units and jobs that each area could accommodate by 2028 and by 2040 based on land use modeling work from the UGB and Integrated Land Use and Transportation Plan (ILUTP)
    - Estimates of the potential System Development Charge (SDC) and annual property tax revenue that could be generated from the projected new development in each area
    - The UGB assumptions were intentionally conservative in estimating the potential redevelopment of the core opportunity areas, so longer time horizons are used which align to the upcoming transportation and sanitary sewer system updates underway
- Growth Area Needs and Costs (Section 3):
    - Estimates of infrastructure costs for key facilities needed to support growth
    - Transportation system improvements needed when development begins in a given area and those needed to support area build-out
    - Sanitary sewer infrastructure needs to serve each area
    - Opportunities and issues for other public facilities and services in each area
    - City department perspectives
- Evaluation Summary Matrix (Section 4)
- Planning and Implementation (Section 5):
    - Infrastructure funding tools
    - Urban Renewal (UR) Pre-Feasibility Study which evaluates the potential of different areas for a new Urban Renewal District (URD)
    - Development incentives program comparison
    - SDC financing
- Conclusions and next steps (Section 6)

Figure 1: UGB Expansion Areas & Area Planning Requirements

July 18, 2016

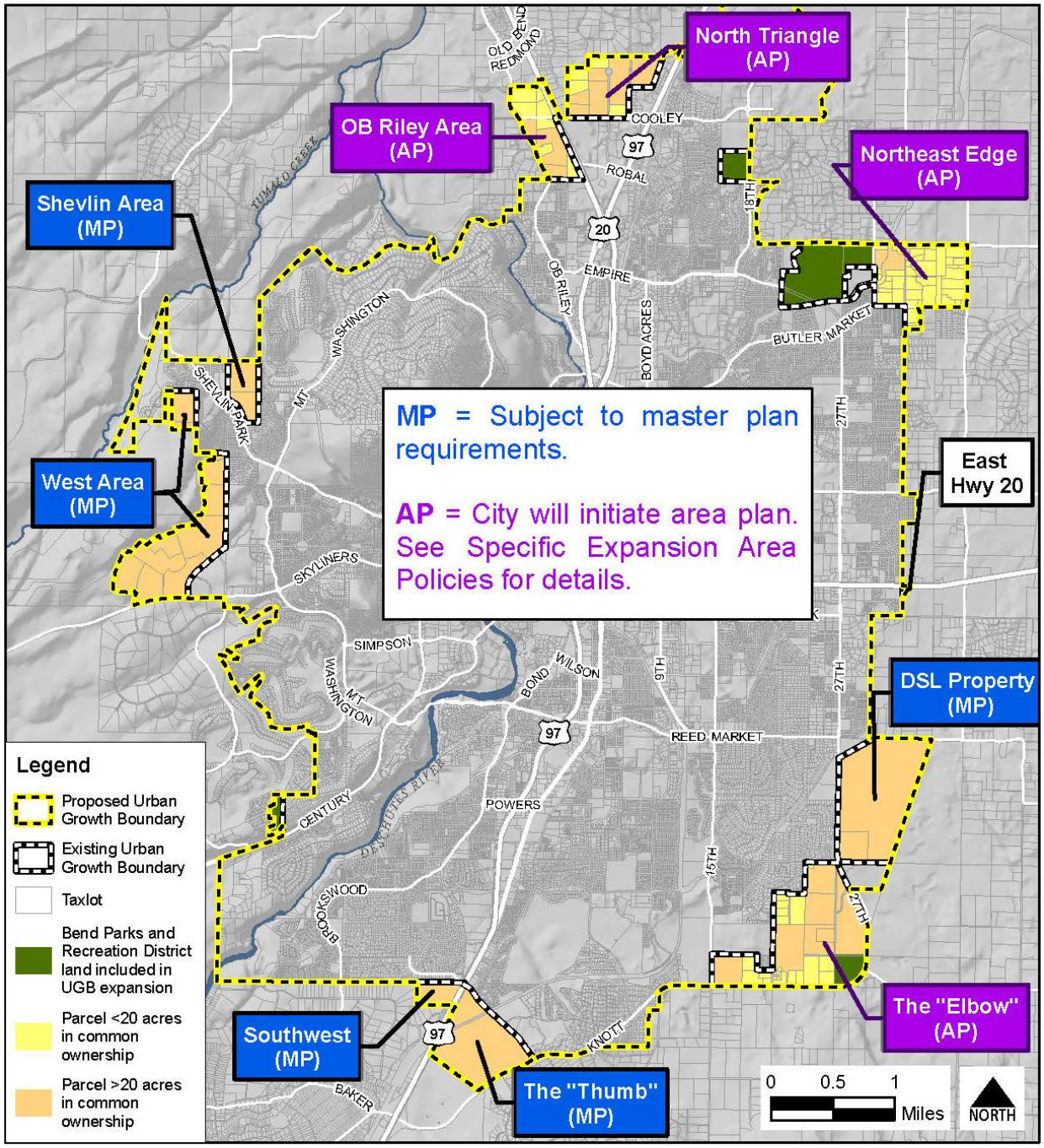
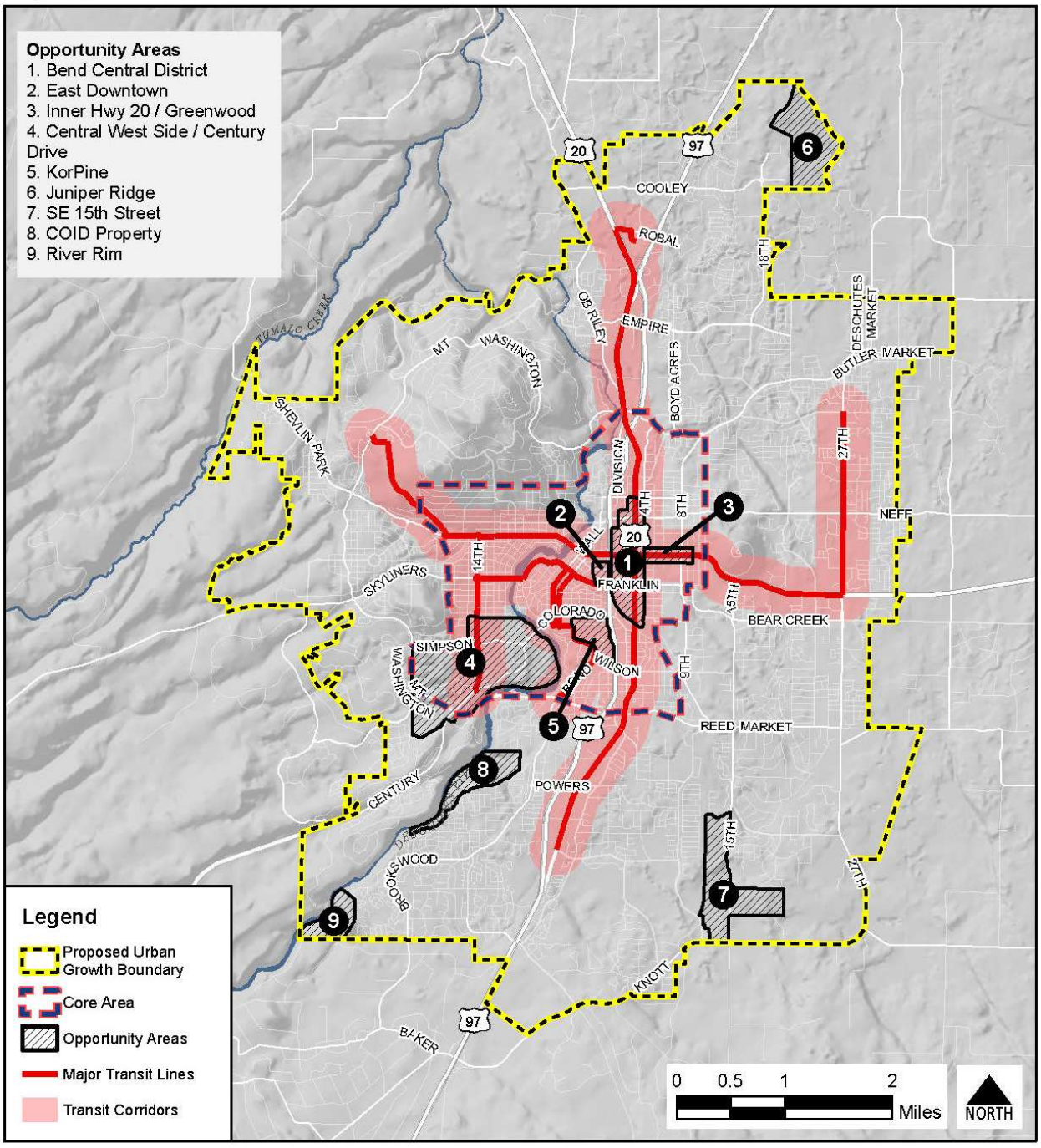


Figure 2: Opportunity Areas & Core Area

July 18, 2016



URBAN GROWTH BOUNDARY REMAND

Data Source: Deschutes County GIS (2014)

Growth Area Readiness & Return on Investment

This report analyzes individual UGB expansion areas and opportunity areas and makes summary conclusions for logical groupings of these areas. These Areas of Analysis are the North Area (including OB Riley and North Triangle UGB expansion areas), the Northeast Edge, the "Elbow" and the Core Areas (Century Drive Area, KorPine, Bend Central District (BCD), East Downtown, Inner Highway 20/Greenwood Ave. opportunity areas).

A key finding of this body of work is that all of the growth areas require infrastructure upgrades, but some need more than others, and some have more potential to generate housing, jobs, and SDC revenue to help pay for those upgrades than others. SDCs alone, and these development areas in isolation, are likely not responsible for paying for all improvements discussed in this report because of timing, proportionate impacts, and many improvements have regional to city-wide benefits. The highlights of the evaluation for each area or group of areas are summarized below.

- The core opportunity areas have the benefit of past infrastructure investments and need relatively less investment to upgrade existing sewer, water, and transportation systems to accommodate further growth and redevelopment. There is interest in, and potential for, near-term development in these areas, and their long-term development potential equals or exceeds that of the UGB expansion areas. City actions that can support this development are described in the following sections and technical appendices.
- Of the UGB expansion areas, the "Elbow" area in the southeast is the best positioned for near-term development based on the recent sanitary sewer investments in the area (the Southeast Interceptor) and a relatively low impact on state highways that avoids potential concerns and complexity from the Oregon Department of Transportation (ODOT). Area Planning in this area can also respond to recent changes to plans for the nearby land inside the UGB where a new school is proposed to be located and set a plan for coordinated incremental development of the area. Bend Parks and Recreation District (BPRD) encourages near-term development in this area because of anticipated investments in the area. City Fire and Police Departments also support near-term development of the area assuming the Murphy Road corridor is completed to decrease response times.
- The North Area relies on extension of a new sewer interceptor line from the sewer treatment plant to Juniper Ridge and then across US 97 to serve those areas. Phase 1 of the North Interceptor is programmed in the City's Capital Improvement Plan (CIP), but even that portion will take years and a budgeted cost of $22 million by current estimates. Extending the North Interceptor through Juniper Ridge is estimated to cost an additional $29 million. Phase 3 of the North Interceptor would need to be constructed at an estimated cost of $11 million to serve the North Triangle and OB Riley UGB expansion areas. Until it is complete, little or no development is possible due to the severe sewer capacity limitations in this area. In addition, these areas' location relative to US 97 and US 20 means they will have greater impact on state highways and be subject to complex negotiations with Oregon Department of Transportation (ODOT) and landowners over the timing and extent of needed improvements to ODOT facilities. The current TSP update can help set the state for those discussions and will make it easier to move forward with an Area Plan for these areas.

- The Northeast Edge does not face complicated transportation system issues (though it does rely on the Empire Avenue extension); however, it needs a new major sewer line as well. The portion of the East Interceptor that will serve this area will also expand capacity in the rest of the system, but it will take at least 3-5 years and an estimated $14 million to construct. This area provides few job opportunities relative to other areas, and other agencies are not as well prepared to serve this area as the "Elbow."

Preliminary Conclusions

Based on these findings, staff and the supporting consultant team conclude supporting implementation in the core areas and expansion areas at this time with existing budgets and resources.

UGB Expansion Areas

Among the candidates for Area Plans, staff and the consultant team suggest initiating the first Area Plan in the "Elbow." Area Plans for the North Area can follow the completion of the TSP update to allow time for high-level discussions with ODOT through that process. The Northeast Edge Area Plan can move forward when the sewer interceptor to serve the area is programmed in the CIP so that the land use planning is timed to match the availability of key infrastructure.

Core Areas

Based on the preliminary evaluation of UR potential, staff and the consultant team suggest an UR Feasibility and Implementation Plan for portions of the Core Area including the BCD and surrounding opportunity areas, including KorPine, East Downtown, and Inner Highway 20/Greenwood/midtown. Recent market response suggests this would further stimulate housing and job growth in this area, and provide a funding source for local improvements. Infrastructure capacity in the sewer system is available for all areas except the KorPine area (which requires a project in the current CIP). Transportation projects, while costly, can be phased in this area. Additional outreach and planning work with public and private stakeholders will also be needed to establish and prioritize a project list of improvements needed to support development in these areas.

In the Century Drive area, staff and the consultant team recommend enabling property tax abatement programs for workforce and mixed-income housing to leverage the private sector's interest in this area to produce affordable housing. Some of these programs may also be suitable for the "Elbow."

Conclusion

Staff and the consultant team's conclusions embody an on-going commitment to a two-pronged strategy for growth in the City of Bend, supporting implementation both in core and expansion areas. This aligns with the policy direction in the Growth Management chapter of the Comprehensive Plan to "wisely grow up and out. Supporting development where it is most ready to occur and taking advantage of the investments the City has already made in infrastructure is the practical approach.

The next step is for Council to consider these conclusions and the supporting information and provide direction to staff to initiate follow-up work in one or more growth areas.

Section 1: Introduction

Purpose

The City of Bend 2017-2019 Strategic Plan (July 2017) calls for a "Return on Investment Study: Urban Renewal, Area Plan, Housing Tax Credit programs." This analysis seeks to satisfy this Council project while taking into consideration other Council goals and objectives. Based on this work, the Council will direct projects in multiple departments to make progress on their goals and objectives.

This analysis provides information to aid the Council in addressing the following questions:

- Where should the Council authorize the first Area Plan for a UGB expansion area?
- What planning and infrastructure investments are needed in expansion and opportunity areas?
- How can land use and infrastructure planning be prioritized to increase housing options?
- What housing incentive programs might increase the inventory of affordable housing? Where might they be applied?

Based on direction from the City Manager, the overall approach to this analysis and next steps is as follows:

- Prepare this analysis, present the findings supported by staff and a consultant team in a work session. The purpose of this work session is education and discussion with the Council rather than making formal decisions.
- At the close of the first work session, Council may find they have sufficient information and agreement to move forward on specific next steps, or may direct staff to continue analyzing and reporting.
- The City Manager may suggest that the Council make formal motions to initiate specific work tasks in subsequent regular Council meetings.
- If the Council believes they have sufficient information to make decisions related to initiating planning activities, Council will direct staff to begin preparing materials (scopes of work, contract amendments, additional work sessions) to initiate the necessary work. If not, staff will continue working with Council to provide more information as directed.

Overview & Approach

Bend's population and economy are growing rapidly, and recent population and employment forecasts do not suggest the growth will slow or stop in the near term. The Council goals and objectives recognize the need for continued implementation planning and infrastructure construction after the recent UGB expansion.

The Council requested an analysis of the relative return on investment for planning work and infrastructure improvements in different potential development areas in the City. This "return on

investment analysis" is conducted at a near citywide scale, using existing information from past studies, the UGB project, and available information from projects in process.

The focus is on Core Areas (UGB opportunity areas in the City's core, which received a new, higher-intensity Comprehensive Plan designation) and three UGB expansion areas: (1) North, composed of North Triangle and OB Riley; (2) the Elbow; and (3) the Northeast Edge, all three of which are subject to the Area Plan requirements. These areas are shown in Figure 3, below. The OB Riley and North Triangle areas are combined in this analysis under the assumption one Area Plan would be undertaken for both areas since they share the same major infrastructure systems and improvements.

How "Return on Investment" is Considered

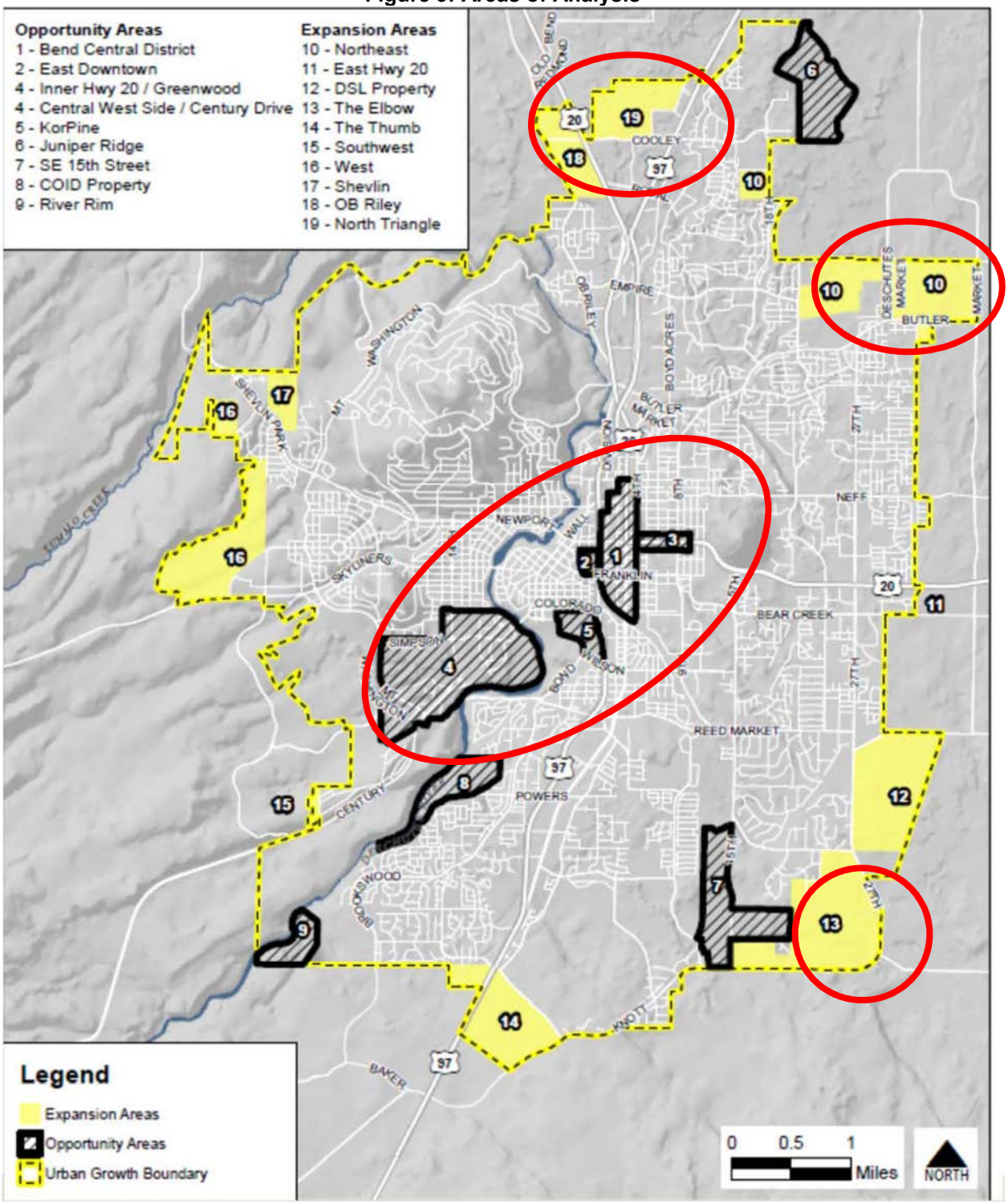
For implementation planning and Area Planning, "return" is described as the realization of land use objectives (housing, employment estimates at different years). Different UGB expansion areas and opportunity areas will achieve different development results from a land use perspective. Land use estimates included in this analysis are at future states (year 2028 and 2040) to illustrate how the entitlements provided through the new Comprehensive Plan may be developed at buildout. These estimates are based on model results from UGB planning.

Based on land use mix and intensity, SDC associated with different development levels have been calculated to estimate "returns." Additional annual tax receipts from new development (not existing) are also included for context, but are not directly compared against future maintenance and service levels and costs.

Other "return" factors are important as well, such as the readiness of other service providers to serve one area vs. another. Urban services such as parks, schools, libraries, public safety, and private or public agencies are critical for successful urban development and provide public benefits. These service providers are directly impacted by near-term development, so their qualitative input has been included to assess their readiness and inform the Council.

The term "investment" is used to mean the planning level cost to construct new infrastructure to serve a level of development assumed by area by 2028 and beyond. The capacity of infrastructure systems in the Bend UGB is constrained in some locations. Areas in the newly expanded UGB and current City limits do not have equal capacity for immediate development. Understanding which areas have capacity in basic infrastructure systems like sewer, water, and transportation systems may help the Council focus on some areas with immediate potential, while other areas may be more suitable for future implementation planning after core infrastructure systems are more readily available.

Figure 3: Areas of Analysis



The scale, timing, and cost of the infrastructure projects that are required to support the levels of development in the growth plan are estimated at planning levels (Class 5[1]) and are labeled as "investment" for the purposes of this analysis. Land use planning costs are relatively insignificant compared to the large infrastructure investments, so are not explicitly calculated.

This analysis is not a funding plan or strategy, and does not assign costs or imply that the costs involved are the responsibility of a group of property owners. Assigning costs is not appropriate at this scale without additional work and detail. Large infrastructure projects serve the local area and broader community. Subsequent formal land use actions provide the level of detail about the actual level of development and other critical details to draw conclusions about needed improvements for any large-scale development proposal.

Time is also a critical factor in "investment" if the Council desires to achieve near-term progress on implementing the newly approved Comprehensive Plan. All areas inside the expanded UGB will be serviceable (meaning will have infrastructure to develop) over time as Public Facility Plans (PFPs) are updated to reflect the expanded UGB and entitlements in the core of the city, but not all are serviceable today. This analysis attempts to answer which areas are most ready today for further development.

Integrating Council Goals

The following are Council Goals, Objectives, and Actions in the 2017-2019 Strategic Plan informing this analysis. Staff and the consulting team have applied these as appropriate to this analysis. Underlined portions highlight the focus of this analysis. The consideration this analysis gives each of these highlighted areas is also briefly explained.

Council Goal 1: <u>Implement a growth plan</u> that is consistent with community goals for the <u>economy, environment and affordability</u>.

Objective: Complete foundational policy and planning work necessary to implement the approved plan

- *Action: <u>Return on Investment Study: Urban Renewal, Area Plan, Housing Tax Credit Programs</u>*
- *Action: <u>First Expansion Area Plan</u>*
- *Action: <u>New Urban Renewal Plans</u>*
- *Action: Enabling ordinance for <u>housing tax credit program(s)</u>*

The City's growth plan is the Comprehensive Plan. Estimates for future land uses at year 2028 and 2040 from the plan are included in this analysis as estimates of future states once development occurs assuming infrastructure capacity is available. The goal uses the terms "economy, environment, and affordability." This analysis assumes implementation should

[1] Class 5 budget estimates, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below 2%. The expected accuracy range is -20 to -50% on the low end, and +30 to +100% on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, and inflation. Cost estimates were performed in 2017 dollars based on The Engineering News Record Construction Cost Index (ENR CCI) basis of 10870 (December 2017).

consider goals related to these subjects. Land use estimates and descriptions include a consideration of future housing and employment development intensities. Affordability is approximated through housing mix estimates at different years per the Comprehensive Plan. The bulk of the technical analysis and modeling relates to comparing different potential areas for new URDs, modeling of housing incentives, and transportation analysis for different development areas. Existing data regarding Vehicle Miles Traveled (VMT) and housing types are related to energy and environment so have been included in the comparative analysis of opportunity area and UGB expansion readiness and development impacts.

Objective: Prioritize planning and infrastructure investments in the "expansion" and "opportunity" areas

- *Action: Post Acknowledgment Plan Amendment of Collection System Master Plan*

This objective recognizes the need to prioritize between both expansion and opportunity areas as it relates to planning and infrastructure. This analysis implements this objective by assessing site readiness, planning level costs, timing considerations, complexity, planning level infrastructure requirements, energy implications for both the core areas (opportunity areas which received new plan/zoning designations for more intensive uses) and expansion areas subject to an Area Plan. The UGB expansion areas that are not subject to the policy requirement of an Area Plan are not evaluated, since they are anticipated to develop at the pace determined by the landowner, and the City cannot force a landowner to initiate private development actions (Master Planning). Planning investments include completing an Area Plan in UGB expansion areas, the formation of new URD, and other implementation measures such as establishing affordable housing incentives. Draft information from the update to the Collection System Master Plan, which is in development, has been included in this report to assess the sewer system needs, costs, and timing of system improvements.

Objective: Employ energy efficiency and fossil fuel reduction policies to guide City operations and growth plan.

- *Action: Integrated Land Use and Transportation Planning, City Council support of Cascades East Transit, fundraising for climate action planning*

This objective and action reference energy efficiency policies guiding growth planning, which is the main theme of this report. No climate modeling is available to aid in this analysis directly, but energy as it relates to housing type and transportation from prior UGB work was included in the qualitative analysis of development impacts and of recommendations for the first steps in implementing the growth plan. The ILUTP element of the Comprehensive Plan is referenced, so was used in modeling future land uses at 2040, and in identifying future transportation projects in core areas.

Council Goal 2: Move people and products around Bend efficiently, safely and reliably

Objective: Improve road conditions and update winter operations policies

- *Action: Create synergy projects and leverage investments with other city departments*

Objective: Involve residents and key stakeholders in developing policies that relieve congestion, improve ease of travel and safety, and identify funding options for desired levels of service.

The analysis includes transportation modeling, identifying new capacity, safety, connectivity, and aspirational projects, and estimating cost of projects for different areas under consideration. This work is at a planning level based on existing models and the existing Transportation System Plan (TSP), which is currently being updated. Transportation project priorities, policies, funding, and costs will be updated as part of the currently TSP update. Therefore, this work is subject to change and refinement, while using the best available information. The transportation analysis is done to assess the overall level of complexity, cost, and timing considerations of doing an Area Plan in the UGB expansion areas, or the infrastructure analysis associated with an URD. The Streets and Operations Department provided input on how development or redevelopment of different areas would affect the street maintenance program. Streets and Operations input was provided in a subjective format based on street condition maps and a professional understanding of the network, and ranked different development areas from the standpoint of new development or redevelopment.

Council Goal 3: Increase affordable housing options

Objective: Quantify housing needs through a data-driven approach

- *Action: Use UGB Housing Needs Analysis to verify housing need and identify where policy gaps exist*

This analysis describes the housing units by type originating from the Housing Needs Analysis (HNA) completed for the UGB expansion in order to illustrate the differences between different areas under consideration. The differences between development areas in the core and UGB expansion areas can help the Council understand how implementation will result in different housing mixes and types. The development incentives work illustrates how housing incentive programs make it more likely that additional units at affordable levels will be built.

Objective: Prioritize land-use and infrastructure planning that maximizes identified supply needs

- *Action: Use Return on Investment Study (Goal 1) to identify locations that can accommodate the highest number of units in **12 months***
- *Action: Identify street, water, sewer improvements needed to develop those locations*

This report identifies the “backbone” or “trunk level” infrastructure systems needed to develop different locations at 2028 densities. These improvements are the systems that are typically included in the City’s infrastructure plans, and do not include smaller, localized infrastructure systems. The Council action also clearly indicates this study should focus on locations that can

provide the highest number of units in 12 months (or shortest timeframe). This emphasis on short-term results directed this analysis to focus on recommendations for the first and best set of planning and infrastructure investments rather than a longer-term strategy.

Objective: Increase the inventory of affordable housing through incentives, removing regulatory barriers, and increasing land supply and funding options

- *Action: Identify group of possible incentives for affordable housing, Development Code changes that allows for additional affordable units, and new funding sources or new ways to deploy existing funds*

This objective has resulted in this study including the topics of affordable housing programs, SDC financing, and site readiness in key areas of the Bend UGB. This work does not specifically address regulatory barriers, but this topic is being addressed through work by the Affordable Housing Advisory Committee, Bend Economic Development Advisory Board, and Planning Commission. This study does identify a group of possible incentives for affordable housing and provides modeling to explain their effectiveness.

Council Goal 4: Keep residents safe with innovative and cost-effective public safety services

Objective: Continue to develop innovative service models that improve response times at a lower cost

The Police and Fire Departments were consulted during this study for their perspective on which area of the City (opportunity areas, UGB expansion areas subject to an Area Plan requirement), would provide the most benefits from the standpoint of public safety. Their input was based on experience from their service area.

This analysis provides background information to help the Council execute its Strategic Plan. This analysis assumes future development patterns, redevelopment rates, infrastructure costs, timing of infrastructure improvements, and future revenues for large land areas, and is therefore subject to considerable uncertainty. This analysis uses the best available information at this time and scale to inform decisions, but the work is not predictive. Most importantly, the purpose of this analysis is for the Council to direct immediate next steps with an understanding of long-term possibilities.

Section 2: Growth Area Yield & Benefits

Overview

Policy and implementation decisions affecting Bend can be estimated and predicted, but not calculated definitively. The information provided in this analysis is rooted in the best available projections and predictions. Ultimately, however, it is the Council's judgment that determines the benefits that are most important to the community.

This section describes some of the land use attributes associated with the Areas of Analysis (Exhibit 3) discussed in this report. The Areas of Analysis are subsets of UGB expansion areas that require City Area Planning prior to development (unless property owners perform their own Master Plan on 40 or more acres). The Areas of Analysis also include a subset of UGB identified opportunity areas, which are locations the City re-designated in the core areas of the City through the UGB adoption.

This section describes land use development assumptions for the Areas of Analysis at different years, SDCs revenues resulting from development according to land use development assumptions, and annual city property tax revenues resulting from new development.

Housing & Jobs

Understanding the potential growth yield of different areas of the UGB requires a discussion of how development projections were created, and how to use them appropriately. The following explains the approach to making land use projections for 2018 associated with the UGB adoption, and for 2040 associated with the ILUTP. Land use estimates form the basis for subsequent SDC and tax revenue estimates. The 2028 and in some cases 2040 land use estimates are used in public facility system modeling.

Land Use Assumptions: 2028

Overview

This section summarizes the growth assumptions (and the rationale behind them) that underlie the analysis that supported the expansion of the UGB.

The UGB analysis was based on control totals for population and employment projections through 2028. This means that estimated capacities are not build-out or maximum allowed capacities. They reflect reasonable but conservative (in the context of ensuring adequate land supply) assumptions about likely development within the planning horizon (through 2028). The overall population projection of 115,063 residents by 2028 was developed using the coordinated population forecast developed with Deschutes County, as required by state law.

Most growth assumptions were linked to the Comprehensive Plan designation, though in some cases there were variations to account for master plan requirements, approved and platted subdivisions, and other special cases.

As described below, while the capacity assumptions are reasonable and appropriate as averages across many properties within a given plan designation, the outcomes on specific

properties may vary based on site conditions, developer or property owner preferences, and other factors. The UGB analysis addressed the inherent uncertainty about future development by using weighted averages and reasonable default assumptions on many issues where precision is not possible.

The UGB rules also require cities to assume that nearly all land that is buildable and not already developed will develop within the planning horizon unless there is evidence to support an assumption that development is highly unlikely within the planning horizon. In reality, some properties may not develop within the planning horizon at all.

Growth Areas

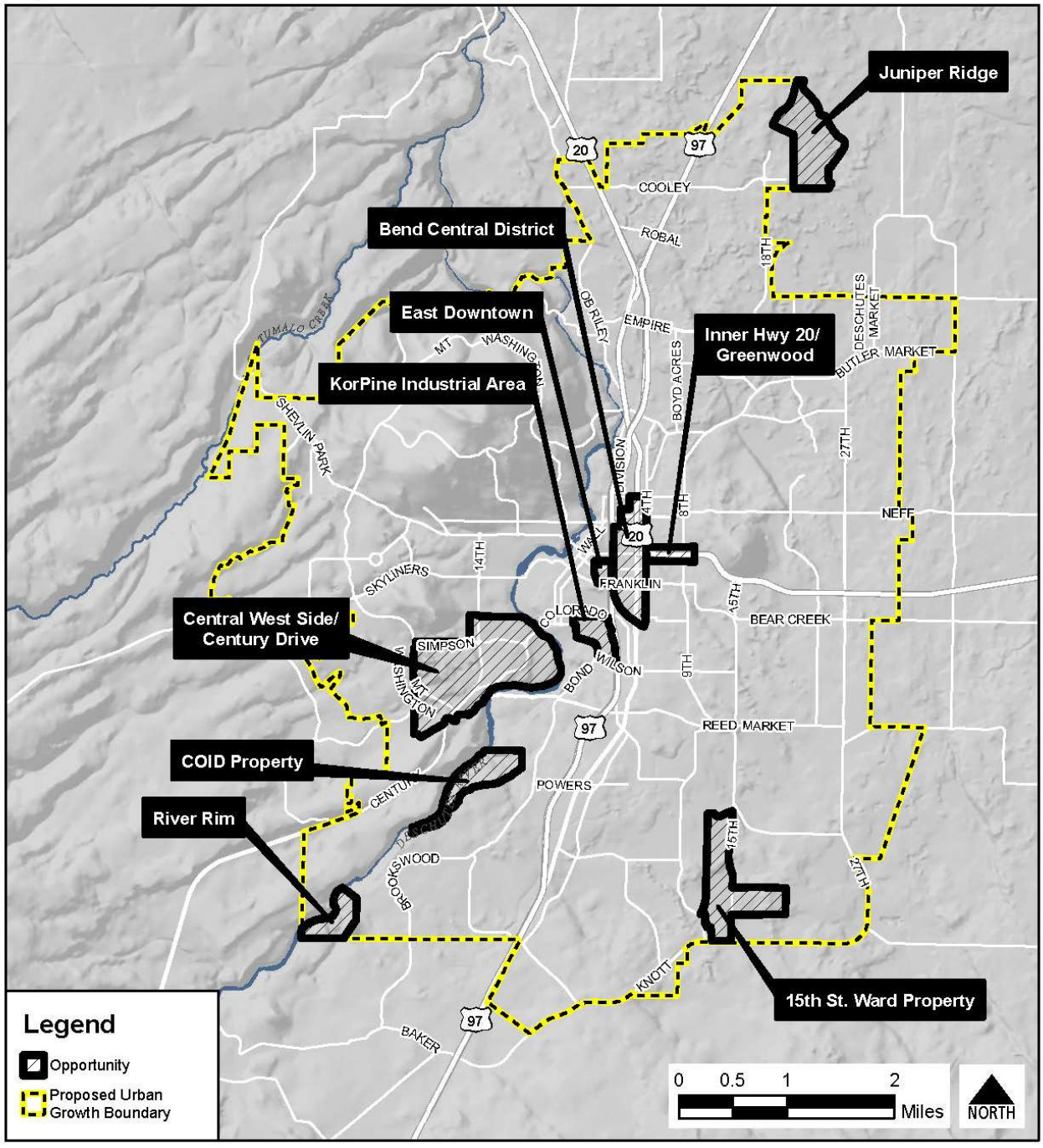
The UGB analysis projected population, housing, and employment growth spatially throughout the existing City limits and in the newly approved UGB expansion areas. The UGB work addressed growth in three different types of areas somewhat differently:

- "Opportunity areas" were identified within the existing City limits where there was either significant vacant acreage or the potential for redevelopment. Potential for growth by 2028 was evaluated in detail for these areas, particularly where changes to plan designations and/or zoning were adopted.
- UGB expansion areas were identified outside existing City limits for new development. Nearly all represent "complete communities" with a mix of housing, employment, and civic uses (e.g. schools and parks). All expansion areas were assumed to be fully developed by 2028.
- In the balance of the existing City limits, modest incremental infill, reinvestment, and non-residential redevelopment were assumed, based on zoning and historic trends. , and due to changes in the Bend Development Code adopted with the UGB expansion.

The Opportunity Areas are shown in Figure 4. The Expansion areas are shown in Figure 5.

Figure 4: Opportunity Areas

July 18, 2016

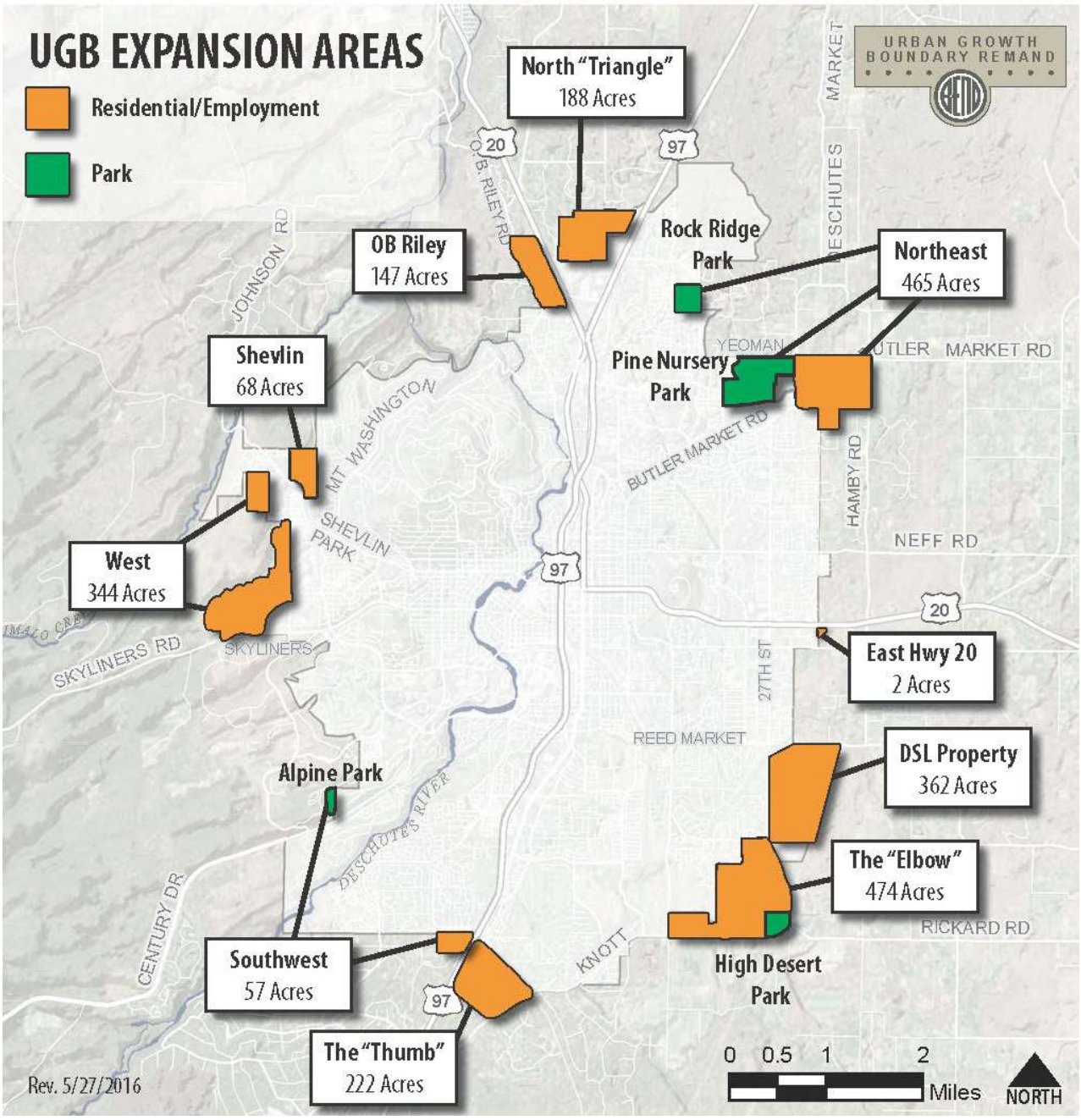


URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

Streams/Rivers
Roads/Highways

Figure 5: UGB Expansion Areas



Projected Density

Projected densities are based on historical development trends and zoning code requirements. They generally represent either the minimum density allowed in the zone or the average density of development over the last decade or so, whichever is greater. They are reasonable but conservative. Residential density assumptions are summarized by plan designation, relative to the minimum and maximum in the plan/zone, in Table 1. Note that master planned properties are assumed to have higher densities, on average, because the Growth Management chapter of the Comprehensive Plan and the development code require higher minimum densities for residential master plan sites. Master planning is required for properties over 20 acres, and is optional for smaller properties.

Table 1: Residential Density Assumptions & Allowed Ranges by Plan Designation/Zone

Zone	Master Plan / Standard version	Assumed Gross Density (units per acre, on buildable residential land)[2]	Minimum Gross Density (units per acre, on buildable residential land)	Maximum Gross Density (units per acre, on all residential land)
Residential Low (RL)	Standard	1.69	1.1	4.0
	Master Plan[3]	3.40	2.0	4.0
Residential Standard (RS)	Standard	4.07	4.0	7.3
	Master Plan	5.13	5.11	7.3
Residential Medium (RM)	Standard	10.23	7.3	21.7
	Master Plan	13.02	13.11	21.7
Residential High (RH)	Standard	21.7	21.7	43.0
	Master Plan	21.7	21.7	43.0

Projected Redevelopment in Opportunity Areas

Projected redevelopment in opportunity areas was based on assumptions of how much new development, consistent with the plan designation/zone for the area, would be able to pay for property that would be fully redeveloped, compared to the property value (land plus existing improvements) by parcel in the opportunity area. It is nearly impossible to predict which properties will redevelop on a site-specific basis. Thus, the UGB assumptions used a probability approach – that of those properties that have the greatest potential for redevelopment based on the property value, only a fraction, generally 10-15%, will actually redevelop during the planning period (2014 to 2028). A percentage of the total amount of potential growth through redevelopment was assumed on each site in order to generate an overall level of growth through redevelopment. As noted above, the total amount of redevelopment assumed was calibrated to be a conservative estimate of what is "reasonably likely" between now and 2028.

Businesses may also add or subtract employees with few or no changes to the building, which can lead to changes in employment density with no redevelopment. This was accounted for to

[2] Excludes land identified for non-residential uses, including employment / commercial uses and "other" urban uses (see page 6). Also excludes Accessory Dwelling Units.

[3] RL Master Plan is found only in the West expansion area, where more specific unit minimums and maximums are set in policy.

by assuming “refill” of jobs into already developed areas with fairly low job densities, particularly for sectors (e.g. industrial) that sustained heavy job losses during the recession. This approach also does not fully account for reuse of existing buildings for different types of businesses with relatively minor upgrades to the structure, although this certainly can and does happen as areas change.

Projected Infill & Redevelopment Outside of Opportunity Areas

Much of Bend is already developed at densities well below the maximum allowed under the zoning. Outside of opportunity areas, little infill and redevelopment was assumed. Generally, only properties with potential for a significant increase in the number of housing units or jobs were assumed to have potential for infill / redevelopment within the planning horizon. Actual infill and redevelopment proposals may exceed assumed levels of redevelopment.

Land for Schools

Total land need for schools was based on the Bend La Pine School District’s 2016 facility plan and recent discussions with the District. For the UGB work, locations of schools were assumed as placeholders based on the best available information from the School District. Policies in the Growth Management chapter of the Comprehensive Plan require coordination with the School District to identify sites in expansion areas where they were assumed; however, there is no requirement that the District ultimately build a school in those areas, and specific properties have not yet been publicly identified. Long-planned future school sites reported in the District’s siting plans and carried through the UGB work may not match the District’s proposed school site locations. However, the assumed total number of schools by type built in the existing and newly expanded UGB assumed in the UGB work will likely be very similar to what the District will build in the future.

Land for Parks

Future parkland (other than undeveloped land already owned by the Bend Park and Recreation District (BPRD) was accounted for in one of two ways, depending on the area:

- For most large (over 20 acres), vacant sites subject to master planning requirements (both inside the City limits and in UGB Expansion areas), land for future parks and open space was assumed based on a 10% set aside for open space under master plan requirements. Because this set-aside is required in the development code, the estimate is likely to be accurate; however, for sites with natural resource constraints, the parkland often ends up including the constrained area, whereas the assumptions for the UGB treated constrained land separately from parks and open space. As a result, by using natural resources to meet open space requirements, some master plan sites may be able to achieve somewhat more buildable area than assumed for the UGB work.
- In a few UGB expansion areas, additional parks were assumed based on coordination with BPRD, preliminary conceptual layouts, etc. Policies in the Growth Management chapter require coordination with BPRD to address provision of parks and/or trails in each area; however, there is no requirement that BPRD ultimately locate a park in the areas where they were assumed, and specific sites have not yet been identified.

- Actual park locations, sizes, and types will likely differ from site specific UGB assumptions based on a number of factors such as land owner willingness and land pricing, BPRD policy decisions related to land surplus, and BPRD policies and their operational needs.

Land for Right-of-Way

Land for right-of-way (ROW) for new roads was assumed based on City street and block size standards by zone, with an average of 21% of raw land city-wide. This represents a reasonable assumption consistent with existing patterns of development City-wide; however, individual sites will vary based on topography, layout, street design choices, and the need for new collector roads.

Land for "Other" Uses

Land for institutional uses (e.g. religious institutions), private open space and recreational uses, and other assorted uses that occupy land within the City but do not fit into any of the categories of housing, employment, ROW, parks, or schools, was grouped together as "other" uses. In the UGB analysis, these uses were accounted for through a relatively uniform set-aside reflecting the percentage of the current City's land, in aggregate, that is occupied by such uses (about 13%). This assumption is roughly right at a macro scale, but it is impossible to predict where those uses will end up being sited. As a result, an additional 13% of any given property may be available for development of housing or employment uses relative to what was assumed for the UGB analysis.

Summary of Projected Growth

Table 2 and Table 3 summarize the housing and employment growth projected in each of the growth areas through 2028, given the assumptions summarized above for the UGB work. The Areas of Analysis in the North Area include the North Triangle and OB Riley. The Northeast is the Northeast Edge Area. The North Area and Northeast Areas are somewhat isolated from other UGB expansion areas, whereas the Elbow is adjacent to the DSL property, which is housing and employment rich, and the "The Thumb" is also nearby.

Table 2: Housing & Employment Capacity Estimates for UGB Expansion Areas

Expansion Area	Housing Units[4]	Est. Jobs
North "Triangle"	505	835
Northeast	1,099	214
East Hwy 20	70	0
DSL Property	1,001	880
"The Elbow"	819	2,274
"The Thumb"	266	1,573
Southwest	240	80
West	983	261
Shevlin	174	74
OB Riley	125	990
Expansion Total	**5,282**	**7,181**

[4] Housing units are modeled capacity estimates. Policies in the Growth Management chapter of the Comprehensive Plan specify minimum and/or maximum housing capacities for each expansion area that are based on the modeled capacity estimates, but may be rounded slightly or incorporate slight refinements based on negotiated agreements.

Table 3: Housing & Employment Capacity Estimates for Opportunity Areas (through 2028)

Opportunity Area	Net New Housing Units	Net New Jobs
Bend Central District	232	280
East Downtown	4	6
Inner Highway 20 / Greenwood Ave	1	0
Century Drive area	531	439
KorPine	148	194
Juniper Ridge	0	1491
15th Street Ward property	862	386
COID	120	6
River Rim	0	0
Opportunity Areas Total	**1898**	**2802**

Figures 6 and 7 are "heat maps" of projected 2028 housing and employment growth, which show hot spots where growth is concentrated.

Growth Projections & Uncertainty

This section summarized the assumptions for the UGB and sources of uncertainty about how development will play out relative to those assumptions. As used here, uncertainty refers to development realities that are beyond the ability of the Comprehensive Plan to predict or control, such as the strength and direction of market demand; the exact timing of infrastructure investments; and, physical limitations for specific properties. Key points to understand about the growth projections and infrastructure analysis that were done to support the UGB expansion are summarized as follows:

- Growth projections are based on a horizon year of 2028, and do not represent the maximum capacity of the land. They were based on reasonable but conservative assumptions about likely development within the planning horizon.
- Any individual property could potentially develop at a level of intensity well above what was forecast. Because the allowed density range for residential uses is wide, the UGB assumptions tended to fall near or at the bottom end of that range and represented expected averages across many properties, and set-asides distributed across many sites that may take up more or less land on any single property.
- Conversely, any individual property may not develop at all within the planning horizon, for reasons that are specific to that property or that property owner.
- Opportunity areas have been zoned or designated to allow much greater intensity of development than is expected to occur by 2028. However, higher levels of redevelopment (either due to a change in market conditions or looking beyond 2028) could result in significantly more growth in those areas.

Figure 6: Heat Map of Projected Employment Growth

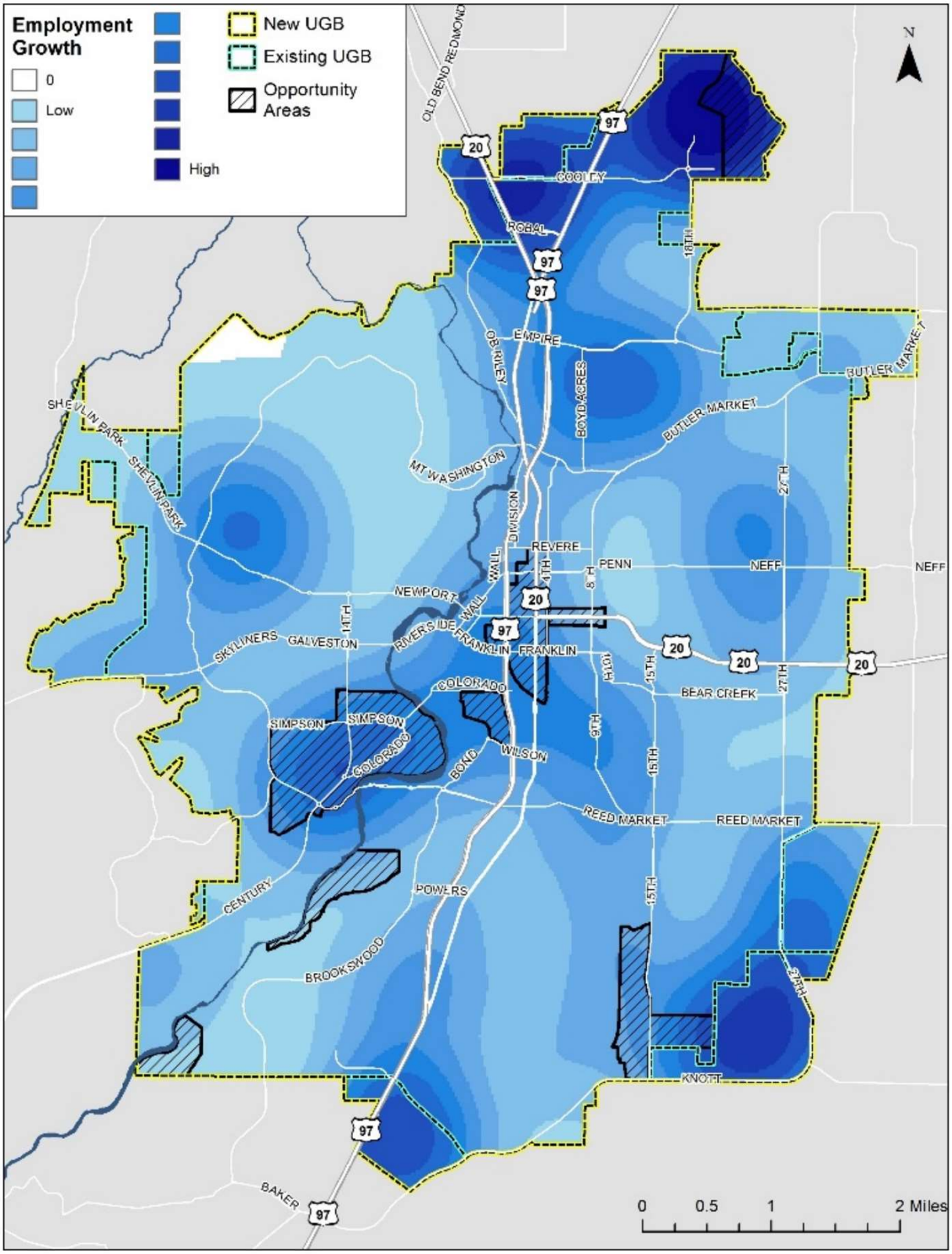
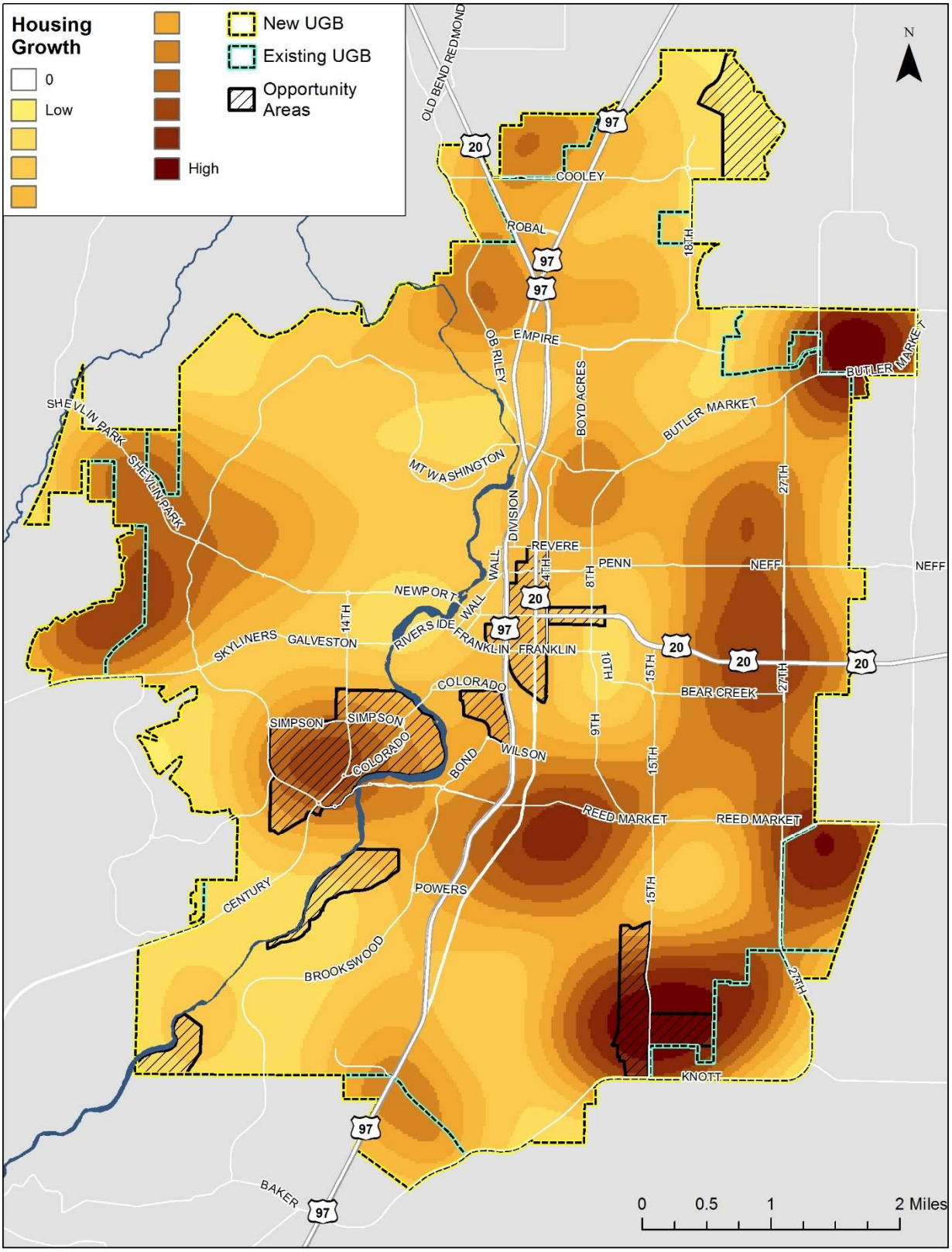


Figure 7: Heat Map of Projected Housing Growth



Land Use Assumptions: 2040

Overview

Because the UGB planning and analysis was based on a future year of 2028, the land use assumptions for 2040 must project further into the future in ways that are broadly consistent with the land use planning that has already been completed. This means assuming both more infill and redevelopment in the core of the City and some additional expansion on the periphery. The 2040 assumptions that are currently in use by the Bend Metropolitan Planning Organization (MPO) and are proposed for use in the TSP update were reviewed by the committees that guided the UGB update process. In addition, all the land outside the UGB that is included in the 2040 assumptions was evaluated as part of the UGB process.[5] However, it is important to note that the land use assumptions for 2040 are just that – assumptions. The projected land use is an indicator of trends and patterns, not a precise prediction of the future and it does not determine, or even guide, where or when the City might expand its UGB in the future.

Background

As part of the City's UGB expansion planning process in 2014-2016, the City adopted the ILUTP, which contains strategies to provide more transportation choices, as required by state law.[6] These included looking at how future growth patterns will affect people's transportation choices, and their ability to walk, bicycle, use transit, or make shorter trips. The future growth pattern that formed the basis for the City's adopted strategies looked ahead to the year 2040, even though the UGB planning process was focused on planning for growth through 2028.[7] This means that the land use assumptions for the 2040 analysis considered additional development and redevelopment beyond what was expected by 2028. Some of that additional development and redevelopment was assumed to occur in the central core of the City, in opportunity areas designated for future mixed-use development. Some of the growth was assumed to occur in areas outside the UGB. The 2040 analysis used in the ILUTP was subsequently used for the BMPO 2040 Regional Travel Demand Model land use assumptions. The following sections provide additional explanation of where and what type of growth is assumed to occur through 2040.

Forecasts for 2040

The land use assumptions start from population and employment forecasts that estimate the number of people that will live and work in Bend by the year 2040. These forecasts come from state agencies that use the best available information about past growth and trends. Population forecasts are generated by Portland State University's Population Research Center using a model to forecast natural increase (births minus deaths) and net migration (in-migration minus

---

[5] The BMPO model has allocated future population and employment growth to areas inside the current UGB and in select areas outside the UGB. The areas outside the UGB that received portions of the 2040 growth were also locations that were considered in some of the UGB scenarios but were not included in the final approved UGB expansion.

[6] Oregon's Transportation Planning Rule (TPR) requires larger communities, including Bend, to plan transportation systems and land use patterns that increase transportation choices and reduce reliance on the automobile. (Oregon Administrative Rule 660-012-0035)

[7] The 2040 land use and transportation strategies were adopted in an appendix to the Bend Transportation System Plan, called the "Integrated Land Use and Transportation Plan", July 19, 2016.

out-migration). Employment forecasts are generated by assessing the economic opportunities analysis (EOA) prepared by the Oregon Office of Economic Analysis, the City of Bend EOA, and an assessment of regional employment data. The forecasts are "coordinated" in that population forecasts at the city level add up to match state-level population forecasts, and reference local, regional and statewide trends for employment. The approximate total existing and projected population and employment in the City of Bend are shown in Table 4.

Table 4: Population & Employment Estimates & Forecasts

	2014 (Estimated)	2028 (Projected)	2040 (Projected)
Population	84,000 *Source: Census Population Estimate*	115,000 *Source: Bend HNA*	143,600 *Source: Portland State University Population Research Center*
Employment	43,000 *Source: Quarterly Census of Employment and Wages*	67,000 *Source: Bend Employment Opportunities Analysis*	81,000 *Source: Analysis prepared for Bend MPO*

Population growth projections were converted to projected new housing using assumptions consistent with the City's adopted HNA. Some adjustments were required for the employment projections to account for methodology differences between the 2028 projection and the 2040 projections. With all adjustments and conversions applied, the projected housing and employment growth from 2014 to 2040 was 28,046 housing units and 27,745 jobs.

2040 Spatial Allocations: Where Growth is Projected to Occur

This section summarizes where Bend's forecasted growth in housing and jobs were assumed to occur by 2040. At a high level, the land use allocations reflect the following assumptions, based on adopted City growth management policies and development trends:[8]

- Redevelopment with more housing and jobs in mixed use opportunity areas near the City center;
- Increasing density and redevelopment in some transit corridors;
- Development on much of the vacant buildable land within the City;
- Small amounts of residential infill and Accessory Dwelling Units (ADUs)[9] in existing neighborhoods where already allowed by existing zoning and comprehensive plan designations;
- Higher average density for future development, but within the ranges allowed today; and
- Limited UGB expansion on lands identified as potentially suitable for future expansion but not included in the 2016 UGB expansion.[10]

[8] These assumptions and strategies are also reflected in the adopted ILUTP.

[9] Accessory Dwelling Units are small living quarters on a property with a single-family home that are independent of the main house (including having their own kitchen or kitchenette).

[10] State laws require that cities consider certain types of land first when expanding the UGB – generally land that is not designated as high-value farmland. All areas that were included in the 2016 UGB expansion and all additional areas included in the land use assumptions through 2040 were designated as "exception lands" by the state, meaning that they are not subject to farm and forest land protections. State regulations also require that cities consider factors like the ability to develop the land efficiently; the ability to provide infrastructure and public services cost-effectively; environmental, energy, economic and social consequences; and

The projected housing and employment growth was distributed geographically based on:

- Comprehensive plan land use designation (type and amount of development allowed);
- Presence of existing development;
- Natural resource constraints;
- Public land ownership;
- Subdivision contracts, covenants and restrictions (CC&Rs) that preclude further l;
- Redevelopment potential (for commercial, industrial, and mixed-use areas); and
- Need for new streets, parks, schools, and other uses.

To simplify the complex assumptions that were used to reflect the factors above in the many different land use designations and contexts in the City, this section summarizes how growth was assumed to occur in the following types of areas:

- Core mixed-use opportunity areas identified as part of the UGB process:
    - Bend Central District, between the US 97 and 4th St and between NE Revere Ave and the railroad tracks;
    - Central Westside, including the new Oregon State University (OSU) Cascades campus;
    - "KorPine," between SW Bond St and US 97 and between Arizona Ave and Wilson Ave;
    - "East Downtown", between NW Harriman St and US 97, and between NW Franklin Ave and NW Irving Ave; and
    - Inner Highway 20/Greenwood Ave, from NE 4th St to NE 10th St.
- Other land inside the UGB prior to the 2016 UGB expansion
- 2016 UGB Expansion areas – 2,380 acres across 10 different areas on all sides of the City
- Areas outside the adopted 2016 UGB – land generally adjacent to the 2016 UGB expansion areas but not currently in the UGB (see footnote 10)

Figure 8 shows new housing and employment by area, Figure 9 illustrates the relative intensity of housing growth in different areas, while Figure 10 illustrates the relative intensity of employment growth.

Table 5 summarizes the housing and job growth assumed for each of those types of areas through 2040 to match up to the total population and employment growth forecast for the City. Table 5 also provides the growth increments in each area through 2028 based on the UGB assumptions as a comparison.

compatibility with nearby farms and forestry uses. All these were considered in the 2016 UGB expansion, which identified more potentially suitable land for future expansion than was needed to accommodate growth through 2028. As noted previously, **UGB expansions assumed beyond the adopted 2016 UGB are *for analysis purposes only*, and do not imply a guarantee or pre-determination of where or when future UGB expansions will take place.**

Figure 8: New Housing & Employment (2014-2040) by Area

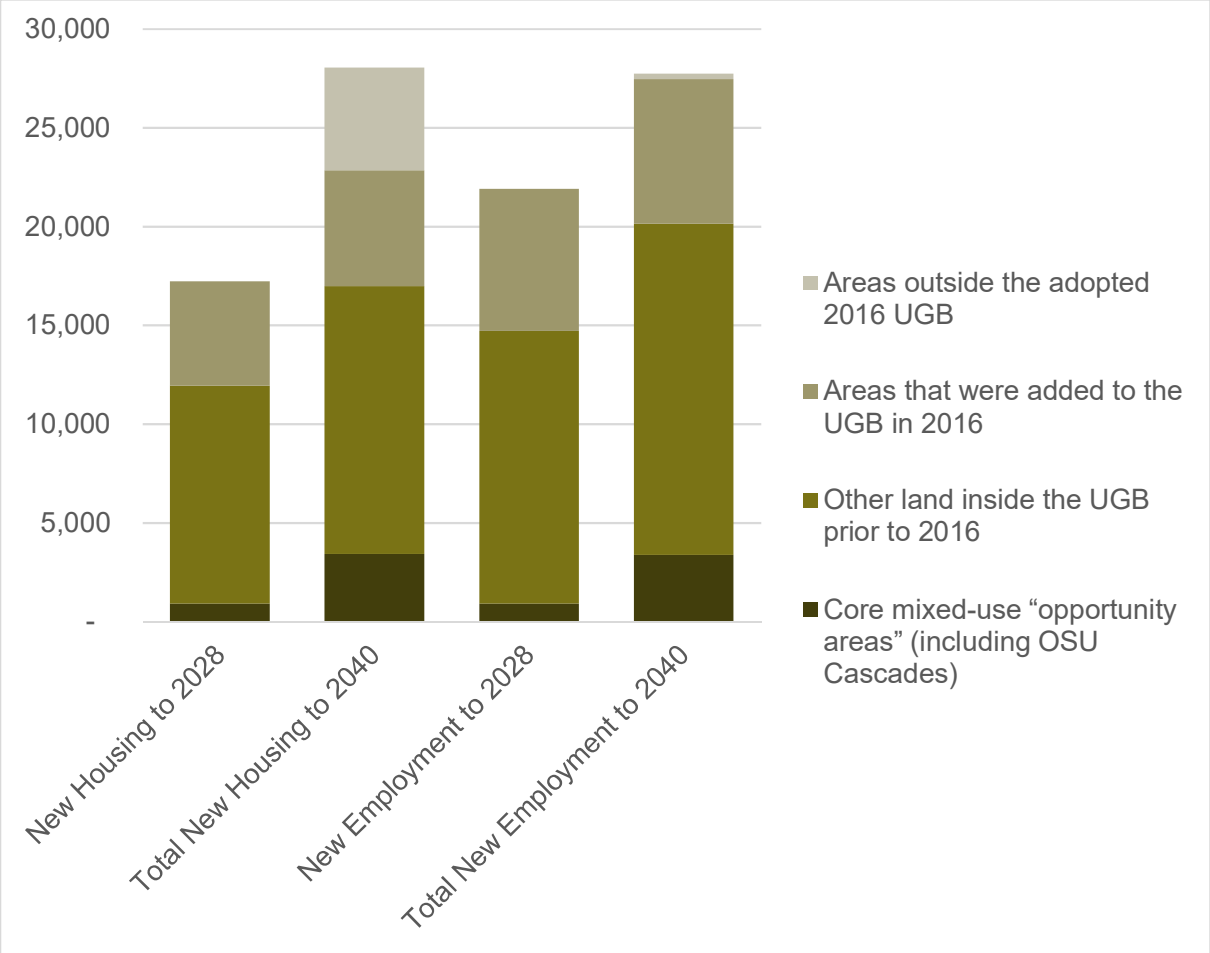


Table 5: New Housing & Employment (2014-2028 & 2014-2040) by Area

Type of Area	New Housing to 2028	New Housing to 2040	New Employment to 2028	New Employment to 2040
Core mixed-use "opportunity areas" (including OSU Cascades)	916 (5%)	3,434 (12%)	919 (4%)	3,372 (12%)
Other land inside the "pre-2016" UGB	11,034 (64%)	13,552 (48%)	13,804 (63%)	16,779 (60%)
Areas that were added to the UGB in 2016	5,282 (21%)	5,869 (21%)	7,181 (33%)	7,312 (26%)
Areas outside the adopted 2016 UGB	0 (0%)	5,190 (19%)	0 (0%)	280 (1%)
Total	17,232 (100%)	28,045 (100%)	21,904 (100%)	27,743 (100%)

Figure 9. Heat Map of Projected Housing Growth Intensity (2014-2040)

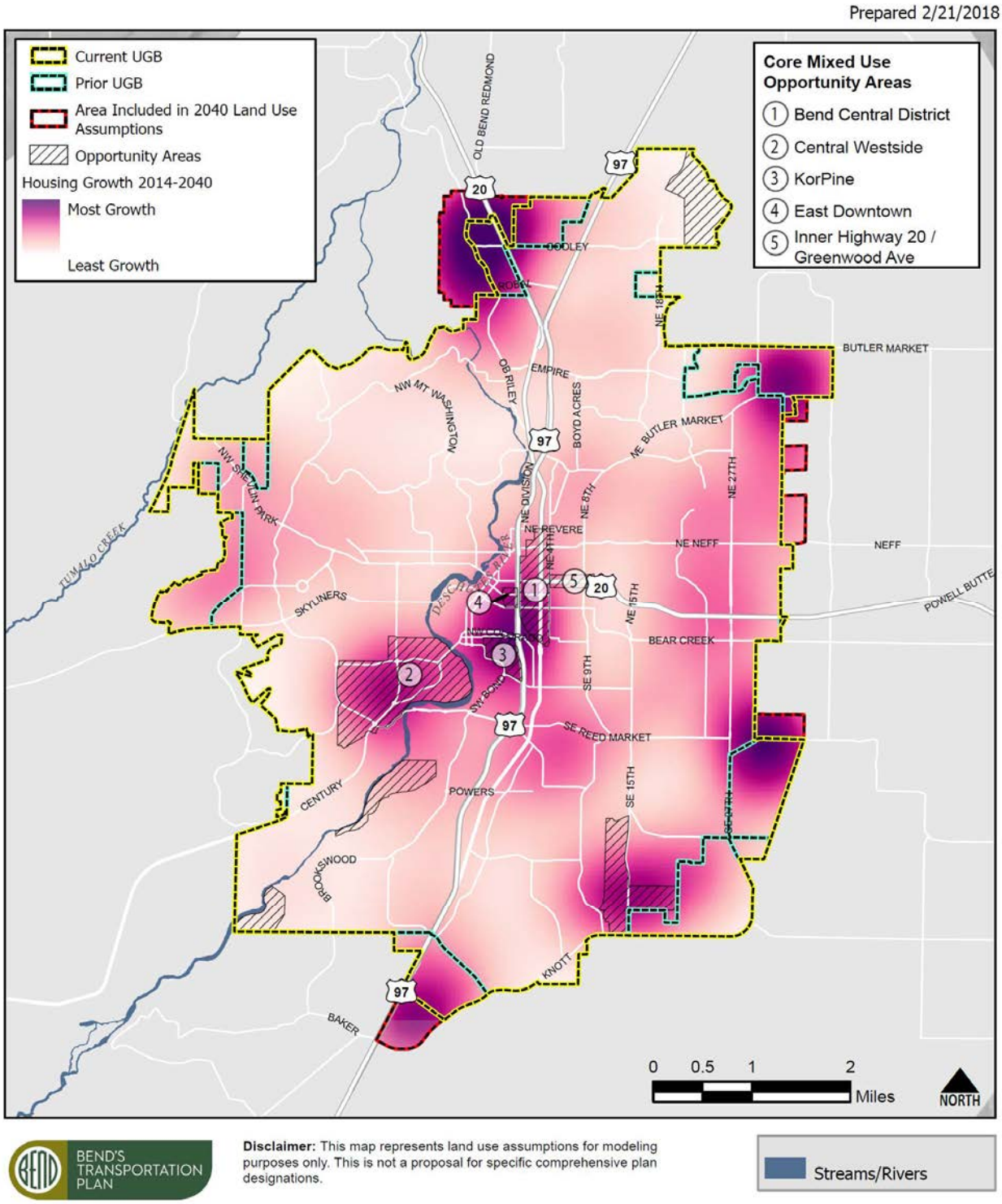
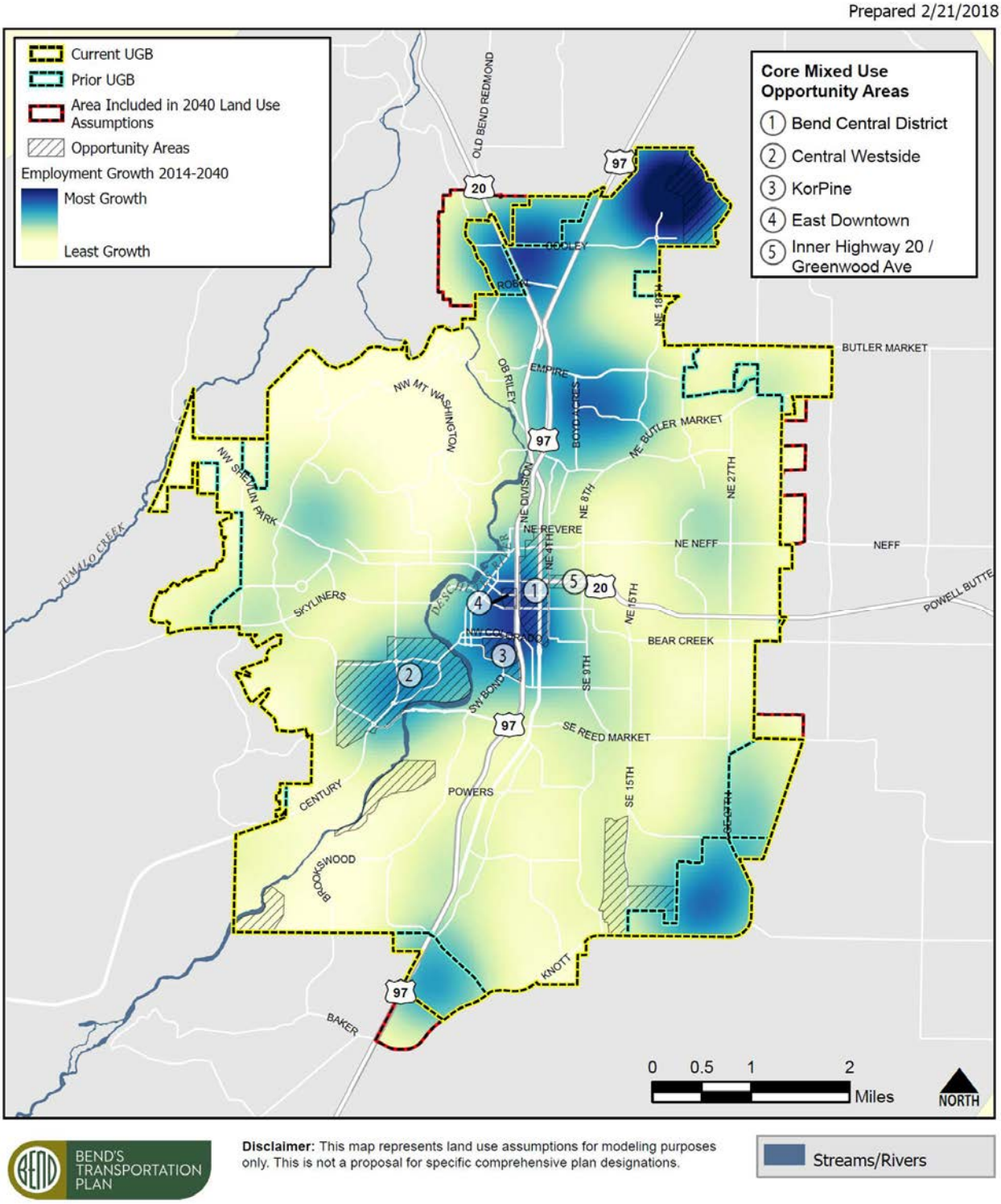


Figure 10: Heat Map of Projected Employment Growth (2014-2040)



Growth Estimates by Areas of Analysis

Housing and employment projections from the UGB adoption, summarized to the Areas of Analysis (North, Northeast, Elbow, Core areas) are described in Table 6. The UGB expansion areas are all similar in size, between 342 and 479 gross acres. The core areas summed together cover roughly 900 gross acres.

The ratio of jobs to residents is provided to provide a snapshot of how much employment relative to housing (assumed residents) was estimated in each Area of Analysis. Areas such as the Northeast Edge have much less employment than areas like the North Area and Elbow, which are job-rich because they include more acres designated for light industrial, commercial, and mixed employment uses. If the Council is seeking to focus on implementation efforts in areas with a blend of jobs and housing, all areas except the Northeast Edge contain higher ratios of jobs to housing.

The housing mix for each sub-area is also described. The Elbow area contains the most varied mix of housing types, followed by the North and Northeast areas. The Core area is expected to develop primarily as multi-family housing due to the mixed-use land use designations and more urban setting. The Northeast Edge and Core, followed by the Elbow, are assumed to provide the greatest number of total housing units and future residents (assuming 2.4 people per occupied housing unit).

Table 6: 2028 Land Use Estimates, Net New Housing & Jobs by Area of Analysis

Area	Gross Acres	Ratio of Jobs to Residents	2028 UGB Housing Unit Estimates [1]	2028 UGB Estimated Residents (2.4 people/hh)	2028 UGB Housing Mix			2028 UGB Housing Mix (SDF/SFA/MF) [2]	2028 UGB Employment	2028 UGB Resident and Jobs Total
					SFD	SFA	MF			
OB Riley Area	154		125	300	88	13	25	70/10/20	990	1,290
North Triangle	188		505	1,212	222	66	212	44/13/42	835	2,047
North Area	**342**	**1.2**	**630**	**1,512**	**310**	**78**	**237**	**50/12/38**	**1,825**	**3,337**
Northeast Edge	**471**	**0.08**	**1,099**	**2,638**	**550**	**110**	**440**	**50/10/40**	**214**	**2,852**
The "Elbow"	**479**	**1.2**	**819**	**1,966**	**295**	**139**	**385**	**36/17/47**	**2,274**	**4,240**
Century Drive Area (w/ OSU site)	583		1,017	2,441	0	102	915	0/10/90	1,590	4,031
KorPine	65		148	355	0	15	133	0/10/90	194	549
Bend Central District	196		232	557	0	23	209	0/10/90	280	837
East Downtown	19		4	10	0	0	4	0/10/90	6	16
Inner Highway 20/Greenwood Ave.	38		1	2	0	0	1	0/10/90	0	2
Core Areas	**901**	**0.6**	**1,402**	**3,365**	**0**	**140**	**1,262**	**0/10/90**	**2,070**	**5,435**

[1] UGB Envison Tomorrow model based on UGB project

[2] Housing mix from Comprehensive Plan policies, assumed for Core based on Envision Tomorrow Development type (Urbanization Report, Bend Comprehensive Plan)

3. Numbers may not add to total due to rounding

Table 7 shows the estimated levels of development in the Areas of Analysis in year 2040. The land use estimates are derived from models used in the ILUTP. The ILUTP was required by the UGB Remand Order in order to complete the UGB expansion and meet state law. The legal drivers for the ILUTP center around reducing VMT through land use and transportation system improvements and strategies.

UGB expansion area housing and employment growth were held mostly in the Areas of Analysis between the years 2028 and 2040, while opportunity areas were assumed to grow more intensively (more than double; see 2040 discussion).

Table 7: 2040 Land Use Estimates, Net New Housing & Jobs by Area of Analysis

Area	Gross Acres	2040 ILUTP Housing Estimates[1]	2040 ILUTP Residents (2.4 people/hh)	2040 ILUTP Housing Mix [1]			2040 ILUTP Employment [1]	ILUTP HH/Emp Total
				SDF	SFA	MF		
OB Riley Area	154	137	329	93	13	33	987	1,316
North Triangle	188	548	1,315	239	70	240	834	2,149
North Area	**342**	**685**	**1,644**	**332**	**83**	**273**	**1,821**	**3,465**
Northeast Edge	**471**	**1,378**	**3,307**	**614**	**116**	**651**	**471**	**3,778**
The "Elbow"	**479**	**882**	**2,117**	**315**	**141**	**428**	**2,277**	**4,394**
Century Drive Area (w/ OSU site)	583	1,615	3,876	43	168	1,418	1,723	5,599
KorPine	65	864	2,074	0	36	828	600	2,674
Bend Central District	196	928	2,227	0	14	937	1,029	3,256
East Downtown	19	25	60	0	1	25	20	80
Inner Highway 20/Greenwood Ave.	38	2	5	1	0	2	0	5
Core Areas	**901**	**3,434**	**8,242**	**44**	**219**	**3,210**	**3,372**	**11,614**

[1] Integrated Land Use and Transportation Plan. Envision Tomorrow model, Cascadia Partners.

Affordable Housing Commitments Made During UGB Process

During the UGB remand process, four expansion areas were included in the final proposal based on commitments from landowners to provide affordable housing. These commitments were first proposed in written testimony to the UGB Steering Committee, and subsequently incorporated as policies in Chapter 11 (Growth Management) of the Comprehensive Plan. Three of these expansion areas require master planning. Only one requires a City-initiated area plan -- the North Area. The following summarizes the commitment the owners and/or their representatives made regarding the development of affordable housing, and the Comprehensive Plan policy that incorporated this commitment in the Comprehensive Plan. Other areas will fulfill their agreement when they initiate development.

1. North Triangle.
   a. Commitment. "The GTAC (Golden Triangle Area Consortium) will dedicate 25% of the minimum calibrated Housing Units for the area, to affordable housing for Bend's workforce (housing that can be rented or purchased at rates of 30% of the average median income), with the recommended target of 80% owner occupancy.
   b. Bend Comprehensive Plan Policy 11-126: The properties identified on Exhibit 11-9 shall provide for affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan, as follows:
      - The minimum number of affordable housing units shall be 25% of all housing units approved by the City on each property.
      - The minimum required number of affordable housing units is satisfied when 77 units of affordable housing (in total on the properties identified on Exhibit 11-9) have been

approved in land use applications, subject to phasing requirements acceptable to the City.

- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.
- Planning and phasing requirements for affordable housing units shall be established, in a form acceptable to the City.

Other areas subject to an Area Plan (Elbow, Northeast Edge) do not have affordable housing agreements established in policy. In the following sections of the report, Housing Incentives, applicability of programs such as the Multiple-Unit Property Tax Exemption (MUPTE) may be appropriate in some circumstances for areas without existing agreements.

SDC Revenue Potential

As developments are approved through the Community Development Department, they are assessed SDCs to pay for their proportionate impacts on the transportation, water, sewer, and parks systems. Parks SDCs are paid at the City, but forwarded to BPRD. SDCs are assessed based on a methodology relating the charge to measurable characteristics of a development such as water meter size, the number of trips generated, dwelling units, etc. This methodology changes over time, as do the actual SDCs. SDC estimates for future development, as a result, are inherently uncertain.

Despite the uncertainty, estimations can provide important information about the overall magnitude of SDCs in different areas at assumed development intensities, and are useful to use to compare one area with another given the same assumptions and methodology. With this in mind, this section of the report estimates future SDC generation for different Areas of Analysis. As discussed later, it is also possible to compare the rough magnitude of costs of infrastructure to serve a level of development against SDC revenues.

Estimates of future SDCs for the Areas of Analysis were generated, based on the same models used in the UGB expansion to estimate housing and jobs, development patterns in the Areas of Analysis and other areas of the City.

The values of SDCs are based on new development (not existing) estimated in 2028 for the UGB project, and 2040 separately for this project. Note that some of the areas, such as the Northeast Edge and Elbow, are not in the City's water service territory, and therefore will not collect SDCs on development. Water system improvements, discussed in the later sections of the report, are not "difference makers" from the standpoint of land being ready for development. Water system costs will be roughly equal in all UGB expansion areas, so have not been included in summary tables, but are available in Appendix A. Summarized results are presented by Area of Analysis in Table 8.

Table 8: Transportation & Sewer SDSs 2028, Additional SDCs by 2040

Area of Analysis	2028 Transportation SDC ($M)	2028 Sewer SDC ($M)	2028-2040 Transportation SDC ($M)	2028-2040 Sewer SDC ($M)
North Area	$15	$6	$0.2	$0.3
Northeast Edge	$6	$5	$0.8	$1
"The Elbow"	$18	$7	$0.2	$0.3
Core Areas	$10	$10	$13	$11

SDC estimates are derived from the Envision Tomorrow model based on the Bend CDD Master SDC Calculator 2016-2017, July 1st 2016 update. See detailed results in Appendix A. Numbers rounded to nearest $M where appropriate.

The Elbow and North Area have the highest estimated SDCs in 2028, and Core Areas generate the most sewer SDCs. SDC growth between 2028 and 2040 is a function of assumed growth in these areas, as well as the longer-term capacity of the Core areas relative to the UGB expansion areas, which were assumed to build out at reasonable (but not maximum) densities in 2028.

Property Tax Revenue Potential

Table 9 summarizes the approximate annual total property tax revenues resulting from the assessment of the value of the built environment in the Areas of Analysis. More details about the methodology and key findings and assumptions are provided in Appendix A.

Envision Tomorrow, an open source tool that measures building feasibility and pro forma based on land use, was used for both the UGB project and this analysis. The model creates building types from Bend's Development Code to estimate permissible building types in different zoning designations and locations. It integrates building feasibility economics like land values, construction costs, rates of return, costs of financing, and many other variables. Building types are created which represent actual building types to test their feasibility in the market under existing or new regulations driving the built environment such as scale, height, parking, setbacks, and Floor Area Ratios. Buildings of different types and scales can house varying degrees of employees and residents.

The Envision Tomorrow model can also estimate property tax revenues based on assumed levels and types of buildings containing jobs and housing units. The new square footage of the improvements and land establish an assessment value.

The analysis is driven by many assumptions, notably the amount of redevelopment and development in an area. The redevelopment assumed in the Core Areas is modest because it was based on past redevelopment and infill trends, so the estimates for these areas included should be considered conservative and could be higher, particularly in the long term. The development in the UGB expansion areas was assumed to "build out" (fully developed) based on common development patterns. While additional intensity is possible in most cases, the potential increase is less than in the Core Areas. This is reflected by the difference between annual property tax revenue estimates in 2028 and 2040 for the Areas of Analysis.

At modest redevelopment rates, total new annual property tax revenue for the Core Areas is $2-$3 million less than the expansion areas. If additional growth occurs in the Core Area through

more redevelopment, it meets or exceeds the new annual property tax revenues of the expansion areas at a reasonable level of "buildout."

The City of Bend's portion of the total new annual property tax revenue is 20.8% of the total with an assumed collection rate of 95%. For example, in the North Area, the City of Bend would receive approximately $1M of the $6M shown in Table 9.

Table 9: Total New Annual Tax

Area of Analysis	2028 Total New Annual Property Tax Revenue ($M)	2028-2040 Total Annual Property Tax Revenue ($M)
North Area	$6	$0.1
Northeast Edge	$6	$1
"The Elbow"	$8	$0.1
Core Areas	$5	$8

Fregonese Associates. See detailed results in Appendix A. Numbers rounded to nearest $M where appropriate.

Section 3: Growth Area Needs & Costs

Overview

This section assesses major infrastructure needs to serve the 2028 land use development levels by Area of Analysis documented in the prior section. This assessment is at a citywide, planning level, based on existing information that may change because of other major infrastructure planning and construction projects the City will undertake in the coming years.

The assessment of infrastructure needs and costs is to establish the "readiness" of the Areas of Analysis. Readiness is defined as the availability of major core infrastructure required to serve any major development including water, sewer, and transportation. The purpose of identifying readiness in the short-term (i.e. now or in the coming year) is to help the Council understand where future planning investments might yield development levels documented in the prior section. Investing in implementation level planning, therefore, will have the greatest immediate and near to long-term impact where infrastructure is currently available and has capacity, or the capacity can be constructed with the incremental development of an area.

This analysis does not include consideration of the smaller but critical infrastructure systems, such as local roadways, and smaller diameter water and sewer lines. This analysis assumes that these types of costs, while considerable for any development, will more or less be equal between all the Areas of Analysis.

The sanitary sewer collection system is a major driver in Bend because the system to serve the entire UGB is still under construction. In Bend's case, sewer is readily available at the trunk level in some areas and not in others.

Transportation improvements are typically phased in over time with development. Typically, transportation projects are built as needed based on more detailed development proposals, needs, and proportionality.

Bend's water system is not a major driver, unlike sewer and transportation. The water system is robust enough to be extended with development, so these costs and projects are not used as "difference makers."

Costs are estimated at a planning level Class 5, which is the best available information at this scale (UGB wide). Care has been taken to use the best available information from a variety of sources. These include the current update to the sanitary sewer collection system PFP, the current TSP, a transportation project cost estimator based on recent projects, the ILUTP, and other more targeted studies such as the Central Westside Plan and the Multi-modal Mixed Use Area (MMA) Plan that was done for the BCD.

Transportation Investments

The following section contains the objectives, methods, and findings regarding the transportation analysis for the growth area needs and costs. The City is currently in a multi-year community update of the TSP and Metropolitan Transportation Plan (MTP). A focus of this effort with be the needs and funding analysis. Private development will fund a portion of the costs for new transportation projects; however, it is assumed that there will be significant funding gaps. With this in mind, the transportation analysis in this report is a point in time and pertinent for this analysis until the TSP is updated.

Since the DKS Associates (DKS) transportation analysis (which follows) was developed, Council has taken action to allocate partial funding for the Murphy Road and Empire Avenue corridors as well as placed a $50 million earmark for the Highway 97 and Cooley Road intersection. This new funding will not cover all the planned costs for these facilities but it is a very positive start to long awaited projects and will greatly assist in how to fill the funding gaps. This analysis does not attempt to determine partnerships or proportionality given these recent programmed funding actions.

The DKS transportation analysis reviewed eight expansion and opportunity areas. The initial analysis and method was approved by staff and provides the necessary information to make findings for the purposes of this report, and was useful for other purposes at the time. There are numerous methods and analysis for how to assess and compare the areas in this report and certainly, with more time and funds a more detailed analysis could have been conducted. However, the narrow question of the report is to assess the “readiness” of areas. For this question, the transportation analysis in this report is appropriate.

Consequently, staff offers the following clarifications and explanations about the analysis that should be kept in mind when reading this section:

- The method for calculating the traffic impact to derive the projects is based on ODOT methods that are applied for a private development application; these methods are more conservative; they assume more traffic impacts initially. The ODOT method was used because many of the areas will have to perform a traffic analysis to satisfy the ODOT and City traffic requirements and it is safer to use the more conservative ODOT method for assigning trips to a roadway, which then determines impacts and costs. A proposed development will use both the City and ODOT development review requirements for a traffic analysis.
- Transportation improvements could be assigned to more than one area; this is very likely and an Area Plan should include the impacts to the transportation system by consolidating areas that are close and adjacent to each other in order to get an accurate representation of impacts. Staff combined areas for summary purposes for the Core Area, Elbow, and North Area, and Northeast Edge Area based on the more technical work performed by DKS and Associates to summarize costs. Appendix H contains the combined analysis performed by city staff based on the more detailed work of smaller sub-areas by DKS.
- Staff assessed the project lists in each area to see if any of the projects were assumed to be built by the City, ODOT or by a private development as a condition of approval. If these

projects existed, they were removed from an area's obligation. For instance, ODOT will begin design and construction for a section of US 20 and it did not seem appropriate to assign a project obligation to an area that also existed in the limits of the United States (US) 20 project corridor. At the same time, staff did not attempt to break down what could be a developer or community obligation for the Murphy or Empire corridors, both of which are partially funded in the current Capital Improvement Program (CIP). The improvements along Highway 97 such as Cooley Road and Highway 97, which $50 million has been earmarked by the State for improvements. Staff recognizes there will be proportionality in any area planning.

- There were also projects in areas that had projects assigned to them that were more than reasonably located from the area. For instance, the Franklin Streetscape project was assigned to the Elbow Area. When this occurred staff did not assign that project cost to the area. Similarly, there were projects such as 15th and Wilson intersection improvement that is adjacent to a large vacant area that will assume a major portion of the 15th and Wilson intersection improvements.
- This report has used only one aspect of the ODOT methods, which assigns trips from an area to a City or ODOT facility. There are allowances and credits that exist in the City and ODOT traffic study regulations that determine proportionality and costs to a development that are not in this report.
- Larger, regional transportation facilities will most likely be a shared cost between the community and the areas. Development will be responsible for contributing a proportion of the costs related to their impacts. Certainly, the transportation projects that are needed to provide access and connectivity to a development will probably be the sole responsibility of that development. This report does not tease out the regional and direct development costs to an area. For example, the Northeast Area was assigned costs for intersection projects along 27th Street, which will most likely only be a partial cost or proportion of cost to a development in the Northeast Area. In a typical traffic analysis, the vehicle trips from a development are distributed across the system; the distribution assumes percentages of trips to different roadways and is dependent on the type of land use among other factors. Other factors such as site location and building orientation are too fine to analyze for this analysis but are considered in a site plan traffic analysis and will determine distributions across roadways.

Table 10 displays the results of subsequent review and packaging of the DKS analysis. As discussed above, in conjunction with the detailed project tables in Appendix H, it allows viewing the approximate types of transportation facilities and costs associated with the 2028 land uses described earlier in this report.

The purpose of this approach is to determine the overall complexity, cost, and issues that will inevitably emerge in subsequent implementation and development; either through an Area Plan or through district level planning in the Core Areas. The results can be used to suggest all of these projects must be built prior to development, or that the costs will all be borne by development of the area. It is useful to inform the Council of the relative complexity of full

development of an area, as well as the range of projects that will be considered during subsequent development actions.

Table 10: Combined Transportation Costs by Area based on DKS Analysis

Area of Analysis	System Cost With Development ($M)	System Cost Needed in 5 Years, or Prior ($M)	System Cost Needed for Area in 10+ Years ($M)	Summary Ranking (complexity, time, cost)
North Area	$71	$8	$11	Poor
Northeast Edge	$50	$13	$.5	Fair
"The Elbow"	$70	$23	$0	Fair
Core Areas	$27	$26	$26	Good

See Appendix H for projects and planning level costs.

The main conclusions drawn based on this work are that full development of all Areas of Analysis require considerable transportation improvements. The North Area is the most complex area to develop from a transportation standpoint due to the statewide highway impacts, the large and complex nature of projects on the regional system, and coordination with multiple property owners and ODOT. The Northeast Edge and Elbow Areas of Analysis also require significant investments, but have fewer impacts on the state facilities. These areas will mostly involve the City's systems. The Core Areas are relatively less expensive and complex up front, and include projects which are focused on improving existing system operations (signal upgrades, for example), new roundabouts and roadway connections, and many bike and pedestrian improvements to serve the mixed-use area at increasing levels of buildout. These projects are less complicated and can often be phased in over time.

The following is a more specific analysis conducted by DKS. This section examines pertinent individual opportunity areas and UGB expansion areas.

Evaluation Context

Objective

The key objective of the evaluation was to identify what transportation infrastructure improvements that are needed to support development of potential Area Plan sites, including those needed to begin development, those needed to support buildout, and those that would be longer-term enhancements to the site area. Those identified improvements were then compared to the City's Capital Improvement Plan (CIP) to identify prioritization refinement that could be required to support near-term implementation of a specific site. The evaluation concludes with an overall discussion of site readiness in terms of the reasonableness (or ease) of implementing improvements in the near term to support development.

Previous Work

The analysis conducted for this assessment differs significantly from prior work completed for the UGB project. Prior UGB work focused on identifying key (arterial and collector system) transportation improvements that would be required by the year 2028 to support land use development in the preferred UGB land use scenario and meet Oregon Administrative Rule

(OAR) 660-012-0060 requirements[11]. That evaluation essentially identified what improvements needed to be added to the City's Transportation System Plan beyond what was already adopted for long-term system performance. This evaluation for site readiness was based on a near-term evaluation to identify improvements needed in addition to existing transportation facilities to support Area Plan development (as opposed to comparison to a "planned" system). In both cases, the analysis was a high-level review based on travel demand model and GIS data, focusing on identifying key improvement needs. Additional details/refinements for improvements in each development area would be determined through a more robust site evaluation through area planning or as part of a development review or CIP project development process.

Analysis Methodology

Study Areas

There are nine potential Plan Areas evaluated for this readiness assessment. Four sites are UGB expansion areas (with one expansion area split into two evaluation areas) and four opportunity sites. The expansion areas include:

- OB Riley
- North Area
- NE Area
- Elbow West
- Elbow East

The opportunity areas include:

- Bend Central District
- KorPine Industrial Area
- Central West Side/Century Drive
- 15th Street/Ward Property[12]

Evaluation Tools

The high-level transportation evaluations described in this memorandum were completed using the following tools/resources:

- ArcGIS mapping software – This tool was used to provide mapping resources, including to review the layout of the conceptual street system, identify potential geographic properties (existing roads, rail, canals, etc.), and create maps for presentation.
- Bend MPO Regional Travel Demand Model – This tool was used to forecast future transportation growth and needs in Bend for the year 2028 as part of the UGB Expansion evaluation. Data from these models was extracted for this evaluation. The base year 2010

[11] The evaluation conducted for the UGB Expansion compared a 2028 scenario with development in the proposed UGB Expansion areas with a scenario with the same level of population and employment within the existing UGB boundary. Therefore, the evaluation only identified additional transportation improvements that would be needed to satisfy rule requirements based on the change of geography and mix of land use development.

[12] The 15th Street/Ward property is designated as a Master Plan, not Area Plan, location. However, it was included in this evaluation due to proximity and relationship with the Elbow area.

and future year 2028 and 2040 models that were used are consistent with the prior transportation analysis completed as part of the UGB expansion[13].

- Local Knowledge – City of Bend and Bend MPO staff provided input on current transportation system needs within the influence area of each study area, drawing from their experience with recent development applications, project evaluations, and observations of system performance.

Influence Areas

The travel demand model was used to determine an influence area for each of the nine study areas to identify potential capacity and safety improvements (for both roadway segments and intersections) that could be needed for motor vehicle travel. The potential additional weekday PM peak hour traffic volume generated by growth in each area was used to determine which roadway segments to include in each influence area. The threshold used to identify potentially impacted roadway segments was 50 PM peak hour trips (in one direction).

Intersection Analysis

The travel demand model was used to identify intersections that were forecasted to have traffic volumes that exceed levels that can typically be served by stop-control. ODOT's preliminary signal warrants were used to set volume thresholds for major and minor street intersection approaches for roads in the regional travel demand model. The volume thresholds vary by number of lanes and range between 150 to 400 vehicles on the minor street approach and 1000 to 2500 vehicles on the major street approach. Intersections that exceeded the threshold were identified as candidates for traffic control/capacity upgrades. The high-level analysis did not identify control specifics related to traffic signals or roundabouts, although roundabouts are preferred in Bend. In addition, previous plans[14] and local knowledge were used to identify intersections currently nearing capacity that was not reflected by the travel model volume evaluation.

Segment Analysis

The regional travel demand model was used to identify roadway segments that meet the influence area threshold and are forecasted to be near or over capacity under existing (year 2017) or future (year 2028) conditions. The congested segments from the travel demand model in each influence area were reviewed to determine when the capacity improvements identified in the City TSP would need to be constructed. A three-tier ranking system was used to categorize projects as near-term, mid-term, or far-term.

- Near-term (Tier 1) – Tier 1 projects are defined as roadway segments in which the travel model demand currently exceeds segment capacity and therefore, would potentially require improvement to begin development. Current 2017 travel model volumes were estimated by

[13] The project team previously coordinated with Bend Metropolitan Planning Organization (MPO) staff and the Oregon Department of Transportation's (ODOT's) Transportation Planning Analysis Unit (TPAU), who manages the model, to prepare model scenarios that could be used to measure transportation system impacts for each growth configuration.

[14] Previous plans include: (1) Bend Central District – Multimodal Mixed Use Area Plan, Angelo Planning Group, July 2014. (2) Bend North Area Transportation Study, October 2015. (3) City of Bend – Central Westside Plan, Kittelson & Associates, Inc. May 2016.

interpolating between the 2028 and 2010 model volumes, including back-checking model volumes with recent traffic count data for reasonableness.

- Mid-term (Tier 2) – Tier 2 projects are defined as roadway segments that are expected to be over capacity due to the added traffic volumes from each subarea within the next 5 years.
- Long-term (Tier 3) – Tier 3 projects are defined as roadway segments with a volume to capacity (v/c) ratio above 0.95 but less than 1.0 due to the added traffic volumes from each subarea. These roadway segments were categorized as a longer-term need within the next 10 to 15 years (e.g., by the year 2028 with development in the area).

Safety Analysis

Crash data was reviewed to identify safety issues and corresponding potential improvements on segments within each influence areas. Crash data between 2007 and 2013 was obtained from the City of Bend to see if any crash patterns would emerge. In addition, the ODOT's Top 10% SPIS (Safety Priority Index System) list was reviewed to identify safety issues on state highways. Planned City safety improvements that may address these needs for facilities in the study areas were categorized as near-term, mid-term and long-term based on proximity to the site and the amount of added traffic volume.

Connectivity Analysis

A GIS map evaluation was conducted for each study area to determine roadway connections that would be required to serve each site. The connections were rated as one of the following categories:

- Near-Term (Essential) – Roadway connections anticipated to be needed to provide access where it does not exist or to avoid overloading existing roadways in the area.
- Mid-Term (Supporting) – Roadway connections that improve the site area but are not essential for distributing traffic for initial development.
- Long-Term (Amenity) – Connections (including non-roadway facilities) that would enhance the site, but may not be needed until other areas nearby develop.

Bike/Pedestrian Enhancements and Urban Upgrade Analysis

A GIS map evaluation was conducted to evaluate each study area for needed bike/pedestrian facilities and full roadway modernization (urban upgrade) projects. For this analysis, the evaluation focused on modernization projects identified through the UGB process and bike/pedestrian projects identified as priorities as part of the ILUTP. Numerous other bike/pedestrian facility enhancements would be beneficial for each area, particularly towards the edge of the City where connecting facilities are often still have rural design features; however, this evaluation was not able to go to the level of detail to prioritize those improvements and further assessment will be needed during development review phases. The improvements that were identified were rated as one of the following categories:

- Near-Term (Essential) – Site frontage upgrades abutting the development site, which may include a necessary connection from a site to urban facilities nearby (i.e. filling a gap that would otherwise rely on rural-type facilities to connect the site into Bend).

- Mid-Term (Supporting) – Bicycle/pedestrian projects from the ILUTP that are in or adjacent to the site and are focused on improving safety.
- Long-Term (Amenity) – Bicycle/pedestrian related projects (e.g., streetscape) from the ILUTP that are in or adjacent to the site and focus on aesthetic enhancement.

Key Findings

The following sections summarize key findings from the evaluation. Each potential Plan Area is summarized to provide an overview of site readiness based on the amount of investment in transportation infrastructure needed to begin development (near-term/Tier 1 projects) and if those projects are already on the City's CIP list. The evaluation is based upon high-level planning cost estimates, primarily developed by gathering data from past plans or estimating costs with the City's CIP cost estimating unit cost tool. Therefore, cost estimates are provided as ranges with the intent of establishing order-of-magnitude cost information for overall area development (as opposed to detailed project cost estimates for a particular project). The cost estimate ranges do not account for cost sharing between agencies or with private parties. Therefore, the cost data does not imply any level of infrastructure funding policy for the City. Based on this approach, full project cost estimates were utilized in the ranges even though some projects already have an established potential cost share with agencies such as ODOT.

In addition to infrastructure cost assessment, improvements that would require complex corridor/system improvements involving other jurisdictions and potential system management policy discussions (e.g., US 97 capacity enhancements) are noted for potential impact to site readiness.

Based on the near-term infrastructure cost ranges (including on-site/frontage[15] and off-site improvement considerations), whether the costs are currently part of the City's CIP, and the potential complexity of off-site improvement projects, each location is assigned a site readiness of Good, Fair, or Poor. For example, a location with a lower cost, supporting CIP improvements, and few improvements with complex issues would be considered Good. A site with higher costs but limited complexity would be considered Fair. On-site or frontage improvement costs are considered less difficult than off-site mitigation improvements. Project maps and tables are attached to illustrate the specifics of each area.

US 97/Bend Parkway Findings

Most of the study areas were estimated to add more than 50 PM peak vehicles to the central US 97 Parkway (Empire Avenue to Colorado Avenue). This section of US 97 has been identified in numerous past studies as having long-range conditions that exceed mobility standards (forecasted demand that exceeds capacity), including the Bend MPO MTP and the City of Bend TSP. These prior studies have pointed to the need for additional corridor planning refinement to determine the policies and improvements necessary to manage the facility.

Based on the analysis conducted for this site readiness evaluation and examining current 2017 traffic volume data, it appears that the forecasted long-term congestion issues for US 97

[15] Frontage improvements were assumed as roadway modernization projects (e.g., sidewalks, bike lanes, etc.) along the boundary of the site.

between Empire Avenue and Colorado Avenue are becoming a reality in the near-term. This could mean that improvements such as auxiliary lanes or closure of at-grade connections need to be evaluated in the near term, and policy changes such as mobility targets and alternate performance measures that can guide development review need to be advanced. ODOT has initiated a multi-agency US 97 Refinement Plan that is currently in Phase 1 to document a detailed assessment of existing conditions. Phase 2 of that work will determine the improvements and policies discussed above. Therefore, for this site readiness evaluation, potential effect on the US 97 parkway is limited to considering the level of added traffic volume as an indicator of site development complexity as part of the summary findings.

O.B. Riley Road Area Findings

Development in the O.B. Riley Road area relies significantly upon upgrading O.B. Riley Road to urban standards to handle traffic for all modes of travel. In addition, to key connections and modernization of other fronting facilities such as US 20, development here could be limited by congestion issues on US 20 between O.B. Riley Road and US 97.

- **Near-Term Improvement Costs:** $30M to $40M
  - On-Site and Frontage Improvements - $14M to $21M
  - Off-Site Improvements - $13M to $21M
- **Near-Term Projects Not in the current CIP:** (all near-term projects)
  - US 20 (Empire Avenue to Division Street) Capacity and Safety Upgrades (ODOT is advancing this project)
  - O.B. Riley Road/Empire Avenue Roundabout
  - O.B. Riley Road (UGB to Empire Avenue) Modernization
  - O.B. Riley Road (Empire Avenue to US 20) Modernization
  - Robal Road Extension (US 20 to O.B. Riley Road)
  - Jamison Street Extension (to Robal Road Extension)
  - US 20 (UGB to US 97) Modernization
- **Development Complexity Issues:**
  - Capacity/congestion issues on US 20 (3rd Street) from O.B. Riley Road to US 97
  - Potential added PM peak traffic to US 97 Central Parkway 75 to 150 vehicles per direction
  - Empire Avenue @ US 20 and US 97 improvements may be required
- **Overall Site Readiness Assessment -** Fair to Poor

North Area Findings

The North Area is a complex location due to traffic distribution to US 20 and US 97, which would require substantial mitigation due to existing congestion issues and known improvements needed at US 97/Cooley Road and US 97/Robal Road. These projects are not currently part of

the City's CIP. In addition, Cooley Road and portions of Hunnell Road would require modernization for multi-modal safety and connectivity.

- **Near-Term Improvement Costs**: $47M to $70M
  - On-Site and Frontage Improvements - $8M to $12M
  - Off-Site Improvements - $40M to $60M
- **Near-Term Projects Not in the current CIP:** (all near-term projects)
  - US 97/Cooley Road Interim Improvements
  - US 20 (US 97 to Empire Avenue) Capacity and Safety Upgrades
  - US 20 (Empire Avenue to Division Street) Capacity and Safety Upgrades (ODOT is advancing this project)
  - Cooley Road (US 20 to US 97) Modernization and Intersection Upgrades
  - US 20/Jamison Street Safety Improvements
  - US 20 (UGB to Cooley Road) Modernization
  - Hunnell Road (Cooley Road to Robal Road) Modernization
- **Development Complexity Issues:**
  - Capacity/congestion issues on US 20 (3rd Street) from Jamison Street to Division Street
  - Capacity/congestion issue at US 97/Cooley Road, potentially trigger the need for the grade-separation "interim improvements"
  - Potential added PM peak traffic to US 97 Central Parkway 100 to 150 vehicles per direction
  - Empire Avenue @ US 20 and US 97 improvements likely required
- **Overall Site Readiness Assessment -** Poor

Northeast Area Findings

Development in the Northeast area will require upgrading and extending roadways along the frontage of the development, which are significant costs but part of typical development. The area relies significantly on Butler Market Road and the programmed Empire Avenue Extension (which is part of the City's current CIP). Potential impacts to US 20 and US 97 are limited.

- **Near-Term Improvement Costs**: $40M to $60M
  - On-Site and Frontage Improvements - $11M to $17M
  - Off-Site Improvements - $27M to $43M

- **Near-Term Projects Not in the current CIP:** ($10M to $20M in off-site projects)
  - 27th Street/Neff Road Capacity Improvements
  - 8th Street (Revere Avenue to Greenwood Avenue) Capacity Improvements
  - Butler Market Road (8th Street to Wells Acres Road) Improvements and roundabout @ Wells Acres Road
  - Butler Market Road (27th Street to Deschutes Market Road) Modernization
  - Butler Market Road (Deschutes Market Road to UGB) Modernization
  - Yeoman Road (Deschutes Market Road to UGB) Extension
  - Deschutes Market Road (Butler Market Road to UGB) Modernization
- **Development Complexity Issues:**
  - Potential added PM peak traffic to Empire Avenue interchange 50 to 75 vehicles per direction
  - Potential added PM peak traffic to US 97 Central Parkway 50 to 75 vehicles per direction
- **Overall Site Readiness Assessment –** Fair

Elbow West Area Findings

Development in the Elbow West area relies heavily upon the 15th Street, Murphy Road (including the extension to 15th Street that is in the City's CIP), Brosterhaus Road, 27th Street, and Reed Market Road corridors. As with other areas, significant frontage modernization costs would be required, including managing speeds and safety along Knott Road. In addition, the Elbow area has more internal roadways shown and planned in the TSP due to the level of detail there from the UGB planning process, which adds to the high-cost of the near-term improvement shown below (but much of this is typical development facility cost). Potential impacts to US 20 and US 97 are limited.

- **Near-Term Improvement Costs**: $55M to $85M
  - On-Site and Frontage Improvements - $24M to $37M
  - Off-Site Improvements - $30M to $50M
- **Near-Term Projects Not in the current CIP:** ($14M to $21M in off-site improvements)
  - 15th Street/Wilson Avenue Roundabout
  - Brosterhaus Road (3rd Street to Chase Road) Improvements, including roundabouts at Chase Road and Parrell Road
  - Reed Market Road/9th Street Signalization
  - 27th Street (Reed Market Road to Ferguson Road) Safety Improvements, including a roundabout at Ferguson Road
  - 15th Street (Reed Market Road to Knott Road) Modernization

- Knott Road/15th Street Roundabout
- Internal Site Collector Roadways
- Knott Road (15th Street to Rickard Road) Modernization

- **Development Complexity Issues:**
  - Potential added PM peak traffic to US 97 Central Parkway 50 to 75 vehicles per direction
- **Overall Site Readiness Assessment -** Fair

Elbow East Area Findings

Development in the Elbow East area relies most heavily upon 27th Street, with 15th Street, Murphy Road (including the extension to 15th Street that is in the City's CIP), and Reed Market Road corridors also providing key traffic distribution. As with other areas, significant frontage modernization costs would be required, including managing speeds and safety along Knott Road and 27th Street. In addition, the Elbow area has more internal roadways shown and planned in the TSP due to the level of detail there from the UGB planning process, which adds to the high-cost of the near-term improvement shown below (but much of this is typical development facility cost). Further analysis will be necessary to determine if internal roadways in the Elbow East area will be critical for this site for utilizing the Murphy Road corridor. Potential impacts to US 20 and US 97 are limited.

- **Near-Term Improvement Costs** - $35M to $55M
  - On-Site and Frontage Improvements - $15M to $23M
  - Off-Site Improvements - $20M to $32M
- **Near-Term Projects Not in the current CIP:** ($2M to $3M in off-site improvements)
  - Reed Market Road/9th Street Signalization
  - US 20 (12th Street to Purcell Boulevard) Pedestrian Crossing Safety Improvements
  - 27th Street (Reed Market Road to Ferguson Road) Safety Improvements, including a roundabout at Ferguson Road
  - 27th Street (Ferguson Road to Rickard Road) Modernization
  - 15th Street (Reed Market Road to Knott Road) Modernization
  - Internal Site Collector Roadways
  - Knott Road (15th Street to Rickard Road) Modernization
- **Development Complexity Issues:**
  - Potential added PM peak traffic to US 97 Central Parkway 50 to 75 vehicles per direction

Ward/15th Street Area Findings

Development in the Ward/15th Street area distributes traffic primarily to 15th Street, Murphy Road (including the extension to 15th Street that is in the City's CIP), and Brosterhaus Road. As with other areas, significant frontage modernization costs would be required, including improving 15th Street. Potential impacts to US 20 and US 97 are limited.

- **Near-Term Improvement Costs** - $31M to $51MOn-Site and Frontage Improvements - $8M to $14M
    - Off-Site Improvements - $24M to $36M
- **Near-Term Projects Not in the current CIP:** ($8M to $12M in off-site improvements)
    - Brosterhaus Road (3rd Street to Chase Road) Improvements, including roundabouts at Chase Road and Parrell Road
    - 15th Street (Reed Market Road to Knott Road) Modernization
    - Internal Site Collector Roadways
    - Knott Road (15th Street to Brosterhaus Road) Modernization
- **Development Complexity Issues:**
    - Potential added PM peak traffic to US 97 Central Parkway 50 to 75 vehicles per direction
- **Overall Site Readiness Assessment –** Fair

Central District Area Findings

Development in the Central District Area distributes traffic distributes traffic primarily to US 20 (3rd Street and Greenwood Avenue), 3rd Street, Greenwood Avenue, and Franklin Avenue. The local street grid in the area is planned for significant streetscape and multi-modal upgrades. Potential impacts to US 97 are limited.

- **Near-Term Improvement Costs** - $6M to $10M
    - On-Site and Frontage Improvements - $1M to $2M
    - Off-Site Improvements - $5M to $6M
- **Near-Term Projects Not in the current CIP:** (all near-term projects)
    - US 20 (Empire Avenue to Division Street) Capacity and Safety Upgrades (ODOT is advancing this project)
    - 4th (Studio Road to Revere Avenue) Improvements, including signalization at Revere Avenue
    - 3rd Street (Revere Avenue to Greenwood Avenue) Bike Lanes
    - Franklin Avenue Undercrossing Improvements
    - Greenwood Avenue Undercrossing Improvements
    - Franklin Avenue/3rd Street Crossing Improvements

- Hawthorne Avenue/3rd Street Crossing Improvements
- Hawthorne Avenue Trail (COCC to Larkspur)

- **Development Complexity Issues:**
  - Capacity/congestion issues on US 20 (3rd Street) from Empire Avenue to US 97
- **Overall Site Readiness Assessment –** Good

Central Westside Area Findings

Development in the Central Westside area would include implementation of several key multimodal projects from the ILUTP. Key congestion issues would be Colorado Avenue and the Central Parkway. Potential impacts to US 97 are more significant than other areas, which could make significant development for the area complex.

- **Near-Term Improvement Costs** - $10M to $16M
  - On-Site and Frontage Improvements - $4M to $8M
  - Off-Site Improvements - $4M to $8M
- **Near-Term Projects Not in the current CIP:** ($2M to $5M in off-site improvements)
  - Colorado Avenue/Columbia Street Roundabout
  - Colorado Avenue (Simpson Avenue to Wall Street) Improvements
  - Colorado Avenue/US 97 Ramps Roundabout or Signalization
  - Simpson Avenue (14th Street to Colorado Avenue) Improvements, including roundabout upgrades at 14th Street and Columbia Street
  - OSU-MUD-Coyner Trail via Aune Street
  - N/S Bike Boulevard (Harmon Boulevard to Old Mill)
- **Development Complexity Issues:**
  - Potential added PM peak traffic to US 97 Central Parkway 125 to 175 vehicles per direction
- **Overall Site Readiness Assessment –** Fair to Good

KorPine Area Findings

Development in the KorPine area would initially rely upon Industrial Way to connect to Bond Street and Aune Street. Key issues for this area include improved connectivity and multi-modal enhancements from the ILUTP. Key congestion issues would be Colorado Avenue and the Central Parkway. Potential impacts to US 97 are moderate.

- **Near-Term Improvement Costs** - $7M to $11M
  - On-Site and Frontage Improvements – none identified besides internal local streets
  - Off-Site Improvements - $7M to $11M

- **Near-Term Projects Not in the current CIP:** (all near-term projects)
  - Colorado Avenue/US 97 Ramps Roundabout or Signalization
  - OSU-MUD-Coyner Trail via Aune Street
  - Industrial Way/Bond Street Roundabout
- **Development Complexity Issues:**
  - Potential added PM peak traffic to US 97 Central Parkway 100 to 150 vehicles per direction
- **Overall Site Readiness Assessment –** Good

Sanitary Sewer

The City of Bend is in the process of updating its sanitary sewer collection systems master plan and PFP as directed by the Council's Strategic Plan. This update is a critical step in implementing the City's growth plan, since it has not been updated since prior to the UGB adoption. Facilities serving expansion areas have not been formally assessed in a plan, and sewer collection systems at the "trunk level" must be in an adopted Public Facilities Plan per Goal 11 and its administrative rules. The Sewer PFP update is in progress, so while this is the best information available, it is subject to change. The following is a summary of the Murraysmith technical memorandum, the entirety of which is found in Appendix C.

Areas of Analysis in this report have different degrees of immediate sewer conveyance capacity. Generally, areas in the core of the City and areas in the southeast "Elbow" area have capacity in the sewer interceptors they rely upon. Programmed or relatively easy to develop and install improvements are needed to provide capacity for immediate development.

Areas such as the North and Northeast Areas do not have planned sewer interceptors nearby, so are dependent on large sewer projects to be constructed by the City over the course of years. The North Area, for example, requires multiple phases of the North Interceptor to be constructed prior to having conveyance systems adjacent or on site. The Northeast Edge requires the first phase of the North Interceptor and then first phase of the East Interceptor to have conveyance capacity.

Areas with less immediate capacity require large public expenditures and more time to be served with sewer interceptors. The cost of these projects are significant, and it may not be feasible for one or more landowners to pay for these systems up front prior to development.

There is also a degree of risk in all large construction projects. Projects may go more or less quickly than planned, and may cost more or less than anticipated. The City attempts to manage these risks and deliver projects on time and under budget, but the risk is still present.

Table 11 outlines the costs for the major sewer conveyance projects necessary to fully serve the Areas of Analysis. These costs do not include local connections and smaller lines to connect to these systems, which are a significant development cost. Projects identified are those that are typically identified in the City Sanitary Sewer Public Facilities Plan, which are larger system-wide projects.

Systems like transportation, sewer, and water are connected and therefore provide system wide benefits if designed and operated properly. Table 11 is not intended to imply or conclude that the projects identified for these systems are only benefiting one or more particular areas. Improvements may benefit one particular area or site, however will have a community wide benefit in many cases.

Murraysmith and City staff have attempted to draw out the most important system improvements critical for the Areas of Analysis to be developed at intensities previously referenced in the land use section of the report. Some projects that were planned in the prior Sewer PFP and that are currently programmed in the CIP include:

- North Interceptor Phase 1: This project is required to serve all key development areas - $17.9 million
- Drake Lift Station and Force Main: Required to serve the KorPine and to address existing lift station operational issues - $2.4 million

Table 11: Major Sanitary Sewer Collection System Improvements, Costs

Area of Analysis	Improvement Cost Prior To Service ($M)	System Cost With Development ($M)	System Cost Needed in 5 Years, or Prior ($M)	System Cost Needed for Area in 10+ Years ($M)	Time For Development
North Area	$29	$11			3-5 years at the fastest
Northeast Edge	$17.9 North Interceptor (CIP)		$14		3-5 years as the fastest
"The Elbow"		$7		$16	After construction of local improvements
Core Areas	$2.4 Drake Lift Station Force Main (CIP)			$11	All but KorPine, immediate

See details below and Appendix C.

North Area:

- Prior to service, the North Area requires construction of the North Interceptor Phase2 - $28.9M
- With development of the North Area, Phase 3 of the North Interceptor is required - $11.3M

Northeast Edge:

- East Interceptor Phase 1 (also serves south area development in the long-term) - $14.3M

The "Elbow":

- Portion of Southeast lift station decommissioning - $1M
- Local gravity trunk extension - $2.5M
- Local lift station and force main - $3.5M
- 10+ year projects:

- East Interceptor Phase 2 – required for buildout growth in south (including Elbow, DSL, and Thumb) - $15.6M

The Core:

- 10+ year projects:
  - Drake Downstream Gravity – required for buildout growth of KorPine - $4M
  - Central Interceptor – required for buildout growth in Core Area (and West UGB expansion areas) - $7.3M

Drinking Water Infrastructure

The Areas of Analysis included in the UGB Expansion are served by either the City of Bend water utility or the Avion Water Company. The City serves the North Area and Core Areas. Avion Water Company serves the Elbow and Northeast Edge Areas. Input from Avion Water Company is included.

City of Bend Water Service Area

The City's water service area only covers the North Area and Core Area. Other Areas of Analysis are in the jurisdiction of a private water provider, notably Avion. Water service is not considered a major determinate of one area's serviceability over another. The UGB expansion areas can be adequately served with the implementation of the full set of pipeline capital projects identified in the City's WMP. This includes a large diameter transmission pipeline northwest of the City's UGB.

As part of the UGB expansion study, intermediate pressure-zone expansion improvements were evaluated for service to sub-areas prior to full construction of the perimeter transmission pipeline. The expansion sub-areas can be served by constructing capital improvements identified in the WMP (minus portions of the perimeter transmission pipeline) and looped piping.

Avion Water Company

Avion Water Company is a private utility that provides domestic water to the North Triangle, Northeast Edge, DSL, Elbow, and Thumb Expansion areas. The following summarizes a February 15, 2018 meeting between City staff and Avion Water Company.

Avion currently has storage at the south end of Bend, and relies on gravity to deliver water to the north and east. Areas to the north of the UGB, such as the North Triangle and OB Riley Road expansion areas, will be more expensive due to the need to bore underneath Highways 20 and 97.

With respect to the expansion areas within Avion's service territory, Avion rated the following areas as "Good" – Northeast Edge; DSL; the Elbow; and the Thumb. Avion rated as "Fair" the North Triangle and the OB Riley expansion areas. These ratings are based on cost to provide water; Avion already has infrastructure in the ground and capacity for development.

Avion provided some additional background on their utility. Their focus is still on providing domestic water. They have constructed a new well off China Hat Road, and are extending a 24" water line currently in Knott Road to the north and east. This 24" water line will provide

additional capacity for the expansion areas on the east side of Bend – Northeast Edge, DSL, and the Elbow.

Other Public Facilities & Services

City staff contacted other taxing districts, Deschutes County, ODOT, and irrigation districts to obtain their input on next steps for Expansion Area and opportunity area Planning. The following identifies the affected governments and the content from these meetings, summarized in memoranda, that were also shared with and approved by the affected entity before being included in this report. Maps of irrigation district key facilities are included in Appendix F for reference.

Arnold Irrigation District

Arnold Irrigation District (AID) is the irrigation district delivering irrigation water to areas in the south of Bend and south of the city limits. For the purpose of the ROI Study, the Elbow Area is the only expansion area within their district boundaries that requires a city-initiated area plan. Other expansion areas, including the DSL property, the Thumb, and the Southwest, will be required to coordinate with AID when developing a master plan. AID has a lateral that runs north of Knott Road into the Elbow Area, and is identified as the Ladera Lateral on their district map. The lateral delivers approximately 21 acres of irrigation water to five properties on Cabin Lane, and delivers water some properties to the west and north of Mirramar Drive. AID also noted that the district has a number of facilities that go into Bend like fingers, but do not go through Bend like the canals and laterals of other irrigation districts.

Central Oregon Irrigation District

Central Oregon Irrigation District (COID) facilities and services fall within the Northeast Edge expansion area. The Northeast Edge expansion area is located approximately east of NE Purcell Boulevard, south of Yeoman Road, west of Hamehook Road, and North of Butler Market Road. There are three properties south of Butler Market Road and east of Eagle that are also within this expansion area.

With respect to COID's facilities in the Northeast Edge, their facilities include the District's "A" lateral that travels from Butler Market Road north between Cole Road to the west and Hamehook Road to the east. COID has not planned for any piping of the "A" lateral at this time, and their focus now is on maintenance and operation of the facilities in this expansion area. There are also no pressurized deliveries in the area.

Swalley Irrigation District

Swalley Irrigation District (SID) serves the North Area, consisting of the North Triangle and OB Riley expansion areas. The District's irrigation facilities in these areas include the Rogers Lateral and Rogers sub-Lateral canals, both unpiped north of Cooley Rd proceeding north through the northern boundary of the North Triangle. With respect to the OB Riley Expansion Area, the District's facilities include the Riley Lateral and Riley Sub-Lateral canals that cross properties located between OB Riley on the west and Highway 20 on the east. The District owns fully adjudicated and certificated senior water rights appurtenant to 128.4 acres of land between the two expansion areas.

SID's Board has adopted board policy and resolutions that require an irrigation facility such as a canal to be piped before crossings will be permitted. These crossings include bridges for roads and infrastructure such as sewer collector pipes and under or overhead utilities. SID provided copies of these policies that include Resolutions #13-06 and #15-06. SID has also developed a Developer Handbook that outlines the District's requirements for piping. The handbook is available online at: Swalley Irrigation District Development Handbook.

SID has also developed a System Improvement Plan and Modernization Strategy that outlines the District's plans for piping all district facilities. The District's goal is to replace all open canals with pressurized pipe to reduce water loss, increase public safety, protect water quality, conserve energy, and ensure a more efficient delivery of irrigation water. SID is currently implementing this plan with a project in the North Triangle. The District is piping the Rogers and Rogers Sub-Laterals from a spill point 50 feet north of Cooley Road running north through the northern boundary of the North Triangle Expansion Area (North Area), pending funding. SID also plans to pipe the segment of the Riley Sub-Lateral in the OB Riley expansion areas, but this project will also not begin until funding is secured.

SID requires a number of agreements in order to facilitate crossing of district facilities and easements with infrastructure such as roads and utility lines. These agreements include: (1) a responsible party agreement; (2) a crossing agreement; (3) an encroachment agreement; (4) a piping agreement and (5) possibly an easement restatement agreement if an alignment of infrastructure is requested. All require third-party review at the developer's expense and carry fees ranging from $1,000 per minor crossings to tens of thousands of dollars for more moderate crossings. SID may ultimately deny any crossings of their infrastructure at any location.

Bend-LaPine Schools District

Bend-LaPine Schools District (BLPSD) recently completed a 2016 Sites and Facilities Report and a successful 2017 School Bond. The Sites and Facilities Report identifies near, mid, and long-term school siting needs throughout the district and Bend area. Based on the Sites and Facilities Report, the type, number, and vicinity of new school sites and facilities are identified, in addition to improvements to existing schools.

In summary, the Sites and Facilities Report predicts a need for four elementary schools, one middle school, and two high schools in Bend between 2017 and 2033.

The Sites and Facilities Report identifies the southeast of Bend as the most suitable location for the new middle and high-school sites. In November 2017, the District announced that the new high school would be located at the corner of SE 15th Street and Knott Road and open in 2021.

The District announced a new elementary school site off OB Riley Road in northwest Bend. This location can serve the enrollment needs in the west and northeast of Bend. These two areas were identified as having the highest immediate need for an elementary school in the Sites and Facilities Report.

Current District land holdings suitable for future school-site construction are one factor in determining the District's readiness to respond to enrollment growth in particular areas of Bend. The District owns land on the west of Bend outside the UGB, and land in the southeast at High Desert Middle School (Elbow) which may be suitable for another elementary school. BPLSD

does not own additional vacant and suitable parcels of land for schools in the core areas of the City. Their strategy for accommodating future student growth would be through boundary adjustments to schools around the opportunity areas. Examples include Juniper Elementary, Pilot Butte Middle School, and Bend High School. Some nearby elementary schools are magnet schools (Kenwood, Thompson, Kingston), which may limit the flexibility of accommodating local student growth.

The City added land to the UGB for a new school site in the DSL site (southeast), and Northeast Edge. School land needs were accounted for in the size and shape of the boundary, but the City and District have not acquired the necessary sites in the northeast and DSL sites. The City did not add land for new schools in the north UGB expansion area.

The District conveyed that of all areas that are candidates for Area Planning, the Elbow has the greatest amount of existing District-owned land for new schools. In addition, the new high school will be located in the area. Existing and new schools may stimulate interest in the area. There is a potential to construct new schools in the immediate vicinity of the Elbow such as a new middle and additional elementary school. If development were to occur in the area resulting in the construction of the extension of Murphy Road, this would benefit access and circulation to the new high school site, and other future schools, improve safety, and connectivity.

The District is building a new elementary school in the North Area off OB Riley, which would provide capacity. The District does not own additional land in this area for additional schools.

The District owns no land in the Northeast Edge area. However, a site is included in the city's UGB expansion to accommodate a new elementary school without displacing planned future residents and employees.

BLPSD does not own vacant lands for future school sites in the core areas.

School District Staff does not speak for the School Board, which ultimately determines the District's policy position on the formation of new URDs. City staff asked if there any factors that the City should understand better before discussing the subject with Council. School District staff mentioned that negative funding impacts to Bend-La Pine Schools resulting from URDs is minimized (roughly three cents per dollar of assessment targeted to an URD) at the local level due to state law and funding formula. District staff were neutral on the subject, without strong positive or negative viewpoints on the formation of a new URD.

Bend Parks and Recreation District

BPRD is currently working to update its Comprehensive Plan, with the goal of the BPRD Board of Directors adopting the plan in July 2018. Through this effort, they are also looking at the recently added UGB expansion areas, and considering their needs for parks and trails in their planning. The District has identified about 30 park search areas, including several UGB expansion areas, that need a park or access to a park within one-half (1/2) mile walking distance from most homes within the District's current and future boundary. BPRD staff noted the ½-mile walking distance was one indicator of its level of service analysis.

BPRD has identified several areas (aka park search areas) where acquisition of land for a future park is a priority. These areas include the Elbow expansion area, where land acquisition is a

high priority. The following expansion areas are also under consideration although they will probably not be as high of a priority as the Elbow: DSL, Northeast Edge, North Triangle, Shevlin, and West.

BPRD has also re-evaluated their Level of Service (LOS) standards through their Comprehensive Plan update process. The new (proposed, not adopted) standards are as follows:

- Neighborhood and Community Parks Combined: 7.8 acres per 1,000 people
- Regional Parks: 10 acres per 1,000 people.

Within the District's boundary, BPRD has identified a need for about 162 acres of neighborhood and community parkland by the year 2028 to meet its new LOS, although the District already owns 80 of those acres. The District has not identified a need for any new regional parks through their comprehensive plan update.

BPRD also provided some additional input on the "Elbow" expansion area. The Elbow represents the District's first choice for an Area Plan due to its purchase of 37 acres for Alpenglow Community Park, and the future public investments by the City and School District. BPRD has been approached by many of the landowners in the Elbow, who have expressed a strong interest in working with the District on an area plan for the Elbow. Currently, BPRD has plans to develop the Alpenglow Community Park site on 15th Street. BPRD also noted that the planned extension of Murphy Road east toward and through the Elbow might further influence their plans, timing, and projects in the southeast of Bend. The Bend-La Pine School District's plans for a new high school in the southeast and close to the Elbow might influence BPRD decision to co-locate sports field space adjacent to this new school site.

Regarding planning for the opportunity areas, the City and BPRD discussed the potential for using UR as a tool for spurring development in one or more opportunity areas in the Core Area. The District shared some of their experiences with the City using urban renewal, including those experiences where UR was not effectively employed. The District is open to considering urban renewal, and noted its value as a tool when employed correctly.

One final topic discussed was how to coordinate the implementation of the District's Comprehensive Plan (once adopted) with the City's Comprehensive Plan, since BPRD is the City's provider of recreation services under Statewide Land Use Goal 8. The City and District agreed to research this topic, including how the BPRD Comprehensive Plan has historically been implemented into the City's plan and how other cities have done this with parks and recreation districts.

Deschutes Public Library District

Deschutes Public Library District (DPLD) is a countywide provider of public library services. DPLD will soon embark upon a facility needs assessment, which will conclude by September 2018. It is too early to rely on any findings from this analysis, so the following is based on professional judgment and experience. DPLD understands it will likely need to plan for additional facilities in the future, particularly a new library in Bend as well as facilities in other communities.

It has long been understood by DPLD policy makers and staff that a larger public library in Bend is needed to serve a growing community. The current library on Bond Street is currently undersized to serve Bend, as well as future growth. DPLD does not have specific square footage needs specified, but it is fair to say a future library in Bend could be over twice the size of the existing library, and be designed to serve its role as a distribution and operational center for surrounding communities.

The purpose, design, layout, and characteristics of a modern library are nuanced and sophisticated to serve a vital role for the community. Modern libraries are transformational public buildings that reflect on the values of the broader community. Buildings themselves should be welcoming and draw in the public, integrated into active locations where the public has ready access via automobiles and pedestrians, and are as much a public community center where people gather for a wide variety of reasons (events, lectures, gathering, meeting spaces, music, etc.) as they are a place for learning. They are a neutral public gathering place where all are welcome to engage in civic activities, learning, and gathering. As a public building, they are often successfully sited in locations that are desirable, convenient, and safe. Other communities have incorporated new libraries into civic redevelopment projects alongside public open spaces, retail uses, and other civic buildings.

DPLD does not own land for a new facility. Smaller satellite facilities may not be the solution based on examples from other communities in Oregon. A future site might be better sited in a more central location than the current location, which some consider inconvenient. A new site in a new location may better serve the community of Bend, and be more convenient for residents working in Bend, but living in other locations in Deschutes County. A new library would likely require between three to five acres, but this depends on many factors such as adjacent uses and co-siting opportunities.

The role and characteristics of a modern library suggest most of the UGB expansion areas are not appropriate for a new flagship public library, except possibly the North Area. Other UGB expansion areas are too far off the regional transportation network and do not have the gravity to attract users for other reasons. The North Area is well suited for a library, being adjacent to Highway 97 and Highway 20, but suffers from not being central for the larger population centers of Bend. It will also take time for the development in the area to mature to the point where the area would be a natural community-gathering place due to proximity, as well as predominance of regional retail uses.

DPLD staff acknowledge that the current land use pattern in the Bend Central District are not a natural fit for a new library. However, DPLD staff do recognize that place making is a focal point of the DPLD's mission to "enrich lives, and build community." If this area were to redevelop,

and the community supported this redevelopment effort, it may evolve into an ideal place for a new library. This area does have a central location for Bend, and if sited properly could have ready access to the regional transportation system. Other nearby opportunity areas such as East Downtown and Inner Highway 20, adjacent to the Bend Central District have similar traits, but are smaller and further parcelized which limit their compatibility for such a large use.

DPLD Staff does not speak for their governing body, which ultimately determines the District's policy position on the formation of new URDs. City staff asked if there any factors that the city should understand better before discussing the subject with Council. DPLD staff were open to the idea of a new URD, especially if consideration is given to the District's mission of building community through civic amenities such as parks and libraries, civic spaces, and creating an asset for the community. District staff encourages additional discussions on the subject, and even participation in future planning efforts.

Deschutes County Community Development

The County identified several quasi-judicial land use applications either pending or approved on properties on the periphery of the Bend UGB.

- Porter/Kelly/Burns plan amendment and zone change. The County has approved a plan amendment and zone change for property at 21455 Highway 20 from exclusive farm use to multiple use agricultural (See Ordinances 2017-007 and 2017-008). This approval changed the plan designation and zoning on approximately 38 acres of land adjacent to the East Highway 20-expansion area.
- Section 11. The Department of State Lands (DSL) submitted applications for a plan amendments and zone change (See File Nos. 247-17-000726 PA and ZC) on the remainder of their Stevens Road Tract not included in the UGB expansion and still zoned for exclusive farm use.
- Church on Stevens Road. An application has been submitted to establish a church on property North of Stevens Road and the DSL expansion area.

County staff also mentioned that the County has several relevant road improvement projects in its CIP for 2018 to 2022. These projects, and their timing, include:

- Extension of Hunnell Road north from Cooley to Tumalo Road:
    - Hunnell Road: Rodgers to Tumalo – 2021-2022
    - Hunnell Road: Cooley to Rodgers – 2021-2022
- Improvements to the Old Bend-Redmond Highway from Highway 20 north to Tumalo Road – 2018-2019.

ODOT has been coordinating with the County on intersection improvements at Highway 20 and Cooley Road.

CDD staff noted that no significant legislative amendments to its Comprehensive Plan are in progress that could affect preparation of an area plan for an expansion area. They did note that there is the potential for the County to start work on a non-resource lands project this summer.

This project would neither affect nor influence area planning for the expansion areas, but could affect the status of properties under consideration for the next UGB process.

Oregon Department of Transportation

The following summarizes the discussion with ODOT by referring to geographic areas of Bend. ODOT is preparing a Parkway Plan for the Bend Parkway that has an estimated completion date of June 2019. House Bill (HB) 2017 provided $50 million for the interim solution at US 97 and Cooley Road. (See Section 71d.(1)(d) of 2017 HB 2017). ODOT applied for $65 million of additional funding through an Infrastructure for Rebuilding America (INFRA) grant from the US Department of Transportation, Federal Highway Administration. INFRA grants are extremely competitive; however, if successful, the combination of the HB 2017 earmark and an awarded INFRA grant provides funding for a significant part of the North Corridor improvements. Funds from an awarded INFRA grant must be appropriated by 2021. The preferred alternative for the North Corridor is now incorporated in the City's TSP (See Ordinances NS-2215 and NS-2216 from 2014). Development of the Gateway/Fred Meyer site at southeast corner of the Cooley Road and Highway 20 intersection will help fund construction of a roundabout at this intersection. ODOT also noted that the 2016 ILUTP includes several projects that should be considered when looking at the northern expansion areas.

ODOT mentioned that the MMA Plan for the BCD included a transportation projects list. The BCD and KorPine could be planned as one project given their proximity. Development could potentially occur more quickly in the core because of transportation infrastructure that is already in place, and trips from this area would have less impact on the state system. ODOT also noted that freight movement must to be considered in the core areas because Highway 20 is a freight route.

The Baker Road interchange is south of the Elbow. There are two expansion areas closer to the interchange, the Southwest and the Thumb, which are not under consideration for a city-initiated area plan because each site is owned by a single owner who can initiate development through a master plan. ODOT noted that trips from development of the Elbow would affect the Baker Road interchange. ODOT has plans to develop an interchange area management plan (IAMP) for this interchange, but they are not currently funded. ODOT has also completed a Baker Road – Lava Butte refinement plan for the stretch of Highway 97 that includes the interchange.

Given its financial resources, ODOT's focus is on facility management and preservation. Their current budget does not include funding for significant modernization projects, with the exception of the North Corridor Project.

Internal City Departments

This project involved City departments linked to the Council's Strategic Plan. This includes the Streets and Operations Department, Bend Fire Department, Bend Police Department, and input from staff involved in implementing the Climate Action Resolution.

Streets & Operations

Streets and Operations Department emphasized that as lane miles grow, so does the need for resources to maintain roadways. Core Areas are already maintained, while any UGB expansion area will add lane miles requiring additional street maintenance over time. While the roadways in UGB expansion areas will be new, they will require maintenance.

In the expansion areas outside the City limits (North Area, Northeast), there are few existing county roadways. The roadways that do exist are in decent condition according to the Deschutes County Pavement Condition Index (PCI) report. The County system as a whole has a PCI of 82 (out of 100). The few existing roads within the expansion areas have PCIs in the 70s-80s.

The City has recently increased its roadway standards and specifications, as well as its pave-back policies, so any new development in these areas would be reviewed under the current standards and specifications.

The development in UGB expansion areas will add to the transportation system that the City must maintain. As the City works towards a sustainable funding source for street maintenance, this increase in roadway miles will need to correlate into increased funding and resources to maintain more areas, streets, and lane miles.

In the core areas, the City either currently maintains the roadway system or they are private roads. The areas listed below have some existing internal existing street infrastructure. Arterials and collectors have a decent PCI rating. Roadways with a PCI under 50 are not being prioritized from a maintenance perspective.

- KorPine: This area today has private roads. If these roadways were to become public, they will need to be brought up to current City Standards. Any new roads would be reviewed under the current standards and specifications.
- The Bend Central District: In this area, it would be the most beneficial for redevelopment to re-construct the existing roadways. Appendix J includes a summary of the roads in this area, which has an average PCI of 59-60. The Arterials and Collectors are in relatively good shape, but the local roads need improvement.

Climate Action Resolution

Based on feedback from staff, implementation of the Climate Action Resolution is in process, so technical analysis is not available. However, based on experience and research some broad observations can be made in regards to Core Areas, UGB expansion areas, and strategies to reduce energy consumption.

For the core area, redevelopment typically results in increasing energy and water efficiency because this triggers bringing older buildings into compliance with current code. Increasing density is typically linked to a reduction in VMT. See Appendix I for reference maps of VMT per capita in Bend.

Creating complete communities, including development on the edges of the UGB that bring services closer to residential areas to reduce trips and travel times would also serve the City

well from an emissions standpoint. The Council could consider the Hillsboro, Oregon approach of conditioning Area Plans. This approach set targets to exceed energy codes by a certain percentage in pursuit of fossil fuel reduction. The approach includes for funds from the Energy Trust of Oregon, support from solar companies and Earth Advantage, and preferential CDD support in the development process.

Bend Police & Fire Departments

Bend Fire and Police provide public safety services in all the Areas of Analysis. Their comments are directed towards improving public safety and response times.

The Bend Fire Department mentioned they would like better access out of the North Fire Station if development in that area occurs. Ideas included a parallel road to Highway 20 north to Robal Road and possibly a new fire station near Cooley Road.

Bend Fire indicated a need for additional staffing and equipment (ladder truck) if the concentration of taller buildings continues to increase. New Fire Inspectors, Engine Truck Companies, and Ladder Truck Company may be required to permit, inspect, and respond to incidents in large mid-rise buildings. This has been a conversation recently within the Department based on existing and new building proposals.

Both the Bend Fire and Bend Police Departments recommend constructing the extension of Murphy Road corridor to improve response times. Being able to have a bridge over the railroad tracks could reduce Fire Department response times in that area by 1-2 minutes, but specific data is not available. In addition, this area may be a good location for an additional Fire Station.

The Police Department had the same comments, but also added their responsibilities to serve schools, which will be constructed in the southeast area. The Chief of Police emphasizes the importance of this facility, and the need to engage the possibility of enlarging the traffic team to maintain response times because saving lives in serious car accidents and school attacks are measured in seconds. The Police Department is actively engaged with the Bend-La Pine School District on site design, security, and emergency response, so better connectivity near schools is an improvement from their perspective.

Demographic Maps

Appendix G contains maps depicting demographic information for the City Council. These include linguistically isolated households, number and rate of poverty, and population density per acre from the latest American Community Survey. Employment density is depicted for 2016 from the Oregon Department of Employment.

Section 4: Evaluation Summary Matrix

The following matrix, Table 12, attempts to compile and summarize the findings of this report based on the most relevant factors to assess site readiness. Ratings are related to readiness in the short term, and do not suggest any area is inherently better in the medium to long-term for development. The City's Comprehensive Plan clearly requires all areas in the UGB expansion and Core to support development both within and beyond the planning period. This evaluation matrix is therefore making findings and conclusions for which areas are most ready today recognizing all areas will be served with infrastructure and developed. Conditions will change in the near or mid-term, which could affect these ratings

Table 12: Evaluation Summary Matrix				
Factor	**North Area16**	**Northeast Edge**	**The "Elbow"**	**Core Areas17**
Size	342 acres	471 gross, 259 acres (excluding parks)	479 acres	901 acres
Potential Housing & Employment Yield: 2028[18]	630 housing units 1,825 jobs Housing mix: 50% SFD, 12% SFA, 38% MF	1,099 housing units 214 jobs Housing mix: 50% SFD, 10% SFA, 40% MF	819 housing units 2,274 jobs Housing mix: 36% SFD, 17% SFA, 47% MF	1,402 housing units 2,070 jobs Housing mix: 0% SFD, 10% SFA, 90% MF
Potential Housing & Employment Yield: 2040[19]	685 housing units 1,821 jobs Some deed restricted housing	1,378 housing units 471 jobs	882 housing units 2,277 jobs	3,434 housing units 3,372 jobs
Transportation Infrastructure – Relative Cost and Complexity[20]	**Poor** • Approximately $71 million in near-term needs • $19 million in mid-long term needs • Impacts to US 20 and US 97 – mitigation could be complex and costly, projects not in City CIP • Requires modernization to US 20 • Extensive coordination with ODOT • Most complex transportation issues	**Fair** • Approximately $50 million in near-term needs • $14 million in mid-long term needs • Most costs are for new roads and frontage improvements – typical for new development • Empire Ave. extension key – some in City's CIP • Limited impacts to US 20 and US 97 • Mostly City improvements - moderate complexity	**Fair** • Approximately $70 million in near-term needs • $23 million in mid-long term needs • Relatively high costs for new roads and frontage improvements • Murphy Road extension key – some in City's CIP • Limited impacts to US 20 and US 97 • Mostly City improvements - moderate complexity	**Fair to Good** • Approximately $27 million in near-term needs • $52 million in mid-long term needs • Most costs are for connectivity and multi-modal, 3rd Street, Parkway improvements, projects more flexible, scalable • Some potential complexity due to impacts to US 97 • Safety projects in high crash locations – some in CIP • Less complexity

16 Includes UGB expansion areas: North Triangle, OB Riley.

17 Includes UGB opportunity areas: Bend Central District, KorPine, East Downtown, Greenwood / Inner Hwy 20, and Central Westside (including OSU).

18 Based on Bend UGB adoption materials. SFD= Single-family Detached Unit, SFA=Single-family Attached Unit, MF=Multi-Family Unit.

19 Based on City of Bend Integrated Land Use and Transportation Plan, Envision Tomorrow analysis by Cascadia Partners.

20 Relative ranking is based on ability to develop sooner based on a variety of factors. Source: City of Bend based on DKS and Associates.

Table 12: Evaluation Summary Matrix				
Factor	**North Area16**	**Northeast Edge**	**The "Elbow"**	**Core Areas17**
Sewer Infrastructure – Relative Cost and Complexity[21]	**Poor** • Requires North Interceptor Phase 1 (roughly $20 million budgeted) plus $29 million for Phase 2, plus $11 million in additional cost to extend the North Interceptor in Phase 3 • Project time risk for near-term development • Sewer available 3-5 years at the fastest	**Fair** • Requires North Interceptor Phase 1, extension of East Interceptor Phase 1 (roughly $14 million) • Less project time risk than North, but dependent on Phase 1 North Interceptor • Sewer available 3-5 years at the fastest	**Good** • Immediate capacity in Southeast Interceptor, need local connection roughly $7 million (likely development cost) • 10+ years need Phase 2 of East Interceptor for buildout of this and surrounding area at roughly $16 million	**Good** • Immediate capacity in all but KorPine area • Improvements to Drake pump station & force main funded and in CIP at roughly $2 million • 10+ years need for system-wide improvements serving large areas of central and west Bend roughly $11 million
Other Public Facilities & Services – Relative Serviceability[22]	**Fair** • No major benefits or issues for other public facilities & services • Swalley Irrigation District expects piping of facilities • New elementary school will be available	**Fair** • No major benefits or issues for other public facilities & services • Would need future schools - site not acquired	**Good** • Murphy extension will improve emergency response times for police and fire, services for parks and schools • Schools prepared for growth in this area • Parks has CIP investments planned in southeast	**Fair to Good** • Efficient for new, larger library/community center concept • No major benefits or issues for other public facilities & services • Higher concentrations of taller buildings require fire department investments
Revenue Potential by 2028 build estimates (SDCs and property taxes)[23]	**Fair** • $15 million in transportation SDCs • $6 million in sewer SDCs • $1 million city annual tax revenues • Year 2040 – similar financials as 2028	**Poor** • $6 million in transportation SDCs • $5 million in sewer SDCs • $1 million city annual tax revenues • Year 2040 – similar financials as 2028	**Good** • $18 million in transportation SDCs • $7 million in sewer SDCs • $2 million city annual tax revenues • Year 2040 – similar financials as 2028	**Fair** • $10 million in transportation SDCs • $10 million in sewer SDCs • $1 million city annual tax revenues • Year 2040 – higher financials than 2028

[21] Relative ranking is based on ability to develop sooner for a variety of factors. Source: City of Bend based on Murraysmith March 12, 2018 Draft Technical Memorandum.

[22] Relative ranking based on relative readiness of other public service providers. City of Bend based on interviews with public facility providers.

Table 12: Evaluation Summary Matrix				
Factor	**North Area16**	**Northeast Edge**	**The "Elbow"**	**Core Areas17**
Potential Tax Increment Finance Bonding Capacity (at 2040 assumed development)[24]	$26-27 million Evaluated as part of a larger study area including adjacent industrial land along US 20 and US 97 south of Robal Rd	Not evaluated – less suitable for urban renewal	Not evaluated – less suitable for urban renewal	$84-86 million for Bend Central District, KorPine, East Downtown, and adjacent land to the north and east $56-57 million for Century Drive area
Other Benefits	Could support development of Juniper Ridge and industrial land supply (2-3,000+ jobs) Could drive improvements to regional transportation system	Could support construction of East Interceptor, which benefits other areas of Bend, Empire extension	Highest concentration of surrounding vacant residential lands for approximately 1-2,000 more homes and jobs (inside city + DSL, Thumb)	Lower energy usage from buildings and transportation due to lower VMT and more efficient multi-family buildings Area in or adjacent to highest concentrations of existing jobs and housing
Potential Implementation and Housing Incentives[25]	Area Plan SDC Financing MUPTE	Area Plan SDC Financing MUPTE	Area Plan SDC Financing MUPTE	URD in appropriate locations SDC Financing Vertical Housing Development Zones

[23] Relative ranking based on near term totals. Based on Fregonese Associates Bend UGB Remand Growth Area Revenue Potential presentation.

[24] Based on EcoNorthwest Urban Renewal Pre-feasibility Analysis.

[25] Based on Development Incentives Report and Sensitivity Testing, Alex Joyce, Fregonese and Associates, 5/17/2017.

Section 5: Planning & Implementation

Need for Follow-Up Planning Actions

The following explains implementation actions the Council can consider for the Areas of Analysis. Infrastructure funding tools are described since they apply broadly, and to some or all Areas of Analysis.

A URD Pre-feasibility study is provided to explain considerations, opportunities, suitability, next steps, and relative merits of applying an URD in one or more areas. This implementation strategy is most suitable for the Core Areas.

Vertical Housing Development Zones (VHDZs) and MUPTE program elements and effectiveness are discussed which can suit both Core Areas and UGB expansion areas. A fiscal analysis in Appendix E, highlights discussed in this section, provide an analysis of these programs to illustrate the effectiveness of their use and applicability.

The Evaluation Summary Matrix makes initial conclusions regarding where these implementation programs may be most effective and suitable.

Infrastructure Funding Tools

Overview

This section provides a high-level description of the most commonly used funding tools for infrastructure, affordable housing, and development incentives, along with discussion of what makes them useful in particular situations or geographies. The list is not exhaustive; it is provided to initiate more detailed conversations and analysis to determine a funding strategy for each area.

Infrastructure Funding

Urban Renewal & Tax Increment Financing

UR provides funding from property taxes with a built-in financing tool, tax increment financing (TIF). It can generate substantial revenue for capital projects, and can act as one of the most flexible financial incentives for furthering development. Tax increment revenue is generated from property values within a Urban Renewal Area (URA) above the frozen base. Any new taxes generated within that URA through either property appreciation or new taxable investment becomes the *excess value,* or *tax increment revenue*. Taxing jurisdictions continue to collect taxes from the frozen base, but the UR agency collects the tax increment revenue. The UR agency then can issue long-term bonds and other forms of debt (such as lines of credit) to pay for identified public improvements and/or investments in private projects included in the UR plan. The tax increment revenue is used to repay the bonds.

Bend has two URAs, managed by the Bend Urban Renewal Agency (BURA). The two URAs are Murphy Crossing and Juniper Ridge. Bend previously had a successful downtown URD, which was retired in 2010.

- Agency: Oregon Department of Revenue
- Legal Authority: ORS 457
- Program Website: http://www.oregon.gov/DOR/forms/FormsPubs/urban-renewal-circular_504-623.pdf

Considerations:

- Oregon's state statutes define the necessary characteristics for a URA. The statutes must be carefully followed to ensure that UR plans meet all legal requirements. Statutes also limit the percentage of a jurisdiction's acreage and assessed value that can be in a URA, what its spending capacity (or *maximum indebtedness*) might be, and how TIF dollars can be spent. URAs must comply with these statutes.
- UR can be politically contentious in part because it defers property tax accumulation by the city, county, and other taxing districts until the URA expires or pays off the bonds. It is most likely to be implemented successfully where there is widespread consensus on a vision for development and desire for change, and where overlapping taxing districts benefit from the proposed changes in the area.
- Achieving consensus, especially given the impacts to other taxing districts, is critically important. The process for establishing a URA is complex and requires extensive public involvement as well as interaction with the affected property tax districts.
- UR and TIF work best in areas where assessed values are likely to grow quickly with investment in infrastructure. Without rapid assessed value growth, UR can sometimes take years to produce meaningful levels of revenue to allow investment to occur.
- It can be significantly easier to expand an existing URA than to create a new one, both from a financial perspective and a process / stakeholder involvement perspective.

Implementation steps:

- Most jurisdictions begin the process by completing a feasibility study, which may evaluate alternative boundaries, confirm compliance with state statutes, preliminarily identify projects, and preliminarily evaluate the financial feasibility of a potential new URA. A feasibility study provides a foundation for community conversations.
- To create a new URA, a city must adopt an UR plan that complies with state statute as specified in ORS 457.085, and form an "urban renewal agency", the public body that will oversee plan implementation. The plan identifies the boundary, the projects in which the agency may invest, and the limitations on UR spending. This planning process typically involves substantial public and stakeholder outreach, as well as financial and legal analysis.
- A Best Practices guide, produced by the Association of Oregon Redevelopment Agencies, provides excellent input and advice regarding the process of forming and administering a URA.[26]

[26] This Guide is available online at: http://www.oregonurbanrenewal.org/urban-renewal-best-practices/

- Once a new URA is formed, agency staff implement the plan over a number of years, collecting TIF and making investments in the projects specified in the plan.

Local Improvement District

A local improvement district (LID) is an area assessed to pay for a specific local improvement that it is determined to benefit from. LIDs organize property owners around a common goal and allow property owners to make payments over time to bring about improvements quickly that benefit them individually. A LID may be initiated by the City Council or by property owners themselves. At least 51% of the abutting properties must agree to the assessment and to the project investment for a LID to be formed. There must be a public hearing by the City Council.

- Legal Authority: ORS 174.116

Considerations:

- Because LIDs require the consent of property owners, they are much more easily formed and effective in areas with few property owners who are each equally motivated to invest in a given piece of infrastructure. For example, if several large property owners all need a particular piece of transportation infrastructure before they can develop their property, a LID is an effective tool.
- The process for setting up fair LID payments for property owners who benefit differently from the improvement is challenging. LIDs may have to be repaid when properties are transferred, and small geographical areas may have difficulty generating sufficient revenues to support bonds for the desired improvements.
- LIDs can be attractive for property owners developing for-sale product or otherwise preparing for land transactions, as the encumbrance of the LID passes with the property to future owners.

Implementation Steps:

As authorized by Oregon Revised Statutes (ORS) 223.001, the City of Bend has already established guidelines for creating a new LID. These are described in detail on the City's website and in relevant adopting ordinances.[27] A brief summary of the steps follows:

- While LIDs may be initiated by the City, in most cases, property owners initiate the process by assessing interest from their neighbors in forming an LID for a specific project. If there is sufficient interest, City staff will evaluate alternatives, identify a boundary, and conduct other feasibility assessments.
- A formal petition is circulated among neighbors and affected property owners. If a majority (50%+) sign, City staff submit a resolution for Council vote.
- Notice of intent to create a LID will be mailed to all affected property owners and a Remonstrance Hearing will be held by City Council. If approved by City Council, all benefitted property owners will be included in the LID and assessed.

[27] A summary is here: http://www.bendoregon.gov/Home/ShowDocument?id=6067

- From this point, the project moves forward with engineering, design and construction as overseen by the local government. Once a project is completed, the government assesses final costs and sends notice to all property owners. A lien is placed on each property in the boundary in the amount of the assessment.
- A hearing is scheduled so that any objections to the proposed assessments are heard. After the hearing, final assessment billings are sent to the property owners.

Sole Source and Supplemental SDCs

SDCs are fees charged on new development to cover the incremental impact of that new development on the affected systems. The City of Bend charges SDCs for transportation, water, sewer, and parks, and presumably continue to charge those SDCs on all new development in the subareas. **Sole Source SDCs** would allow the City to retain SDCs paid by developers within the limited geographic area that directly benefits from new development, rather than being available for use citywide. **Supplemental SDCs** are additional SDCs charged on top of the existing SDCs for a particular piece of infrastructure. In some cases, the City may be able to implement a supplemental SDC that is also a sole source SDC.

- Legal Authority: Locally determined

Considerations:

- Since Sole Source SDCs enable eligible improvements within the area that generates those SDC funds, by necessity this will reduce resources for SDC-funded projects in a broader geography. For this reason, the two are often used in concert.
- Supplemental sole source SDCs are often used in UGB expansion areas around the state where infrastructure costs are often higher than in other parts of the City and those infrastructure investments directly benefit only the expansion area. They are less commonly used for infill development.
- Additional fees on development can affect development feasibility, and, in certain circumstances, and affect unit pricing and rents. These impacts must be carefully weighed, or the process of funding infrastructure can work as cross-purposes with other City goals of supporting new housing development in expansion areas.

Implementation Steps:

Any new SDCs in Bend must be established in accordance with new ORS 223.302 and Bend Ordinance NS-2161[28], per the specifications in City Code 12.10.040. To establish a new sole source SDC, first the City must prepare a capital improvement plan that includes a list of the improvements the jurisdiction intends to fund with the revenues of the new SDC and the estimated costs and timing. The cost of capital improvements for the projected need of future users must also be determined.

[28] Ordinance No. NS-2161 amending Bend code to add Chapter 12.10 http://www.bendoregon.gov/home/showdocument?id=4281

- The ordinance or resolution establishing a new SDC must include the methodology behind determining the projected cost of the capital improvements identified in the plan, and the need for increased capacity in the system to which the fee is related.
- Written notice must be mailed to any person who has requested to be kept informed of potential new SDCs at least 90 days prior to the first hearing to establish or modify an SDC, and the methodology supporting the SDC must be available at least 60 days before the first hearing.

Urban Renewal Pre-Feasibility Study

The following is an analysis by EcoNorthwest (ECO). Like the DKS transportation analysis, it analyzes different geographies than the Areas of Analysis because not all are suitable for a new URD for reasons described below.

Purpose

As described in the Comprehensive Plan chapter on Growth Management, "opportunity areas are locations within the City that are appropriate to focus new growth due to their location, zoning (existing or planned), amount of vacant or underdeveloped land, and/or proximity to urban services." Now that the UGB Remand process is complete, the City's next step is to create the policy and infrastructure foundation to support new development to occur in expansion areas and opportunity areas.

Several of the opportunity areas and UGB expansion areas face barriers to development, including lack of infrastructure, deteriorated buildings, and underutilized land. Under State statute, these conditions are considered indicators of "blight" and qualify the areas for use of UR. The purpose of this memorandum is to advance the conversation about the potential use of UR as an implementation tool for advancing the development goals that arose from the UGB Remand process. This analysis provides initial, high-level analysis about if and where UR could be used as part of a broader implementation toolkit for opportunity areas and expansion areas in Bend.

This section is organized as follows:

- UR in Bend describes how UR works and how it is currently used in Bend.
- Methods describes the steps used in our analysis and documents key assumptions used.
- Results presents the preliminary revenue estimates for each of the four URSAs.
- Implications summarizes the most important key findings, comparing the four boundary options. It is intended to help the City make an informed decision on which boundary option(s) should be focused on.

Urban Renewal and Tax Incremental Financing 101

UR is a state-sanctioned program used by more than 60 cities and counties in Oregon to revitalize specified areas within their jurisdictions. UR can provide a funding source for capital improvements such as sewer systems, streets, parks, parking garages, and transit capital improvements that stimulate private investment and attract new businesses, jobs, and residents.

It can also be used to assist with private development activities, such as financing for affordable housing or mixed-use, transit-oriented development.

TIF is the primary finance vehicle used within URA. When a URA is established, the current assessed value (AV) of all property in the area forms a "frozen base." Over time, the total in the area increases above the frozen base, from appreciation of existing property and from new taxable investment. The AV in the area above the frozen base is called the *incremental assessed value (IAV)*.

The taxing jurisdictions that overlap the URA continue to collect tax revenue from the frozen base, but tax revenue generated from the IAV is used to pay for projects that benefit the URA. The UR agency can then issue long term bonds and other forms of debt (such as lines of credit) to pay for identified public improvements and/or investments in private projects that are in the public interest. The TIF revenues are used to repay this indebtedness.

In short, an URA does not raise taxes. Rather, the increase in taxes due to rising AVs is set aside for the URA. The URA then uses the TIF revenues to pay off bonds that were issued to support revitalization projects. In this way, the URA can fund projects ahead of receiving all TIF revenue. When the bonds are paid off, the IAV is no longer set aside for the URA and is returned to the general property tax rolls.

State statute defines eligibility requirements for forming a URA. The area must contain documented instances of blight, typified by conditions such as deteriorated buildings, low improvement to land value ratios, and lack of adequate infrastructure. (See Appendix A for all definitions of blight per Oregon Statute 457.010.) The UR Plan must contain a list of goals and eligible projects. The plan must also have a limit on the *maximum indebtedness* of the URA, which is the total amount that can be spent from tax increment proceeds for projects, programs and administration. Table 13 summarizes the qualities of an URA.

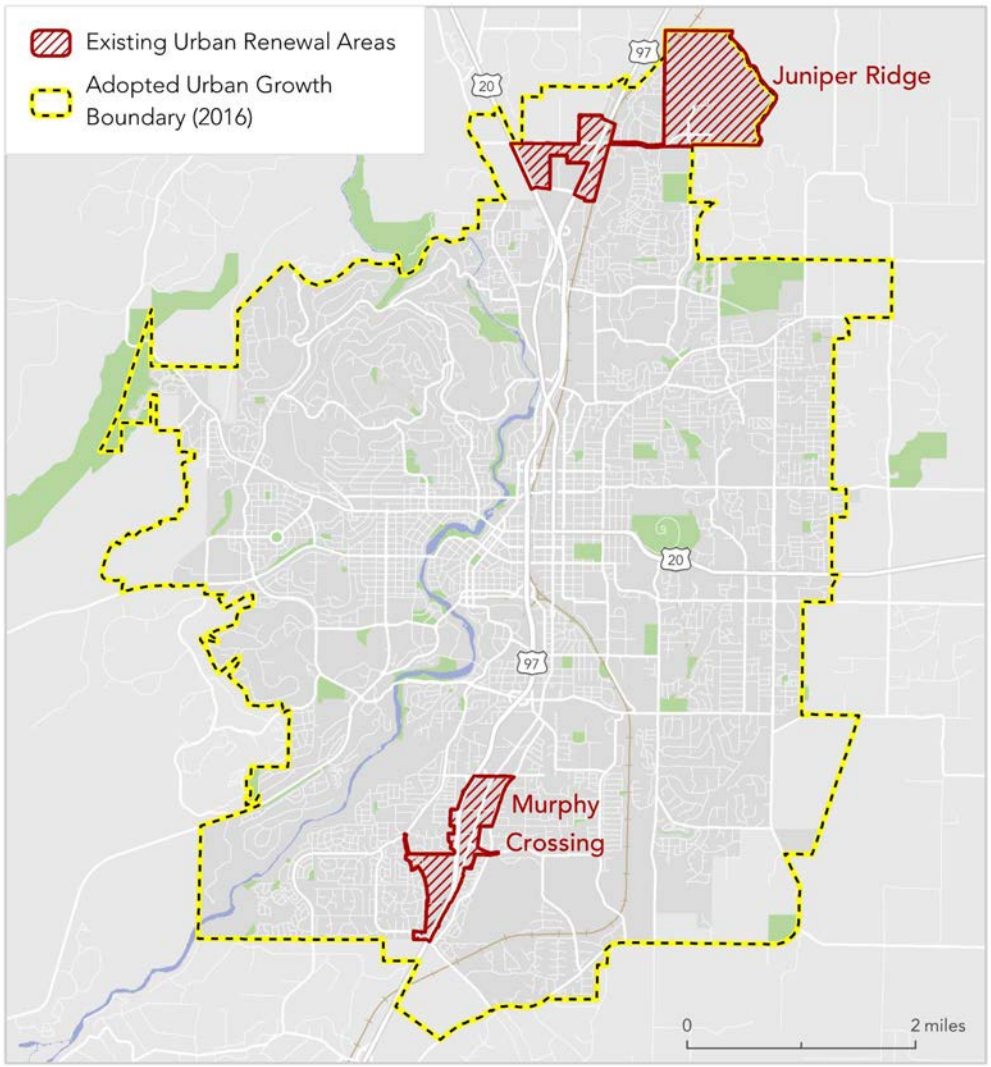
Table 13: URA Summary

Attributes of an Urban Renewal District	
Examples of Capital Investments Funded by a URA	- Redevelopment projects, such as mixed-use or infill housing developments. - Economic development strategies, such as capital improvement loans for small or startup businesses that can be linked to family-wage jobs. - Streetscape improvements, including new lighting, trees and sidewalks. - Land assembly for public as well as private re-use. - Transportation enhancements, including intersection improvements. - Historic preservation projects. - Parks and open spaces.
Benefits of a URA	- Over the long term (most districts are established for a period of 20 or more years), the district could produce significant revenues for capital projects. - Large amount of flexibility in spending and projects. - Does not raise taxes; "feeds into itself" where projects can increase the general AV.
Drawbacks of a URA	- Overlapping taxing jurisdictions (including city, county, parks, and schools) do not see an increase in property tax revenue until the UR district expires or pays off bonds. - Due to the sometimes slow or indirect nature of property tax growth, UR can often take five or more years to produce meaningful levels of revenue. This can affect the timing of implementation of projects identified in the UR plan. - Complex process: the City would need to explore options with county officials and elected leadership, go through a public involvement process, and meet with overlapping taxing entities. - Use of UR can be politically contentious because of its impact on funds available to overlapping taxing districts, and because of the perception that the school districts are adversely impacted.

Urban Renewal in Bend

Bend currently has two established URAs: Murphy Crossing and Juniper Ridge, shown in Figure 11.

Figure 11: Map of Murphy Crossing & Juniper Ridge



Source: City of Bend GIS data; mapping by ECONorthwest

Juniper Ridge

The Juniper Ridge URA was adopted in 2005 and has a maximum indebtedness of $41.25 million, of which $6.1 million has been issued. The purpose of the URA is to support development of necessary urban services infrastructure for Juniper Ridge, including water, sewer, storm water, and transportation systems. Examples of projects funded through the URA include a sewer pump station and a road extension with roundabout. Various companies have purchased industrial land in the area since the adoption of the URA and are building headquarters or centers in the area. Per the UR Plan, the Juniper Ridge URA is 701 acres.

Capacity for Additional URAs within Bend

Oregon statute (ORS 457.420) limits the percent of a city's land area and AV that can be inside URAs. For a city of Bend's size, no more than 15% of acreage and no more than 15% of AV

can be inside URAs.[29] Each of these limits is calculated separately. Before evaluating the potential for additional URAs within Bend, the first step is to determine how much acreage and AV remains under the 15% cap.

Table 14 shows the current acreage and AV within Murphy Crossing and Juniper Ridge relative to statutory limits on UR. In summary, the City could add more than $1.4 billion in AV and 2,200 acres to URAs before hitting statutory limits.

Table 14: URA Acreage and AV Relative to Statutory Limits

	Acreage	Assessed Value for Capacity Calculation
Murphy Crossing	230	$72,685,192
Juniper Ridge	701	$13,752,658
Total in existing URAs	931	$86,437,850
City of Bend	21,082	$10,331,349,879
Percent of City total within existing URAs	4.4%	0.8%
Amount available for new/expanded URAs	**2,231**	**$1,463,264,632**

Source: Murphy Crossing Urban Renewal Plan, Juniper Ridge Urban Renewal Plan, GIS area calculations by ECONorthwest, Deschutes County Assessor, SAL 4a FYE 2017

Notes: 1) Assessed value used for capacity calculation is the total assessed value minus the urban renewal excess value. 2) Acreage for existing URAs comes from the Urban Renewal Plans for each area this reported acreage may differ slightly from the acreage as calculated in GIS.

It is important to note that if a URA extends beyond City limits, the URA plan must be adopted by both the City and the County, and governance of the UR agency will be shared between the two entities. For this reason, if Bend wanted to adopt a new URA (or expand an existing URA) to include UGB expansion areas, we would recommend that the City first incorporate that land into City limits.[30] This would increase the city's total land area, and decrease the percent of the City's acreage contained within existing URAs.

Allowable Expansions to Current URAs

State statutes limit opportunities to expand a URA once it has been approved. First, the land area of a URA cannot be increased by more than 20%. Second, the maximum indebtedness may not be increased by more than 20% over the plan's initial maximum indebtedness, unless the agency receives concurrence from overlapping taxing jurisdictions.

Increases in acreage larger than 1% and any increases to maximum indebtedness are considered substantial amendments. Substantial amendments require that the agency go through similar public involvement, analytic, and approval procedures as required in adopting a new URA plan.

Table 15 shows the allowable acreage and maximum indebtedness expansions for the Murphy Crossing and Juniper Ridge URAs. If both Murphy Crossing and Juniper Ridge were expanded

[29] The acreage limit is calculated by dividing the acreage within URAs by the total land area of the City. The assessed value limit is calculated by dividing the frozen base of URAs by the total assessed value of the City less urban renewal increment.

[30] In order to incorporate new land into city limits, the City of Bend must comply with State and City regulations on annexation. These regulations include pre-conditions on annexation, including further planning refinements and infrastructure funding plans.

to the maximum allowed area (which would require substantial amendments), Bend would still have 2,044 acres available for new UR areas.

Table 15: Allowable Expansions of Existing URAs

	Murphy Crossing	Juniper Ridge
Acreage		
Existing acreage	230 acres	701 acres
Threshold for substantial amendment (1%)	2.3 acres	7 acres
Maximum allowed increase (20%)	46 acres	140.3 acres
Maximum indebtedness		
Existing maximum indebtedness	$52,600,000	$41,250,000
Threshold for substantial amendment	$0	$0
Maximum allowed increase (20% of inflation-adjusted MI)	$13,326,421	$11,419,929

Source: ECONorthwest calculations.
Note: Maximum allowed increase in MI assumes that a 3% inflation rate was used to compute future project costs for the original Urban Renewal Plans.

UR Methods

This work provides a preliminary, high-level analysis of the potential use of UR in four areas of Bend. It is **not** a feasibility study of any new URA(s). If the City decides to purpose use of UR in these areas, additional analysis will be required.

The methods used in our analysis included the following key steps:

- Step 1. Define boundary options
- Step 2. Determine applicable tax rates.
- Step 3. Estimate growth in assessed value.
- Step 4. Calculate TIF and revenue sharing.

Step 1: Define Boundary Options

This analysis evaluates four different URSAs. These areas were chosen based on 2017 Council goals. The URSAs include both opportunity areas and UGB expansion areas. Several of the URSAs also include land that is outside of the opportunity and expansion areas because it faces similar redevelopment challenges and opportunities, or because it includes the locations of projects that are needed to spur development in the rest of the URSA.[31] These areas are not proposals for new URDs. They are illustrative in nature and provide some context to inform future discussions on this topic.
The four URSAs are:

1. **North URSA** comprises the North Triangle and OB Riley expansion areas and adjacent land to the south, adjacent to the existing Juniper Ridge URA.
2. **Central District Plus URSA** comprises three opportunity areas (Bend Central District, East Downtown, and Inner Highway 20/Greenwood) and adjacent commercial land.
3. **KorPine Plus URSA** comprises the KorPine opportunity area and adjacent land.

[31] Projects funded with urban renewal must be physically located within the URA.

4. **Central Westside URSA** uses the same boundary as the Central Westside/Century Drive opportunity area.

Figure 12 shows the URSAs in relation to opportunity areas, UGB expansion areas, and existing URAs. Figure 13 shows URSAs and comprehensive plan designations. This memorandum examines each of the URSAs independently. Moving forward, the City could choose to move forward to a detailed feasibility study (or studies) for one, several, or all the URSAs. As part of a more detailed study, these boundaries could be adjusted, and several URSAs could be combined into a larger URA.

Step 2: Determine Applicable Tax Rates

The consolidated tax rate is the sum of all eligible tax rates for taxing districts with boundaries that overlap the URSA boundary. The consolidated tax rate is multiplied by the IAV (estimated in Step 3) to calculate TIF revenues. All property in the four URSAs can be analyzed using the tax rates for one tax code area, 1001.[32]

1. North URSA includes property in three tax code areas: 1001, 1003, and 1114. However, 1003 and 1114 are outside Bend city limits, and these tax code areas pay rural fire district and law enforcement property taxes. It was assumed that these areas would be incorporated before becoming part of an URA and would pay tax rates consistent with tax code area 1001. This approach assumes forward planning efforts such as the City completing an Area Plan for both expansion areas is complete prior to, or concurrent with, establishment of a URA.
2. Central District Plus includes property in two tax code areas: 1001 and 1061. The tax rates in those two code areas are identical.
3. KorPine Plus URSA is entirely within tax code area 1001.
4. Central Westside URSA is entirely within tax code area 1001.

Eligible tax rates for new URAs include only permanent tax rates, local option levies or general obligation bonds that were approved prior to October 6, 2001. There are no eligible general obligation bonds or local option levies in Bend, which means that only permanent rate levies are used for calculating the consolidated tax rate for the duration of the UR analysis. The consolidated tax rate for tax code area 1001 for the purposes of calculating TIF is $12.778 per $1,000 of assessed value. This tax rate, including the individual rates for each overlapping taxing district is shown in Table 16. Because these are permanent tax rates, we do not estimate any change in the tax rates in future years.[33]

[32] A tax code area is a geography that defines which taxing jurisdictions a property is located within. The tax code area of each taxlot determines the consolidated property tax rate. Tax code areas are determined by the county assessor.

[33] Once established, permanent tax rates cannot by changed by voters or by the district itself. Changes to permanent tax rates can only happen if: 1) the state legislature establishes new, lower statutory limits; or 2) voters approve the establishment of a new taxing district with its own permanent rate.

Figure 12: URSAs, Opportunity Areas, 2016 UGB Expansion Areas, & Existing URAs

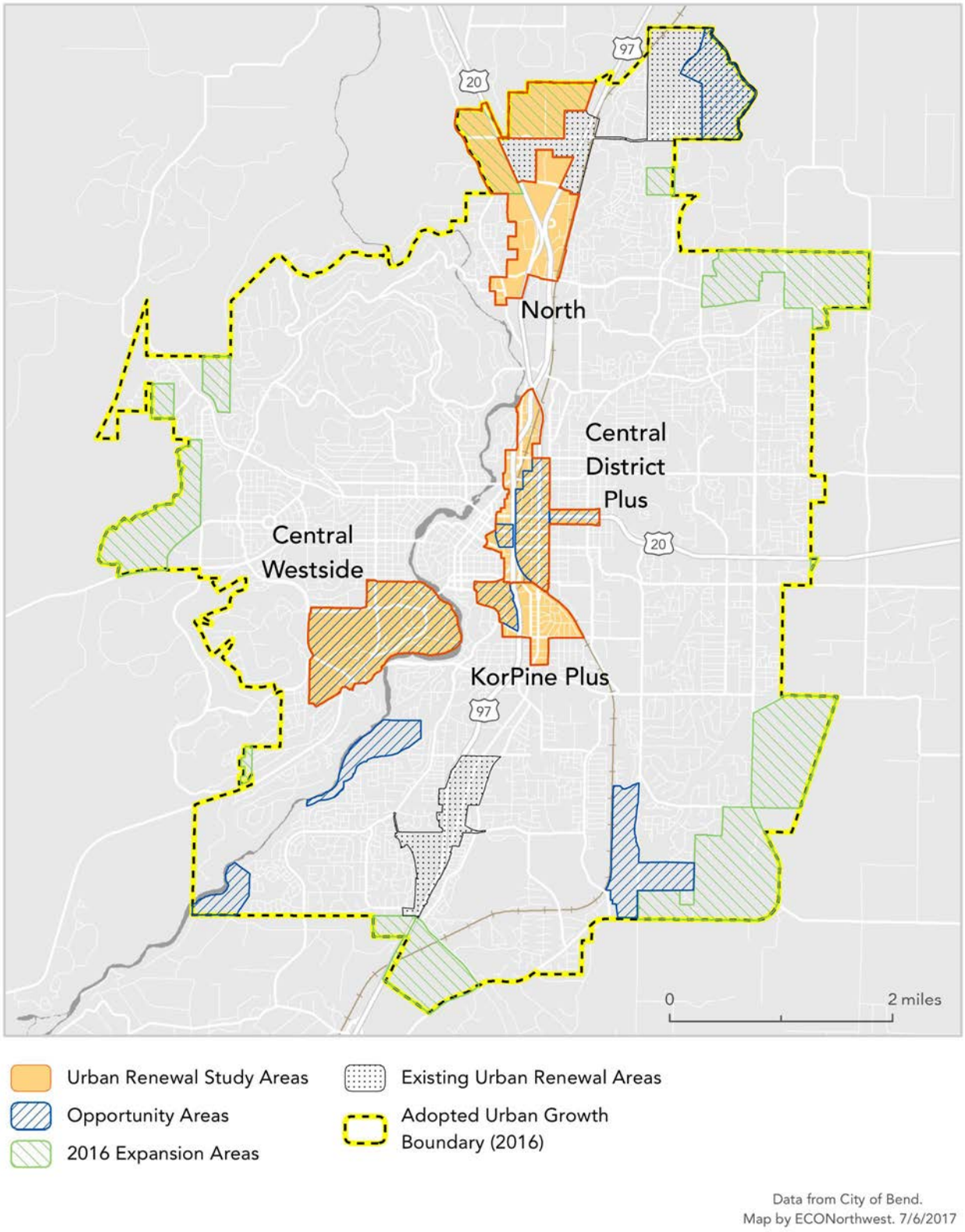


Figure 13: Map of URSAs with Comprehensive Plan Designations

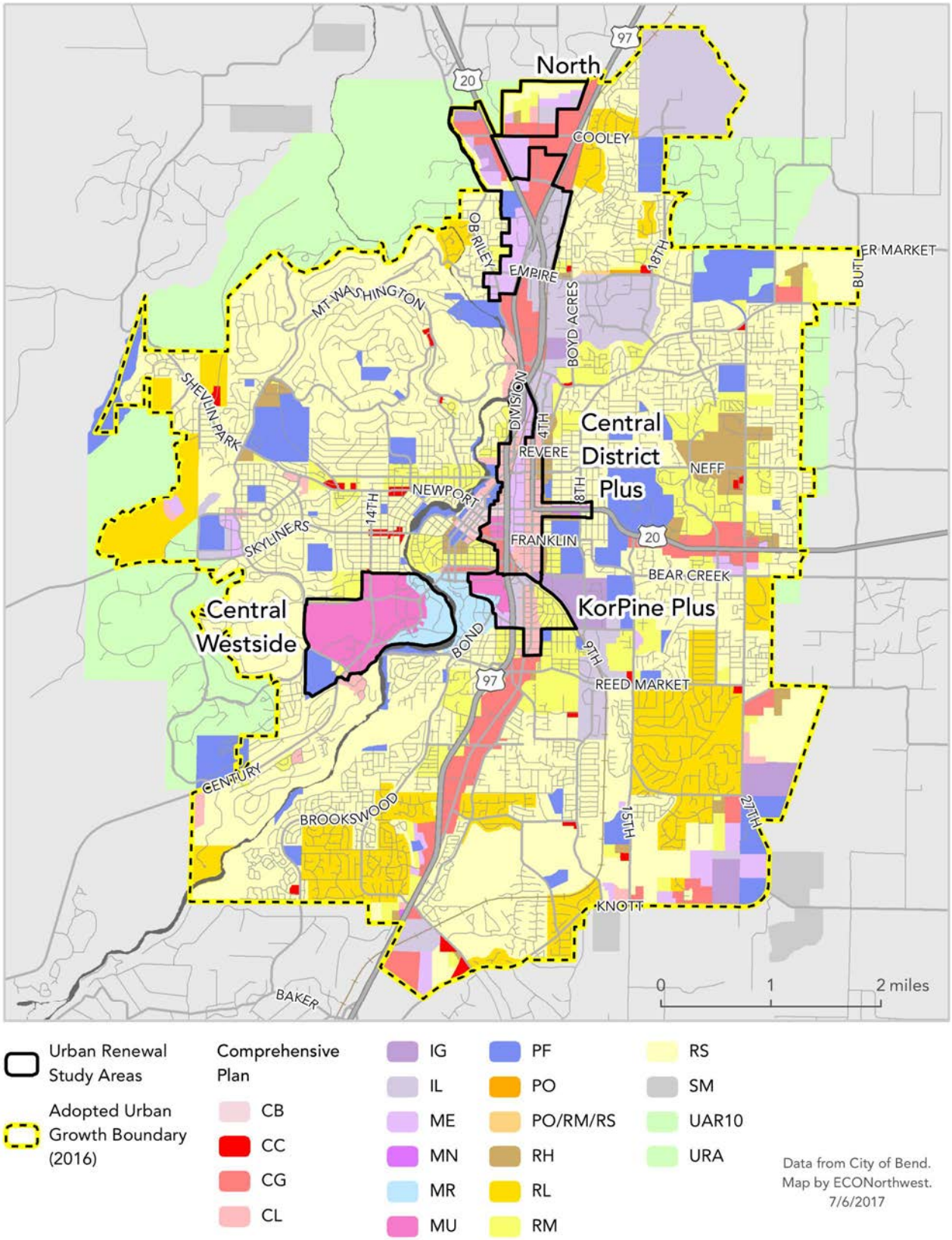


Table 16: Consolidated tax rate for tax code area 1001 (FYE 2017)

Tax Code Area 1001	Permanent Rate (per $1000 AV)
General Government: Permanent Rates	
Deschutes County	1.2783
County Library	0.5500
Countywide Law Enforcement	1.0200
County Extension/4H	0.0224
9-1-1	0.1618
City of Bend	2.8035
Bend Parks and Rec	1.4610
General Government Subtotal	**7.2970**
Education: Permanent Rates	
School District #1	4.7641
High Desert ESD	0.0964
Central Oregon Community College	0.6204
Education Subtotal	**5.4809**
TOTAL	**12.7779**

Calculated by ECONorthwest with data from Deschutes County Assessor, FY 2016-2017.

Step 3: Estimate Growth in Assessed Value

The consolidated tax rate is multiplied by the assessed value of the *increment* to calculate annual TIF revenues. The increment-assessed value is the difference between the total assessed value in each year and the assessed value in the first year of the URA (known as the *frozen base*).

Determine frozen base inside each URSA

Using spatial analysis, we determined the frozen base of property in each of the URSAs. Using Deschutes County Assessor data from FY 2013-2014 data and the potential boundary for the URA, we calculated the FY 2013-2014 assessed value of tax lots physically located within the four URSA.

To adjust to the FY 2013-2014 data to FY 2018-2019 (the assumed first year of any new URA for purposes of this analysis), we applied the following assumptions:

- Between FY 2013-2014 and FY 2016-2017, assessed value in the URSAs grew at the same rate as assessed value in the City of Bend over the same period (5.99%)
- Between FY 2016-2017 and FY 2018-2019, assessed value in the URSAs will continue to grow at 5.99% per year.

Using this methodology, we estimated FY 2018-2019 assessed value for each of the URSAs, which becomes the frozen base. Table 17 shows the FY 2013-2014 assessed value and the frozen base for each URSA.

Table 17: FY 2013-2014 Assessed Value & Frozen Base for each URSA

URSA	FY 2013-2014 AV	Frozen Base AV (FY 2018-2019)
North	$132,360,939	$177,045,258
Central District Plus	$247,147,045	$330,582,518
KorPine Plus	$95,809,889	$128,154,777
Central Westside	$240,797,902	$322,089,939

Source: ECONorthwest with data from Deschutes County Assessor, FY 2016-2017

Estimate Incremental Assessed Value

Over time, the AV in the area will increase above the frozen base value. The difference between the total assessed value and the frozen base is the increment value. Thus, to calculate the increment value, we need to estimate the future growth in property values in each of the URSAs.

Growth rates for assessed value vary over time, depending on market cycles and new development. The two components of AV growth are appreciation of existing property and new construction.

a. Appreciation of existing property

Under Measure 50, growth in assessed value for existing properties is capped at 3% per year. We assume that assessed value for existing properties will grow at 3% per year for the life of the URA. Actual growth may vary, and some years may be lower than this assumption. Note that the State of Oregon classifies property tax accounts into four separate categories:

1. **Real** property consists of land and buildings, and is what most people typically think of as taxable property. In FY 2013-2014 (the date of our assessed value data), real property accounted for 95% of assessed value in Deschutes County.
2. **Personal** property consists of machinery and equipment. The assessed value of personal property within an area can vary significantly from year to year. When looking at assessed value trends over time for broad geographic areas, investment in new equipment is more or less canceled out by depreciation of existing property, resulting in little or no growth. In FY 2013-2014, personal property accounted for 2% of assessed value in Deschutes County.
3. **Manufactured** property consists of mobile homes. Manufactured property loses value over time. In FY 2013-2014, manufactured property accounted for less than 1% of assessed value in Deschutes County.
4. **Utility** property includes the value of any property owned by utility companies. Unlike the other three property types, utility property is not location specific. Instead, the total value of each utility company is determined by the State of Oregon and then allocated to individual tax code areas across the State. In FY 2013-2014, utility property accounted for 2% of assessed value in Deschutes County.

When analyzing change in assessed value over time, ECONorthwest's preferred methodology is to use different appreciation assumptions for different property categories. For example, we may assume that real property will appreciate at 3% per year, while personal, manufactured, and utility property will grow at 0% per year. However, the Deschutes County GIS data used to determine frozen base does not break out assessed value by property type. Because real

property accounts for about 95% of total assessed value in Deschutes County, it was assumed that most of the assessed value within our GIS dataset is real property, and thus, that an appreciation rate of 3% per year is reasonable.

b. Assessed value of new development

For an area to experience AV growth above 3.0% per year, it generally requires new development to occur.[34] For this preliminary analysis, the assumptions about the value of new development in the URSAs come from long-range scenario planning conducted in Envision Tomorrow as part of the Bend UGB Remand planning process. One of the Envision Tomorrow scenarios— ILUTP Scenario B— provided the net new improvement value on each parcel by 2040.[35] This new development scenario has also been use by the Bend MPO in long-range regional transportation modeling. Angelo Planning Group calculated net new improvement value based on the projected construction value of improvements, minus a loss of existing improvement value on redevelopment sites.[36] The project team made several refinements to ILUTP Scenario B for this UR analysis:

- A redevelopment rate for industrial development types of 5% rather than 40% as used in ILUTP Scenario B. We chose the 40% redevelopment rate to reflect "refill" of jobs into existing buildings. The 5% redevelopment rate for this UR analysis is a more realistic rate of redevelopment for existing buildings and excludes employment infill.
- Development occurring in University, Institutional, PF, School, or Park development types will be entirely tax-exempt. This is a conservative assumption; in reality, some of the development associated with OSU in the Central Westside may be taxable.

Figure 14 shows the growth forecast used for the purposes of this analysis.

To incorporate the Envision Tomorrow data into our TIF analysis, we need to make assumptions about the timing of development between 2016 and 2040 (the forecast period of ILUTP Scenario B). For the Central District Plus, KorPine Plus, and Central Westside URSAs, we assume for purposes of this analysis that the development is distributed evenly over the 2016-2040 period. For the North URSA, we assume a lower share of development in the first three years (to allow for necessary infrastructure improvements and an assumed time lag for an Area Plan), and then even distribution in the following years.

When new development occurs, the County Assessor will apply a "changed property ratio" to convert the real market value of the property into the initial maximum assessed value. The changed property ratio varies by property type. In Deschutes County for FY 2016-2017, the

---

[34] Oregon law allows for several exceptions to the 3% limitation on growth in maximum assessed value. Other "exception events" include improvements to existing structures, additions of new structures, subdivisions, and partitions.

[35] For more information about the methodology of ILUTP Scenario B, see "Land Use Assumptions for 2040 Integrated Land Use and Transportation Plan "Medium" Scenario" (March 31, 2017 memorandum from Angelo Planning Group and Fregonese Associates to the City of Bend).

[36] In a more detailed feasibility analysis, we would recommend a more detailed analysis of the potential real market value in the URSAs; however, for the purposes of this initial look at financial capacity, net construction value of improvements is a reasonable proxy. For the ADU Infill development type (which models the addition of accessory dwelling units to existing single-family zones), it is not appropriate to assume that part of the home value is removed when an ADU is added. For this development type, the net new improvement value is the same as the new improvement value (with no subtraction of value for redevelopment of existing structures).

changed property ratio was 63.3 for single-family residential development and 75.9 for multi-family, commercial, and industrial development. In other words, a new multiple development with a real market value of $1,000,000 would receive an initial maximum assessed value of $759,000. For this analysis, we use the 75.9 changed property ratio for all new development. It is also important to note that Envision Tomorrow gives the construction value of new development, which is not the same as the assessed real market value. The Deschutes County Assessor determines real market value of new development based on real market value of comparable properties. The assessed real market value may be higher or lower than the construction value. However, for this preliminary analysis, we assume that the construction value is the same as the real market value.

Step 4: Calculate TIF

Multiplying the consolidated tax rate (Step 2) by the estimated IAV (Step 3) results in an estimate of annual TIF revenues in nominal (i.e., year-of-expenditure) dollars. To be conservative, we assume a 5% reduction from gross to net TIF revenues to account for discounts, delinquencies, and compression losses. The first year the URA would receive TIF revenue is fiscal year ending (FYE) 2020, due to the timing of the annual assessment process.

For this analysis, we assumed that the last year of TIF collection would be FYE 2042, which is the last assessment year in the Envision Tomorrow forecast period and is consistent with other planning work in the City.[37] The duration of the URA is another assumption that can be adjusted; a 30-year duration would yield higher TIF revenues and more bonding capacity. Table 16 and Figure 15 show the annual net TIF revenues for each URSA for the FYE 2019-2042 period, in 2017 inflation-adjusted dollars. As shown below, this preliminary analysis indicates that annual TIF revenue would be low in the initial years and steadily increase over the life of the URA. In addition, because URAs typically issue debt, and use TIF revenue to repay that debt, including payments of both principal and interest, the amounts shown in Table 18 and Figure 15 are not equal to the funding capacity of the URSAs.

[37] The last year of the Envision Tomorrow forecast is 2040. Development that occurs in 2040 does not fully come onto the tax rolls until FYE 2042 due to the timing of the assessment process.

Figure 14: Net New Improvement Value Per Acre, 2016-2040

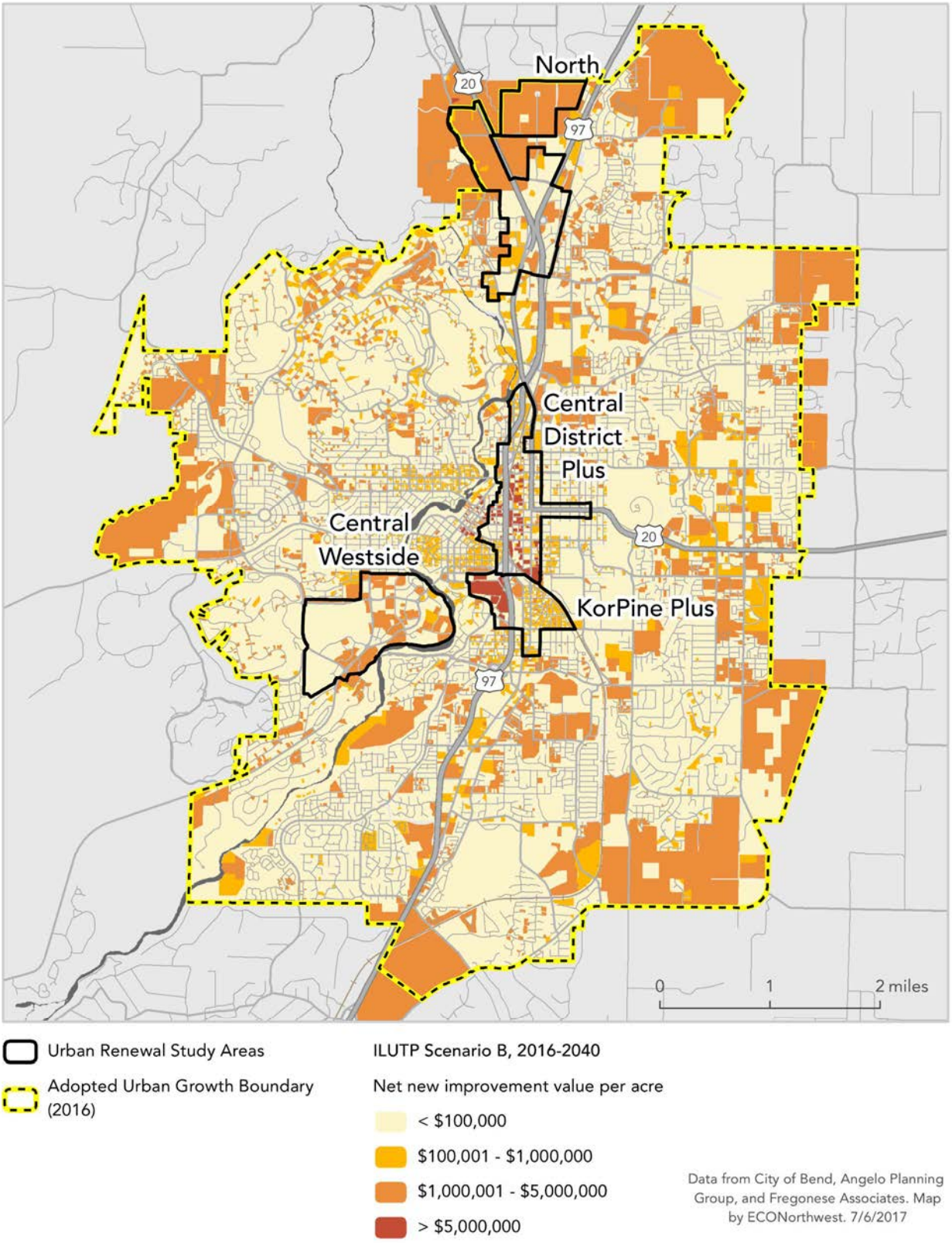
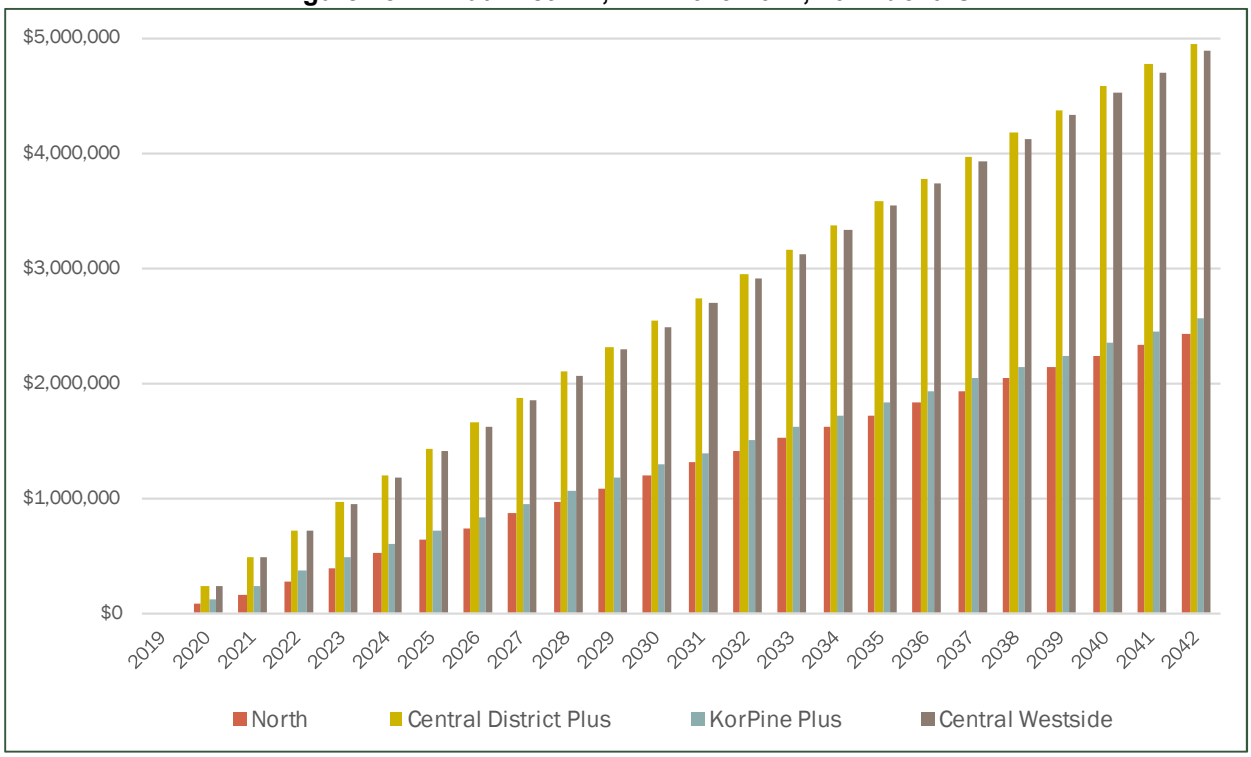


Table 18: Annual Net TIF, FYE 2019-2042, 2017 Dollars

FYE	North	Central District Plus	KorPine Plus	Central Westside
2019	$0	$0	$0	$0
2020	$80,000	$240,000	$120,000	$240,000
2021	$150,000	$490,000	$240,000	$480,000
2022	$270,000	$720,000	$360,000	$710,000
2023	$390,000	$960,000	$480,000	$950,000
2024	$510,000	$1,190,000	$600,000	$1,170,000
2025	$630,000	$1,420,000	$710,000	$1,400,000
2026	$740,000	$1,650,000	$830,000	$1,620,000
2027	$860,000	$1,870,000	$940,000	$1,850,000
2028	$970,000	$2,090,000	$1,060,000	$2,060,000
2029	$1,080,000	$2,310,000	$1,170,000	$2,280,000
2030	$1,190,000	$2,530,000	$1,280,000	$2,490,000
2031	$1,300,000	$2,740,000	$1,390,000	$2,700,000
2032	$1,410,000	$2,950,000	$1,500,000	$2,910,000
2033	$1,510,000	$3,160,000	$1,610,000	$3,120,000
2034	$1,620,000	$3,370,000	$1,710,000	$3,320,000
2035	$1,720,000	$3,570,000	$1,820,000	$3,530,000
2036	$1,830,000	$3,770,000	$1,930,000	$3,730,000
2037	$1,930.000	$3,970,000	$2,030,000	$3,930,000
2038	$2,030,000	$4,170,000	$2,140,000	$4,120,000
2039	$2,130,000	$4,370,000	$2,240,000	$4,320,000
2040	$2,230,000	$4,570,000	$2,340,000	$4,510,000
2041	$2,330,000	$4,760,000	$2,440,000	$4,700,000
2042	$2,420,000	$4,950,000	$2,550,000	$4,890,000
Cumulative Net TIF	**$29,330,000**	**$61,820,000**	**$32,490,000**	**$61,030,000**

Source: ECONorthwest.
Note: These TIF estimates exclude any revenue sharing with overlapping taxing jurisdictions. Revenue sharing begins when TIF revenues in a single year exceed 10% of maximum indebtedness. These are inflation-adjusted, 2017 dollars using an assumed 3% annual inflation rate.

Figure 15: Annual Net TIF, FYE 2019-2042, 2017 dollars



Step 5: Estimate Total Borrowing Capacity based on TIF Revenue

To determine borrowing capacity, the annual cash flow of TIF revenue is translated into the principal amount of debt that could be repaid by that cash flow. That principal amount is adjusted for inflation and reported in constant 2017 dollars to provide an accurate estimate of the total dollar amount of projects that could be funded with UR.

The calculation of borrowing capacity depends upon assumptions about the type and timing of indebtedness incurred. This analysis assumed long-term debt would be incurred beginning in the second year of TIF collections, with an amortization period of 20 years, and an interest rate of 5.0%.[38] In interim years, the annual TIF revenue in excess of scheduled debt service amounts would be available to fund projects directly, using a "pay as you go" approach to TIF revenue. After FYE 2022, the assumed duration of the URA limits the ability to incur new debt with a 20-year amortization period. Therefore, subsequent debt series are assumed to have shorter amortization periods that terminate in FYE 2042 (the 23th year of TIF collection). After FYE 2033, we assumed no additional long-term debt would be incurred, due to the short period remaining to repay that debt.

Note that the calculation of borrowing capacity depends on a number of key assumptions used in the analysis. The URA could have more borrowing capacity if the assessed value of new construction is more than estimated, or occurs earlier in the life of the URA than estimated. Additionally, the borrowing capacity would be higher if lower interest rates are achieved on

[38] The interest rate assumption of 5.0% was chosen in consultation with City finance staff. Future interest rates may be higher or lower.

future indebtedness. Conversely, assumptions that are more conservative would yield a lower borrowing capacity.

Summary of Urban Renewal Study Areas

North

The North URSA comprises the North Triangle and OB Riley expansion areas and adjacent land to the south. It is adjacent to the existing Juniper Ridge URA. Current development patterns in this area are characterized by low density rural development in North Triangle and OB Riley; big box commercial shopping center in the Triangle area between I-97 and Route 20 south of Cooley Road; and low-density light industrial and auto-oriented commercial businesses south of the interchange. Table 19 provides a summary of the forecast for net new housing units and new jobs for the North Area.

Table 19: North Area Summary

Total Acreage	711
Acreage within tax lots	585
Net new housing units by 2040	690
Net new jobs by 2040	2,702

Vision for Development

With more than 2,700 new jobs forecasted by 2040, the North URSA is envisioned as a major employment center for the Central Oregon region.[39] Development in North URSA will also complete communities, including residential development, in the UGB expansion areas. The vision for the area calls for infrastructure improvements to support planned development, improve connectivity to the rest of Bend, and integrate with planned improvements to Highway 97.

Preliminary Evidence of Blight[40]

The following conditions of blight are present in the North URSA:

- **Inadequate infrastructure**. Lack of infrastructure in the area limits connectivity and hinders development. Specifically, the area lacks sewer capacity and requires a new major sewer interceptor. Transportation investments are needed to provide access to land locked parcels, restore east-west connectivity across the parkway, and accommodate future employment and residential growth.
- **Underutilized land.** The URSA contains vacant tax lots and tax lots with low improvement to land value ratios.
- **Inefficient parcel configuration.** The construction of the Parkway created a number of land-locked industrial parcels in the area.

[39] Estimates of net new jobs housing units for all URSAs come from Envision Tomorrow ILUTP Scenario B.

[40] The descriptions of blight included in this memorandum are preliminary and illustrative. If the City decides to pursue use of urban renewal, additional documentation of conditions of blight will be necessary.

Major Projects Needed

Potential projects that might be funded in whole or in part through an URA include:

- Extension of North Sewer Interceptor to serve the area
- Transportation improvements in coordination with Highway 97 project
- Local service roads in UGB expansion areas and to serve landlocked industrial tax lots

TIF/Bonding Capacity (2017 dollars)

- Total funding capacity: $26-27 million

Central District Plus

The Central District Plus URSA includes three opportunity areas—Bend Central District, East Downtown, and Inner Highway 20/Greenwood—and adjacent commercial land to the north and west. This URSA contains Bend's primary commercial strip and surrounding areas. Currently the area is characterized by auto-oriented businesses, high traffic volumes, and low-intensity land uses.

Table 20: Central District Plus Summary

Total Acreage	432
Acreage within tax lots	248
Net new housing units by 2040	690
Net new jobs by 2040	1.392

Vision for Development

Plans for this area envision a new urban mixed-use center with a vibrant mix of residential, commercial, office, and light industrial uses. Investments in bicycle, pedestrian, and transit infrastructure will create strong multimodal connections to surrounding neighborhoods, downtown Bend to the west, and KorPine to the south. Improved east-west connectivity across the Parkway will allow these areas to connect with downtown to the west and unify these areas.

Preliminary Evidence of Blight

- **Inadequate infrastructure.** The area lacks safe, multimodal transportation connections across the Bend Parkway and railroad tracks. The Bend Central District Multimodal Mixed-Use Area Plan identified a number of transportation improvements that are needed to support redevelopment. This area contains major transportation facilities such as 3rd Street, Highway 20, the Bend Parkway, Franklin Avenue, and Greenwood Avenue, which may also require investments to address issues of safety, connectivity, and capacity.
- **Underutilized land.** The area contains a large number of surface parking lots and underutilized land. Many of the older industrial buildings on 1st and 2nd Streets have low improvement to land value ratios.

Major Projects Needed

Potential projects that might be funded in whole or in part through an URA include:

- Placemaking and streetscape improvements
- Bicycle/pedestrian improvements
- Water infrastructure improvements to support denser development

TIF/Bonding Capacity

- Total funding capacity: $56-57 million (2017 dollars)

KorPine Plus

Background Statistics

This URSA comprises the KorPine opportunity area and adjacent commercial and residential land to the east. The area includes a 22-acre former mill site that has been used for storage and other low intensity uses since 2004.

Table 21: KorPine Plus Summary

Total Acreage	235
Acreage within tax lots	169
Net new housing units by 2040	884
Net new jobs by 2040	850

Vision for Development

Similar to the Central District Plus URSA, this area is envisioned as a vibrant mixed-use center with strong multimodal connections to downtown, the Old Mill District, and the rest of the city. The development vision also includes bicycle and pedestrian friendly transportation improvements east-west across the Parkway to connect planned urban amenities to southeast Larkspur neighborhood. Additional road connectivity projects between the Old Mill, downtown, and 3rd Street will also be required.

Preliminary Evidence of Blight

- **Inadequate infrastructure:** The Parkway and railroad form a barrier that impedes access between the east and west parts of the city, particularly for bicyclists and pedestrians. Much of the area was planned for large-scale industrial uses and lacks local streets.
- **Concentrations of poverty**: The residential area of this USRA has concentrations of poverty, which reduces the capacity for taxes and public services.
- **Deteriorated or unsafe buildings** and **underutilized land**: The old KorPine mill site was recently damaged and demolished. Surrounding areas are vacant or in lower intensity land uses such as storage units. Low improvement to land value ratios are common throughout the area.
- **Inefficient parcel configuration.** Large parcels at the KorPine site may need to be subdivided to support redevelopment.

Major Projects Needed

Potential projects that might be funded in whole or in part through an URA include:

- Drake sewer improvements
- Placemaking and streetscape improvements
- Bicycle/pedestrian improvements
- Local service roads to serve subdivided tax lots

TIF/Bonding Capacity

- Total funding capacity: $28-29 million (2017 dollars)

Central Westside

The Central Westside URSA has the same boundaries as the Central Westside opportunity area. The area contains a number of large vacant parcels, including the former Deschutes County landfill site and an old mine. The OSU Cascades Campus is located within this URSA, and OSU is planning a larger expansion beyond the current 10-acre campus.

Table 22: Central Westside Summary

Total Acreage	583
Acreage within tax lots	515
Net new housing units by 2040	1,615 incl. OSU 1,083 excl. OSU
Net new jobs by 2040	1,723 including OSU 1,284 excluding OSU

Vision for Development

Development in the Central Westside area has the opportunity to create a walkable mixed-use district anchored by the OSU Cascades campus. The 2016 Central Westside Plan calls for the creation of livable neighborhoods with a small-town feel and the transformation of 14th Avenue from an old state highway to a walkable corridor.

Preliminary Evidence of Blight

- **Deteriorated or unsafe buildings** and **underutilized land**: There are multiple brownfields in the URSA including a pumice mine, a former landfill, and old mill sites. The area contains deteriorated, underused buildings and lands which will require environmental remediation before redevelopment. Much of the area has low improvement to land value ratios.
- **Inadequate infrastructure:** The area has a number of infrastructure and transportation challenges, particularly a lack of local street connectivity.

Major Projects Needed

Potential projects that might be funded in whole or in part through an URA include:

- Local service roads to serve subdivided tax lots
- Environmental remediation
- Streetscape improvements

TIF/Bonding Capacity

- Total funding capacity: $55-56 million (2017 dollars)

Implications

This section summarizes the implications of ECONorthwest's analysis of potential URAs in Bend.

General Considerations

- **Bend has plenty of capacity to add new URAs.** Statutory limits on the amount of acreage and assessed value that can be within URAs are not likely to be a limiting factor in the near term. The City could add more than $1.4 billion in AV and 2,200 acres to URAs. If desired, Bend could adopt all four URSAs examined in this memorandum and remain under the statutory limits.
- **Expansion of existing URAs would provide limited project funding for new projects.** The Murphy Crossing URA could be expanded to include a maximum of 46 more acres and $13.3 million in maximum indebtedness. The Juniper Ridge URA could be expanded to include a maximum of 140 more acres and 11.4 million in maximum indebtedness. Expansions of that size are considered "substantial amendments" and require the same public process as creating a new URA. However, funding in an expanded URA may be available more quickly than in a new URA, as there is demonstrated evidence of tax increment growth to support new bonds, as well as (potentially) existing reserves to support debt coverage ratios necessary for borrowing. For funding lower-cost projects that are needed in the near-term, expanding an existing URA may prove more efficient that creating a new one, despite the required process for the expansion.
- **UR could provide funding to support implementation of Bend's development goals for the four URSAs, but it is not a silver bullet.** Based on this preliminary analysis, the North URSA and KorPine Plus URSA could each generate about $26-29 million in funding capacity (in present-day dollars), and the Central District Plus URSA and Central Westside URSA could each generate about $55-57 million. While substantial, these amounts are not likely to pay for all the necessary infrastructure improvements in each area. Full implementation will require coordination with other funding and financing tools.
- **Bend should carefully consider how UR would affect future revenues for overlapping taxing districts, including the City of Bend.** Because UR works by capturing the increase in property values above the frozen base, overlapping taxing jurisdictions (including the city, county, parks, and schools) do not see the increase in property tax revenue from new

development until the URD expires or pays off its bonds. The taxing jurisdictions that overlap the URA continue to collect tax revenue from the frozen base, but most or all of the tax revenue generated from the IAV goes to the URA.[41] Generally speaking, overlapping taxing districts are more likely to support UR if 1) the URA stimulates development that would not occur "but for" the investments funded by TIF, and 2) if the URA is relatively short-lived. Appendix B provides more information about impacts to overlapping taxing districts.

- **Tools that offer property tax abatements for new development decrease the funding potential of UR.** Tools like the MUPTE and VHDZs provide a partial property tax abatement to qualifying new developments for a certain number of years. These incentives reduce the amount of TIF generated by the URA, because there is less taxable value above the frozen base. While TIF and property tax abatements can work together, their interaction requires care in design.
    - With MUPTE, the property tax exemption applies only to the City's portion of property taxes (unless other taxing jurisdictions agree by resolution to participate). In Bend, the City's permanent tax rate of $2.8035 per $1,000 of assessed value accounts for about 22% of the consolidated property tax rate used for UR. Thus, a property that qualifies for MUPTE would generate about 22% less TIF revenue for the URA for the 10-year length of the MUPTE exemption than an identical property without a MUPTE exemption.
    - VHDZ provides a property tax exemption of up to 80% of the improvement value of the residential portions of the project for 10 years. (The percent of property tax abated depends on the number of qualifying residential floors). Overlapping taxing districts may elect not to participate in a VHDZ, but they must take action in order to opt-out. Thus, a property that qualifies for VHDZ would generate up to 80% less TIF revenue for the URA for the 10 years of the MUPTE exemption than an identical property not receiving a VHDZ exemption.

      When designing an implementation strategy for areas that may be candidates for UR and property tax exemptions, the City should analyze how different tools work together in order to ensure maximum efficacy.
- While the City has discretion in establishing URAs, there are several important considerations that should inform the City's decisions:
    - The City is required to 'consult and confer' with affected taxing districts in the process of forming a new URA, and must consider the potential degree of support or opposition from these districts. Outreach to and coordination with overlapping taxing districts will be a key next step for any areas identified for more detailed exploration and a feasibility study.

[41] Urban renewals created or amended after 2009 must share TIF revenue with other taxing districts when they attain certain thresholds of annual tax revenue. When tax revenues reach 10% of the URD's maximum indebtedness, then a portion of the TIF above that level is shared with overlapping taxing districts. (Specifically, 25% of the TIF above this threshold remains with the URD, and the remaining 75% of TIF is returned to taxing districts). Additionally, when TIF revenues for the URD reach 12.5% of the maximum indebtedness, TIF revenues for the URD are capped at the amount, with all TIF revenues above 12.5% of maximum indebtedness going to overlapping taxing districts.

- The City should be cautious about designating URAs in UGB expansion areas, for several reasons. First, the City should avoid including any area in a new URA until it has been annexed into City limits. While it is possible to create a new URA that crosses municipal boundaries, it is administratively cumbersome; both the City and the County would have to adopt the plan and administer the URA. Further, greenfield URAs can create financial challenges for overlapping taxing districts, because they have very little "frozen base" that they continue to collect revenue from, especially relative to future growth. The districts would need to serve future development, with most of the tax revenue diverted to UR uses.
- Selecting areas that align with the original intended purpose of UR – to overcome "blight" conditions in urban areas through public investments – may increase support for the designation.

URSA-Specific Highlights & Considerations

1. **North:** A new or expanded URA in the north could generate funding to contribute to major transportation and/or sewer improvements, but would likely not be enough to fully fund the City's portion of needed infrastructure for the area. There are several reasons to be cautious about UR in this area. First, the City should wait until the new UGB expansion areas are annexed to the City to establish a URA here, since the County would need to participate in the UR designation if it pre-dates annexation. Another consideration is that ROW acquisition for Highway 97 improvements would reduce the taxable base, which creates the potential for a negative increment growth. If UR is pursued in this area, the boundary should be drawn carefully so that any projects related to Highway 97 that will be funded (in full or in part) by the URA are included, but areas where significant ROW acquisition is needed and little redevelopment is expected are excluded. Project lists would need to be coordinated with the Juniper Ridge URA to ensure that they complement one another. Another consideration for this area is that the existing Juniper Ridge URA can be expanded by up to 140 acres. This would be enough to pick up a portion of the area included in URSA 1 (e.g. most, but not all, of the North Triangle UGB expansion area, or nearly all of the OB Riley UGB expansion area) if a smaller area were ultimately selected as appropriate for UR.
2. **Bend Central District Plus:** A new URA centered around the Bend Central District and adjacent areas could potentially generate enough bonding capacity to pay for many of the streetscape improvements, bike/pedestrian improvements, and other projects identified as needed for the Bend Central District, as well as potentially funding projects like storefront improvements and affordable housing development. These improvements could make the area much more desirable for housing and mixed-use development. There has also been strong interest from a variety of stakeholders in the City to support and advance redevelopment in this area, which could smooth the path to approval of an URA. The precise boundaries of the area would need additional evaluation and refinement as part of a feasibility study.
3. **KorPine Plus:** A new URA including the KorPine opportunity area and adjacent areas to the east could generate a reasonable amount of funding capacity considering the small size

of the area. This area could also be combined with the Bend Central District. The need for public investments in this area may be less than in some other URSAs. However, UR in the KorPine area could support connectivity improvements that would help link the area to neighborhoods to the east and might go beyond what the City could condition a developer to build. Timing would be important in this area, since there has been interest in development in a portion of the area in the near-term. If significant redevelopment begins in the area prior to establishment of an URA, the City will have missed the chance to capture the increment of increase in property value. It may also weaken the case for UR if the public and other taxing jurisdictions perceive that the market does not need public support in that area.

4. **Central Westside:** A new URA for the Central Westside / Century Drive opportunity area could potentially generate significant bonding capacity to help with streetscape improvements and other needed transportation projects, to address brownfield issues, and potentially also support affordable housing development. The planned Oregon State University (OSU) Cascades campus is a consideration as well, because much of the early redevelopment in the area could end up being tax-exempt if owned by the University.

Next Steps

If the City wishes to pursue use of UR as a funding tool for one or more of the URSAs, next steps include:

- Continue to refine lists of potential projects (and costs) for each area. The June 2017 DKS memorandum to the City of Bend provides a starting place for this analysis, but more detail will be needed.[42] Because URAs can only fund projects that are physically within their boundaries, major projects may need to be broken out by the portion inside the URSA.
- Begin a series of conversations with City of Bend finance staff and overlapping taxing districts about potential use of UR.
- Determine which URSA(s) alone or in combination are most promising, and develop a scope for formal UR feasibility study. A feasibility study will include the following refinements from this memorandum:
    - Boundary adjustments as necessary
    - Updated financial analysis using current (e.g., FY 2017-18) Assessor's data and more detailed analysis to support projections of likely tax increment revenue growth
    - Preliminary project list, with information about costs and phasing
    - Further analysis of maximum indebtedness and revenue sharing
    - Public, stakeholder, and taxing district input into project priorities and agency governance issues

Note that if the City decides to pursue the use of UR in the North URSA (or other UGB expansion areas), we would recommend that the City annex that land before adoption of the URA in order to simplify governance of the UR agency. Because state and city annexation rules

[42] See "Area Plan Readiness Assessment: Transportation Evaluation," June 2017 memorandum from DKS to City of Bend.

require a number of pre-conditions to annexation (including development of Area Plans and infrastructure funding plans), planning for annexation and UR should be done in close coordination.

Creation of new URAs will require two primary Council actions. The first action required is for Council to identify the general part(s) of the City where UR Feasibility Studies will be conducted. The second action is to allocate staff resources. Council allocated money to the UR General Fund in the fall of 2017, but did not assign staff.

With the two-abovementioned decisions made, URSAs require a two-pronged planning approach. The visioning and urban design work is undertaken by the Growth Management Department while the required Feasibility Study is directed by the Economic Development Department. Oversight and decision- making authority will be assigned to a BURA appointed Advisory Board with significant input from designated stakeholder or working groups. Stakeholder of working groups will be created for each part of the City where UR is considered.

Final adoption of the new URA(s) will occur 18 to 24 months after the plans are initiated. As shown above in the bar graph on page 86, it will take a year or two after adoption for the City to collect TIF revenue and will take several years after that before money is available to fund projects inside the URA boundary.

Development Incentives

Property Tax Abatement

Creation and adoption of new housing incentive programs, or property tax abatement programs, is a relatively simple act for the City Council. The following table provides a summary of the various incentive programs that can be used to increase housing supply, although it is not a full evaluation of all affordable housing incentives or programs. Additional affordable housing incentives such as density bonuses, height bonuses, fast tacking, and parking reductions are not included in the table, but are available through the Bend Development Code for qualifying projects. The existing Low Income Rental Housing program is included solely for comparison purposes.

Table 23: Summary of Development Incentives

Program & Authorizing Statute	Vertical Housing Development Zones (VHDZs) (ORS 307.841 to 307.867[43])	Multiple-Unit Property Tax Exemptions (MUPTE) (ORS 307.600 to 307.637)	Low Income Rental Housing (ORS 307.515 to 307.523)
Designation Process	City designates via ordinance or resolution. Notice to overlapping taxing districts required. Must consider potential for displacement of households in the zone.	City designates via ordinance or resolution. Public hearing required to determine whether qualifying housing would or would not be built without the benefit of the program.	Already in place in Bend

[43] The recently passed Senate Bill 310 makes significant amendments to the applicable statutes. This summary is based on the revised language, which is not yet effective or incorporated into statute, but will be within a matter of months.

		City must establish standards and guidelines with requirements for eligibility.[44]	
Eligible Areas	Anywhere in the city	Core areas[45], light rail station areas or transit oriented areas (within a quarter-mile of fixed-route transit service per a local transportation plan). Alternatively, the city can designate the entire City and limit the program to affordable housing.[46] URAs are also eligible.[47]	Anywhere in the city
Eligible Projects	Must include at least one "equalized floor" of residential; at least 50% of the street-facing ground floor area must be committed to non-residential use. Can be new construction or rehabilitation. City can add other criteria.	Housing subject to a housing assistance contract with a public agency (must show that the exemption is necessary to preserve or establish the low-income units, but no max income); OR housing that meets City criteria for number of units and design elements benefitting the public. If transit-oriented, must support the transit system. May be new construction, addition of units, or conversion of an existing building to residential use.[48]	Rental housing exclusively for low-income households (generally at or below 60% AMI, though sometimes up to 80% AMI). City can add other criteria.

[44] ORS 307.606(1)-(4)

[45] "Core area" is not defined in statute. The legislative findings in ORS 307.600 suggest that the intent is for areas around a downtown, but definitions for the Vertical Housing Development Zone program (in OAR 813-013-0005) that pre-date the SB 310 amendments included a range of other walkable commercial areas. Those definitions will likely be removed based on the amendments to the statute. There seems to be discretion for the City to interpret this broadly if desired.

[46] ORS 307.606(2)

[47] ORS 307.609

[48] ORS 307.603(5)

Tax Exemption / Abatement	Improvements exempt based on number of "equalized floors" of residential use: 20% for 1 floor, 40% for 2 floors, 60% for 3 floors, 80% for 4 floors. Land partially exempt for low-income housing (up to 80% AMI) – same % per floor as above. Exemption good for 10 years.	Improvements exempt. May not include commercial property unless required as a public benefit element.[49] Exemption good for 10 years, but for low-income housing, exemption can be extended for as long as the housing is subject to the public assistance contract.[50]	Land and improvements exempt. Exemption lasts as long as property meets the criteria.
Participation by Other Taxing Districts	Can elect not to participate within 30 days from City notice	None, unless districts representing at least 51% of combined levy agree by board resolution to participate, in which case all districts are included.[51]	None, unless the boards of districts representing at least 51% of combined levy agree to the exemption for a given property, in which case all districts are included.[52]
Timing considerations	Can't qualify until project is under construction – creates uncertainty for developer & lenders	Property owner can apply by the February before first assessment year of requested exemption.[53] Construction need not be complete. Program appears to sunset in 2022 for new applications.[54]	Can be used when property is held for future low-income rental housing development. No requirement that construction be complete prior to application.

These incentives are typically adopted by ordinance into the City's municipal code. The code language outlines the criteria for approval and the process for approving individual tax exemptions. Like UR, these incentives require a high degree of cooperation from other taxing districts in order for housing development projects to take full advantage of the allowed tax exemption. Therefore, coordination and agreement among the taxing districts is important to configure prior to City Council adoption

[49] ORS 307.612(2)

[50] ORS 307.612(3)

[51] ORS 307.606(1)

[52] ORS 307.519

[53] ORS 307.615

[54] ORS 307.637

SDC Financing

SDC financing enables developers to stretch their SDC payment over time, thereby reducing upfront costs. Alternatively, SDC credits allow developers to construct system level improvements required as part of their development proposal in return for credits towards their required SDC assessments.

Deferral contracts are a variation on SDC financing and allow the applicate to defer SDC payments for a specified time, typically up to one year.

SDC financing is typically provided through installment loans or a deferral contract secured by a lien on the benefited property. Loan requirements could include:

- All property owners of records must sign an installment contract
- The SDC financing installment contract creates a lien on the property
- For installment loans, applicants may select monthly payments for a specified term. Cities EcoNorthwest reviewed typically used 5- or 10-year periods
- Applicants pay a nonrefundable finance fee
- The terms have no prepayment penalty
- Installment billings begin 30 to 60 days after the loan contract is received
- Interest is charged through the bill due date. Late payments are subject to penalties and collection charges as provided by City Code
- **Considerations:**
    - Allowing SDC financing reduces up-front costs for developers, which can enable a quicker development timeframe and increase assessed value.
    - One drawback is that this reduces the availability of SDC funds over the short term for the City.
- **Implementation Steps**
    - To use the Bancroft Bonding Act a city in Oregon that has charter or ordinances provisions for bonding SDCs and selling bonds may follow those protocols.

Potential Impacts

Initial findings explained in Appendix E suggest that incentives can make desired developments “pencil,” but it may take multiple incentives to be in place for some building types to be built in Bend. Current rents make vertical development a challenge without these incentives.

VHTE and MUPTE can enable income-restricted housing at a low “cost” to the city in that deferred tax collection requires no direct out of pocket costs but does require deferred revenues. These tools are far more cost effective than direct subsidy for the construction of new affordable units because of their ability to leverage private development projects.

VHTE has narrower applicability and is most suitable for Core Areas on mixed-use main streets since the exemption requires ground floor retail and tax exemptions are highest for buildings with four full floors of residential to receive an 80% tax exemption. MUPTE could be good fit for more suburban areas not in URDs to incentivize apartments of 3-4 stories.

SDC financing has benefits, but needs agreement with other taxing districts. While forming new URDs, it will be important to coordinate with taxing districts to find the right balance between these programs.

Area Plans

Area Plans are a planning tool to coordinate development in a subarea of the city. Once adopted, they guide and regulate incremental development so that it knits together, over time, to achieve public objectives such as creating complete communities. Area plans are typically prepared for areas where there are many different parcels and ownerships, because coordinated planning can prevent disconnected development and support the efficient delivery of public infrastructure and services.

Area plans are comprehensive and context-sensitive. Typical components include the following:

- Vision and planning principles for the area
- Land use map – refinements of existing plan designations, or new plan designations needed to achieve the vision
- Transportation –maps of streets, bikeways, pedestrian paths, coupled with cross-sections and other designs. Transit, if applicable, is integrated
- Parks, schools and other civic uses – guidance for the type and general location for these key public uses
- Open space and natural resources – maps and implementation strategies
- Area-specific public amenities – ideas for special uses such as gateways, plazas, viewpoints
- Water, sanitary sewer and storm water infrastructure plans and cost estimates
- Infrastructure funding strategies
- Plan policies and zoning code implementation, often including tailored regulations and design guidelines

Areas Plans create a common vision for an area and strategies for how to implement that vision. They focus on the long term and affect many parties, so community participation is important. This helps build support for the plan, taps into the local knowledge of residents and property owners, and tailors the outcomes to the needs of the local community and future investors.

In addition, Area Plans answer practical questions that make subsequent development more feasible and predictable. Examples include:

- What refinements to existing land use designations are needed for the area, and how should those be applied at a parcel-specific level?
- What type of commercial development is appropriate to the area and is there a realistic opportunity for neighborhood-scale commercial uses?
- What strategies for transitions between land uses should be included in the plan?
- Where should new collector-level streets be located, and what is the intended pattern of local streets between the collectors.
- How many parks and schools are needed, and what types?

Section 6: Recommendations

2016 UGB Expansion Areas

The "Elbow"

Of the UGB expansion areas, the "Elbow" area in the southeast is the best positioned for near-term development based on the recent sanitary sewer investments in the area (the Southeast Interceptor) and a relatively low impact on state highways that avoids potential concerns and complexity from ODOT. Area Planning in this area can also respond to recent changes to plans for the nearby land inside the UGB where a new school is proposed to be located and set a plan for coordinated incremental development of the area. BPRD encourages near-term development in this area because of anticipated investments in the area. City Fire and Police Departments also support near-term development of the area assuming the Murphy Road corridor is completed to decrease response times.

2016 Opportunity Areas

Core Areas

Based on the preliminary evaluation of UR potential, staff and the consultant team suggest a UR Feasibility and Implementation Plan for portions of the Core Area including the Bend Central District and surrounding opportunity areas, including KorPine, East Downtown, and Inner Highway 20 / Greenwood / Midtown. Recent market response suggests this would further stimulate housing and job growth in this area, and provide a funding source for local improvements. Infrastructure capacity in the sewer system is available for all areas except the KorPine area (which requires a project in the current CIP). Transportation projects, while costly, can be phased in this area. Additional outreach and planning work with public and private stakeholders will be needed to establish and prioritize a project list of improvements needed to support development in these areas.

In the Century Drive area, staff and the consultant team conclude enabling property tax abatement programs for workforce and mixed-income housing could leverage the private sector's interest in this area to produce affordable housing. Some of these programs may also be suitable for the "Elbow."

Other Implementation Actions

Housing incentive programs require taxing districts for maximum effectiveness, and in the case of SDC financing, the BPRD. UR also affects taxing districts to varying degrees. The team concludes that forming a new URD is likely the more effective tool for incentivizing redevelopment, housing and job creation, and creating public improvements. Therefore, the team concludes coordination and discussions with other taxing districts is needed to find the mix of incentives and implementation actions balancing the needs of the Council and other taxing districts.

Appendices

Appendix A

SDC and Property Tax Revenue Potential Maps and Tables

Bend UGB Remand

Growth Area Revenue Potential

FREGONESE ASSOCIATES

Executive Summary: **Key Assumptions**

- Important differences between Expansion and Opportunity Areas development assumptions from UGB Process:
  - The redevelopment assumed in the Opportunity Areas is modest because they are based on past redevelopment and infill trends, so the estimates for these areas included here should be considered conservative and could be higher, particularly over the longer term.
  - Conversely, the development in the Expansion Areas are assumed to be "build out" (fully developed) based on common development patterns. While additional intensity is possible in most cases, the potential increase is less than in Opportunity Areas
- Opportunity Areas have existing infrastructure in place and the City is already paying for ongoing maintenance, so one could assume the marginal additional infrastructure costs in these areas would be lower compared to expansion areas. Further analysis is required to quantify this.

Executive Summary: Key Findings
High Level

- Significant property tax and SDC revenue exists in both the expansion and opportunity areas
  - At build-out, the **expansion areas** could generate more than **$7.5 million in annual tax revenue** and **$154 million in SDC revenue** for the City of Bend
  - At assumed modest redevelopment levels, the **opportunity areas** could generate more than **$2 million in annual tax revenue** and nearly **$74 million in SDC revenue** for the City of Bend
  - Note: a full accounting of infrastructure needs and costs is still required to know whether these areas have net positive revenue benefit to the City

NOTE: Property tax revenue estimates are City of Bend ONLY (excluding County, School District, etc.)

Executive Summary: Key Findings
Opportunity Areas

- **Value:**
- Even with modest redevelopment assumptions within the Opportunity Areas, the potential increase in value is significant.
  - Increases in value from 50% to over 200% are anticipated in several areas.
- Not surprisingly, increases in value are highest in areas that have very low or no values today.
  - Juniper Ridge, River Rim and the Central West Side see the highest percentage increase in value

- **New Property Taxes:**
  - The Ward Property, if developed at the assumed levels, has the highest potential new property tax revenue potential.
  - The Ward Property, River Rim and KorPine have the highest property tax revenue per acre.

- **SDC Revenue:**
  - The Central Westside and Ward Properties have the highest total estimated SDC revenue potential, while the Ward and KorPine have the highest SDC revenue per acre.

Executive Summary: Key Findings
Expansion Areas

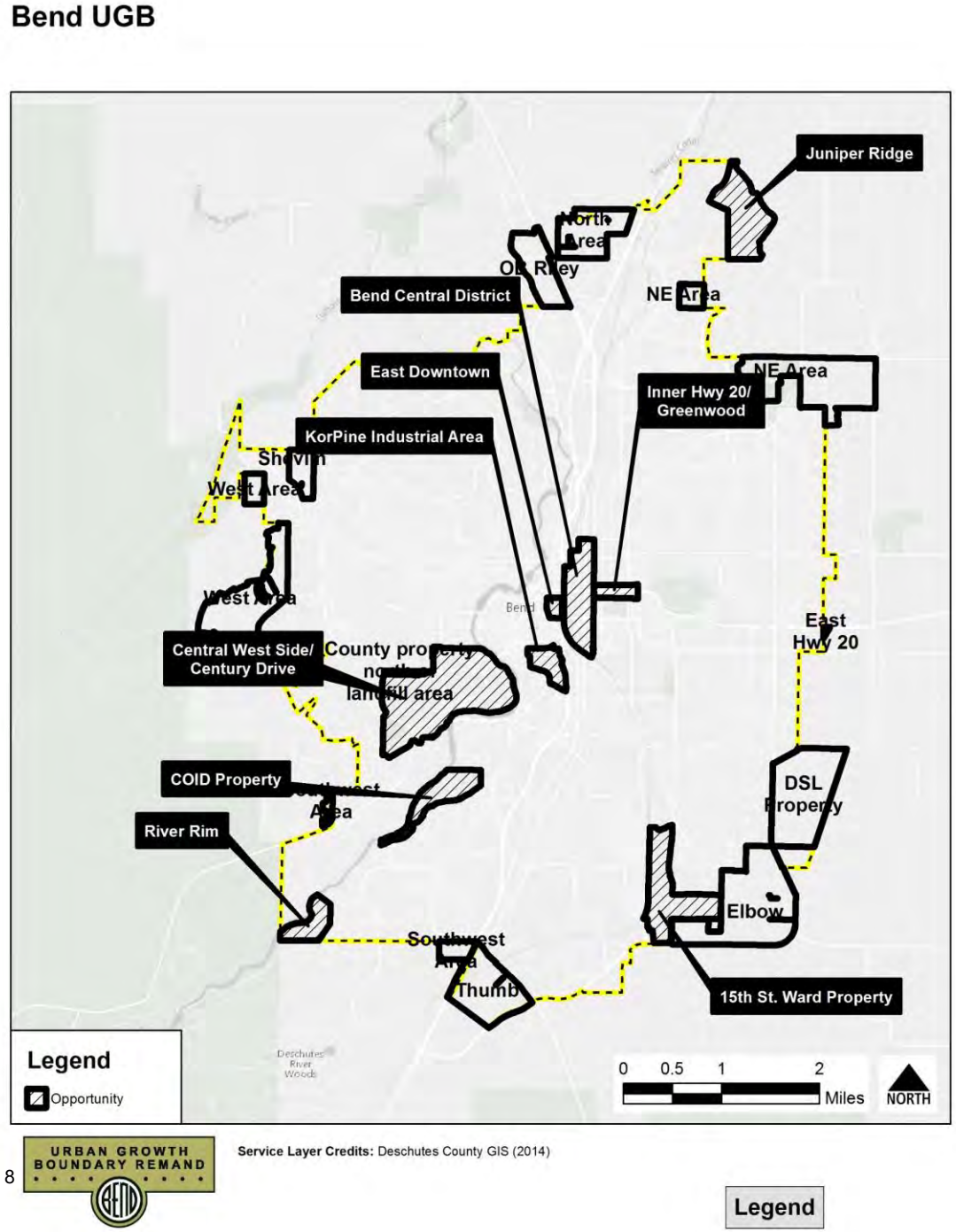
- **New Property Taxes:**
  - Several of the areas have several million dollars of anticipated future annual property taxes at build-out
  - The West and North area, and the East HWY 20 area, have the highest projected property tax revenue per acre

- **SDC Revenue:**
  - The Elbow, the West Area, DSL Property, NE Area, the Thumb and the North Area have the highest total SDC revenue at build-out
  - The North Area, OB Riley, and Shevlin have the highest SDC revenue per acre at build-out

Goal: Estimate Value and Revenue in Expansion and Opportunity Areas

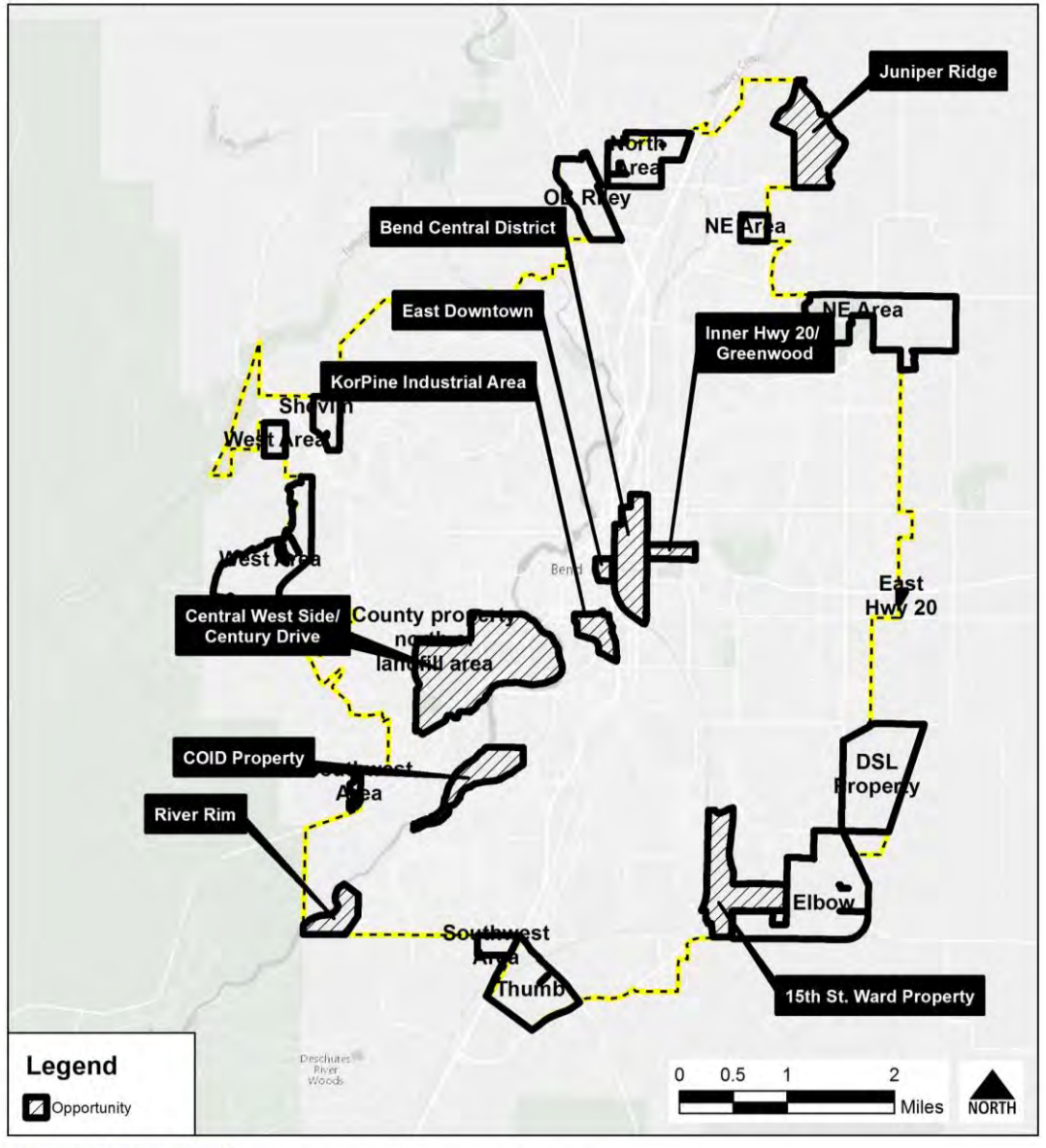
- Summarize the potential private sector value and revenue within key growth areas
- Help the team begin to understand the municipal revenue potential of these areas
- Estimate total SDC revenue based on current rates and calculation formulas and Envision Tomorrow building prototypes

Expansion & Opportunity Areas



OPPORTUNITY AREAS – HOUSING AND JOBS

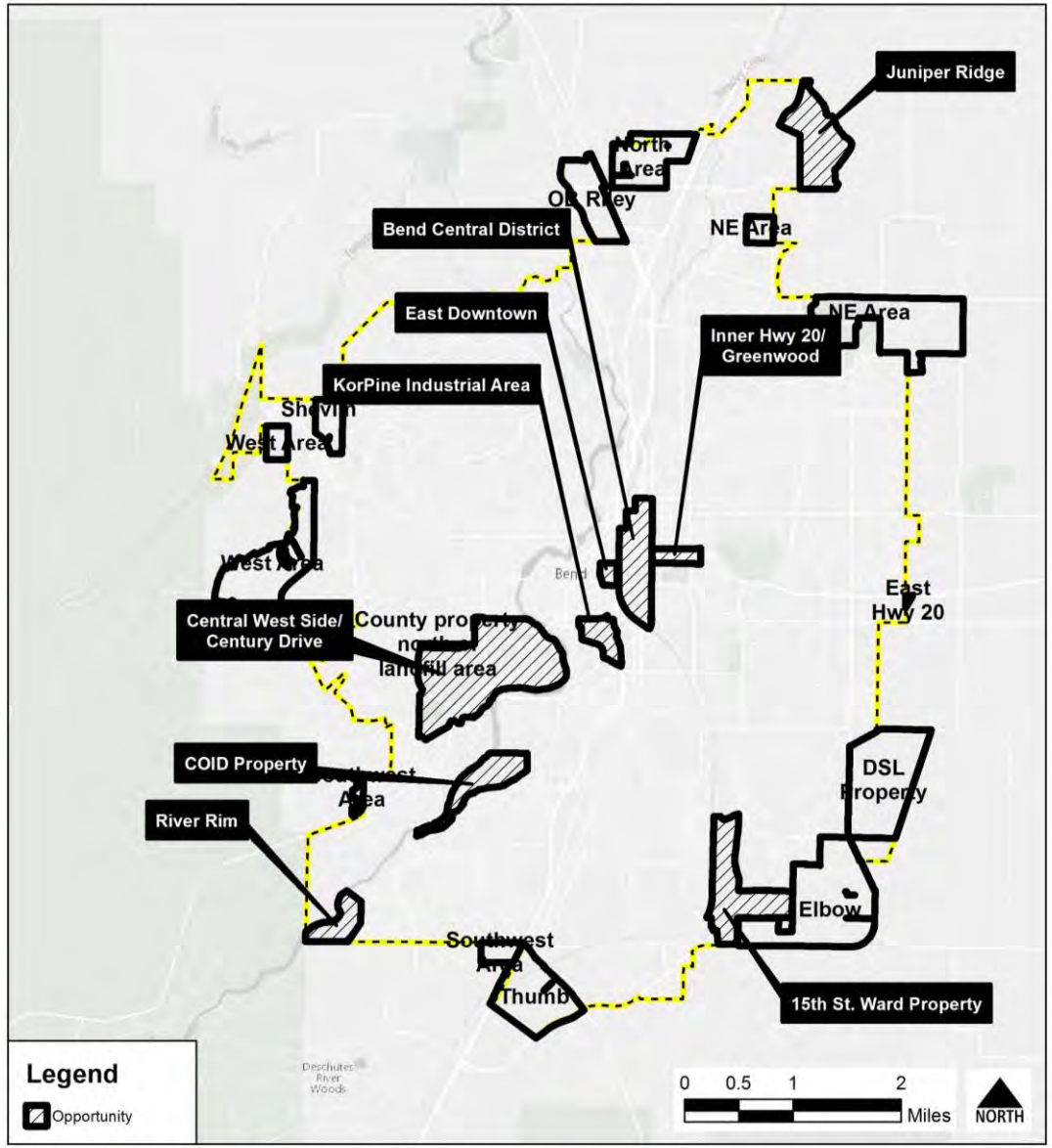
OPPORTUNITY AREAS	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH
Central West Side/Century Drive	909	1,629
15th St. Ward Property	862	386
Bend Central District	238	347
KorPine Industrial Area	148	215
River Rim	120	6
East Downtown	4	6
Inner Hwy 20/Greenwood	1	0
Juniper Ridge	0	1,491
COID Property	0	0



Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on conservative rates of redevelopment.

EXPANSION AREAS – HOUSING AND JOBS

OPPORTUNITY AREAS	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH
NE Area	1,098	214
DSL Property	1,001	880
West Area	983	261
Elbow	821	2,286
North Area	505	835
Thumb	266	1,444
Southwest Area	240	80
Shevlin	171	74
OB Riley	125	992
East Hwy 20	69	1



Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns and adopted land use designations.

OPPORTUNITY AREAS – DEVELOPMENT & VALUE

OPPORTUNITY AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL SQFT NEW DEVELOPMENT	EXISTING RMV	UNCHANGED EXISTING VALUE (PARCELS NOT REDEVELOPED)	NEW VALUE (LAND & IMPROVEMENT)	TOTAL VALUE (EXISTING UNCHANGED + NEW)	% CHANGE	IMPROVEMENT VALUE / SQFT
Central West Side/Century Drive	583	909	1,629	3,734,472	$ 325,139,096	$ 315,510,157	**$ 628,117,444**	$ 943,627,601	190.22%	$ 157.72
15th St. Ward Property	250	862	386	2,232,039	$ 250,148,080	$ 246,762,995	**$ 360,363,514**	$ 607,126,508	142.71%	$ 142.67
Bend Central District	196	238	347	529,129	$ 162,410,605	$ 154,871,824	**$ 90,077,178**	$ 244,949,002	50.82%	$ 157.91
Juniper Ridge *	219	0	1,491	1,538,430	$ 20,580,800	$ 20,580,800	**$ 212,604,758**	$ 233,185,558	1033.02%	$ 126.99
KorPine Industrial Area	65	148	215	428,847	$ 72,381,074	$ 66,722,373	**$ 70,536,963**	$ 137,259,336	89.63%	$ 152.96
River Rim	81	120	6	316,987	$ 19,326,600	$ 19,326,600	**$ 50,150,329**	$ 69,476,929	259.49%	$ 138.89
Inner Hwy 20/Greenwood	38	1	0	1,441	$ 36,563,780	$ 36,552,254	**$ 228,156**	$ 36,780,410	0.59%	$ 141.66
East Downtown	19	4	6	11,701	$ 22,258,568	$ 22,097,834	**$ 1,924,559**	$ 24,022,393	7.92%	$ 152.96
COID Property	14	0	0	0	$ 33,871,580	$ 33,871,580	**$ -**	$ 33,871,580	0.00%	-
Total:	Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on conservative rates of redevelopment.						**$1,414,002,900**	**$2,330,299,316**		

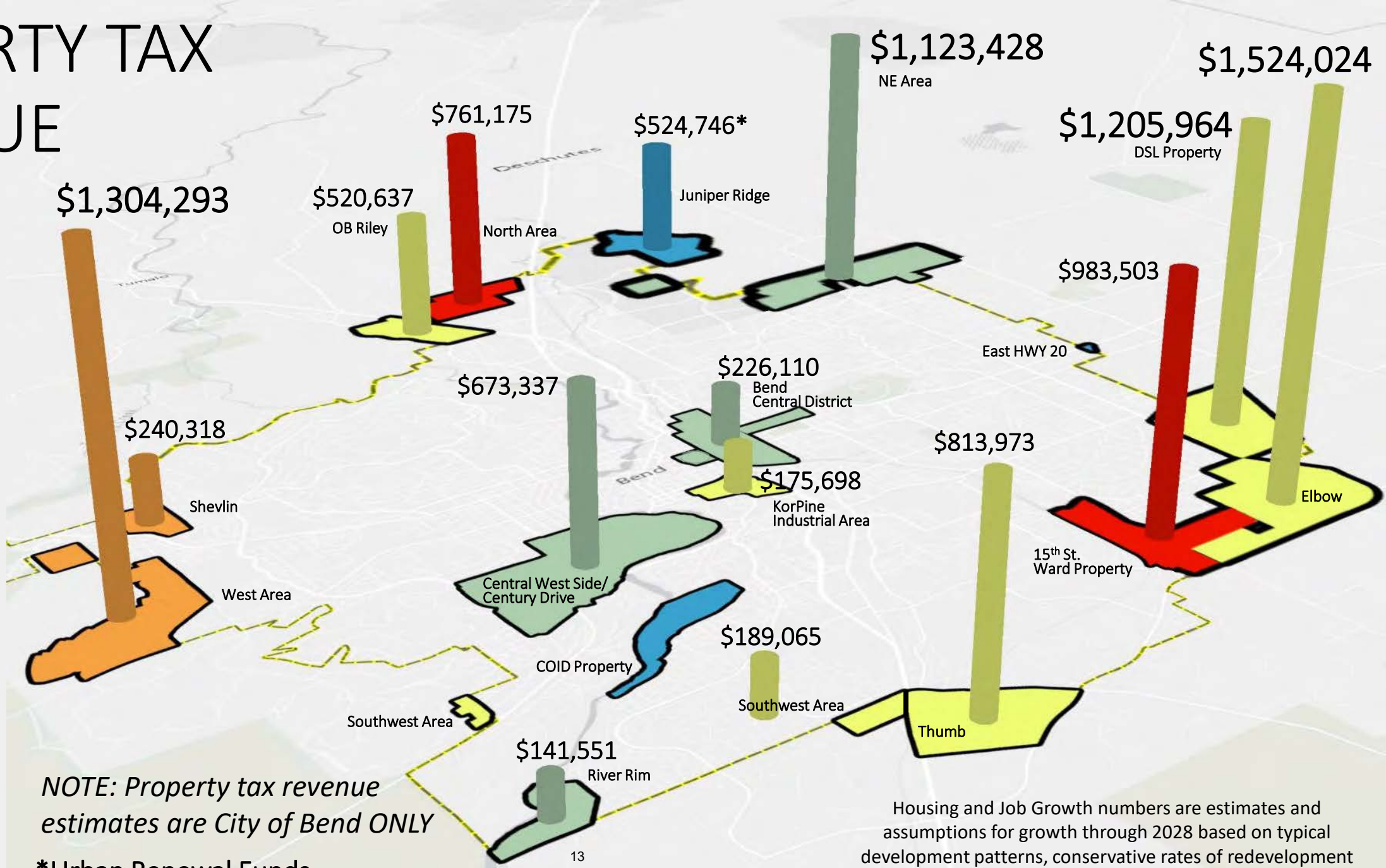
* Does not include an assumed large lot industrial user.

EXPANSION AREAS – DEVELOPMENT & VALUE

EXPANSION AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL SQFT NEW DEVELOPMENT	NEW VALUE (LAND & IMPROVEMENT)	IMPROVEMENT VALUE / SQFT
Elbow	479	821	2,286	3,805,984	**$ 609,584,876**	$ 143.33
West Area	347	983	261	3,063,134	**$ 475,399,419**	$ 133.48
DSL Property *	368	1,001	880	2,854,911	**$ 458,436,701**	$ 143.17
NE Area	471	1,098	214	2,611,112	**$ 413,519,112**	$ 139.90
Thumb	245	266	1,444	2,027,216	**$ 331,460,559**	$ 145.64
North Area	188	505	835	1,822,608	**$ 297,045,108**	$ 144.86
OB Riley	154	125	992	1,307,565	**$ 212,402,036**	$ 144.84
Shevlin	68	171	74	556,312	**$ 88,354,440**	$ 136.42
Southwest Area	57	240	80	435,778	**$ 71,744,986**	$ 148.36
East Hwy 20	2	69	1	78,779	**$ 13,138,729**	$ 153.96
Total New Value:	Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns and adopted land use designations.				**$2,971,085,965**	

* Does not include an assumed large lot industrial user.

PROPERTY TAX REVENUE



Bend Property Tax Revenue Per Acre

High

Low

NOTE: Property tax revenue estimates are City of Bend ONLY

*Urban Renewal Funds

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns, conservative rates of redevelopment and adopted land use designations.

Property Tax Revenue: Key Findings

- **Opportunity Areas: more than $2 million in annual tax revenue**
  - The Ward Property, if developed at the assumed levels, has the highest potential new property tax revenue potential.
  - The Ward Property, River Rim and KorPine have the highest property tax revenue per acre.
- **Expansion Areas: more than $7.5 million in NEW annual tax revenue**
  - Multiple areas have several million dollars of anticipated future annual property taxes at build-out
  - The West and North area, and the East HWY 20 area, have the highest projected property tax revenue per acre

OPPORTUNITY AREAS: Property Tax Revenue

NOTE: Property tax revenue estimates are total tax revenue, inclusive of County, City, Schools etc.

OPPORTUNITY AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL NEW ANNUAL PROPERTY TAX REVENUE	BEND ONLY NEW ANNUAL PROPERTY TAX REVENUE (20.8% OF TOTAL WITH 95% COLLECTION RATE)	NEW BEND URBAN RENEWAL FUNDS (0.9%)	PROPERTY TAX / ACRE
15th St. Ward Property	250	862	386	$ 4,977,240	**$ 983,503**	$ 44,795	$ 3,940
Central West Side/Century Drive	583	909	1,629	$ 3,407,575	**$ 673,337**	$ 30,668	$ 1,156
Juniper Ridge *	219	0	1,491	$ 2,522,819	**$ -**	**$ 524,746**	$ -
Bend Central District	196	238	347	$ 1,144,282	**$ 226,110**	$ 10,299	$ 1,155
KorPine Industrial Area	65	148	215	$ 889,158	**$ 175,698**	$ 8,002	$ 2,694
River Rim	81	120	6	$ 716,349	**$ 141,551**	$ 6,447	$ 1,739
East Downtown	19	4	6	$ 24,260	**$ 4,794**	$ 218	$ 247
Inner Hwy 20/Greenwood	38	1	0	$ 3,110	**$ 614**	$ 28	$ 16
COID Property	14	0	0	$ -	**$ -**	$ -	$ -
Total New Tax Revenue Potential:				$13,684,794	**$2,205,606**	$625,204	

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on conservative rates of redevelopment.

* Does not include an assumed large lot industrial user.

Juniper Ridge Urban Renewal District NEW tax revenue is used as Urban Renewal Funds in its entirety

Expansion Areas: Property Tax Revenue

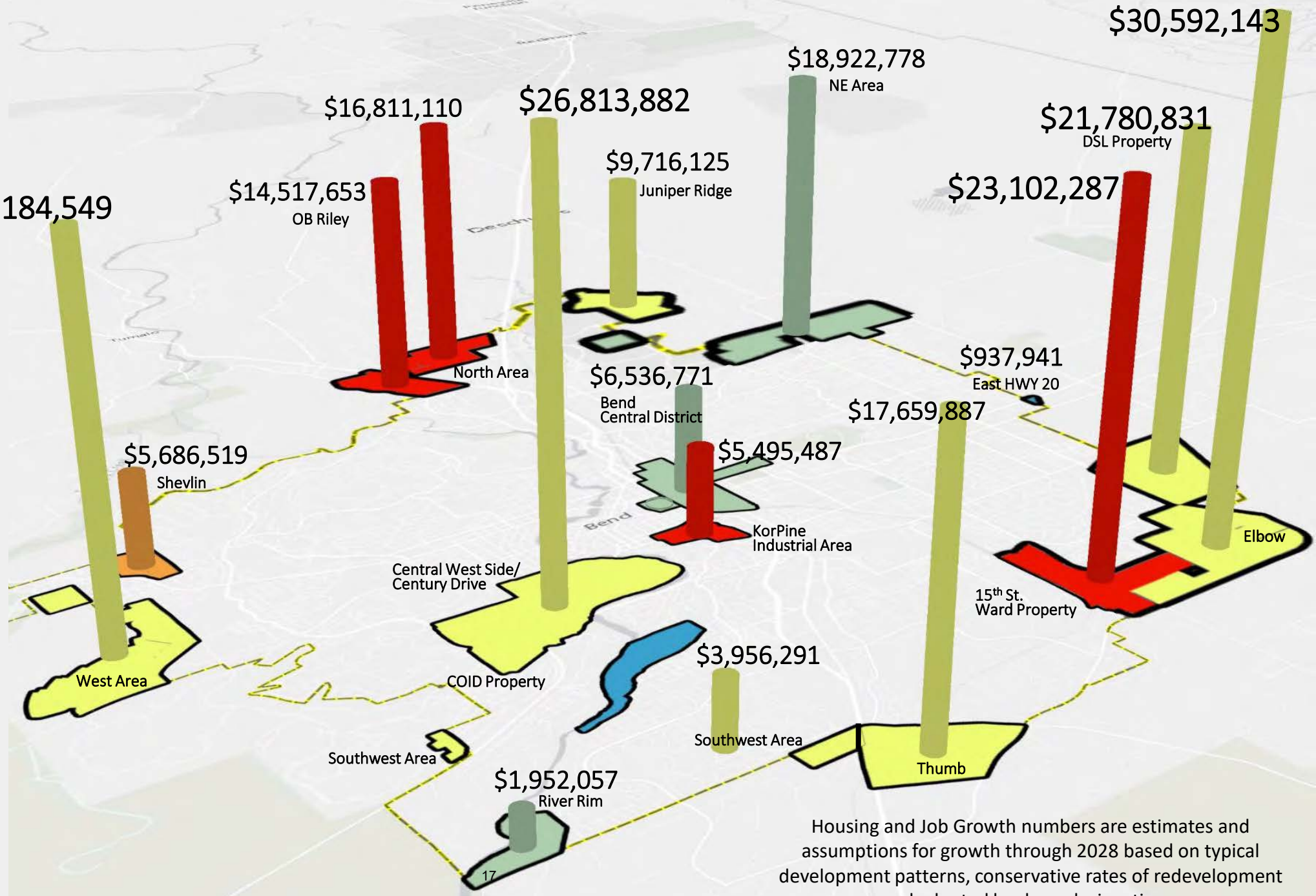
NOTE: Property tax revenue estimates are total tax revenue, inclusive of County, City, Schools etc.

EXPANSION AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL NEW ANNUAL PROPERTY TAX REVENUE	BEND ONLY NEW ANNUAL PROPERTY TAX REVENUE (20.8% OF TOTAL WITH 95% COLLECTION RATE)	NEW BEND URBAN RENEWAL FUNDS (0.9%)	PROPERTY TAX / ACRE
Elbow	479	821	2,286	$ 7,712,674	**$ 1,524,024**	$ 69,414.07	$ 3,182.66
West Area	347	983	261	$ 6,600,671	**$ 1,304,293**	$ 59,406.04	$ 3,755.85
DSL Property *	368	1,001	880	$ 6,103,054	**$ 1,205,964**	$ 54,927.49	$ 3,274.81
NE Area	471	1,098	214	$ 5,685,367	**$ 1,123,428**	$ 51,168.30	$ 2,385.56
Thumb	245	266	1,444	$ 4,119,296	**$ 813,973**	$ 37,073.66	$ 3,323.06
North Area	188	505	835	$ 3,852,100	**$ 761,175**	$ 34,668.90	$ 4,055.41
OB Riley	154	125	992	$ 2,634,804	**$ 520,637**	$ 23,713.24	$ 3,374.90
Shevlin	68	171	74	$ 1,216,187	**$ 240,318**	$ 10,945.68	$ 3,522.33
Southwest Area	57	240	80	$ 956,807	**$ 189,065**	$ 8,611.27	$ 3,334.85
East Hwy 20	2	69	1	$ 169,075	**$ 33,409**	$ 1,521.67	$ 14,277.44
Total New Tax Revenue Potential:				$39,050,035	**$7,716,287**	$351,450	

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns and adopted land use designations.

* Does not include an assumed large lot industrial user.

SDC REVENUE



Bend SDC
Revenue Per Acre

High

Low

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns, conservative rates of redevelopment and adopted land use designations.

SDC Revenue: Key Findings

- **Opportunity Areas: $74 million in SDC revenue**
  - The Central Westside and Ward Properties have the highest total estimated SDC revenue potential, while the Ward and KorPine have the highest SDC revenue per acre.
- **Expansion Areas: $154 million in SDC revenue**
  - The Elbow, the West Area, DSL Property, NE Area, the Thumb and the North Area have the highest total SDC revenue at build-out
  - The North Area, OB Riley, and Shevlin have the highest SDC revenue per acre at build-out

OPPORTUNITY AREAS – SDC REVENUE

* Does not include an assumed large lot industrial user.

OPPORTUNITY AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL SDCs from NEW DEVELOPMENT	TOTAL SDCs / ACRE	SEWER SDCs	WATER SDCs	TRANSPORTATION SDCs	PARKS SDCs
Central West Side/Century Drive	583	909	1,629	**$ 26,813,882**	$ 46,022	$ 7,229,946	$ 8,024,879	$ 6,323,854	$ 5,235,203
15th St. Ward Property	250	862	386	**$ 23,102,287**	$ 92,546	$ 4,340,357	$ 7,128,133	$ 5,811,105	$ 5,822,691
Juniper Ridge *	219	0	1,491	**$ 9,716,125**	$ 44,291	$ 1,014,118	$ 3,532,724	$ 5,169,284	$ -
Bend Central District	196	238	347	**$ 6,536,771**	$ 33,388	$ 1,368,729	$ 1,537,171	$ 1,931,070	$ 1,699,802
KorPine Industrial Area	65	148	215	**$ 5,495,487**	$ 84,260	$ 1,089,772	$ 1,460,868	$ 1,531,830	$ 1,413,017
River Rim	81	120	6	**$ 1,952,057**	$ 23,981	$ 544,125	$ -	$ 597,870	$ 810,062
East Downtown	19	4	6	**$ 149,941**	$ 7,740	$ 29,734	$ 39,859	$ 41,795	$ 38,553
Inner Hwy 20/Greenwood	38	1	0	**$ 15,504**	$ 410	$ 3,308	$ 3,772	$ 2,970	$ 5,455
COID Property	14	0	0	$ -	$ -	$ -	$ -	$ -	$ -
Total SDC Revenue:				**$73,782,055**					

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on conservative rates of redevelopment.

EXPANSION AREAS – SDC REVENUE

* Does not include an assumed large lot industrial user.

EXPANSION AREAS	ACRES	INCREMENTAL HU GROWTH	INCREMENTAL JOB GROWTH	TOTAL SDCs from NEW DEVELOPMENT	TOTAL SDCs / ACRE	SEWER SDCs	WATER SDCs	TRANSPORTATION SDCs	PARKS SDCs
Elbow	479	821	2,286	**$ 30,592,143**	**$ 63,886.69**	$ 6,679,670	$ -	$ 17,549,048	$ 6,363,425
West Area	347	983	261	**$ 23,184,549**	**$ 66,762.31**	$ 4,593,229	$ 5,849,891	$ 5,970,281	$ 6,771,148
DSL Property *	368	1,001	880	**$ 21,780,831**	**$ 59,146.86**	$ 5,478,208	$ -	$ 9,300,931	$ 7,001,693
NE Area	471	1,098	214	**$ 18,922,778**	**$ 40,182.57**	$ 5,113,394	$ -	$ 6,206,997	$ 7,602,387
Thumb	245	266	1,444	**$ 17,659,887**	**$ 72,098.83**	$ 3,386,388	$ -	$ 11,921,192	$ 2,352,308
North Area	188	505	835	**$ 16,811,110**	**$ 89,568.49**	$ 3,452,410	$ 1,513,373	$ 8,066,877	$ 3,778,451
OB Riley	154	125	992	**$ 14,517,653**	**$ 94,111.58**	$ 2,078,197	$ 4,198,843	$ 6,915,419	$ 1,325,193
Shevlin	68	171	74	**$ 5,686,519**	**$ 83,355.59**	$ 900,961	$ 2,259,626	$ 1,359,454	$ 1,166,477
Southwest Area	57	240	80	**$ 3,956,291**	**$ 69,788.16**	$ 1,099,725	$ -	$ 1,245,695	$ 1,610,870
East Hwy 20	2	69	1	**$ 937,941**	**$ 400,829.52**	$ 266,890	$ -	$ 214,827	$ 456,224
Total SDC Revenue:				**$154,049,703**					

Housing and Job Growth numbers are estimates and assumptions for growth through 2028 based on typical development patterns and adopted land use designations.

Follow up: Estimate Infrastructure Costs by area and compare to revenues

- Major infrastructure costs for each expansion and opportunity area need to be organized, and estimated.

- A high-level comparison of the infrastructure costs and municipal development revenue estimates for each area can then be completed.

- This comparison could begin to provide clarity on which areas have the greatest ability to cover substantial infrastructure costs through private development. The comparison matrix will also begin to detail how much planned growth can be “unlocked” through investments in infrastructure, and which areas appear to yield the most for the least public cost.

APPENDIX: Municipal Revenue Assumptions

- All values reflect NEW DEVELOPMENT within the final Preferred Scenario (2.1G)

- All values derived from Envision Tomorrow scenario model

- All SDC calculations derived from Bend CDD Master SDC Calculator 2016-2017 July 1st 2016 Update

APPENDIX: Municipal Revenue Assumptions

- TOTAL new property tax revenue is inclusive of city, county, schools etc., and is calculated based on 2015-16 Deschutes County tax and assessment ratios
  - Property tax rate – 1.5%
    - Assessment ratios -
      - Residential (single family): 68.4%
      - Multifamily: 84.4%
      - Commercial & Industrial: 80.8%

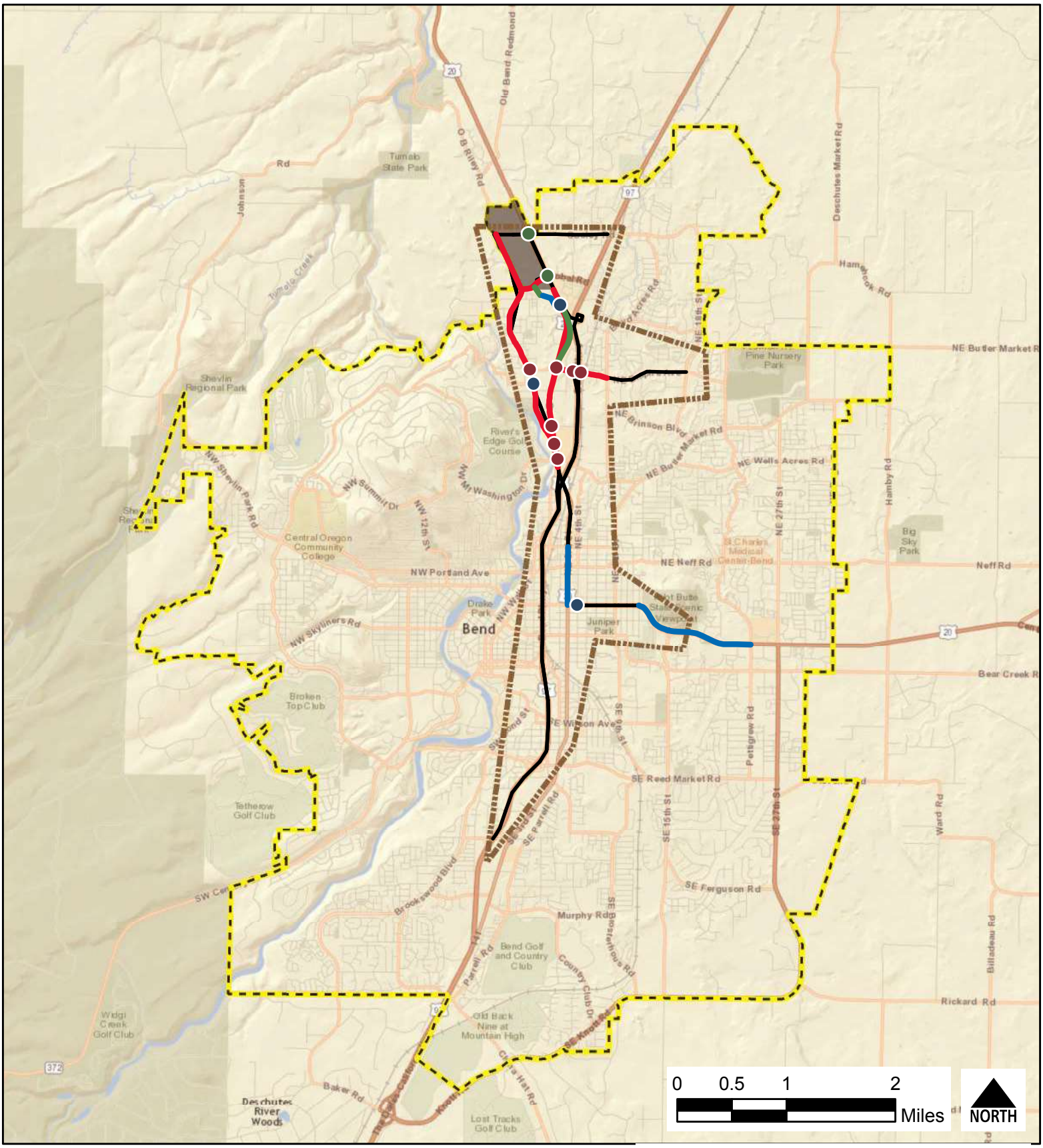
- BEND ONLY new property tax revenue is calculated by multiplying the TOTAL by 20.8% (2015-16 City of Bend percentage of taxes received), and then multiplied by 95% based on the approximate tax collection rate

- URBAN RENEWAL funds were calculated by multiplying the TOTAL by 0.9% (2015-16 Urban Renewal percentage of taxes received)
  - 100% of the Juniper Ridge BEND ONLY new property tax revenue was included as URBAN RENEWAL funds based on its status as an Urban Renewal District

Appendix B

Transportation Investment Assessment Maps and Tables

O.B. Riley



URBAN GROWTH BOUNDARY REMAND

Intersection Projects
- Near-Term
- Mid-Term
- Far-Term

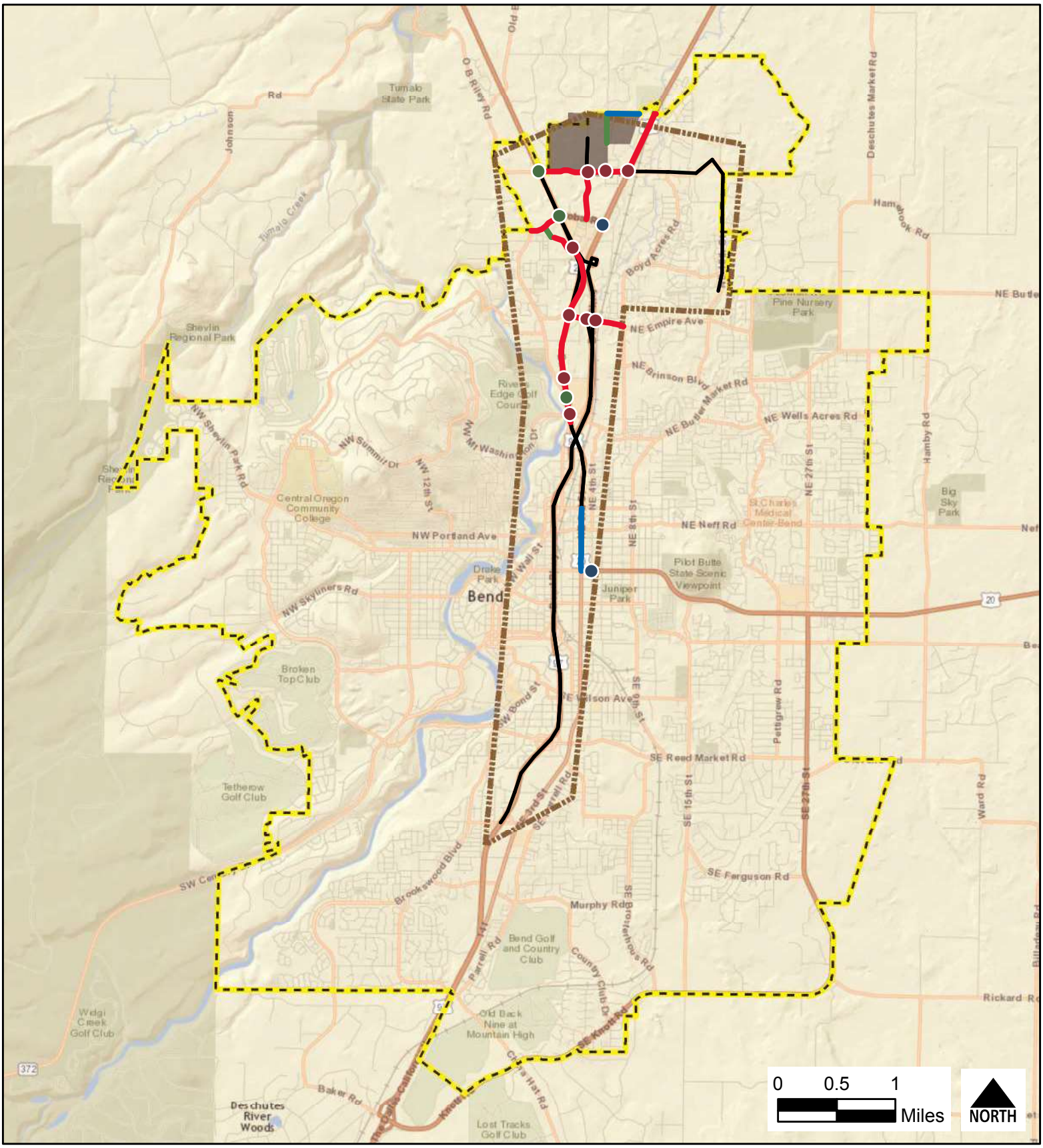
Segment Projects
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- OB Riley
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
13	US 20	Empire	Division	Includes: Intersection upgrades at signalized intersections	Capacity & Safety	OB Riley	1	TSP	Mid-Term
29	Empire	US 20	US 97	Includes: Empire @ 3rd signal modification Empire @ Parkway SB On-ramp: new signal, realignment, new local road, new lanes	Capacity	OB Riley	1	TSP	Near-Term
30	Empire	US 97	Boyd Acres	Includes: - Empire @ Parkway NB Off--ramp: widen, add thru lanes	Capacity	OB Riley	1	TSP	Near-Term
99	OB Riley	Empire	-	Construct a roundabout	Capacity	OB Riley	1	TSP	Long-Term
208	OB Riley	UGB	Empire	Modernization	Capacity & Safety & Ped/Bike Improvement	OB Riley	1	TSP	Mid-Term
209	OB Riley	Empire	US 20	Modernization	Capacity & Safety & Ped/Bike Improvement	OB Riley	1	TSP	Mid-Term
23	US 20	4th	-	Construct a traffic signal	Capacity	OB Riley	2	TSP	Mid-Term/Long-Term
165	OB Riley	Archie Briggs	-	Construct a roundabout	Capacity	OB Riley	2	TSP	Mid-Term/Long-Term
241	Britta	Hardy	Robal	Extend Britta Street to connect with Robal Road at US 20. Modify and upgrade US 20/Robal Road Signal and improve existing Britta Street.	Capacity & Safety & MV Connectivity	OB Riley	3	TSP/BNATS	Long-Term
*	US 20	Cooley	-	Construct a traffic signal or roundabout	Capacity	OB Riley	3	BNATS	n/a
*	US 20	OB Riley	-	Signal Upgrades and Intersection Capacity Improvements	Capacity	OB Riley	3	City Staff	n/a
Safety									
9	US 20	12th	Purcell	Corridor Improvements	Safety	OB Riley	2	TSP	Mid-Term
15	3rd	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	Safety	OB Riley	2	TSP/MMA	Mid-Term
*	US 20	Jamison	-	Right-in/right-out only	Safety	OB Riley	2	BNATS	Mid-Term
12	US 20	US 97	Empire	Frontage Improvements	Safety	OB Riley	3	TSP	Mid-Term
Connectivity									
204	Robal	US 20	OB Riley	Construct new roadway	MV Connectivity & Ped/Bike Improvement	North Area	1	TSP	n/a
251	Jamison	Britta	N Fire Station	New roadway	Connectivity	OB Riley	1	TSP	Long-Term
Pedestrian/Bicycle									
8	US 20	Cooley	US 97	New frontage	Ped/Bike Connectivity	OB Riley	1		

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$30M - $40M	$14M - $21M	$13M - $21M
Tier 2	$5M - $8M	-	$5M - $8M
Tier 3	$7M - $11M	-	$7M - $11M
Total	**$40M - $60M**	**$15M - $24M**	**$25M - $38M**

North Area



URBAN GROWTH BOUNDARY REMAND

Intersection Projects
- Near-Term
- Mid-Term
- Far-Term

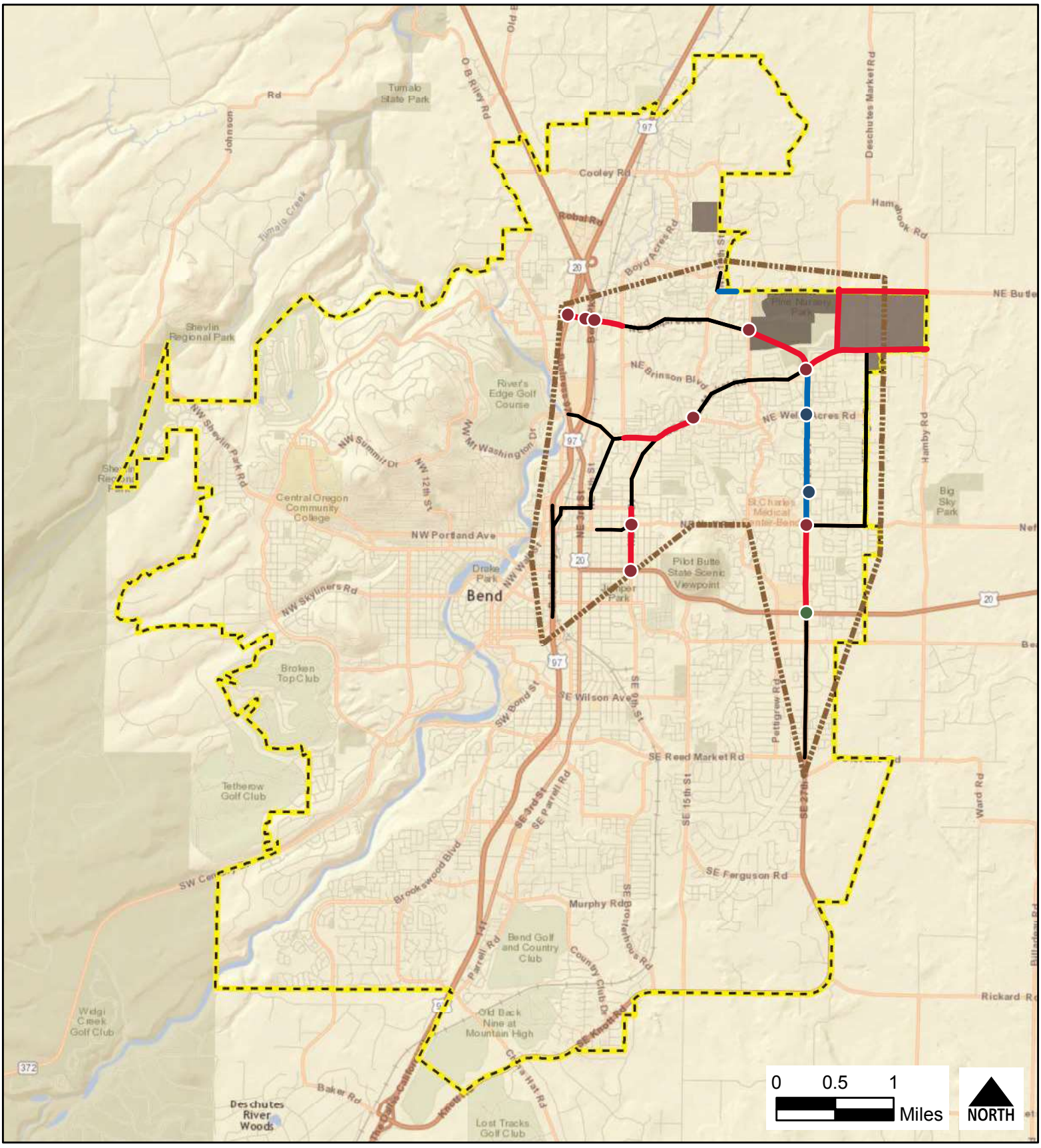
Segment Projects
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- North Area
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
4	US 97	UGB	Cooley	Includes: US 97 @ Cooley Road overcrossing	Capacity	North Area	1	TSP	Near-Term
13	US 20	Empire	Division	Includes: Intersection upgrades at signalized intersections	Capacity & Safety	North Area	1	TSP	Mid-Term
29	Empire	US 20	US 97	Includes: Empire @ 3rd signal modification Empire @ Parkway SB On-ramp: new signal, realignment, new local road, new lanes	Capacity	North Area	1	TSP	Near-Term
30	Empire	US 97	Boyd Acres	Includes: - Empire @ Parkway NB Off--ramp: widen, add thru lanes	Capacity	North Area	1	TSP	Near-Term
94	Cooley	US 20	US 97	Includes: Cooley @ Hunnel roundabout; East & West intersections	Capacity & Ped/Bike Improvement	North Area	1	TSP	Mid-Term
23	US 20	4th	-	Construct a traffic signal	Capacity	North Area	2	TSP	Mid-Term/Long-Term
*	US 97	Robal	-	Reconstruction of the intersection to allow for the removal of split phasing. Addition of second eastbound left turn lane.	Capacity	North Area	2	BNATS	n/a
241	Britta	Hardy	Robal	Extend Britta Street to connect with Robal Road at US 20. Modify and upgrade US 20/Robal Road Signal and improve existing Britta Street.	Capacity & Safety	North Area	3	TSP/BNATS	Long-Term
*	US 20	Cooley	-	Construct a traffic signal or roundabout	Capacity	North Area	3	BNATS	n/a
*	US 20	OB Riley	-	Signal Upgrades and Intersection Capacity Improvements	Capacity	North Area	3	City Staff	n/a
Safety									
12	US 20	US 97	Empire	Frontage Improvements	Safety & Ped/Bike Improvement	North Area	1	TSP	Mid-Term
*	US 20	Jamison	-	Right-in/right-out only	Safety	North Area	1	BNATS	Mid-Term
15	3rd	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	Safety	North Area	2	TSP/MMA	Mid-Term
Connectivity									
204	Robal	US 20	OB Riley	Construct new roadway	MV Connectivity & Ped/Bike Improvement	North Area	1	TSP	n/a
251	Jamison	Britta	N Fire Station	New Roadway	MV Connectivity	North Area	1	TSP	Long-Term
206a	New Road	Hunnel	Scenic	New Roadway	MV Connectivity	North Area	2	TSP	n/a
205	Hunnell Road Extension	Hunnel	UGB	New Roadway	MV Connectivity	North Area	3	TSP	n/a
Pedestrian/Bicycle									
110	Hunnell Road Extension	Cooley	Robal	Sidewalk Infill	Ped/Bike Improvements	North Area	1	TSP	Near-Term

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$47M - $70M	$8M - $12M	$40M - $60M
Tier 2	$3M - $7M	$1M - $3M	$1M - $3M
Tier 3	$7M - $11M	$1M - $3M	$4M - $9M
Total	**$60M - $85M**	**$11M - $19M**	**$56M - $68M**

NE Area



URBAN GROWTH BOUNDARY REMAND

Intersection Projects
- Near-Term
- Mid-Term
- Long-Term

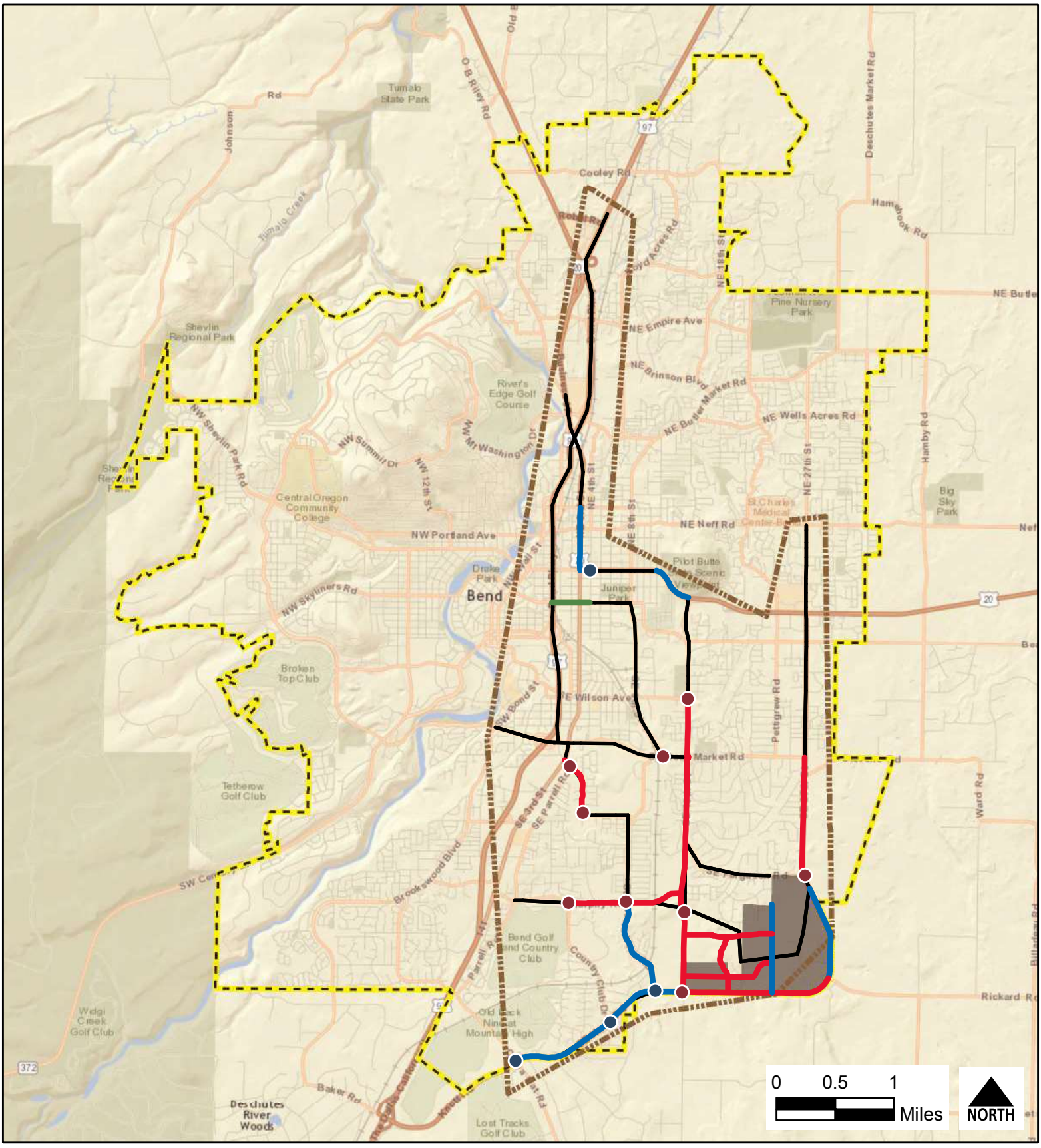
Segment Projects
- Near-Term
- Mid-Term

- >50 Trips Added
- NE Area
- Influence Area
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
26	27th	Neff Road	US 20	Includes: 27th @ Neff signal modification	Capacity	NE Area	1	TSP	Near-Term/Long-Term
29	Empire	US 20	US 97	Includes: Empire @ 3rd signal modification Empire @ Parkway SB On-ramp: new signal, realignment, new local road, new lanes	Capacity	NE Area	1	TSP	Near-Term
30	Empire	US 97	Boyd Acres	Includes: - Empire @ Parkway NB Off--ramp: widen, add thru lanes	Capacity	NE Area	1	TSP	Near-Term
47	8th	Revere	Greenwood	Includes signal upgrades	Capacity	NE Area	1	TSP	Near-Term
83	Butler Market	8th	Wells Acre	Entire corridor improvements and Butler Market/Wells Acres roundabout	Capacity	NE Area	1	TSP	Near-Term
151	Empire	Yeoman/Purcell	Butler Market	Includes: Empire @ Purcell roundabout; Empire @ Butler Market roundabout	Capacity	NE Area	1	TSP	Near-Term
25	27th	Butler Market	Neff Rd	Includes: 27th @ Wells Acres roundabout; 27th @ Beall roundabout; 27th @ Conners roundabout	Capacity	NE Area	2	TSP	Mid-Term
255	Yeoman	18th	Desert Sage	New Roadway	Capacity	NE Area	2	TSP	Mid-Term
Safety									
*	US 20	27th	-	Signal and Safety Upgrades	Safety	NE Area	3	City Staff	n/a
Connectivity									
86	Butler Market	27th	Deschutes Market	Frontage improvement	MV Connectivity & Ped/Bike Improvement	NE Area	1	TSP	Near-Term
87	Butler Market	Deschutes Market	UGB	Frontage improvement	MV Connectivity & Ped/Bike Improvement	NE Area	1	TSP	Long-Term
207a	Yeoman Ext			Frontage improvement	MV Connectivity & Ped/Bike Improvement	NE Area	1	TSP	n/a
Pedestrian/Bicycle									
188	Deschutes Market	Butler Market	N. UGB	Frontage improvement	Ped/Bike Improvement	NE Area	1	TSP	Long-Term

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$40M - $60M	$11M - $17M	$27M - $43M
Tier 2	$10M - $15M	-	$10M - $15M
Tier 3	$1M - $2M	-	$1M - $2M
Total	**$50M - $75M**	**$11M - $17M**	**$40M - $60M**

Elbow - West



URBAN GROWTH BOUNDARY REMAND

Segment Projects
- Near-Term
- Mid-Term
- Long-Term

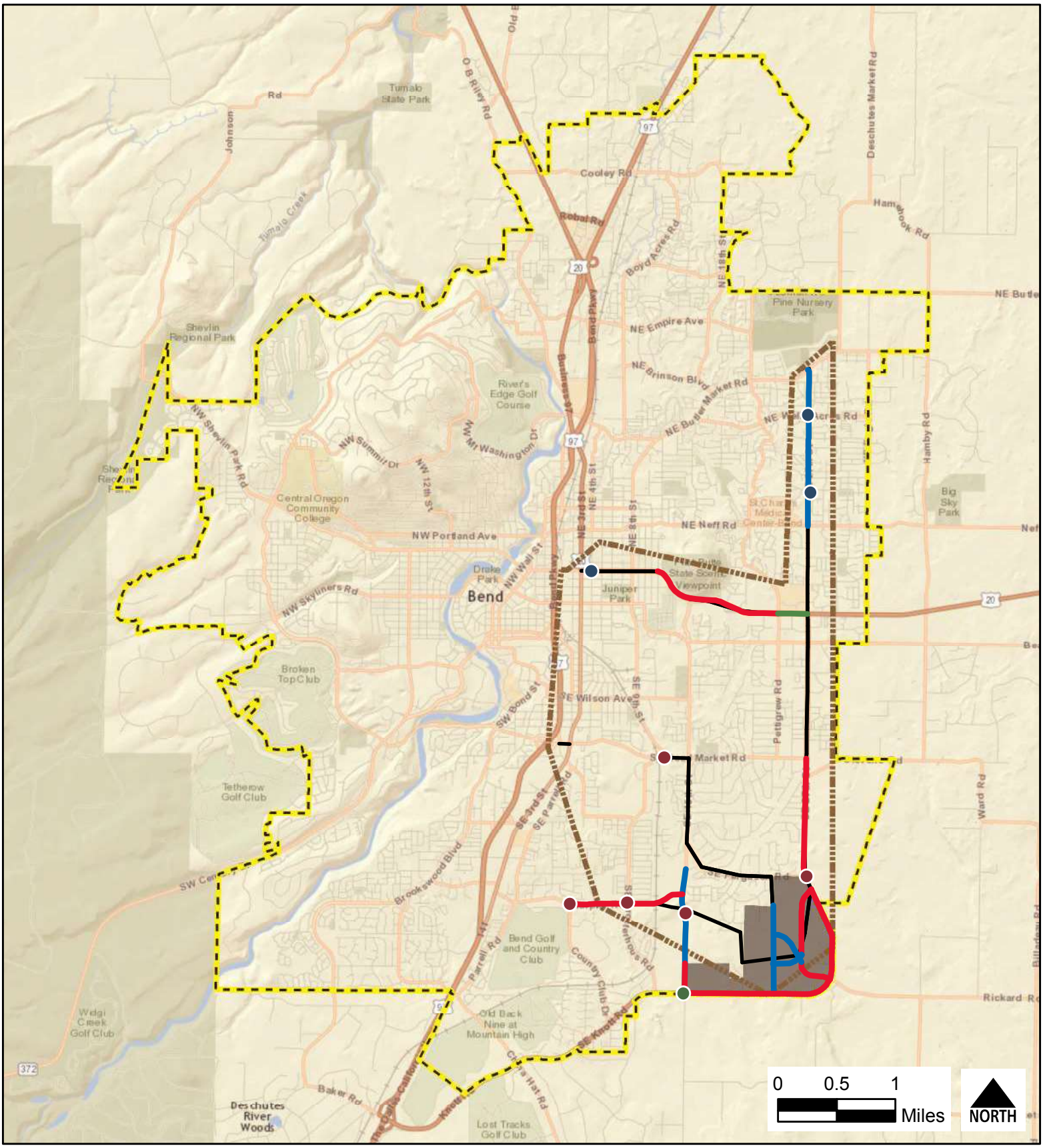
Intersection Projects
- Near-Term
- Mid-Term

- >50 Trips
- Influence Area
- Elbow
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
56	15th	Wilson	Reed Market	Includes: 15th @ Wilson roundabout	Capacity	Elbow West	1	TSP	Near-Term/Long-Term
179	Brosterhous	3rd St	Chase Road	Includes: Brosterhous @ Chase roundabout; Brosterhous @ Parrell roundabout	Capacity	Elbow West	1	TSP	Near-Term/Long-Term
204	Murphy	Country Club	Brosterhous	Includes: Murphy @ Country Club roundabout;	Capacity	Elbow West	1	TSP	Near-Term/Mid-Term
252	Murphy Road	Brosterhous	15th	Includes: 15th @ Murphy roundabout; Murphy @ Brosterhous roundabout Bridge Overcrossing	Capacity & Safety	Elbow West	1	TSP	Mid-Term
*	Reed Market	9th	-	Construct a traffic signal	Capacity	Elbow West	1	Project Team	n/a
23	US 20	4th	-	Construct a traffic signal	Capacity	Elbow West	2	TSP	Mid-Term/Long-Term
Safety									
61	27th	Reed Market	Ferguson	Includes: Ferguson @ 27th roundabout	Safety	Elbow West	1	TSP	Long-Term
R20	15th	Knott	1300' north of Knott	Modernization along S 15th	Safety & Ped/Bike Improvement	Elbow East	1	TSP	n/a
*	Knott	15th	-	Construct a roundabout	Safety	Elbow West	1	City Staff	n/a
9	US 20	12th	(only to 15th)	Corridor Improvements	Safety	Elbow West	2	TSP	Mid-Term
15	3rd	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	Safety	Elbow West	2	TSP/MMA	Mid-Term
111	Knott	China Hat	15th	Includes: Knott @ China Hat roundabout; Knott @ Country Club roundabout	Safety	Elbow West	2	TSP	Near-Term/Long-Term
182	Brosterhous	Knott	Murphy	Includes: Brosterhous @ Knott roundabout	Safety	Elbow West	2	TSP	Mid-Term
101	Franklin	US 97	3rd	Streetscape Upgrade	Safety	Elbow West	3	TSP	Long-Term
102	Franklin	3rd	4th	Streetscape Upgrade	Safety	Elbow West	3	TSP/MMA	Aspirational
Connectivity									
214	New Road			New Roadway	MV Connectivity	Elbow West	1	TSP	n/a
214b	New Road			New Roadway	MV Connectivity	Elbow West	1	TSP	n/a
224b	New Road			New Roadway	MV Connectivity	Elbow West	1	TSP	n/a
234	Raintree Ct Ext.			New Roadway	MV Connectivity	Elbow West	1	TSP	n/a
235	Raintree Ct Ext. (N)			New Roadway	MV Connectivity	Elbow West	1	TSP	n/a
226	Magnolia Ln Ext.			New Roadway	MV Connectivity	Elbow West	2	TSP	n/a
Pedestrian/Bicycle									
57	15th	Reed Market	Knott	Frongtage Improvements	Ped/Bike Improvement	Elbow West	1	TSP	Near-Term/Long-Term
R19	Knott Rd	Rickard Rd	15th St	Frongtage Improvements	Ped/Bike Improvement	Elbow West	1	TSP	n/a
R16	SE 27th St	Public works driveway	Middle school north driveway	Modernization	Ped/Bike Improvement	Elbow West	2	TSP	n/a
R17	SE 27th St	Middle school north driveway	Middle school south driveway	Modernization	Ped/Bike Improvement	Elbow West	2	TSP	n/a
R18	SE 27th St	Middle school south driveway	Rickard Rd	Modernization	Ped/Bike Improvement	Elbow West	2	TSP	n/a

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$55M - $85M	$24M - $37M	$30M - $50M
Tier 2	$17M - $27M	$5M - $9M	$10M - $20M
Tier 3	$1M - $2M	-	$1M - $2M
Total	**$75M - $115M**	**$30M - $45M**	**$46M - $68M**

Elbow - East



URBAN GROWTH BOUNDARY REMAND

Segment Projects
- Near-Term
- Mid-Term
- Long-Term

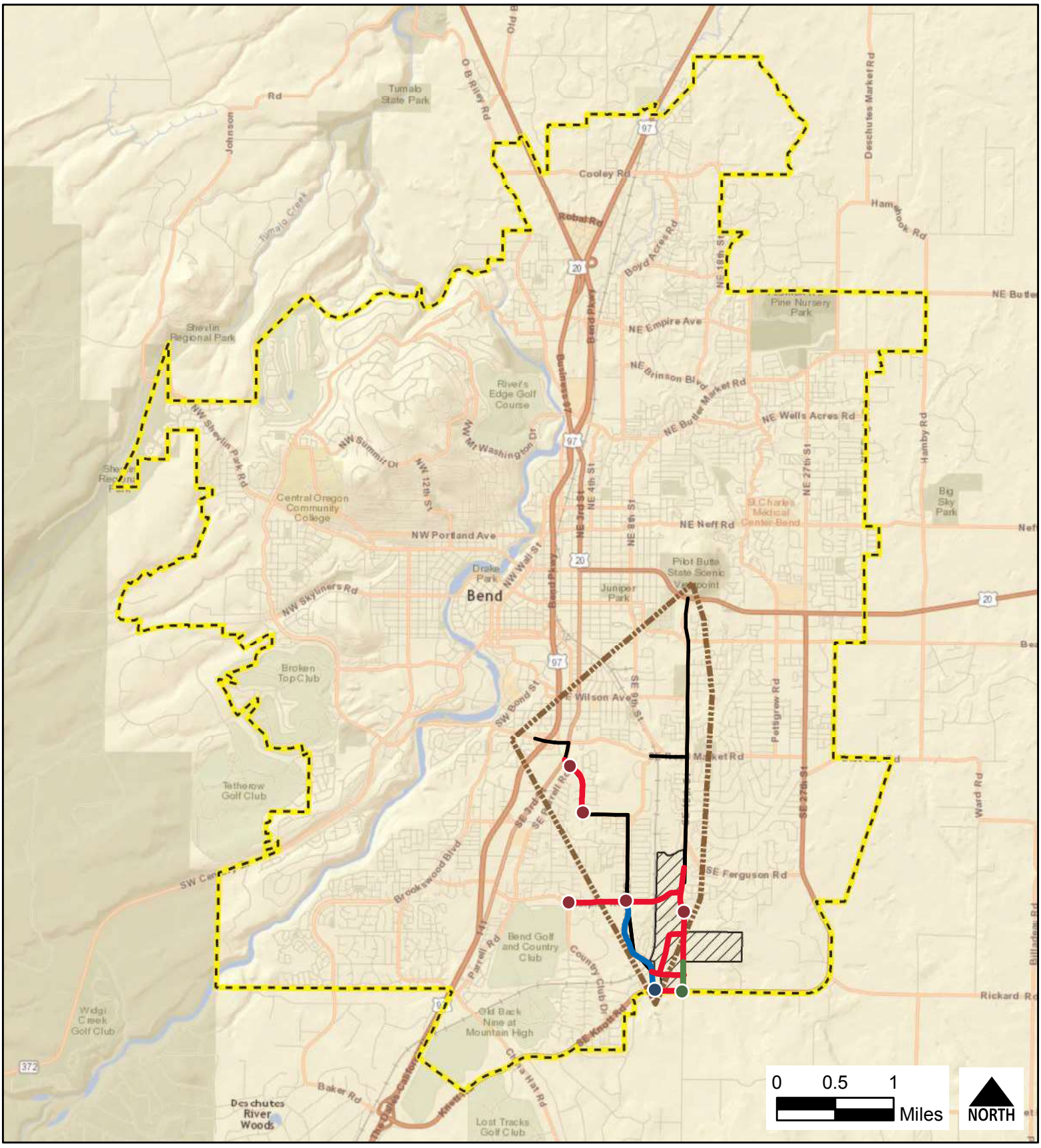
Intersection Projects
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- Elbow
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
204	Murphy	Country Club	Brosterhous	Includes: Murphy @ Country Club roundabout;	Capacity	Elbow East	1	TSP	Near-Term/Mid-Term
252	Murphy Road	Brosterhous	15th	Includes: 15th @ Murphy roundabout; Murphy @ Brosterhous roundabout Bridge Overcrossing	Capacity & Safety	Elbow East	1	TSP	Mid-Term
*	Reed Market	9th	-	Construct a traffic signal	Capacity	Elbow East	1	Project Team	n/a
23	US 20	4th	-	Construct a traffic signal	Capacity	Elbow East	2	TSP	Mid-Term/Long-Term
25	27th	Butler Market	Neff Rd	Includes: 27th @ Wells Acres roundabout; 27th @ Beall roundabout; 27th @ Conners roundabout	Capacity	Elbow East	2	TSP	Mid-Term
Safety									
9	US 20	12th	Purcell	Corridor Improvements	Safety	Elbow East	1	TSP	Mid-Term
61	27th	Reed Market	Ferguson	Includes: Ferguson @ 27th roundabout	Safety	Elbow East	1	TSP	Long-Term
R20	15th	Knott	1300' north of Knott	Modernization along S 15th	Safety & Ped/Bike Improvement	Elbow East	2	TSP	n/a
10	US 20	Purcell	27th	Corridor Improvements	Safety	Elbow East	3	TSP	Aspirational
*	Knott	15th	-	Construct a roundabout	Safety	Elbow East	3	City Staff	n/a
Connectivity									
213	New Road			New Roadway	MV Connectivity	Elbow East	1	TSP	n/a
216	New Road			New Roadway	MV Connectivity	Elbow East	1	TSP	n/a
225	New Road			New Roadway	MV Connectivity	Elbow East	1	TSP	n/a
214b	New Road			New Roadway	MV Connectivity	Elbow East	2	TSP	n/a
224c	New Road			New Roadway	MV Connectivity	Elbow East	2	TSP	n/a
226	Magnolia Ln Ext			New Roadway	MV Connectivity	Elbow East	2	TSP	n/a
Pedestrian/Bicycle									
R16	SE 27th St	Public works driveway	Middle school north driveway	Modernization	Ped/Bike Improvement	Elbow East	1	TSP	n/a
R17	SE 27th St	Middle school north driveway	Middle school south driveway	Modernization	Ped/Bike Improvement	Elbow East	1	TSP	n/a
R18	SE 27th St	Middle school south driveway	Rickard Rd	Modernization	Ped/Bike Improvement	Elbow East	1	TSP	n/a
R19	Knott Rd	Rickard Rd	15th St	Modernization	Ped/Bike Improvement	Elbow East	1	TSP	n/a
57	15th	Reed Market	Knott	Frontage Improvements	Ped/Bike Improvement	Elbow East	2	TSP	Near-Term/Long-Term

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$35M - $55M	$15M - $23M	$20M - $32M
Tier 2	$22M - $32M	$11M - $17M	$8M - $13M
Tier 3	$2M - $5M	-	$2M - $4M
Total	**$42M - $62M**	**$27M - $40M**	**$33M - $52M**

15th St./Ward Property



URBAN GROWTH BOUNDARY REMAND

Intersection Projects
- Near-Term
- Mid-Term
- Long-Term

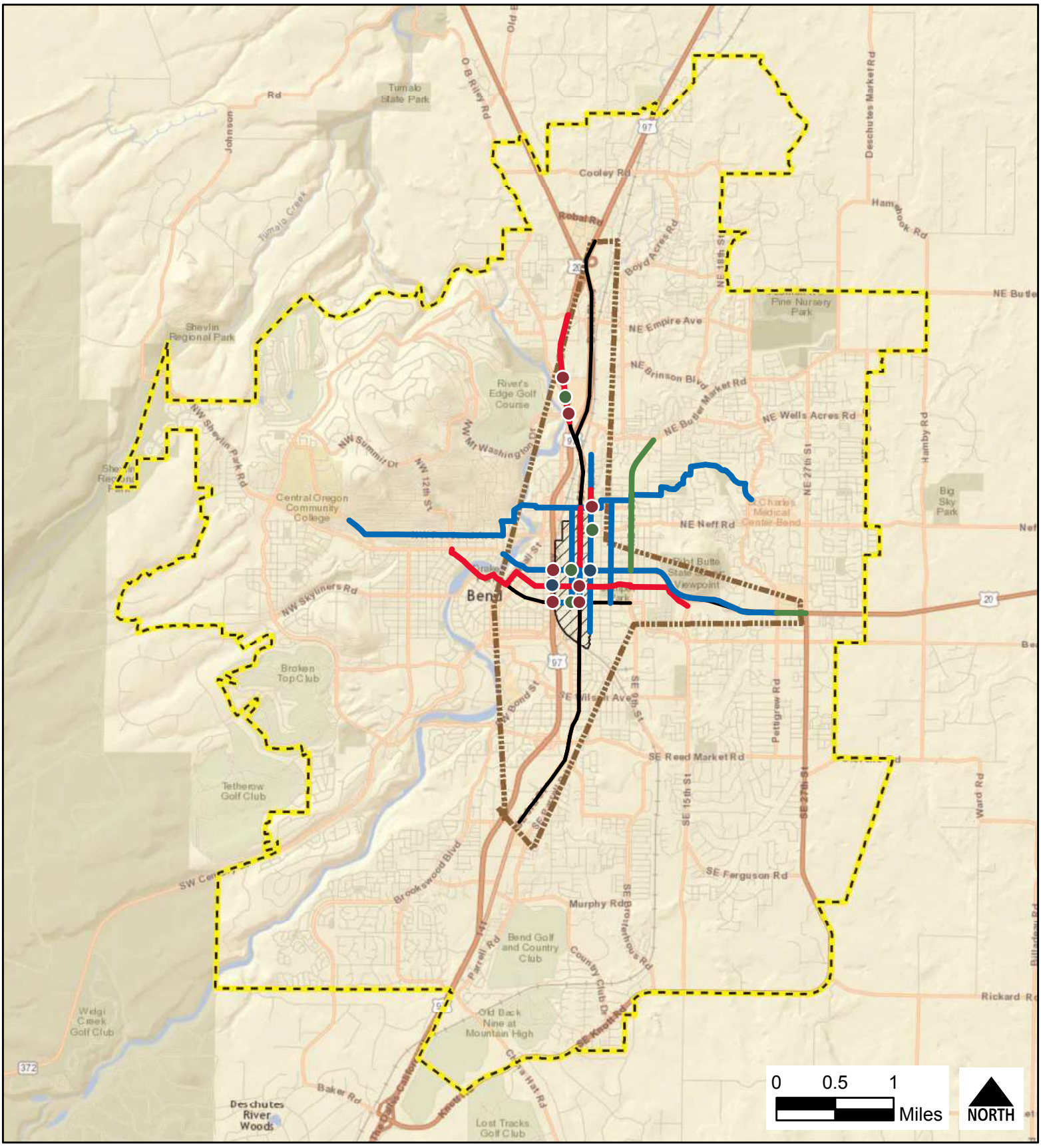
Segment Projects
- Near-Term
- Mid-Term

- >50 Trips Added
- Influence Area
- 15th St./Ward Property
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
179	Brosterhous	3rd St	Chase Road	Includes: Brosterhous @ Chase roundabout; Brosterhous @ Parrell roundabout	Capacity	15th St./Ward Property	1	TSP	Near-Term/Long-Term
204	Murphy	Country Club	Brosterhous	Includes: Murphy @ Country Club roundabout;	Capacity	15th St./Ward Property	1	TSP	Near-Term/Mid-Term
252	Murphy Road	Brosterhous	15th	Includes: 15th @ Murphy roundabout; Murphy @ Brosterhous roundabout Bridge Overcrossing	Capacity & Safety	15th St./Ward Property	1	TSP	Mid-Term
Safety									
R20	15th	Knott	1300' north of Knott	Modernization along S 15th	Safety & Ped/Bike Improvement	15th St./Ward Property	1	TSP	n/a
182	Brosterhous	Knott	Murphy	Includes: Brosterhous @ Knott roundabout	Safety	15th St./Ward Property	2	TSP	Mid-Term
*	Knott	15th	-	Construct a roundabout	Safety	15th St./Ward Property	3	City Staff	n/a
Connectivity									
214c	New Road			New Roadway	MV Connectivity	15th St./Ward Property	1	TSP	n/a
224a	New Road			New Roadway	MV Connectivity	15th St./Ward Property	1	TSP	n/a
Pedestrian/Bicycle									
57	15th	Reed Market	Knott	Frontage Improvements	Ped/Bike Improvement	15th St./Ward Property	1	TSP	Near-Term/Long-Term
*	Knott	Brosterhous	15th	Modernization along Knott	Ped/Bike Improvement	15th St./Ward Property	1		

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$31M - $51M	$8M - $14M	$24M - $36M
Tier 2	$2M - $4M	-	$2M - $4M
Tier 3	$2M - $4M	$2M - $4M	-
Total	**$38M - $58M**	**$27M - $40M**	**$26M - $40M**

Bend Central District



URBAN GROWTH BOUNDARY REMAND

Intersection Projects
- Near-Term
- Mid-Term
- Long-Term

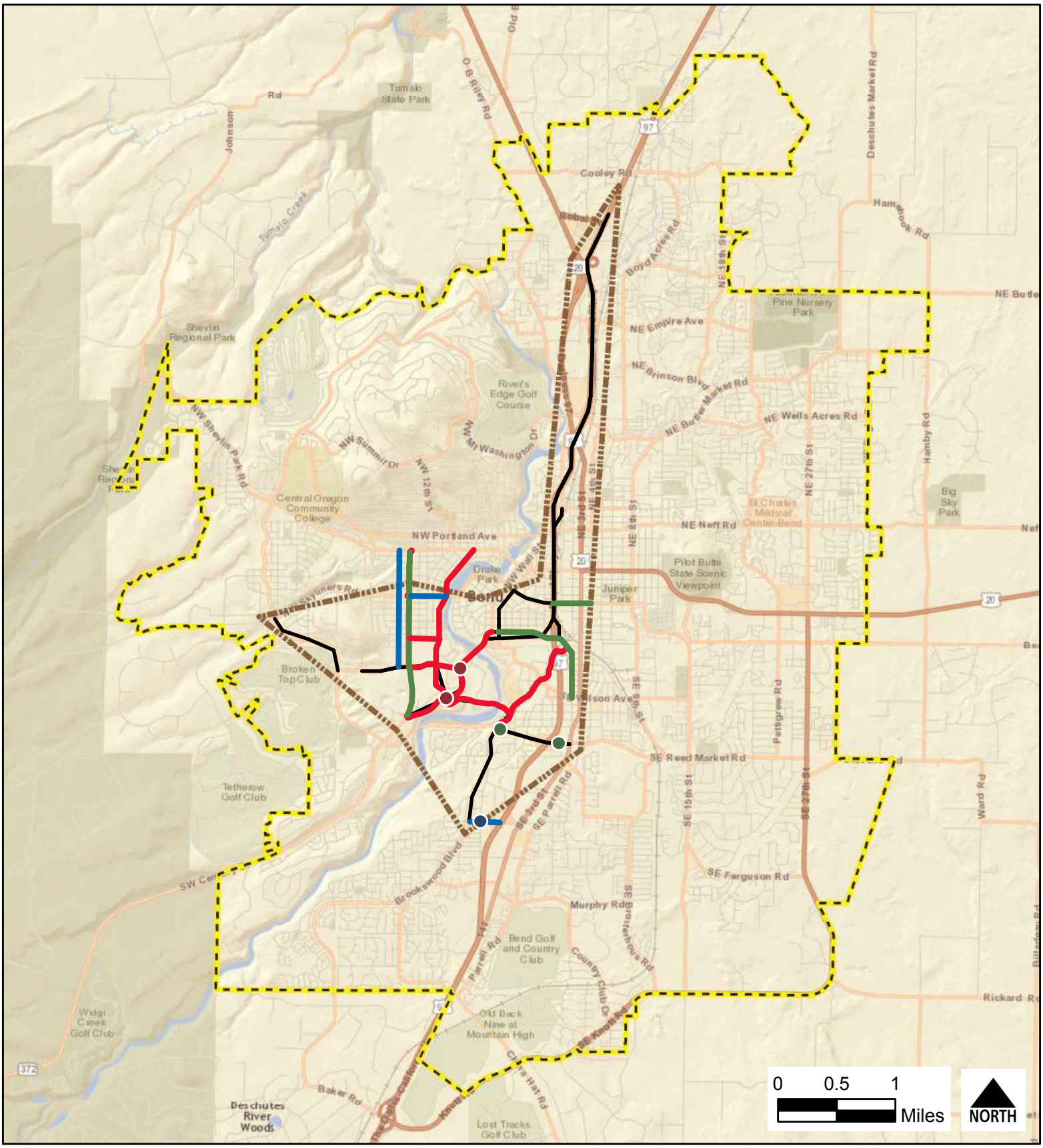
Segment Projects
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- UGB
- Bend Central District

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
13	US 20	Empire	Division	Includes: Intersection upgrades at signalized intersections	Capacity & Safety	Bend Central District	1	TSP	Mid-Term
43	4th	Studio	Revere	Includes: 4th @ Revere new signal	Capacity	Bend Central District	1	TSP	Near-Term
16	3rd	Greenwood	Franklin	Streetscape and safety improvement	Capacity	Bend Central District	2	TSP	Mid-Term
23	US 20	4th	-	Construct a traffic signal	Capacity	Bend Central District	2	TSP	Mid-Term/Long-Term
*	US 97	Hawthorne		Pedestrian/Bicycle overcrossing improvement	Capacity & MV Connectivity	Bend Central District	2	MMA	n/a
*	4th	Neff	-	Construct a traffic signal or roundabout	Capacity	Bend Central District	3	?	n/a
*	US 20	OB Riley	-	Signal Upgrades and Intersection Capacity Improvements	Capacity	Bend Central District	3	City Staff	n/a
Safety									
15	3rd	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	Safety	Bend Central District	1	TSP/MMA	Mid-Term
9	US 20	12th	Purcell	Corridor Improvements	Safety	Bend Central District	2	TSP	Mid-Term
101	Franklin	US 97	3rd	Streetscape Upgrade	Safety	Bend Central District	2	TSP	Long-Term
102	Franklin	3rd	4th	Streetscape Upgrade	Safety	Bend Central District	2	TSP/MMA	Aspirational
10	US 20	Purcell	27th	Corridor Improvements	Safety	Bend Central District	3	TSP	Aspirational
*	2nd	Franklin	-	Signal and Safety Upgrades	Safety	Bend Central District	3	City Staff	n/a
*	2nd	Greenwood	-	Signal and Safety Upgrades	Safety	Bend Central District	3	City Staff	n/a
Pedestrian/Bicycle									
*	COCC to Larksupr Trail via Hawthrone			Bike Boulevard	Ped/Bike Improvement	Bend Central District	1	ILUTP (#24)	Planned
*	Hawthorne	3rd		Safety Crossing and Bike	Ped/Bike Improvement	Bend Central District	1	ILUTP (#27)	Programmed
*	Franklin	3rd		Safety Crossing and Bike	Ped/Bike Improvement	Bend Central District	1	ILUTP (#28)	Programmed
*	Franklin Undercrossing Bridge			Minor Undercrossing Improvements	Ped/Bike Improvement	Bend Central District	1	ILUTP (#33)	Planned
*	Greenwood Undercrossing Bridge			Minor Undercrossing Improvements	Ped/Bike Improvement	Bend Central District	1	ILUTP (#34)	Planned
*	Newport	12th	Awbrey	Streetscape	Ped/Bike Improvement	Bend Central District	2	ILUTP (#13)	Planned
*	Juniper Rec-Bend High-Marshal High via 6th			Bike Boulevard	Ped/Bike Improvement	Bend Central District	2	ILUTP (#17)	Planned
*	4th	Studio		Streetscape	Ped/Bike Improvement	Bend Central District	2	ILUTP (#21)	Future
*	COCC to St Charles vis 1st Rapids			Bike Boulevard	Ped/Bike Improvement	Bend Central District	2	ILUTP (#23)	Planned
*	2nd	Franklin	Revere	Streetscape	Ped/Bike Improvement	Bend Central District	2	ILUTP (#31)	Planned
*	8th	Greenwood	Butler Market	Streetscape	Ped/Bike Improvement	Bend Central District	3	ILUTP (#22)	Future

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$6M - $10M	$1M - $2M	$5M - $9M
Tier 2	$11M - $18M	$4M - $6M	$7M - $11M
Tier 3	$3M - $8M	$1M - $2M	$4M - $6M
Total	**$22M - $34M**	**$5M - $9M**	**$16M - $26M**

Central West Side



URBAN GROWTH BOUNDARY REMAND

BEND

Segment Projects
- Near-Term
- Mid-Term
- Long-Term

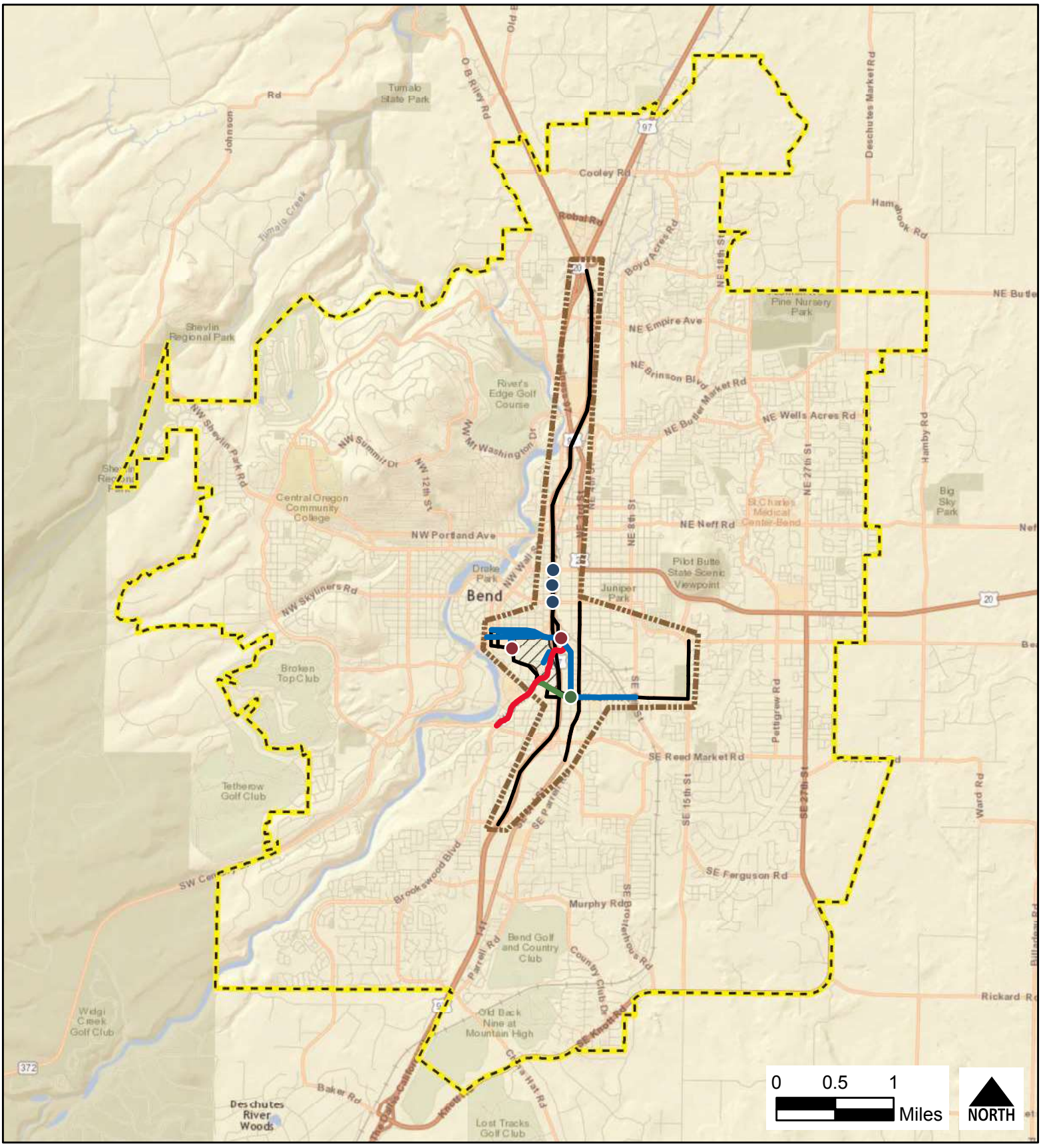
Intersection Projects
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
52	14th	Galeston	Simpson	Frontage Improvements	Capacity	Central West Side	1	TSP	Near-Term
91	Colorado	Century	Simpson	Includes: Colorado @ Columbia roundabout	Capacity	Central West Side	1	TSP	Near-Term
92	Colorado	Simpson	Wall	Frontage Improvements	Capacity	Central West Side	1	TSP	Near-Term
141	Simpson	14th	Colorado	Includes: Simpson @ Columbia new roundabout	Capacity	Central West Side	1	TSP	Near-Term
128	Powers	Brookswood	US 97	Includes: Powers @ Blakely roundabout	Capacity	Central West Side	2	TSP	Mid-Term/Long-Term
35	Reed Market	Division	-	Construct a roundabout	Capacity	Central West Side	3	TSP	Long-Term
*	Reed Market	Bond	-	Roundabout upgrade	Capacity	Central West Side	3	Central Westside Plan	n/a
Safety									
51	14th	Newport	Galveston	Corridor Improvements	Safety	Central West Side	1	TSP	Near-Term
101	Franklin	US 97	3rd	Streetscape Upgrade	Safety	Central West Side	3	TSP	Long-Term
102	Franklin	3rd	4th	Streetscape Upgrade	Safety	Central West Side	3	TSP/MMA	Aspirational
Connectivity									
*	Commerce	14th	Columbia	Streetscape	Ped/Bike Improvement	Central West Side	1	ILUTP (#12)	Planned
*	OSU-MUD-Coyner Trail via Aune			Bike Boulevard	Ped/Bike Improvement	Central West Side	1	ILUTP (#16)	Planned
*	N/S Bike Boulevard	Harmon	Old Mill	Bike Boulevard	Ped/Bike Improvement	Central West Side	1	ILUTP (#18)	Planned
*	14th	Colorado	Simpson	Streetscape	Ped/Bike Improvement	Central West Side	2	ILUTP (#4)	Programmed
*	14th	Commerce	Galveston	Streetscape	Ped/Bike Improvement	Central West Side	3	ILUTP (#4)	Programmed
*	15th	Newport	Simpson	Bike Boulevard	Ped/Bike Improvement	Central West Side	2	ILUTP (#26)	Planned
*	Galveston Corridor	Harmon	14th	Streetscape	Ped/Bike Improvement	Central West Side	3	ILUTP (#5)	Programmed
*	Colorado/2nd	Bond	Wilson	Streetscape	Ped/Bike Improvement	Central West Side	3	ILUTP (#15)	Planned

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$10M - $16M	$4M - $8M	$4M - $8M
Tier 2	$4M - $6M	-	$4M - $6M
Tier 3	$8M - $13M	-	$9M - $15M
Total	**$25M - $37M**	**$4M - $8M**	**$19M - $30M**

KorPine Industrial Area



URBAN GROWTH BOUNDARY REMAND

Segment Projects
- Mid-Term
- Long-Term

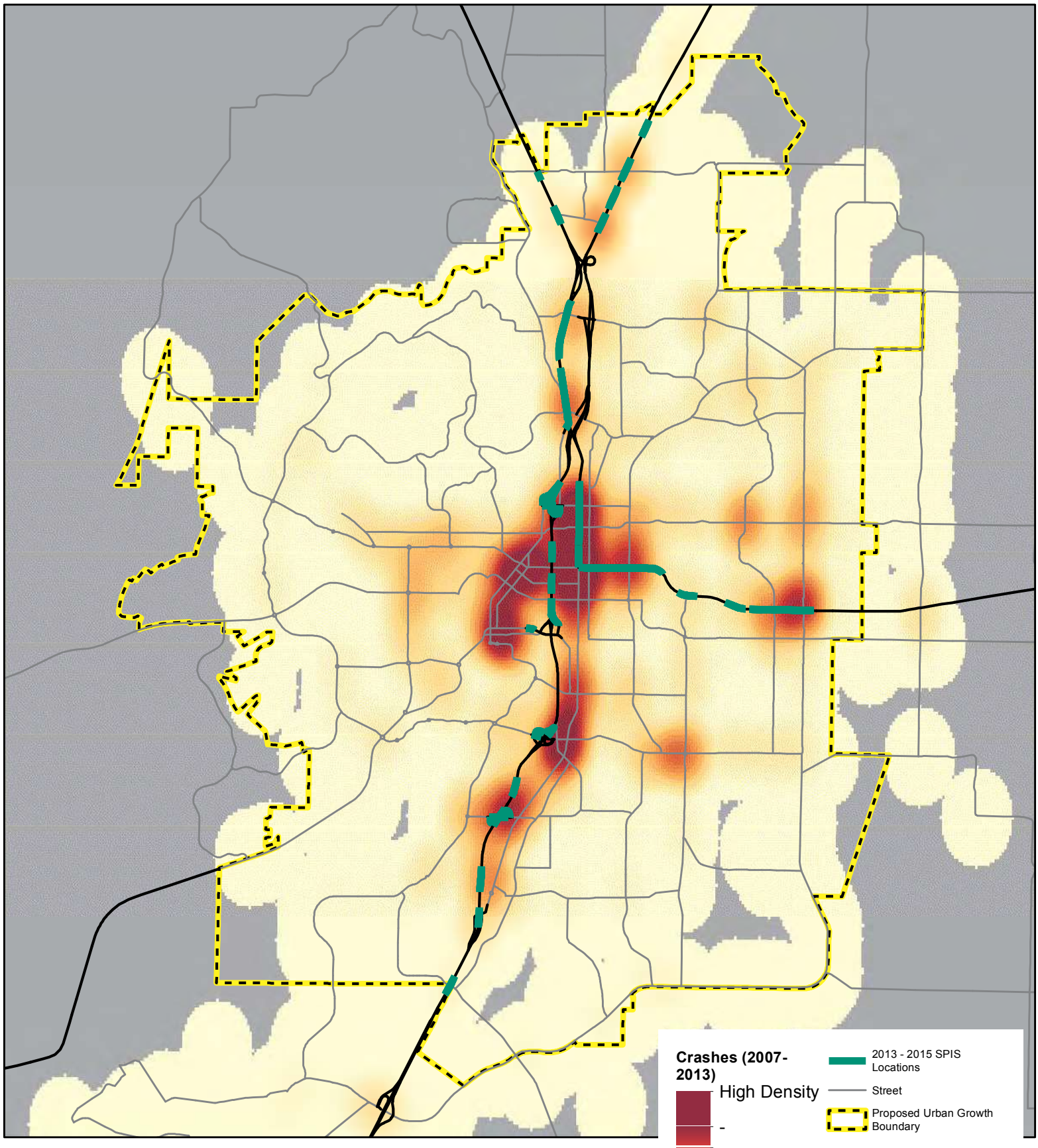
Intersection Improvementa
- Near-Term
- Mid-Term
- Long-Term

- >50 Trips Added
- Influence Area
- KorPine
- UGB

TSP ID	Street Name	Begin	End	Improvement	Type	Area	Tier	Project Source	Previous Source Timeline
Capacity									
93	Colorado	US 97 NB Ramps	-	Construct a roundabout	Capacity	KorPine	1	TSP	Near-Term/Long-Term
*	Bond	Industrial		Intersection improvement	Capacity & Safety	KorPine	1	Project Team	n/a
*	US 97	Hawthorne		Pedestrian/Bicycle overcrossing improvement	Capacity & MV Connectivity	KorPine	2	MMA	n/a
147	Wilson	Bond	US 97	Includes: Widening to three-lane cross section	Capacity	KorPine	3	TSP	Aspirational
148	Wilson	US 97	3rd	Includes: Widening to three-lane cross section Wilson @ 2nd traffic signal	Capacity	KorPine	3	TSP	Long-Term
Connectivity									
*	Lava	Arizona	Industrial	Roadway Extension	MV Connectivity	KorPine	2	Project Team	n/a
*	Aune	Scalehouse	Division	Roadway Extension	MV Connectivity	KorPine	2	Project Team	n/a
Pedestrian/Bicycle									
*	OSU-MUD-Coyner Trail via Aune			Bike Boulevard	Ped/Bike Improvement	KorPine	1	ILUTP (#16)	Planned
*	Franklin Undercrossing Bridge			Minor Undercrossing Improvements	Ped/Bike Improvement	KorPine	2	ILUTP (#33)	Planned
*	Greenwood Undercrossing Bridge			Minor Undercrossing Improvements	Ped/Bike Improvement	KorPine	2	ILUTP (#34)	Planned
*	Wilson	2nd	9th	Streetscape	Ped/Bike Improvement	KorPine	2	ILUTP (#6)	Programmed
*	Colorado/2nd	Bond	Wilson	Streetscape	Ped/Bike Improvement	KorPine	2	ILUTP (#15)	Planned
*	Arizona - Colorado Couplet			Pedestrian Crossing Improvements	Ped/Bike Improvement	KorPine	2	City Staff	n/a

	Total	Internal/Frontage Improvements	Off-Site Improvements
Tier 1	$7M - $11M	-	$7M - $11M
Tier 2	$9M - $14M	$1M - $2M	$7M - $11M
Tier 3	$10M - $16M	-	$10M - $16M
Total	**$28M - $42M**	**$1M - $2M**	**$27M - $41M**

Bend UGB


Crashes (2007-2013)
High Density
Low Density
2013 - 2015 SPIS Locations
Street
Proposed Urban Growth Boundary
0
0.5
1
Miles
NORTH
URBAN GROWTH BOUNDARY REMAND
BEND

Appendix C

Sewer Analysis Details

DRAFT TECHNICAL MEMORANDUM

DATE: March 12, 2018

PROJECT: Public Facility Plan Update

TO: City of Bend, Oregon

FROM: Shad Roundy, P.E.
Murraysmith

RE: Sanitary Sewer Projects for Key Development Areas

Background

The City of Bend (City) is updating the Sanitary Sewer Collection System Public Facilities Plan (PFP) from the 2014 document which was included as a volume of the City's Collection System Master Plan (CSMP, 2014). The City CSMP and PFP address development, phasing, and improvements for buildout of the Urban Growth Boundary prior to expansion. In 2016, the City adopted an expanded UGB including redevelopment areas within the City limits and 2,380 acres of expansion lands. As part of the PFP update, the collection system Capital Improvement Program (CIP) is also being updated to reflect the expanded UGB.

Murraysmith performed hydraulic analysis for the City to identify improvement sizing and phasing for the updated CIP and PFP. This document provides a summary of critical capital projects from the CIP for key development areas including:

1. North Area – OB Riley and North Triangle
2. Northeast Area – Northeast Edge
3. South Area – Elbow
4. Core Area – Century Drive, KorPine, Bend Central District, East Downtown, and Midtown

Capital Projects

The full set of potential sanitary sewer capital projects evaluated for the PFP update are shown in Figure 1 as a reference. These capital projects, including planning level cost estimates, were refined to accommodate City-wide planned densities consistent with the adopted UGB expansion. The capital projects reflecting the adopted UGB expansion are shown in Tables 1 thru 3 including project drivers and phasing notes. Projects are listed in three categories:

1. Gravity Infrastructure
2. Lift Station and Force Main Infrastructure
3. Local Area Infrastructure

Capital Projects for Key Development

A subset of the CIP is required to serve the key development areas in the near-term. These capital projects are shown in Figure 2 and outlined below.

Programmed Improvements

1. North Interceptor Phase 1 – Required to serve all key development areas - $17.9 million
2. Drake Lift Station and Force main – Required to serve KorPine and to address existing lift station operational issues - $2.4 million
3. Southeast Interceptor Extension & Diversion– Offloads Central Interceptor for Core Area development - $3.0 million

Improvements to Serve Specific Development Areas

1. North – OB Riley and North Triangle
    a. North Interceptor Phase 2 - $28.9 million
    b. North Interceptor Phase 3 – $11.3 million

2. Northeast Edge
    a. East Interceptor Phase 1 (also serves South area development in long-term) - $14.3 million

3. South - Elbow
    a. Portion of Southeast Lift Station Decommissioning - $1.0 million
    b. Local gravity trunk extension - $2.5 million
    c. Local lift station and force main - $3.5 million

4. Core (no additional near-term improvements, see discussion of other improvements)

10-Year Improvements

Based on existing infrastructure capacity, several capital projects serving key development areas are not required prior to 10-years. The PFP update will recommend appropriate flow monitoring triggers to signal acceleration of these projects if development and rate of occupancy occur more quickly than planned. These projects are listed below.

1. Drake Downstream Gravity – required for buildout growth of KorPine - $4 million
2. Central Interceptor – required for buildout growth in Core (and West UGB expansion areas) - $7.3 million
3. East Interceptor Phase 2 – required for buildout growth in South (including Elbow, DSL, and Thumb) - $15.6 million

Other Developments

Other development areas within the City that contribute to the City's CIP are identified below including common projects identified previously in this document and additional projects specific to each area.

1. North Area – Juniper Ridge and North Infill Development
    a. Common projects
        i. North Interceptor Phases 1 and 2
    b. Additional projects
        i. North Area Lift Station Decommissioning - $14.6 million
        ii. Deschutes Business Lift Station - $1.5 million

2. South Area – DSL, Thumb (partial), South Infill and Septic Conversion
    a. Common projects
        i. North Interceptor Phase 1
        ii. East Interceptors Phases 1 & 2
    b. Additional Projects
        i. South Area Lift Station Decommissioning - $8 million (excludes $1 million already documented for Elbow)
        ii. Local Gravity for DSL - $4.3 million
        iii. Local Gravity for Thumb (partial) - $1.8 million

3. Southeast Area – Southeast Infill, Septic Conversion, River Rim, and Thumb (partial)
    a. Common projects
        i. North Interceptor Phase 1
        ii. East Interceptors Phases 1 & 2
        iii. Southeast Interceptor and Diversion
    b. Additional Projects
        i. Amethyst/Mahogany - $1.6 million
        ii. River Rim Lift Station - $2.1 million
        iii. Local Gravity for Thumb (partial) - $3.8 million

4. West Area –Infill, West, and Shevlin
    a. Common projects
        i. North Interceptor Phase 1
        ii. Central Interceptor
    b. Additional projects
        i. Newport - $0.8 million
        ii. Shevlin Commons Lift Station - $0.8 million
        iii. Shevlin Meadows Lift Station and Force main - $1.2 million
        iv. Renaissance Lift Station - $0.5 million
        v. Local Gravity West - $7 million

5. Core – Infill development
    a. Common projects
        i. North Interceptor Phase 1
        ii. Central Interceptor
    b. Additional projects
        i. 4th Street Trunk - $5.5 million
        ii. Old Mill Lift Station and Force main- $4.2 million

Table 1. Gravity Capital Projects, Costs, Drivers, and Notes

Improvement Group - Gravity	Length (feet)	Max Diameter (inch)	Cost Estimate ($Million)[1]	Key Project Driver	Timeframe	Notes
North Interceptor Phase 1	9,700	60	17.9	Condition and capacity of existing Plant Interceptor	0 to 5-year (Tier 1 thru 3)	
North Interceptor Phase 2	16,600	60	28.9	North area development (Infill and Juniper Ridge), UGB Expansion areas in north (OB Riley/North Triangle)	Required for north area development, 0 to 5-year (Tier 1 thru 3)	Monitoring recommended in Empire/Purcell downstream of Brinsom
North Interceptor Phase 3	14,200	24	11.3	UGB Expansion areas in the north (OB Riley/North Triangle)	Required for north area development, 0 to 5-year (Tier 1 thru 3)	Monitoring recommended in Empire/Purcell downstream of Brinsom
North Area Lift Station Decommissioning	11,000	18	14.6	Associated with North Interceptor Phase 2	Same timeframe as North Interceptor Phase 2	
East Interceptor Phase 1	8,600	36	14.3	NE Edge UGB Expansion, some benefit to off load Central Interceptor, South UGB expansion (DSL, Elbow, Thumb), Septic Conversions	10-year, based on potential delay between development permitting and service	Monitoring recommended downstream of the Southeast Interceptor Phase 1 extension and in the lower portion of the Central Interceptor
East Interceptor Phase 2	14,500	30	15.6	Some benefit to off load Central Interceptor, South UGB expansion (DSL, Elbow, Thumb), Septic Conversions	10-year, based on potential delay between development permitting and service	Monitoring recommended downstream of the Southeast Interceptor Phase 1 extension and in the lower portion of the Central Interceptor
Central Interceptor	6,200	48	7.3	KorPine/Box Factory, Central District, OSU Cascades, Century Drive, West/Shevlin UGB Expansion areas	10-year, based on potential delay between development permitting and service	Timeframe may require acceleration if services exceed approximately 70-percent of 2028 development densities prior to 10-years. Cost and extent of improvements increases to 20,000 feet and $20M beyond projected 2028 densities. Monitoring recommended in Central Interceptor.
Drake, Downstream Gravity	6,300	48	4.0	KorPine/Box Factory	10-year, based on potential delay between development permitting and service	Timeframe may require acceleration if services exceed approximately 70-percent of 2028 development densities prior to 10-years. Potential routing option to Colorado parallel force main and 2nd Street gravity. Monitoring recommended in Drake gravity trunk sewer.
Newport	1,200	36	0.8	West/Shevlin UGB Expansion Areas	Required for West/Shevlin area development, 0 to 5-year (Tier 1 thru 3)	Cost and extent of improvement increases to 8,700 feet and $5.5M beyond projected 2028 densities.
4th Street Trunk	8,000	18	5.5	Localized development at upper end of trunk sewer	0 to 5-year (Tier 1)	Cost and extent of improvement increases to 9,300 feet and $6.4M beyond projected 2028 densities.
Amethyst/Mahogany	2,700	30	1.6	River Rim development, Southwest UGB expansion, Septic conversions	0 to 5-year (Tier 0)	Cost and extent of improvement increases to 9,200 feet and $5.5M beyond projected 2028 densities.
Southeast Interceptor Extension	3,600	30	4.0	Off loads Central Interceptor and provides flow control to Southeast Interceptor	0 to 5-year, Combine with Amethyst Mahogany	
Southeast Lift Station Decommissioning	20,000	12	9.0	Associated with completion of Southeast Interceptor Phase 1 Extension	0 to 5-year	Multiple gravity trunk sewers to convey decommissioned lift station service area flows to the Southeast Interceptor.
Subtotal Cost Gravity			134.9			

Note 1. All cost estimates are Class 5 budget estimates, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, and inflation. Cost estimates were performed in 2017 dollars based on The Engineering News Record Construction Cost Index (ENR CCI) basis of 10870 (December 2017).

Table 2. Lift Station and Force main Capital Projects, Costs, and Drivers

Improvement Group - Lift Station and Force main[3]	Lift Station Cost Estimate ($Million)[1]	Force main Length, Diameter (feet, inches)	Force main Cost Estimate ($Million)[1]	Key Project Driver	Timeframe
Drake	2.1	600, 8	0.3	KorPine/Box Factory, lift station condition & operations	0 to 5-year (Tier 1 thru 3)
Shevlin Commons	0.8			West/Shevlin UGB Expansion Areas	0 to 5-year (Tier 1 thru 3)
Shevlin Meadows	0.9	600, 6	0.3	West/Shevlin UGB Expansion Areas	0 to 5-year (Tier 1 thru 3)
Renaissance	0.5			West/Shevlin UGB Expansion Areas	0 to 5-year (Tier 1 thru 3)
Old Mill	3.6	1600, 8	0.6	Local development	0 to 5-year (Tier 3)
River Rim	2.1			River Rim development	0 to 5-year (Tier 0)
Deschutes Business	1.5			Local development	0 to 5-year (Tier 1 thru 3)
Subtotal LS & FM	11.6		1.1		

Table 3. Local Area Improvements

Improvement Group - Local Area Improvements	Cost Estimate ($Million)[1, 2]
Elbow Gravity Trunk	2.5
Elbow Lift Station and Force main	3.5
DSL Gravity Trunk	4.3
Thumb Gravity Trunk	5.7
West Gravity Trunk	7.0
Subtotal Local Area	23.0

Note 1. All cost estimates are Class 5 budget estimates, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, and inflation. Cost estimates were performed in 2017 dollars based on The Engineering News Record Construction Cost Index (ENR CCI) basis of 10870 (December 2017).

Note 2. Local area improvement cost estimates included limited trunk sewer extensions to serve recent UGB expansion areas. A single lift station and force main is identified for the Elbow. The estimates exclude local sewers (8 to 10-inch) and sewer laterals.

Note 3. Other lift stations and/or force mains that may require improvement for increased density beyond projected 2028 densities, or generic UGB expansion growth include Sunrise #1, Service Station, Awbrey Glen, and Westside. Boyd Acres lift station is identified as a potential improvement based on tiered development prior to completion of the North Interceptor Phase 2.

Existing Infrastructure
- Existing Lift Station
- Gravity Main - Existing Trunk
- Force Main - Existing

Improvement
- Lift Station Improvement
- Lift Station Decommissioning
- Pipeline Improvement (varied colors)

Development
- Tier 0
- Tier 1
- Tier 2
- Tier 3
- All Tiers
- Generic UGB Expansion

North Area PS Decommission (multiple projects)
North Interceptor Phase 2
North Interceptor Phase 3
Boyd Acres Lift Station
North Triangle
OB Riley
Service Station Lift Station
North Interceptor Phase 1
Renaissance Lift Station
Awbrey Lift Station & Forcemain
Deschutes Business Lift Station
Empire/Purcell
East Interceptor Phase 1
Shevlin Commons LiftStation & Forcemain
Northeast Edge
West Gravity
Brinsom
Shevlin
Awbrey Gravity
Shevlin Meadows Lift Station & Forcemain
Newport
Central Interceptor
East Interceptor Phase 2
West Gravity
Westside Forcemain
1st Street
Milwaukee Ave
Central District
4th Street
West
Drake Gravity
Drake Lift Station & Forcemain
KorPine
OSU Cascades
Century Drive
Drake Upstream Gravity
2nd Street
Old Mill Lift Station & Forcemain
DSL Gravity
DSL
Sunrise #1 Lift Station
Southeast PS Decommissioning (multiple projects)
River Rim Lift Station & Forcemain
Elbow
Elbow Lift Station & Forcemain
Amethyst/Mahogany
Southeast Interceptor Extension
Elbow Gravity
Thumb
Thumb Gravity
Thumb Gravity

DRAFT - subject to change

N

0 0.5 1 2 Miles

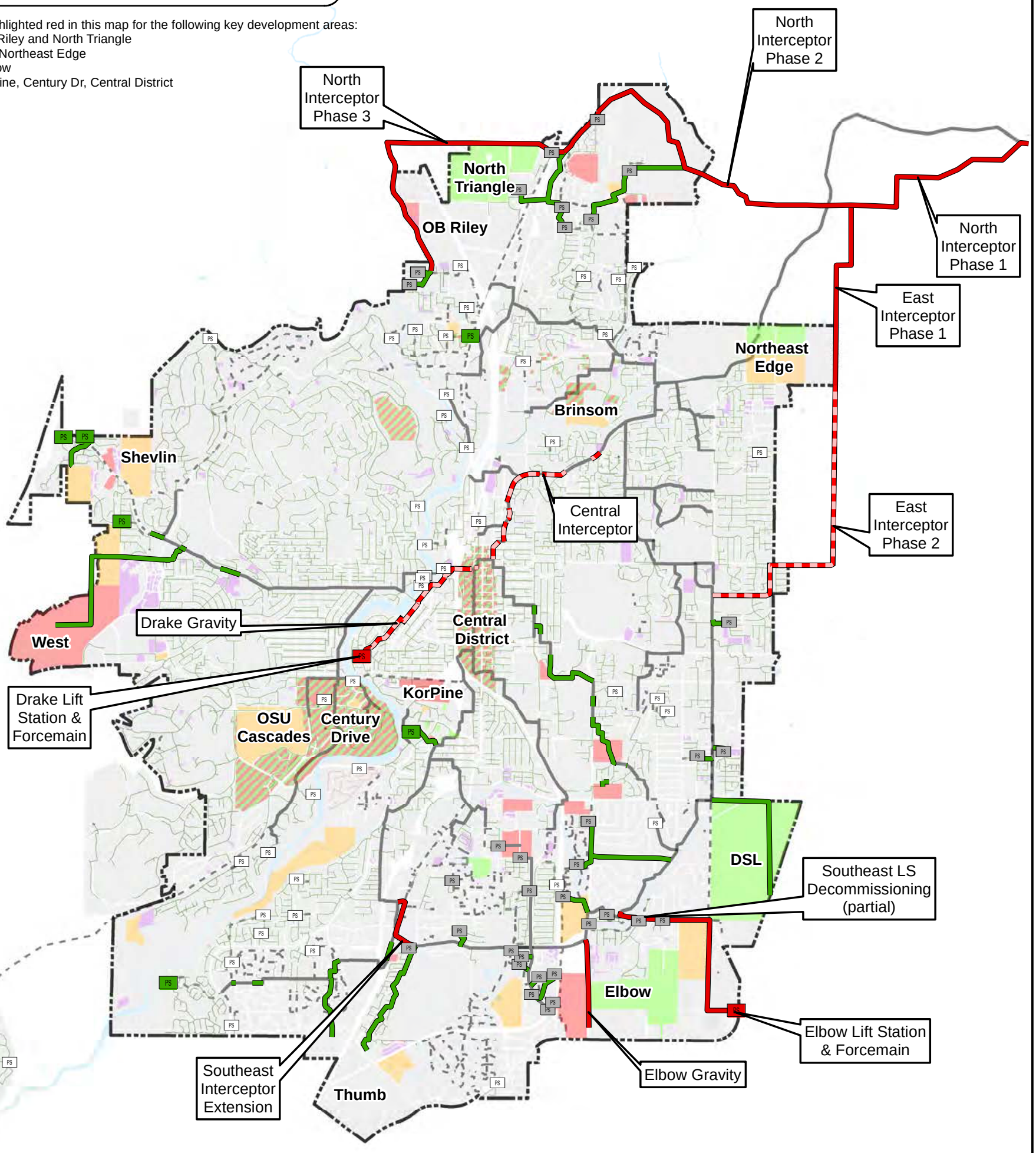
murraysmith	**City of Bend** **Collection System** **Public Facillities Plan Update**	**Figure 1** **Capital Project Reference**

Existing Infrastructure
- Existing Lift Station
- Gravity Main - Existing Trunk
- Force Main - Existing

Improvement
- Lift Station Capital Project Key Development (near-term)
- Lift Station Capital Project (Other)
- Lift Station Decommissioning
- Pipeline Capital Project Key Development (near-term)
- Pipeline Capital Project Key Development (10-year)
- Pipeline Capital Project (Other)

Development
- Tier 0
- Tier 1
- Tier 2
- Tier 3
- All Tiers

Projects highlighted red in this map for the following key development areas:
North - OB Riley and North Triangle
Northeast - Northeast Edge
South - Elbow
Core - KorPine, Century Dr, Central District



DRAFT - subject to change

murraysmith	**City of Bend Collection System Public Facillities Plan Update**	**Figure 2 Capital Projects for Key Development Areas**	

Appendix D

Urban Renewal Supporting Information – Definitions and Impacts to Overlapping Taxing Districts

Appendix A.

Definition of Blight, from Oregon Statute 457.010

“"Blighted areas" means areas that, by reason of deterioration, faulty planning, inadequate or improper facilities, deleterious land use or the existence of unsafe structures, or any combination of these factors, are detrimental to the safety, health or welfare of the community. A blighted area is characterized by the existence of one or more of the following conditions:

a) The existence of buildings and structures, used or intended to be used for living, commercial, industrial or other purposes, or any combination of those uses, that are unfit or unsafe to occupy for those purposes because of any one or a combination of the following conditions:
    a. Defective design and quality of physical construction;
    b. Faulty interior arrangement and exterior spacing;
    c. Overcrowding and a high density of population;
    d. Inadequate provision for ventilation, light, sanitation, open spaces and recreation facilities; **or**
    e. Obsolescence, deterioration, dilapidation, mixed character or shifting of uses;

b) An economic dislocation, deterioration or disuse of property resulting from faulty planning;

c) The division or subdivision and sale of property or lots of irregular form and shape and inadequate size or dimensions for property usefulness and development;

d) The laying out of property or lots in disregard of contours, drainage and other physical characteristics of the terrain and surrounding conditions;

e) The existence of inadequate streets and other rights of way, open spaces and utilities;

f) The existence of property or lots or other areas that are subject to inundation by water;

g) A prevalence of depreciated values, impaired investments and social and economic maladjustments to such an extent that the capacity to pay taxes is reduced and tax receipts are inadequate for the cost of public services rendered;

h) A growing or total lack of proper utilization of areas, resulting in a stagnant and unproductive condition of land potentially useful and valuable for contributing to the public health, safety and welfare; **or**

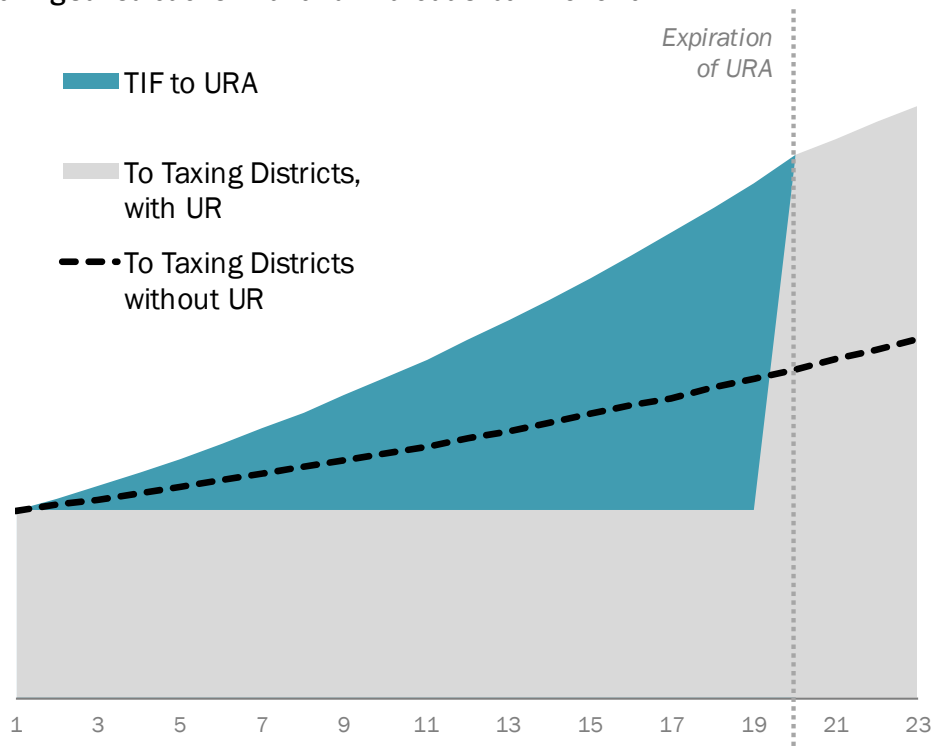
i) A loss of population and reduction of proper utilization of the area, resulting in its further deterioration and added costs to the taxpayer for the creation of new public facilities and services elsewhere.”

Appendix B. Impacts to Overlapping Taxing Districts

Taxing districts are often concerned about the impact of urban renewal on their future tax revenues.[15] During the operation of an urban renewal plan, the taxing districts will forego any increase in property taxes within the URA. The motivation for pursuing urban renewal is to increase the value of properties in the URA, thereby increasing the property tax revenues in the long-term. At the termination of an URA, taxing districts will benefit from increased property tax revenues if the URA was successful at increasing the taxable assessed value.

Error! Reference source not found. shows an illustration of how urban renewal affects property tax revenue to taxing districts during and after the URA. Overlapping taxing districts do not see any increase in property tax revenue for the life of the URA (because that increment goes to the URA), but they see a large positive impact in first year that the URA ends.

Exhibit 10. Hypothetical Illustration of Tax Revenue to Overlapping Taxing Jurisdictions With and Without Urban Renewal



A key factor to consider when evaluating impacts to overlapping taxing districts is whether the projected new development would occur regardless of urban renewal, and, therefore, whether those taxes should be considered as foregone or whether the taxing district would not have seen that growth without urban renewal. Taxing jurisdictions are more likely to support use of urban renewal in places where investment is needed in order to stimulate growth.

[15] Some of the content in this section is based on *Best Practices for Urban Renewal Agencies in Oregon*, January 2014, prepared by ECONorthwest for Association of Oregon Redevelopment Agencies (AORA).

Exhibit 11 through Exhibit 14**Error! Reference source not found.** show estimated annual foregone revenue at several points in time for each URSA, in nominal (year of expenditure) dollars. The numbers presented here are preliminary, order-of-magnitude estimates and will be refined if the City decides to pursue the use of urban renewal. These tables likely *overestimate* revenue foregone by overlapping districts, because they assume that urban renewal did not stimulate any growth above what would have occurred anyway.

Exhibit 11. North URSA, Estimated Annual Impacts to Taxing Districts, Year of Expenditure Dollars

	2020	2030	2040
General Government			
Deschutes County	-$8,200	-$175,000	-$440,000
County Library	-$3,500	-$75,000	-$189,000
Countywide Law Enforcement	-$6,600	-$140,000	-$351,000
County Extension/4H	-$100	-$3,000	-$8,000
9-1-1	-$1,000	-$22,000	-$56,000
City of Bend	-$18,000	-$384,000	-$965,000
Bend Metro Parks & Rec	-$9,400	-$200,000	-$503,000
Education			
School District #1	-$30,600	-$652,000	-$1,639,000
High Desert ESD	-$600	-$13,000	-$33,000
Central Oregon Community College	-$4,000	-$85,000	-$213,000

Source: ECONorthwest
Note: the levels of maximum indebtedness assumed for this analysis ($50 M) mean that revenue sharing does not kick in until after the expiration of the URA. Smaller levels of maximum indebtedness mean that revenue sharing happens sooner.

Exhibit 12. Central District Plus URSA, Estimated Annual Impacts to Taxing Districts, Year of Expenditure Dollars

	2020	2030	2040
General Government			
Deschutes County	-$26,700	-$371,000	-$901,000
County Library	-$11,500	-$160,000	-$388,000
Countywide Law Enforcement	-$21,300	-$296,000	-$719,000
County Extension/4H	-$500	-$7,000	-$16,000
9-1-1	-$3,400	-$47,000	-$114,000
City of Bend	-$58,600	-$814,000	-$1,977,000
Bend Metro Parks & Rec	-$30,500	-$424,000	-$1,030,000
Education			
School District #1	-$99,500	-$1,383,000	-$3,360,000
High Desert ESD	-$2,000	-$28,000	-$68,000
Central Oregon Community College	-$13,000	-$180,000	-$438,000

Source: ECONorthwest
Note: the levels of maximum indebtedness assumed for this analysis ($100 M) mean that revenue sharing does not kick in until after the expiration of the URA. Smaller levels of maximum indebtedness mean that revenue sharing happens sooner.

Exhibit 13. KorPine Plus URSA, Estimated Annual Impacts to Taxing Districts, Year of Expenditure Dollars

	2020	2030	2040
General Government			
Deschutes County	-$13,300	-$188,000	-$462,000
County Library	-$5,700	-$81,000	-$199,000
Countywide Law Enforcement	-$10,600	-$150,000	-$369,000
County Extension/4H	-$200	-$3,000	-$8,000
9-1-1	-$1,700	-$24,000	-$59,000
City of Bend	-$29,200	-$412,000	-$1,014,000
Bend Metro Parks & Rec	-$15,200	-$215,000	-$529,000
Education			
School District #1	-$49,700	-$700,000	-$1,724,000
High Desert ESD	-$1,000	-$14,000	-$35,000
Central Oregon Community College	-$6,500	-$91,000	-$224,000

Source: ECONorthwest
Note: the levels of maximum indebtedness assumed for this analysis ($50 M) mean that revenue sharing does not kick in until after the expiration of the URA. Smaller levels of maximum indebtedness mean that revenue sharing happens sooner.

Exhibit 14. Central Westside URSA, Estimated Annual Impacts to Taxing Districts, Year of Expenditure Dollars

	2020	2030	2040
General Government			
Deschutes County	-$26,300	-$366,000	-$891,000
County Library	-$11,300	-$158,000	-$383,000
Countywide Law Enforcement	-$21,000	-$292,000	-$711,000
County Extension/4H	-$500	-$6,000	-$16,000
9-1-1	-$3,300	-$46,000	-$113,000
City of Bend	-$57,800	-$803,000	-$1,953,000
Bend Metro Parks & Rec	-$30,100	-$419,000	-$1,018,000
Education			
School District #1	-$98,200	-$1,365,000	-$3,319,000
High Desert ESD	-$2,000	-$28,000	-$67,000
Central Oregon Community College	-$12,800	-$178,000	-$432,000

Source: ECONorthwest
Note: the levels of maximum indebtedness assumed for this analysis ($100 M) mean that revenue sharing does not kick in until after the expiration of the URA. Smaller levels of maximum indebtedness mean that revenue sharing happens sooner.

Impact to Local School District Funding

Although Exhibits 11-14 include the Bend school district, it is important to note that urban renewal does not have a direct impact on local school district funding. Property taxes were once the primary funding source for K-12 schools, and tax rates varied by district. Today, the State of Oregon "equalizes" school funding, using a formula that takes into account property tax revenue generated at the school district level and revenue from the State's coffers generated by the statewide income tax, Oregon Lottery, and intergovernmental revenues.

Appendix E

Development Incentives Examples

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Development Incentives Sensitivity Testing

Alex Joyce

Fregonese Associates

June 2017

Goal

URBAN GROWTH BOUNDARY REMAND

- Test the financial impact of several development incentives on prototypical building types within several submarkets of Bend
- Understand the impact of layering these incentives
- Make recommendations on the locations where the tools will be most beneficial

Tools and Their Practical Impact

URBAN GROWTH BOUNDARY REMAND

- Vertical Housing Development Zones (VHDZs) and Multiunit Property Tax Exemptions (MUPTE): reduce operating costs through limited duration and partial property tax exemptions

- SDC Financing: converts otherwise large, upfront costs to an ongoing operating cost and defers first payment to after stabilization (12 months) – SDC costs are paid when project is generating revenue (from rent or sales)

Market Today and Assumptions

URBAN GROWTH BOUNDARY REMAND

- **Existing comparables for new, mixed-use multifamily are limited**
  - Costar has few newer, urban comparables
    - Most from last cycle or older, or suburban garden style – would not qualify for Vertical Housing Development Zone (VHDZ) tax abatement

- **Rents are being tested in Bend, slowly – hopefully more soon**
  - Tom Cody's "Range" Apartments at NW Crossing - $2 / sq ft

Key Assumptions

URBAN GROWTH BOUNDARY REMAND

- **"5-over-1" building type**
  - Mix of mostly 1 bedrooms and studios with a few 2 bedrooms
  - Avg. unit size: 790 (bigger than Range)
  - Avg. rent / sq ft: $1.96 (lower than Range)

- **"4-over-1" and "3-over-1" building type**
  - Mix of mostly 1 and 2 bedroom with a few studios
  - Avg. unit size: 790 (bigger than Range)
  - Avg. rent / sq ft: $1.81-1.84 (lower than Range)

- **All Suburban Types: "4-over-2", wrap and walk-up**
  - Mix of mostly 1 and 2 bedroom with a few studios
  - Avg. unit size: 750-785 (bigger than Range)
  - Avg. rent / sq ft: $1.74 (lower than Range)

- **Incentive Assumptions (details in pro forma model)**
  - SDC financing:
    - Current financing method: 10 yrs @ 7% without Park SDC
    - Improved method: 10 yrs @ 7% including Park SDC and 1 year deferral with interest (during stabilization)
  - Vertical Housing Development Zone (VHDZ):
    - 4 Equalized floors = 80% property tax exemption on residential
    - 3 Equalized Floors = 60% property tax exemption on residential
    - 20% property tax exemption on land for project with 1 qualifying floor of workforce housing (80% AMI)
  - Multiple Unit Property Tax Exemption (MUPTE)
    - 100% property tax exemption for 10 years on residential portion of improvement value for multifamily housing developments
    - Assumed locational criteria applied

Key Assumptions

URBAN GROWTH BOUNDARY REMAND

- **Return Rate Targets**
  - Cash-on-Cash Return Rate = 10%
    - The ratio of annual before-tax cash flow to the total amount of equity/cash invested, expressed as a percentage.
  - Leveraged Internal Rate of Return (IRR) = 20%
    - A leveraged IRR calculation uses discounted cash flow and takes into account the amount and timing of equity invested; the amount and timing of returns/revenue; the debt service (loan payments) over the holding period; and the repayment of the remaining loan balance upon the sale of the property.
  - Targets are based on what investors expect to earn on their investment, based on the level of risk and the returns available from other forms of investment (e.g. bonds, stocks).
  - Expected returns vary from project to project and investor to investor, but the thresholds used here are an estimate of what would be considered “typical” in the current market.
  - If a potential development won’t generate enough return, it won’t be able to attract investors, and won’t get built.

Pushing the Market:

Range at NW Crossing

- ProjectPDX, Tom Cody
- High end, garden style apartments
- 3 stories, avoids elevator costs
- Surface parking
- 1 and 2 bedroom units
- $2 / sq ft
- Pre-leasing currently

Prototypes Tested

URBAN GROWTH BOUNDARY REMAND

BEND

- 5-over-1 Prototype: High Rent Central Submarket
- 4-over-1 Prototype: High Rent Central Submarket
- 3-over-1 Prototype: Moderate Rent Inner Submarket
- 4-over-2 Prototype: Higher Rent Suburban Submarket
- 4 story “wrap” apartment: Higher Rent Suburban Submarket
- 3 story walk-up apartment: Higher Rent Suburban Submarket

5-over-1 Prototype Standards

Highest Rent Central Submarkets

URBAN GROWTH BOUNDARY REMAND

BEND

Standard	Ranges
Height (Stories)	70 - 75 feet (6)
FAR	2.5 - 3.5
Density	85 – 115 DU / Acre (varies significantly based on unit mix and parking)
Parking	1 / unit 2 / 1000 sq ft commercial
Lot Coverage	80 - 100%
Landscaping	0 – 15%

5-over-1 Example:
Hoyt 20, GreenLight Development, Portland

5-over-1 Prototype

Highest Rent Central Submarkets

The Tax Trade-Off

24 new workforce units for a 10 year abatement of $1.7 million

That's only $77,000 / unit – less than half what a unit costs to build

URBAN GROWTH BOUNDARY REMAND

BEND

- "5-Over-1" Typology
- Internal, structured and/or tuck-under parking

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ Vertical Housing (4 floors = 80% exemption)	+ 25% affordable @ 80% AMI
Average Res. Rent	$1.98 / sq ft					$1.88 / sq ft
Cash-on-Cash	10%	7.2%	8.7%	9.3%	12.1%	10.3%
Levered IRR (IRR on Before Tax Cash Flows)	20%	14.6%	16.4%	17.3%	20.6%	18.6%

5-over-1 Example:
Hoyt 20, GreenLight Development, Portland

4-over-1 Prototype Standards

Higher Rent Central Submarkets

Standard	Ranges
Height (Stories)	60 - 65 feet (5)
FAR	1.5 – 2.5
Density	55 – 65 DU / Acre (varies significantly based on unit mix and parking)
Parking	1.3 / unit 2 / 1000 sq ft commercial
Lot Coverage	80 - 100%
Landscaping	0 – 15%

4-over-1 Example: 28th and Belmont
GreenLight Development, Portland

4-over-1 Prototype

Higher Rent Central Submarkets

- "4-Over-1" Typology
- Combination of surface and tuck-under parking – very efficient & cost effective

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ Vertical Housing
Average Res. Rent	$1.81 / sq ft				
Cash-on-Cash	10%	6.5%	8.1%	9.0%	10.9%
Levered IRR (IRR on Before Tax Cash Flows)	20%	13.7%	15.8%	17.0%	19.0%

4-over-1 Example: 28th and Belmont GreenLight Development, Portland

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC** and 1 year deferral with interest

Current vs. Improved SDC Financing Method – and Impact

URBAN GROWTH BOUNDARY REMAND

- Impact assessment on a 4-over-1 building type
- Park SDCs are significant: ~1/3rd of total SDC cost
- Current financing method: 10 yrs @ 7% without Park SDC
- Improved method: 10 yrs @ 7% including Park SDC and 1 year deferral with interest (during stabilization)

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ Vertical Housing
Average Res. Rent	$1.81 / sq ft				
Cash-on-Cash	10%	6.5%	8.1%	9.0%	10.9%
Levered IRR (IRR on Before Tax Cash Flows)	20%	13.7%	15.8%	17.0%	19.0%

4-over-1 Example: 28th and Belmont GreenLight Development, Portland

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC** and 1 year deferral with interest

3-over-1 Prototype Standards

Moderate Rent Inner Submarket

URBAN GROWTH BOUNDARY REMAND

BEND

Standard	Ranges
Height (Stories)	45 – 55 feet (4 – 4.5)
FAR	1.8 – 2.5 (lower parking ratios allow for increased non-parking building area, which increases FAR)
Density	55 – 65 DU / Acre (varies significantly based on unit mix and parking)
Parking	1 / unit 1 / 1000 sq ft commercial (50% surface parking / 50% tuck under)
Lot Coverage	80 - 100%
Landscaping	0 – 15%

3-over-1 Example:
Jack Menashe,
N Williams, Portland OR

3-over-1 Prototype

Moderate Rent Inner Submarkets

URBAN GROWTH BOUNDARY REMAND

BEND

- "3-over-1" Typology – rear surface and tuck under parking
- Needs urban parking ratios to be successful – because relies on mostly rear surface and tuck under parking.

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ Vertical Housing (3 floors = 60% exemption)	+ 25% affordable @ 80% AMI
Average Res. Rent	$1.84 / sq ft					$1.68
Cash-on-Cash	10%	7.9%	9.7%	10.7%	12.5%	10.4%
Levered IRR (IRR on Before Tax Cash Flows)	20%	15.6%	17.7%	19.0%	20.8%	18.5%

3-over-1 Example: Jack Menashe, N Williams, Portland OR

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC** and 1 year deferral with interest

Suburban Mixed-Use Podium (4-over-2) Prototype Standards

Higher Rent Suburban Submarket

URBAN GROWTH BOUNDARY REMAND

BEND

Standard	Ranges
Height (Stories)	65 - 75 feet (5)
FAR	2.5 – 3.5
Density	70 – 80 DU / Acre (varies significantly based on unit mix and parking)
Parking	1.5 / unit 3 / 1000 sq ft commercial
Lot Coverage	80 - 100%
Landscaping	0 – 15%

Suburban 4-over-2 Example: Vector, Holland Partners, Orenco Station, Hillsboro

Suburban Mixed-Use Podium (4-over-2) Prototype
Higher Rent Suburban Submarket

URBAN GROWTH BOUNDARY REMAND
BEND

- "4-Over-2" Typology – with 2 levels of internal parking
  - Suburban areas require higher parking ratios
- Higher cost structured parking makes this particular building type challenging outside of the core, higher rent areas

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ Vertical Housing (4 floors = 80% exemption)	+ 23% affordable @ 80% AMI
Average Res. Rent	$1.74 / sq ft					$1.59 / sq ft
Cash-on-Cash	10%	1.9%	2.6%	3.1%	5.8%	5.9%
Levered IRR (IRR on Cash Before Tax Flows)	20%	6.2%	7.6%	8.6%	12.8%	12.8%

Suburban 4-over-2 Example: Vector, Holland Partners, Orenco Station, Hillsboro

Suburban "Wrap" Apartment Prototype Standards

Higher Rent Suburban Submarket

URBAN GROWTH BOUNDARY REMAND

BEND

Standard	Ranges
Height (Stories)	45 – 50 feet (5)
FAR	2.0 – 3.0
Density	65 – 75 DU / Acre (varies significantly based on unit mix and parking)
Parking	1.5 / unit
Lot Coverage	75 - 90%
Landscaping	0 – 20%

4 Story Wood-frame Example: Nexus, Simpson Housing, Orenco Station, Hillsboro

Suburban "Wrap" Apartment Prototype
Higher Rent Suburban Submarket

URBAN GROWTH BOUNDARY REMAND
BEND

- Not mixed use building, so only MUPTE would be possible – suitable for a horizontally mixed-use area
- 4 story "Wrap style" – wood-framed building wrapped around a parking structure

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ MUPTE **	+ 25% affordable @ 80% AMI
Average Res. Rent	$1.74 / sq ft					$1.61
Cash-on-Cash	10%	3.2%	4.1%	4.8%	8.8%	6.7%
Levered IRR (IRR on Cash Before Tax Flows)	20%	8.8%	10.3%	11.4%	16.8%	14.1%

4 Story Wood-frame Example: Nexus, Simpson Housing, Orenco Station, Hillsboro

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC** and 1 year deferral with interest
** MUPTE assumptions are a 10 year tax abatement on residential improvement value (not exempting land value)

Suburban Walk-Up Apartment Prototype
Higher Rent Suburban Submarket

URBAN GROWTH BOUNDARY REMAND
BEND

Standard	Ranges
Height (Stories)	32 – 40 feet (5)
FAR	0.8 – 1.5
Density	35 – 45 DU / Acre (varies significantly based on unit mix and parking)
Parking	2.0 / unit
Lot Coverage	75 - 90%
Landscaping	0 – 20%

Suburban Walk Up Example: Nexus, Simpson Housing, Orenco Station, Hillsboro

Suburban Walk-Up Apartment Prototype
Higher Rent Suburban Submarket

- **NOTE: Alt 1 @ $125/ft in hard costs - $195/ sq ft total cost**
- 3 story, walk up - with adjacent surface parking and garages (potentially)
- Not mixed use building, so only MUPTE would be possible – suitable for a horizontally mixed-use area
- Efficient, wood-only construction
- No elevators required to comply with ADA

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ MUPTE **	+ 25% affordable @ 80% AMI
Average Res. Rent	$1.74 / sq ft					$1.61
Cash-on-Cash	10%	5.2%	6.5%	7.4%	11.2%	8.8%
Levered IRR (IRR on Cash Before Tax Flows)	20%	12.0%	13.8%	15.0%	19.6%	16.9%

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC** and 1 year deferral with interest
** MUPTE assumptions are a 10 year tax abatement on residential improvement value (not exempting land value)

NOTE: Bend has seen garden style apartments delivered without subsidy this real estate cycle. However, using current land cost comparables, construction costs, and rents, achieving financial feasibility at a 10% cash-on-cash return rate appears challenging. This would suggest that the projects completed in Bend may have A) had unusually low land costs, B) been constructed when construction costs were lower earlier in the cycle, or C) the investors required a below average return rate on equity. (Equity return rates have been declining rapidly as this cycle has heated up.)

Suburban Walk Up Example: Nexus, Simpson Housing, Orenco Station, Hillsboro

Suburban Walk-Up Apartment Prototype
Higher Rent Suburban Submarket

- **NOTE: Alt 2 @ $100/ft in hard costs - $165/ sq ft total cost**
- 3 story, walk up - with adjacent surface parking and garages (potentially)
- Not mixed use building, so only MUPTE would be possible – suitable for a horizontally mixed-use area
- Efficient, wood-only construction
- No elevators required to comply with ADA

	Target	No Incentives	+ SDC Financing (current*)	+ SDC Financing (improved*)	+ MUPTE **	+ 25% affordable @ 80% AMI
Average Res. Rent	$1.74 / sq ft					$1.61
Cash-on-Cash	10%	9.9%	11.7%	13.0%	17.4%	14.7%
Levered IRR (IRR on Cash Before Tax Flows)	20%	18.0%	20.1%	21.4%	26.0%	23.4%

* Current: 10 yrs @ 7% without Park SDC; Improved: 10 yrs @ 7% **including Park SDC**[80] and 1 year deferral with interest
** MUPTE assumptions are a 10 year tax abatement on residential improvement value (not exempting land value)

NOTE: Bend has seen garden style apartments delivered without subsidy this real estate cycle. However, using current land cost comparables, construction costs, and rents, achieving financial feasibility at a 10% cash-on-cash return rate appears challenging. This would suggest that the projects completed in Bend may have A) had unusually low land costs, B) been constructed when construction costs were lower earlier in the cycle, or C) the investors required a below average return rate on equity. (Equity return rates have been declining rapidly as this cycle has heated up.)

Woody Walk Up Example: Nexus, Simpson Housing, Orenco Station, Hillsboro

Key Findings

URBAN GROWTH BOUNDARY REMAND

- **Current rents make vertical development a challenge without additional incentives**
  - Structured parking costs and high construction costs are a big driver
- **Incentives can make desired development types "pencil" – but multiple, layered tools are required (no silver bullet)**
  - At no direct, out-of-pocket costs to City
- **VHDZ and MUPTE can enable income restricted housing production at no direct "cost" to city**
  - Potential to leverage market to achieve income restricted units at ~50% less than the cost to build otherwise
  - Cost = deferred tax collection, so no direct out of pocket costs, i.e.: only deferred revenue
- **VHDZ has narrower applicability than MUPTE – only on mixed-use buildings fronting main streets**
  - Requires ground floor retail with public road frontage
  - Property tax exemption incentivizes 4 full floors of residential – needed to get full 80% property tax exemption
- **Flexibility of MUPTE could be good fit for horizontal mixed-use areas where multifamily can support a walkable commercial area**
  - No ground floor retail is required and efficient 3 and 4 story apartments can be fully abated
- **SDC financing has significant benefit – but needs full taxing district participation**
  - Park SDCs comprise ~1/3rd of project SDC costs
  - Need intergovernmental agreements to enable full property tax exemption

Tool Applicability Recommendations

URBAN GROWTH BOUNDARY REMAND

BEND

- **SDC Financing**
  - **Most suitable locations:** In areas with high quality existing infrastructure, including good street connectivity, multimodal travel options, parks. To be most effective, the current program needs to include Parks SDCs and a 1 year deferral option.
  - *Candidate locations: Entire city*
- **Vertical Housing Development Zones (VHDZ)**
  - **Most suitable locations:** In areas with moderate to strong market strength where the city wants 4-over-1 style mixed use buildings and opportunities for privately-funded workforce housing (80% AMI). Specifically on parcels with commercial frontage where vertical mixed-use (residential over retail) is desired. 4 floors of residential above ground floor retail achieves the highest possible tax exemption (80%).
  - *Candidate locations: commercial streets within CWP, KorPine, Central District*
- **Multiple Unit Property Tax Exemptions (MUPTE)**
  - **Most suitable locations:** In areas where multifamily is desired or required but where market strength is challenging. In areas where horizontal rather than vertical mixed-use is acceptable. The eligibility can be crafted to achieve public benefits, such as walkability, in submarkets where that pattern is not the norm.
  - For instance, in areas that have (or will have) retail and services as well as a variety of housing types, locating multifamily adjacent to and walkable to the commercial areas has benefits for both household travel costs as well as reducing regional auto congestion and vehicle miles traveled compared to highly segregated, disconnected suburban uses.
  - *Candidate locations: Areas adjacent to commercial streets, but not on commercial streets, in East Downtown, Central District, and possibly in or adjacent to commercial centers within UGB Expansion areas. Potential future use in residential portions of transit corridors as an Integrated Land Use and Transportation Plan (ILUTP) implementation strategy.*

Property Tax Exemption Programs –
The Counter-intuitive Impact to Long Term Tax Revenues

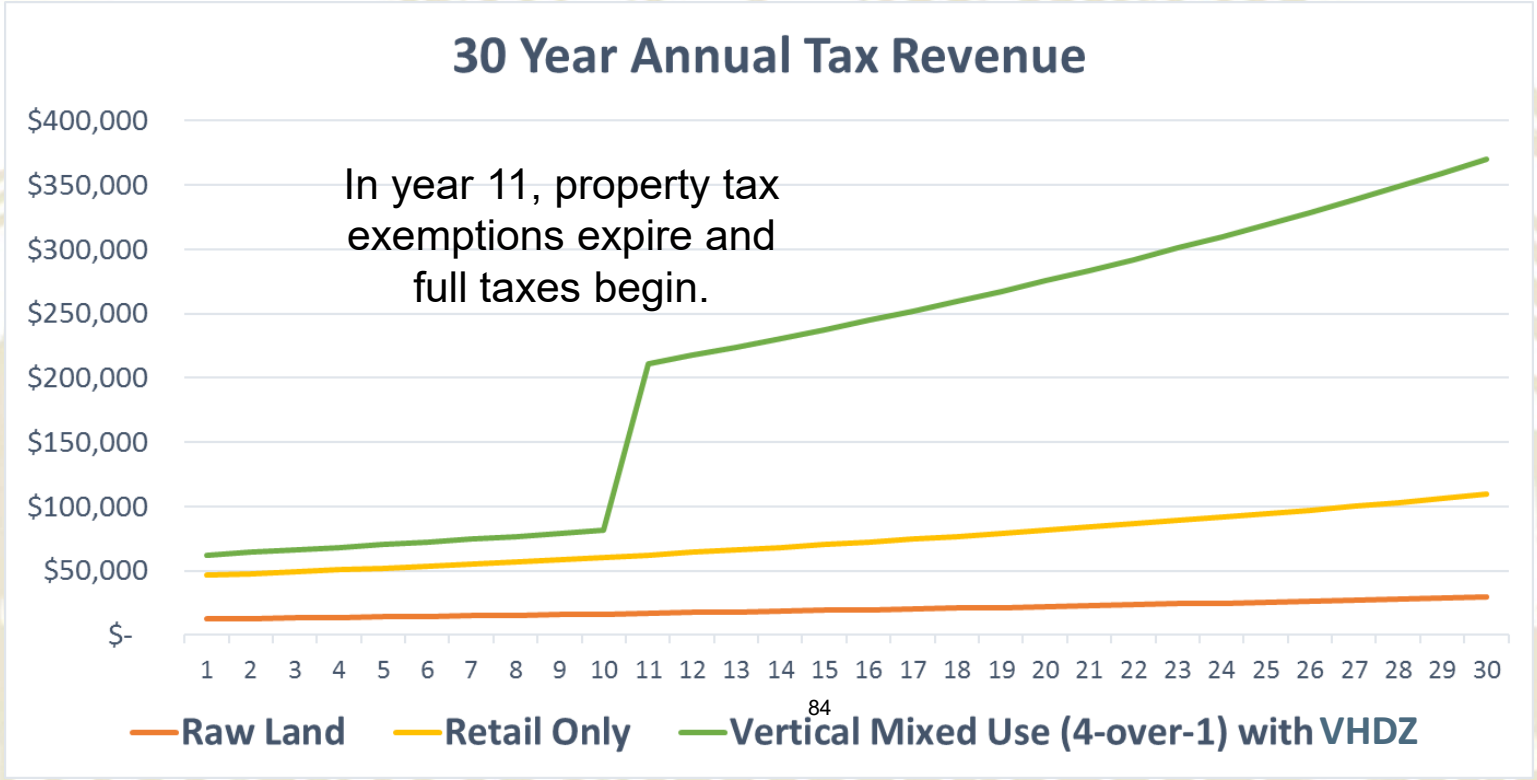
URBAN GROWTH BOUNDARY REMAND

- Illustrate 3 separate development scenarios for a single piece of commercial land in Bend and the associated tax revenue.
  - Scenario 1: Raw land goes undeveloped because it is financially infeasible to develop anything
  - Scenario 2: Land gets developed into stand-alone retail shopping center
  - Scenario 3: Land gets developed as a 4-over-1 mixed-use development and takes advantage of a Vertical Housing Development Zone (VHDZ)
- *Note: Scenario 3 is only financially feasible with VHDZ in place. A vertical mixed-use project would not happen without that incentive.*

How Limited Tax Property Exemptions Can Actually Result in More Tax Revenue

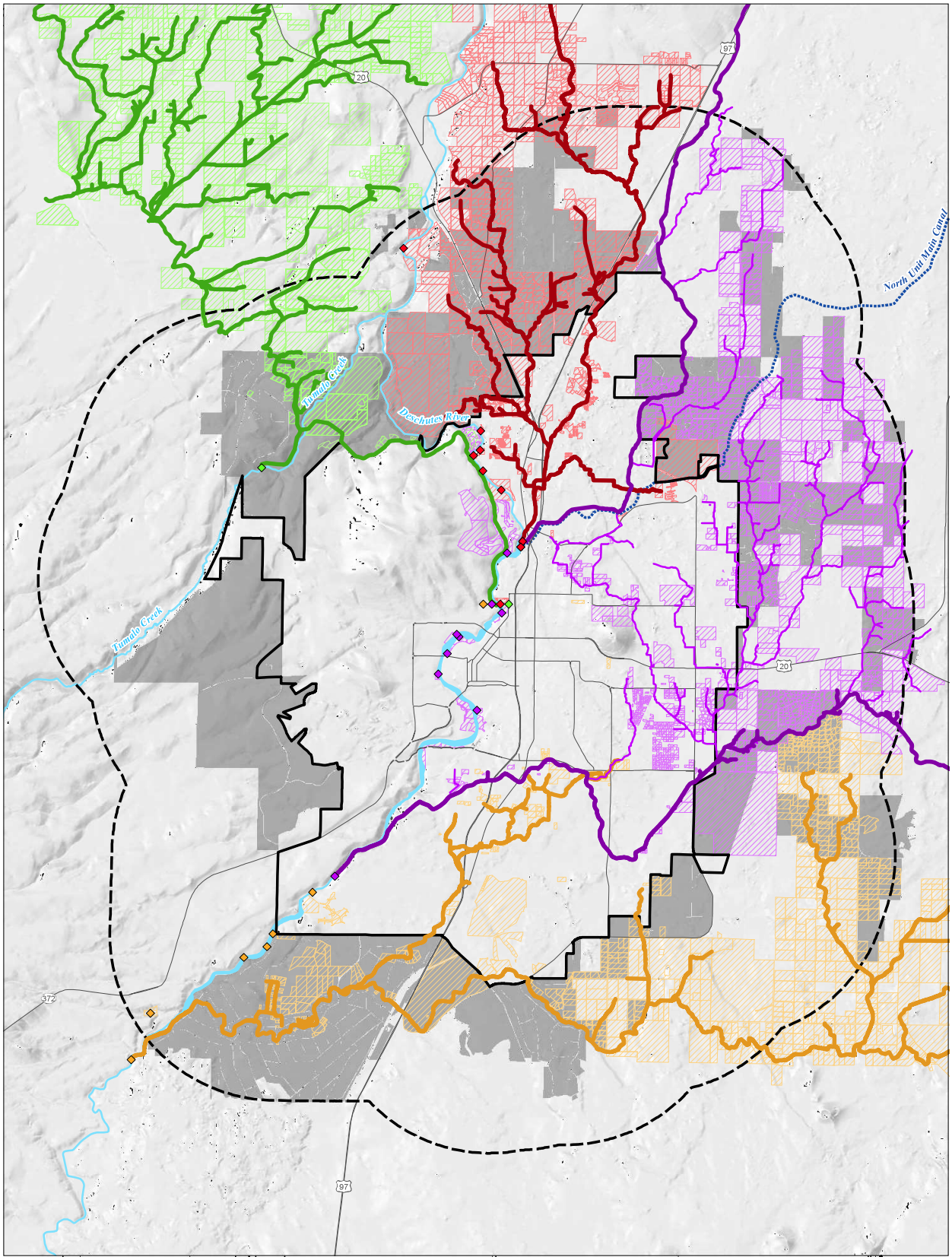
URBAN GROWTH BOUNDARY REMAND

- Between years 1-10, the stand-alone retail and the vertical mixed-use project have similar tax revenue, but looking over 30 years, the tax revenue is much higher for the vertical mixed-use building.
  - Even with a 10 year, 80% property tax exemption on the residential portion of the vertical mixed-use building.
- The net present value of revenues over 30 years from the vertical mixed-use building are $2,000,000 compared to $790,000 for the stand-alone retail (assuming a 7% discount rate).
  - That is over 140% more value.



Appendix F

Irrigation District Maps



LEGEND

Exception Lands

Irrigation District Infrastructure

- Points of Diversion
- Canals/Laterals/Pipelines
- Tax Lots Served by Irrigation District

Irrigation District Color

- Arnold
- COID
- Swalley
- Tumalo

All Other Features

- City of Bend Urban Growth Boundary (UGB)
- 2 Miles from UGB
- Major Roads
- Natural Watercourses
- North Unit Main Canal Only - No Water Deliveries Until North of Crooked River

NOTE

All canals, laterals, and piping have a corresponding easement on both sides of the structure.

Date: April 21, 2015
Data Sources: City of Bend, USGS, ESRI

FIGURE X

UGB Analysis: All Irrigation Districts

City of Bend

DRAFT

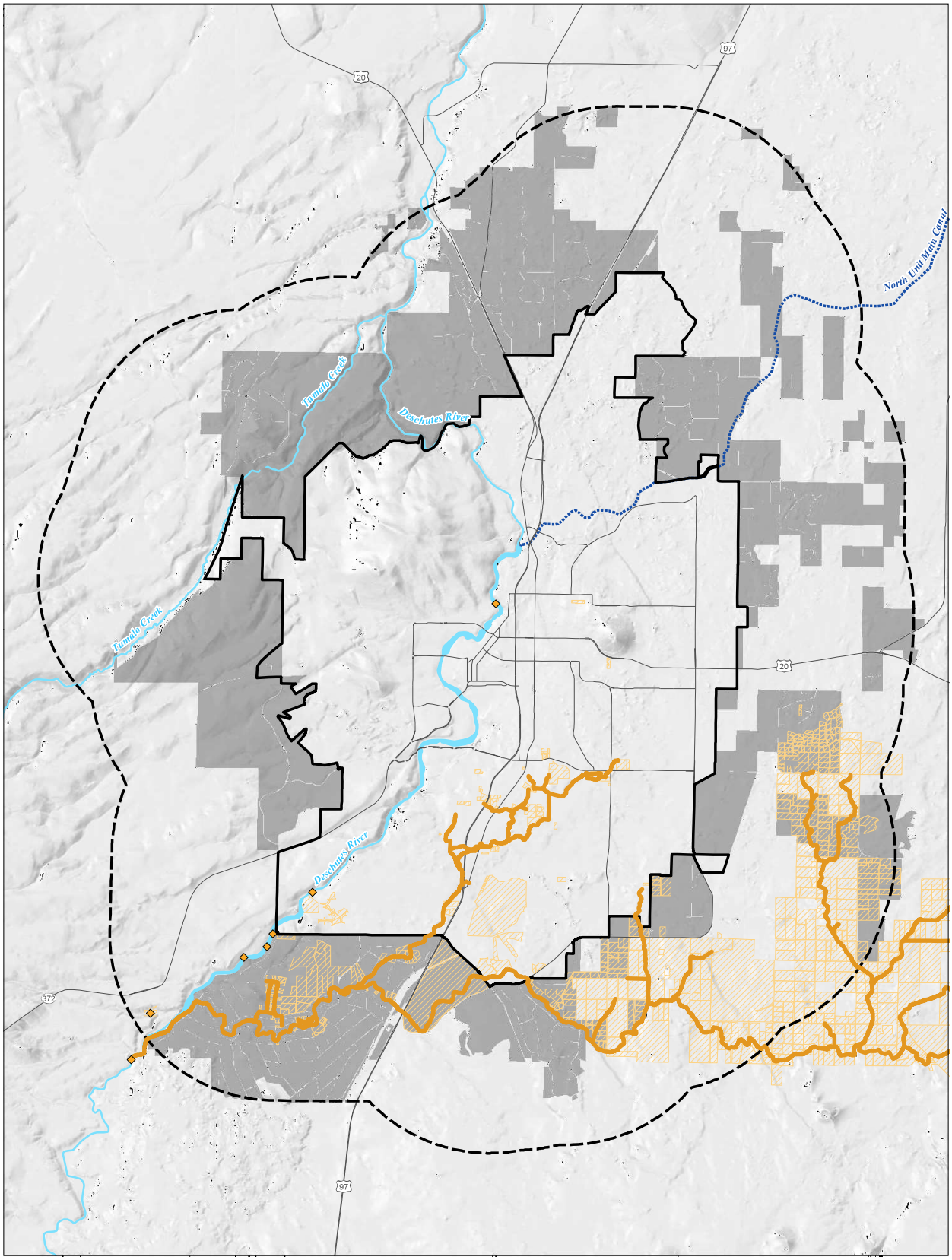
N

0 3,000 6,000 9,000

Feet

GSI Water Solutions, Inc.

Document Path: P:\Portland\237 - City of Bend\015-WR Consultant of Record 14-15\Project_GIS\Project_mxds\FigureX_Exception_Lands_and_All_IDs.mxd



LEGEND

- Exception Lands

Arnold Irrigation District Infrastructure

- Points of Diversion
- Canals/Laterals/Pipelines
- Tax Lots Served by

All Other Features

- City of Bend Urban Growth Boundary (UGB)
- 2 Miles from UGB
- Major Roads
- Natural Watercourses
- North Unit Main Canal Only - No Water Deliveries Until North of Crooked River

FIGURE X

UGB Analysis: Arnold Irrigation District

City of Bend

DRAFT

NOTE

All canals, laterals, and piping have a corresponding easement on both sides of the structure.

Date: April 13, 2015
Data Sources: City of Bend, USGS, ESRI

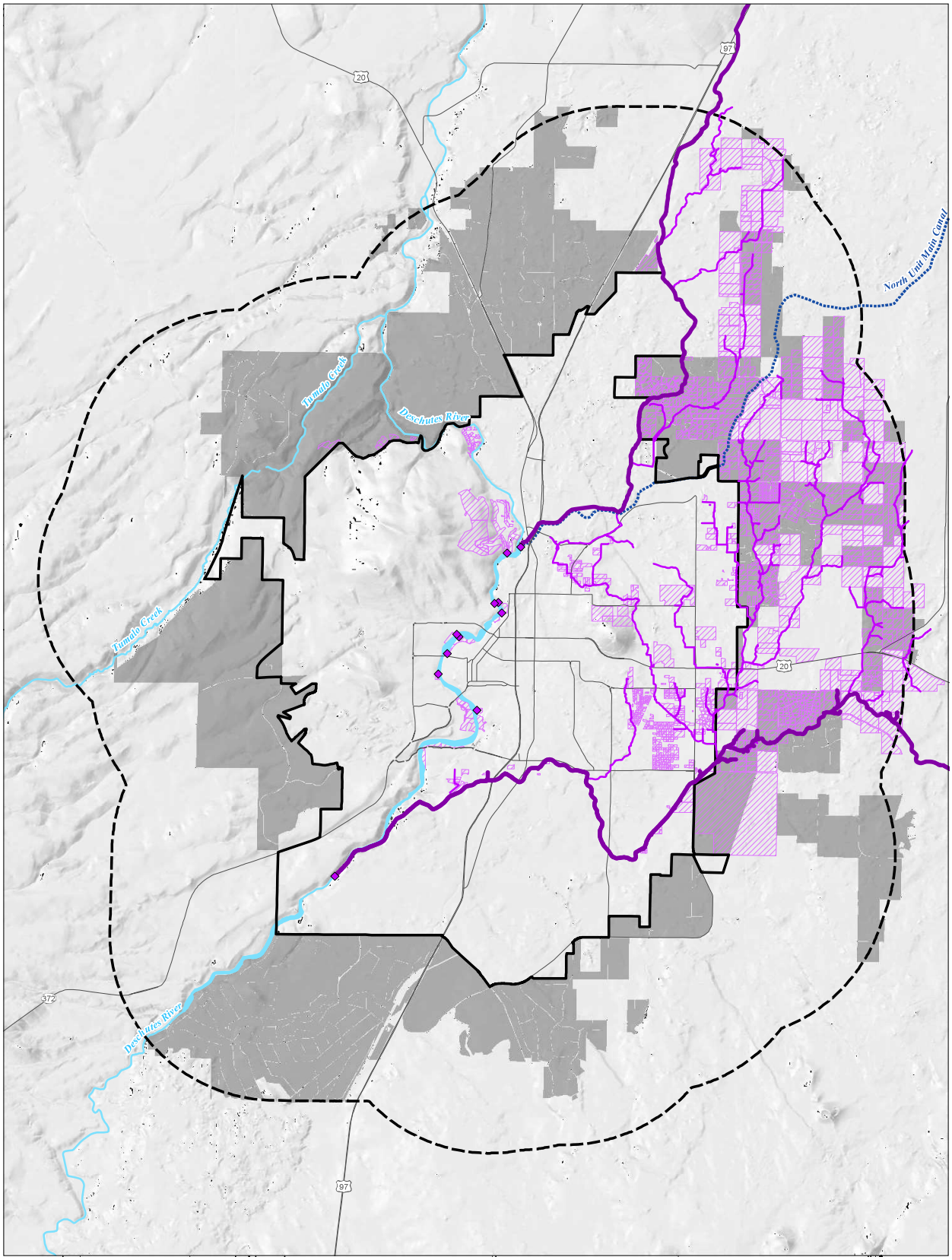
N

0 3,000 6,000 9,000

Feet

GSI Water Solutions, Inc.

Document Path: P:\Portland\237 - City of Bend\015-WR Consultant of Record 14-15\Project_GIS\Project_mxds\FigureX_Exception_Lands_and_Arnold.mxd



LEGEND

Exception Lands

COID Infrastructure

- Points of Diversion
- Canals
- Laterals/Pipelines
- Tax Lots Served by COID

All Other Features

- City of Bend Urban Growth Boundary (UGB)
- 2 Miles from UGB
- Major Roads
- Natural Watercourses
- North Unit Main Canal Only - No Water Deliveries Until North of Crooked River

NOTE
All canals, laterals, and piping have a corresponding easement on both sides of the structure.

Date: April 13, 2015
Data Sources: City of Bend, USGS, ESRI

FIGURE X

UGB Analysis: Central Oregon Irrigation District (COID)

City of Bend

DRAFT

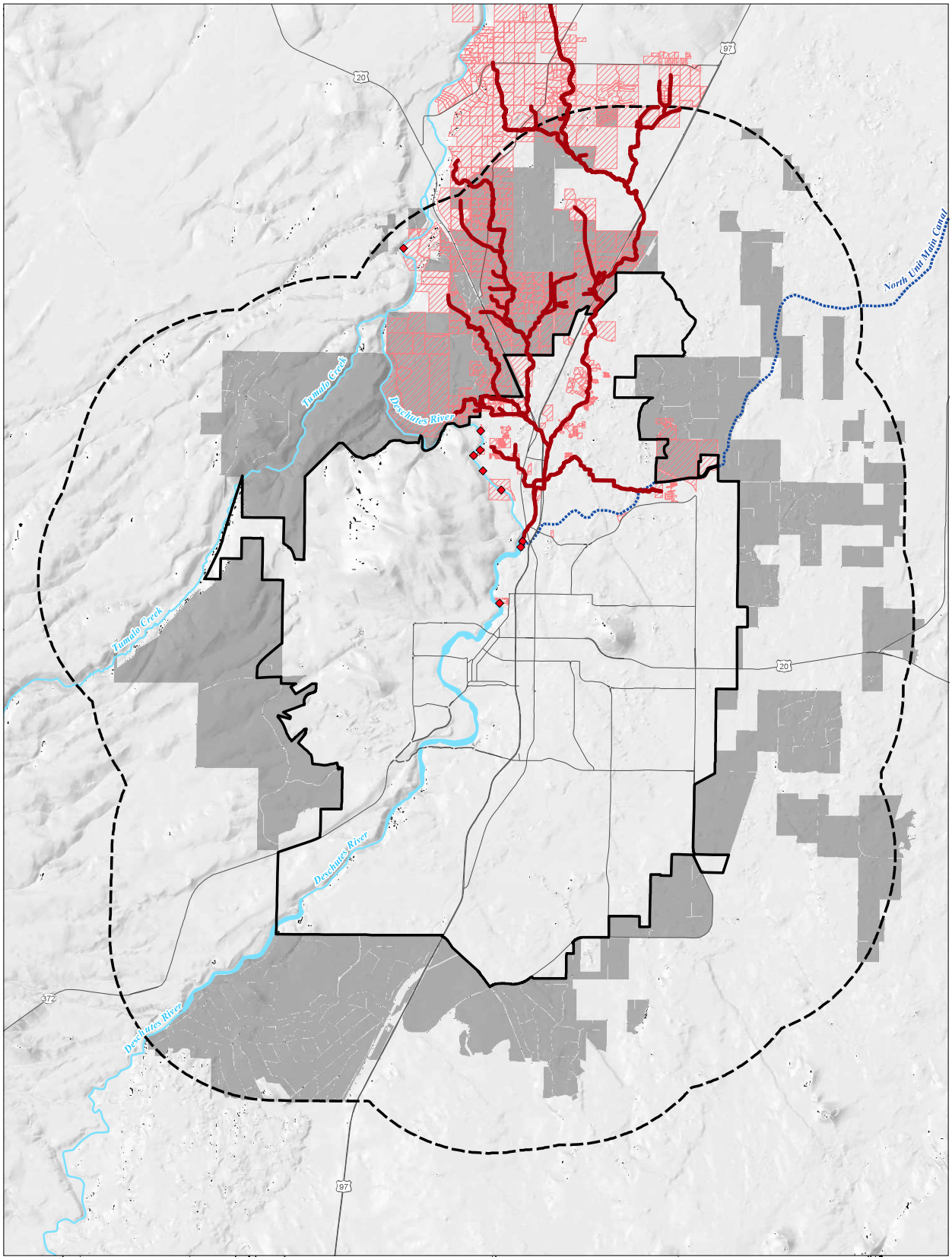
N

0 3,000 6,000 9,000

Feet

GSI Water Solutions, Inc.

Document Path: P:\Portland\237 - City of Bend\015-WR Consultant of Record 14-15\Project_GIS\Project_mxds\FigureX_Exception_Lands_and_COID.mxd



LEGEND

Exception Lands

Swalley Irrigation District Infrastructure

Points of Diversion

Canals/Laterals/Pipelines

Tax Lots Served by Swalley

All Other Features

City of Bend Urban Growth Boundary (UGB)

2 Miles from UGB

Major Roads

Natural Watercourses

North Unit Main Canal Only - No Water Deliveries Until North of Crooked River

FIGURE X

UGB Analysis: Swalley Irrigation District

City of Bend

DRAFT

NOTE

All canals, laterals, and piping have a corresponding easement on both sides of the structure.

Date: April 21, 2015
Data Sources: City of Bend, USGS, ESRI

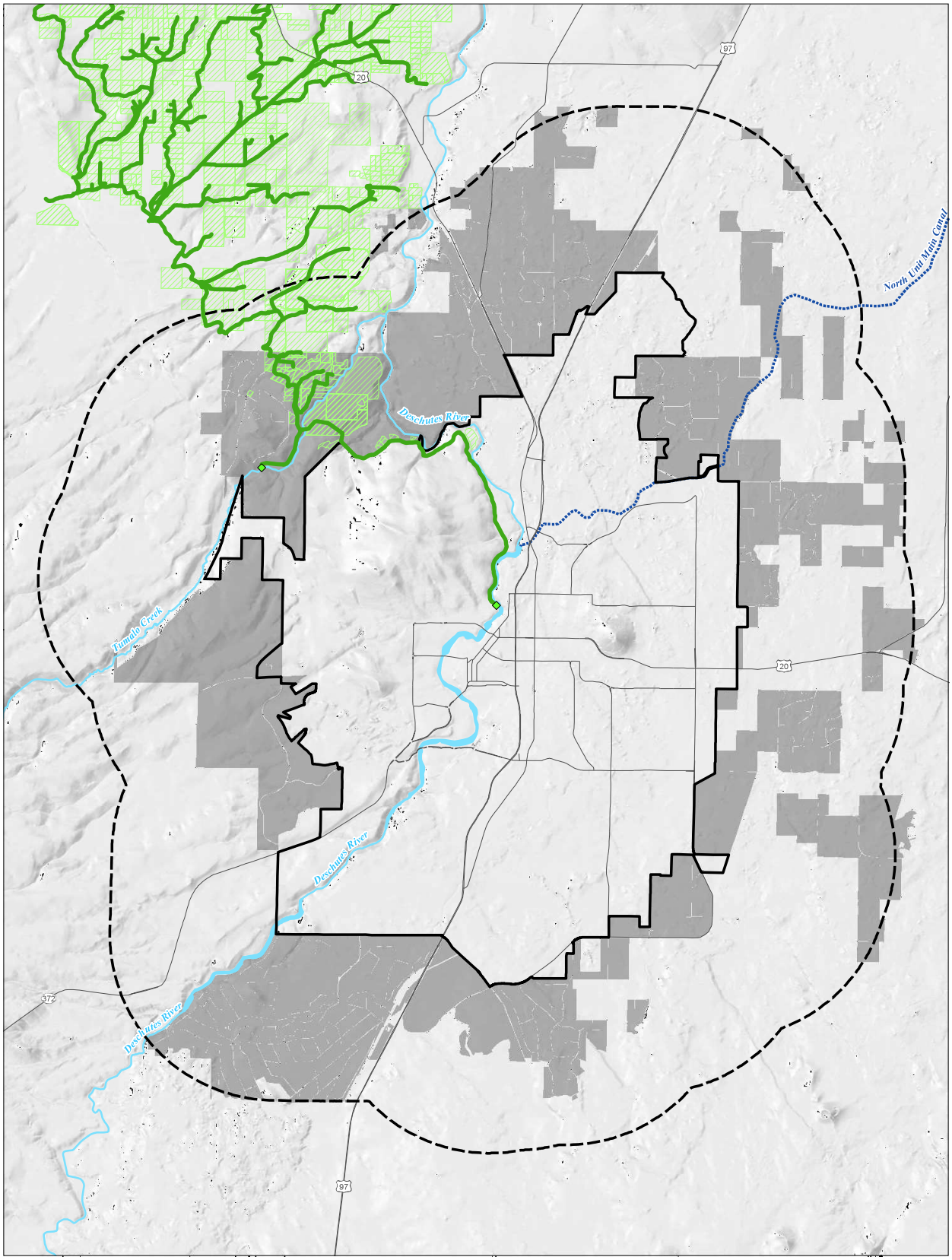
N

0 3,000 6,000 9,000

Feet

GSI Water Solutions, Inc.

Document Path: P:\Portland\237 - City of Bend\015-WR Consultant of Record 14-15\Project_GIS\Project_mxds\FigureX_Exception_Lands_and_Swalley.mxd



LEGEND

Exception Lands

Tumalo Irrigation District Infrastructure

- Points of Diversion
- Canals/Laterals/Pipelines
- Tax Lots Served by Tumalo

All Other Features

- City of Bend Urban Growth Boundary (UGB)
- 2 Miles from UGB
- Major Roads
- Natural Watercourses
- North Unit Main Canal Only - No Water Deliveries Until North of Crooked River

NOTE
All canals, laterals, and piping have a corresponding easement on both sides of the structure.

Date: April 14, 2015
Data Sources: City of Bend, USGS, ESRI

FIGURE X

UGB Analysis: Tumalo Irrigation District

City of Bend

DRAFT

N

0 3,000 6,000 9,000

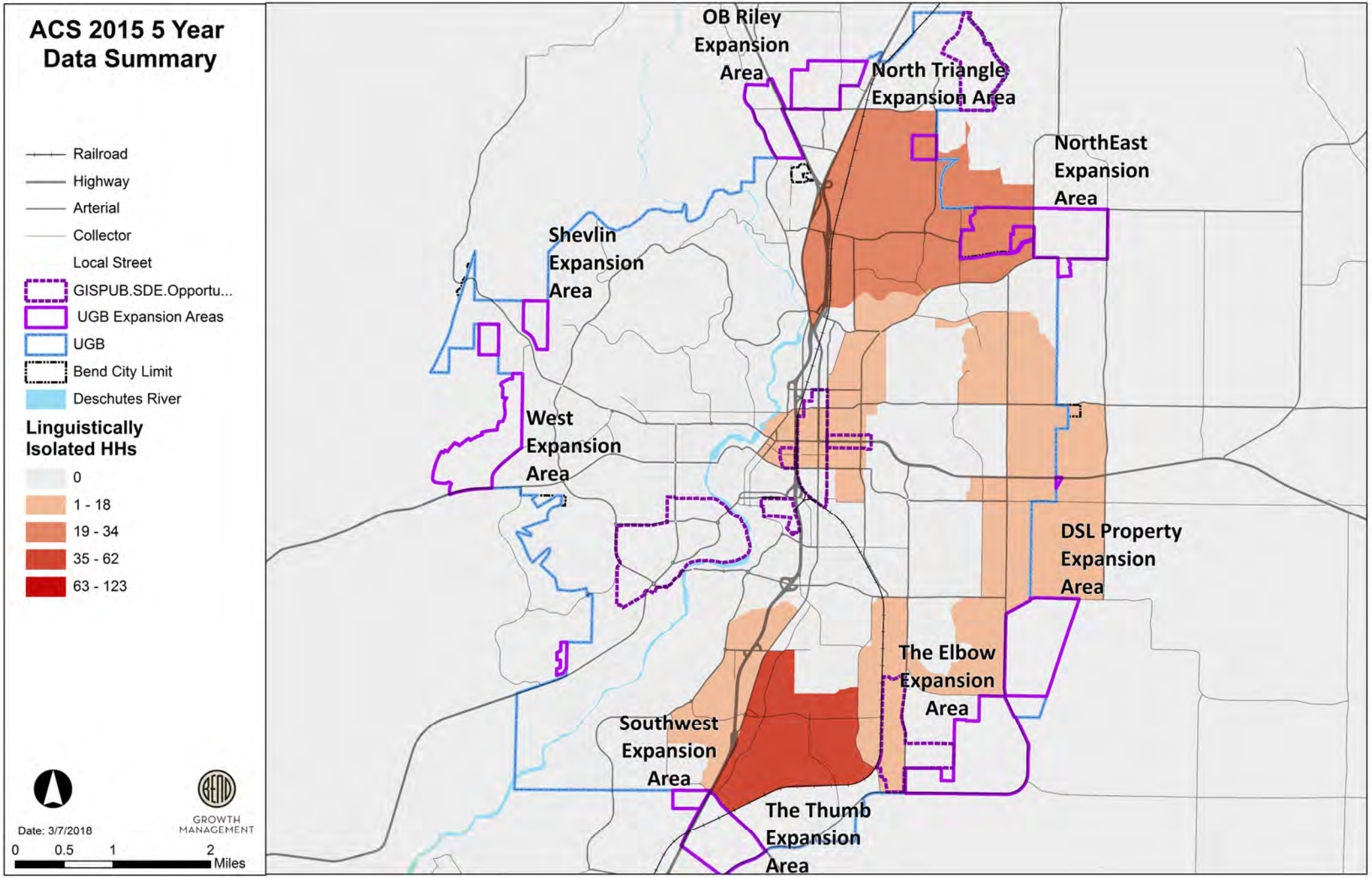
Feet

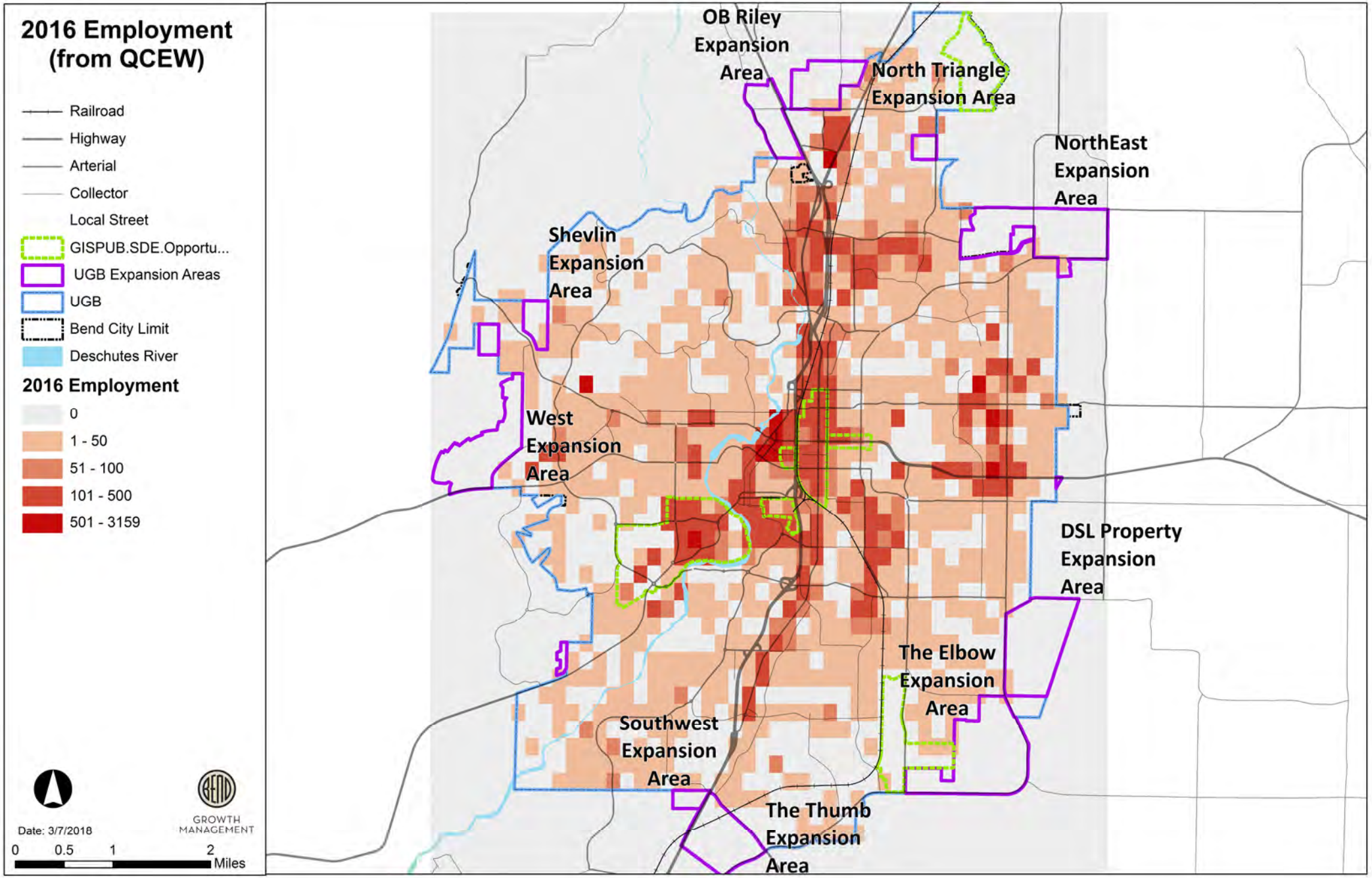
GSI Water Solutions, Inc.

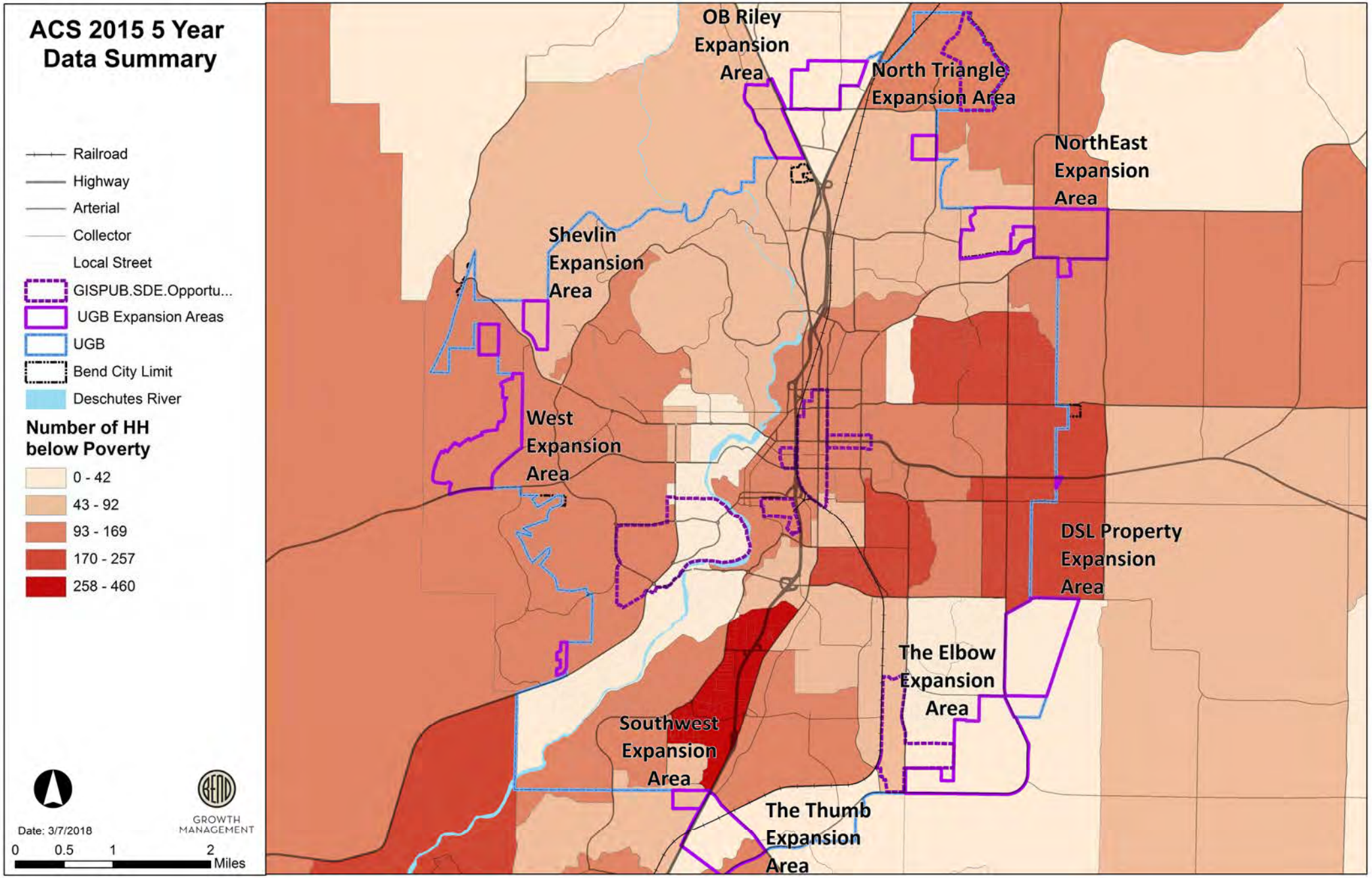
Document Path: P:\Portland\237 - City of Bend\015-WR Consultant of Record 14-15\Project_GIS\Project_mxds\FigureX_Exception_Lands_and_Tumalo.mxd

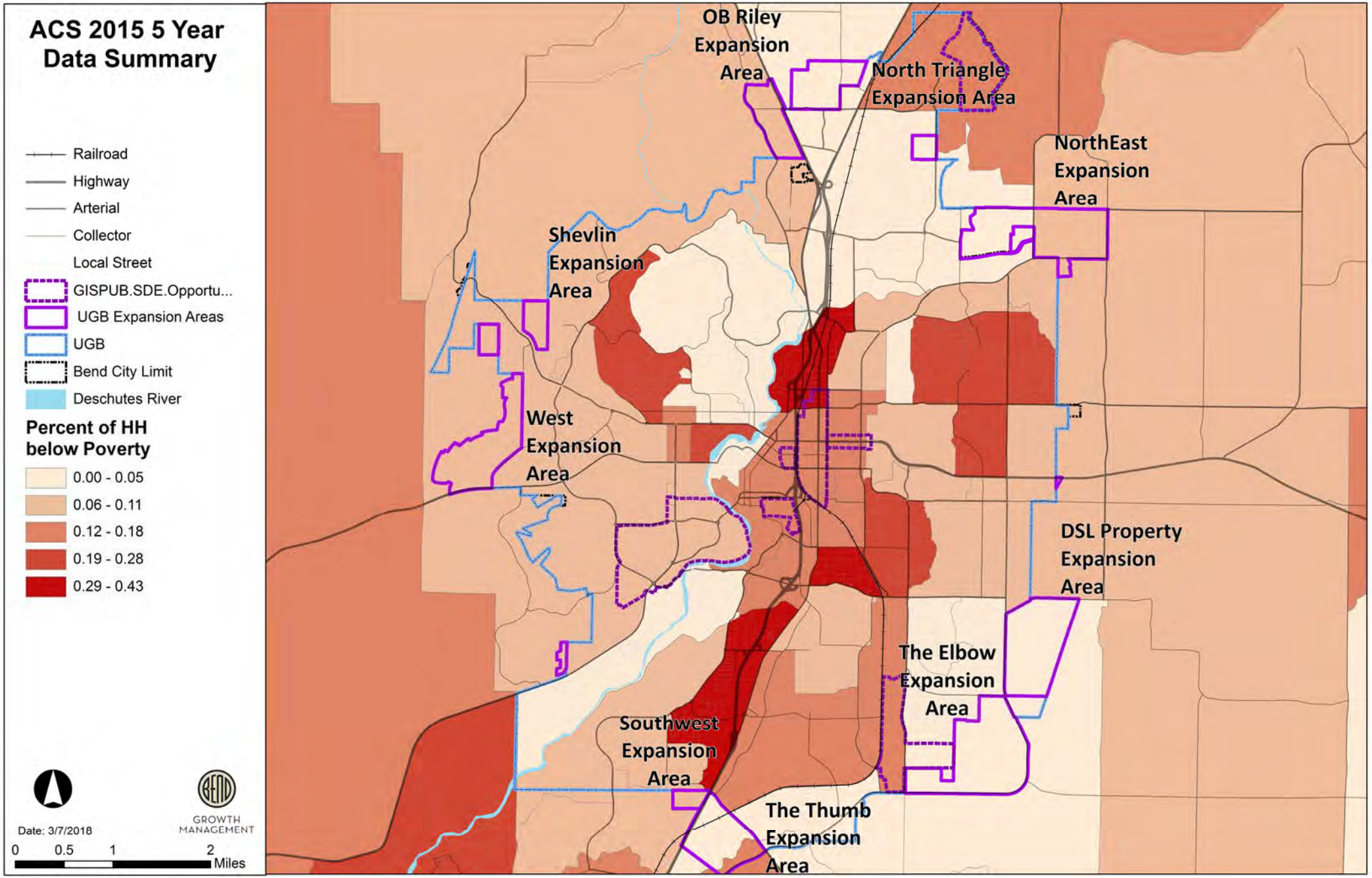
Appendix G

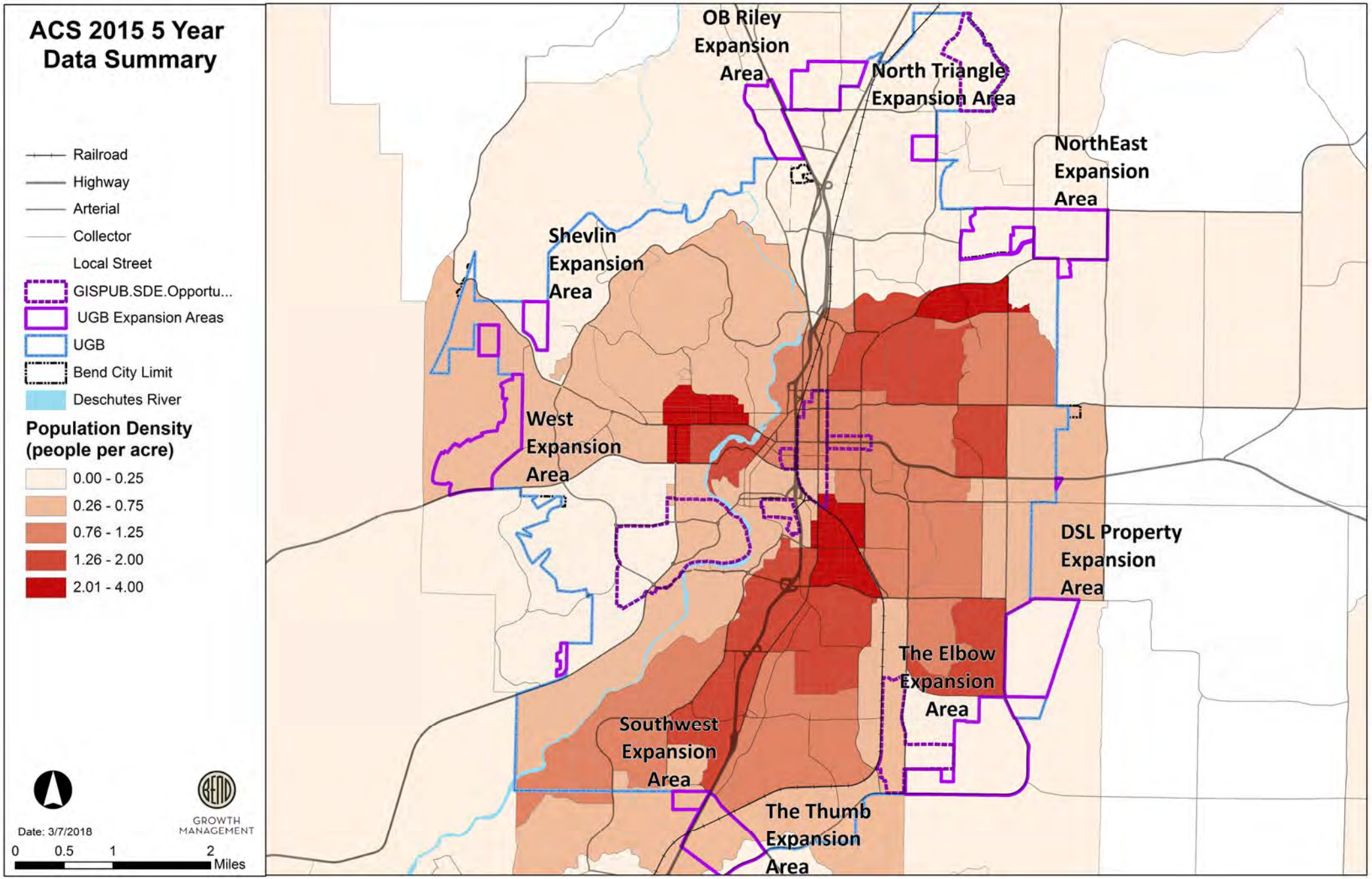
Supporting Demographic Information Maps


ACS 2015 5 Year Data Summary
Railroad
Highway
Arterial
Collector
Local Street
GISPUB.SDE.Opportu...
UGB Expansion Areas
UGB
Bend City Limit
Deschutes River
Linguistically Isolated HHs
0
1 - 18
19 - 34
35 - 62
63 - 123
Date: 3/7/2018
GROWTH MANAGEMENT
0 0.5 1 2 Miles
OB Riley Expansion Area
North Triangle Expansion Area
NorthEast Expansion Area
Shevlin Expansion Area
West Expansion Area
DSL Property Expansion Area
The Elbow Expansion Area
Southwest Expansion Area
The Thumb Expansion Area


2016 Employment
(from QCEW)
Railroad
Highway
Arterial
Collector
Local Street
GISPUB.SDE.Opportu...
UGB Expansion Areas
UGB
Bend City Limit
Deschutes River
2016 Employment
0
1 - 50
51 - 100
101 - 500
501 - 3159
Date: 3/7/2018
GROWTH MANAGEMENT
0 0.5 1 2 Miles
OB Riley Expansion Area
North Triangle Expansion Area
NorthEast Expansion Area
Shevlin Expansion Area
West Expansion Area
DSL Property Expansion Area
The Elbow Expansion Area
Southwest Expansion Area
The Thumb Expansion Area


ACS 2015 5 Year Data Summary
Railroad
Highway
Arterial
Collector
Local Street
GISPUB.SDE.Opportu...
UGB Expansion Areas
UGB
Bend City Limit
Deschutes River
Number of HH below Poverty
0 - 42
43 - 92
93 - 169
170 - 257
258 - 460
Date: 3/7/2018
GROWTH MANAGEMENT
0 0.5 1 2 Miles
OB Riley Expansion Area
North Triangle Expansion Area
NorthEast Expansion Area
Shevlin Expansion Area
West Expansion Area
DSL Property Expansion Area
The Elbow Expansion Area
Southwest Expansion Area
The Thumb Expansion Area


ACS 2015 5 Year Data Summary
Railroad
Highway
Arterial
Collector
Local Street
GISPUB.SDE.Opportu...
UGB Expansion Areas
UGB
Bend City Limit
Deschutes River
Percent of HH below Poverty
0.00 - 0.05
0.06 - 0.11
0.12 - 0.18
0.19 - 0.28
0.29 - 0.43
Date: 3/7/2018
GROWTH MANAGEMENT
0 0.5 1 2 Miles
OB Riley Expansion Area
North Triangle Expansion Area
NorthEast Expansion Area
Shevlin Expansion Area
West Expansion Area
DSL Property Expansion Area
The Elbow Expansion Area
Southwest Expansion Area
The Thumb Expansion Area


ACS 2015 5 Year Data Summary
Railroad
Highway
Arterial
Collector
Local Street
GISPUB.SDE.Opportu...
UGB Expansion Areas
UGB
Bend City Limit
Deschutes River
Population Density (people per acre)
0.00 - 0.25
0.26 - 0.75
0.76 - 1.25
1.26 - 2.00
2.01 - 4.00
Date: 3/7/2018
GROWTH MANAGEMENT
0 0.5 1 2 Miles
OB Riley Expansion Area
North Triangle Expansion Area
NorthEast Expansion Area
Shevlin Expansion Area
West Expansion Area
DSL Property Expansion Area
The Elbow Expansion Area
Southwest Expansion Area
The Thumb Expansion Area

Appendix H

Combined Transportation Investment Assessment Tables: City of Bend

TSP ID	Street Name	Begin	End	Improvement	Cost	Cost Source	Type	Tier	Project Source	Previous Source Timeline
Capacity										
26	27th	Neff Road	US 20	Includes: 27th @ Neff signal modification	$900,000	Cost Estimator	Capacity	1	TSP	Near-Term/Long-Term
29	Empire	US 20	US 97	Includes: Empire @ 3rd signal modification Empire @ Parkway SB On-ramp: new signal, realignment, new local road, new lanes	$3,900,000	Bend MTP	Capacity	1	TSP	Near-Term
30	Empire	US 97	Boyd Acres	Includes: - Empire @ Parkway NB Off--ramp: widen, add thru lanes	$5,080,000	Bend MTP & Cost Estimator	Capacity	1	TSP	Near-Term
47	8th	Revere	Greenwood	Includes signal upgrades	$1,800,000	Cost Estimator	Capacity	1	TSP	Near-Term
83	Butler Market	8th	Wells Acre	Entire corridor improvements and Butler Market/Wells Acres roundabout	$3,450,000	Cost Estimator	Capacity	1	TSP	Near-Term
151	Empire	Yeoman/Purcell	Butler Market	Includes: Empire @ Purcell roundabout; Empire @ Butler Market roundabout	$20,300,000	City Staff Presentation to City Council (On CIP)	Capacity	1	TSP	Near-Term
25	27th	Butler Market	Neff Rd	Includes: 27th @ Wells Acres roundabout; 27th @ Beall roundabout; 27th @ Conners roundabout	$9,300,000	Cost Estimator	Capacity	2	TSP	Mid-Term
255	Yeoman	18th	Desert Sage	New Roadway	$3,615,500	Cost Estimator	Capacity	2	TSP	Mid-Term
Safety										
*	US 20	27th	-	Signal and Safety Upgrades	$437,500	Cost Estimator	Safety	3	City Staff	n/a
Connectivity										
86	Butler Market	27th	Deschutes Market	Frontage improvement	$431,320	Cost Estimator	MV Connectivity & Ped/Bike Improvement	1	TSP	Near-Term
87	Butler Market	Deschutes Market	UGB	Frontage improvement	$1,864,388	UGB Expansion Work	MV Connectivity & Ped/Bike Improvement	1	TSP	Long-Term
207a	Yeoman Ext			Frontage improvement	$10,927,448	UGB Expansion Work	MV Connectivity & Ped/Bike Improvement	1	TSP	n/a
Pedestrian/Bicycle										
188	Deschutes Market	Butler Market	N. UGB	Frontage improvement	$868,636	UGB Expansion Work	Ped/Bike Improvement	1	TSP	Long-Term

	Total	-20%	20%
Tier 1	$49,521,792	$39,617,434	$59,426,150
Tier 2	$12,915,500	$10,332,400	$15,498,600
Tier 3	$437,500	$350,000	$525,000
Total	**$62,874,792**	**$50,299,834**	**$75,449,750**

TSP ID	Street Name	Begin	End	Improvement	Cost	Cost Source	Type	Tier	Project Source	Previous Source Timeline
Capacity										
29	Empire	US 20	US 97	Includes: Empire @ 3rd signal modification Empire @ Parkway SB On-ramp: new signal, realignment, new local road, new lanes	$3,900,000	Bend MTP	Capacity	1	TSP	Near-Term
30	Empire	US 97	Boyd Acres	Includes: - Empire @ Parkway NB Off--ramp: widen, add thru lanes	$5,080,000	Bend MTP & Cost Estimator	Capacity	1	TSP	Near-Term
99	OB Riley	Empire	-	Construct a roundabout	$3,100,000	Cost Estimator	Capacity	1	TSP	Long-Term
208	OB Riley	UGB	Empire	Modernization	$9,280,950	Cost Estimator	Capacity & Safety & Ped/Bike Improvement	1	TSP	Mid-Term
209	OB Riley	Empire	US 20	Modernization	$999,400	Cost Estimator	Capacity & Safety & Ped/Bike Improvement	1	TSP	Mid-Term
23	US 20	4th	-	Construct a traffic signal	$900,000	Cost Estimator	Capacity	2	TSP	Mid-Term/Long-Term
165	OB Riley	Archie Briggs	-	Construct a roundabout	$3,100,000	Cost Estimator	Capacity	2	TSP	Mid-Term/Long-Term
241	Britta	Hardy	Robal	Extend Britta Street to connect with Robal Road at US 20. Modify and upgrade US 20/Robal Road Signal and improve existing Britta Street.	$1,000,000	Bend MTP	Capacity & Safety & MV Connectivity	3	TSP/BNATS	Long-Term
*	US 20	Cooley	-	Construct a traffic signal or roundabout	$5,000,000	Cost Estimator	Capacity	3	BNATS	n/a
Safety										
15	3rd(US 20)	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	$731,140	Cost Estimator	Safety	2	TSP/MMA	Mid-Term
*	US 20	Jamison	-	Right-in/right-out only	$40,000	BNATS	Safety	2	BNATS	Mid-Term
12	US 20	US 97	Empire	Frontage Improvements	$2,407,500	Cost Estimator	Safety	3	TSP	Mid-Term
Connectivity										
204	Robal	US 20	OB Riley	Construct new roadway	$2,653,736	UGB Expansion Work	MV Connectivity & Ped/Bike Improvement	1	TSP	n/a
251	Jamison	Britta	N Fire Station	New roadway	$707,700	Cost Estimator	Connectivity	1	TSP	Long-Term
Pedestrian/Bicycle										
8	US 20	Cooley	US 97	New frontage	$5,132,790	Cost Estimator	Ped/Bike Connectivity	1		
Capacity										
4	US 97	UGB	Cooley	Includes: US 97 @ Cooley Road overcrossing	$30,000,000	Bend MTP	Capacity	1	TSP	Near-Term
94	Cooley	US 20	US 97	Includes: Cooley @ Hunnel roundabout; East & West intersections	$10,368,500	Cost Estimator	Capacity & Ped/Bike Improvement	1	TSP	Mid-Term
*	US 97	Robal	-	Reconstruction of the intersection to allow for the removal of split phasing. Addition of second eastbound left turn lane.	$280,000	Cost Estimator	Capacity	2	BNATS	n/a
Safety										
*	US 20	Jamison	-	Right-in/right-out only	$40,000	BNATS	Safety	1	BNATS	Mid-Term
Connectivity										
206a	New Road	Hunnel	Scenic	New Roadway	$2,558,960	UGB Expansion Work	MV Connectivity	2	TSP	n/a
205	Hunnell Road Extension	Hunnel	UGB	New Roadway	$2,369,407	UGB Expansion Wor	MV Connectivity	3	TSP	n/a
Pedestrian/Bicycle										
110	Hunnell Road Extension	Cooley	Robal	Sidewalk Infill	$162,750	Cost Estimator	Ped/Bike Improvements	1	TSP	Near-Term

	Total	-20%	20%
Tier 1	$71,425,826	$57,140,661	$85,710,991
Tier 2	$7,610,100	$6,088,080	$9,132,120
Tier 3	$10,776,907	$8,621,526	$12,932,288
Total	**$89,812,833**	**$71,850,266**	**$107,775,400**

TSP ID	Street Name	Begin	End	Improvement	Cost	Cost Source	Type	Tier	Project Source	Previous Source Timeline
Capacity										
204	Murphy	Country Club	Brosterhous	Includes: Murphy @ Country Club roundabout;	$3,800,000	City Staff Presentation to City Council (On CIP)	Capacity	1	TSP	Near-Term/Mid-Term
252	Murphy Road	Brosterhous	15th	Includes: 15th @ Murphy roundabout; Murphy @ Brosterhous roundabout Bridge Overcrossing	$20,100,000	City Staff Presentation to City Council (On CIP)	Capacity & Safety	1	TSP	Mid-Term
*	Reed Market	9th	-	Construct a traffic signal	$900,000	Cost Estimator	Capacity	1	Project Team	n/a
Safety										
61	27th	Reed Market	Ferguson	Includes: Ferguson @ 27th roundabout	$3,100,000	Cost Estimator	Safety	1	TSP	Long-Term
R20	15th	Knott	1300' north of Knott	Modernization along S 15th	$699,646	UGB Expansion Work	Safety & Ped/Bike Improvement	1	TSP	n/a
*	Knott	15th	-	Construct a roundabout	$3,100,000	Cost Estimator	Safety	1	City Staff	n/a
111	Knott	China Hat	15th	Includes: Knott @ China Hat roundabout; Knott @ Country Club roundabout	$8,477,370	Cost Estimator	Safety	2	TSP	Near-Term/Long-Term
182	Brosterhous	Knott	Murphy	Includes: Brosterhous @ Knott roundabout	$3,100,000	Cost Estimator	Safety	2	TSP	Mid-Term
Connectivity										
214	New Road			New Roadway	$5,781,336	UGB Expansion Work	MV Connectivity	1	TSP	n/a
214b	New Road			New Roadway	$4,549,248	UGB Expansion Work	MV Connectivity	1	TSP	n/a
224b	New Road			New Roadway	$7,625,183	UGB Expansion Work	MV Connectivity	1	TSP	n/a
234	Raintree Ct Ext.			New Roadway	$2,369,407	UGB Expansion Work	MV Connectivity	1	TSP	n/a
235	Raintree Ct Ext. (N)			New Roadway	$2,464,184	UGB Expansion Work	MV Connectivity	1	TSP	n/a
226	Magnolia Ln Ext.			New Roadway	$7,108,222	UGB Expansion Work	MV Connectivity	2	TSP	n/a
Pedestrian/Bicycle										
57	15th	Reed Market	Knott	Frongtage Improvements	$1,837,500	Cost Estimator	Ped/Bike Improvement	1	TSP	Near-Term/Long-Term
R19	Knott Rd	Rickard Rd	15th St	Frongtage Improvements	$5,499,479	UGB Expansion Work	Ped/Bike Improvement	1	TSP	n/a
R16	SE 27th St	Public works driveway	Middle school north driveway	Modernization	$140,777	UGB Expansion Work	Ped/Bike Improvement	2	TSP	n/a
R17	SE 27th St	Middle school north driveway	Middle school south driveway	Modernization	$1,277,822	UGB Expansion Work	Ped/Bike Improvement	2	TSP	n/a
R18	SE 27th St	Middle school south driveway	Rickard Rd	Modernization	$525,685	UGB Expansion Work	Ped/Bike Improvement	2	TSP	n/a
Connectivity										
213	New Road			New Roadway	$3,980,604	UGB Expansion Work	MV Connectivity	1	TSP	n/a
216	New Road			New Roadway	$1,516,421	UGB Expansion Work	MV Connectivity	1	TSP	n/a
225	New Road			New Roadway	$3,032,841	UGB Expansion Work	MV Connectivity	1	TSP	n/a
224c	New Road			New Roadway	$2,629,683	UGB Expansion Work	MV Connectivity	2	TSP	n/a

	Total	-20%	20%
Tier 1	$70,355,849	$56,284,679	$84,427,018
Tier 2	$23,259,559	$18,607,647	$27,911,471
Total	**$93,615,408**	**$74,892,326**	**$112,338,489**

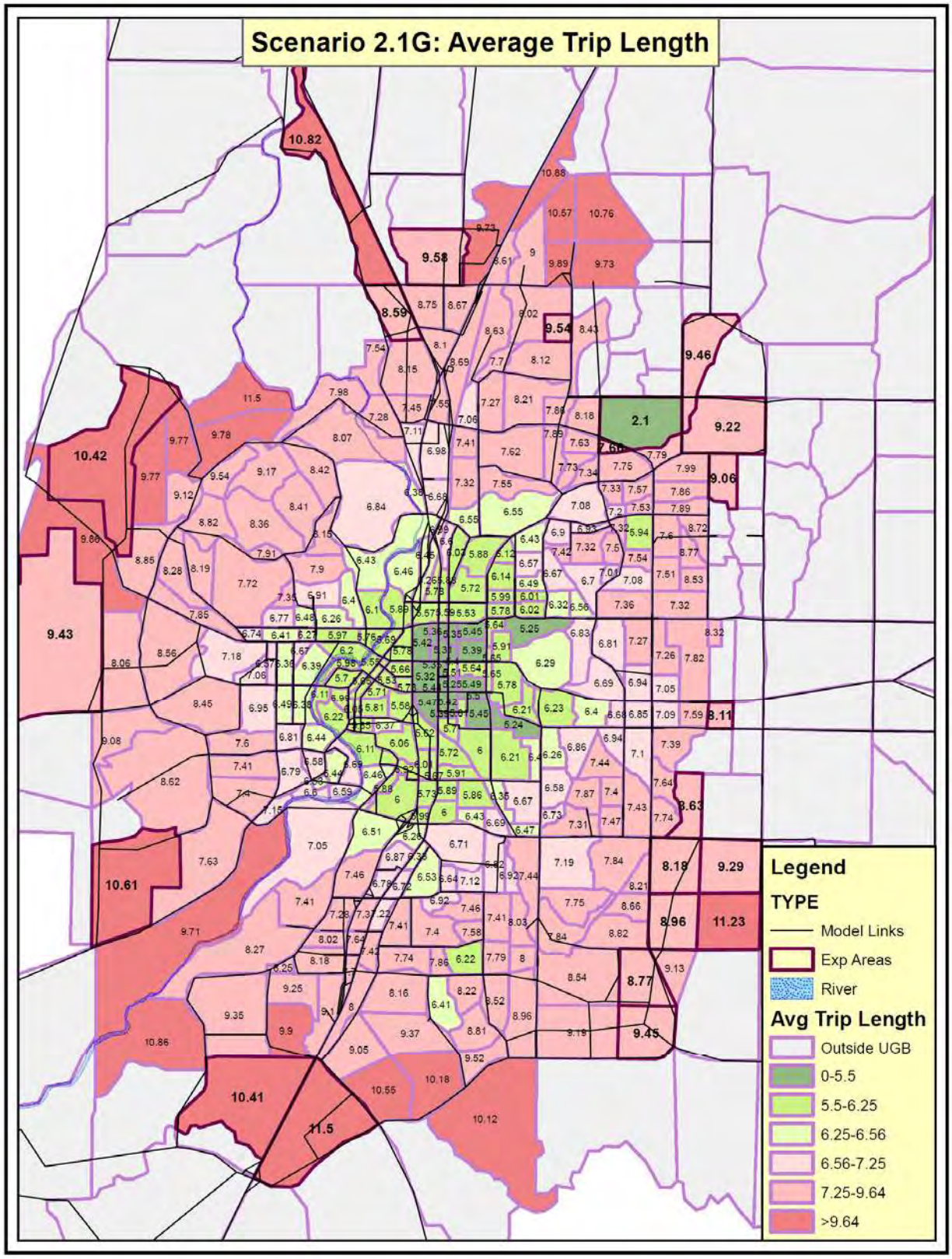
TSP ID	Street Name	Begin	End	Improvement	Cost Estimate	Cost Source	Type	Tier	Project Source	Previous Source Timeline
Capacity										
43	4th	Studio	Revere	Includes: 4th @ Revere new signal	$437,500	Cost Estimator	Capacity	1	TSP	Near-Term
16	3rd	Greenwood	Franklin	Streetscape and safety improvement	$1,491,000	Cost Estimator	Capacity	2	TSP	Mid-Term
23	US 20	4th	-	Construct a traffic signal	$900,000	Cost Estimator	Capacity	2	TSP	Mid-Term/Long-Term
*	US 97	Hawthorne		Pedestrian/Bicycle overcrossing improvement	$5,000,000	CH2M Bridge Preliminary Study	Capacity & MV Connectivity	2	MMA	n/a
*	4th	Neff	-	Construct a traffic signal or roundabout	$3,100,000	Cost Estimator	Capacity	3	?	n/a
Safety										
15	3rd(US 20)	Revere	Greenwood	Bike lanes through restriping or ROW acquisition, Pedestrian crossing safety enhancements	$731,140	Cost Estimator	Safety	1	TSP/MMA	Mid-Term
9	US 20	12th	Purcell	Corridor Improvements	$1,578,000	Cost Estimator	Safety	2	TSP	Mid-Term
101	Franklin	US 97	3rd	Streetscape Upgrade	$250,000	Cost Estimator	Safety	2	TSP	Long-Term
102	Franklin	3rd	4th	Streetscape Upgrade	$250,000	Cost Estimator	Safety	2	TSP/MMA	Aspirational
*	2nd	Franklin	-	Signal and Safety Upgrades	$437,500	Cost Estimator	Safety	3	City Staff	n/a
*	2nd	Greenwood	-	Signal and Safety Upgrades	$437,500	Cost Estimator	Safety	3	City Staff	n/a
Pedestrian/Bicycle										
*	COCC to Larksupr Trail via Hawthrone			Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#24)	Planned
*	Hawthorne	3rd		Safety Crossing and Bike	$312,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#27)	Programmed
*	Franklin	3rd		Safety Crossing and Bike	$574,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#28)	Programmed
*	Franklin Undercrossing Bridge			Minor Undercrossing Improvements	$1,000,000	CH2M Bridge Preliminary Study	Ped/Bike Improvement	1	ILUTP (#33)	Planned
*	Greenwood Undercrossing Bridge			Minor Undercrossing Improvements	$1,000,000	CH2M Bridge Preliminary Study	Ped/Bike Improvement	1	ILUTP (#34)	Planned
*	Juniper Rec-Bend High-Marshal High via 6th			Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#17)	Planned
*	4th	Studio		Streetscape	$1,500,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#21)	Future
*	COCC to St Charles vis 1st Rapids			Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#23)	Planned
*	2nd	Franklin	Revere	Streetscape	$2,000,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#31)	Planned
Capacity										
52	14th	Galeston	Simpson	Frontage Improvements	$835,025	Cost Estimator	Capacity	1	TSP	Near-Term
91	Colorado	Century	Simpson	Includes: Colorado @ Columbia roundabout	$3,100,000	Cost Estimator	Capacity	1	TSP	Near-Term
92	Colorado	Simpson	Wall	Frontage Improvements	$526,000	Cost Estimator	Capacity	1	TSP	Near-Term
141	Simpson	14th	Colorado	Includes: Simpson @ Columbia new roundabout	$3,100,000	Cost Estimator	Capacity	1	TSP	Near-Term
128	Powers	Brookswood	US 97	Includes: Powers @ Blakely roundabout	$3,100,000	Cost Estimator	Capacity	2	TSP	Mid-Term/Long-Term
35	Reed Market	Division	-	Construct a roundabout	$3,100,000	Cost Estimator	Capacity	3	TSP	Long-Term
*	Reed Market	Bond	-	Roundabout upgrade	$875,000	Cost Estimator	Capacity	3	Central Westside Plan	n/a
Safety										
51	14th	Newport	Galveston	Corridor Improvements	$2,600,000	CIP	Safety	1	TSP	Near-Term
Connectivity										
*	Commerce	14th	Columbia	Streetscape	$2,000,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#12)	Planned
*	OSU-MUD-Coyner Trail via Aune			Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#16)	Planned
*	N/S Bike Boulevard	Harmon	Old Mill	Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	1	ILUTP (#18)	Planned
*	14th	Colorado	Simpson	Streetscape	$1,500,000	CIP	Ped/Bike Improvement	2	ILUTP (#4)	Programmed
*	14th	Commerce	Galveston	Streetscape	$3,700,000	CIP	Ped/Bike Improvement	3	ILUTP (#4)	Programmed
*	15th	Newport	Simpson	Bike Boulevard	$500,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#26)	Planned
*	Galveston Corridor	Harmon	14th	Streetscape	$3,500,000	ILUTP	Ped/Bike Improvement	3	ILUTP (#5)	Programmed
*	Colorado/2nd	Bond	Wilson	Streetscape	$800,000	ILUTP	Ped/Bike Improvement	3	ILUTP (#15)	Planned
Capacity										
93	Colorado	US 97 NB Ramps	-	Construct a roundabout	$6,200,000	Cost Estimator	Capacity	1	TSP	Near-Term/Long-Term
*	Bond	Industrial		Intersection improvement	$3,100,000	Cost Estimator	Capacity & Safety	1	Project Team	n/a
147	Wilson	Bond	US 97	Includes: Widening to three-lane cross section	$7,448,194	Cost Estimator	Capacity	3	TSP	Aspirational
148	Wilson	US 97	3rd	Includes: Widening to three-lane cross section Wilson @ 2nd traffic signal	$6,396,056	Cost Estimator	Capacity	3	TSP	Long-Term
Connectivity										
*	Lava	Arizona	Industrial	Roadway Extension	$483,000	Cost Estimator	MV Connectivity	2	Project Team	n/a
*	Aune	Scalehouse	Division	Roadway Extension	$1,008,000	Cost Estimator	MV Connectivity	2	Project Team	n/a
Pedestrian/Bicycle										
*	Wilson	2nd	9th	Streetscape	$1,480,000	ILUTP	Ped/Bike Improvement	2	ILUTP (#6)	Programmed
*	Arizona - Colorado Couplet			Pedestrian Crossing Improvements	$383,300	ILUTP Average	Ped/Bike Improvement	2	City Staff	n/a

	Total	-20%	20%
Tier 1	$27,015,665	$21,612,532	$32,418,798
Tier 2	$26,123,300	$20,898,640	$31,347,960
Tier 3	$26,094,250	$20,875,400	$31,313,100
Total	**$79,233,215**	**$63,386,572**	**$95,079,858**

Appendix I

Vehicle Miles Traveled Scenario 2.1G (UGB Expansion) Map

Figure 6: Average trip lengths from UGB Expansion Scenario 2.1G



Appendix J

Pavement Condition Inventory Maps

CITY OF BEND
PAVEMENT CONDITION INDEX

Streets & Operations Department
(March, 2018)

PCI2017Under50

StreetClass

- A - Arterial PCI<50
- C - Collector PCI<50
- R - Residential PCI<50

- City Limit
- ODOT Maintained
- City Maintained PCI>50
- Privately Maintained

STREETS & OPERATIONS

0 0.125 0.25 0.5 0.75 1 Miles

D. Abbas
03/14/18
Bend Central District PCI Review

West to East Roads	Start	Finish	PCI	Class
NE Revere Ave	2nd	3rd	90	A
	3rd	4th	90	A
NW Quimby Ave	2nd	3rd	72	R
	3rd	4th	41	R
NE Penn Ave	1st	NE Lyle St	63	R
	NE Lyle St	2nd St	57	R
	2nd	3rd	74	R
	3rd	4th		
NE Olney Ave	1st	2nd	84	A
	2nd	3rd	41	A
	3rd	4th	71	A
NE Norton Ave	2nd	3rd	67	R
	3rd	4th	17	R
NE Marshall Ave	3rd	4th	17	R
NE Lafayette Ave	2nd	3rd	56	R
	3rd	4th	22	R
NE Kearney Ave	1st	2nd		
	2nd	3rd	60	R
	3rd	4th	10	R
Greenwood/Hwy 20	PRKWY	1st	65	A
	1st	2nd	64	A
	2nd	3rd	71	A
	3rd	10th	ODOT	
NE Irving Ave	1st	2nd	47	R
	2nd	3rd	35	R
	3rd	4th	65	R
NE Hawthorne Ave	1st	2nd	76	C
	2nd	3rd	35	C
	3rd	4th	64	C
NE Greeley	1st	2nd	0	R
	2nd	3rd	33	R
NE Franklin Ave	PRKWY	1st	80	A
	1st	2nd	84	A
	2nd	3rd	76	A
	3rd	4th	52	A
NE Emerson Ave	1st	2nd	11	R
	2nd	3rd	57	R
	3rd	4th	75	R
NE Dekalb	1st	2nd		
	2nd	3rd	44	R
	3rd	4th	64	R
NE Clay Ave	3rd	4th	71	R
NE Burnside Ave	2nd	3rd	50	R
	3rd	4th	56	R
		PCI AVG	55.175	

Bend Central District

North to South Roads	Start	Finish	PCI	Class
1st St	NE Penn Ave	NE Olney Ave	25	R
	NE Olney Ave	NE Norton Ave	26	R
	NE Norton Ave	NE Greenwood	21	R
	NE Greenwood	NE Irving Ave	63	R
	NE Irving Ave	NE Hawthorne Ave	65	R
	NE Hawthorne Ave	NE Greeley Ave	48	R
	NE Greeley Ave	NE Franklin Ave	59	R
	NE Franklin Ave	NE Emerson Ave		
2nd St	NE Revere Ave	NE Quimby Ave	31	R
	NE Quimby ave	NE Penn Ave	24	R
	NE Penn Ave	NE Olney Ave	74	R
	NE Olney Ave	NE Norton Ave	68	R
	NE Norton Ave	NE Lafayette Ave	52	R
	NE Lafayette Ave	NE Kearney Ave	67	R
	NE Kearney Ave	NE Greenwood Ave	61	R
	NE Greenwood Ave	NE Irving Ave	49	R
	NE Irving Ave	NE Hawthorne Ave	63	R
	NE Hawthorne Ave	NE Greeley Ave	62	R
	NE Greeley Ave	NE Frankline Ave	59	R
	NE Franklin Ave	NE Emerson Ave	40	R
	NE Emerson Ave	NE Dekalb Ave	44	R
	NE Dekalbe Ave	NE Burnside Ave	53	R
3rd St	NE Revere Ave	NE Greenwood Ave	ODOT	
	NE Greenwood Ave	NE Irving Ave	89	A
	NE Irving Ave	NE Hawthorne Ave	89	A
	NE Hawthorne Ave	NE Greeley Ave	85	A
	NE Greeley Ave	NE Frankline Ave	89	A
	NE Franklin Ave	NE Emerson Ave	89	A
	NE Emerson Ave	NE Dekalb Ave	89	A
	NE Dekalbe Ave	NE Clay Ave	89	A
	NE Clay Ave	NE Burnside Ave	89	A
	NE Burnside Ave	RR Xing	82	A
4th St	NE Revere Ave	NE Quimby Ave	75	A
	NE Quimby ave	NE Penn Ave	78	A
	NE Penn Ave	NE Olney Ave	82	A
	NE Olney Ave	NE Norton Ave	82	A
	NE Norton Ave	NE Marshall Ave	77	A
	NE Marshall Ave	NE Lafayette Ave	74	A
	NE Lafayette Ave	NE Kearney Ave	73	A
	NE Greenwood Ave	NE Irving Ave	69	A
	NE Irving Ave	NE Hawthorne Ave	69	A
	NE Hawthorne Ave	NE Greeley Ave	60	A
	NE Greeley Ave	NE Frankline Ave	78	A
	NE Franklin Ave	NE Emerson Ave	69	A
	NE Emerson Ave	NE Dekalb Ave	64	A
	NE Dekalbe Ave	NE Clay Ave	63	A
	NE Clay Ave	NE Burnside Ave	68	A
	NE Burnside Ave	NE Alden Ave	66	A
		PCI AVG	65.02174	

TOTAL AVG PCI =	59.75