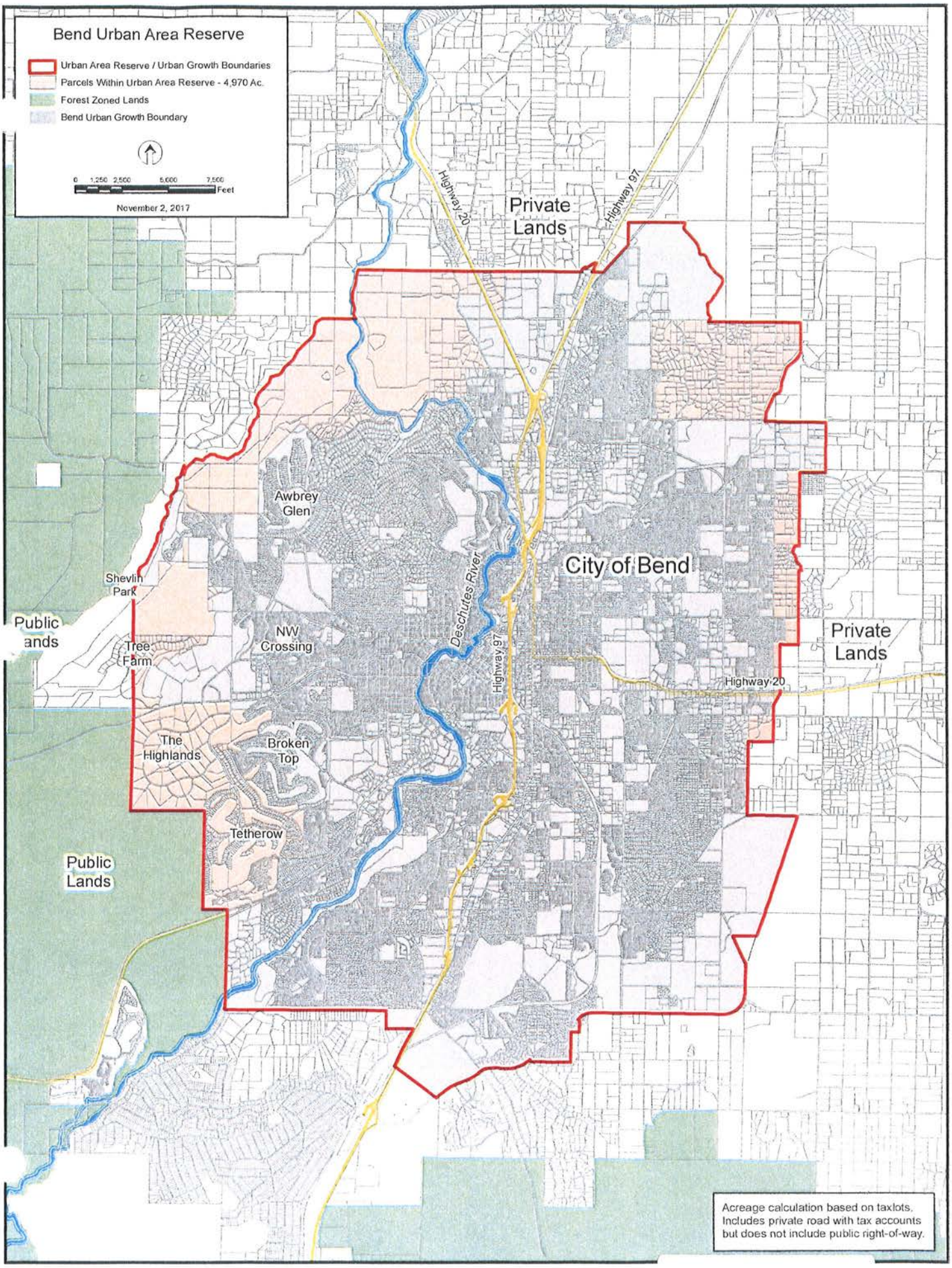
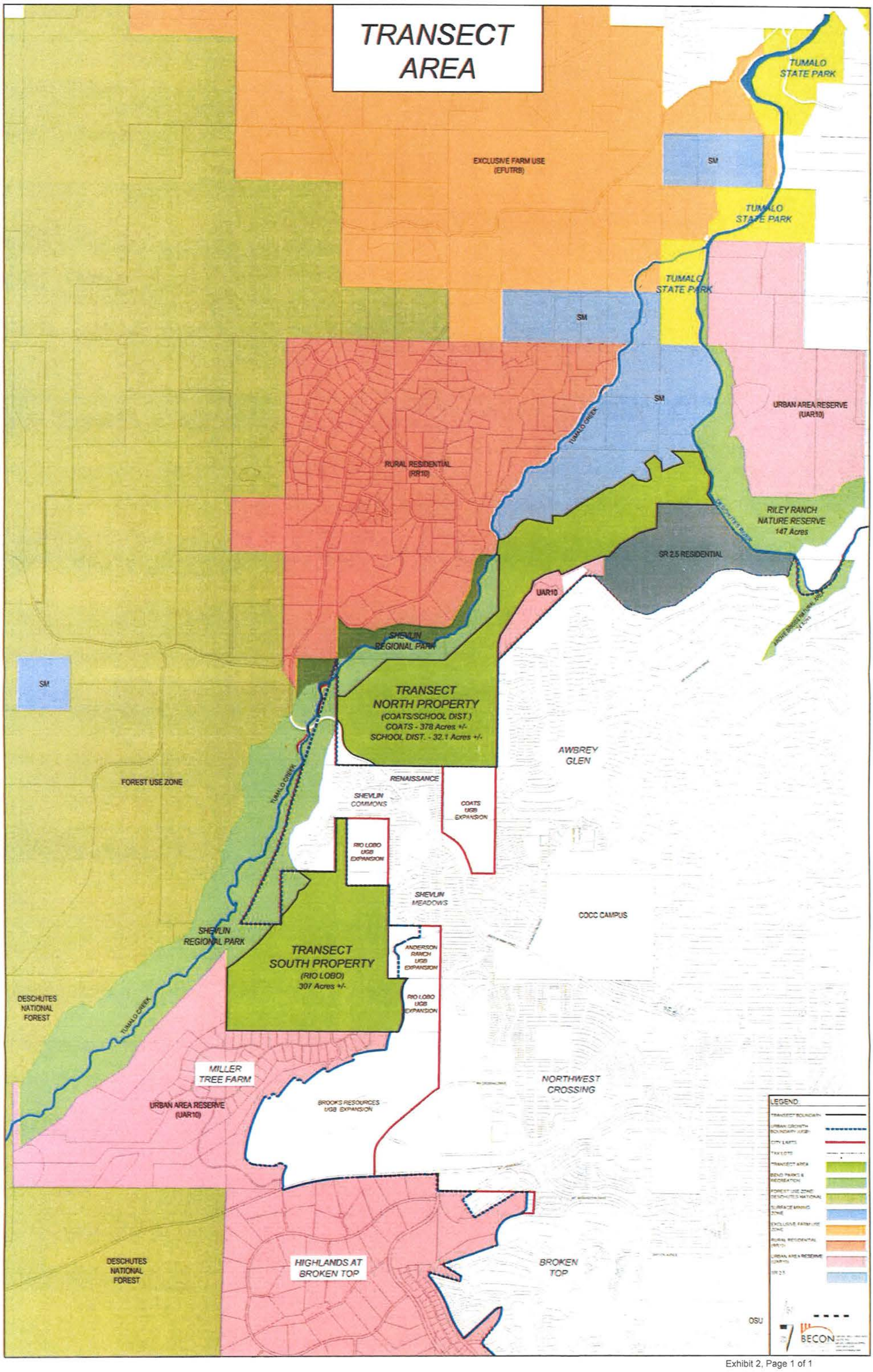
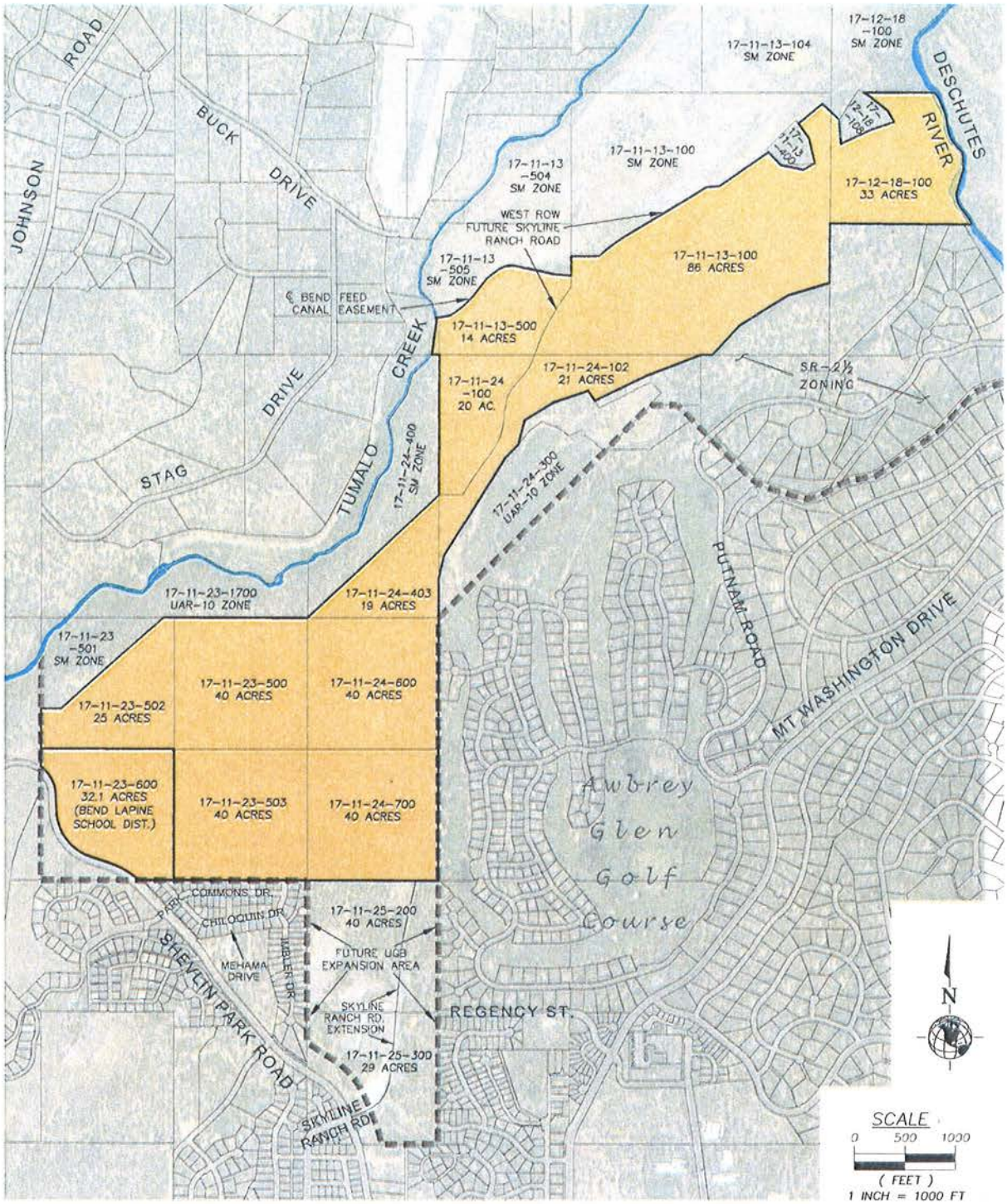

Bend Urban Area Reserve
Urban Area Reserve / Urban Growth Boundaries
Parcels Within Urban Area Reserve - 4,970 Ac.
Forest Zoned Lands
Bend Urban Growth Boundary
0 1,250 2,500 5,000 7,500 Feet
November 2, 2017
Private Lands
Highway 20
Highway 97
Awbrey Glen
City of Bend
Deschutes River
Shevlin Park
Public Lands
Tree Farm
NW Crossing
Private Lands
Highway 20
The Highlands
Broken Top
Tetherow
Public Lands
Acreage calculation based on taxlots. Includes private road with tax accounts but does not include public right-of-way.


TRANSECT AREA
TUMALO STATE PARK
EXCLUSIVE FARM USE (EFUTRB)
SM
TUMALO STATE PARK
TUMALO STATE PARK
SM
SM
URBAN AREA RESERVE (UAR10)
TUMALO CREEK
RURAL RESIDENTIAL (RR10)
RILEY RANCH NATURE RESERVE 147 Acres
SR 2.5 RESIDENTIAL
UAR10
SHEVLIN REGIONAL PARK
SM
TRANSECT NORTH PROPERTY
(COATS/SCHOOL DIST.)
COATS - 378 Acres +/-
SCHOOL DIST. - 32.1 Acres +/-
AWBREY GLEN
FOREST USE ZONE
TUMALO CREEK
RENAISSANCE
SHEVLIN COMMONS
COATS UGB EXPANSION
RIO LOBO UGB EXPANSION
SHEVLIN MEADOWS
COCC CAMPUS
SHEVLIN REGIONAL PARK
TRANSECT SOUTH PROPERTY
(RIO LOBO)
307 Acres +/-
ANDERSON RANCH UGB EXPANSION
RIO LOBO UGB EXPANSION
DESCHUTES NATIONAL FOREST
TUMALO CREEK
MILLER TREE FARM
URBAN AREA RESERVE (UAR10)
BROOKS RESOURCES UGB EXPANSION
NORTHWEST CROSSING
LEGEND:
DESCHUTES NATIONAL FOREST
HIGHLANDS AT BROKEN TOP
BROKEN TOP
OSU
BECON



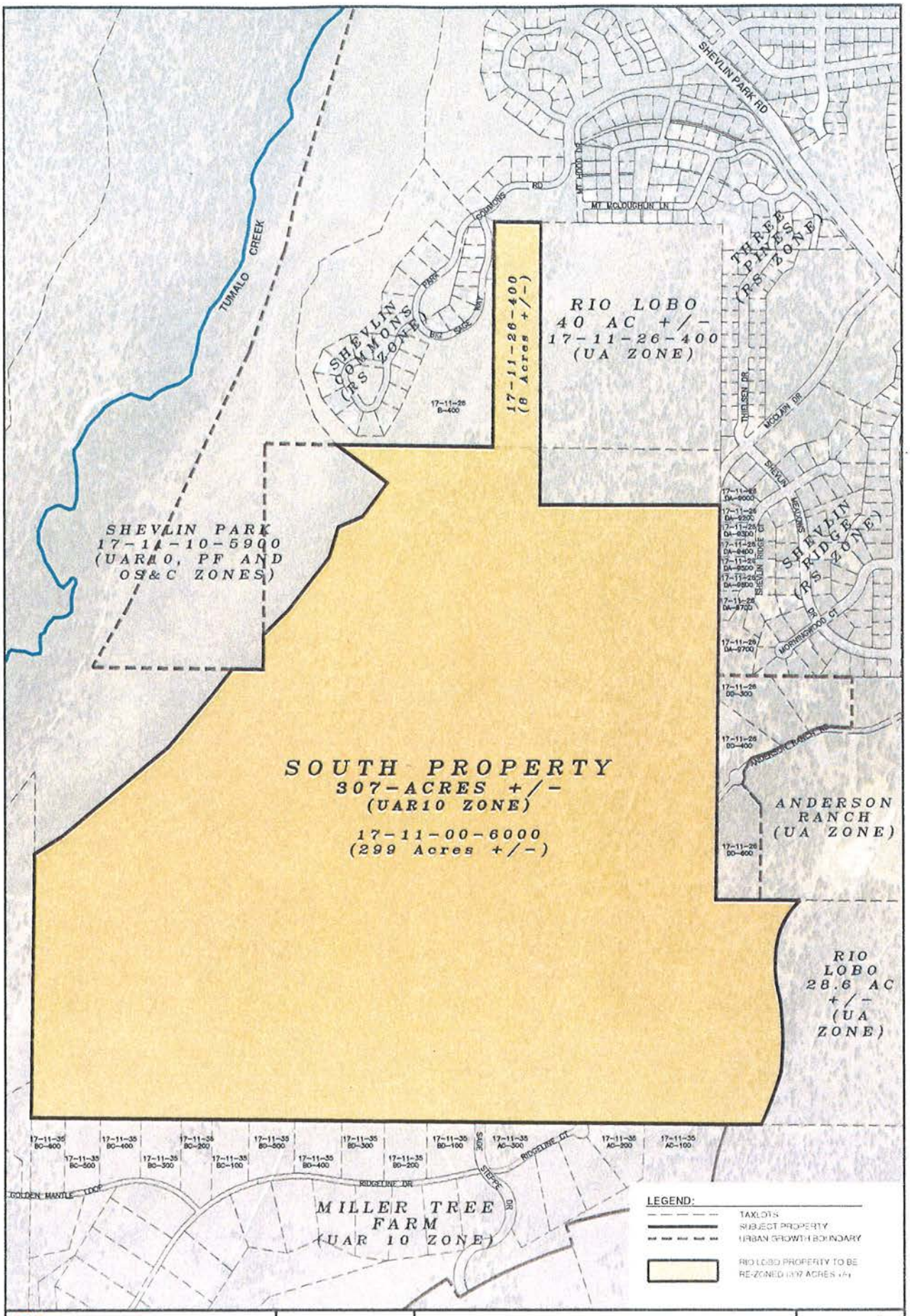
LEGEND

- EXISTING TAXLOT LINE
- SUBJECT PROPERTY
- EXISTING URBAN GROWTH BOUNDARY
- NORTH AREA (COATS) PROPERTIES TO BE RE-ZONED (APPROX. 378 ACRES*)
- NORTH AREA (BEND LAPINE SCHOOL DISTRICT) PROPERTIES TO BE RE-ZONED (32.1 ACRES)

*NOTE: EXACT AREAS MUST BE VERIFIED BY LAND SURVEYS ON THE GROUND.

SHEET 1 OF 1	DESIGNED: KSD DRAWN BY: CAB LAST EDIT: 12/14/17 PLOT DATE: 12/14/17 SCALE: 1"=1000'	NORTH PROPERTY (COATS AND BEND LAPINE SCHOOL DISTRICT PROPERTIES) ZONE CHANGE MAP DESCHUTES OREGON PROJECT: COAT001 DRAWING FILE NAME: Zone Change Map.dwg	REGISTERED PROFESSIONAL ENGINEER OREGON JAN. 20, 1981 KEITH B. DAGOSTINO EXPIRES 12/31/17

D'Agostino Parker, LLC



BECON
Civil Engineering & Land Surveying
549 SW MILL VIEW WAY
SUITE 105
BEND, OREGON 97702
(541) 633-3140
www.beconeng.com

FOR:
KEVIN SPENCER

SOUTH PROPERTY
(RIO LOBO PROPERTY)
ZONE CHANGE MAP

DATE: 12-22-2017 | SCALE: 1" = 500' | DRAWN BY: JLB | PROJ: 13861

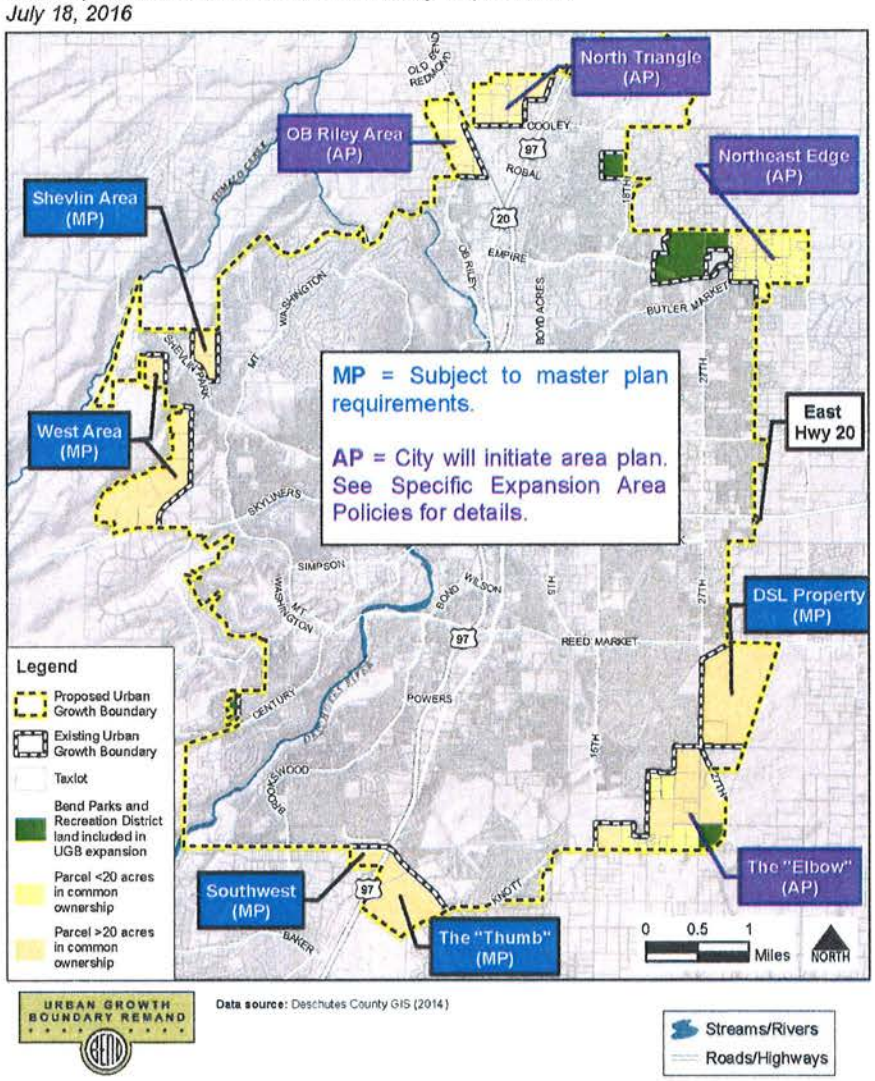
SHEET 1 OF 1

PRELIMINARY

REVISED: JUNE 30, 2017

Exhibit 4
Page 1 of 1

Bend UGB
UGB Expansion Subareas and Area Planning Requirements
July 18, 2016



URBAN GROWTH BOUNDARY REMAND

Data source: Deschutes County GIS (2014)

Northeast – Butler Market Village:

11-56 The City will initiate an Area Plan for the Northeast – Butler Market Village area. The Area Plan will address policies 11-57 through 11-63. Prior to completion of the Area Plan, annexations in this area must be a minimum of 40 contiguous acres and be the subject of a master plan application, which includes a framework level Area Plan for the rest of the subarea. Following adoption of the Area Plan, annexation and development of individual properties or groups of properties of any size, consistent with the Area Plan, may be approved.

11-57 Within the area identified on Figure 11-4, the central planning concepts are to: create a new, complete community as a node that sets the stage for additional urban growth in the future; and

REVIEWED
LEGAL COUNSEL

For Recording Stamp Only

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Repealing Ordinance 2009-001, and Declaring an Emergency.	* *	ORDINANCE NO. 2016-020

WHEREAS, on February 11, 2009, the Board of County Commissioners ("Board") adopted Ordinance 2009-001 to amend Title 23 of the Deschutes County Code to expand the City of Bend ("Bend') Urban Growth Boundary ("UGB"); and

WHEREAS, the Oregon Land Conservation and Development Commission issued a final order on November 2, 2010, remanding the Bend UGB for revisions needed to conform with state requirements; and

WHEREAS, in July of 2016, Bend formally reinitiated the land use process to expand the UGB; and

WHEREAS, the expansion of the Bend UGB requires substantially different amendments to the Deschutes County Comprehensive Plan for Urbanization and the Deschutes County Comprehensive Plan Map; and

WHEREAS, the Deschutes County Planning Commission reviewed this ordinance at a work session on August 11, 2016 and, on that same date, forwarded to the Board a recommendation to repeal Ordinance No. 2009-001; and

WHEREAS, the Board considered this matter after a duly noticed joint public hearing with the Bend City Council on August 25, 2016, and concluded that the public will benefit from the repeal of Ordinance No. 2009-001; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. REPEALED. Ordinance 2009-001 is hereby repealed in its entirety.

Section 2. AMENDMENT. Deschutes County Code 23.01.010, Introduction, is amended to read as described in Exhibit "A," attached and incorporated by reference herein, with new language underlined and deleted language set forth in ~~strikethrough.~~

///

Section 2. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance is final on adoption and shall take effect the date the County receives formal acknowledgement of this ordinance by the Oregon Department of Land Conservation and Development in accordance with ORS 197.628 to 197.650.

Dated this 28th of Sept., 2016

BOARD OF COUNTY COMMISSIONERS
OF DESCHUTES COUNTY, OREGON

Alan Unger

ALAN UNGER, Chair

TAMMY BANEY, Vice Chair

ATTEST:

Bonnie Baker

Recording Secretary

ANTHONY DEBONE, Commissioner

Date of 1st Reading: 28th day of Sept., 2016.

Date of 2nd Reading: 28th day of Sept., 2016.

Record of Adoption Vote

Commissioner	Yes	No	Abstained	Excused
Alan Unger	✓			
Tammy Baney	✓			
Anthony DeBone	✓			

Effective date: see section 2, above day of _____, 2016.

Chapter 23.01 COMPREHENSIVE PLAN

23.01.010. Introduction.

A. The Deschutes County Comprehensive Plan, adopted by the Board in Ordinance 2011-003 and found on the Deschutes County Community Development Department website, is incorporated by reference herein.

B. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2011-027, are incorporated by reference herein.

C. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-005, are incorporated by reference herein.

D. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-012, are incorporated by reference herein.

E. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-016, are incorporated by reference herein.

F. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-002, are incorporated by reference herein.

G. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-009, are incorporated by reference herein.

H. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-012, are incorporated by reference herein.

I. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-007, are incorporated by reference herein.

J. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-005, are incorporated by reference herein.

K. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-006, are incorporated by reference herein.

L. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-012, are incorporated by reference herein.

M. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-021, are incorporated by reference herein.

N. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-027, are incorporated by reference herein.

O. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-005, are incorporated by reference herein.

P. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-020, are incorporated by reference herein

(Ord. 2016-020 repealed Ord. 2009-001; Ord. 2016-005 § 1, 2016; Ord. 2014-027 § 1, 2014; Ord. 2014-021 §1, 2014; Ord. 2014-012 §1, 2014; Ord. 2014-006 §2, 2013; Ord. 2014-005 §2; Ord. 2013-012 §2, 2013; Ord. 2013-009 §2, 2013; Ord. 2013-007 §1, 2013; Ord. 2013-002 §1, 2013; Ord. 2013-001 §1, 2013; Ord. 2012-016 §1, 2012; Ord. 2012-013 §1, 2012; Ord. 2012-005 §1, 2012; Ord. 2011-027 §1 through 12, 2011; Ord. 2011-017 repealed; Ord.2011-003 §3, 2011)

To view the Comprehensive Plan, type http://www.deschutes.org/compplan into your web browser. **[Laserfiche can't do links.]**

REVIEWED
LEGAL COUNSEL

For Recording Stamp Only

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Repealing Ordinance 2009-002, and Declaring an Emergency.	* *	ORDINANCE NO. 2016-021

WHEREAS, on February 11, 2009, the Board of County Commissioners ("Board") adopted Ordinance 2009-002 to repeal Title 19 and adopt a new Title 19 of the Deschutes County Code to implement the City of Bend ("Bend') Urban Growth Boundary ("UGB"); and

WHEREAS, the Oregon Land Conservation and Development Commission issued a final order on November 2, 2010, remanding the Bend UGB for revisions needed to conform with state requirements; and

WHEREAS, in July of 2016, Bend formally reinitiated the land use process to expand the UGB; and

WHEREAS, the expansion of the Bend UGB no longer requires these amendments to Title 19 of the Deschutes County Code; and

WHEREAS, the Deschutes County Planning Commission reviewed this ordinance at a work session on August 11, 2016 and, on that same date, forwarded to the Board a recommendation to repeal Ordinance No. 2009-002; and

WHEREAS, the Board considered this matter after a duly noticed joint public hearing with the Bend City Council on August 25, 2016, and concluded that the public will benefit from the repeal of Ordinance No. 2009-002; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. REPEALED. Ordinance 2009-002 is hereby repealed in its entirety.

///

Section 2. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance is final on adoption and shall take effect the date the County receives formal acknowledgement of this ordinance by the Oregon Department of Land Conservation and Development in accordance with ORS 197.628 to 197.650.

Dated this 28th of Sept, 2016

BOARD OF COUNTY COMMISSIONERS
OF DESCHUTES COUNTY, OREGON

Alan Unger
ALAN UNGER, Chair

TBaney
TAMMY BANEY, Vice Chair

ATTEST:

Bonnie Baker
Recording Secretary

AD DeBone
ANTHONY DEBONE, Commissioner

Date of 1st Reading: 28th day of Sept., 2016.

Date of 2nd Reading: 28th day of Sept., 2016.

Record of Adoption Vote

Commissioner	Yes	No	Abstained	Excused
Alan Unger	✓			
Tammy Baney	✓			
Anthony DeBone	✓			

Effective date: see section 2, above day of _____, 2016.

REVIEWED
LEGAL COUNSEL

For Recording Stamp Only

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending the Deschutes County Comprehensive plan To Expand the City of Bend Urban Growth Boundary, and Declaring an Emergency	* * *	ORDINANCE NO. 2016-022

WHEREAS, on February 11, 2009, the Board of County Commissioners ("Board") adopted Ordinance 2009-001 to amend Title 23 of the Deschutes County Code to expand the City of Bend ("Bend') Urban Growth Boundary ("UGB"); and

WHEREAS, the Oregon Land Conservation and Development Commission issued a final order on November 2, 2010, remanding the Bend UGB for revisions needed to conform with state requirements; and

WHEREAS, in July of 2016, the City of Bend ("Bend') reinitiated the land use process to expand the Bend Urban Growth Boundary ("UGB"); and

WHEREAS, the expansion of the Bend UGB requires amendments to the Deschutes County Comprehensive Plan for Urbanization and the Deschutes County Comprehensive Plan Map; and

WHEREAS, the Deschutes County Planning Commission reviewed this ordinance at a work session on August 11, 2016 and, on that same date, forwarded to the Board a recommendation to adopt Ordinance No. 2016-022; and

WHEREAS, the Board considered this matter after a duly noticed joint public hearing with the Bend City Council on August 25, 2016, and concluded that the public will benefit from the repeal of Ordinance No. 2009-001; and

WHEREAS, the Board finds it in the public interest to adopt the following Comprehensive Plan amendments; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. AMENDMENT. Deschutes County Code 23.01.010, Introduction, is amended to read as described in Exhibit "A," attached and incorporated by reference herein, with new language underlined and deleted language set forth in ~~strikethrough.~~

Section 2. AMENDMENT. The Deschutes County Comprehensive Plan Map is amended to change the plan designation for certain property depicted on the map set forth as Exhibit "B" with the exhibit attached and incorporated by reference herein.

///

Section 3. AMENDMENT. Deschutes County Comprehensive Plan Chapter 1, Comprehensive Planning, is amended to read as described in Exhibit "C," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 4. AMENDMENT. Deschutes County Comprehensive Plan Chapter 4, Urban Growth Management, is amended to read as described in Exhibit "D," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 5. AMENDMENT. Deschutes County Comprehensive Plan Chapter 5, Supplementary Sections, is amended to read as described in Exhibit "E," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 6. FINDINGS. The Board adopts as its findings Exhibit "F," attached and incorporated by reference herein.

Section 7. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance is final on adoption and shall take effect the date the County receives formal acknowledgement of this ordinance by the Oregon Department of Land Conservation and Development in accordance with ORS 197.628 to 197.650.

Dated this 28th of Sept, 2016

BOARD OF COUNTY COMMISSIONERS
OF DESCHUTES COUNTY, OREGON

Alan Unger

ALAN UNGER, Chair

TAMMY BANEY, Vice Chair

ATTEST:

Bonnie Baker

Recording Secretary

ANTHONY DEBONE, Commissioner

Date of 1st Reading: 28th day of Sept., 2016.

Date of 2nd Reading: 28th day of Sept., 2016.

Record of Adoption Vote

Commissioner	Yes	No	Abstained	Excused
Alan Unger	✓			
Tammy Baney	✓			
Anthony DeBone	✓			

Effective date: See section 2, above day of _____, 2016.

ATTEST:

Bonnie Baker

Recording Secretary

Chapter 23.01 COMPREHENSIVE PLAN

23.01.010. Introduction.

A. The Deschutes County Comprehensive Plan, adopted by the Board in Ordinance 2011-003 and found on the Deschutes County Community Development Department website, is incorporated by reference herein.

B. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2011-027, are incorporated by reference herein.

C. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-005, are incorporated by reference herein.

D. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-012, are incorporated by reference herein.

E. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-016, are incorporated by reference herein.

F. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-002, are incorporated by reference herein.

G. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-009, are incorporated by reference herein.

H. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-012, are incorporated by reference herein.

I. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-007, are incorporated by reference herein.

J. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-005, are incorporated by reference herein.

K. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-006, are incorporated by reference herein.

L. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-012, are incorporated by reference herein.

M. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-021, are incorporated by reference herein.

N. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-027, are incorporated by reference herein.

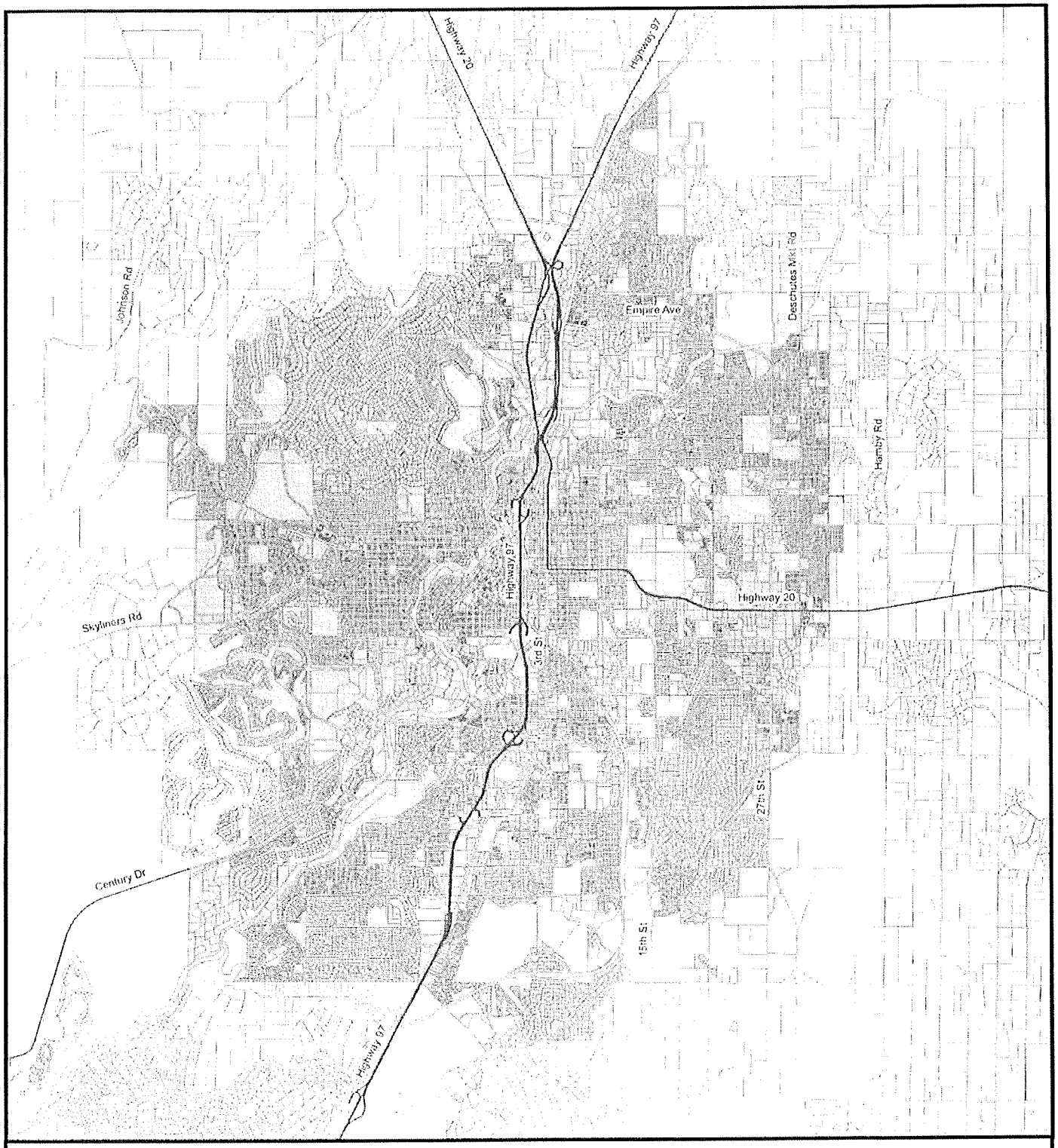
O. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-005, are incorporated by reference herein.

P. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-020, are incorporated by reference herein

Q. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-022, are incorporated by reference herein

(Ord. 2016-022 § 1, 2016; Ord. 2016-020 repealed Ord. 2009-001; Ord. 2016-005 § 1, 2016; Ord. 2014-027 § 1, 2014; Ord. 2014-021 §1, 2014; Ord. 2014-012 §1, 2014; Ord. 2014-006 §2, 2013; Ord. 2014-005 §2; Ord. 2013-012 §2, 2013; Ord. 2013-009 §2, 2013; Ord. 2013-007 §1, 2013; Ord. 2013-002 §1, 2013; Ord. 2013-001 §1, 2013; Ord. 2012-016 §1, 2012; Ord. 2012-013 §1, 2012; Ord. 2012-005 §1, 2012; Ord. 2011-027 §1 through 12, 2011; Ord. 2011-017 repealed; Ord.2011-003 §3, 2011)

To view the Comprehensive Plan, type http://www.deschutes.org/compplan into your web browser. **[Laserfiche can't do links.]**



Legend

Existing Urban Growth Boundary

Proposed Urban Growth Boundary

Deschutes County

Comprehensive Plan

Exhibit "B" to Ordinance 2016-022

0.5 0.25 0 0.5 1 Miles

July 19, 2016

BOARD OF COUNTY COMMISSIONERS
OF DESCHUTES COUNTY, OREGON

Alan Unger, Chair

Tammy Baney, Vice-Chair

Anthony DeBone, Commissioner

ATTEST: Recording Secretary

Dated this _____ day of October, 2016
Effective Date: October _____, 2016

Section 4.2 Urbanization

Background

This section describes the coordination between the County and the cities of Bend, La Pine, Redmond and Sisters on Urban Growth Boundaries (UGBs) and Urban Reserve Areas (URAs). Statewide Planning Goal 2 recognizes the importance of coordinating land use plans.

> "City, county, state and federal agency and special district plans and actions related to land use shall be consistent with the comprehensive plans of cities and counties and regional plans adopted under ORS Chapter 268."

Oregon Revised Statute 197.015(5) goes further to define comprehensive plan coordination.

> "A plan is "coordinated" when the needs of all levels of governments, semipublic and private agencies and the citizens of Oregon have been considered and accommodated as much as possible."

Population

An important basis for coordinating with cities is adopted population projections. Having an estimate of anticipated population is the first step to planning for future growth and conservation. ORS 195.025(1) requires counties to coordinate local plans and population forecasts. The County oversees the preparation of a population forecast in close collaboration with cities. This is important because the population of the County has increased significantly in recent decades and a coordinated approach allows cities to ensure managed growth over time.

Table 4.2.1 – Population Growth in Deschutes County 1980 to 2010

Sources	*1980*	*1990*	*2000*	*2010*
Population Research Center July 1 estimates	62,500	75,600	116,600	172,050
US Census Bureau April 1 counts	62,142	74,958	115,367	157,733

Source: As noted above

In 1996 Bend, Redmond, Sisters and the County reviewed recent population forecasts from the Portland State University Center Population and Research Center (PRC) and U.S. Census Bureau, Department of Transportation, Woods and Poole, Bonneville Power Administration and Department of Administrative Services Office of Economic Analysis. After reviewing these projections, all local governments adopted a coordinated population forecast. It was adopted by Deschutes County in 1998 by Ordinance 98-084.

The results of the 2000 decennial census and subsequent population estimates prepared by the PRC revealed that the respective populations of the County and its incorporated cities were growing faster than anticipated under the 1998 coordinated forecast. The cites and the County re-engaged in a coordination process between 2002 and 2004 that culminated with the County adopting a revised population forecast that projected population to the year 2025. It was adopted by Ordinance 2004-012 and upheld by the Land Use Board of Appeals on March 28, 2005.

The following table displays the 2004 coordinated population forecast for Deschutes County and the UGBs of the cities of Bend, Redmond, and Sisters.

Table 4.2.2 – Coordinated Population Forecast 2000 to 2025

Year	*Bend UGB*	*Redmond UGB*	*Sisters UGB*	*Unincorporated County*	*Total County*
2000	52,800	15,505	975	47,320	116,600
2005	69,004	19,249	1,768	53,032	143,053
2010	81,242	23,897	2,306	59,127	166,572
2015	91,158	29,667	2,694	65,924	189,443
2020	100,646	36,831	3,166	73,502	214,145
2025	109,389	45,724	3,747	81,951	240,811

Source: 2004 Coordinated Population Forecast for Deschutes County

The process through which the County and the cities coordinated to develop the 2000-2025 coordinated forecast is outlined in the report titled "Deschutes County Coordinated Population Forecast 2000-2025: Findings in Support of Forecast."

The fourth city in Deschutes County is the City of La Pine. Incorporated on November 7, 2006, the City of La Pine's 2006 population estimate of 1,590 was certified by PRC on December 15, 2007. As a result of La Pine's incorporation, Deschutes County updated its Coordinated Population Forecast with Ordinance 2009-006.

The purpose of this modification was to adopt a conservative 20 year population forecast for the City of La Pine that could be used by city officials and the Oregon Department of Land Conservation and Development to estimate its future land need and a UGB.

The following table displays the coordinated population forecast for Deschutes County, the UGBs of the cities of Bend, Redmond, and Sisters, and La Pine from 2000 to 2025. By extending the growth rate to the year 2025, La Pine's population will be 2,352. The non-urban unincorporated population decreases by 2,352 from its original projection of 81,951, to 79,599.

Table 4.2.3 – Coordinated Population Forecast 2000 to 2025, Including La Pine

Year	*Bend UGB*	*Redmond UGB*	*Sisters UGB*	*La Pine UGB*	*Unincorporated County*	*Total County*
2000	52,800	15,505	975	-	47,320	116,600
2005	69,004	19,249	1,768	-	53,032	143,053
2010	81,242	23,897	2,306	1,697	57,430	166,572
2015	91,158	29,667	2,694	1,892	64,032	189,443
2020	100,646	36,831	3,166	2,110	71,392	214,145
2025	109,389	45,724	3,747	2,352	79,599	240,811

Source: 2004 Coordinated Population Forecast for Deschutes County – updated 2009

2030 Population Estimate

This Comprehensive Plan is intended to manage growth and conservation in the unincorporated areas of the County until 2030. Because the official population forecast extends only to 2025, County staff used conservative average annual growth rates from the adopted population forecast to estimate population out to 2030. The following table estimates Deschutes County population by extending the adopted numbers out an additional five years.

Table 4.2.4 – Deschutes County 2030 Population Forecast

Year	Bend UGB	Redmond UGB	Sisters UGB	La Pine UGB	Unincorporated County	Total County
2030	119,009	51,733	4,426	2,632	88,748	266,538

Source: County estimates based on the 2004 Coordinated Population Forecast as shown below

Bend's average annual growth rate from 2025 to 2030 is 1.70%
Redmond's average annual growth rate from 2025 to 2030 is 2.50%
Sisters' based their population on forecasted rates of building growth, residential housing units, and persons per dwelling unit
La Pine's average annual growth rate from 2025 to 2030 is 2.20%
Deschutes County's unincorporated area average annual growth rate from 2025 to 2030 is 2.20%

As the pie chart below indicates, if population occurs as forecasted, 67% of the County's population will reside in urban areas by 2030.

In 2030

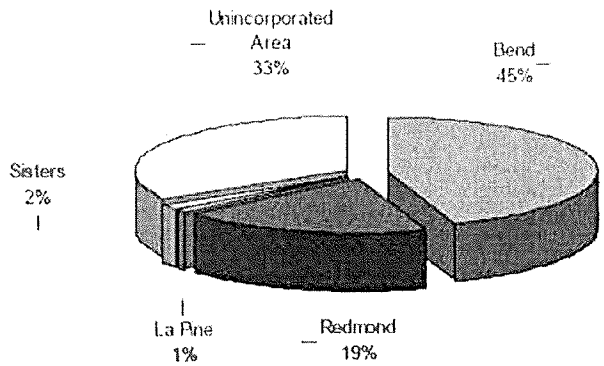


Figure 4.1 Deschutes County 2030 Estimated Population

Such growth will undoubtedly require strategically managing the provision of public services and maintaining adequate amounts of residential, commercial and industrial lands. Growth pressures will also require programmatic approaches to maintain open spaces, natural resources, and functional ecosystems that help define the qualities of Deschutes County.

Urban Growth Boundary Amendments

Bend

The City of Bend legislatively amended its UGB as part of a periodic review acknowledgment in December 2004. The Bend City Council and the Board of County Commissioners adopted concurrent ordinances that expanded the Bend UGB by 500 acres and satisfied a 20 year demand for industrial land.

In July 2007, the Bend-La Pine School District received approvals to expand the City of Bend UGB to include two properties for the location of two elementary schools, one at the Pine Nursery, the other on Skyliner Road. In 2014, the Bend-La Pine School district received approval to include a 33-acre site within the UGB near Skyliners Road to facilitate the construction of a public middle school.

The Bend City Council and the Board of County Commissioners approved a legislative amendment to the Bend UGB in September 2016. The adopted amendment added 2,380 acres of land intended to satisfy a 20-year land need for needed housing, employment, and public uses from 2008 to 2028. The adopted UGB amendment also satisfied the terms of a 2010 Remand

Order from the Oregon Land Conservation and Development Commission (10-REMAND-PARTIAL ACKNOW-001795).

Sisters

The City of Sisters legislatively amended its UGB in September 2005 when its City Council and the Board of County Commissioners adopted respective ordinances. The Sisters UGB expansion covered 53 acres and satisfied a 20 year demand for residential, commercial, light industrial, and public facility land. In March 2009, Sisters amended their UGB to facilitate the establishment of a 4-acre fire training facility for the Sisters/Camp Sherman Fire District.

Redmond

The City of Redmond legislatively amended its UGB in August 2006 when its City Council and the Board of County Commissioners adopted respective ordinances. The Redmond UGB expansion covered 2,299 acres and satisfied a 20 year demand for residential and neighborhood commercial land.

La Pine

In 2012 La Pine adopted its first Comprehensive Plan. La Pine established a UGB that matches the city limits, because the City contains sufficient undeveloped land for future housing, commercial and industrial needs over a 20-year period. The Plan map includes land use designations intended to provide an arrangement of uses to ensure adequate and efficient provision of public infrastructure for all portions of the City and UGB.

Urban Reserve Area

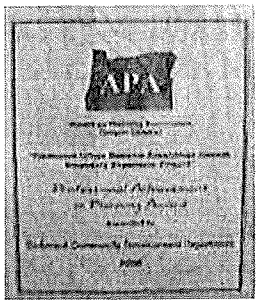
Redmond

In December 2005, Redmond City Council and the Board of County Commissioners adopted a 5,661 acre URA for the City. It is the first URA in Central Oregon because most cities find planning farther into the future than the 20-year UGB timeframe, challenging.

Coordination

As noted above, Statewide Goal 2 and ORS promote land use planning coordination. The purposes of the urbanization goals and policies in this section are to provide the link between urban and rural areas, and to provide some basic parameters within which the urban areas of Deschutes County can develop, although the specific comprehensive plan for each community remains the prevailing document for guiding growth in its respective area. These policies permit the County to review each city's comprehensive plan to ensure effective coordination.

The Redmond and Deschutes County Community Development Departments received the Oregon Chapter of American Planning Association's (OAPA) Professional Achievement in Planning Award in 2006 for the "Redmond Urban Reserve Area / Urban Growth Boundary Expansion Project.". The following quote taken from the Oregon Chapter of the American Planning Association's 2006 Awards Program shows why the Redmond Community Development Department was chosen for this award. "An outstanding effort to address Redmond's rapid population growth, including the successful designation of an Urban Reserve and the imminent designation of an Urban Growth Boundary, a "Framework Plan" with a requirement for master planning, and the establishment of "Great Neighborhood Principles."



Section 4.2 Urbanization Policies

Goals and Policies

Goal 1 **Coordinate with cities, special districts and stakeholders to support urban growth boundaries and urban reserve areas that provide an orderly and efficient transition between urban and rural lands.**

Policy 4.2.1 Participate in the processes initiated by cities in Deschutes County to create and/or amend their urban growth boundaries.

Policy 4.2.2 Promote and coordinate the use of urban reserve areas.

Policy 4.2.3 Review the idea of using rural reserves.

Goal 2 **Coordinate with cities, special districts and stakeholders on urban growth area zoning for lands inside urban growth boundaries but outside city boundaries.**

Policy 4.2.4 Use urban growth area zoning to coordinate land use decisions inside urban growth boundaries but outside the incorporated cities.

Policy 4.2.5 Negotiate intergovernmental agreements to coordinate with cities on land use inside urban growth boundaries and outside the incorporated cities.

Policy 4.2.6 Develop urban growth area zoning with consideration of the type, timing and location of public facilities and services provision consistent with city plans.

Policy 4.2.7 Adopt by reference the comprehensive plans of Bend, La Pine, Redmond and Sisters, as the policy basis for implementing land use plans and ordinances in each city's urban growth boundary.

Goal 3 **Coordinate with cities, special districts and stakeholders on policies and zoning for lands outside urban growth boundaries but inside urban reserve areas.**

Policy 4.2.8 Designate the Redmond Urban Reserve Area on the County Comprehensive Plan Map and regulate it through a Redmond Urban Reserve Area (RURA) Combining Zone in Deschutes County Code, Title 18.

Policy 4.2.9 In cooperation with the City of Redmond adopt a RURA Agreement consistent with their respective comprehensive plans and the requirements of Oregon Administrative Rule 660-021-0050 or its successor.

Policy 4.2.10 The following land use policies guide zoning in the RURA.

a. Plan and zone RURA lands for rural uses, in a manner that ensures the orderly, economic and efficient provision of urban services as these lands are brought into the urban growth boundary.
b. New parcels shall be a minimum of ten acres.
c. Until lands in the RURA are brought into the urban growth boundary, zone changes or plan amendments shall not allow more intensive uses or uses that

generate more traffic, than were allowed prior to the establishment of the RURA.

d. For Exclusive Farm Use zones, partitions shall be allowed based on state law and the County Zoning Ordinance.
e. New arterial and collector rights-of-way in the RURA shall meet the right-of-way standards of Deschutes County or the City of Redmond, whichever is greater, but be physically constructed to Deschutes County standards.
f. Protect from development existing and future arterial and collector rights-of-way, as designated on the County's Transportation System Plan.
g. A single family dwelling on a legal parcel is permitted if that use was permitted before the RURA designation.

Policy 4.2.11 Collaborate with the City of Redmond to assure that the County-owned 1,800 acres in the RURA is master planned before it is incorporated into Redmond's urban growth boundary.

Section 1.3 Land Use Planning

Background

This section establishes the overall framework for the development and implementation of plans and policies for land use within the County. Statewide planning guidelines require each county to establish a land use planning process based on current issues and factual information. The policies in this section assure that the County's land use policies are current, fact-based and responsive to change. The policies recognize the need for coordination between the cities and the County and provide full public access to Plan documents and the information upon which land use decisions are based.

As noted throughout this Plan, there are two important things to remember. First, the Oregon land use system draws a bright line between rural and urban lands and promotes new growth and infrastructure in urban areas. Growth on rural lands is limited in order to protect farms, forests, open spaces and natural resources. Deschutes County is required to plan in compliance with the State planning system in order to promote orderly and efficient growth and protect the resources important to Oregonians.

Second, land use is often controversial because ultimately it can intermix community values with private property rights and expectations. A property owner may choose to keep pigs, or start a day care center or build a windmill. For each of those uses there may be impacts on the neighbors in the form of odors, traffic or blocked views. Land use regulations attempt to achieve a balance between giving property owners the freedom to use their property however they choose while maintaining the livability of the neighborhood and wider community. This Plan recognizes those tensions that occur when creating land use policies.

Land Use

Statewide Planning Goal 2 Land Use Planning, requires a fact-based land use planning process and policy framework to guide land use decisions. It requires comprehensive planning that identifies issues and complies with Statewide Planning Goals. Goal 2 also addresses the process to allow exceptions to Statewide Goals (see also Section 5.10).

In 1979 the County complied with the Statewide planning system by writing a Comprehensive Plan. From 1988-2003 the County underwent State mandated Periodic Review to ensure the Plan was still in compliance with changing State regulations. The 2008-2011 update was done outside of Periodic Review, which is no longer required for Oregon counties. Instead, the County recognized that to remain valid the Comprehensive Plan needed to be completely rewritten and updated. For historic reference, a copy of the Comprehensive Plan replaced by this Plan will remain available on the County website. This Plan is a policy document based on existing facts and community values. No specific land use designation changes are included in the 2008-2011 Plan update. Instead, this Plan revisits each Statewide Goal, its existing Goals and Policies, community values and new issues requiring policy direction. It lays out a blueprint for the future and defines what matters to County residents and businesses through updated Goals and Policies.

The Comprehensive Plan is implemented primarily through zoning and the zoning code must be regularly reviewed for compliance with the Plan. However, there are other tools for implementation, such as capital improvement plans, partnerships or incentive programs. To assure this Plan remains useful, an action plan identifying various ideas for implementing Comprehensive Plan policies will be created. The action plan will be annually updated and reviewed to identify and prioritize work plans for the coming year.

Land Ownership and Jurisdiction

When considering land use in Deschutes County two important factors are the amount of public ownership and which lands are under County jurisdiction. Table 1.3.1 shows nearly 80% of land in the County is publically owned. The implications of the large tracts of public land range from the loss of tax revenue to having vast open lands available for recreation for both tourists and residents.

Table 1.3.1 – Public Land in Deschutes County 2010

Ownership	*Acres**	*Percent*
Total County Acres	1,913,482	100%
Federal Government	1,466,067	76.6%
State Government	53,051	2.8%
County Government	10,434	0.6%
Total Public Lands	**1,529,552**	**79.9%**

* Acres of parcels – does not include roads, right-of-ways, lakes, rivers or other publicly-owned parcels such as cities or park districts

Source: County Geographical Information System

Table 1.3.2 shows jurisdictional responsibilities. Note that the federal government, primarily through the Bureau of Land Management and the U.S. Forest Service, owns over 76% of the land in the County. Federal lands are not required to conform to local regulations, such as zoning. They rely on their own resource plans. This means a majority of lands in the County are not under County jurisdiction. However, they remain in this Plan to encourage intergovernmental policy coordination.

Table 1.3.2 – 2010 Land Jurisdiction in Deschutes County 2010

Jurisdiction	*Acres**	*Percent*
Total County Acres	1,913,482	100%
Federal Government	1,466,067	76.6%
Bend Urban Growth Boundary	17,534	0.9%
La Pine Urban Growth Boundary	4,008	0.2%
Redmond Urban Growth Boundary	10,733	0.6%
Sisters Urban Growth Boundary	1,023	0.1%
Total Cities	33,298	1.7%
Total Other Jurisdiction	**1,499,365**	**78.4%**

* Acres of parcels – does not includes roads, right-of-ways, lakes and rivers

Source: County Geographical Information System

In addition to Federal lands, four cities have primary jurisdiction over less than 2% of lands in the County. This includes lands outside the incorporated city boundaries, but inside urban growth boundaries. The urban growth boundaries define a municipality's 20-year land supply to accommodate future growth. These lands are managed by the cities through intergovernmental

agreements between the cities and the County. The bottom line is that the County has land use jurisdiction over approximately 22% of the land base.

Comprehensive Plan Map Designations

The Comprehensive Plan Map (Map) illustrates the County's goals and policies. The Map describes land use categories that provide for various types of development and conservation for the rural area during the 20-year planning period.

Each Comprehensive Plan map designation provides the land use framework for establishing zoning districts. Zoning defines in detail what uses are allowed for each area. The Deschutes County Comprehensive Plan and Zoning Maps exist in official replica form as an electronic map layer within the County Geographic Information System. Other maps illustrating various Comprehensive Plan areas, such as rural commercial properties, are available to the public for informational purposes.

The Comprehensive Plan map designations are defined below.

Agriculture: To preserve and maintain agricultural lands for farm use.

Airport Development: To allow development compatible with airport use while mitigating impacts on surrounding lands.

Destination Resort Combining Zone: To show lands eligible for siting a destination resort.

Forest: To conserve forest lands for multiple forest uses.

Open Space and Conservation: To protect natural and scenic open spaces, including areas with fragile, unusual or unique qualities.

Rural Residential Exception Areas: To provide opportunities for rural residential living outside urban growth boundaries and unincorporated communities, consistent with efficient planning of public services.

Surface Mining: To protect surface mining resources from development impacts while protecting development from mining impacts.

Resort Community: To define rural areas with existing resort development that are not classified as a destination resort, based on Oregon Administrative Rule 660-22 or its successor.

Rural Community: To define rural areas with limited existing urban-style development, based on Oregon Administrative Rule 660-22 or its successor.

Rural Service Center: To define rural areas with minimal commercial development as well as some residential uses, based on Oregon Administrative Rule 660-22 or its successor.

Urban Unincorporated Community: To define rural areas with existing urban development, based on Oregon Administrative Rule 660-22 or its successor.

Rural Commercial: To define existing areas of isolated rural commercial development that do not fit under Oregon Administrative Rule 660-22.

Rural Industrial: To define existing areas of isolated rural industrial development that do not fit under Oregon Administrative Rule 660-22.

Urban Growth Boundaries: To define land that provides for urban development needs and identifies and separates urban and urbanizable land from rural land

Bend Urban Area Reserve: To define lands outside of Bend's Urban Growth Boundary that were under the jurisdiction of the ~~but within~~Bend Area ~~its~~ General Plan. ~~-~~These areas were removed in September 2016 through the 2016 amendment to the Bend Urban Growth Boundary. These areas are now under the jurisdiction of the County's Comprehensive Plan~~area that are expected to be brought into the Urban Growth Boundary~~.

Redmond Urban Reserve Area: To define Redmond's additional 30-year growth boundary for lands expected to be brought into the Urban Growth Boundary.

Comprehensive Plan Map Designations and Associated Zoning

Table 1.3.3 lists existing Comprehensive Plan designations and related Zoning districts. Some Plan designations apply County-wide and some only apply to designated areas of existing development. The Destination Resort designation is a combining zone that supplements the underlying zoning. Most of the area-specific designations fall under the State rules for Unincorporated Communities and are detailed in Chapter 4 of this Plan. The Rural Commercial and Rural Industrial areas are detailed in Chapter 3 under Rural Economy.

Table 1.3.3 - Comprehensive Plan and Zoning Code Designations

Comprehensive Plan Designation	*Associated Deschutes County Zoning Code*
County-wide designations	
Agriculture	Title 18 - All EFU subzones
Airport Development	Title 18 - AD, AS
Destination Resort Combining Zone	Title 18 - DR
Forest	Title 18 - F-1, F-2
Open Space and Conservation	Title 18 - OS&C
Rural Residential Exception Area	Title 18 - RR-10 and MUA-10
Surface Mining	Title 18 - SM
Area specific designations	
Resort Community	Title 18 - All Black Butte Ranch and Inn of the 7th Mountain/Widgi Creek subzones
Rural Community	Title 18 - All Tumalo and Terrebonne subzones
Rural Service Center	Title 18 - All RSC zones
Urban Unincorporated Community	Title 18 - All Sunriver subzones
Rural Commercial	Title 18 - Rural Commercial
Rural Industrial	Title 18 - Rural Industrial
Bend Urban Growth Area	Title 19 - UAR-10, SM, SR 2 ½, RS, IL, ~~PF,~~ FP
Redmond Urban Growth Area	Title 20 - UH-10
Sisters Urban Growth Area	Title 21 - UAR-10, OA, FP
Redmond Urban Reserve Area	Title 18 - RURA

Source: County Geographical Information System and Deschutes County Code

Intergovernmental and Other Coordination

Regional Coordination

Deschutes County is responsible for coordinating all planning activities affecting land uses within the County.

- Coordinating population forecasts
- Coordinating with special districts, including irrigation districts, park districts, school districts, sewer districts, and water districts
- Establishing Cooperation Agreements with special districts that provide an urban service in a UGB
- Coordinating with the U.S. Forest Service and Bureau of Land Management
- Joint Management Agreements with municipalities for managing urban growth areas (areas outside city limits, but inside a UGB)
- Establishing Urban Reserve Areas

The County recognizes the importance of working closely and cooperatively with the cities of Bend, La Pine, Redmond and Sisters, as well as special districts and state and federal agencies, to ensure a coordinated approach to future growth and conservation.

Cooperative Agreements

Cities are required to enter into a cooperative agreement with each special district that provides an urban service within a UGB. The appropriate city may also enter into a cooperative agreement with any other special district operating within a UGB.

Urban Service Agreements

Deschutes County has the responsibility for negotiating urban service agreements with representatives of all cities and special districts that provide, or declare an interest in providing, urban services inside an Urban Growth Boundary. Urban service means:

- Sanitary sewers;
- Water;
- Fire protection;
- Parks;
- Open space;
- Recreation; and
- Streets, roads and mass transit.
- Special Districts

Special Districts

Special districts are defined in ORS 198.010 and are recognized as government bodies. Special districts include the following.

Table 1.3.4 - Special Districts

Utility district	Rural fire protection district
Water supply district	Irrigation district
Cemetery maintenance district	Drainage district
Park and recreation district organized	Water improvement district
Mass transit district	Water control district
Metropolitan service district organized	Vector control district
Special road district	9-1-1 communications district
Road assessment district	Geothermal heating district
Highway lighting district	Transportation district
Health district	Library district

Sanitary district	Soil & water conservation district
Sanitary authority, water authority or joint water and sanitary authority	

Other Coordination

Besides intergovernmental coordination, Deschutes County generally supports coordination and partnerships with non-profits and other organizations that are working with residents to improve the quality of life in the County. There are groups working to address issues from affordable housing to clean rivers, from economic development to fire-free neighborhoods. Two examples of community projects that were completed from 2006-2010 are the Bend 2030 Plan and the Deschutes County Greenprint, both created after extensive public outreach. Note that the nature and extent of the County's role will vary based on County priorities at any given time and that coordination on a project does not ensure County support of every action undertaken on that project. Still, partnering is an efficient and effective method of addressing important issues.

County-Owned property

When considering land use it is important to consider County-owned lands, which are managed through Deschutes County Code Title 11. As of 2009 there were nearly 700 individual parcels owned by the County, totaling almost 8,000 acres. Management of these properties consists of defining appropriate uses for different parcels, cleaning up illegal dumpsites, fire hazard reduction and public auction. Many of these properties were acquired through foreclosure for non-payment of property taxes. It is anticipated that the County will continue to acquire lands through foreclosure.

Starting in 1994 the County began to designate certain sensitive properties along rivers, creeks or streams or with wildlife, wetlands or other values, as park lands. The intent was not to develop these lands for park use but rather to preserve lands with valuable resources. The park designation means that the lands would be retained in public ownership unless there was a public hearing and the Board of County Commissioners determined that selling was in the best interest of the public. ORS 275.330 governs the disposal of these lands, stating that if they are sold the proceeds must be dedicated to park or recreation purposes. As of 2009, there were approximately 70 properties designated as park lands under the following Orders.

Order #
94-138
96-071
97-147
97-151
98-127
2004-001
2004-037
2006-019

Section 1.3 Land Use Planning Policies

Goals and Policies

Goal 1 **Maintain an open and public land use process in which decisions are based on the objective evaluation of facts.**

Policy 1.3.1 Protect the limited amount of privately-owned land in Deschutes County through consideration of private property rights and economic impacts to property owners and the community when creating and revising land use policies and regulations.

a. Evaluate tools such as transfer of development rights programs that can be used to protect private property.

Policy 1.3.2 Consider sustainability and cumulative impacts when creating and revising land use policies and regulations.

Policy 1.3.3 Involve the public when amending County Code.

Policy 1.3.4 Maintain public records which support the Comprehensive Plan and other land use decisions.

Policy 1.3.5 Review the Comprehensive Plan every five years and update as needed, in order to ensure it responds to current conditions, issues and opportunities, as well as amended State Statute, Oregon Administrative Rules and case law.

Policy 1.3.6 Maintain and enhance web-based property-specific information.

Policy 1.3.7 The Deschutes County Comprehensive Plan Map will be retained in official replica form as an electronic map layer within the County Geographic Information System and is adopted as part of this Plan.

Policy 1.3.8 Implement, as appropriate, recommendations in the Final Report from the Oregon Task Force on Land Use Planning dated January 2009.

Policy 1.3.9 A list of actions to implement this Comprehensive Plan shall be created, maintained and reviewed yearly by the Community Development Department and the Board of County Commissioners.

Goal 2 **Promote regional cooperation and partnerships on planning issues.**

Policy 1.3.10 Regularly review intergovernmental and urban management agreements, and update as needed.

Policy 1.3.11 Participate in and, where appropriate, coordinate regional planning efforts.

a. Provide affected agencies, including irrigation districts, an opportunity to comment and coordinate on land use policies or actions that would impact their jurisdictions.

Policy 1.3.12 Support non-profit or public acquisition of lands determined through an extensive public process to have significant value to the community.

Policy 1.3.13 Support implementation of the Bend 2030 Plan and incorporate, as appropriate, elements from the Bend 2030 Plan into this Plan.

Goal 3 **Manage County owned lands efficiently, effectively, flexibly and in a manner that balances the needs of County residents.**

Policy 1.3.14 Where feasible, maintain and manage County owned properties as follows:

a. Manage designated park lands to preserve the values defined in the park designation;
b. Permit public access to County owned lands designated as parks unless posted otherwise;
c. Encourage properties located along rivers, streams or creeks or containing significant wildlife, scenic or open space values to be designated as park land.

Chapter 1 Primary References

References[1]

1. Oregon Department of Land Conservation and Development. Goal 1: Citizen Involvement. Oregon's Statewide Planning Goals and Guidelines.
2. Putting the People in Planning: A Primer on Public Participation in Planning, produced by Oregon's Citizen Involvement Advisory Committee – Third Edition – May 2008
3. Oregon. Department of Land Conservation and Development. Goal 2: Land Use Planning. Oregon's Statewide Planning Goals and Guidelines.
4. Oregon Task Force on Land Use Planning, Final Report to the 2009 Oregon Legislature, January 2009
5. Oregon Revised Statute 197, particularly:
    a. 197.173-197.200 Comprehensive Planning Responsibilities
    b. 197.201-197.283 Goals Compliance
    c. 197.610-197-651 Post-Acknowledgement Procedures
6. Oregon Administrative Rules Chapter 660, particularly:
    a. 660-003 Acknowledgement of Compliance
    b. 660-004 Goal 2 Exceptions Process
    c. 660-015 Statewide Planning Goals and Guidelines
    d. 660-018 Post-Acknowledgement Amendments
7. Bend 2030 at http://bend2030.org
8. Oregon's Playground Prepares for the Future: A Greenprint for Deschutes County. The Trust for Public Land. 2010

[1] The references listed are provided for the convenience of the public and are not legally adopted into this Plan.

Section 5.12 Legislative History

Background

This section contains the legislative history of this Comprehensive Plan.

Table 5.11.1 Comprehensive Plan Ordinance History

Ordinance	Date Adopted/ Effective	Chapter/Section	Amendment
2011-003	8-10-11/11-9-11	All, except Transportation, Tumalo and Terrebonne Community Plans, Deschutes Junction, Destination Resorts and ordinances adopted in 2011	Comprehensive Plan update
2011-027	10-31-11/11-9-11	2.5, 2.6, 3.4, 3.10, 3.5, 4.6, 5.3, 5.8, 5.11, 23.40A, 23.40B, 23.40.065, 23.01.010	Housekeeping amendments to ensure a smooth transition to the updated Plan
2012-005	8-20-12/11-19-12	23.60, 23.64 (repealed), 3.7 (revised), Appendix C (added)	Updated Transportation System Plan
2012-012	8-20-12/8-20-12	4.1, 4.2	La Pine Urban Growth Boundary
2012-016	12-3-12/3-4-13	3.9	Housekeeping amendments to Destination Resort Chapter
2013-002	1-7-13/1-7-13	4.2	Central Oregon Regional Large-lot Employment Land Need Analysis
2013-009	2-6-13/5-8-13	1.3	Comprehensive Plan Map Amendment, changing designation of certain property from Agriculture to Rural Residential Exception Area
2013-012	5-8-13/8-6-13	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Bend Urban Growth Boundary
2013-007	5-29-13/8-27-13	3.10, 3.11	Newberry Country: A Plan for Southern Deschutes County

2013-016	10-21-13/10-21-13	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Sisters Urban Growth Boundary
2014-005	2-26-14/2-26-14	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Bend Urban Growth Boundary
2014-012	4-2-14/7-1-14	3.10, 3.11	Housekeeping amendments to Title 23.
2014-021	8-27-14/11-25-14	23.01.010, 5.10	Comprehensive Plan Map Amendment, changing designation of certain property from Sunriver Urban Unincorporated Community Forest to Sunriver Urban Unincorporated Community Utility
2016-005	TBD	23.01.010, 2.2, 3.3	Comprehensive Plan Amendment recognizing non-resource lands process allowed under State law to change EFU zoning
2016-022	TBD	23.01.010, 1.3, 4.2	Comprehensive plan Amendment, including certain property within City of Bend Urban Growth Boundary

FINDINGS

REVIEWED
LEGAL COUNSEL

For Recording Stamp Only

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending Title 19, Bend Urban Growth Area Zoning, of the Deschutes County Code, and Declaring an Emergency	* * *	ORDINANCE NO. 2016-023

WHEREAS, on February 11, 2009, the Board of County Commissioners ("Board") adopted Ordinance 2009-002 to repeal Title 19 and adopt a new Title 19 of the Deschutes County Code to implement the City of Bend ("Bend') Urban Growth Boundary ("UGB"); and

WHEREAS, the Oregon Land Conservation and Development Commission issued a final order on November 2, 2010, remanding the Bend UGB for revisions needed to conform with state requirements; and

WHEREAS, in July of 2016, the City of Bend ("Bend') reinitiated the land use process to expand the Bend Urban Growth Boundary ("UGB"); and

WHEREAS, the expansion of the Bend UGB requires amendments to Title 19, Bend Urban Growth Area Zoning; and

WHEREAS, the Deschutes County Planning Commission reviewed this ordinance at a work session on August 11, 2016 and, on that same date, forwarded to the Board a recommendation to adopt Ordinance No. 2016-023; and

WHEREAS, the Board considered this matter after a duly noticed joint public hearing with the Bend City Council on August 25, 2016, and concluded that the public will benefit from the adoption of Ordinance No. 2016-023; and

WHEREAS, the Board finds it in the public interest to adopt the following amendments to Title 19 of the Deschutes County Code; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. REPEAL. The following Deschutes County Code ("DCC") Title 19, Chapters are hereby repealed;

19.24 Urban Low Density Residential Zone - RL
19.32 Urban Medium Density Residential Zone - RM
19.36 Urban High Density Residential Zone –RH
19.40 Neighborhood Commercial Zone – CN
19.44 Limited Commercial Zone – CL
19.48 Convenience Commercial Zone – CC
19.52 Highway Commercial Zone – CH
19.56 General Commercial Zone – CG
19.60 Industrial Park Zone – IP
///

19.68 Industrial General - IG
19.70 Public Facilities Zone – PF

Section 2. AMENDMENT. DCC Chapter 19.04, Title, Purpose, Compliance and Definitions, is amended to read as described in Exhibit "A," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 2. AMENDMENT. DCC Chapter 19.08, Establishment of Zones and Zoning Maps, is amended to read as described in Exhibit "B," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 3. FINDINGS. The Board adopts as its findings Exhibit "F," attached to Ordinance 2016-022 and incorporated by reference herein.

Section 4 EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance is final on adoption and shall take effect the date the County receives formal acknowledgement of this ordinance by the Oregon Department of Land Conservation and Development in accordance with ORS 197.628 to 197.650.

Dated this 28th of Sept., 2016

BOARD OF COUNTY COMMISSIONERS
OF DESCHUTES COUNTY, OREGON

Alan Unger
ALAN UNGER, Chair

TAMMY BANEY, Vice Chair

ATTEST:
Bonnie Baker
Recording Secretary

ANTHONY DEBONE, Commissioner

Date of 1st Reading: 28th day of Sept., 2016.

Date of 2nd Reading: 28th day of Sept, 2016.

Record of Adoption Vote

Commissioner	Yes	No	Abstained	Excused
Alan Unger	✓			
Tammy Baney	✓			
Anthony DeBone	✓			

Effective date: see section 2, above day of _____, 2016.

ATTEST:
Bonnie Baker
Recording Secretary

Chapter 19.04. TITLE, PURPOSE, COMPLIANCE AND DEFINITIONS

19.04.010. Title.
~~**19.04.020. Purpose.**~~
~~**19.04.025. Bend Unincorporated Urban Area.**~~
19.04.0230. Compliance with Title Provisions.
19.04.040. Definitions.

19.04.010. Title.

DCC Title 19 shall be known as the "Zoning Ordinance" of the Bend Urban Area of Deschutes County, Oregon.
(Ord. 90-038 §1, 1990)

~~19.04.020. Purpose.~~

~~A. DCC Title 19 has been designed in accordance with the goals, policies and statements of intent of the Bend Area General Plan, the officially enacted comprehensive plan for the City of Bend and its environs. It is the general purpose of DCC Title 19, therefore, to provide one of the principal means for implementation of the Bend Area General Plan.~~

~~B. DCC Title 19 is designed to classify, designate and regulate the location and use of buildings, structures and land for residential, commercial, industrial or other uses in appropriate places and for said purposes; to divide the Bend Urban Area into districts of such number, shape and area as may be deemed best suited to carry out these regulations and provide for their enforcement; to encourage the most appropriate use of lands; to conserve and stabilize the value of natural resources; to provide adequate open spaces for light and air and prevention of fire; to prevent undue concentrations of population; to lessen congestion of streets; to facilitate adequate provisions for community utilities, such as transportation, water, sewerage, schools, parks and other public requirements; and to promote the public health, safety and general welfare.~~

~~C. To regulate placement, height and bulk of buildings, and the placement and growth of vegetation within the County to insure access to solar energy by reasonably regulating interests in property within the County, as authorized under ORS 215.044 and ORS 105.880 through 105.890; to promote and maximize the conservation of energy by preserving the option to utilize solar energy and to implement the Comprehensive Plan policies relating to solar energy.~~

~~D. To encourage the design of new buildings, structures and developments which use solar energy and protect future options to use solar energy by protecting solar access.~~

~~(Ord. 83-041 §1, 1983)~~

~~19.04.025. Bend Unincorporated Urban Area.~~

~~A. Except for specific provisions of Title 19 identified herein, DCC Title 19 shall not apply to lands lying outside the city limits of the City of Bend and within the Bend Urban Growth Boundary, as that term is defined in that certain intergovernmental agreement entered into between the City of Bend and the County dated February 18, 1998. The City of Bend Zoning Ordinance, No. NS-1178, as adopted by the Board of County Commissioners as DCC Title 19A, and as supplemented by specifically identified provisions of this title and additional supplemental provisions identified in County Ordinance 98-040, and such other supplementing and/or amending ordinances as might from time to time be adopted, shall apply to those lands instead.~~

~~B. The following sections of this title shall remain in effect for the lands lying within the Urban Growth Boundary outside the city limits of the City of Bend: DCC 19.04.020, Purposes; DCC 19.04.030, Compliance With Title Provisions; DCC 19.08.010, Classification of Zones; DCC 19.08.020, Application of Regulations to Zones Generally; DCC 19.08.030, Zoning Map; DCC 19.08.040, Interpretation of Zoning Boundaries.~~

~~C. DCC Title 19 shall remain in effect for those lands referred to as the Urban Reserve lands in that certain intergovernmental agreement entered into between the City of Bend and the County dated February 18, 1998.~~

~~(Ord. 98-040 §1, 1998)~~

19.04.0~~3~~20. Compliance with title provisions.

~~A.~~ Except as provided in DCC 19.76, no building or other structure shall be constructed, improved, altered, enlarged or moved, nor shall any use or occupancy of premises within the Bend Urban Area be commenced to be changed, nor shall any condition of or upon real property be caused or maintained after the effective date of DCC Title 19, except in conformity with DCC Title 19.

~~B. Any application for land use permit received prior to the adoption of DCC Title 19 which has not received preliminary approval by the effective date hereof, shall comply with DCC Title 19. Applications for land use permit for which preliminary approval notices have been mailed on or before the effective date hereof need not comply with DCC Title 19, but shall comply with the City and County Zoning Ordinances which DCC Title 19 supersedes. DCC Title 19 supersedes County Zoning Ordinance PL-5 and the Zoning Ordinance of the City of Bend, NS-796 on the date DCC Title 19 is adopted by the governing bodies of the County and City, respectively.~~

(Ord. 2016-023 §1, 2016; Ord. 90-038 §1, 1990)

"**" Denotes portions of this Section not amended by Ordinance 2016-023.**

Section 19.08.010. Classification of Zones.

For the purpose of this title, the Bend Urban Area is divided into zones designated as follows:

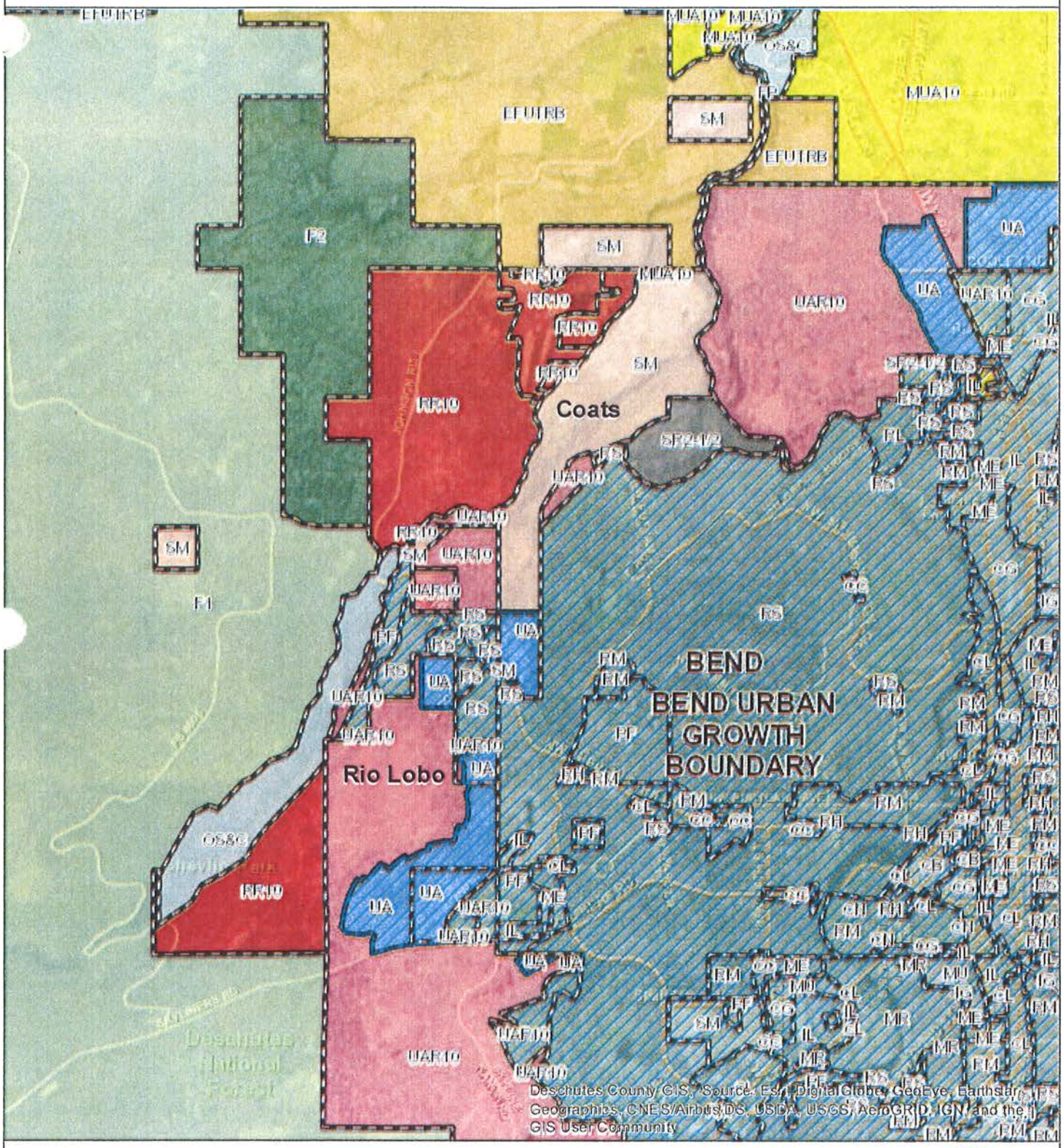
Zone	**Map Symbols and Abbr. Designations**
Urban Area Reserve	UAR-10
Surface Mining	SM
Residential Suburban Low Density	SR-2 1/2
~~Residential Urban Low Density~~	~~RL~~
Residential Urban Standard Density	RS
~~Residential Urban Medium Density~~	~~RM~~
~~Residential Urban High Density~~	~~RH~~
~~Commercial Neighborhood~~	~~CN~~
~~Commercial Convenience~~	~~CC~~
~~Commercial Limited~~	~~CL~~
~~Commercial Highway~~	~~CH~~
~~Commercial General~~	~~CG~~
~~Industrial Park~~	~~IP~~
Industrial Light	IL
~~Industrial General~~	~~IG~~
Flood Plain	FP
~~Public Facility~~	~~PF~~

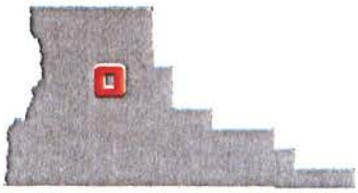
(Ord 2016-023 §2, 2016; Ord. 96-042 §1, 1996; Ord. 80-217 §1 Exhibit A, 1980)

****

Westside Transect Zone

Zoning





STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND, OREGON 97201

APPLICATION
FOR
PROVISIONAL OPERATING PERMIT
SURFACE MINING

(SEE INSTRUCTIONS BELOW)

NAME OF APPLICANT (TYPE OR PRINT)
Robert L. Coats

PERMANENT ADDRESS (INCLUDE 'ZIP')
B. B. Newport Ave.
Bend, Oregon 97701

TELEPHONE NO. 382-2166

TEMPORARY ADDRESS (INCLUDE 'ZIP')

TELEPHONE NO.

OWNERSHIP: Surface of land to be surface mined (show names and addresses)
Robert L. Coats
B. B. Newport Ave.
Bend, Oregon 97701

OWNERSHIP: Mineral Rights (show names and addresses)
Robert L. Coats
B. B. Newport Ave.
Bend, Oregon 97701

DATE SURFACE MINING WILL COMMENCE
In operation since 1964

SIZE AND LEGAL DESCRIPTION

SEC	T S N	RANGE E W WM	COUNTY
			Deschutes

DISTANCE	DIRECTION FROM	NEAREST COMMUNITY
3 miles	N.W.	Bend

TYPE OF OVERBURDEN	APPROX. MAX. DEPTH OF OVERBURDEN
Dirt	3 ft.

MATERIAL TO BE MINED OR REMOVED	QUANTITY (TONS OR YARDS) OVERBURDEN	MINERAL
Gravel		10,000 Cu. yds.

ESTIMATED TOTAL ACRES TO BE SURFACE MINED	ESTIMATED NUMBER OF ACRES TO BE MINED IN FIRST YEAR
300	5

METHOD OF MINING	EST. MAX. DEPTH TO BE SURFACE MINED
Open Pit	14 feet

PURPOSE FOR WHICH THIS LAND IS TO BE USED AFTER MINING
Subdivisons and Farming

RECEIVED
JAN 18 1973
[illegible]
MINERAL [illegible]

INSTRUCTIONS
1. This application must be accompanied by the fee, ~~a reclamation plan and a plan of surface mining~~.
2. ~~Attach a statement (or form) from the appropriate zoning agency showing that the proposed subsequent use of the property is a legal use under present zoning classification~~.

A BASIC FEE OF $100 PER SITE IS HEREWITH ATTACHED
$100 REC'D 1-17-73 REC'D
1 SITE

SIGNATURE
Robert L. Coats

DATE
1-10-73

TITLE
Owner

PERMIT NO.

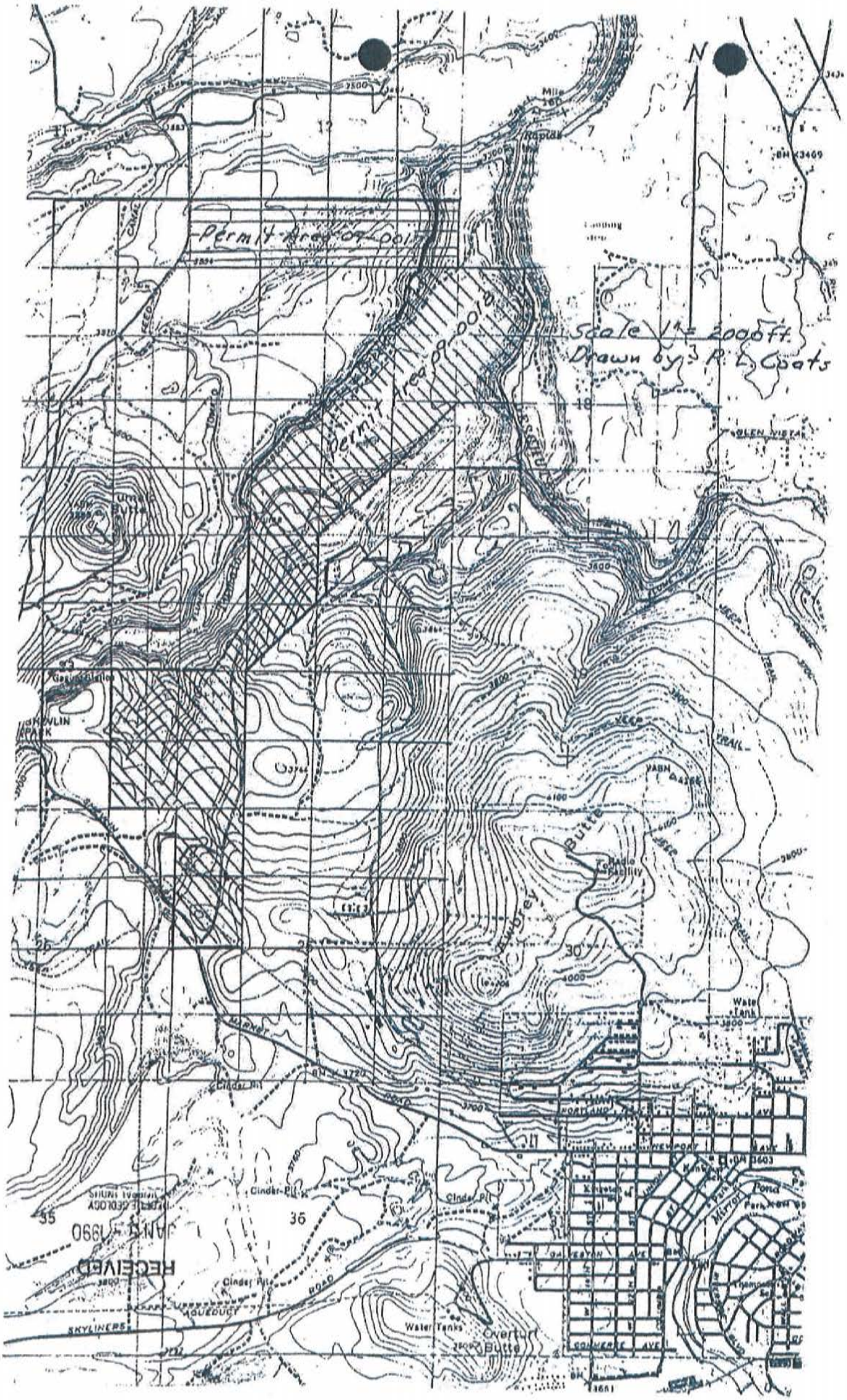
FOR DEPARTMENT USE ONLY

DATE ACCEPTED BY DEPARTMENT:

ACCEPTED BY:

Form 1

Copy Distribution: White - Portland; Yellow - Field; Pink - Applicant



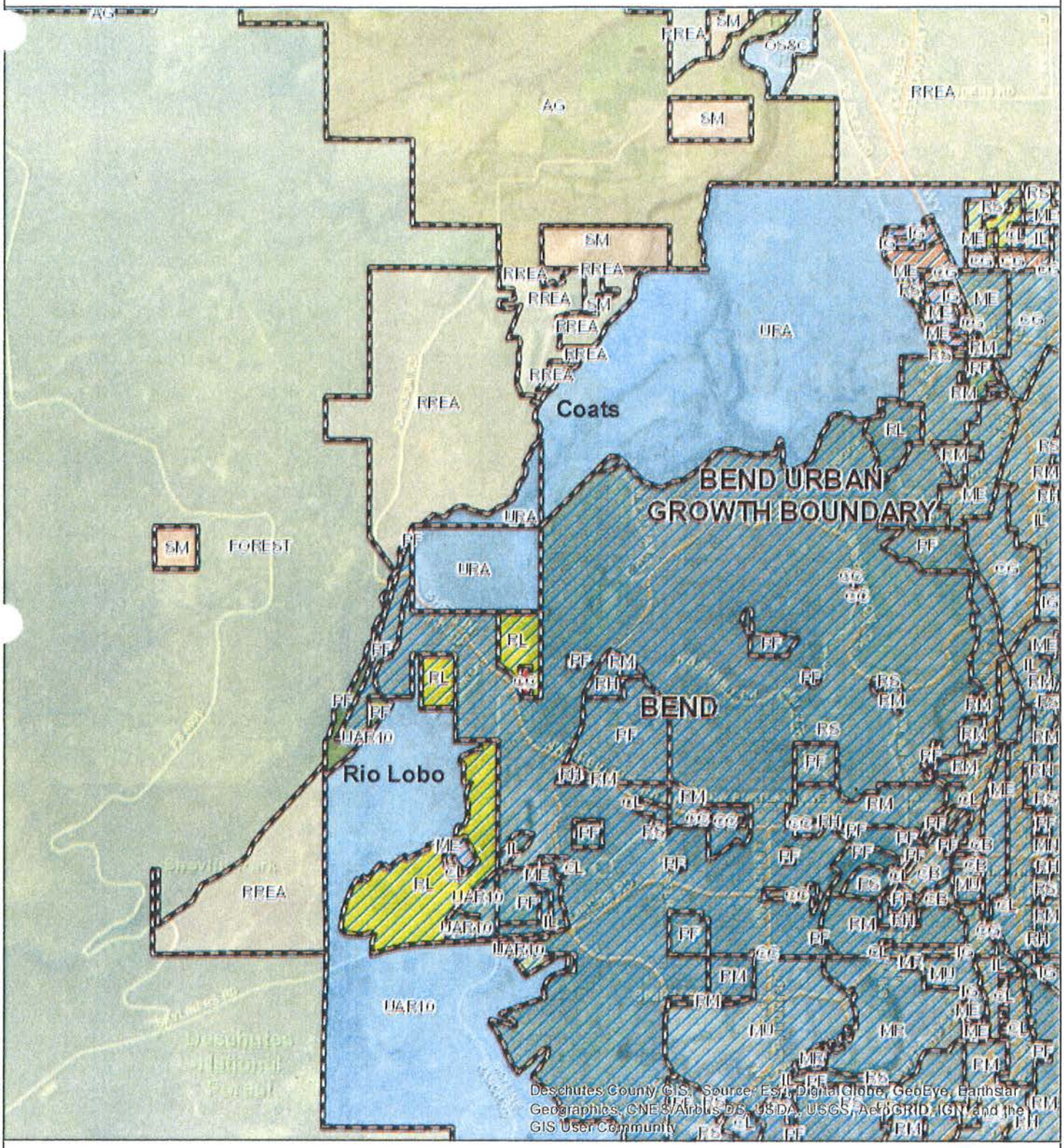
09-0018

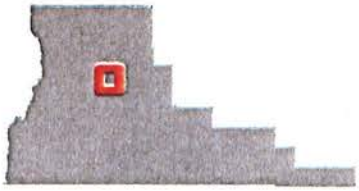
CAKE PIT

Exhibit 9
Page 1 of 1

Westside Transect Zone

Comprehensive Plan





EXCEPTIONS STATEMENT

The following information describes the current status of the land being excluded from the IUGB. The City and County adopted an Urban Growth Boundary in 1972, and this boundary was modified several times through 1978. In 1979 the City and County submitted the Bend Area General Plan and UGB to LCDC, and LCDC directed that a new boundary be prepared using the following criteria.

1. Revise the Bend Urban Growth Boundary to include:

   a. All lands within the City limits.
   b. All lands beyond the City limits which are demonstrably needed, based on factors 1 and 2 of Goal 14, and the buildable lands information in Goal 10, and factors 3-7 of Goal 14.
   c. All lands beyond need which are justified, based upon consideration of factors 3-7 of Goal 14.

2. All lands remaining outside the boundary established as listed above, but inside the current UGB must be designated as natural resources, rural, or urban reserve, and zoned in the UAR-10 or other protective zone classification until such time as a boundary change is justified.

The City and County have agreed to a new Initial Urban Growth Boundary that excludes approximately 25 percent of the land contained in the 1979 Urban Growth Boundary. These lands are designated as urban reserve and surface mining, and zoned SR-2½, UAR-10, and SM. The majority of the SR-2½ areas are currently developed with lot sizes of that size or smaller.

The inventory of soil data indicates that most of the agriculture lands are Class VI and are interspersed between lava ridges of scabland Class VIII. The forest soils are site 6 except for a small area of 4 contained within the Tumalo Creek canyon which is Shevlin Park. The conclusion from this analysis is that these lands are marginal resource lands. Much of the land is surrounded by existing one to five acre subdivisions. These areas have been excepted in the Deschutes County Comprehensive Plan.

The urban reserve area acts as a buffer to the more rural and resource lands beyond the UGB. The use of the urban reserve will promote more orderly and efficient development, and still retain the 1972 planning commitments which have resulted in financial commitments from both the public and private sectors. The minimum lot sizes of 2½ to 10 acres will be compatible with the adjacent land uses, and in most cases are the same as the adjacent MUA-10 and RR-10 zoning outside the UGB.

The provision of these areas as urban reserve will enable the community to convert these areas when needed, and hopefully reduce any impact of the small number of individual owners of larger parcels within the IUGB. It is important to pre-plan future expansion areas for compatibility and consistency with adjacent uses and services. These areas offer opportunities important to the Bend's and Deschutes County's economy for destination resorts. These areas offer the community an opportunity to review rural urban conflicts and develop more compatible urban and rural relationships.

No alternatives were considered, since this would require the enlargement of the 1979 UGB.

Based on these considerations, the City and County are taking an exception to Goals 3 and 4 as they relate to the land between the IUGB and the UGB.

JCH:bf
Revised 9/24/80

EXHIBIT D

Wildlife Habitat
and
Forest Health Management Plans

Table of Contents

Section I: Introduction

Section II: North Property

1) Wildfire Mitigation and Forest Health Plan by Singletree Enterprises
2) Wildlife Habitat Findings by Mason Bruce Girard
3) Wildlife Habitat and Forest Health Management Plan

Section III: South Property

1) Forest Health and Wildfire Fuels Evaluation by Singletree Enterprises
2) Wildlife Habitat Findings by Mason Bruce Girard
3) Wildlife Habitat and Forest Health Management Plan

Section IV: Qualifications of Professionals

SECTION I

INTRODUCTION

Wildlife Habitat and Forest Health

Management Plan

Introduction

This section of the application introduces the applicants' comprehensive approach to creating an integrated residential development plan within an existing dynamic wildlife and wildfire landscape. It is unusual to have an opportunity such as this to manage for wildlife habitat and wildfire protection on a large area (over 700 acres) located on the urban-rural fringe with primarily two landowners. The applicants are committed to developing a land development and stewardship plan that balances human activity with wildlife migration and movement, and habitat values in conjunction with a responsible wildfire protection plan. Each of the properties, North Property and South Property, have developed integrated management plans for wildlife habitat and forest health. Measures of community stewardship for implementation, monitoring, and enforcement are included in the plans and provide authority of the Home Owners Associations (HOA) to enforce and monitor the plans as well as incorporating measures into the Declaration of Covenants, Conditions, and Restrictions (CC&Rs).

Each plan is meant to respect the natural environment with development that fosters the coexistence of people and nature for living within a dynamic ecosystem with appropriate sustainability and conservation measures.

The North Property has had continuous disturbance to its landscape predominantly by surface mining activities for over 50 years. Yet, wildlife has found a way to harmonize its movements within the dynamic landscape of the on-going mining business. The transition of the land from mining to low density residential, with integrated resource management corridors, will enable the property owners to take an active role to enhance and restore some of the wildlife habitat and movement patterns and corridors that have been lost or moved over time.

The implementation of wildfire prevention measures which optimizes forest health and makes the forest more resilient to the effects of fire, together with fuels reduction and defensible space requirements, enables the property owners to protect their communities and the nearby urbanized lands at the City's edge.

Historical Uses of the North and South Properties

<u>North Property</u>

For over 50 years, the North Property has been actively mined for aggregate, sand, and gravel. Starting around 1964, mining activities, including excavation, blasting, crushing, and screening of aggregate, sand, and gravel have occurred at the property. Truck traffic flows throughout the site from one end to another carrying large quantity of aggregate to be processed and sold. An asphalt batch plant, concrete washing area, an office, shop, and truck and storage shed, and a redi-mix operation standby to support

the operations at the pit. Disturbances to the landscape and related mining noise are continuous and on-going to this day. A number of unimproved roads meander throughout the site and some areas of the property have been actively farmed for pasture in the past. Family residences dot the landscape and portions of the property are actively managed for wildfire suppression.

South Property

The South Property remains undeveloped. A large portion of the South Property was burned in the 1990 Awbrey-Hall fire. The northern portion of the property (most of which is now included within the UGB) was previously utilized (beginning in the 1960's and 1970's) for the manufacturing and distribution of motorcycle parts. This portion of the property included a motorcycle test track and was later used as the administrative offices for the Hooker Creek companies. The buildings utilized for such uses have now been incorporated within the UGB. No existing buildings or structures are located within the boundary of the South Property. A number or existing unimproved roadways meander through the South Property. The roadways are currently utilized for access, land management and fire protection purposes.

Historical Zoning of Property

The North and South Properties have been slated for eventual urbanization since the early 1970's. The City of Bend and Deschutes County adopted the original Bend Urban Growth Boundary (UGB) in 1972, which was modified several times through 1978. In 1979, the City and County submitted the Bend Area General Plan and UGB to the Land Conservation and Development Commission, which directed the preparation of a new boundary that would separate urban lands from future urbanizable lands (reserves). Based on that direction, the subject property was designated Urban Area Reserve (UAR) with its stated purpose to act as a buffer between the urban area and the more rural resource lands outside the reserve area and to be a holding area for future urbanization.

Proposed Development

The applicants are seeking a text amendment to add a new zone called the Westside Transect Zone to the Comprehensive Plan (Title 23) and the Bend Urban Growth Boundary Zoning Ordiance (Title 19). In addition, the applicants are seeking a zone change for the North Property (approximately 410 acres) from Urban Area Reserve (UAR) and Surface Mining (SM) to the new Westside Transect Zone and for the South Property (approximately 306 acres) from UAR to the new Westside Transect Zone. The Westside Transect Zone is a low-density residential pattern of development that gradually decreases from the Urban Growth Boundary to the rural boundary using a density range of one unit per 2.5 to 10 acres and a minimum lot size of 2.5 acres.

The development plans within these North and South Properties will include residential subdivisions with dedicated resource management corridors and funded and enforceable provisions for the management of wildlife habitat and wildfire prevention

and mitigation plans. The proposed zoning will allow for public uses such as schools and utility facilities that support the surrounding area. Trails, multi-use paths, and pedestrian ways meander through the property, which will be carefully managed for areas of active recreation where appropriate and more passive recreation (no off-leash dogs, no mountain biking, etc.) where necessary to protect wildlife movement and corridors.

Organization of Report

The organization of this report is divided into two sub-reports, one for the North Property and one for the South Property. For both properties, the report contains the following separate sections:

- Introduction
- Wildfire Mitigation and Forest Health Plan wildfire consultant, John Jackson of Singletree Enterprises
- Wildlife Habitat Findings prepared by biologist, Wendy Wente of Mason, Bruce & Girard
- Wildlife Resource Management and Wildfire Protection Plan
- Qualifications of Professionals

SECTION II

NORTH PROPERTY

Wildfire Mitigation

And

Forest Health Plan

Prepared by

John Jackson, Singletree Enterprises, LLC

Singletree
ENTERPRISES, LLC
2660 NE Hwy 20 Ste 610 #222 • Bend, OR 97701 • 541-410-9686
john@singletreeconsulting.com • www.singletreeconsulting.com

December 4, 2017

Mr. Eric Coats

63285 Skyline Ranch Road

Bend, OR 97701

Dear Mr. Coats,

Please find attached the "Wildfire Mitigation and Forest Health Plan" as requested.

This document was developed in coordination with the development of the "Wildlife Habitat Management Plan for the Coats Property" produced by Mason, Bruce and Girard, Inc.

Please contact me for any additional information as needed.

John C. Jackson

Attachment

Wildfire Mitigation and Forest Health Plan

Eric W. Coats

12-4-2017

63285 Skyline Ranch Road, Bend, OR

Section 1: Introduction

This Wildfire Mitigation and Forest Health Plan was requested by the landowner in support of a land use planning initiative for a portion of the larger ownership parcel. An update of the Forest Management Plan for the parcel as a whole is currently under development. This *Wildfire Mitigation and Forest Health Plan* document is intended to address forest health issues and actions to increase resiliency to high intensity wildfire within the area included the land-use proposal.

Based on Congressional direction, the fire services at the national level were directed to address the expanding wildland fire situation. The Cohesive Wildland Fire Strategy came out of that effort.

The three focal points of the *Western Cohesive Wildland Fire Strategy* are:

- Restore and maintain resilient landscapes
- Create Fire Adapted Communities
- Safe and effective wildfire response

This analysis and associated recommendations are intended illustrate how this proposed project will comply with and contribute to development of a fire-adapted community on Bend's west side.

Section 2: Historical Use/Recent Fire Events/Current Condition

The ownership as a whole is bordered by Tumalo Creek and Shevlin Park to the west, the Deschutes River to the northeast and residential development of varying densities on the remainder of its boundaries. Recent past and current forest vegetation management activities on the parcel have been designed to

support forest health. These include vegetation management activities to reduce fire intensity resulting from any ignitions that may occur.

Significant portions of the property have been developed over time in support of the landowner family-owned surface mine business. The forested portions of the property have supported timber growth and harvest where soil conditions are adequate to support Ponderosa pine. Forest management work undertaken over the last two years have been focused on thinning to reduce tree density to optimum stocking levels, removal of Western Juniper where it completes with pine and mowing brush to minimize fire intensity potential and reduce moisture competition.

In August, 1990 the Awbrey-Hall Fire started in Shevlin Park along Tumalo Creek. During the early stages of the incident the fire quickly spread up out of the creek bottom and spotted northeast across Shevlin Park Road. It spread up the hill onto the Coats property and then on to the adjoining parcel to the south currently owned by the Bend-LaPine School District. Some twelve hours later the fire spread in Deschutes River Woods after jumping the Deschutes River. Over the last 25 years the land within the footprint of the fire has become dominated by a dense stand of highly flammable bitterbrush, sagebrush and rabbit brush with little if any pine natural regeneration.

In 2016, Mr. Coats and the School District conducted a brush mowing operations intended to reduce fuel loading and potential fire behavior intensity in the event of an ignition from Shevlin Park or Shevlin Park Road. A portion of the School District parcel was too steep, with rock outcrops, to mow all of the brushy areas including one area adjacent to Shevlin Park Road. In addition, a portion of the School District parcel that did not burn during the fire is in need of a forest health/ stand improvement thinning to reduce stand density, competition for moisture and increase in resiliency to high intensity stand replacement fire.

Current Forest Condition

The majority of the Coats ownership in the southern portion in the proposed project area has received stand-improvement, non-commercial thinning and brush mowing treatments over the last 15-20 years. Residual pine lower limb pruning/ladder fuel reduction was also conducted in the southern ½ of the SE ¼ of section 23. A more aggressive approach to thinning and ladder fuel work has

been applied along property boundaries and where ignition sources were deemed to be of greater potential.

The east half of the NW ½ of the NE ¼ of section 23 (T17S R11E), east of the power lines was treated in 2016. The prescription included non-commercial thinning to optimize Ponderosa pine density and Western Juniper removal where ever there was competition with pine. Residual bole removal and slash pile burning is pending completion in December, 2017.

Lower limb ladder fuel pruning and bush mowing was also completed in 2016 on the east, west and south sides of the industrial/truck shop area (w ½ Section 25 T17S R11E), and extending north along the east side of Skyline Ranch Road. This work was undertaken to reduce the potential for fire spread from Shevlin Park Road to the south and the residential/golf course properties to the east. These last treatment areas are not a part of the proposed project area.

The overall intention of this work was to optimize forest health and make the forest more resilient to the effects of fire.

Photo illustrates an example of thinned stand with ladder fuel treatment on a portion of Coats property. Note that the School District parcel behind fence and has not been treated. The thinning and limbing shown here is more aggressive due to increased ignition risk from Shelvin Park Road and adjoining property boundaries. (Photo taken from SE ¼ of Section 23 with view to the west into the SW ¼.)

Wildlife Considerations

While forest health and actions to restore of a resilient landscape have been one Coats family objective, another has been retention of wildlife habitat.

Areas of the larger family ownership lack adequate growing components for Ponderosa pine. The primary requirement for pine is adequately deep soils to help hold moisture, preferably on north aspect slopes. The Coats parcel contains a substantial amount of broken, dissected terrain with minimal soil depth. In these areas the objective has been to retain tree cover and density of existing pine, juniper and brush species in favor of wildlife habitat needs.

The success of that approach is highlighted by evidence of use by elk, deer and a variety small mammals, reptiles and bird species intermingled with surface mining and forest management activities.

Section 3: Wildfire Mitigation Components

Fire Behavior-Wildfire, particularly in central Oregon, generally spreads from progressive linear fire movement over the ground with direct flame contact, and/or from spotting as a result of firebrands carried aloft with the fire convection column, then carried downwind and landing on a susceptible fuel source adequate to sustain an ignition.

The *Fire Triangle* is composed of fuel, oxygen and heat. The *Fire Behavior Triangle* is composed fuels, topography and weather. These two models help illustrate what is required to support fire behavior. Likewise they offer insight to potential mitigations. Clearly there is little that can be done with the oxygen and weather variables.

The fuels variable however is common to both and is susceptible to mitigation by reducing the amount and continuity of *available* flammable material. *Availability* in this case does not always mean total removal. "Ladder fuel" treatments such as pruning lower branches off of trees and removing brush under tree canopies is one such example. Taking this action tends to isolate and make tree crowns less available to support crown fire development. Landscaping with deciduous trees is another example due their lack of resinous needles.

Reducing the amount of available flammable fuels reduces fire intensity and produces less heat. This in turn lowers spot fire risk by minimizing production of firebrands available to produce downwind ignitions.

The end objective is to keep the fire on the ground where driveways, streets, green lawns, etc. are effective in reducing fire intensity and rates of spread, and where fire response resources can safely and effectively work to suppress the fire.

Topography is the other big variable. While it can't be changed, it can be avoided. In addition to increasing rates of fire spread, slopes have an impact on winds. Drainages with significant canyons such as Tumalo Creek and the Deschutes River typically can vector wind patterns away from prevailing free-air wind flow. Side drainages and draws coming off of these more dissected canyons should be expected to funnel and accelerate winds. Likewise accelerated rates of fire spread from canyon-bottom ignitions should be expected. Wind patterns will be more turbulent where side draws emerge from the drainages. Consequently structures should be located well-way from the mouth at the top of side drainages and well set back the rim-rock edge above steep slopes and canyon walls.

Defensible Space- Defensible space around buildings and vegetation maintenance along driveways and access/egress routes is a critical component to wildfire effects mitigation as discussed above. The "zone concept" around buildings implements a "defense in depth" approach with progressively more modest treatment standards as the distance from structures increases.

Different jurisdictional agencies have slightly different defensible space standards, but all with the same intent. The defensible space standards identified in NFPA 1144 meet or exceed the defensible space requirements of the Oregon Department of Forestry-administered "SB360" (*The Oregon Forestland-Urban Interface Fire Protection Act of 1997,* ORS 477.001-477.061) and the Deschutes County defensible space standard for residential development in F-1 and F-2 (DCC 18.36.070 and DCC 18.40.070) zones.

Recommended Vegetation Management Standards for Structural Defensible Space

Zone 1: 30 Feet Adjacent to Structures

Use non-flammable landscaping materials within first 5 feet of structures. All vegetation and combustibles are removed from under decks and within 5 feet of the home or auxiliary structures. Outside of 5 feet, low-growing, resin-free fire resistive plants are carefully spaced and maintained, and are kept free of dead material that do not allow flame lengths greater than 3 feet. Areas of lawn must be well irrigated and regularly mowed. Mature trees are pruned to a height of 6 to 10 feet from the ground with no brush inside of the tree dripline. Juvenile trees are not pruned more than 20% of stem length. Trees may not touch the home. No firewood storage is permitted outside of an enclosed structure. This zone includes driveway/road surfaces.

Zone 2: 30 to 100 Feet from Structures

Plants are low-growing and well irrigated. Tree canopies are spaced at 15-20 feet, or 30 feet between small groups of small trees. Zone 2 treatments will extend to the lot boundary (beyond the 100-foot zone) when the lot is adjacent to down-hill slopes greater than 20%. Small individual brush species will be irrigated, maintained free of dead material and outside the dripline of trees.

Zone 3: 100 to 200 Feet from Structures

Trees will be thinned and pruned, woody debris removed and brush fields mowed or removed. Density of taller trees will be reduced and maintained so that canopies do not touch. Taller, more mature trees however, typically present less of a fire risk as long as brush is not present within the tree drip-line and lower limbs are pruned.

Over time, tree canopies will grow together gradually. A long-term strategy is required to address this issue. Provisions should be made within CC&Rs for removal of some large trees as needed *if this standard is to be maintained.*

Zone 2 and 3 treatment areas will overlap each other between home sites and extend into open areas. For lots with greater than 20% slopes, Zone 2 treatments will extend beyond 100 feet to the lot boundary.

Beyond the 200-foot Zone 3 boundaries associated with the building lots, the open space will continue to be maintained consistent with the Zone 3 wildlife standards. (Please refer to Wildlife Vegetative "Zone 3 Standards".)

Maintenance of Forest Health and Landscape Resiliency

Ongoing vegetation management is the key to maintenance of a healthy forest and overall resilience to the effects of fire. Young pine seedlings will become established through natural regeneration. A coordinated, long term plan will be needed to help plan for and evaluate options for vegetation regrowth and sprouting. Depending on location and condition of older forest vegetation, young seedlings may be used to provide additional wildlife screening or other aesthetic issues. Alternatively, depending on spacing, intermingled vegetation and continuity, young pine reproduction can quickly compromise desired conditions within the defensible space zones.

Antelope bitterbrush and other brush species generally require an ongoing action plan to enhance winter range value for deer and to maintain compliance with established defensible space standards.

Bitterbrush, for example, is often classified by its growth (seral) stage. Typically the majority of the plants within an area will fall into one of three categories. The most common treatment is mowing or other mechanical means. A treatment priority model is shown below.

Antelope Bitterbrush Site Condition Classification

Priority 1: Decadent, over mature stands with a high component of dead wood. ("Late Seral")

Bitterbrush in this class is mature to the point of decadence, with long, non-leaf bearing stems. On good sites it is up to five feet tall. It is composed of relatively large woody stems and branches with the leaf bearing branches isolated at the ends of bare stems. Current year's growth is short, 1" or less, infrequent and is not readily apparent. When the bitterbrush plants in this class reach 70% or more of the plants in an area, consideration should be given to renewal at the

first opportunity by mowing or other means. Bitterbrush in this class are of relatively less deer winter range value.

Mowing to approximately a 6" height will allow a percentage of the plants to re-sprout and reset the seral stage.

Priority 2: Mixed-age stands or stands dominated by young mature plants. ("Mid-seral")

Bitterbrush in this class is mature, but the majority of the plant is still leaf-bearing. On good sites these plants are two feet to three feet tall. Most of the main stems, though relatively large, have leaf-bearing branches to within one foot of the ground. Most leaf-bearing branches show at least some current year's growth. Plants in this category are important for deer winter range in part because they typically extend above winter snow levels and are available as browse.

Priority 3: Young, developing stands. ("Early seral")

This is young, thrifty bitterbrush. These plants are up to two feet in height and the stems have leaf-bearing branches from the ground to the top of the plant. Current year's growth is up to six inches and is present over most of the plant.

Vegetation Management in Wildlife Habitat Areas

Once defensible space around structures and along egress routes is defined and identified on the ground, less aggressive fuels management options can be utilized to enhance the visual screening effect of natural topographic features and to benefit wildlife. Vegetation associated with rock outcrops, lava ridges and other topographic features can often be left untreated as long as doing so will not compromise the defensible space standards of nearby structures and egress routes. Making the choice to defer treatment must be made with the understanding that if fire gets started in such an area that it will most likely be totally consumed; that it will burn with high intensity and that it will potentially generate a significant number of firebrands to start spot fires. Deferred treatment areas should be somewhat spatially isolated from one another to enhance horizontal separation. However they can often be situated in such a

manner to appear continuous from a distance, for example from a nearby road with significant levels of traffic use.

In addition to visual screening for ungulates, rocky outcrops with heavier ground vegetation can provide habitat hot spots for a variety of smaller species.

Section 4: Structural Design and Materials Selection

While defensible space is a critical component to a fire-adapted community, building design and material choices can have a major multiplier effect.

Fire brands and embers from a developing fire are lifted by the convection column created by the fire and then carried downwind by the prevailing winds. When these "ember showers" come to another building they behave much the same as snowflakes do in the winter in that many will eddy around the building, accumulating in any nooks and crevices on the downwind side of the building. Accumulations will tend to concentrate heat. To the degree that there is no contact with flammable materials (structural materials or landscaping) where these accumulations occur or that the concentrations can be avoided due to building design features, the vulnerability of the structure to secondary ignition is greatly reduced.

Ground level wooden decks-Wooden decks are problematic because they provide a flat flammable surface to catch fire brands. Ground level open-sided wooden decks also provide a place for wind-blown grass, brush and other flammable debris, and fire brands to accumulate. In addition they are very difficult to clean out due the confined space. As a rule, if a homeowner can't get under the deck to clean out accumulated materials each spring before fire season, then the deck should be screened with 1/8 inch mesh screen to exclude both debris and fire brands.

A far better solution to provide ground level outdoor living space is to utilize pavers, flagstone, or some other non-flammable material.

Structural Roofing Material – Fire-resistant roofing material has become the standard in new construction and is the single most important component to fire safety.

In addition, annual roof and gutter maintenance and cleaning is critical. Needle build-up is a common occurrence. If fire brands land on the roof or accumulate in the gutters littered with dry pine needles, much of the benefit of fire-resistant roofing is lost. In addition if an ignition is sustained in a gutter, it may provide a path for fire spread up under the fire resistant roof resulting in an attic fire.

An annual "spring clean-up" event should place emphasis on roof and gutter cleaning and should be addressed as an HOA/CC&R requirement.

Section 5: Operational Issues and Standards

As has been identified with other WUI development areas, it is important to plan for potentially threatening wildfire events. Detailed planning and identified expected resident actions in the event of a fire-related evacuation is of the highest priority.

Evacuation Routes-Multiple egress/access routes for the development area should be planned. Avoid long cul-de-sac situations and plan for loop layout of neighborhood streets. Opportunities for emergency access gates to adjoining developments or streets should be identified and built into the transportation plan. Access/egress routes should be planned to avoid traffic bottlenecks such as narrow gates or other factors that would constrict traffic flow. Plan for dual, simultaneous use for evacuation and emergency responder access.

Communication and Information Plan for Residents-Evacuation plan maps and procedures are a critical part of pre-incident planning. Clear, concise Emergency Action Plan instructions should be present in each residence. These types of high anxiety events require clear and usable tools such as a "grab and go" checklist and evacuation route map for residents and visitors.

Section 6: Summary

Bend's west side has experienced large scale change over the last 35 years. Ground that was once characterized by commercial pine forests with a variety of wildlife uses has, in reality, become part of the city.

The 1990 Awbrey Hall fire left a half to three quarter mile strip running north to south from Shevlin Park to Deschutes River Woods. After 25 years, very little if any natural pine regeneration has occurred within the brush-dominated fire footprint. These extensive brush fields, if left un-treated, represent a very significant fire risk to the surrounding areas of residential development and recreational use. Further, due to prevailing wind patterns, they also pose a very substantial risk to adjoining areas of residential development further to the east.

The proposed development of these remnant areas within the fire footprint would provide for fire-fuels mitigation in perpetuity, improved access, and dependable water supply making the area a part of the solution to the fire risk equation. It would represent a step forward toward developing a fire-adapted community on Bend's west side and would result in a net overall fire-safety benefit.

Wildlife Habitat Findings

Prepared by

Mason, Bruce & Girard

Wildlife Habitat Management Plan for the Coats Property

Deschutes County, Oregon

Prepared for:

Eric W. Coats
c/o Joyce E. Coats Revocable Trust
63285 Skyline Ranch Road
Bend, Oregon 97701

Prepared by:

MB&G

Mason, Bruce & Girard, Inc.
707 SW Washington, Suite 1300
Portland Oregon 97205

December 14, 2017

MB&G Project No. 0101695

Table of Contents

Introduction 1
PSA Location 1
Methodology 3
Results 3
Deer and Elk Habitat Utilization Trends 6
Integration of Wildlife Habitat Management with Wildfire Protection 9
Wildlife Habitat Conservation Measures 11
Summary and Opinion 16
References 17

List of Figures

Figure 1. Vicinity Map 2
Figure 2. Habitat Types 4
Figure 3. Mule Deer Movement Patterns 8
Figure 4. Wildlife Travel Corridors 13

Introduction

The Coats Property consists of approximately 400 acres of land located west of the City of Bend (City) in Deschutes County, Oregon, and is the project study area (PSA) for this report (Figure 1). The PSA is identified by the Oregon Department of Fish and Wildlife (ODFW) as mule deer and elk winter range (ODFW 2014).

The property owner, Mr. Eric Coats, contracted with Mason, Bruce & Girard, Inc. (MB&G) natural resource consultants to assess the potential impacts of low density residential development on mule deer and elk populations occurring within or utilizing the PSA. The purpose of this Wildlife Habitat Management Plan (WHMP) is to document the wildlife usage patterns and habitats, and create management objectives to ensure the proposed land use zone change and future development within the PSA will strive to maintain areas of mule deer and elk winter range forage habitat as well as conserve wildlife movement patterns within and adjacent to the PSA.

In this report, MB&G presents the results of the general habitat assessment based on characteristics of each habitat type, such as vegetative components, structure, age class distribution, landscape position, topography, elevation, hydrologic regime, and management history. Also included are any habitat use patterns which might affect the design of a preliminary development plan. Finally, we present the primary management plan components, and wildlife habitat conservation measures to demonstrate the Project Team's commitment to reducing impacts to elk and mule deer winter range habitat. The Mule Deer and Elk Winter Range Project Overlap Figure is included as Appendix A, and project area photographs are included as Appendix B.

PSA Location

The approximately 400-acre PSA is located west of the Awbrey Glen Golf Club, approximately 2 miles west of Bend, Oregon (Figure 1). In the PSA, approximately 135 acres are zoned UAR and 265 acres are zoned SM. Shevlin Park/Tumalo Creek borders the PSA to the west and the PSA is situated between the Tumalo Creek and McKenzie Canyon-Deschutes River watersheds. The property is located in Sections 13, 18, 23, and 24 of Township 17 South, Range 11 East. The coordinates of the center point of the PSA are approximately 44.09087 North and -121.35762 West. Topography in the PSA is gently rolling in the southern portion with steep slopes and rock outcrops in the northeast along the highland. Elevations on the PSA range from 3,450 feet in the northeastern area to approximately 3,800 feet above mean sea level at its southern edge.

Figure 1.
Vicinity Map

Coats Property
Deschutes County, Oregon

Project Study Area

Urban Area Reserve (10 acre minimum) - UAR10

Surface Mining - SM

MB&G

Source: Aerial imagery from Microsoft Bing, all other data from MB&G. Reproduced for information of purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

Feet
0 325 650 1,300

Figure1_Vicinity_2010_1/20/2017

Methodology

On November 2nd and 3rd, 2016, MB&G wildlife biologists (Dr. Wendy Wente and Jenny McKay) traversed the PSA in order to identify and characterize discernable habitat types within the area. Habitats were characterized based on habitat descriptions developed by Johnson and O'Neil (2001). Aerial photos and topographic maps were used during the site investigation for navigation, verifying overstory type and canopy closure, and identifying potential corridors (National Agriculture Imagery Program [NAIP] 2016, United States Geological Survey [USGS] 1981). At representative observation points, MB&G biologists evaluated and photo-documented various biological and physiographical characteristics of the habitat within the PSA. Observation point evaluations consisted of a habitat assessment including, but not limited to, dominant vegetation species inventory for each apparent structural layer within an approximate 100-foot radius of the plot center, average slope, landscape position, elevation, and proximity to forage and water resources.

In addition to characterizing on-site habitats, MB&G documented current deer and elk utilization as evidenced by observations of individuals and also by tracks, scat, rubs, use of shelter (beds or yarding), and browsing patterns of herbaceous and woody forage species. The MB&G biologists also noted signs of localized heavy use by deer and elk and evidence of corridor travel patterns.

Results

Habitat Types

In general, habitat in the PSA has been disturbed by past human use; primarily surface mining activities, which resulted in disturbed surface areas that were in various stages of re-vegetation. Currently, portions of the PSA are managed for fire suppression by regular tree limbing and thinning, as well as juniper removal. There are a number of unimproved roads and the PSA is subject to a moderate level of human disturbance due to its proximity to Shevlin Park on the western property boundary and the City on the eastern property boundary. Tumalo Creek and its associated riparian area are aligned in a northeasterly direction and parallel the southwest side of the PSA. The Deschutes River abuts the northern tip of the PSA. An active surface mine is located adjacent and within the PSA to the northwest and the Awbrey Glen Golf Course adjoins the PSA to the southeast.

The PSA exhibited six habitat types available to wildlife species based on vegetation, topography, aspect, and land use impacts. Descriptions of these habitat types are listed below and have been modified from those described by Johnson and O'Neil in order to provide a more localized account of each habitat type (Johnson and O'Neil 2001). Example photographs of each habitat type are presented in Appendix B. A map showing the approximate distribution of these habitat types and the location of the representative habitat observation points is presented in Figure 2. Habitat types included on Figure 2 were based on results of the field survey as well as existing data.

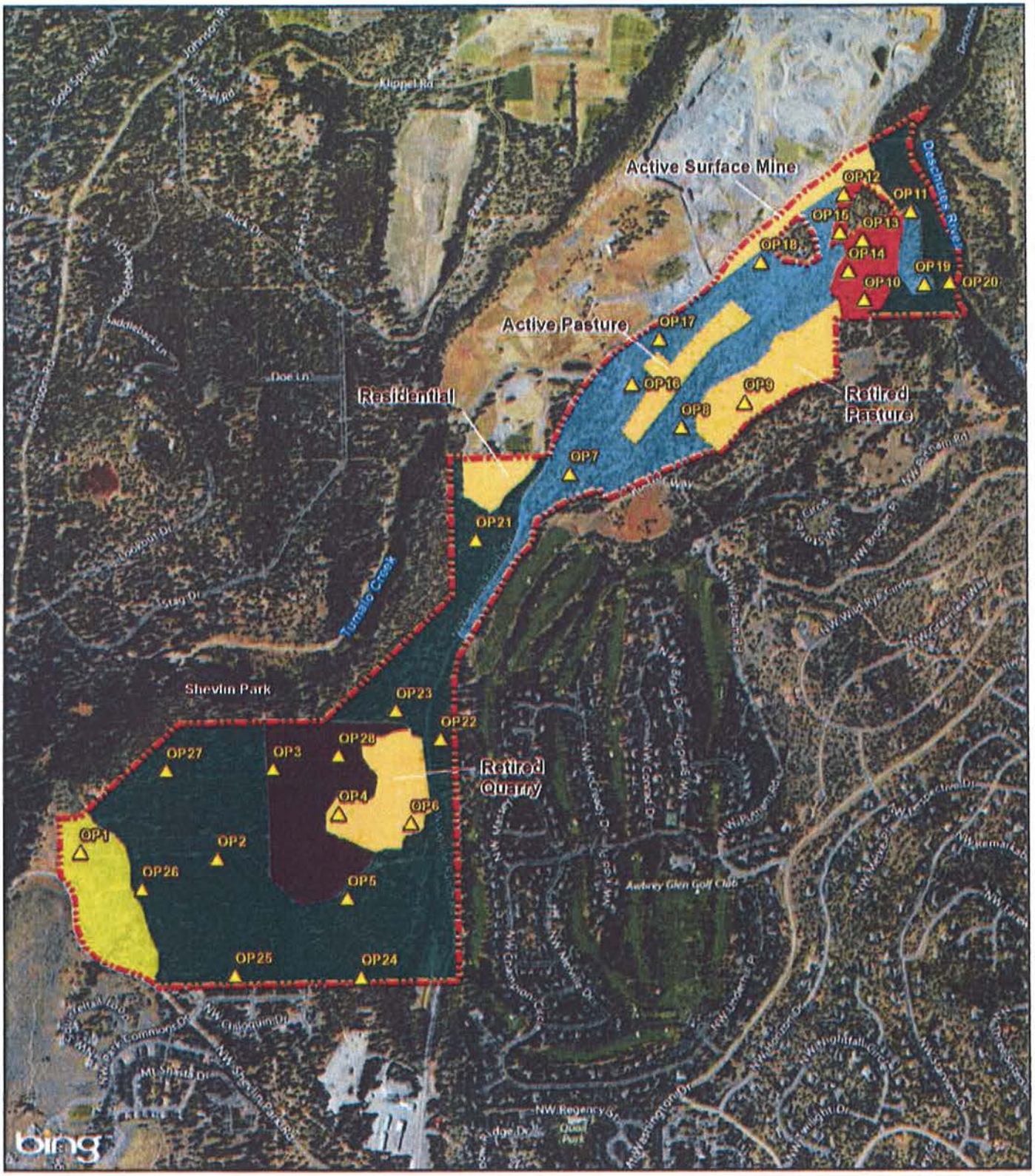


Figure 2.
Habitat Map

Coats Property
Deschutes County, Oregon

- Project Study Area
- ObservationPoint
- Shrub-Steppe
- Agriculture, Pasture, and Mixed Environments
- Western Juniper
- Western Juniper with Ponderosa Pine
- Ponderosa Pine
- Ponderosa Pine with Western Juniper

MB&G

Source: Aerial imagery from Microsoft Bing; all other data from MB&G. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

0 325 650 1,300 Feet

Figure2_Habitat 1/20/2017

Ponderosa Pine Forest (Plots OP3 and OP28)
This habitat is dominated by ponderosa pine (*Pinus ponderosa*) in the overstory (Photo 1, Appendix B). The shrub layer of the Ponderosa Pine Forest type is composed primarily of antelope bitterbrush (*Purshia tridentata*) and Idaho fescue (*Festuca idahoensis*). Unvegetated areas of forest floor are covered by bare mineral soil and significant accumulations of pine needle duff. Slopes within this habitat range from 5-10% and there are two draws which traverse this habitat type and slope to the north.

Ponderosa Pine Forest with Western Juniper Component (Plots OP2, OP5, and OP20-OP27)
This habitat type is similar to the Ponderosa Pine Forest in regards to structure, age-class distribution, and management history (Photo 2, Appendix B). However, this habitat type includes approximately 5-10% western juniper (*Juniperus occidentalis*).

Western Juniper Forest (Plot OP10, OP12-OP15)
This habitat type is dominated by western juniper in the overstory (Photo 3, Appendix B). The understory of the Western Juniper Forest type is composed primarily of sagebrush species (*Artemisia* sp.), bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue, and common fescue (*Schedonorus arundinaceus*). In some areas, there is significant bare mineral soil associated with this forest type. There are no perennial or significant intermittent watercourses which traverse this habitat type.

Western Juniper Forest with Ponderosa Pine Component (Plot OP7, OP8, OP11, OP16-OP19)
This habitat type is structurally similar to the Western Juniper Forest in age-class distribution and management history. However, this habitat type also includes a 5-10% ponderosa pine component (Photo 4, Appendix B).

Shrub-Steppe (Plot OP1)
In 1990, the southwest portion of the PSA was burned by the Awbrey Hall Forest Fire. This stand-replacement fire affected forested upland areas within the PSA. Most tree species were killed, leaving pole to mature sized snags as well as increased resources for emerging shrub and herbaceous species (Photo 5, Appendix B). Rabbitbrush (*Chrysothamus viscidiflorus*), antelope bitterbrush, yarrow (*Achillea millefolium*) and various bunch grasses comprise the vegetation community in this area.

Agriculture, Pasture and Mixed Environments (Plots OP4, OP6, and OP9)
Land use within this diverse habitat type within the PSA includes a retired agricultural pasture (OP9, Photo 6, Appendix B), a filled quarry (OP4 and OP6, Photos 7, 8, and 10, Appendix B), an active surface mining facility, a residential lot, and an active agricultural pasture. The active surface mine has very little to no vegetation and is significantly disturbed while the residential lot has a well maintained lawn and a small pond. The active agriculture pasture is fenced and provides grazing and shelter to horses and pigs. The retired quarry provides habitat to ungulates in the form of low lying forbs within the existing gravel as well as rabbitbrush and Idaho fescue.

The meadow to the northeast of the PSA is a retired pasture which was irrigated up until approximately 2000. It is planted with densely-seeded cultivar grass along with cheatgrass (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*), orchardgrass (*Dactylis glomerata*), spotted knapweed (*Centaurea stoebe*), and rabbitbrush. The meadow sits at the bottom of a draw and includes several large western juniper trees dispersed throughout.

Incidental Sightings

Throughout the field investigation, the MB&G biologists identified and documented observations of deer and elk use of the PSA, including physical sightings of individuals, scat, tracks, bedding locations, and evidence of grazing and browsing. The following section provides evidence of utilization by deer and elk for the different habitat types within the PSA. Photographic evidence is provided in Appendix B, Project Photo Log.

Western Juniper (with and without a Ponderosa Pine component)

Deer browse, physical sightings, bones, tracks and scat
Elk scat (old) and bones

Ponderosa Pine Forest (with and without Western Juniper component)

Deer browse, physical sightings, bones, tracks and scat
Elk scat (old) and rubs

Mixed Agriculture, Pasture and Mixed Environments

Deer browse, physical sightings, tracks and scat
Elk scat (old)

Shrub-Steppe

Deer browse, physical sightings, tracks and scat
Elk scat (old) and fence destruction

Deer and Elk Habitat Utilization Trends

Mule Deer Habitat and Migration Corridor

Mule deer are known to migrate through the PSA and use it as winter range. During the field investigation, MB&G biologists observed signs of diffuse movement through all the habitat types discussed above. Wildlife species, especially ungulates, frequently use the PSA in its entirety as evidenced by the presence of deer sign at observation points and other areas throughout the property. These forested habitats provided evidence of bedding, foraging, and game trails. Numerous signs of established trails and single tracks suggest that forested areas throughout the PSA serve as both concentrated and diffuse corridors for traveling to resources located outside of the PSA and for accessing forage and cover resources located within the PSA.

Key areas identified as currently used travel corridors for deer included (Figure 3):

1. The southwest facing slope running northeast to southwest. This corridor extends along the northwestern boundary of the property where it parallels the ridge line to the east and the mining access road to the west.
2. Corridor running northeast to southwest along the meadow located in the northeastern portion of the PSA. This corridor runs along the dry draw near OP9.
3. The northwest facing slopes accessing the Deschutes River in the northeastern portion of the property. Several distinct game trails run upslope and side-slope in this area.
4. Diffuse corridors in the southwest portion of the study area within lower gradients. Heavy usage along the existing roads throughout this area and north-south movement along the powerline and two dry draws.
5. The fence located in the southwest corner of the PSA has been damaged by elk, creating an access point to the property.
6. Access points (gates or fence openings) that allow animals to move between the golf course and the PSA.

Elk Habitat

Elk are known to utilize the PSA as evidenced by an abundance of elk sign throughout the PSA. However, all elk sign (rubs, browse, and scat) appears to be old. Local knowledge of the PSA reveals that elk occasionally bed in the center of the PSA and they are known to move between the PSA and the adjacent golf course through gates that were installed specifically to facilitate this movement pattern (Figure 3). Old elk rubs near the southern portion of the PSA suggest that elk move throughout the southwestern portion of the PSA (Figure 3, Photos 9a and 9b, Appendix B). Although MB&G's observations indicate elk traverse and/or use the PSA, there is little evidence of consistent, recent elk use within the PSA.

Rimrock and Outcrops

Due to topographical constraints and associated access difficulty, the lands immediately surrounding the bases of rimrock outcrops are not regularly subject to brush removal. As such, the rimrock areas can develop pockets of older brushy vegetation communities, adding to their habitat value relative to wildlife enhancements. Due to unique habitat qualities provided by rimrock and rock outcrops, they serve as a keystone habitat niche within the PSA for ungulate species. These areas provide visual and physical cover and they are used as secure bedding and browsing locations, specifically for deer. This usage pattern was evident by direct observations (Photo 8, in Appendix B) and ubiquitous deer trails paralleling these features.

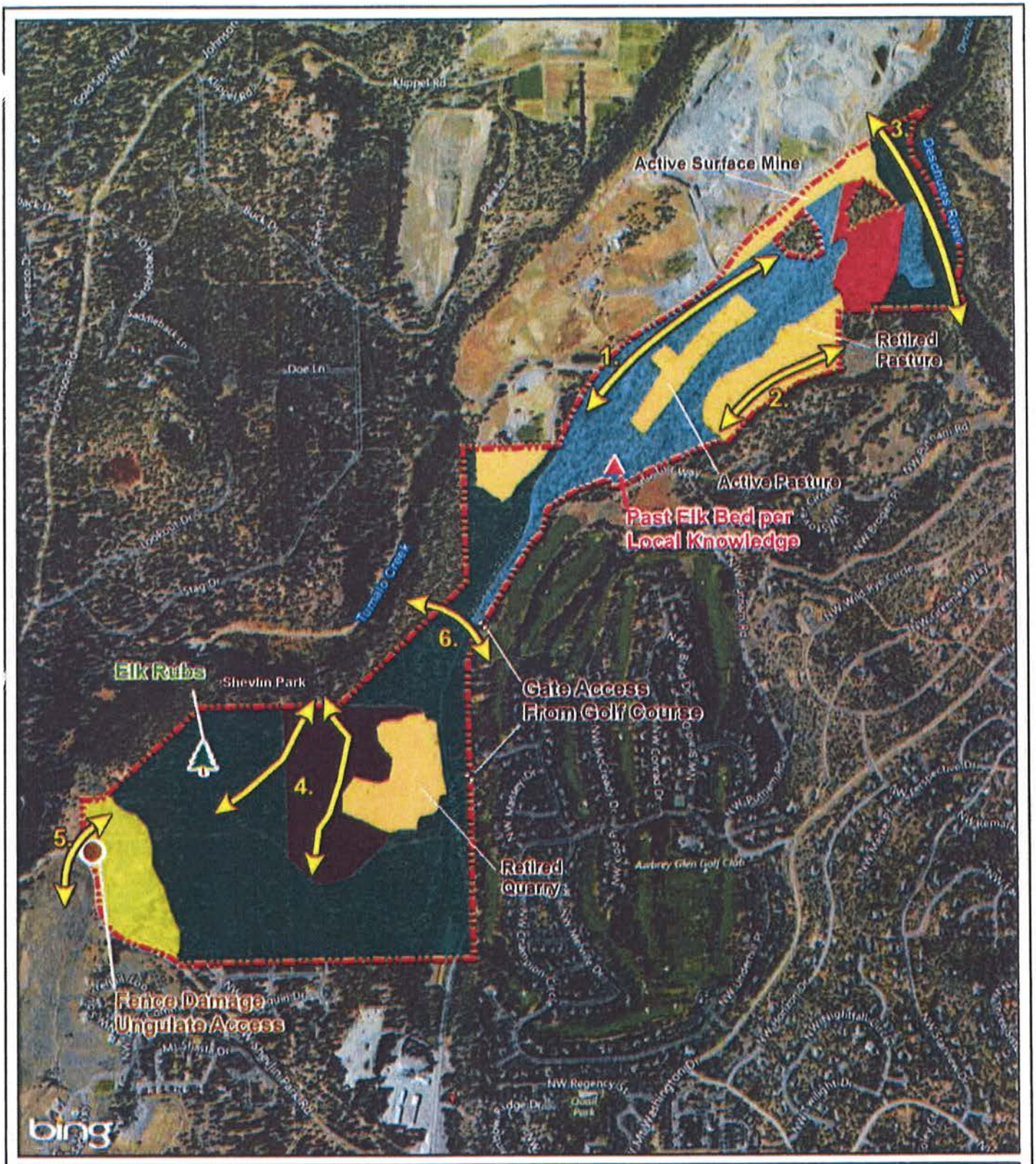


Figure 3.

Mule Deer Movement Patterns Map

Coats Property
Deschutes County, Oregon

- Mule Deer Movement
- Project Study Area
- Shrub-Steppe
- Agriculture, Pasture, and Mixed Environments
- Western Juniper
- Western Juniper with Ponderosa Pine
- Ponderosa Pine
- Ponderosa Pine with Western Juniper

MB&G

Source: Aerial imagery from NAIP 2015, all other data from MB&G. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

0 325 650 1,300 Feet

Figure 3. Corridors 1/24/2017

Integration of Wildlife Habitat Management with Wildfire Protection

The project team developed a Forest Health Management Plan (FHMP 2017) in conjunction with this WHMP in order to produce a comprehensive vegetation management plan that will reduce the threat of wildfire spread while also maintaining quality wildlife habitat within the designated open space areas, and in the undeveloped portions of the residential lots. As explained in the FHMP, vegetation will generally be managed in compliance with the National Fire Protection Association (NFPA) codes and standards which use a zone of protection approach. Vegetation management prescriptions that are intended to reduce the potential for wildfire can affect forage quality and quantity, as well as the associated cover effectiveness of wildlife habitat. After development, vegetation management on the PSA will include tree stand thinning, ladder fuel reduction (*e.g.* periodic removal of ground fuels and tree limbing), slash pile removal, and slope-specific treatments. The following provisions will be implemented to maintain wildlife habitat within the context of the NFPA standards as described in the FHMP.

Within open space, and within lots beyond fire protection buffers associated with structures:

- Downed logs: Downed logs will be left as a source of visual screening if they will not act as ladder fuel. Where possible, retain an average of two downed logs per acre, consistent with the goals of adjacent Shevlin Park (Boldenow 2008).
- Standing snags (dead trees) provide food and nest site locations for wildlife, especially cavity nesting birds. Leave snags in place where practical. The density target for snags will be two of each per acre, consistent with the goals of adjacent Shevlin Park (Boldenow 2008).
- Brush: Leave patches of brush (Photo 7, Appendix B), especially those associated with rock outcrops. Most brush under the drip line of trees must be removed often enough to maintain a distance of at least three times the height of the ground fuel and the tree crown, but in open areas, older and taller brush patches can be maintained and remain consistent with the fire protection guidelines (FHMP).
    - Patches of brush will specifically be left within the wildlife corridor along the PSA's boundary with Shevlin Park, and opportunistically within other open spaces and building lots when also in compliance with the FHMP.
    - Brush patches will be maintained in a mosaic pattern following a multi-year cycle of brushing so that brush patches will vary in age and height.
- Slope-specific brush treatments: Hand-pruning treatments will be used to maintain brush patches as wildlife habitat while also providing breaks in the linear continuity of brush patches oriented along steep slopes and rock outcrops; a fire reduction practice (FHMP).

Vegetation Management Standards and Wildlife Habitat

Application of the vegetation management standards described above will result in a landscape which continues to support deer, elk, and other wildlife. In particular, although the treated

ponderosa pine stands (brushed and limbed) have an open understory which could expose deer, elk, and other wildlife to a higher level of visual disturbance, the interspersion of ridges and other topographic features specific to this PSA such as rock outcrops, as well as more temporary features such as isolated downed logs with associated brush, provide some visual screens for deer and elk utilizing the area. In addition, a mosaic of brush pockets and juniper or ponderosa pine cover associated with the steeper slopes and with the wildlife travel corridors shown on Figure 4 will continue to provide habitat connectivity for deer, elk, and other wildlife.

Treatments to slopes below home sites will be implemented in a manner consistent with maintaining pockets of habitat for animals to continue utilizing as cover. Therefore, the vegetation treatments on the sloped areas are not expected to significantly impact wildlife habitat beyond the management already occurring as a part of the currently-applied vegetation treatments.

The current forest management treatments of brushing and thinning applied within the PSA result in a more open understory which mimics the effects of fire and also encourages the growth of forage species which deer in particular rely upon during the winter months (Joyce Coats' Property Forest Vegetation Plan, project file copy). Forage will continue to be more accessible in winter due to the maintenance of a ponderosa pine tree canopy throughout most of the PSA which will reduce the depth of the snowpack relative to more open areas on nearby deer and elk winter range (*e.g.* within the Awbrey Hall fire perimeter).

Wildlife Disturbance

Implementation of the vegetation management standards will potentially disturb wildlife for short periods of time as workers move through areas to complete vegetation alteration and slash removal. These activities will be short in duration and similar to those practiced in the past on the PSA as well as on nearby lands including the Deschutes National Forest (United States Forest Service [USFS] 1990) and Shevlin Park (Boldenow 2008). In addition, vegetation management activities are likely to be performed in the fall or spring when the area is most accessible and not under fire restrictions; therefore the activities will likely occur outside of the deer winter range season.

Wildlife Habitat Conservation Measures

The PSA and proposed development are within ODFW defined mule deer and elk winter range as well as located within one mile of Deschutes County's wildlife area (WA) combining zone (Appendix A). Because the PSA is not located within the WA zone, and is within the UAR designated area on the urban fringe, development plans are not subject to wildlife area zone or siting standards. The applicant voluntarily proposes incorporating the following development design elements and conservation measures to protect deer and elk populations. These conservation measures are based on selected portions of the DCC 18.88 for WA combining zones, including DCC specific to cluster developments (18.128.200 B.3) (Deschutes County 2008), and they are further modified based on discussion with ODFW in a meeting held April 18, 2017 (Corey Heath and Sara Gregory, ODFW Biologists, pers. comm., April 18, 2017). These Project-specific conservation measures also take into account the specific characteristics of the PSA and the surrounding landscape.

Residential Lot Siting Standards

Siting standards for the residential lots consider input from the biologist to maintain a north-east to south-west buffer, or wildlife resource corridor, along the property boundary with Shevlin Park. The wildlife resource corridor will provide deer winter range habitat, as well as a wildlife travel corridor. The Project team proposed this location for the resource corridor based on a landscape-level assessment of the general surrounding area and taking into account the nearby private and public (*i.e.* Shevlin Park) properties, as well as the WA combining zone boundary which is located on the north side of Tumalo Creek within less than one mile of the PSA. The proposed corridor protects wildlife habitat values and migration corridors by routing movement patterns through contiguous and adjacent areas that are likely to remain wildlife habitat in the future (*e.g.* the riparian area along Tumalo Creek in Shevlin Park).

Fencing Standards

Fencing standards are modified from the DCC 18.88.070. New fences constructed as a part of future development of the property will be designed to permit wildlife passage. Fence design will follow the standards and guidelines below unless an alternative fence design that provides equivalent wildlife passage is approved by the County after consultation with ODFW. Fences encompassing less than 10,000 square feet which surround or are adjacent to residences or structures are exempt from the fencing standards as well as corrals used for working livestock.

1. The distance between the ground and the bottom strand or board of the fence shall be at least 15 inches.
2. The height of the fence shall not exceed 48 inches above ground level.
3. Smooth wire and wooden fences that allow passage of wildlife are preferred. Woven wire fences are discouraged.

In addition to new fence design, the applicant will remove the barrier fence along Shevlin Park where it passes through the PSA to promote natural ungulate movement patterns.

Development Plan Elements

Additional development plan elements are targeted towards protecting mule deer and elk habitat within wildlife resource corridors, as well as within the building areas outside of protective vegetation management buffers associated with structures (see FHMP). These include:

- No developed recreational uses similar to golf courses, tennis courts, or swimming pools, are allowed within the proposed development.

- Lots located adjacent to designated open space areas, including wildlife resource corridors, will apply a setback requirement.

Wildlife Corridors

At a landscape level, the PSA is located on the eastern edge of the ODFW-designated deer winter range for the Tumalo herd (Appendix A). It does not fall within the Deschutes County WA zoned area which is the highest priority area for winter range protection. The nearest WA zoned area, designated for deer winter range, is located on the north side of Tumalo Creek to the north and west of the PSA.

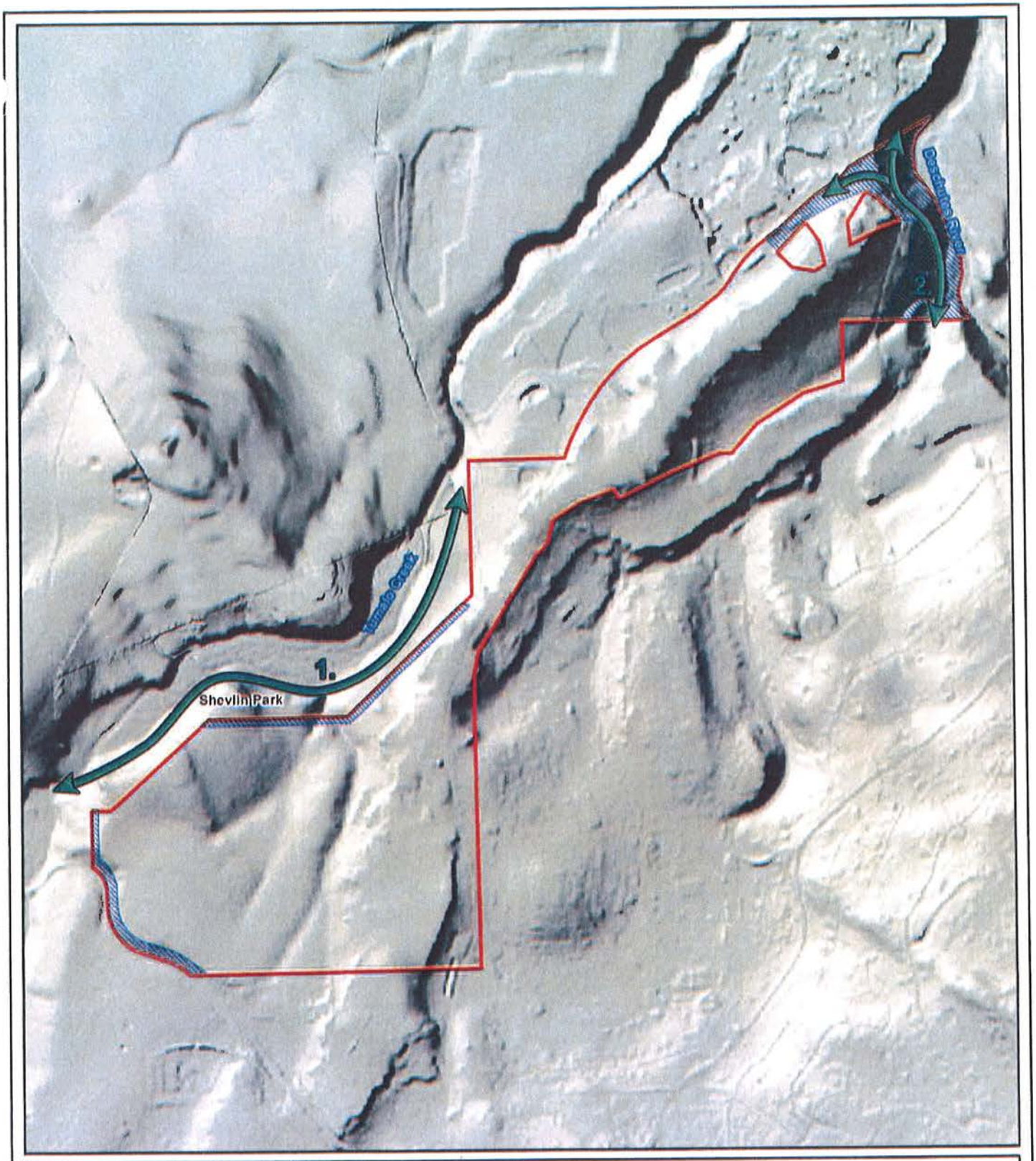


Figure 4.
Wildlife Travel Corridor Map

Coats Property
Deschutes County, Oregon

Wildlife Corridor
Project Study Area
Wildlife Travel Corridor

MB&G

Source: Elevation from ESRI and OSG, all other data from MB&G. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

Feet
0 300 600 1,200

Figure4_WildlifeOverlay 4/21/2017

The configuration of the wildlife corridors and open space will be designed to provide minimally obstructed wildlife travel corridors contiguous with adjacent protected areas (WA zoned private lands to the north of Tumalo Creek, the Deschutes River riparian area, and Shevlin Park). There are two areas that would function as wildlife corridors proposed within the Project. These include 1) a buffer of open space and corridor extending along the development's border with Shevlin Park and with Shevlin Park Road, and 2) a buffer of open space where the Project abuts the Deschutes River riparian corridor (Figure 4). In conjunction with other development plans and their associated open spaces located to the north and south of the PSA, the corridor extending along the development's border with Shevlin Park provides a key link in the landscape-level continuity of wildlife habitat maintained along Tumalo Creek.

A third existing corridor is used by deer and elk to move along an east-west axis between the Tumalo Creek riparian corridor and the Awbrey Glen Golf Course. Based on discussions with ODFW biologists, this corridor, which is shown on Figure 3, will not be included in future development plans because it would be likely to encourage continued access to the golf course grounds by elk (Corey Heath and Sara Gregory, ODFW Biologists, pers. comm., April 18, 2017).

Management Measures

Post-development, open space, including designated wildlife corridors, will be managed for the protection of mule deer and elk winter range. In general, existing natural vegetation will be protected, preserved and enhanced for the benefit of deer and elk winter range which includes cover/shelter, food supply and free movement. As part of the management of the open space areas, additional specific wildlife habitat conservation measures targeted at protecting and enhancing the wildlife habitat present within the study area will be adhered to, and these include:

- Continued application of the vegetation management standards described earlier in this report. If more aggressive fuel reduction treatments become necessary within the designated open space, their impacts to wildlife habitat will be re-assessed by a professional biologist, and possible modifications designed to lessen the impacts of the proposed measures will be considered prior to their implementation.
- Vegetation will be monitored and weeds/non-native plants will be controlled and eradicated when possible and feasible following the recommendations of the Deschutes County Noxious Weed Board or a similar body.
- With the exception of juniper trees used as visual screens in wildlife corridors, juniper trees will be removed when encountered within the open space areas during application of the fire fuels reduction practices outlined above to prevent competition with native shrub species that are preferred by deer.
- Live ponderosa pine trees will be preserved within the open space when doing so is consistent with the FHMP.
- Pockets of brush and tree cover will be maintained on steep slopes and within other areas, as appropriate. The distribution of brush pockets will be maintained to provide cover for deer and elk utilizing the open space and they may or may not be associated with tree cover. There is no brush pocket minimum size. The goals for distribution of brush

pockets will be to locate them near outcrops throughout the development, and to provide visual screening along and within the wildlife resource corridor areas indicated on Figure 4.

- Downed logs and snags will be retained for their wildlife value when feasible and compatible with safety needs. The density target for snags and downed logs will be two of each per acre, consistent with the goals of adjacent Shevlin Park (Boldenow 2008).
- Fire wood cutting or vegetation alteration beyond that prescribed as management for increased habitat value and fuels management will not be permitted within the open space areas.
- To minimize the impact of domestic dogs on deer populations, leash laws will be posted and strictly enforced within the designated open space.
- Livestock will not be kept or allowed on the property.
- No high-intensity recreational uses will be allowed.
- The proposed development will restrict the use of off-road motor vehicles within the designated open space area. Motorized vehicle use in the open space will not be allowed except as needed for management or emergency fire vehicle access.
- Where existing or proposed roads intersect open space and corridors, there will be reduced speed signs and signage indicating wildlife crossings.
- Develop a program to educate residents and guests on the project's wildlife habitat maintenance goals, and how they can reduce impacts to deer using open space as winter range.

Implementation, Monitoring, and Enforcement of the Wildlife Habitat Conservation Measures

The developer will implement these wildlife habitat conservation measures and will be responsible for monitoring and enforcing adherence with these measures until management is turned over to the Home Owners Association (HOA). The transfer of management from the developer to the HOA is expected to occur once all property has been conveyed or sold to persons or entities other than the developer or 15 years after the conveyance of the first home site or at an earlier time at the discretion of the developer. Throughout development and once management is transferred to the HOA, there will be three avenues for continued implementation, monitoring, and enforcement of the wildlife habitat conservation measures:

1) Wildlife habitat conservation measures will be incorporated into the Declaration of Covenants, Conditions, and Restrictions (CC&Rs), therefore the HOA will have ultimate authority to assess a fine or fee if an owner is non-compliant and the HOA will have the ability to bring the property into compliance should an owner continue failing to comply.

2) There will be a provision in the CC&Rs for a professional biologist to conduct an audit of the compliance of the developer or HOA (the managing party, as determined by the status of land management responsibility at the time of the audit) with this WHMP. This audit would be performed every 3 to 5 years starting from inception of ground breaking activities associated with the development. The expected deliverable would be a monitoring report assessing the implementation and effectiveness of the above Wildlife

Habitat Conservation Measures and proposing potential adaptive management actions to address any issues detected during the audit.

3) The managing party (the developer or the HOA, depending on the status of land management responsibility) is required to meet County Code and abide by the land use decision.

Summary and Opinion

The habitat types and evidence of use of the PSA by deer and elk observed by MB&G during the field investigation indicate a general pattern of use that is consistent with the designation of the entire area within the PSA as biological mule deer and elk winter range habitat. The management objectives to be implemented with any proposed development were developed considering impacts to the wildlife habitat present within the PSA. Development of this wildlife habitat management plan and inclusion of the conservation measures and management actions described herein in the future development plan are in excess of Deschutes County's requirements for developments on the land, as zoned within the PSA. These efforts indicate a recognition on the part of the Project team with respect to this important habitat value and the desire to maintain its function. Furthermore, this project considers a landscape-level approach to maintaining wildlife habitat connectivity as development occurs on the west side of the City.

References

Boldenow, Ron. 2008. Shevlin Park Vegetation Management Plan. March 2008. 44 pp.

Forest Health Management Plan. 2017. Report prepared by John Jackson, Wildland Fire Expert, Singletree Enterprises, LLC. April, 2017.

Heath, C. and S. Gregory. 2017. Biologists, Bend Field Office, ODFW. Personal communication with Wendy Wente of mason, Bruce 7 Girard, Inc. on April 18, 2017.

Joyce Coats' Property Forest Vegetation Plan (Project file)

Deschutes County. 2008. Deschutes County: 2030 Comprehensive Plan Update. Wildlife Area Combining Zone. Deschutes County, Oregon. 284 pp.

Johnson, David H. and Thomas A. O'Neil. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press 2001. 736 pp.

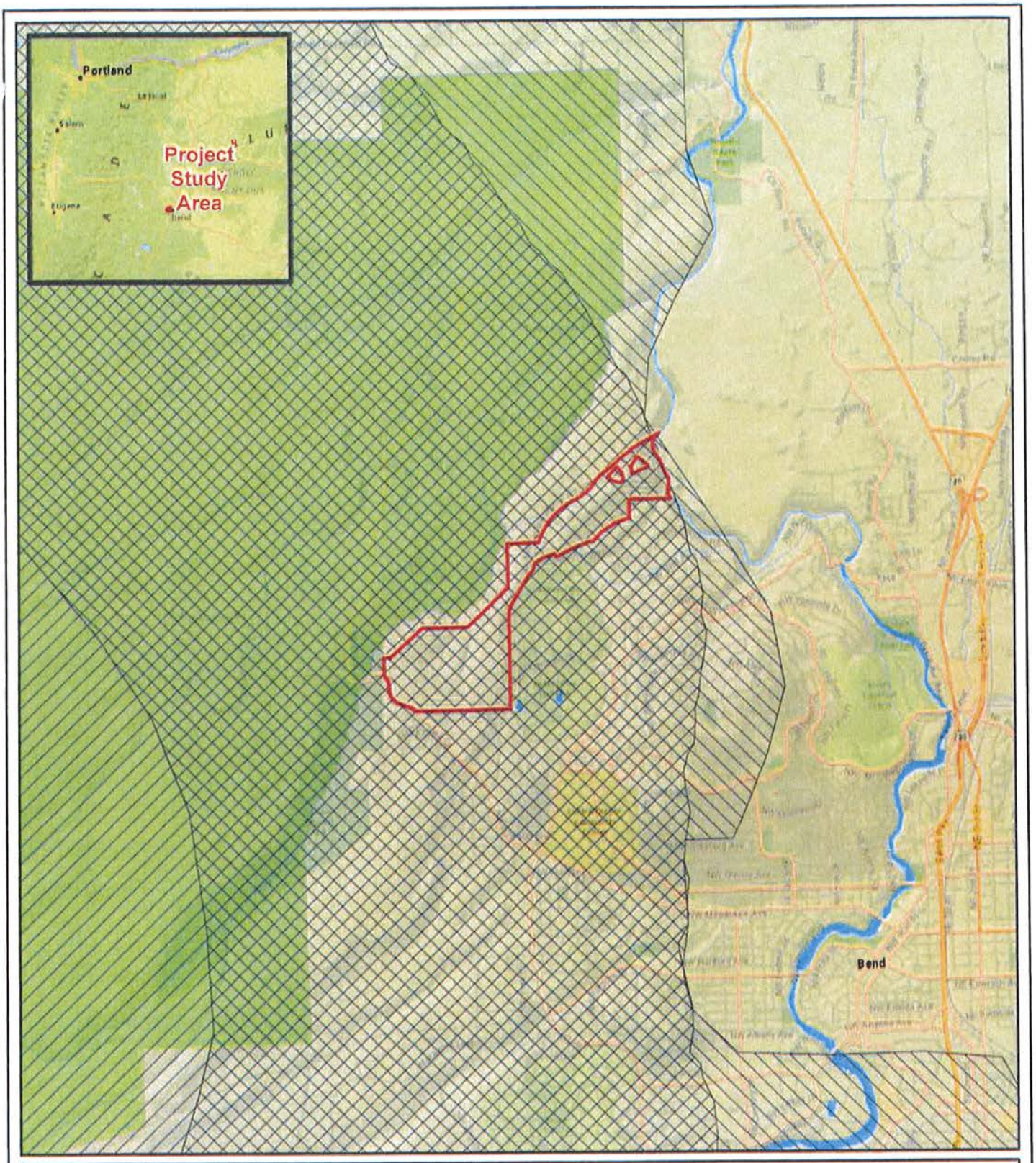
National Agriculture Imagery Program (NAIP). 2016. Oregon 1-meter resolution. Deschutes County Mosaic. U.S. Department of Agriculture, Farm Service Agency, Washington, D.C.

United States Forest Service (USFS). 1990. Deschutes National Forest Land and Resource Management Plan. USFS Pacific Northwest Region. 194 pp.

United States Geological Survey (USGS). 1981. Bend, Oregon. 7.5-minute quadrangle, 1:24,000.

Appendix A

Mule Deer and Elk Winter Range Project Overlap Figure



ODFW Mule Deer and Elk Winter Range

Coats Property
Deschutes County, Oregon

Project Study Area (PSA)
ODFW Mule Deer Winter Range
ODFW Elk Winter Range
Deschutes County WA Combining Zone (Mule Deer Tumalo Herd)

MB&G

Source: Base map from National Geographic atlas; data from MBG, Deschutes County, and ODFW. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Symbolizations derived from such information are the responsibility of the user.

0 2,000 4,000 Feet

WinterRange_1/20/2017

Appendix B

Project Photos

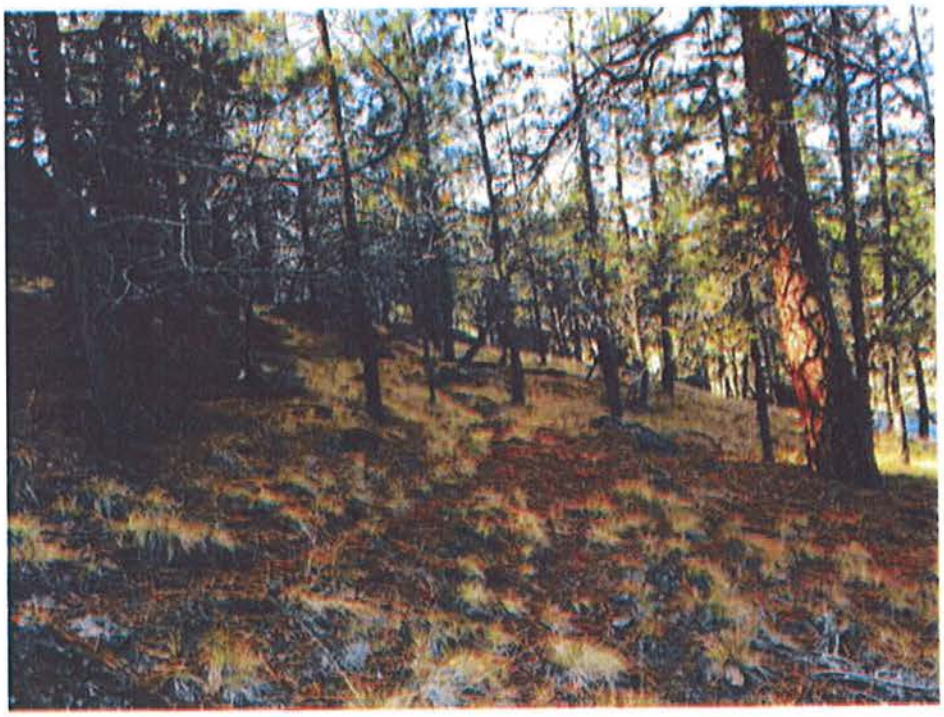
1

2

MB&G	**Wildlife Habitat Management Plan** **The Coats Property** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates: November 2 and 3, 2016	1. Ponderosa Pine habitat type near OP28. Note the downed logs dispersed within the habitat type. 2. This Ponderosa Pine Forest (with a Western Juniper Component) near OP23 is similar to the Ponderosa Pine Forest habitat type but with 5-10% western juniper.

3

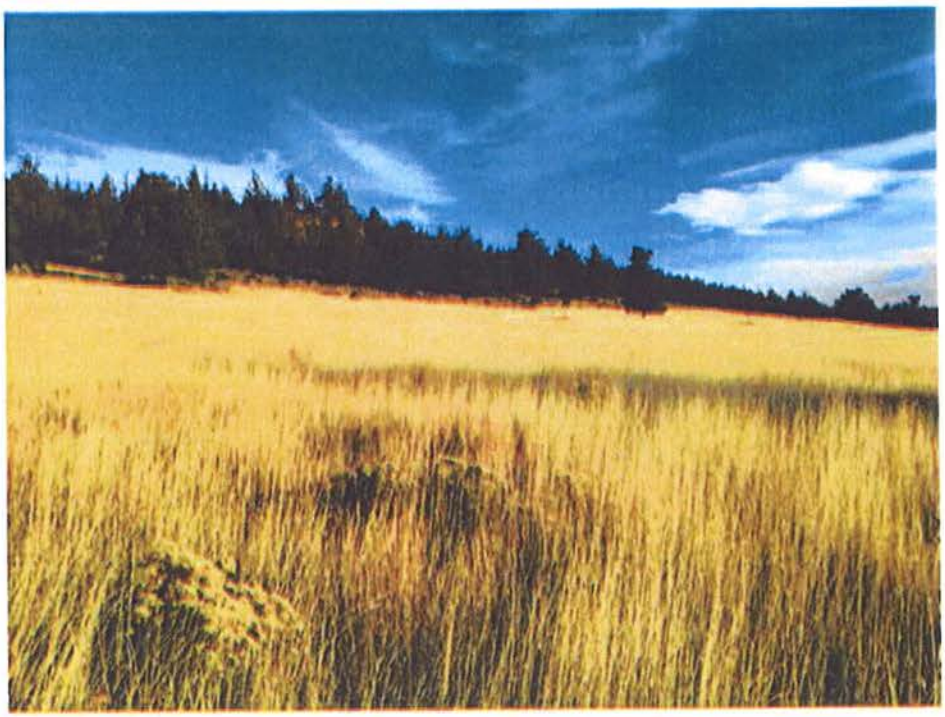
4



MB&G	**Wildlife Habitat Management Plan** **The Coats Property** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates: November 2 and 3, 2016	3. Western Juniper habitat type found near OP13. 4. This Western Juniper Forest (with a Ponderosa Pine Component) near OP17 is similar to the Western Juniper Forest habitat type but with 5-10% ponderosa pine.

5

6



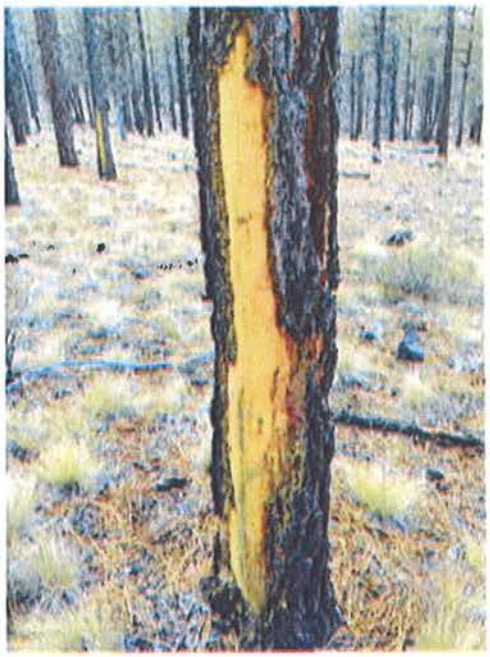
MB&G	**Wildlife Habitat Management Plan** **The Coats Property** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates: November 2 and 3, 2016	5. The Shrub-Steppe habitat type, found near OP1, is a result of a forest fire in 1990. 6. View to the north of the retired agricultural field from OP9. Note the Western Juniper habitat type and large rim rock in the background.

7

8

MB&G	**Wildlife Habitat Management Plan** **The Coats Property** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates: November 2 and 3, 2016	7. Rock outcrop associated with the Agriculture, Pasture and Mixed Environments habitat type near OP4. 8. Mule deer buck bedded at the base of the rock outcrop within the retired quarry, near OP4.

9a&b



10

MB&G	**Wildlife Habitat Management Plan** **The Coats Property** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates: November 2 and 3, 2016	9. Evidence of elk rub near OP28. Note a rub in the background. 10. View to the west from OP6 at the retired quarry showing a doe and two fawns after browsing on small forbs distributed within the gravel and brush.

Wildlife Habitat

And

Forest Health Management Plan

For The North Property

North Property

Wildlife Habitat and Forest Health Management Plan

Balancing the protection of wildlife with a wildland fire management plan within the Westside Transect Zone is key to ensuring the protection of wildlife habitat within a known wildfire hazard area. The Wildlife Habitat and Forest Health Management Plan includes a comprehensive vegetation management plan to reduce the threat of wildfire spread while maintaining quality habitat. In addition, wildlife habitat conservation measures have been included from the County's Wildlife Area Combining Zone (WA) code (Deschutes County Code Title 18, Chapter 88) even though the North Property is outside of the WA zone.

Part of the success of the Plan is the low-density residential pattern of the Westside Transect Zone that gradually decreases from the Urban Growth Boundary (UGB) outward to the rural lands boundary. Development plans within the North Property will include residential subdivisions with dedicated resource management corridors and funded and enforceable provisions for the management of wildlife habitat and wildfire prevention and mitigation plans.

The integrated management plan below has several sections that address various vegetation management techniques, structural and building design as well as materials selection, and operational issues and standards, such as evacuation routes and communication plans for residents. In addition, the plan includes several wildlife habitat conservation and management measures.

Compliance with the Wildlife Habitat and Forest Health Management Plan will be achieved through provisions in the CC&Rs that provide authority for the Home Owners Association (HOA) to assess fines or fees to bring property owners into compliance with the rules.

Integrated plan

I. Vegetation Management Standards for Structural Defensible Space

Three zones of vegetation management are described below. The zones will surround each dwelling, extending outward in concentric rings. This "zone concept" around the buildings implements a "defense in depth" approach with progressively more modest treatment standards as the distance from structures increases.

Zone 1: 30 Feet Adjacent to Structures

Use non-flammable landscaping materials within first 5 feet of structures. All vegetation and combustibles are removed from under decks and within 5 feet of the home or auxiliary structures. Outside of 5 feet, low-growing, resin-free fire resistive plants are carefully spaced and maintained, and are kept free of dead material that do not allow flame lengths greater than 3 feet. Areas of lawn must be well irrigated and regularly mowed. Mature

trees are pruned to a height of 6 to 10 feet from the ground with no brush inside of the tree dripline. Juvenile trees are not pruned more than 20% of stem length. Trees may not touch the home. No firewood storage is permitted outside of an enclosed structure. This zone includes driveway/road surfaces.

Zone 2: 30 to 100 Feet from Structures

Plants are low-growing and well irrigated. Tree canopies are spaced at 15-20 feet, or 30 feet between small groups of small trees. Zone 2 treatments will extend to the lot boundary (beyond the 100-foot zone) when the lot is adjacent to down-hill slopes greater than 20%. Small individual brush species will be irrigated, maintained free of dead material and outside the dripline of trees.

Zone 3: 100 to 200 Feet from Structures

Trees will be thinned and pruned, woody debris removed and brush fields mowed or removed. Density of taller trees will be reduced and maintained so that canopies do not touch. Taller, more mature trees however, typically present less of a fire risk as long as brush is not present within the tree drip-line and lower limbs are pruned.

Over time, tree canopies will grow together gradually. A long-term strategy is required to address this issue. Provisions should be made within CC&Rs for removal of some large trees as needed if this standard is to be maintained.

Zone 2 and 3 treatment areas will overlap each other between home sites and extend into open areas. For lots with greater than 20% slopes, Zone 2 treatments will extend beyond 100 feet to the lot boundary.

Wildlife Standards for Vegetation Management

Within open space, and within the resource management corridors on lots beyond fire protection buffers associated with structures:

- Downed logs: Downed logs will be left as a source of visual screening if they will not act as ladder fuel. Where possible, retain an average of two downed logs per acre, consistent with the goals of adjacent Shevlin Park.
- Standing snags (dead trees) provide food and nest site locations for wildlife, especially cavity nesting birds. Leave snags in place where practical. The density target for snags will be two of each per acre, consistent with the goals of adjacent Shevlin Park.

- Brush: Leave patches of brush, especially those associated with rock outcrops. Most brush under the drip line of trees must be removed often enough to maintain a distance of at least three times the height of the ground fuel and the tree crown, but in open areas, older and taller brush patches can be maintained and remain consistent with the fire protection guidelines (FHMP).
    - Patches of brush will specifically be left within the wildlife corridor along the PSA's boundary with Shevlin Park, and opportunistically within other open spaces and building lots when also in compliance with the FHMP.
    - Brush patches will be maintained in a mosaic pattern following a multi-year cycle of brushing so that brush patches will vary in age and height.
- Slope-specific brush treatments: Hand-pruning treatments will be used to maintain brush patches as wildlife habitat while also providing breaks in the linear continuity of brush patches oriented along steep slopes and rock outcrops; a fire reduction practice (FHMP).

II. Maintenance of Forest Health and Landscape Resiliency

Ongoing vegetation management is the key to maintenance of a healthy forest and overall resilience to the effects of fire. Young pine seedlings will become established through natural regeneration. A coordinated, long term plan will be needed to help plan for and evaluate options for vegetation regrowth and sprouting. Depending on location and condition of older forest vegetation, young seedlings may be used to provide additional wildlife screening or other aesthetic issues. Alternatively, depending on spacing, intermingled vegetation and continuity, young pine reproduction can quickly compromise desired conditions within the defensible space zones.

Antelope bitterbrush and other brush species generally require an ongoing action plan to enhance winter range value for deer and to maintain compliance with established defensible space standards.

Bitterbrush, for example, is often classified by its growth (seral) stage. Typically the majority of the plants within an area will fall into one of three categories. The most common treatment is mowing or other mechanical means. A treatment priority model is shown below.

Antelope Bitterbrush Site Condition Classification

Priority 1: Decadent, over mature stands with a high component of dead wood. ("Late Seral")

Bitterbrush in this class is mature to the point of decadence, with long, non-leaf bearing stems. On good sites it is up to five feet tall. It is composed of relatively large woody

stems and branches with the leaf bearing branches isolated at the ends of bare stems. Current year's growth is short, 1" or less, infrequent and is not readily apparent. When the bitterbrush plants in this class reach 70% or more of the plants in an area, consideration should be given to renewal at the first opportunity by mowing or other means. Bitterbrush in this class are of relatively less deer winter range value.

Mowing to approximately a 6" height will allow a percentage of the plants to re-sprout and reset the seral stage.

Priority 2: Mixed-age stands or stands dominated by young mature plants. ("Mid-seral")

Bitterbrush in this class is mature, but the majority of the plant is still leaf-bearing. On good sites these plants are two feet to three feet tall. Most of the main stems, though relatively large, have leaf-bearing branches to within one foot of the ground. Most leaf-bearing branches show at least some current year's growth. Plants in this category are important for deer winter range in part because they typically extend above winter snow levels and are available as browse.

Priority 3: Young, developing stands. ("Early seral")

This is young, thrifty bitterbrush. These plants are up to two feet in height and the stems have leaf-bearing branches from the ground to the top of the plant. Current year's growth is up to six inches and is present over most of the plant.

III. Structural Design and Materials Selection

While defensible space is a critical component to a fire-adapted community, building design and material choices can have a major multiplier effect.

> Ground level wooden decks - Wooden decks are discouraged. If built, and a homeowner cannot get under the deck to clean out accumulated materials each spring before fire season, then the deck shall be screened with 1/8 inch mesh screen to exclude both debris and fire brands. The use of pavers, flagstone, or some other non-flammable material is preferred.
>
> Structural Roofing Material - Fire-resistant roofing material willl be used in new construction.
>
> Roof and gutter maintenance and cleaning will be performed annually.
>
> Annual Spring Clean-up - The community subject to the HOA will conduct an annual spring clean-up event with emphasis on roof and gutter cleaning.

IV. Operational Issues and Standards

Evacuation Routes - Multiple egress/access routes for the development area will be planned. Avoid long cul-de-sac situations and plan for loop layout of neighborhood streets. Opportunities for emergency access gates to adjoining developments or streets will be identified and built into the transportation plan. Access/egress routes will be planned to avoid traffic bottlenecks such as narrow gates or other factors that would constrict traffic flow. Plan for dual, simultaneous use for evacuation and emergency responder access.

Communication and Information Plan for Residents - Clear, concise Emergency Action Plan instructions will be present in each residence and shall include, usable tools such as a "grab and go" checklist and evacuation route map for residents and visitors.

V. Wildlife Habitat Measures

Residential Lot Siting Standards

Siting standards for the residential lots shall maintain a north-east to south-west wildlife resource corridor along the property boundary with Shevlin Park.

Fencing Standards

New fences constructed as part of future development of the property will be designed to permit wildlife passage. Fence design should follow the standards and guidelines below unless an alternative fence design that provides equivalent wildlife passage is approved by the County after consultation with Oregon Department of Fish and Wildlife. Fences encompassing less than 10,000 square feet which surround or are adjacent to residences or structures are exempt from the fencing standards as well as corrals used for working livestock.

1. The distance between the ground and the bottom strand or board of the fence will be at least 15 inches.

2. The height of the fence will not exceed 48 inches above ground level.

3. Smooth wire and wooden fences that allow passage of wildlife are preferred. Woven wire fences are discouraged.

Applicant/Developer will remove the barrier fence along Shevlin Park where it passes through the North Property to promote natural wildlife movement patterns.

Development Plan Elements

- No developed recreational uses similar to golf courses, tennis courts, or swimming pools, are allowed within the proposed development.

- Ongoing vegetation management will be required within resource management corridors and open space consistent with zone 3 wildlife standards.

Management Measures

Post-development, open space and resource management corridors, will be managed for the protection of mule deer and elk winter range. In general, existing natural vegetation will be protected, preserved and enhanced for the benefit of deer and elk winter range, which includes cover/shelter, food supply and free movement. As part of the management of the open space and resource management areas, additional specific wildlife habitat conservation measures targeted at protecting and enhancing the wildlife habitat present within the study area will be adhered to, and these include:

- Continued application of the vegetation management standards described in the MB&G report. If more aggressive fuel reduction treatments become necessary within the designated open space, their impacts to wildlife habitat will be re-assessed by a professional biologist, and possible modifications designed to lessen the impacts of the proposed measures will be considered prior to their implementation.

- Vegetation will be monitored and weeds/non-native plants will be controlled and eradicated when possible and feasible following the recommendations of the Deschutes County Noxious Weed Board or a similar body.

- With the exception of juniper trees used as visual screens in wildlife corridors, juniper trees will be removed when encountered within the open space areas during application of the fire fuels reduction practices outlined above to prevent competition with native shrub species that are preferred by deer.

- Live ponderosa pine trees will be preserved within the open space when doing so is consistent with the FHMP.

- Pockets of brush and tree cover will be maintained on steep slopes and within other areas, as appropriate. The distribution of brush pockets will be maintained to provide cover for deer and elk utilizing the open space and they may or may not be associated with tree cover. There is no brush pocket minimum size. The goals for distribution of brush pockets will be to locate them near outcrops throughout the development, and to provide visual screening along and within the wildlife resource corridor areas indicated on Figure 4 of the MB&G report.

- Downed logs and snags will be retained for their wildlife value when feasible and compatible with safety needs. The density target for snags and downed logs will be two of each per acre, consistent with the goals of adjacent Shevlin Park.

- Fire wood cutting or vegetation alteration beyond that prescribed as management for increased habitat value and fuels management will not be permitted within the open space areas.

- To minimize the impact of domestic dogs on deer populations, leash laws will be posted and strictly enforced within the designated open space and resource management corridors.

- Livestock will not be kept or allowed on the property.

- No high-intensity recreational uses will be allowed.

- The proposed development will restrict the use of off-road motor vehicles within any designated open space or resource management corridor. Motorized vehicle use in the open space or resource management corridors will not be allowed except as needed for management or emergency fire vehicle access.

- Where existing or proposed roads intersect open space and resource management corridors, there will be reduced speed signs and signage indicating wildlife crossings.

- Develop a program to educate residents and guests on the project's wildlife habitat maintenance goals, and how they can reduce impacts to deer using the area as winter range.

VI. Implementation, Monitoring, and Enforcement

Compliance with the Wildlife Habitat and Forest Health Management Plan will be achieved through provisions in the CC&Rs that provide authority for the Home Owners Association (HOA) to assess fines or fees to bring property owners into compliance with the rules.

SECTION III

SOUTH PROPERTY

Wildfire Mitigation

And

Forest Health Plan

Prepared by

John Jackson, Singletree Enterprises, LLC

Singletree
ENTERPRISES, LLC
2660 NE Hwy 20 Ste 610 #222 • Bend, OR 97701 • 541-410-9686
john@singletreeconsulting.com • www.singletreeconsulting.com

Rio Lobo Investments December 19, 2017

Wildfire Mitigation and Forest Health Plan

Section 1: Introduction

This Wildfire Mitigation and Forest Health Plan was requested by Rio Lobo Investments, LLC in support of a land use planning initiative. This document is intended to address forest health issues and needed actions to increase resiliency to high intensity wildfire within the area included the land-use proposal. The parcel is described as Tax Lot 1711000006000 in portions of sections 26 and 35.

Based on Congressional direction, the federal land management/fire services were directed to address the expanding wildland fire situation at the national level. The *Cohesive Wildland Fire Strategy* came out of that effort.

The three focal points of the *Western Cohesive Wildland Fire Strategy* are:

- Restore and maintain resilient landscapes
- Create Fire Adapted Communities
- Provide for safe and effective wildfire response

This analysis and associated recommendations are intended illustrate how this proposed project will comply with and contribute to development of a fire-adapted community on Bend's west side and provide for an effective and safe environment for fire service response.

Section 2: Historical Use/Recent Fire Events/Current Condition

This parcel is bordered by Tumalo Creek and Shevlin Park to the west, the Urban Growth Boundary to the northwest, to the north and east with residential development of varying densities within the city limits, and the Tree Farm development to the south. Over the last two years vegetation management

activities to reduce highly flammable brush fields on portions of the parcel have been completed.

In August, 1990 the Awbrey-Hall Fire started in Shevlin Park along Tumalo Creek. During the early stages of the incident the fire quickly spread east up out of the creek bottom and spotted northeast across Shevlin Park Road. It spread up the hill and then turned south onto the Rio Lobo property and other adjoining parcels. Some twelve hours later, the fire spread was stopped in Deschutes River Woods after jumping the Deschutes River. Over the last 25 years the portion of the parcel owned by Rio Lobo within the footprint of the fire has become dominated by a dense stand of highly flammable bitterbrush, sagebrush and rabbit brush with little if any pine natural regeneration.

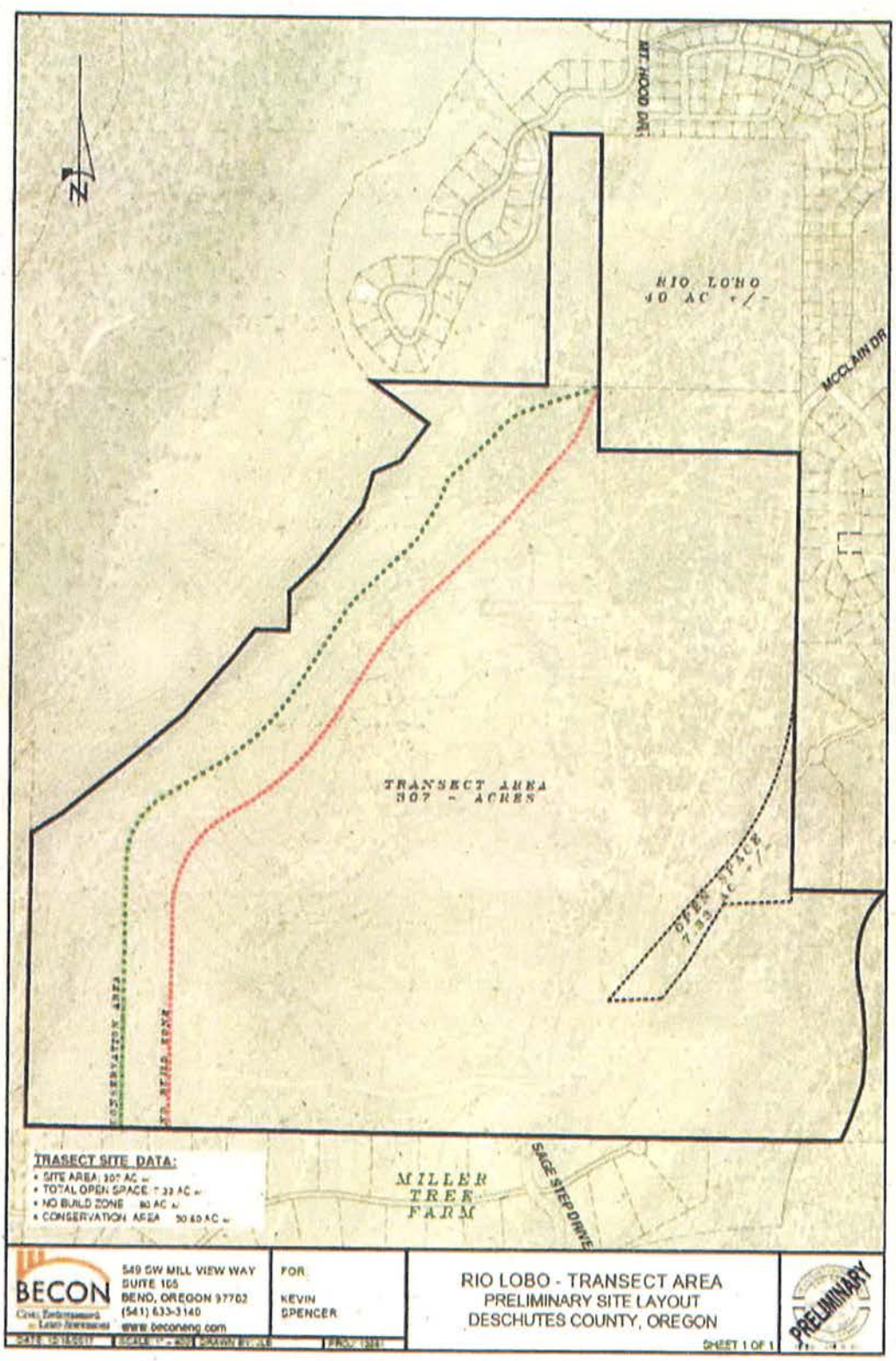
Current Forest Vegetation Condition

As discussed above, a significant portion of the brush field on the parcel has been mowed as a wildfire mitigation treatment. A portion southeast, parallel to, and adjoining the slope above Tumalo Creek and Shevlin Park remains untreated as well as a rocky portion near the middle of the parcel.

Additionally, a portion of the parcel to the east of the brush field area was not impacted by the fire and supports a modest stand of second growth Ponderosa pine, pockets of brush and some Ponderosa seedlings from natural regeneration. This area has been non-commercially thinned to optimize forest health. During the fire, flanking control lines were constructed that successfully kept the fire spread out of this area.

Fire fuels mitigation efforts within this unburned area should focus on mitigating the ladder fuel situation by pruning lower branches on trees and removing brush from under the tree canopies. This action will reduce the potential for tree crown fire in the event of any subsequent fire ignitions.

The Becon Engineering graphic on the following page shows the proposed project layout, topography and surrounding areas of development. The "No Build Zone" and "Conservation Area" designations to address wildlife mitigation issues are also shown adjacent to Shelvin Park along the west boundary of the project area.


MT. HOOD DR.
RIO LOBO
40 AC +/-
MCCLAIN DR
TRANSECT AREA
307 - ACRES
OPEN SPACE
7.33 AC +/-
CONSERVATION AREA
TRASECT SITE DATA:
• SITE AREA: 307 AC +/-
• TOTAL OPEN SPACE: 7.33 AC +/-
• NO BUILD ZONE 80 AC +/-
• CONSERVATION AREA 50.60 AC +/-
MILLER
TREE
FARM
SAGE STEP DRIVE
BECON
549 SW MILL VIEW WAY
SUITE 105
BEND, OREGON 97702
(541) 633-3140
www.beconeng.com
FOR
KEVIN
SPENCER
RIO LOBO - TRANSECT AREA
PRELIMINARY SITE LAYOUT
DESCHUTES COUNTY, OREGON
SHEET 1 OF 1
PRELIMINARY

Wildlife Considerations

Geographically, this parcel falls between Shevlin Park to the west and areas of high density residential development to the east. As proposed, the development plan includes two parallel strips of ground adjacent to Shevlin Park as part of a transition from wildland vegetation conditions to residential development. As described in the *Wildlife Habitat Management Plan* from Mason, Bruce & Girard, Inc., the developers have proposed this approach as a wildlife mitigation action that primarily focuses on the brush fields that provide hiding cover for ungulates transiting this area as well as a variety of smaller wildlife.

Section 3: Wildfire Mitigation Components

Fire Behavior-Wildfire, particularly in central Oregon, generally spreads from progressive linear fire movement over the ground with direct flame contact, and/or from spotting as a result of firebrands carried aloft with the fire convection column, then carried downwind and landing on a susceptible fuel source.

The *Fire Triangle* is composed of fuel, oxygen and heat. The *Fire Behavior Triangle* is composed fuels, topography and weather. These two models help illustrate what is required to support fire behavior. Likewise they offer insight to potential mitigations. Clearly there is little that can be done with the oxygen and weather variables.

The fuels variable however is common to both and is susceptible to mitigation by reducing the amount and continuity of *available* flammable material. *Availability* in this case does not always mean removal. "Ladder fuel" treatments such as pruning lower branches off of trees and removing brush under tree canopies is one such example. Taking this action tends to isolate and make tree crowns less available to support crown fire development. Landscaping with deciduous trees is another example due their lack of resinous needles.

Reducing the amount of available flammable fuels reduces fire intensity and consequently produces less heat. This in turn lowers spot fire risk by minimizing production of firebrands available to produce downwind ignitions.

The end objective is to keep the fire on the ground where driveways, streets, green lawns, etc. are effective in reducing fire intensity and rates of spread, and where fire response resources can safely and effectively work to suppress the fire.

Topography is the other big variable. While it can't be changed, it can be avoided. In addition to increasing rates of fire spread, slopes have an impact on winds. Drainages with significant canyons such as Tumalo Creek typically can vector wind patterns away from prevailing free-air wind flow. Side drainages and draws coming off of these more dissected canyons should be expected to funnel and accelerate winds. Likewise accelerated rates of fire spread from canyon-bottom ignitions should be expected. Wind patterns will be more turbulent where side draws emerge from the drainages. Consequently structures should be located well-way from the mouth at the top of side drainages and well set back from rim-rock edge and/or above steep slopes above drainages and canyon walls.

Defensible Space- Defensible space around buildings and vegetation maintenance along driveways and access/egress routes is a critical component to wildfire effects mitigation as discussed above. The "zone concept" around buildings implements a "defense in depth" approach with progressively more modest treatment standards as the distance from structures increases.

Different jurisdictional agencies have slightly different defensible space standards, but all with the same intent. The defensible space standards identified in NFPA 1144 meet or exceed the defensible space requirements of the Oregon Department of Forestry-administered "SB360" (*The Oregon Forestland-Urban Interface Fire Protection Act of 1997,* ORS 477.001-477.061) and the Deschutes County defensible space standard for residential development in F-1 and F-2 (DCC 18.36.070 and DCC 18.40.070) zones.

Recommended Vegetation Management Standards for Structural Defensible Space

Zone 1: 30 Feet Adjacent to Structures

Use non-flammable landscaping materials within first 5 feet of structures. All vegetation and combustibles are removed from under decks and within 5 feet of the home or auxiliary structures. Outside of 5 feet, low-growing, resin-free, fire resistive plants are carefully spaced and maintained, and are kept free of dead material that do not allow flame lengths greater than 3 feet. Areas of lawn must be well irrigated and regularly mowed. Mature trees are pruned to a height of 6 to 10 feet from the ground with no brush inside of the tree dripline. Juvenile trees are not pruned more than 20% of stem length. Trees may not touch the home. No firewood storage is permitted outside of an enclosed structure. This zone includes driveway/road surfaces.

Zone 2: 30 to 100 Feet from Structures

Plants are low-growing and well irrigated. Tree canopies are spaced at 15-20 feet, or 30 feet between small groups of small trees. Zone 2 treatments will extend to the lot boundary (beyond the 100-foot zone) when the lot is adjacent to down-hill slopes greater than 20%. Small individual brush species will be irrigated, maintained free of dead material and outside the dripline of trees.

Zone 3: 100 to 200 Feet from Structures

Trees will be thinned and pruned, woody debris removed and brush fields mowed or removed. Density of taller trees will be reduced and maintained so that canopies do not touch. Taller, more mature trees however typically present less of a fire risk as long as brush is not present within the tree drip-line and lower limbs are pruned.

Over time, tree canopies will grow together gradually. A long-term strategy is required to address this issue. Provisions should be made within CC&Rs for removal of some large trees as needed *if this standard is to be maintained.*

Zone 2 and 3 treatment areas will overlap each other between home sites and extend into open areas. For lots with greater than 20% slopes, Zone 2 treatments will extend beyond 100 feet to the lot boundary.

Beyond the 200-foot Zone 3 boundaries associated with the building lots, the open space will continue to be maintained consistent with the Zone 3 wildlife standards.

Maintenance of Forest Health and Landscape Resiliency

Ongoing vegetation management is the key to maintenance of a healthy forest and overall resilience to the effects of fire. Young pine seedlings and brush will become established through natural regeneration. A coordinated, long term plan will be needed to help plan for and evaluate options for vegetation regrowth and sprouting. Depending on location and condition of older forest vegetation, young seedlings may be used to provide additional wildlife screening or other aesthetic mitigations. Alternatively, depending on spacing, intermingled vegetation and continuity, young pine reproduction can quickly compromise desired conditions within the defensible space zones.

Antelope bitterbrush and other brush species generally require an ongoing action plan to enhance winter range value for deer and to maintain compliance with established defensible space standards.

Bitterbrush, for example, is often classified by its growth (seral) stage. Typically the majority of the plants within an area will fall into one of three categories. The most common treatment is mowing or other mechanical means. A treatment priority model is shown below.

Antelope Bitterbrush Site Condition Classification

Priority 1: Decadent, over mature stands with a high component of dead wood. ("Late Seral")

Bitterbrush in this class is mature to the point of decadence, with long, non-leaf bearing stems. On good sites it is up to five feet tall. It is composed of relatively large woody stems and branches with the leaf bearing branches isolated at the ends of bare stems. Current year's growth is short, 1" or less, infrequent and is not readily apparent. When the bitterbrush plants in this class reach 70% or more of the plants in an area, consideration should be given to renewal at the

first opportunity by mowing or other means. Bitterbrush in this class are of relatively less deer winter range value.

Mowing to approximately a 6" height will allow a percentage of the plants to re-sprout and reset the seral stage.

Priority 2: Mixed-age stands or stands dominated by young mature plants. ("Mid-seral")

Bitterbrush in this class is mature, but the majority of the plant is still leaf-bearing. On good sites these plants are two feet to three feet tall. Most of the main stems, though relatively large, have leaf-bearing branches to within one foot of the ground. Most leaf-bearing branches show at least some current year's growth. Plants in this category are important for deer winter range in part because they typically extend above winter snow levels and are available as browse.

Priority 3: Young, developing stands. ("Early seral")

This is young, thrifty bitterbrush. These plants are up to two feet in height and the stems have leaf-bearing branches from the ground to the top of the plant. Current year's growth is up to six inches and is present over most of the plant.

Vegetation Management in Wildlife Habitat Areas

Once defensible space around structures and along egress routes is defined and identified on the ground, less aggressive fuels management options can be utilized to enhance the visual screening effect of natural topographic features and to benefit wildlife. Vegetation associated with rock outcrops, lava ridges and other topographic features can often be left untreated as long as doing so will not compromise the defensible space standards of nearby structures and egress routes. *Making the choice to defer treatment must be made with the understanding that if a fire ignition occurs in such an area that it will most likely be totally consumed; that it will burn with high intensity and that it will potentially generate a significant number of firebrands to start spot fires.* Deferred treatment areas should be spatially isolated from one another to enhance horizontal separation. However they can often be situated in such a manner to

appear continuous from a distance, for example from a nearby road with significant levels of traffic use.

In addition to visual screening for ungulates, rocky outcrops with heavier ground vegetation can provide habitat hot spots for a variety of smaller species.

Vegetation Management Adjacent to No Build Zone and Conservation Area

Vegetation management on the lots on the western flank of the parcel present a unique situation. As discussed in the "Fire Behavior" portion of Section 3 (page 4), fire typically spreads by two methods: linear progression and via spotting. The brush fields and other fuels adjacent to Tumalo Creek provide the potential for high intensity spread from both types of spread. Residences in this strip, in addition to being upslope from the untreated fuels area, are also downwind compounding the potential for more severe fire behavior.

The Recommend Vegetation Management Standards for Zone 2 (30 to 100 feet from structures-see page 6) specifies that Zone 2 standards will be extended to the lot boundaries when located on a greater than 20% slope. If applied, that standard could extend all the way though the "No Build Zone" to the "Conservation Area". That situation may be present on at least some of the lots on the western edge of the proposed development area.

Brush in these areas should be thinned so that if small groups (not to exceed six feet diameter) of brush are retained they must be separated by at least three times the diameter of the brush clump. They can be offset so that they provide more visual cover from a distant vantage point.

Management of brush in this manner adjacent to the "Conservation Area" will have minimal adverse impact on wildlife and provide a visual, as well as vegetative transition from wildland to residential development.

Additional mitigation measures should be considered such as installing a sprinkler system through this zone. Such an installation would reduce rates of fire spread via both of the spread methods discussed above.

A similar brush management regime should be considered in other areas of the development where the backs of lots on adjacent parallel streets abut one

another. If left totally untreated as "open spaces" they may provide readily available fuel beds for long range spotting.

Section 4: Structural Design and Materials Selection

While defensible space is a critical component to a fire-adapted community, building design and material choices can have a major multiplier effect.

Fire brands and embers from a developing fire are lifted by the convection column created by the fire and then carried downwind by the prevailing winds. When these "ember showers" encounter another building they behave much the same as snowflakes do in the winter in that many will eddy around the building, accumulating in any nooks and crevices on the downwind side of the building. These accumulations will tend to concentrate heat. To the degree that there is no contact with flammable materials (structural materials or landscaping) where these accumulations occur or that the concentrations can be avoided, the vulnerability of the structure to secondary ignition is greatly reduced.

Ground level wooden decks-Wooden decks are problematic because they provide a flat flammable surface to catch fire brands. Ground level open-sided wooden decks also provide a place for wind-blown grass, brush and other flammable debris, and fire brands to accumulate. In addition they are very difficult to clean out due the confined space. As a rule, if a homeowner can't get under the deck to clean out accumulated materials each spring before fire season, then the deck should be screened with 1/8 inch mesh screen to exclude both debris and fire brands.

A far better solution to provide ground level outdoor living space is to utilize pavers, flagstone, or some other non-flammable material.

Structural Roofing Material – Fire-resistant roofing material has become the standard in new construction and is the single most important component to fire safety.

In addition, annual roof and gutter maintenance and cleaning is critical. Needle build-up is a common occurrence. If fire brands land on the roof or accumulate in

the gutters littered with dry pine needles, much of the benefit of fire-resistant roofing is lost. In addition if an ignition is sustained in a gutter, it may provide a path for fire spread up under the fire resistant roof resulting in an attic fire.

An annual "spring clean-up" event should place emphasis on roof and gutter cleaning and should be addressed as an HOA/CC&R requirement. The *Firewise Community* framework can help institutionalize this process.

Section 5: Operational Issues and Standards

As has been identified with other WUI development areas, it is important to plan for potentially threatening wildfire events. Detailed planning with identified expected resident actions in the event of a fire-related evacuation is of the highest priority.

Evacuation Routes-Multiple egress/access routes for the development area should be planned. Avoid long cul-de-sac situations and plan for loop layout of neighborhood streets. Opportunities for emergency access gates to adjoining developments or streets should be identified and built into the transportation plan. Access/egress routes should be planned to avoid traffic bottlenecks such as narrow gates or other factors that would constrict traffic flow. Plan for dual, simultaneous use for evacuation and emergency responder access.

Communication and Information Plan for Residents-Evacuation plan maps and procedures are a critical part of pre-incident planning. Clear, concise Emergency Action Plan instructions should be present in each residence. These types of high anxiety events require clear and usable tools such as a "grab and go" checklist and evacuation route map for residents and visitors.

Section 6: Summary

Bend's west side has experienced large scale change over the last 35 years. Ground that was once characterized by commercial pine forests with a variety of wildlife uses has, in reality, become part of the city.

The 1990 Awbrey Hall fire left a half to three quarter mile strip running north to south from Shevlin Park to Deschutes River Woods. After 25 years, very little if any natural pine regeneration has occurred within the brush-dominated fire footprint. These extensive brush fields, if left un-treated, represent a very

significant fire risk to the surrounding areas of residential development and recreational use. Further, due to prevailing wind patterns, they also pose a very substantial risk to adjoining areas of residential development further to the east on Bend's west side.

The proposed development of this remnant area of the fire footprint would bring (1) fire fuels mitigation in perpetuity, (2) improved access for emergency responders, and (3) a dependable water supply system making the area a part of the solution to the city's fire risk equation. It would represent a step forward toward developing a *fire-adapted community* on Bend's west side and would *result in a net overall fire-safety benefit.*

Wildlife Habitat Findings

Prepared by

Mason, Bruce & Girard

Wildlife Habitat Management Plan for the Rio Lobo Property

Deschutes County, Oregon

Prepared for:

Kevin Spencer
Empire Construction and Development, LLC
Bend, Oregon 97701

Prepared by:

MB&G

Mason, Bruce & Girard, Inc.
707 SW Washington, Suite 1300
Portland Oregon 97205

December 21, 2017

MB&G Project No. 0101750

Table of Contents

Introduction 1
PSA Location 2
Methodology 4
Results 4
Deer and Elk Habitat Utilization Trends 7
Development Plan 10
Integration of Wildlife Habitat Management with Wildfire Protection 10
Wildlife Habitat Conservation Measures 12
Implementation, Monitoring, and Enforcement of the Wildlife Habitat Conservation Measures 16
Summary and Opinion 16
References 18

List of Figures

Figure 1. Vicinity Map 3
Figure 2. Habitat Types 6
Figure 3. Corridors and Forage Map 9
Figure 4. Elevation Map 15

Introduction

The Rio Lobo Property is located west of the City of Bend (City) in Deschutes County (County), Oregon. The Project Study Area (PSA) for this report includes the entire 375-acre ownership. The Rio Lobo Project Team (Project Team) is seeking a zone change for approximately 307 acres of the PSA from Urban Area Reserve (UAR) to Westside Transect Zone, wherein the density of development would require a minimum lot size of 2.5 acres. A Preliminary Plan depicting the 307-acre area to be re-zoned is included in Appendix A.

The PSA is located within biological mule deer and elk winter range, identified by Oregon Department of Fish and Wildlife (ODFW 2014). Winter range for these species generally extends west of the City across relatively lower elevations on lands with adequate forage and cover resources where deer and elk are known to overwinter. The PSA is not included in the Deschutes County Wildlife Area Combining Zone (WA Zone), a Goal 5 Resource, which was specifically created by the County in coordination with ODFW for conservation of high priority mule deer and elk winter range (Deschutes County 2008). In the vicinity of the PSA, the WA Zone is located north of Tumalo Creek and abutting the southwestern corner of the property on the east side of the creek.

Kevin Spencer of Empire Construction and Development, LLC, contracted Mason, Bruce & Girard, Inc. (MB&G) natural resource consultants to assess the potential impacts of low density residential development on mule deer and elk populations located on the PSA. This assessment intends to inform development design in order to reduce impacts to mule deer and elk using the PSA and to provide appropriate conservation measures to maintain the resource. MB&G conducted a field habitat assessment within the PSA in order to characterize the floral and faunal constituents of habitat types, as well as topography, aspect, and other habitat elements.

In this report, MB&G presents the results of the general habitat assessment of the entire PSA based on characteristics of each habitat type, such as vegetative components, structure, age class distribution, landscape position, topography, elevation, hydrologic regime, and management history. Also included are any habitat use patterns which might affect the design of a preliminary development plan. Finally, this report presents the primary management plan components and wildlife habitat conservation measures to demonstrate the Project Team's commitment to reduce impacts to elk and mule deer winter range habitat as well as conserve wildlife movement patterns within and adjacent to the PSA. Although the entire PSA was assessed, the management plan components and wildlife habitat conservation measures discussed in this report apply to the 307-acre area of the PSA that would be re-zoned to the Westside Transect Zone and subsequently developed. The Preliminary Plan depicting conservation areas, and Mule Deer and Elk Winter Range Project Overlap Figure are included as Appendix A, and project area photographs are included as Appendix B.

PSA Location

The PSA consists of approximately 375 acres adjacent to the northern border of a new housing development named "The Tree Farm" and abutting Shevlin Park to the west (Figure 1). Coordinates for the approximate center of the PSA are 44° 44' 05.94" N 121° 22' 28.31" W. Topographically, the PSA ranges in elevation from approximately 3,750 to 3,900 feet above mean sea level (msl). The PSA is predominantly flat except for a slope down to Tumalo Creek along the western edge of the PSA and a north-south draw in the southeast corner of the property.

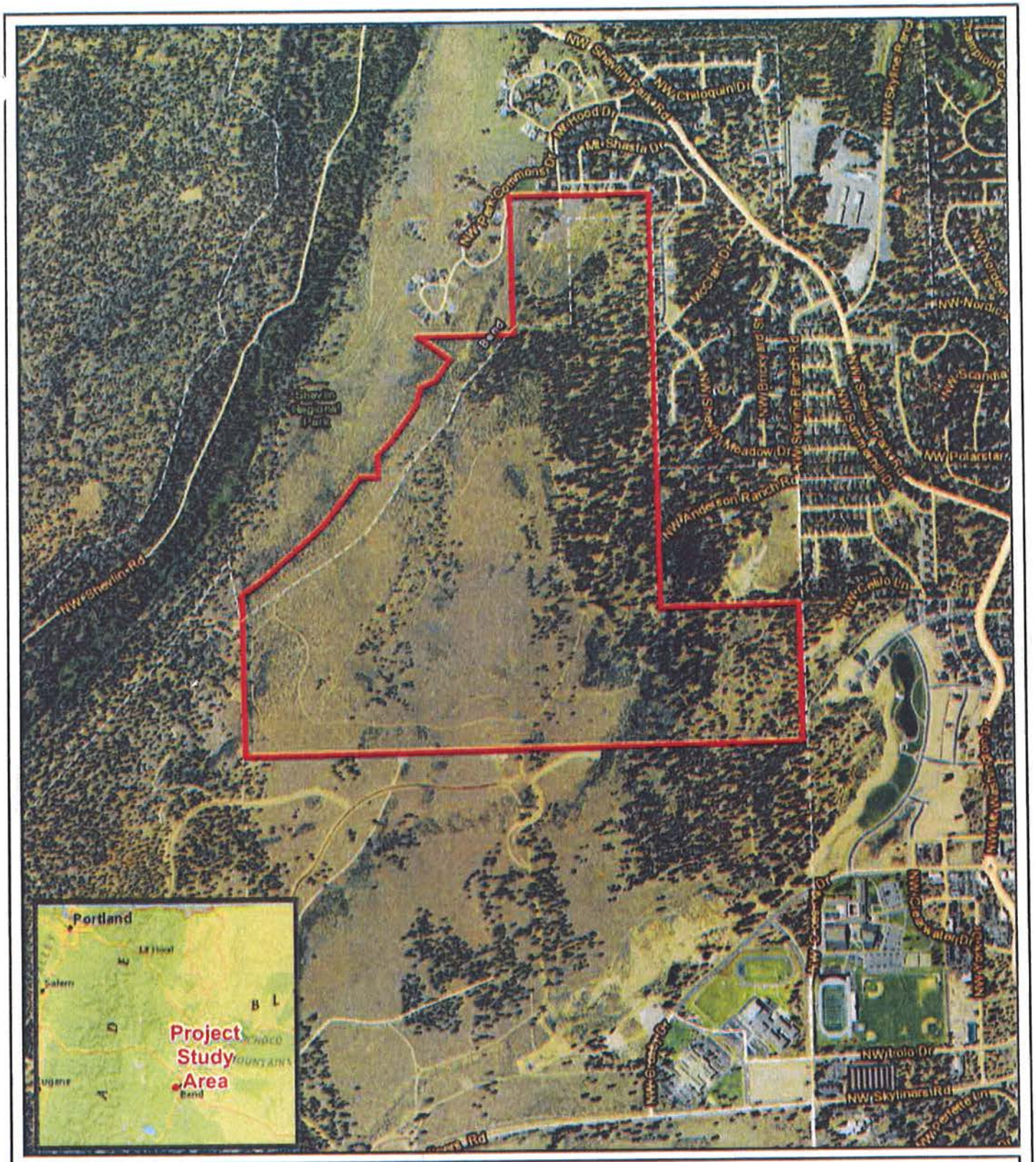


Figure 1.
Vicinity Map

Project Study Area (PSA)

MB&G

Feet
0 300 600 1,200

Rio Lobo Project
Deschutes County, Oregon

Methodology

On December 15th, 2016, and March 15th and 16th, 2017, MB&G wildlife biologists (Dr. Wendy Wente and Jenny McKay) traversed the PSA in order to identify and characterize discernable habitat types within the PSA. Habitats were characterized based on habitat descriptions developed by Johnson and O'Neil (2001). Aerial photos and topographic maps were used during the site investigation for navigation, verifying over-story type and canopy closure, and identifying potential wildlife movement corridors (National Agriculture Imagery Program [NAIP] 2016. United States Geological Survey [USGS] 1981). At representative observation points, the biologists evaluated and photo-documented various biological and physiographical characteristics of the habitat within the PSA. Observation point evaluations consisted of a habitat assessment including, but not limited to, dominant vegetation species inventory for each apparent structural layer within an approximate 100-foot radius of the plot center, average slope, landscape position, elevation, and other habitat elements such as proximity to cover, forage and water resources. Figure 2 presents a wildlife habitat type map of the PSA, including habitat observation point locations. Habitat types included on Figure 2 were determined based on results of the field survey as well as existing data.

In addition to characterizing on-site habitats, MB&G documented current deer and elk utilization as evidenced by observations of individuals and also by tracks, scat, rubs, use of shelter (beds or yarding), and browsing patterns of herbaceous and woody forage species. The MB&G biologists also noted signs of localized heavier use by deer and elk and evidence of corridor travel patterns.

Results

During the initial site visit on December 15th, 2016, a large snow event was underway with ongoing accumulation throughout the day, and MB&G biologists noted 18" to 24" of snow on the ground. The fresh snow greatly hampered the field effort. MB&G biologists returned in March, 2017 to collect the habitat usage and observation point data reported here. Unless otherwise noted, all observations discussed in the following sections are from the March, 2017 site visit.

General Site Description

Pre-field review of aerial photography of the site (Google Earth 2016) confirmed that the western extent of the PSA falls within the Awbrey Hall Fire perimeter, a wildfire that burned through the area in 1990. This fire removed most of the tree cover. The aerial photography and coarse pre-field habitat typing through the USGS National Gap Analysis Program (GAP) Land Cover Data Viewer indicated the presence of typical post-fire vegetation communities dominated by brush and bunchgrass species (Inter-mountain Basins Big Sagebrush Steppe Habitat [USGS 2001]). Some tree cover remains on the northeastern extent of the PSA and in other isolated pockets. In these areas, the USGS GAP Land Cover Data Viewer indicated the presence of forested

ecological types. Field observations of the specific vegetation communities and distribution of habitat patches present in the PSA are discussed in the Habitat Types section below.

In general, field observations confirmed that portions of the PSA were managed for fire suppression by regular tree limbing and thinning, as well as brushing and juniper removal. There were a number of unimproved roads and the PSA was subject to a moderate level of human disturbance due to its adjacency to Shevlin Park and suburban developments. Shevlin Park encompasses Tumalo Creek and its associated riparian area which are aligned in a northeasterly direction and parallel the western side of the PSA. Residential developments bordered the PSA to the east and to the north. An additional residential development was observed directly south of the PSA and was under construction during the March field visit. This development (The Tree Farm) had a series of paved roads with home lots for sale, however, home construction had not begun at the time of the March field survey. New residential homes were also being constructed adjacent to the northeast corner of the PSA.

Habitat Types

The PSA exhibited two habitat types available to wildlife species based on vegetation, topography, aspect, and land use impacts. Descriptions of these habitat types are listed below and have been modified from those described by Johnson and O'Neil in order to provide a more localized account of each habitat type (Johnson and O'Neil 2001). Appendix B includes example photographs of each habitat type. Figure 2 presents a map showing the approximate distribution of these habitat types and the location of the representative habitat observation points.

Figure 2.
Habitat Map

Project Study Area
ObservationPoint
Ponderosa Pine
Shrub-Steppe

MB&G

Feet
0 250 500 1,000

WMP_Figure2_Habitat 3/24/2017

Rio Lobo Project
Deschutes County, Oregon

Ponderosa Pine Forest (Observation Points 1, 3, 4, 13, 15, and 20)
This habitat is dominated by ponderosa pine (*Pinus ponderosa*) in the over story with occasional occurrence of western juniper (*Juniperus occidentalis*) (Photos 1 and 2, Appendix B). The shrub layer of the Ponderosa Pine Forest type was composed primarily of antelope bitterbrush (*Purshia tridentata*), manzanita (*Arctostaphylos sp.*), and rabbitbrush (*Chrysothamus viscidiflorus*). Grasses were dominated by Idaho fescue (*Festuca idahoensis*) and bottlebrush squirreltail (*Elymus elymoides*). Bare mineral soil and significant accumulations of pine needle duff covered unvegetated areas of the forest floor. Slopes within this habitat ranged from 0 to 25% and a draw traversed this habitat type in the southeast corner of the PSA.

Shrub-Steppe (Observation Points 2, 5-12, 14, and 16-19)
In 1990, the Awbrey Hall stand-replacement fire affected forested upland areas within the PSA. Most tree species were killed, leaving increased resources for emerging shrub and herbaceous species. Rabbitbrush, antelope bitterbrush, manzanita, snowbrush ceanothus (*Ceanothus velutinus*), Idaho fescue, and various other bunch grasses comprise the vegetation community in this area (Photos 3-6, Appendix B).

Deer and Elk Habitat Utilization Trends

Mule Deer Habitat and Migration Corridor
Mule deer are known to migrate through the PSA and use it as winter range. During the field investigation in March, MB&G biologists observed signs of diffuse movement through both habitat types discussed above. Resident deer use the PSA in its entirety during winter as evidenced by the presence of deer sign at observation points and other areas throughout the property (Photo 7, Appendix B). Within the shrub-steppe habitat type, there were several pockets of mature to decadent forage species attractive to ungulates. These pockets, along with forested habitat within the PSA provided evidence of bedding, foraging, and game trails. Based on this evidence, the PSA likely serves as both *in-situ* habitat and corridors for traveling to resources located outside of the PSA.

Key areas identified as travel corridors for deer included (Figure 3):

1. The northwest facing slope running northeast to southwest. This corridor extends along the western boundary of the PSA and parallels Shevlin Park to the west.
2. A corridor running northeast to southwest along the draw which transects the southeast corner of the property.

Elk Habitat
Elk are known to utilize the PSA, to a lesser extent than do deer, as evidenced by elk scat and tracks observed throughout the PSA. Elk tracks were noted in several areas between observation points 16 and 5, suggesting a north-south movement pattern throughout the property. However, elk scat was not observed at any of these points indicating that elk are likely moving through and not necessarily utilizing this portion of the PSA for long periods of time. Fairly extensive elk scat was located at observation point 19 along the corridor adjacent to Shevlin Park, suggesting yarding behavior in this area, at least temporarily (Photo 8, Appendix B).

Rock Outcrops

Due to topographical constraints and associated access difficulty, the lands immediately surrounding the bases of rock outcrops within the PSA are not regularly subject to brush removal. As such, these areas have developed pockets of older brushy vegetation communities, adding to their wildlife habitat value. Due to unique habitat qualities provided by rock outcrops, they serve as key habitat elements within the PSA for ungulates and other wildlife species. These areas also provide visual and physical cover and they are used as secure bedding and browsing locations, specifically for deer (Photo 10, in Appendix B).

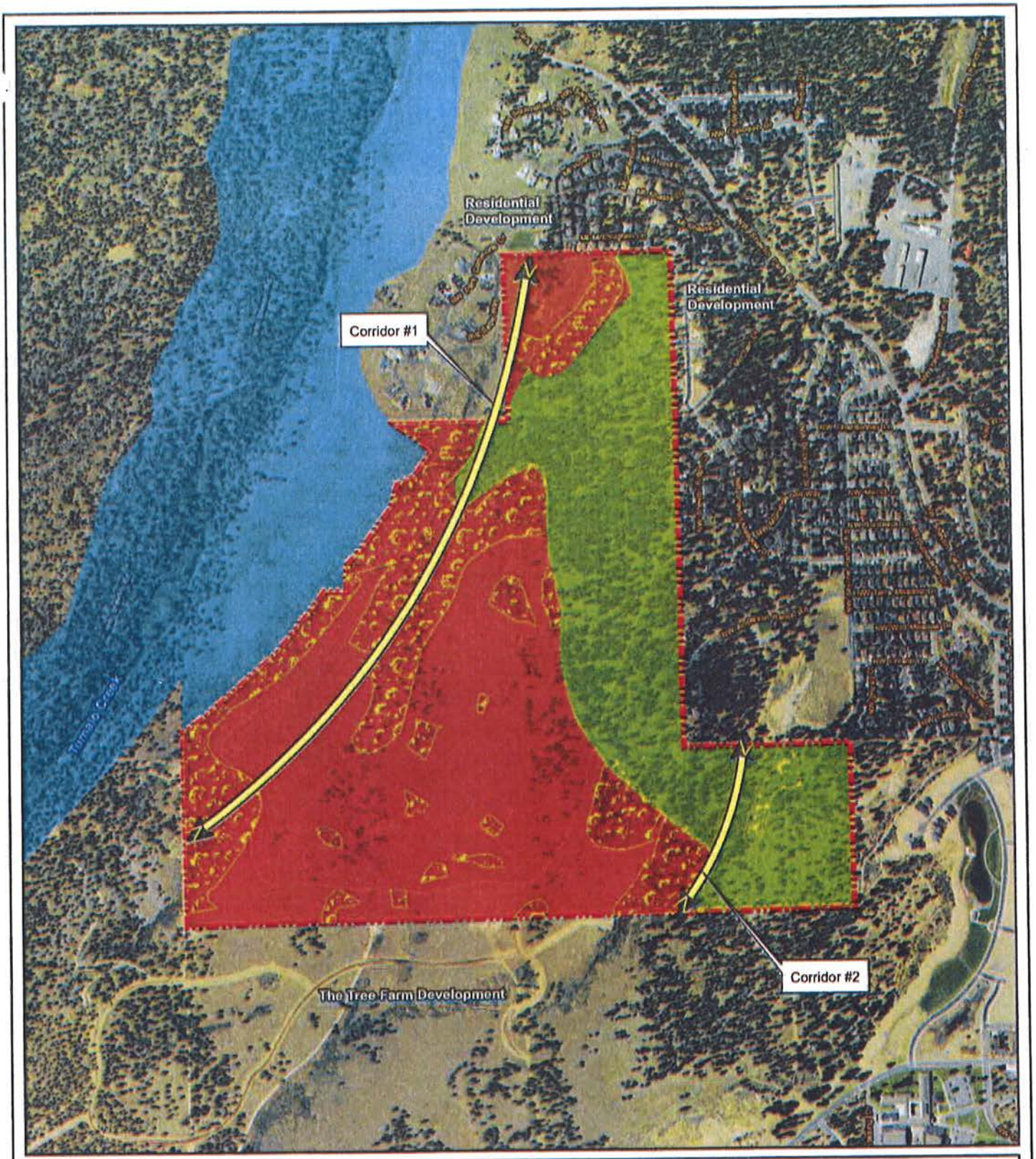


Figure 3. Corridors and Forage Map

Rio Lobo Project
Deschutes County, Oregon

Project Study Area
Mule Deer Movement Pattern (Snapshot)
Winter Forage Patch
Ponderosa Pine Habitat
Shrub-Steppe Habitat
Shevlin Park

MB&G

Source: Aerial imagery from NAIP 2016; all other data from MB&G. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

Feet
0 250 500 1,000

WMP_Figure3_Corridors_12/19/2017

Development Plan

The proposed development includes a total of approximately 103 residential lots that would each be less than two-and-a-half acres in size. The development sets aside portions of the PSA including a conservation area, and a designated open space area which will be managed with some focus on the maintenance of wildlife habitat. These areas are indicated on the Preliminary Plan in Appendix A, and they include the conservation area along the western extent of the proposed development as well as the designated open space in the southeastern corner. There is also a no build zone along the eastern edge of the westernmost conservation area (see Preliminary Plan, Appendix A) that is designed to provide a buffer of defensible space between structures and the conservation area, as described in the Wildfire Mitigation and Forest Health Plan developed for this project (WMFHP 2017). The Preliminary Plan included in Appendix A is preliminary; however, the wildlife habitat conservation measures described in the following sections will be applied to the Westside Transect Zone area of the Preliminary Plan at each stage of its development to finalization; approximately 307 acres.

Integration of Wildlife Habitat Management with Wildfire Protection

Singletree Enterprises developed the WMFHP in conjunction with this WHMP in order to produce a comprehensive vegetation management plan that will reduce the threat of wildfire spread while also maintaining quality wildlife habitat within the conservation area, the designated open space area, and in the undeveloped portions of the residential lots. As explained in the WMFHP, vegetation will generally be managed in compliance with the National Fire Protection Association (NFPA) codes and defensible space standards which use a zone of protection approach. Vegetation treatments for Zones 1, 2, and 3 are defined in the WMFHP.

Vegetation management prescriptions that are intended to reduce the potential for wildfire can affect forage quality and quantity, as well as the associated cover effectiveness of wildlife habitat. After development, vegetation management on the PSA will include tree stand thinning, ladder fuel reduction (*e.g.* periodic removal of ground fuels and tree limbing), slash pile removal, and slope-specific treatments. The following provisions will be implemented to maintain wildlife habitat value within the context of the NFPA standards as described in the WMFHP.

Within open space, including the conservation area, and designated open space, and within lots beyond fire protection buffers associated with structures (*i.e.* outside of Zones 1 and 2, and within Zone 3, per the WMFHP):

- Downed logs: Downed logs will be left as a source of visual screening if they will not act as ladder fuel, per guidance provided in the WPMP. Where possible, retain an average of two downed logs per acre, consistent with the goals of adjacent Shevlin Park (Boldenow 2008).
- Standing snags (dead trees) provide food and nest site locations for wildlife, especially cavity nesting birds (Photo 1, Appendix B). Leave snags in place where practical. The density target for snags will be two of each per acre, consistent with the goals of adjacent Shevlin Park (Boldenow 2008).

- Brush: Leave patches of brush (Photos 4 and 10, Appendix B), especially those associated with rock outcrops. Most brush under the drip line of trees must be removed often enough to maintain a distance of at least three times the height of the ground fuel and the tree crown. In open areas, older and taller brush patches can be maintained and remain consistent with the fire protection guidelines (WMFHP).
    - Patches of brush will specifically be left within the conservation area along the western boundary of the PSA and opportunistically within other open spaces and building lots when also in compliance with the WMFHP (see current brush patch pattern in Figure 3).
    - Brush patches will be maintained in a mosaic pattern following a multi-year cycle of brushing so that brush patches will vary in age and height.
- Slope-specific brush treatments: Hand-pruning treatments will be used to maintain brush patches as wildlife habitat while also providing breaks in the linear continuity of brush patches oriented along steep slopes and rock outcrops; consistent with a fire fuels reduction practice (WMFHP).

Vegetation Management Standards and Wildlife Habitat

Application of the vegetation treatments described above will result in a landscape which continues to support deer and other wildlife species. In particular, maintenance of vegetation within the conservation area on the western edge of the development will maintain a north-south travel corridor adjacent to already protected lands along Tumalo Creek and within Shevlin Park. In addition, a mosaic of brush pockets and ponderosa pine cover associated with the designated open space area, and undeveloped portions of lots within Zone 3 will continue to provide patches of habitat and travel corridors for deer, elk, and other wildlife.

Treatments to steeper slopes represent a small proportion of the total acreage of brush and they will be implemented in a manner consistent with maintaining pockets of habitat for animals to continue utilizing as cover and forage. Therefore, the vegetation treatments on the sloped areas are not expected to significantly impact wildlife habitat beyond the management already occurring as a part of the proposed fuel reduction treatments.

The current land management treatments of brushing and thinning applied within the PSA result in a more open understory which mimics the effects of fire and also encourages the growth of forage species which deer in particular rely upon during the winter months. Forage will continue to be accessible in winter due to the maintenance of a ponderosa pine tree canopy throughout the eastern portion of the PSA which will reduce the depth of the snowpack relative to more open areas on deer and elk winter range (*e.g.* within the Awbrey Hall fire perimeter).

Wildlife Disturbance

Implementation of vegetation treatments will potentially disturb wildlife for short periods of time as workers move through areas to complete vegetation alteration. These activities will be short in

duration and similar to those practiced in the past on the PSA as well as on nearby lands including the Deschutes National Forest (United States Forest Service [USFS] 1990) and Shevlin Park (Boldenow 2008). In addition, vegetation management activities are likely to be performed in the fall or spring when the area is most accessible and not under fire restrictions; therefore the activities will likely occur outside of the deer winter range season.

Wildlife Habitat Conservation Measures

The PSA and proposed development are within ODFW biologically-defined mule deer and elk winter range as well as located adjacent to Deschutes County's wildlife area (WA) combining zone (Appendix A). Because the PSA is not located within the WA zone, development plans must only comply with the more general Deschutes County Code (DCC); however, the Project team voluntarily proposes to incorporate the following development design elements and conservation measures within the 307-acre Westside Transect Zone to protect wildlife habitat values, particularly those of deer winter range. These conservation measures are based on selected portions of the DCC 18.88 for WA combining zones, including DCC specific to cluster developments (18.128.200 B.3), and some originate from our ongoing coordination with ODFW. These Project-specific conservation measures also take into account the specific characteristics of the PSA and the surrounding landscape.

Post-development open space within the Westside Transect Zone, including the conservation area, the no build zone, the designated open space, and building lots beyond the fire protection buffers around structures (*i.e.* outside of Zones 1 and 2, and within Zone 3, per the WMFHP), will be managed for the maintenance of mule deer winter range, and wildlife habitat in general. Existing natural vegetation will be protected, preserved and enhanced to continue providing cover or shelter, food supply, and free movement. As part of the management of open space areas, specific wildlife habitat conservation measures targeted at protecting and enhancing the wildlife habitat include:

- Continued application of the vegetation management standards described earlier in this report. If more aggressive fuel reduction treatments become necessary within the conservation area, no build zone, or designated open space, their impacts to wildlife habitat will be re-assessed by a professional biologist and possible modifications designed to lessen the impacts of the proposed measures will be considered prior to their implementation (see monitoring plan requirement below).
- Vegetation will be monitored and weeds/non-native plants will be controlled and eradicated when possible and feasible following the recommendations of the Deschutes County Noxious Weed Board, or a similar body.
- Juniper trees will be removed when encountered within the open space areas during application of the fire fuels reduction practices outlined above to prevent competition with native shrub species that are preferred by deer.
- Live ponderosa pine trees will be preserved within the open space areas when feasible.
- Fire wood cutting or vegetation alteration beyond that prescribed as management for increased habitat value and fuels management will not be permitted within the open space areas.

- Livestock will not be kept or allowed on the property.
- To minimize the impact of domestic dogs on deer populations, leash laws will be posted and strictly enforced within the conservation area on the western portion of the development and the designated open space in the southeastern corner.
- No high-intensity recreational uses (*e.g.* playground, motorized trail use) will be allowed within the conservation area or the designated open space.
- The lots that are directly adjacent to the designated conservation area along Shevlin Park will observe the no build zone to create a defensible space (per the WMFHP) and also to protect the wildlife value of the adjacent conservation area.
- No new fences will be constructed within the conservation area along the western portion of the development or the designated open space in the southeastern corner. All fences installed on building lots will be constructed in compliance with WA zone fence standards (DCC 18.88.070) to prevent restriction of deer movement throughout the area.
    - ***Fence Standards (Utilizing DCC 18.88.070). The following fencing provisions shall apply as a condition of approval for any new fences constructed as a part of development of a property in conjunction with a conditional use permit or site plan review.***
        - ***New fences shall be designed to permit wildlife passage. The following standards and guidelines shall apply:***
            - ***The distance between the ground and the bottom strand or board of the fence shall be at least 15 inches.***
            - ***The height of the fence shall not exceed 48 inches above ground level.***
            - ***Smooth wire and wooden fences that allow passage of wildlife are preferred. Woven wire fences are discouraged.***

- The proposed development will prohibit the recreational use of off-road motor vehicles within the conservation area, the no build area, and the designated open space area. Motorized vehicle use in these areas will not be allowed except as needed for management or emergency fire vehicle access.
- Where existing or proposed roads intersect the conservation area, the no build zone, or the designated open space, there will be reduced speed signs and signage indicating wildlife crossings.
- As part of the post-development monitoring plan (see below), develop a program to educate residents and guests on the project's wildlife habitat maintenance goals and how they can reduce impacts to deer using open space as winter range.

Providing adequate wildlife passage through the development.

At a landscape level, the PSA is located on the eastern edge of the ODFW-designated deer winter range for the Tumalo herd (Appendix A). It is also identified as elk winter range (biologically). It does not fall within the Deschutes County WA zoned area which is the highest priority area for winter range protection. The nearest WA zoned area, which is designated for deer winter range, is located on the north side of Tumalo Creek to the north and west of the PSA and adjacent to the southwestern property boundary.

The conservation area proposed in the Preliminary Plan along the western edge of the PSA is designed to provide a minimally obstructed wildlife travel corridor, especially for deer and elk, that is contiguous with adjacent protected areas to the west of the development (the riparian zone of Tumalo Creek, Shevlin Park, and public lands farther to the west). In conjunction with other development plans and their associated open spaces located to the north and south of the PSA, this conservation area provides a key link in the landscape-level continuity of wildlife habitat maintained along Tumalo Creek. The corridor follows the natural topography of a ridge that parallels the creek, originating on the southwestern border with the WA zone, and gently dropping down in elevation toward the riparian zone of Tumalo Creek to the north-west of the PSA (Figure 4). According to ODFW biologists, deer migrating through the Bend area on an east-west path are already likely to avoid residentially developed areas, travelling instead along the southern border of the City; however, animals approaching the developed areas are likely to continue using contiguous corridors such as that along Tumalo Creek. Also, pockets of habitat maintained within developments, such as the designated open space indicated in the southeastern portion of the Preliminary Plan, will continue to provide forage and cover resources for resident deer, as well as other wildlife species (Corey Heath and Sara Gregory, ODFW Biologists, pers. comm., April 18, 2017).

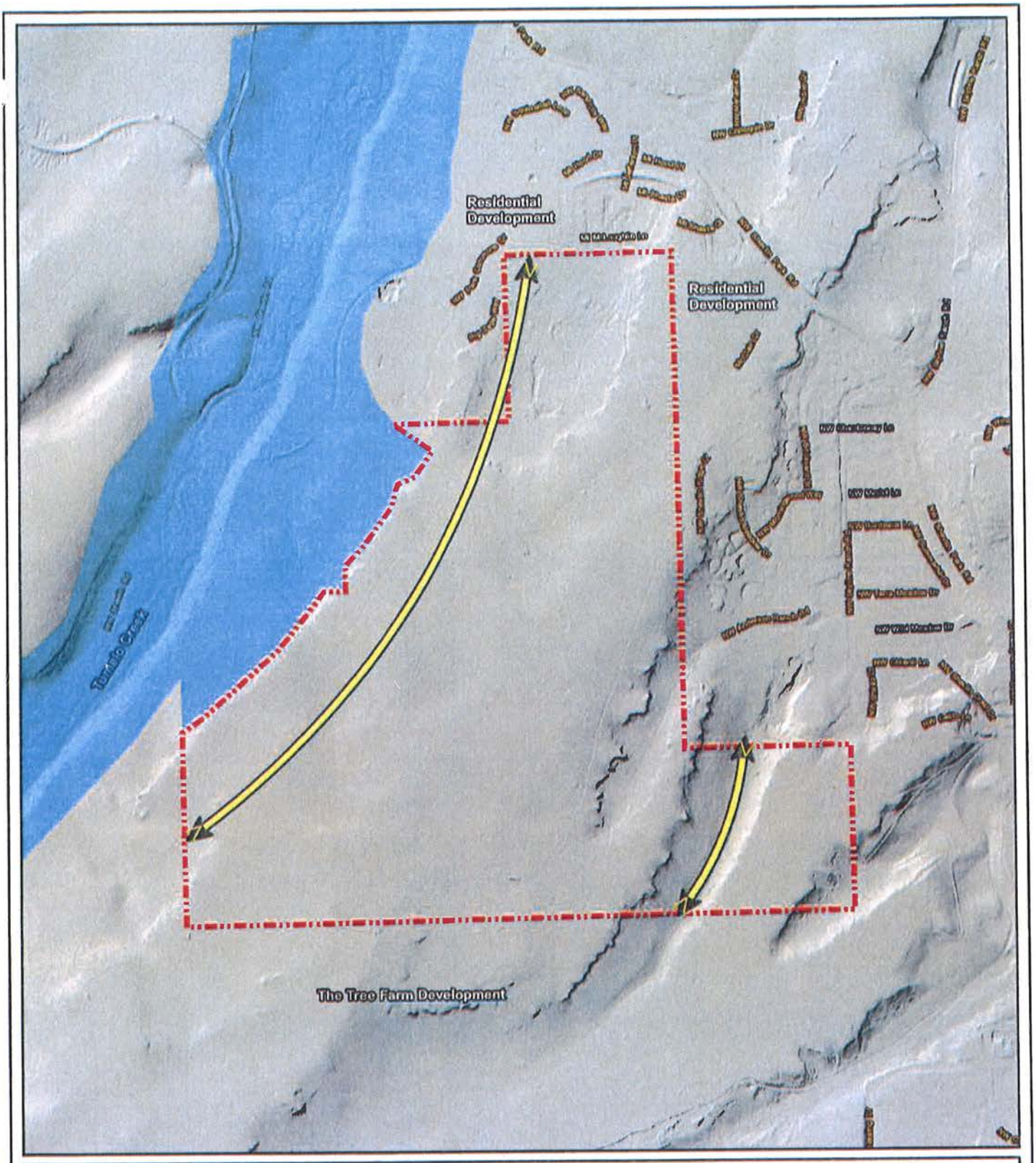


Figure 4.
Elevation Map

Rio Lobo Project
Deschutes County, Oregon

Project Study Area
Mule Deer Movement Pattern (Snapshot)
Shevlin Park

MB&G

Feet
0 250 500 1,000

Implementation, Monitoring, and Enforcement of the Wildlife Habitat Conservation Measures

Within the 307-acre Westside Transect Zone on the PSA, the developer will implement these wildlife habitat conservation measures and will be responsible for monitoring and enforcing adherence with these measures until management is turned over to the Home Owners Association (HOA). The transfer of management from the developer to the HOA is expected to occur once all property has been conveyed or sold to persons or entities other than the developer or 15 years after the conveyance of the first home site or at an earlier time at the discretion of the developer. Throughout development and once management is transferred to the HOA, there will be three avenues for continued implementation, monitoring, and enforcement of the wildlife habitat conservation measures:

1) Wildlife habitat conservation measures will be incorporated into the Declaration of Covenants, Conditions, and Restrictions (CC&Rs), therefore the HOA will have ultimate authority to assess a fine or fee if an owner is non-compliant and the HOA will have the ability to bring the property into compliance should an owner continue failing to comply.

2) There will be a provision in the CC&Rs for a professional biologist to conduct an audit of the compliance of the developer or HOA (the managing party, as determined by the status of land management responsibility at the time of the audit) with this WHMP. This audit would be performed every 3 to 5 years starting from inception of ground-breaking activities associated with the development. The expected deliverable would be a monitoring report assessing the implementation and effectiveness of the above Wildlife Habitat Conservation Measures and proposing potential adaptive management actions to address any issues detected during the audit. Under no circumstances would the measures outlined in this plan be reduced through this audit process.

3) The managing party (the developer or the HOA, depending on the status of land management responsibility) is required to meet County Code and abide by the land use decision.

Costs associated with implementing, monitoring, and enforcing the wildlife habitat conservation measures in this plan will be covered by the developer until management is transferred to the HOA. At that time the expenses will become a part of the HOA annual budget.

Summary and Opinion

The habitat types and evidence of use of the PSA by deer and elk observed by MB&G during the field investigation indicate a general pattern of use that is consistent with the designation of the entire area within the PSA as mule deer and elk winter range habitat. The Preliminary Plan for the proposed project was developed while considering impacts to the wildlife habitat present within the PSA. The development of this WHMP and revisions made to the Preliminary Plan in

response to the findings of this report are in excess of Deschutes County's requirements for developments. These efforts indicate a recognition on the part of the project team with respect to this important habitat value and the desire to maintain its function. Furthermore, this project considers a landscape-level approach to maintaining wildlife habitat connectivity as development occurs on the west side of the City.

References

Boldenow, Ron. 2008. Shevlin Park Vegetation Management Plan. March 2008. 44 pp.

Deschutes County. 2008. Deschutes County: 2030 Comprehensive Plan Update. Wildlife Area Combining Zone. Deschutes County, Oregon. 284 pp.

Heath, C. and S. Gregory. 2017. Biologists, Bend Field Office, ODFW. Personal communication with Wendy Wente of Mason, Bruce & Girard, Inc. on April 18, 2017.

Johnson, David H. and Thomas A. O'Neil. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press 2001. 736 pp.

National Agriculture Imagery Program (NAIP). 2016. Oregon 1-meter resolution. Deschutes County Mosaic. U.S. Department of Agriculture, Farm Service Agency, Washington, D.C.

Oregon Department of Fish and Wildlife (ODFW). 2014. ODFW Winter Range for Eastern Oregon. Accessed 11/3/2016. Online at: https://nrimp.dfw.state.or.us/DataClearinghouse/default.aspx?p=202&XMLname=885.xml.

Rio Lobo Investments - Wildfire Mitigation and Forest Health Plan (WMFHP). 2017. Singletree Enterprises, LLC.

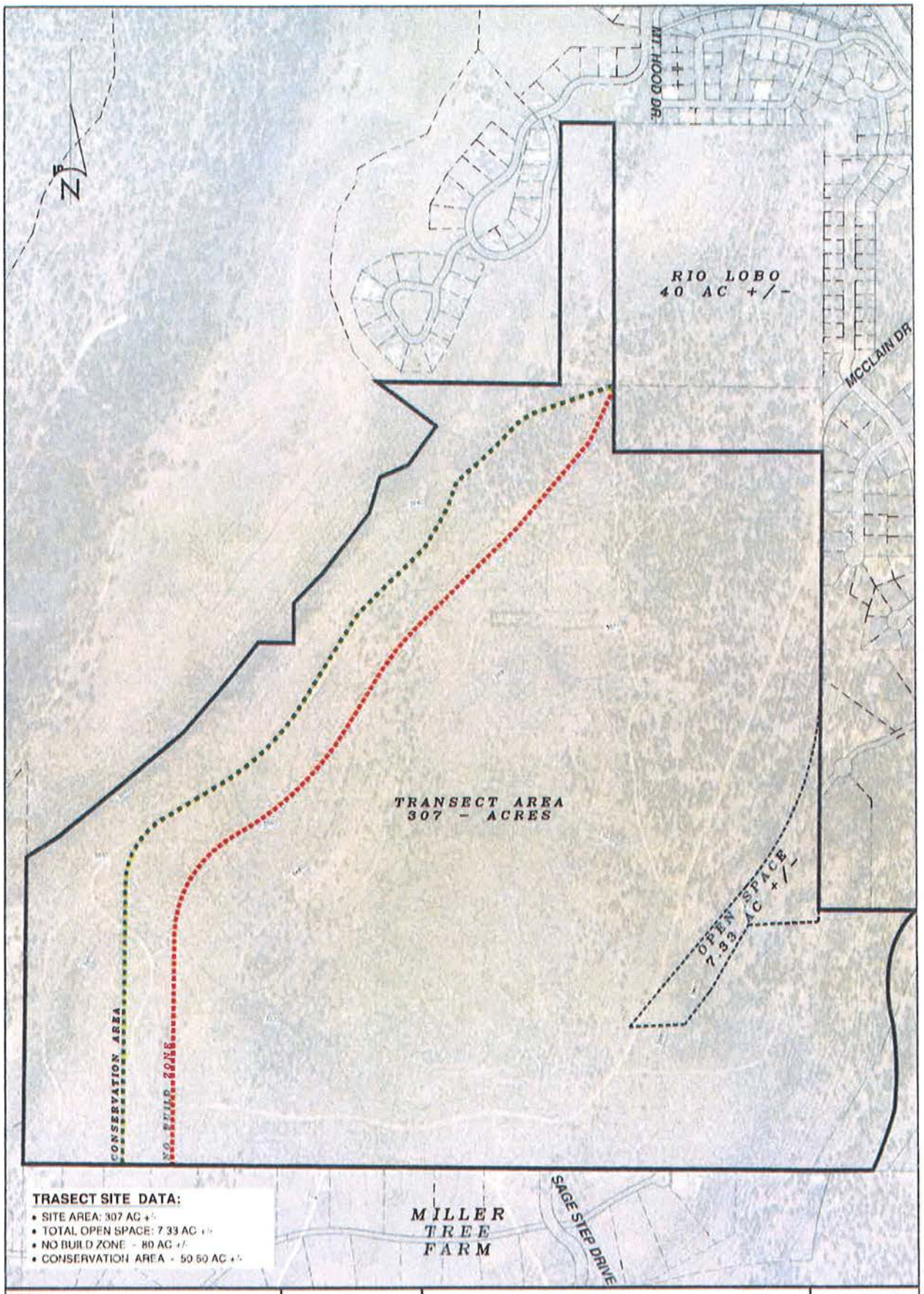
United States Forest Service (USFS). 1990. Deschutes National Forest Land and Resource Management Plan. USFS Pacific Northwest Region. 194 pp.

United States Geological Survey (USGS). 2001. National Gap Analysis Program Land Cover Data Viewer. URL: https://gis1.usgs.gov/csas/gap/viewer/land_cover/Map.aspx.

United States Geological Survey (USGS). 1981. Bend, Oregon. 7.5-minute quadrangle, 1:24,000.

Appendix A

Preliminary Plan
Mule Deer and Elk Winter Range Project Overlap Figure



TRASECT SITE DATA:

- SITE AREA: 307 AC +/-
- TOTAL OPEN SPACE: 7.33 AC +/-
- NO BUILD ZONE - 80 AC +/-
- CONSERVATION AREA - 50.50 AC +/-

BECON
Civil Engineering
Land Surveying

549 SW MILL VIEW WAY
SUITE 105
BEND, OREGON 97702
(541) 633-3140
www.beconeng.com

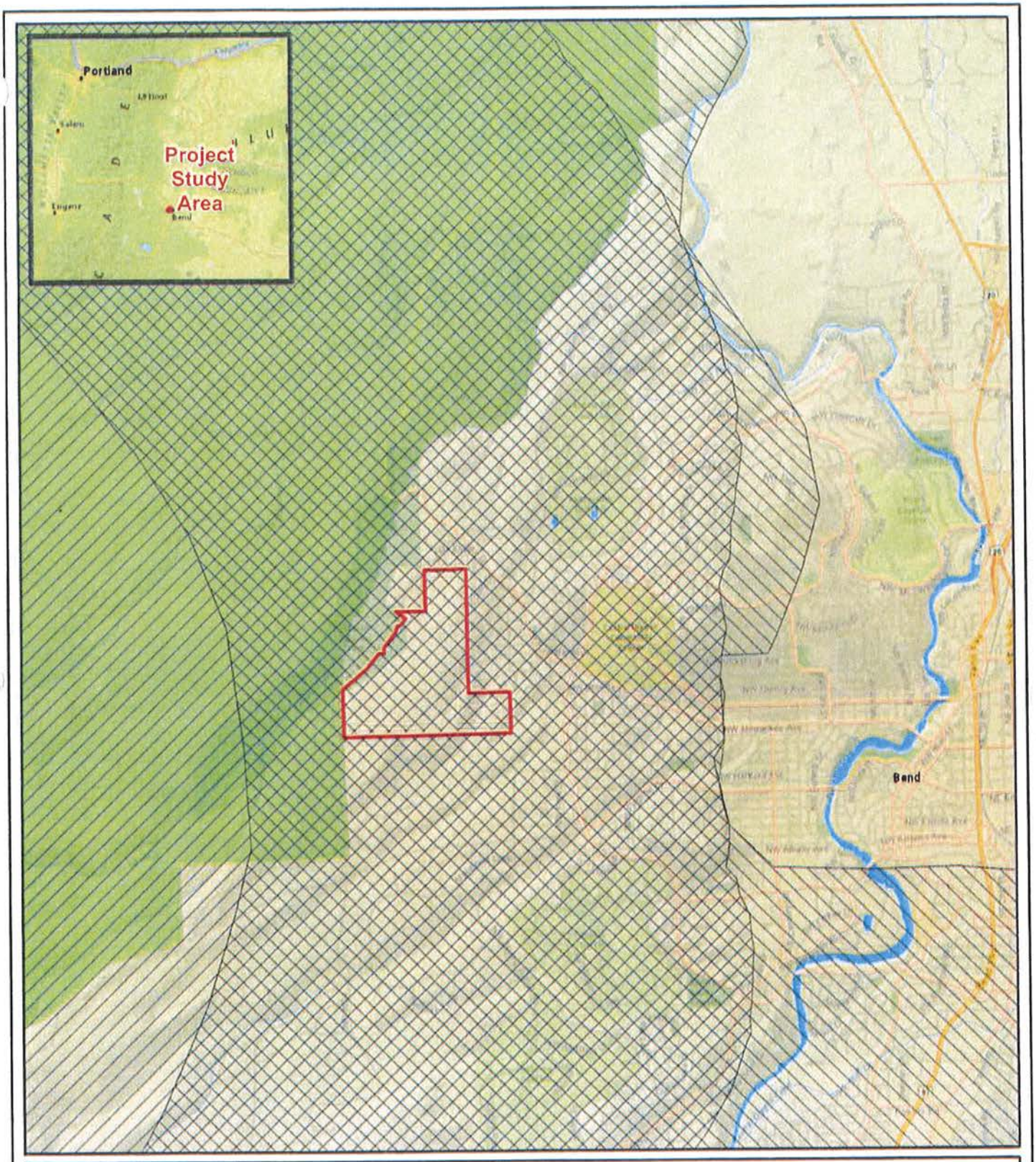
FOR:
KEVIN
SPENCER

RIO LOBO - TRANSECT AREA
PRELIMINARY SITE LAYOUT
DESCHUTES COUNTY, OREGON

DATE 12/15/2017 | SCALE 1" = 400' | DRAWN BY JR | PROJ# 13891

SHEET 1 OF 1

PRELIMINARY



ODFW Mule Deer and Elk Winter Range

Rio Lobo Project
Deschutes County, Oregon

Project Study Area (PSA)
ODFW Mule Deer Winter Range
ODFW Elk Winter Range
Deschutes County WA Combining Zone (Mule Deer Tumalo Herd)

MB&G

Feet
0 2,000 4,000

Appendix B

Project Photos

1

2

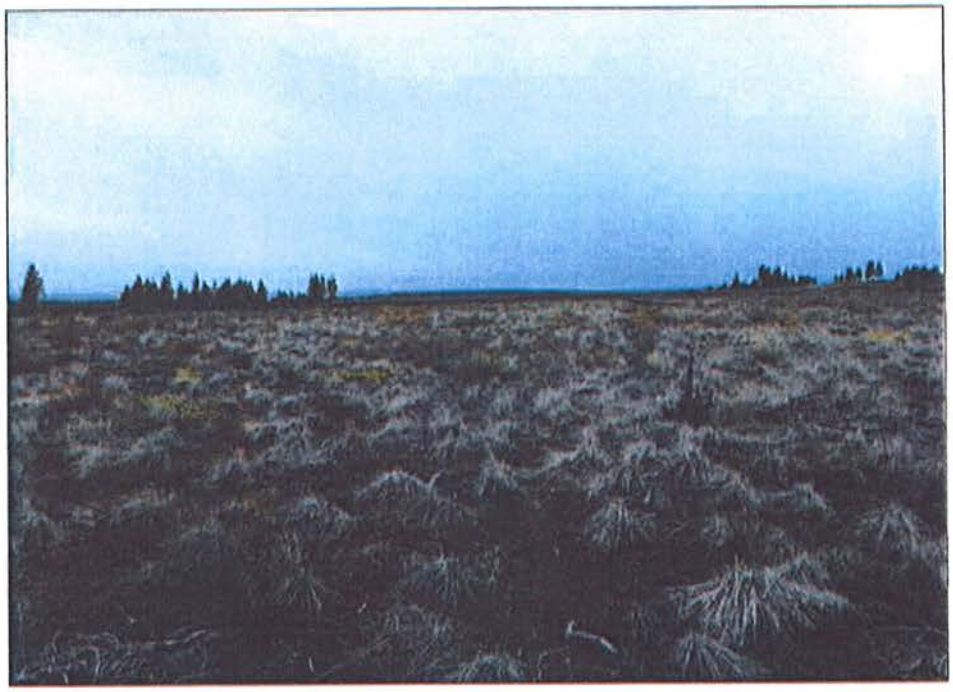
MB&G	**Wildlife Habitat Management Plan** **Rio Lobo Project** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Date March 15, 2017	1. View to the south of the Ponderosa Pine habitat type from observation point 20. Note the thinning and limbing management treatments. Snags like the one shown in the background provide valuable habitat for a multitude of wildlife species. 2. View to the west from observation point 3 of the Ponderosa Pine habitat type. This photo demonstrates the removal of western juniper as well as thinning activity.

3

4

MB&G	**Wildlife Habitat Management Plan** **Rio Lobo Project** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Dates December 15, 2016 and March 15, 2017	3. View to the west of Shrub-Steppe habitat from observation point 17. Note the mature to decadent forage species (antelope bitterbrush, manzanita, and rabbitbrush) available to ungulates during significant snow events (18-24" of snow). 4. The same photo taken three months later after snow melt.

5



6

MB&G	**Wildlife Habitat Management Plan** **Rio Lobo Project** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Date March 15, 2017	5. Photo to the south from observation point 11 of the Shrub-Steppe habitat type. This photo shows bunch grasses dominating the landscape. 6. View to the west from observation point 10 of the Shrub-Steppe habitat type. Note the sparse pine trees and brush patches providing potential cover and bedding to ungulates.

7

8

MB&G	**Wildlife Habitat Management Plan** **Rio Lobo Project** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Date March 15, 2017	7. Photo taken near observation point 2 of deer scat and tracks as well as a rub on a manzanita shrub. 8. Elk scat from multiple animals near observation point 19.

9

10

MB&G	**Wildlife Habitat Management Plan** **Rio Lobo Project** **Deschutes County, Oregon**
Mason, Bruce & Girard, Inc. Photo Date March 15, 2017	9. View to the southwest of elk tracks (photo taken near observation point 5). 10. View to the southwest of the dry draw in the southeast corner of the PSA. Rock outcrops such as the one shown in the background and associated brush serve as key habitat patches for ungulate and other wildlife species.

Wildlife Habitat

And

Forest Health Management Plan

For The South Property

South Property

Wildlife Habitat and Forest Health Management Plan

Balancing the protection of wildlife with a wildland fire management plan within the Westside Transect Zone is key to ensuring the protection of wildlife habitat within a known wildfire hazard area. The Wildlife Habitat and Forest Health Management Plan includes a comprehensive vegetation management plan to reduce the threat of wildfire spread while maintaining quality habitat. In addition, wildlife habitat conservation measures have been included from the County's Wildlife Area Combining Zone (WA) code (Deschutes County Code Title 18, Chapter 88) even though the South Property is outside of the WA zone.

Part of the success of the Plan is the low-density residential pattern of the Westside Transect Zone that gradually decreases from the Urban Growth Boundary (UGB) outward to the rural lands boundary. Development plans within the South Property will include residential subdivisions with a dedicated conservation and "no-build" areas (over 80-acres in size) along the western boundary of the property where it abuts Shevlin Park and the Tumalo Creek corridor. The applicant anticipates the creation of a dedicated "Wildlife Corridor Area" (approximately 50-acres in size) to be located along the western edge of the South Property. The Wildlife Corridor Area will be managed as open space with a focus on the maintenance of wildlife habitat. No homes, building or fencing will be constructed or maintained in the Wildlife Corridor Area. An approximately 30-acre "No Build Area" abuts the Wildlife Corridor Area immediately to the east. This area will be managed primarily for fire protection purposes but may also provide areas for the movement of wildlife. The No Build Area will be included within the boundaries of individual residential lots but buildings in this area will be prohibited. The applicant will record enforceable covenants, conditions and restrictions to provide for the long term protection of the resource management corridors described herein.

The integrated management plan below has several sections that address various vegetation management techniques, structural and building design as well as materials selection, and operational issues and standards, such as evacuation routes and communication plans for residents. In addition, the plan includes several wildlife habitat conservation and management measures.

Compliance with the Wildlife Habitat and Forest Health Management Plan will be achieved through provisions in the CC&Rs that provide authority for the Home Owners Association (HOA) to assess fines or fees to bring property owners into compliance with the rules.

Integrated plan

I. Vegetation Management Standards for Structural Defensible Space

Three zones of vegetation management are described below. The zones will surround each dwelling, extending outward in concentric rings. This "zone concept" around the

buildings implements a "defense in depth" approach with progressively more modest treatment standards as the distance from structures increases.

Zone 1: 30 Feet Adjacent to Structures

Use non-flammable landscaping materials within first 5 feet of structures. All vegetation and combustibles are removed from under decks and within 5 feet of the home or auxiliary structures. Outside of 5 feet, low-growing, resin-free fire resistive plants are carefully spaced and maintained, and are kept free of dead material that do not allow flame lengths greater than 3 feet. Areas of lawn must be well irrigated and regularly mowed. Mature trees are pruned to a height of 6 to 10 feet from the ground with no brush inside of the tree dripline. Juvenile trees are not pruned more than 20% of stem length. Trees may not touch the home. No firewood storage is permitted outside of an enclosed structure. This zone includes driveway/road surfaces.

Zone 2: 30 to 100 Feet from Structures

Plants are low-growing and well irrigated. Tree canopies are spaced at 15-20 feet, or 30 feet between small groups of small trees. Zone 2 treatments will extend to the lot boundary (beyond the 100-foot zone) when the lot is adjacent to down-hill slopes greater than 20%. Small individual brush species will be irrigated, maintained free of dead material and outside the dripline of trees.

Zone 3: 100 to 200 Feet from Structures

Trees will be thinned and pruned, woody debris removed and brush fields mowed or removed. Density of taller trees will be reduced and maintained so that canopies do not touch. Taller, more mature trees however, typically present less of a fire risk as long as brush is not present within the tree drip-line and lower limbs are pruned.

Over time, tree canopies will grow together gradually. A long-term strategy is required to address this issue. Provisions should be made within CC&Rs for removal of some large trees as needed if this standard is to be maintained.

Zone 2 and 3 treatment areas will overlap each other between home sites and extend into open areas. For lots with greater than 20% slopes, Zone 2 treatments will extend beyond 100 feet to the lot boundary.

Wildlife Standards for Vegetation Management

The following restrictions shall apply within the approximately 50-acre Conservation Area and a designated 7.33-acre Open Space area (located along the eastern boundary of the South Property):

- Downed logs: Downed logs will be left as a source of visual screening if they will not act as ladder fuel. Where possible, retain an average of two downed logs per acre, consistent with the goals of adjacent Shevlin Park.
- Standing snags (dead trees) provide food and nest site locations for wildlife, especially cavity nesting birds. Leave snags in place where practical. The density target for snags will be two of each per acre, consistent with the goals of adjacent Shevlin Park.
- Brush: Leave patches of brush, especially those associated with rock outcrops. Most brush under the drip line of trees must be removed often enough to maintain a distance of at least three times the height of the ground fuel and the tree crown, but in open areas, older and taller brush patches can be maintained and remain consistent with the fire protection guidelines (FHMP).
    - Brush patches will be maintained in a mosaic pattern following a multi-year cycle of brushing so that brush patches will vary in age and height.
- Slope-specific brush treatments: Hand-pruning treatments will be used to maintain brush patches as wildlife habitat while also providing breaks in the linear continuity of brush patches oriented along steep slopes and rock outcrops; a fire reduction practice (FHMP).

II. Maintenance of Forest Health and Landscape Resiliency

Ongoing vegetation management is the key to maintenance of a healthy forest and overall resilience to the effects of fire. Young pine seedlings will become established through natural regeneration. A coordinated, long term plan will be needed to help plan for and evaluate options for vegetation regrowth and sprouting. Depending on location and condition of older forest vegetation, young seedlings may be used to provide additional wildlife screening or other aesthetic issues. Alternatively, depending on spacing, intermingled vegetation and continuity, young pine reproduction can quickly compromise desired conditions within the defensible space zones.

Antelope bitterbrush and other brush species generally require an ongoing action plan to enhance winter range value for deer and to maintain compliance with established defensible space standards.

Bitterbrush, for example, is often classified by its growth (seral) stage. Typically the majority of the plants within an area will fall into one of three categories. The most common treatment is mowing or other mechanical means. A treatment priority model is shown below.

Antelope Bitterbrush Site Condition Classification

Priority 1: Decadent, over mature stands with a high component of dead wood. ("Late Seral")

Bitterbrush in this class is mature to the point of decadence, with long, non-leaf bearing stems. On good sites it is up to five feet tall. It is composed of relatively large woody stems and branches with the leaf bearing branches isolated at the ends of bare stems. Current year's growth is short, 1" or less, infrequent and is not readily apparent. When the bitterbrush plants in this class reach 70% or more of the plants in an area, consideration should be given to renewal at the first opportunity by mowing or other means. Bitterbrush in this class are of relatively less deer winter range value.

Mowing to approximately a 6" height will allow a percentage of the plants to re-sprout and reset the seral stage.

Priority 2: Mixed-age stands or stands dominated by young mature plants. ("Mid-seral")

Bitterbrush in this class is mature, but the majority of the plant is still leaf-bearing. On good sites these plants are two feet to three feet tall. Most of the main stems, though relatively large, have leaf-bearing branches to within one foot of the ground. Most leaf-bearing branches show at least some current year's growth. Plants in this category are important for deer winter range in part because they typically extend above winter snow levels and are available as browse.

Priority 3: Young, developing stands. ("Early seral")

This is young, thrifty bitterbrush. These plants are up to two feet in height and the stems have leaf-bearing branches from the ground to the top of the plant. Current year's growth is up to six inches and is present over most of the plant.

III. Structural Design and Materials Selection

While defensible space is a critical component to a fire-adapted community, building design and material choices can have a major multiplier effect.

Ground level wooden decks - Wooden decks are discouraged. If built, and a homeowner cannot get under the deck to clean out accumulated materials each spring before fire season, then the deck shall be screened with 1/8 inch mesh screen to exclude both debris and fire brands. The use of pavers, flagstone, or some other non-flammable material is preferred.

Structural Roofing Material - Fire-resistant roofing material will be used in new construction.

Roof and gutter maintenance and cleaning will be performed annually.

Annual Spring Clean-up - The community subject to the HOA will conduct an annual spring clean-up event with emphasis on roof and gutter cleaning.

IV. Operational Issues and Standards

Evacuation Routes - Multiple egress/access routes for the development area will be planned to the extent feasible. Access/egress routes will be planned to avoid traffic bottlenecks such as narrow gates or other factors that would constrict traffic flow. Plan for dual, simultaneous use for evacuation and emergency responder access.

Communication and Information Plan for Residents - Clear, concise Emergency Action Plan instructions will be present in each residence and shall include, usable tools such as a "grab and go" checklist and evacuation route map for residents and visitors.

V. Wildlife Habitat Measures

Wildlife Corridor Area

An approximately 50-acre "Wildlife Corridor Area" will be retained along the western edge of the South Property where it borders Shevlin Park and the Tumalo Creek corridor. The Wildlife Corridor Area will be maintained in open space and managed to provide a north-south corridor for the movement of wildlife. This area will be managed by the HOA, with binding restrictions that preclude the construction of homes, buildings and fencing. Except as necessary for fire protection purposes, existing natural vegetation in the Wildlife Corridor Area will be preserved to provide cover or shelter and to facilitate the free movement of wildlife.

No Build Area

An approximately 30-acre "No Build Area" will be retained adjacent to the Wildlife Corridor Area. The No Build Area will be managed primarily for fire protection purposes but may also provide areas for the movement of wildlife. The No Build Area will be included within the boundaries of individual residential lots but buildings in this area will be prohibited.

Open Space Area

An approximately 7.33 acre "Open Space Area" will be retained in a natural draw located on the eastern edge of the South Property. The Open Space Area will be maintained in Open Space to provide for a trail connection to the east. No buildings

or structures (other than trail shelter, pavilion or other park structures) will be constructed within the Open Space Area.

Fencing Standards

New fences constructed as part of future development of the property will be designed to permit wildlife passage. Fence design should follow the standards and guidelines below unless an alternative fence design that provides equivalent wildlife passage is approved by the County after consultation with Oregon Department of Fish and Wildlife. Fences encompassing less than 10,000 square feet which surround or are adjacent to residences or structures are exempt from the fencing standards.

4. The distance between the ground and the bottom strand or board of the fence will be at least 15 inches.

5. The height of the fence will not exceed 48 inches above ground level.

6. Smooth wire and wooden fences that allow passage of wildlife are preferred. Woven wire fences are discouraged.

Development Plan Elements

- No developed recreational uses similar to golf courses, tennis courts, or swimming pools, are allowed within the proposed development.

- Ongoing vegetation management will be required within the designated Wildlife Corridor Area and Open Space Area, consistent with zone 3 wildlife standards.

Management Measures

The Wildlife Corridor Area and Open Space Area will be managed for the protection of mule deer and elk winter range. In general, existing natural vegetation will be protected, preserved and enhanced for the benefit of deer and elk winter range, which includes cover/shelter, food supply and free movement. The following additional habitat conservation measures (targeted at protecting and enhancing wildlife habitat) will apply in the Wildlife Corridor Area and Open Space Area:

- Continued application of the vegetation management standards described in the MB&G report. If more aggressive fuel reduction treatments become necessary within the Wildlife Corridor Area and Open Space Area, impacts to wildlife habitat will be re-assessed by a professional biologist, and possible modifications designed to lessen the impacts of the proposed measures will be considered prior to their implementation.

- Vegetation will be monitored and weeds/non-native plants will be controlled and eradicated when possible and feasible following the recommendations of the Deschutes County Noxious Weed Board or a similar body.

- With the exception of juniper trees used as visual screens in wildlife corridors, juniper trees will be removed when encountered within the open space areas during application of the fire fuels reduction practices outlined above to prevent competition with native shrub species that are preferred by deer.

- Live ponderosa pine trees will be preserved within the open space when doing so is consistent with the FHMP.

- Pockets of brush and tree cover will be maintained on steep slopes and within other areas, as appropriate. The distribution of brush pockets will be maintained to provide cover for deer and elk utilizing the open space and they may or may not be associated with tree cover. There is no brush pocket minimum size. The goals for distribution of brush pockets will be to locate them near outcrops throughout the development and to provide visual screening.

- Downed logs and snags will be retained for their wildlife value when feasible and compatible with safety needs. The density target for snags and downed logs will be two of each per acre, consistent with the goals of adjacent Shevlin Park.

- Fire wood cutting or vegetation alteration beyond that prescribed as management for increased habitat value and fuels management will not be permitted within the open space areas.

- To minimize the impact of domestic dogs on deer populations, leash laws will be posted and strictly enforced within the Wildlife Corridor Area and Open Space Area.

- Livestock will not be kept or allowed on the property.

- No high-intensity recreational uses will be allowed.

- The proposed development will restrict the use of off-road motor vehicles within the Wildlife Corridor Area and Open Space Area. Motorized vehicle use in the Wildlife Corridor Area and Open Space Area not be allowed except as needed for maintenance, property management and/or emergency fire vehicle access.

- Develop a program to educate residents and guests on the project's wildlife habitat maintenance goals, and how they can reduce impacts to deer using the area as winter range.

VI. Implementation, Monitoring, and Enforcement

Compliance with the Wildlife Habitat and Forest Health Management Plan will be achieved through provisions in the CC&Rs that provide authority for the Home Owners

Association (HOA) to assess fines or fees to bring property owners into compliance with the rules.

SECTION IV

Qualifications of Professionals

Singletree
ENTERPRISES, LLC
2660 NE Hwy 20 Ste 610 #222 • Bend, OR 97701 • 541-410-9686
john@singletreeconsulting.com • www.singletreeconsulting.com

Singletree Enterprises provides a variety of consulting services for application to wildland fire, forest resources management and community preparedness planning. John Jackson retired from the Oregon Department of Forestry as a Unit Forester after 28 years of progressive fire management and natural resource related assignments. At the time of his retirement, he was qualified as an Incident Commander (ICT2), Operations Section Chief (OSC1) and Agency Representative. Previous qualifications included Fire Behavior Analyst and Safety Officer and a variety of operations-related positions. John graduated from Oregon State University with B.S. degrees in Biological Science ('69) and Zoology ('70).

In addition to the current Rio Lobo and Coats projects, recent wildfire mitigation consulting services have been provided to a variety of Deschutes County large acreage projects including the Tanager Development.

John also currently provides project management services for a Crook County FEMA Pre-Disaster Mitigation grant for wildland-urban-interface fire-fuels vegetation treatment.

Wendy Wente, Ph.D.
Senior Ecologist / Wildlife Biologist / Associate

Wendy is an ecologist with extensive experience meeting the research design and implementation needs of public sector clients. Her field expertise includes wildlife surveys, habitat assessments and field research design. She has experience preparing environmental permitting documentation to demonstrate project compliance with the federal Endangered Species Act (ESA), National Environmental Policy Act (NEPA), and National Forest Management Act (NFMA), as well as State and Local regulations and codes. Prior to joining MB&G, Wendy worked as a wildlife biologist and post-doctoral researcher with the US Geological Survey out of the Forest and Rangeland Ecosystem Science Center in Corvallis, Oregon.

Education

Ph.D., Ecology, Evolution, and Animal Behavior, Indiana University, 2001

B.S., Zoology, Miami University, 1992

Years of Experience: 25

Certificates and Training

- Certified Senior Ecologist, The Ecological Society of America
- Oregon Department of Transportation Qualification Program for ESA Effects Determinations: Federal Aid Highway Programmatic (FAHP) Biological Opinion Training

Proficiencies

- Fish and Wildlife Surveys, Habitat Assessment, and Monitoring
- Population Monitoring, Study Design, and Implementation
- Habitat Restoration and Impact Mitigation
- Wildlife Ecology
- Upland and Wetland Ecosystems and Invasive Species
- Federal, State, and Local Environmental Permitting

Select Relevant Project Experience 2005 to Present – Mason, Bruce & Girard, Inc.

Project Manager, Walker-Macy, Residential Development, Deschutes County, Oregon. Prepared a Wildlife Habitat Management Plan for the Tree Farm development located west of the City of Bend, Oregon. The area was designated by Deschutes County as a Wildlife Area (WA) Combining Zone because mule deer are known to use a portion of the area as winter range. MB&G prepared the Wildlife Habitat Management Plan to demonstrate that the proposed development complies with the development restrictions set forth in the Deschutes County Code regarding WA Combining Zones. MB&G represented the development applicant at a land use hearing for Deschutes County.

Project Manager, Wildlife Biologist, Confidential Client, Wildlife Assessment and Wildlife Habitat Management Plan, private client, Deschutes County, Oregon. A private property, located west of the City of Bend, Oregon, was under consideration for inclusion in the City's Urban Growth Boundary. MB&G completed a deer and elk habitat assessment, prepared a technical report of our results, and reviewed and provided an opinion on the information prepared by the City regarding possible annexation of all or part of the property into the UGB. Upon annexation of a portion of the project into the Bend UGB, MB&G performed a field assessment and prepared a Wildlife Habitat Management Plan.

Wildlife Biologist, Empire Solar Project, Avangrid Renewables, Crook County, Oregon. Avangrid Renewables is proposing a new solar array in Crook County, Oregon. The 530-acre project study area coincides with big game winter range; ODFW Category II habitat. MB&G provided a wetland and waters field investigation, as well as a wildlife habitat assessment to determine habitat types, quality, and use by big game and other species. The results of the assessment were used to prepare a Wildlife Impact Mitigation Plan that describes the habitat, wildlife use, avoidance and minimization measures, and a mitigation proposal.

Project Manager, Wildlife Biologist, Confidential Client, Wildlife Support, private client, Deschutes County, Oregon. MB&G completed an initial review and prepared wildlife habitat

Professional Memberships & Service

- The Wildlife Society
- The Ecological Society of America
- National Speleological Society
- 2017-18 Vice President Elect of the Oregon Chapter of The Wildlife Society
- 2015-16 Board Member of the Oregon Chapter of The Wildlife Society
- 2014-17 National Council for Air and Stream Improvement (NCASI) Member Representative to Western Wildlife Program
- 2010 Volunteer Editor of the Intertwine Regional Conservation Strategy, Portland, Oregon
- 2004 Executive Board: Vice-President for Oregon, Society for Northwestern Vertebrate Biology

conservation recommendations for a proposed development on approximately 400 acres located west of Bend, Oregon. The review focused particularly on reducing impacts of the proposed development on deer migration corridors and use of the area. During a later project phase, MB&G completed a field assessment and prepared a Wildlife Habitat Management Plan for a proposed development on the property.

Project Manager, Wildlife Biologist, Confidential Client, Wildlife Assessment and Wildlife Habitat Management Plan, private client, Deschutes County, Oregon. MB&G completed a wildlife habitat assessment of the approximately 150-acre property, and prepared a Wildlife Habitat Management Plan (WHMP) in compliance with Deschutes County code for proposed development within a Wildlife Area Combining Zone. The WHMP focused particularly on reducing impacts of the proposed development on mule deer use of the area as winter range and migration corridors.

Project Manager and Lead Author, Caldera Pine Forest Destination Resort Development, Deschutes County, Oregon. Prepared a Habitat Evaluation Procedure (HEP) for a destination resort planned near Sunriver, Oregon to model existing and future wildlife habitat quality for species common to the area. The results of the evaluation were used by the client and ODFW to develop appropriate mitigation measures to offset potential impacts of the project on wildlife habitat. Species addressed included several common birds, mammals, amphibians, and reptiles.

Project Manager, Expert Witness, Department of Justice Red Eagle Fire Litigation, US Department of Justice, Blackfeet Tribal Lands, Montana. MB&G provided consulting and expert witness services regarding the effects of the Red Eagle Fire on wildlife habitat. MB&G completed a wildlife habitat assessment of the lands on the tribal forest within and adjacent to the fire perimeter in 2015. MB&G prepared a technical report of the results that was submitted by the DOJ to the Court, and prepared an expert witness rebuttal to the plaintiff's expert witness report regarding Habitat Equivalency Analysis. Dr. Wente testified at trial as an expert ecologist and wildlife biologist.

Project Manager, Confidential Client, Destination Resort Development, Klamath County, Oregon. Prepared a Wildlife Habitat Assessment, Wildlife Habitat Mitigation Assessment, and Habitat Evaluation Procedure (HEP) on private land located in south-central Oregon. The wildlife assessment and HEP were used to model existing and future wildlife habitat quality for species common to the area that would be occupied by a new destination resort proposed by the client. The results of the assessment and HEP were used by MB&G to develop appropriate mitigation measures to offset potential impacts of the project on wildlife habitat. Dr. Wente presented the results of the Habitat Assessment and the Mitigation Plan at a public hearing.

Project Manager, Confidential Client, Destination Resort Access and Deer Winter Range, Jefferson County, Oregon. Prepared a technical report on the potential effects of road upgrades and increased traffic on mule deer use of a Goal 5 designated deer winter range habitat that was bisected by the existing roads which would serve as an access route to a destination resort overlay area. Assessed the deer winter range habitat quality and patterns of use by deer. Identified potential mitigation opportunities for the anticipated effects of the access road upgrades on deer and deer winter range and identified locations for implementation of specific measures.

White, Cathy

From: Ed Keith <Ed.Keith@deschutes.org>
Sent: Monday, March 20, 2017 1:26 PM
To: White, Cathy
Subject: RE: Designated Wildland Urban Interface

Hi Cathy,
You pose a good question. The wildfire hazard map is linked to development standards (roofing specifically). In checking with CDD there hasn't been any specific development standard developed for a "designated WUI" beyond the broad policy statement in the Comprehensive Plan. The nearest I could offer would be the areas identified in the various Community Wildfire Protection Plans that have been developed for various areas of the County. These plans aren't written to be regulatory in nature, but they do define and identify WUI. Essentially the WUI follows almost all lands in the County with development so it tends to be a rather large area. You can find the various plans posted to the Project Wildfire website here: http://www.projectwildfire.org/?page_id=26

If you have further questions please let me know.

Ed Keith
Deschutes County Forester
61150 SE 27th Street
Bend, OR 97702
541-322-7117 – o
541-408-8862 – c

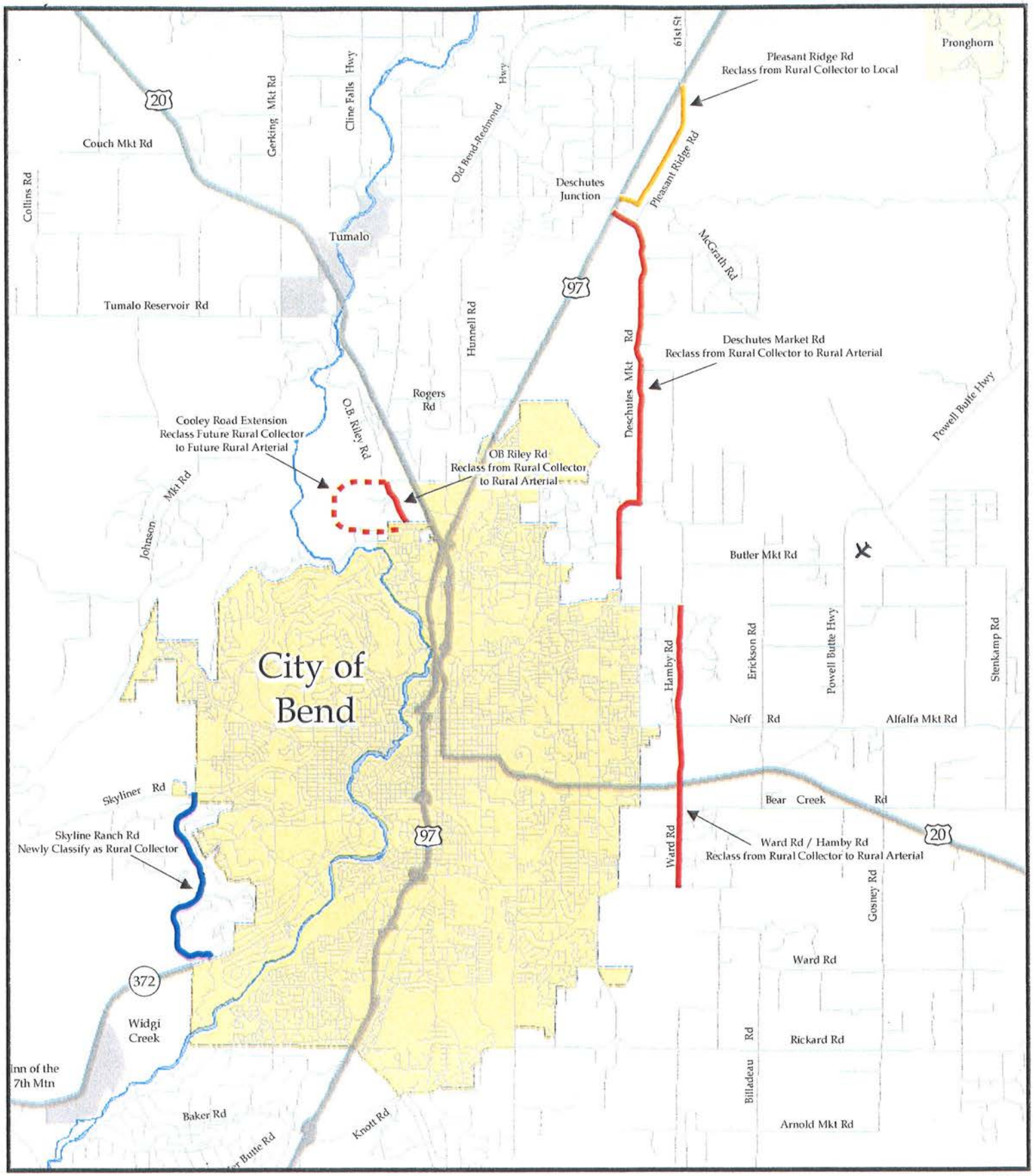
From: White, Cathy [mailto:CWhite@SCHWABE.com]
Sent: Tuesday, March 14, 2017 3:00 PM
To: Ed Keith
Subject: Designated Wildland Urban Interface

Hi Ed. In reviewing the County's Comprehensive Plan, Title 23, Chapter 2, Section 2.6, Wildlife, Policy 2.6.8, the policy refers to a "designated" WUI:

> *Policy 2.6.8 Balance protection of wildlife with wildland fire mitigation on private lands in the designated Wildland Urban Interface.*

I am trying to locate the document or map that shows the "designated" WUI in Deschutes County – is there such a map or document?

I notice the DIAL program has a zoning designation called "Wildfire Hazard" but that is not the same term as "Wildland Urban Interface."



Map Symbols

- Local Street
- Future Arterial
- Rural Collector
- Rural Arterial
- Principal Arterial - (State Highway)
- Local Street
- Lakes & Rivers
- Unincorporated Community
- City Limit

Bend Area County Roads

Functional Reclassification

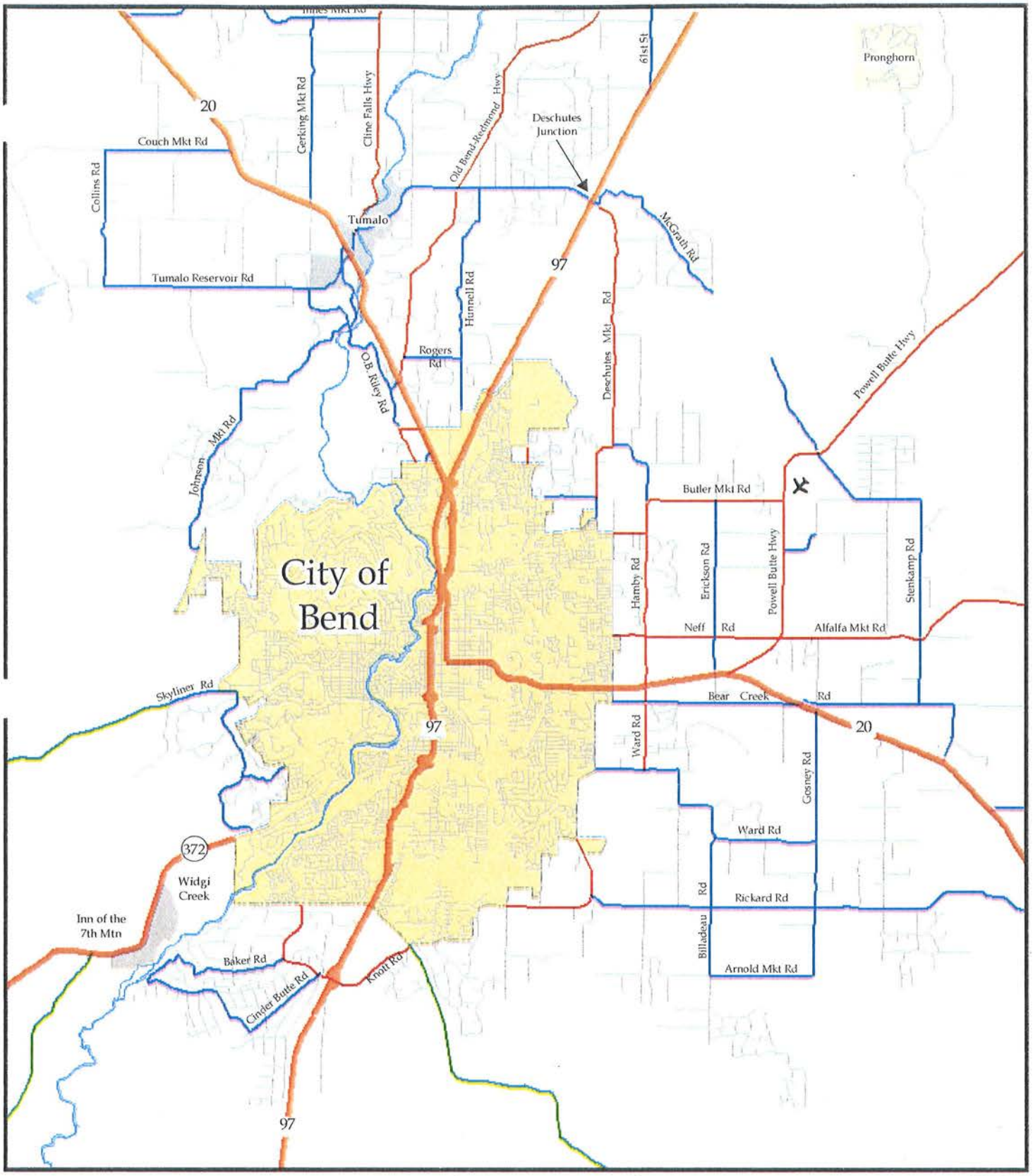
F5.3.F13

Exhibit 14
Page 1 of 1

0 0.8 1.6 3.2 Miles

1" = 1.6 Miles

June 30, 2011



Map Symbols

- County Boundary
- Urban Growth Boundary
- Unincorporated Community
- Lakes & Rivers
- Principal Arterial - (State Highway)
- Rural Arterial
- Rural Collector
- Forest Highway
- Local Street

Bend Area Roads

Existing Classifications

F2.2.F4

Exhibit 15
Page 1 of 1

0 0.5 1 2 3 Miles

1" = 1.9 Miles

June 30, 2011

REGISTERED PROFESSIONAL ENGINEER
79004PE
Miranda Wells
OREGON
JUNE 2016
MIRANDA WELLS

Transportation Impact Study for a Zone Change Application

Deschutes County, Oregon

Date:
December 19, 2017

Prepared for:
Tia Lewis, Schwabe Williamson & Wyatt
Myles Conway, Marten Law

Prepared by:
Miranda Wells, PE
Todd Mobley, PE

LANCASTER ENGINEERING

321 SW 4th Ave., Suite 400 | Portland, OR 97204 | 503.248.0313 | lancasterengineering.com

Table of Contents

Executive Summary 1

Introduction 2

Development Description 2

Supporting Transportation Facilities 3
- Existing Transportation System 3
- Planned Roadways & Street Connections 5
- Property Access 5

Trip Generation 6
- Trip Distribution 8

Traffic Volumes 10

Operations Analysis 13

Transportation Planning Rule 14

Recommendations/Mitigation Measures 16

Appendix 17

Table of Figures

Figure 1 - Study Area and Property Locations 4
Figure 2 – Proposed Developments Near Study Properties 5
Figure 3 – Trip Distribution and Assignment 9
Figure 4 – Existing and Future 2030 Background Traffic Volumes 11
Figure 5 – Future 2030 Background with Rezone Traffic Volumes 12

Table of Tables

Table 1 - Summary of Study-Area Roadways 3
Table 2 - Trip Generation for Proposed Rezone on South Property 6
Table 3 - Trip Generation for Proposed Rezone on North Property 7
Table 4 - Evening Peak Hour Operational Results 14

Executive Summary

1. Two separate properties, both outside of but adjacent to the City of Bend's Urban Growth Boundary (UGB) are proposed for a change in zoning. In general, the two properties comprise the balance of land between the City of Bend and Tumalo Creek.
2. The South Property is 307 acres and is zoned entirely UAR-10 (Urban Area Reserve – 10). The North Property is 410 acres in size and is currently zoned with a mix of UAR-10 and SM (Surface Mining). Both properties are proposed for a zone that will allow rural residential development with a density of 2.5 acres per dwelling unit.
3. The trip generation calculations show that the rezone and subsequent development is anticipated to result in a net increase of 92 evening peak hour and 876 average weekday trips for the South Property and 78 evening peak hour and 850 average weekday trips for the North Property.
4. Capacity analyses shows minimal impact from the rezone of the two properties and all intersections are anticipated to operate within jurisdicational guidelines for all evaluated intersections.
5. Both properties are surrounded by major roads that have a rural design, but are quickly becoming more urbanized. These roads currently have limited sidewalks, bicycle lanes, and transit infrastructure. It is recommended that through more detailed development of these properties that these infrastructure improvements for these modes of travel be considered and coordinated during the development phase of these properties. However, no development is occurring and nothing is recommended at the time of the rezone.
6. If not improved at development stage via adjacent property, NW McClain Drive will need to be developed to local road standards as part of the South Property development.

Introduction

This Transportation Impact Study (TIS) details the potential impacts from the proposed change in zoning for a total of 717 acres that are located between the City of Bend and Tumalo Creek in Deschutes County. The 717 acres is comprised of two separate properties that were both part of the original proposal for expansion of the City of Bend's Urban Growth Boundary (UGB), but were not part of the revised proposal that was recently approved and acknowledged.

Development under the proposed zoning will include rural-scale housing, land dedicated to wildlife reserves, and land for infrastructure improvements (i.e., roads and utilities). More details on the rezone for the properties are provided in the following sections. This TIS is compliant with Deschutes County's guidelines in County Code section 18.116.310.[1]

It should be noted that the analysis conducted in this report has been done in coordination with the current Westside UGB efforts. Due to timeline of completion of that effort, there may be some variance in the final analysis in that report, however, the required mitigations determined as part of that project will include these properties.

Development Description

The total 717 acres includes two separate properties that are owned by three different owners. As shown in Figure 1, the South Property is a total of 307 acres and the North Property is a total of 410 acres. The intended development that would occur in conjunction with the rezone is rural-scale housing with a density of 2.5 acres per home.

The South Property is located south of NW Shevlin Park Road, west of the Central Oregon Community College campus and much of the property is abutted on the north-west side by Shevlin Park. The property is currently zoned Urban Area Reserve-10 (UAR-10)[2]. The proposed zoning would allow a maximum of 122 homes on this property.

The North Property is located north of NW Shevlin Park Road and west of Central Oregon Community College with half of the property abutted on the northwest side by Shevlin Park and abutted on the north-east by the Deschutes river. The current zoning for this property is and Surface Mining (SM) for 297 acres with the remaining acreage being UAR-10 and 32 acres owned by the Bend/La-Pine School District future elementary school. The proposed zoning would allow a maximum of 164 homes on this property.

[1] https://weblink.deschutes.org/public/DocView.aspx?id=87423&searchid=5e1503d4-f86b-46c4-9ec6-7d85f4d0bc99&dbid=0 The subject properties are regulated by Title 19 but the County regulations governing traffic studies are outlined in Title 18

[2] http://www.bendoregon.gov/home/showdocument?id=5222

Supporting Transportation Facilities

The two properties being evaluated are accessed primarily by the arterials of:

- NW Shevlin Park Road
- NW Mount Washington Drive
- NW Skyliners Road

Direct access to the properties are provided in multiple locations via local roads and major collectors. These local roads and connectors are summarized with the arterial roadways that are anticipated to carry the majority of the traffic from the development of these two properties are shown in Figure 1 and are summarized in Table 1.

Table 1 - Summary of Study-Area Roadways

Roadway	Classification	Speed (mph)	Sidewalks	Bicycle Facilities
NW Shevlin Park Road	Minor Arterial	45	Portions	Narrow Shoulders
NW Mount Washington Drive	Minor Arterial	35	Portions	Narrow Shoulders
NW Skyliners Road	Minor Arterial	40	Multi-Use Path	Multi-Use Path
Regency Street	Proposed Major Collector	TBD	TBD	TBD
NW Crosby Drive	Proposed Major Collector	TBD	TBD	TBD
NW McClain Drive	Local Road	25	No	No
NW Park Commons Drive	Local Road	25	Yes	Shared
NW Skyline Ranch Road	Proposed Major Collector	TBD	TBD	TBD

Existing Transportation System

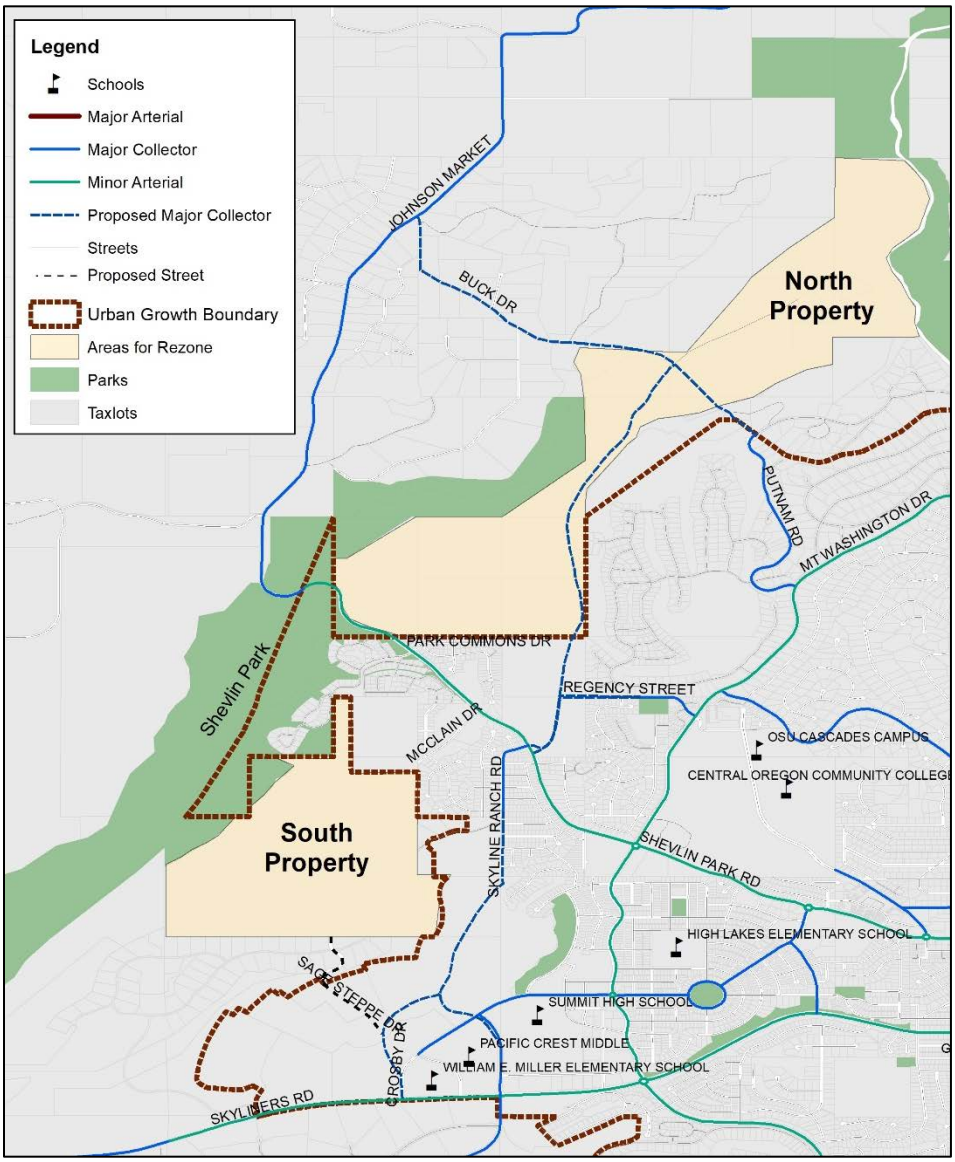
NW Shevlin Park Road is a two-lane minor arterial with a speed limit of 45 miles per hour (mph). The road has a rural design with limited sidewalks and narrow shoulders that are used by bicycles. There are no transit facilities along the roadway near the project property. West of the City NW Shevlin Park Road becomes Johnson Road which provides alternate access the west areas of Bend from Highway 20.

NW Mount Washington Drive is a two-lane minor arterial with a speed limit of 35 mph. There are sidewalks along portions, but generally only exist on one-side of the roadway. There are shoulders along the roadway that are used by bicycles. NW Mount Washington Drive provides a connection from north Bend to south Bend on the west side of the City with no stop signs or signals and a few roundabouts at some of the major intersections.

NW Skyliners Road is a two-lane minor arterial with a speed limit of 40 mph. There is a multi-use path (West Bend Trail) along the roadway that is used by pedestrians and bicyclists. There are no transit facilities along the roadway near the project property.

NW Regency Street is a local street and fully built out east of NW Mount Washington Drive. A portion of the roadway is built out west of NW Mount Washington Drive, that portion offers the start of sidewalks and bike lanes and two-lanes. It will be a major collector west of NW Mount Washington Drive when fully built out.

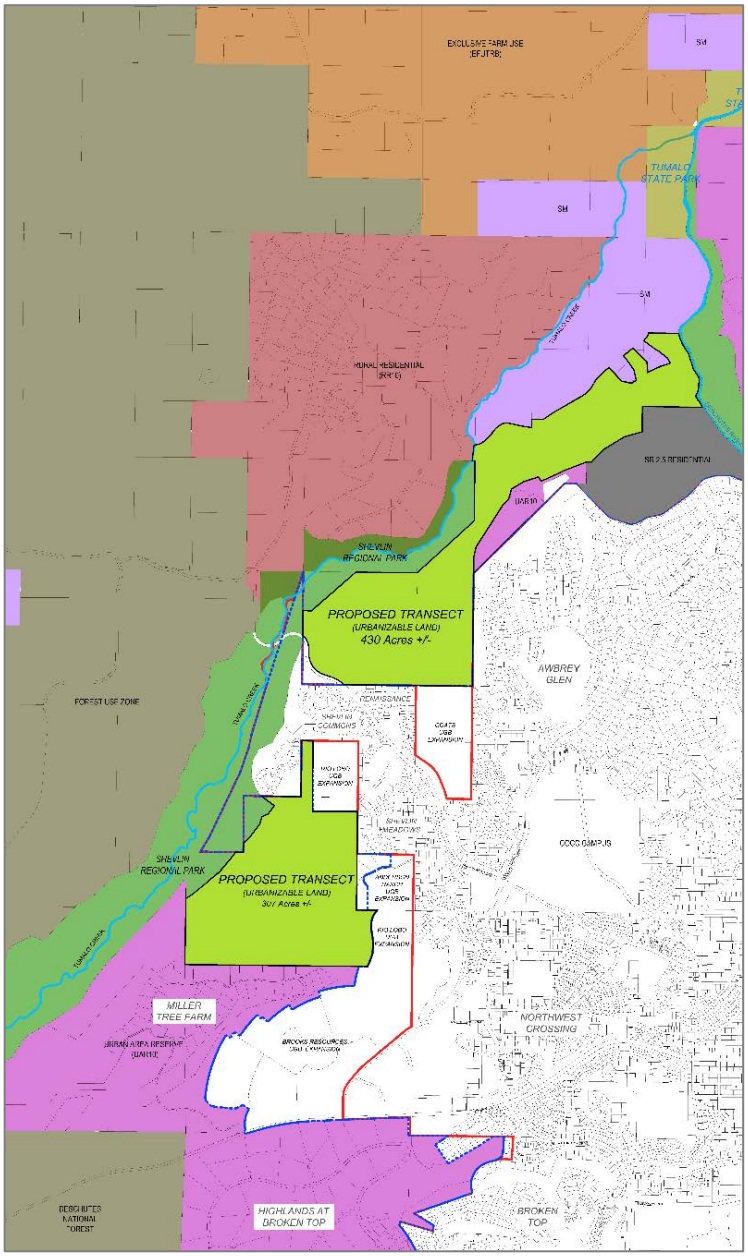
Figure 1 - Study Area and Property Locations



Planned Roadways & Street Connections

The guidelines associated with a zone change application require evaluation to the planning horizon year, for Deschutes County this is 2030 and for the City of Bend it is 2028. It is expected that additional roadways outlined in the County and City Transportation System Plans will be built by the planning horizon year. The specific proposed roadways that are of importance to this study are NW Skyline Ranch Road, Regency Street, and Sage Steppe Drive. The development of SW Skyline Ranch Road and Sage Steppe Drive requires coordination between developers of the surrounding properties. Much of this coordination has happened or is happening at the time of this report.

Figure 2 – Proposed Developments Near Study Properties



The Tumalo Creek Road extension shown on County Transportation maps connecting Buck Road and Putnam Drive through the North Property has no funding or development plans outlined. It was initially provided at the time that the two properties being evaluated were anticipated to be brought into the Urban Growth Boundary (UGB) expansion and more traffic would be generated throughout this area. It was not evaluated in detail in this report, but will be considered in more detail in later development stages of the properties.

Property Access

Topography limits access to the South Property to and from the east. As such, access is proposed via a connection to the south and one to the north. The southern connection will be to Sage Steppe Drive, which is a short public street that is part of the adjacent Miller Tree Farm (see Figure 2) subdivision that was recently approved for rural-scale residential development in Deschutes County. Sage Steppe Drive will then eventually connect to Skyliners Road via NW Crosby Drive through Brooks Resources property to the south, which was recently brought

into the City of Bend UGB. Access to the north will be via McClain Drive, which provides a connection to NW Shevlin Park Road.

Access to the North Property is assumed to be provided via NW Skyline Ranch Road and local streets to NW Park Commons Drive. NW Skyline Ranch Road will provide connections to arterial roadways via direct connection with NW Shevlin Park Road and via Regency Street to NW Mount Washington Drive. Tumalo Creek Drive extension was not included as an access point due to the unknown timing for construction and to provide a more conservative analysis for property access points to the North Property.

NW Skyline Ranch Road is expected to be constructed as part of development of properties that were recently brought into the City of Bend UGB. Development within the North Property is anticipated to extend Skyline Ranch Road through the property.

Trip Generation

To determine the transportation impacts associated with the proposed change in zoning, the reasonable worst-case trip generation of potential development under both the existing and proposed zoning districts were examined. It is worth noting that both these properties preliminary design is anticipated to be fewer lots than identified in this report.

To develop trip generation for potential development under the existing and proposed zoning districts, the residential densities for the South Property as shown in Table 2 were used. To calculate the anticipated residential trips, the *ITE Trip Generation Manual*[3] was utilized. Specifically, land-use code 210, *Single-Family Detached Housing*.

The morning peak hour is projected to see an increase of 69 trips during the morning peak hour, 92 trips during the evening peak hour, and 876 trips on a typical weekday as a result of the rezone of the South Property. The net increase in trip generation for the South Property is shown in Table 2.

Table 2 - Trip Generation for Proposed Rezone on South Property

		ITE	AM Peak Hour			PM Peak Hour			Weekday
	Size	Code	In	Out	Total	In	Out	Total	Total
Reasonable Worst-Case, Existing Zoning									
Single-Family Homes	30 Units	210	6	17	23	19	11	30	286
Reasonable Worst-Case, Proposed Zoning									
Single-Family Homes	122 Units	210	23	69	92	77	45	122	1,162
		Net Increase in Trips	17	52	69	58	34	92	876

[3] Institute of Transportation Engineers (ITE), *TRIP GENERATION MANUAL*, 9th Edition, 2012.

There is currently no ITE trip generation rate for surface mining. To estimate the trip generation potential of the North Property's SM-zoned land, similar surface mines around Oregon were evaluated. Trip generation rates for the peak hours were gathered for a few properties around Oregon and are as follows:

- Rogue Aggregates in Jackson County = 0.084 trips per acre[4]
- Baker Rock in Yamhill County = 0.056 trips per acre[5]
- Lower Bridge in Deschutes county = 0.041 trips per acre[6]

The Lower Bridge study has an approved trip generation rate by Deschutes County, but is a rate that was reflective of a period of time with lower demand for aggregates. However, Rogue Aggregates represents a surface mine that produces much of the aggregate for a substantial portion of Jackson County. As such, the median rate of 0.056 trips per acre was used as a trip generation rate for the North Property. To calculate the anticipated trip generation for the school. ITS Land Use Code 520 – Elementary School was used.

The morning peak hour is projected to see no increase during the morning peak hour as a result of the rezone. The evening peak hour is anticipated to see an additional 78 trips and an additional 340 trips on a typical weekday as a result of the rezone of the North Property. The anticipated increase in trip generation is summarized in Table 3.

Table 3 - Trip Generation for Proposed Rezone on North Property

		ITE	AM Peak Hour			PM Peak Hour			Weekday
	Size	Code	In	Out	Total	In	Out	Total	Total
Reasonable Worst-Case, Existing Zoning									
Single-Family Homes	10 Units	210	2	6	8	6	4	10	96
Surface Mining	297 Acres	-	8	8	16	8	8	16	100
Elementary School	400 Students	520	99	81	180	29	31	60	516
		Subtotals	109	95	204	43	43	86	712
Reasonable Worst-Case, Proposed Zoning									
Single-Family Homes	164 Units	210	31	92	123	103	61	164	1,562
		Net Increase in Trips	-78	-3	-81	60	18	78	850

SM = Surface Mining (Not an ITE Code)

[4] Rogue Aggregates Traffic Access Investigation, Lancaster Engineering, 2007
[5] Baker Rock Traffic Impact Study, Lancaster Engineering, 2008
[6] Lower Bridge Way Rezone, Kittelson & Associates, Inc., December 19, 2007

Trip Distribution

As previously discussed, the evaluation in this report is required to be conducted at a planning horizon year. As such, the trip distribution and assignment consider both the existing and future roadways near the property. The proposed roadway network assumed for this project was developed from the City of Bend's Transportation System Plan (TSP)[7]. It is anticipated that the designs of the roadway will not be exactly what is outlined in the TSP, but will have the same general connections. The summary of this trip distribution for the two properties is shown in Figure 3.

Directional distribution of property trips to and from the proposed development were estimated based on locations of likely destinations and major transportation facilities in the property vicinity. It is anticipated that the majority of trips will be heading east towards the centre of town and major roadways that connect to the region (i.e., US 97 and Highway 20).

The anticipated trips are distributed between the two access points for the South Property and the three access points for the North Property as previously discussed. The distribution between the access points are based on shortest route to the destination.

Through coordination with Deschutes County, the morning peak hour was not evaluated as there is minimal to no increase in trip generation as a result of the rezone. Additionally, traffic along the supporting roadways is less during the morning peak hour. The evening peak hour is anticipated to capture the capacity related mitigations that may be required as a result of the rezone of the properties.

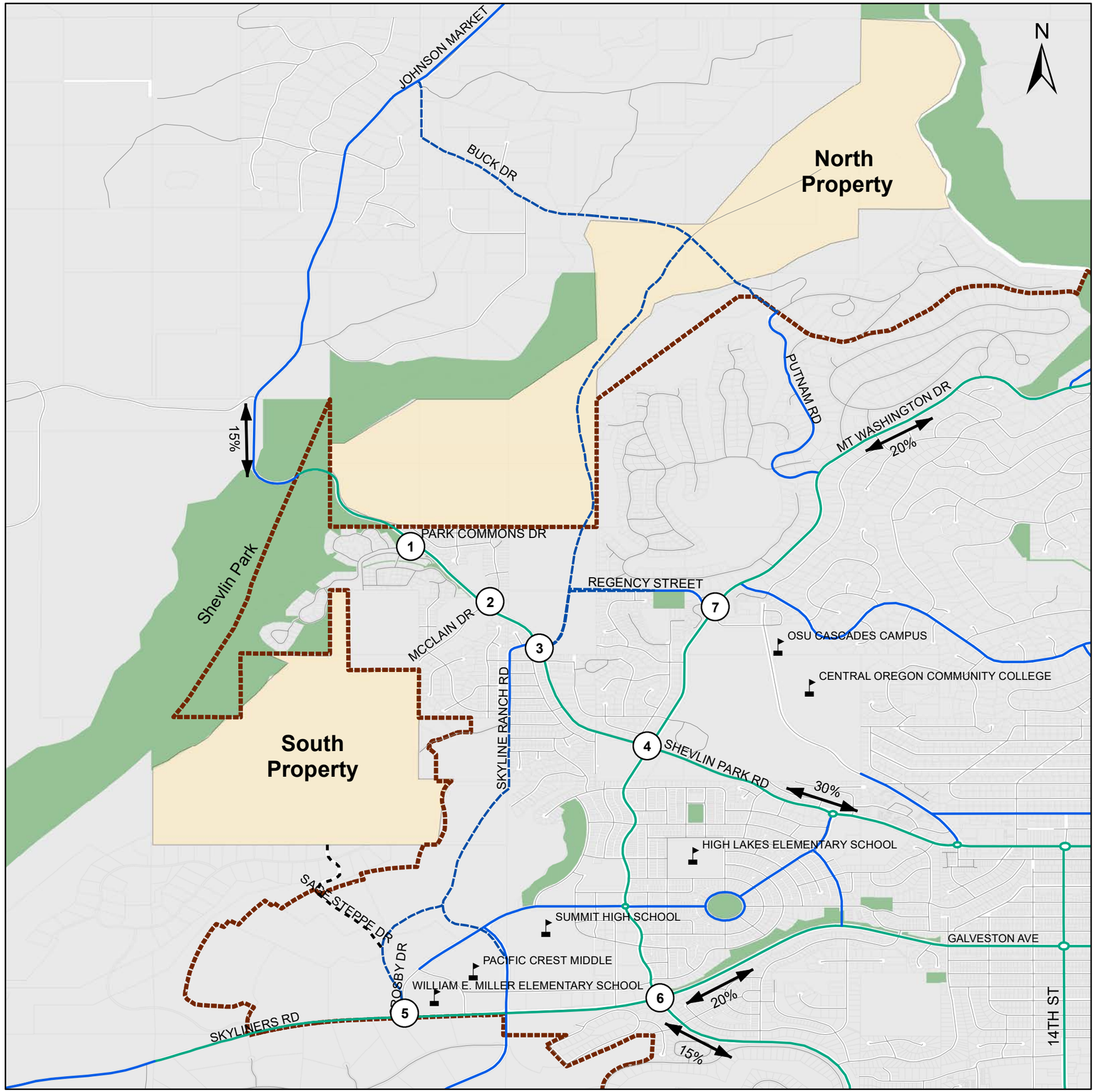
In compliance with Deschutes County and City of Bend guidelines, trip assignment was evaluated at major intersections and access points within one-mile of the property access points to determine which intersections were required for analysis based on the anticipated increase of trips (see Figure 3 for evening peak hour trip assignment):

1. Park Commons Drive at NW Shevlin Park Road (access point for North Property)
2. McClain Drive at NW Shevlin Park Road (access point for South Property)
3. NW Skyline Ranch Road at NW Mount Washington Drive
4. NW Mount Washington Drive at NW Shevlin Park Road
5. NW Crosby Drive at NW Skyliners Road
6. NW Mount Washington Drive at NW Skyliners Road
7. NW Mount Washington Drive at Regency Street

Deschutes County guidelines that require intersections with more than 20 trips being added during a peak hour and access points to be evaluated for potential operational impacts. Based on this, NW Mount Washington Drive at Regency Street is not required for analysis, but all other intersections are included.

[7] Shapefile provided by Deschutes County GIS Department in February 2017

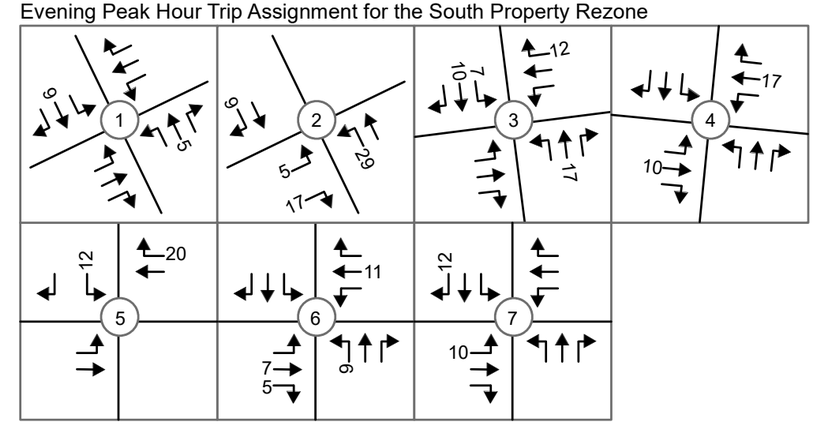
Figure 3 - Trip Distribution and Assignment



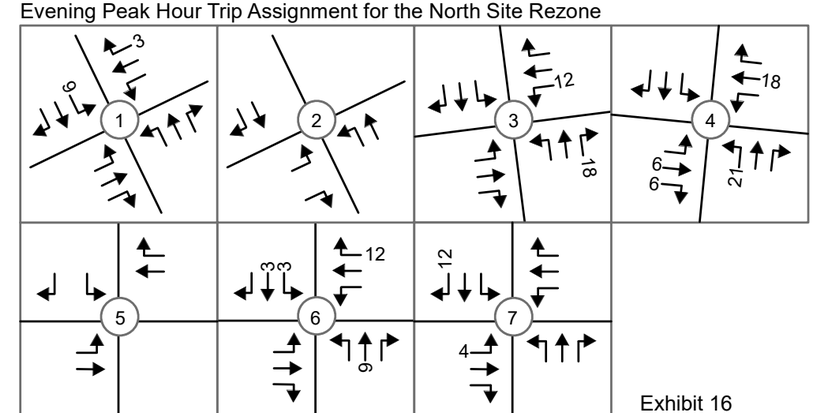
Legend

- Schools
- Major Arterial
- Major Collector
- Minor Arterial
- Proposed Major Collector
- Streets
- Proposed Street
- Study Intersections
- Percent of Project Trips (XX%)
- Urban Growth Boundary
- Areas for Rezone
- Parks
- Taxlots

Evening Peak Hour Trip Assignment for the South Property Rezone



Evening Peak Hour Trip Assignment for the North Site Rezone



Traffic Volumes

Existing traffic volumes were collected in April 2017.[8] The peak hour of each intersection was used to provide a conservative analysis. The guideline for determining a future analysis year at to use the planning horizon year for the governing jurisdiction. The Deschutes County Transportation System Plan[9] has a horizon year of 2030.

While the property is within Deschutes County, the roadways that are primarily used to access these properties are owned by the City of Bend. As such the horizon year of 2030 was discussed with City staff.[10] The current planning horizon for the city has most recently been 2028 for the Urban Growth Boundary Remand. As such, the 2030 analysis is more conservative than their current planning horizon and meets City of Bend guidelines for this type of application.

To obtain the 2030 volumes, the Bend Metropolitan Planning Organization (MPO) travel demand models for 2028 urban growth boundary analysis and the current 2040 models were evaluated to obtain a growth rate. The 2028 model showed negative growth rates in this area and the 2040 model is still in early stages and needs refinement[11] specifically in the area near the proposed rezone properties. As such, neither of these models could be used to develop turn movement counts using NCHRP methodology or to capture an appropriate growth rate to use for this project. As a result, a conservative long-term grown rate of 1.5% was used to obtain the future 2030 background traffic volumes. It is anticipated that as the models are refined, they may be used in future stages of these developments and that traffic results may vary from this documentation when these models are further refined.

Both the existing counts and the future 2030 background traffic volumes for the evening peak hour are shown in Figure 4. The trips as shown were added to the background traffic volumes to obtain the future traffic volumes with the rezone during the evening peak hour. These volumes are shown in Figure 5.

---

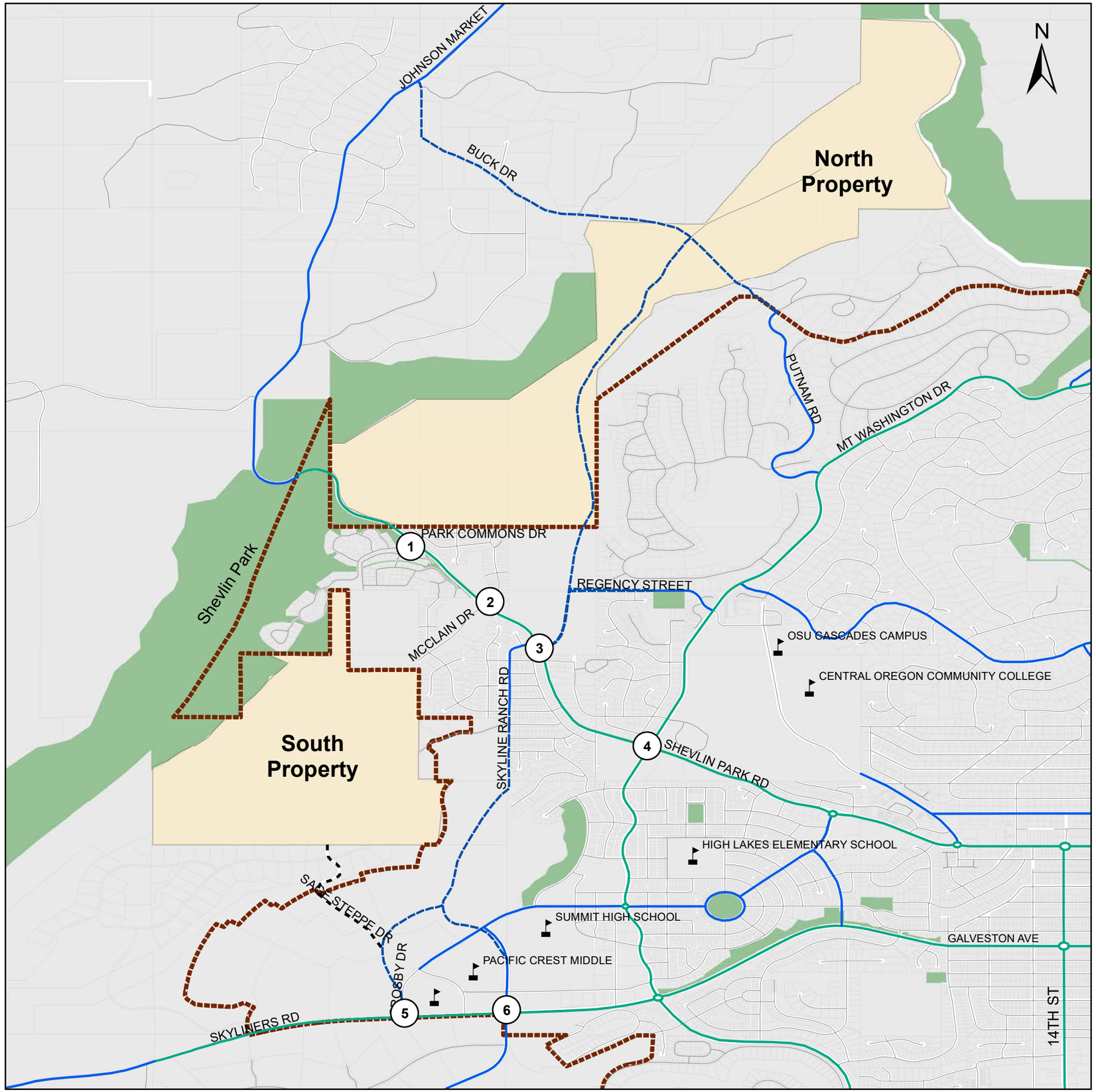
[8] NW Shevlin Park Road at NW Skyline Ranch Road was obtained from City of Bend's online database and had a 2% growth rate applied to obtain existing 2017 traffic volumes at this intersection

[9] https://www.deschutes.org/sites/default/files/fileattachments/community_development/page/730/cp-appc.pdf

[10] Meeting with City staff occurred on May 5, 2017 and included Ryan Oster, Brian Rankin, and Nick Arnis

[11] Westside traffic volumes were not accurate along NW Shevlin Park Road in the project property, error was noted and sent to Tyler Deke, on-going conversations are occurring to mitigate this for the development phase of this property.

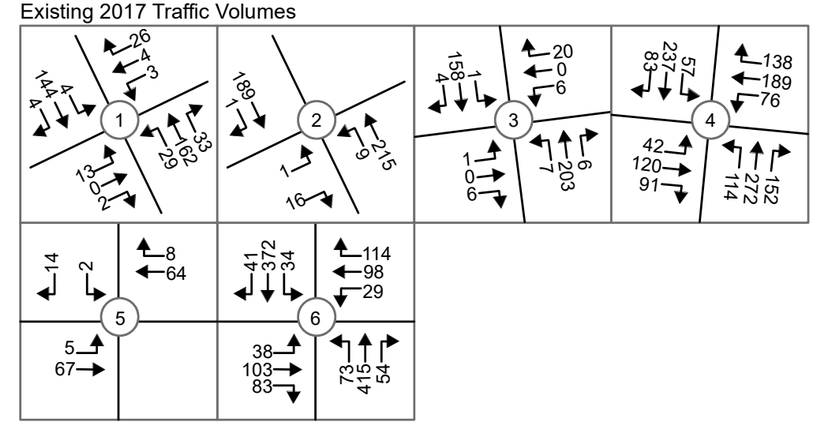
Figure 4 - Existing and 2030 Traffic Volumes



Legend

- Schools
- Major Arterial
- Major Collector
- Minor Arterial
- Proposed Major Collector
- Streets
- Proposed Street
- Study Intersections
- Urban Growth Boundary
- Areas for Rezone
- Parks
- Taxlots

Existing 2017 Traffic Volumes



Future 2030 Traffic Volumes

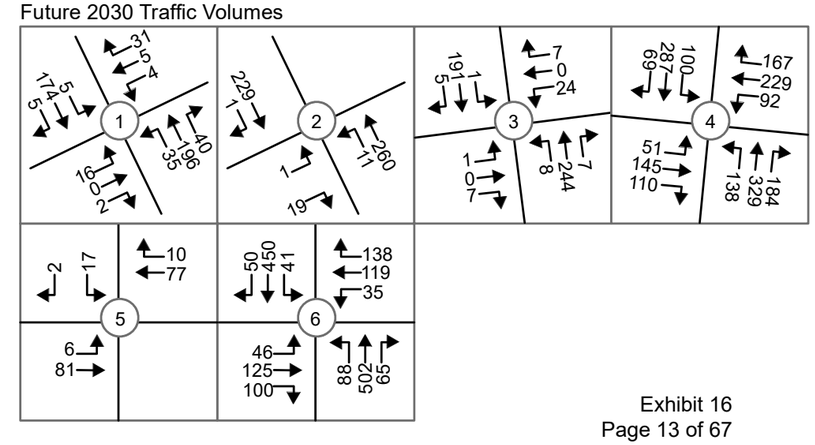
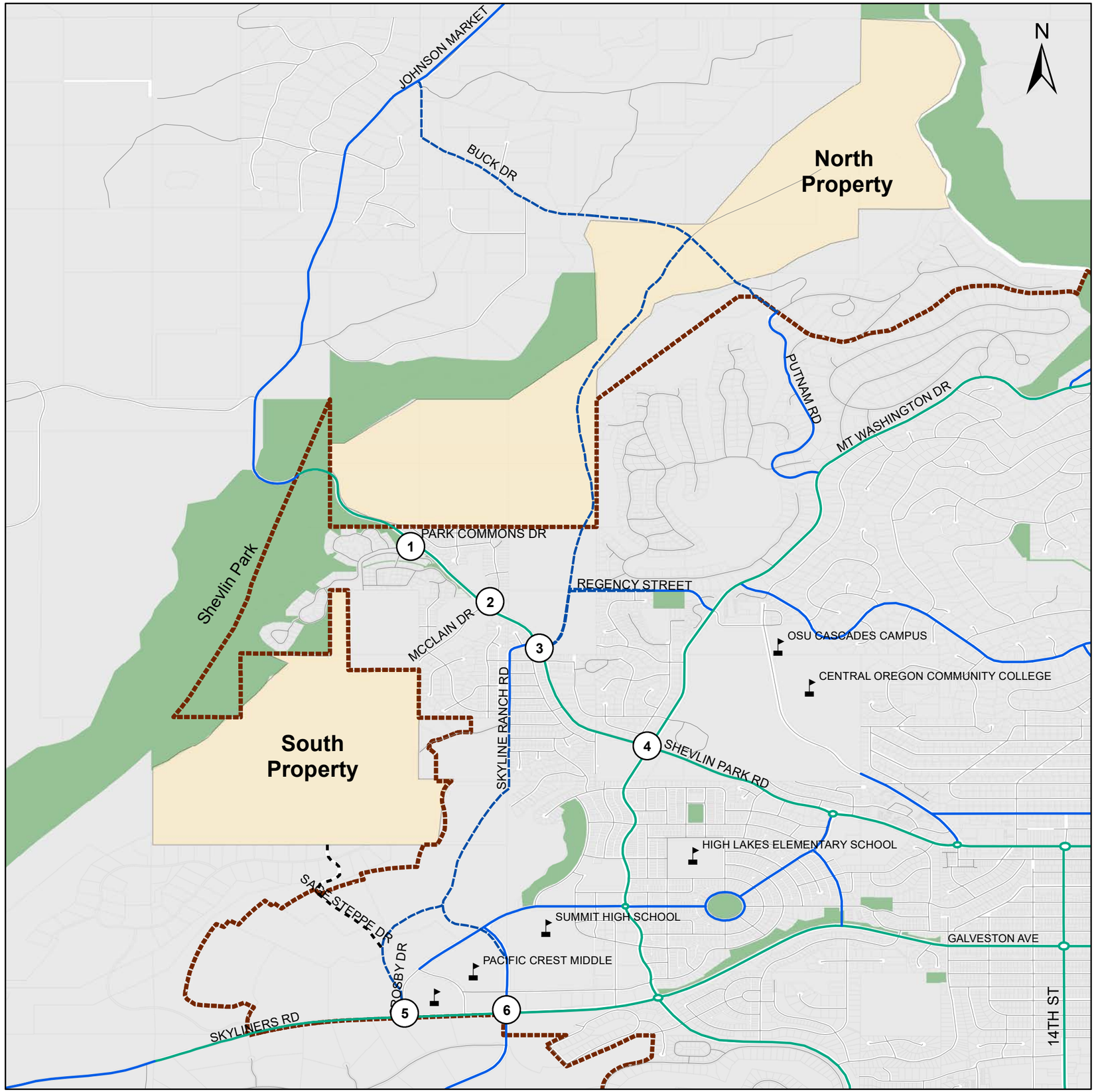


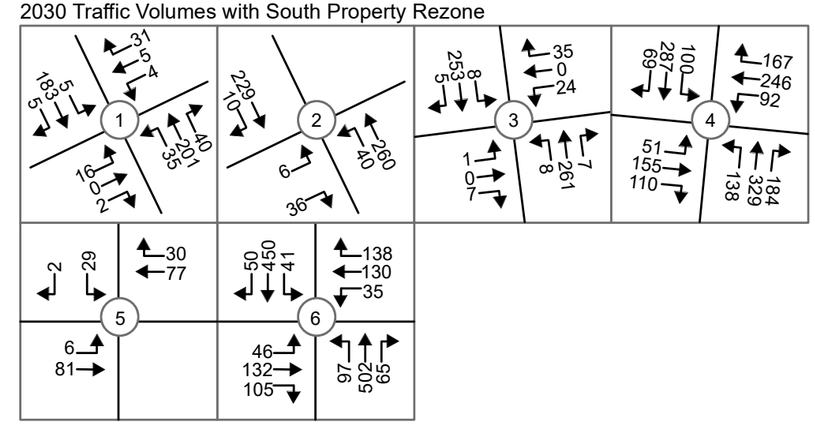
Figure 5 - Future 2030 Background with Rezone Traffic Volumes



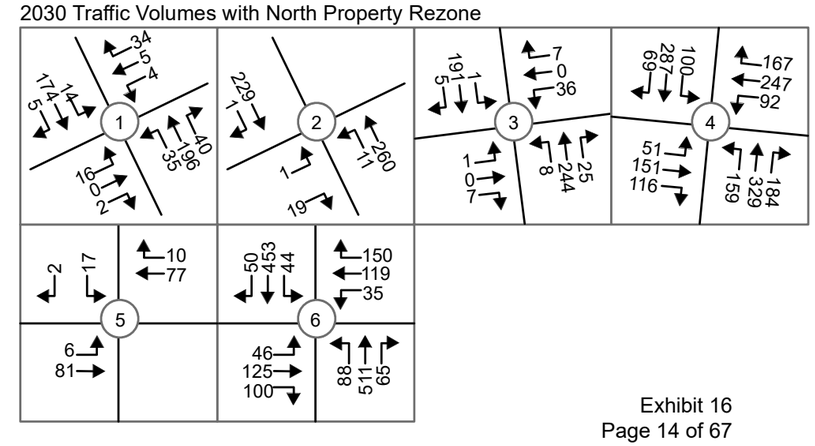
Legend

- Schools
- Major Arterial
- Major Collector
- Minor Arterial
- Proposed Major Collector
- Streets
- Proposed Street
- Study Intersections
- Urban Growth Boundary
- Areas for Rezone
- Parks
- Taxlots

2030 Traffic Volumes with South Property Rezone



2030 Traffic Volumes with North Property Rezone



Operations Analysis

To determine the capacity and level-of-service at the study intersection, a capacity analysis was conducted. The analysis utilized methodologies in the *Highway Capacity Manual (HCM)*[12]. Delay, Level-of-service (LOS), and v/c were all captured to gain a detailed understanding of anticipated operations.

Deschutes County guidelines outline operational standards as a maximum of LOS of D during the evening peak hour. While the zone change is in Deschutes County, all but one of the study intersections are all in City of Bend jurisdiction. The City of Bend's Development Code states that significant impacts for signalized intersections or roundabouts occur when v/c ratios are greater than or equal to 1.0. A ratio of less than 1.0 indicates that the intersection is operating within capacity.

The City of Bend does not typically require analysis for local roads intersections, however, to better understand operations to and from these properties and help ensure adequate operations on streets these intersections were evaluated using the guidelines for major intersections: "Average delay for the critical lane group for approaches of an arterial or collector to another arterial or collector with greater than 100 peak hour trips is greater than or equal to 50 seconds during the peak hour."

Based on these operational guidelines, all intersections are anticipated to operate within jurisdictional guidelines (see Table 4). It is worth noting that the intersection of NW Mount Washington at NW Shevlin Park Road does currently meet jurisdictional guidelines, but is starting to reach the thresholds for roundabouts that result in long queues that are hard to recover from (typically occurring at v/c greater than 0.85) and should be considered for improvements with the coordination of the surrounding developments in coordination with the Master Plan documents being conducted as part of annexation. However, no mitigations are required as part of this rezone.

[12] Transportation Research Board, *Highway Capacity Manual,* 5th Edition, 2010.

Table 4 - Evening Peak Hour Operational Results

	South Property			North Property		
	LOS	Delay (s)	v/c	LOS	Delay	v/c
Park Commons Drive at NW Shevlin Park Road (Two-Way Stop Controlled)						
Existing	B	12	0.03	B	12	0.03
Background 2030	B	14	0.04	B	14	0.04
Background + Rezone 2030	B	14	0.06	B	14	0.07
McClain Drive at NW Shevlin Park Road (Two-Way Stop Controlled)						
Existing	A	10	0.02	A	10	0.02
Background 2030	A	10	0.03	A	10	0.03
Background + Rezone 2030	B	11	0.06	A	10	0.03
***NW Skyline Ranch Road at NE Shevlin Park Road* (Future Roundabout)**						
Existing	-	-	-	-	-	-
Background 2030	A	6	0.26	A	6	0.26
Background + Rezone 2030	A	6	0.27	A	6	0.27
NW Mount Washington at NW Shevlin Park Road (Roundabout)						
Existing	C	17	0.64	C	17	0.64
Background 2030	D	31	0.86	D	31	0.86
Background + Rezone 2030	D	34	0.87	D	34	0.87
NW Skyliners Road at NW Crosby Drive (Two-Way Stop Controlled)						
Existing	A	10	0.03	A	10	0.03
Background 2030	A	10	0.03	A	10	0.03
Background + Rezone 2030	B	10	0.05	A	10	0.03
NW Skyliners Road at NW Mountain Washington (Roundabout)						
Existing	B	13	0.62	B	13	0.62
Background 2030	C	21	0.78	C	21	0.78
Background + Rezone 2030	C	22	0.80	C	22	0.79

Two-way Stop Controlled Intersections – based on worst movement
Roundabouts – based on worst movement

Transportation Planning Rule

The Transportation Planning Rule (TPR) is in place to ensure that the transportation system is capable of supporting the potential increase in traffic intensity that could result from changes to adopted plans and land use regulations. The applicable portions of the TPR are quoted in *italics* below, with responses directly following.

660-012-0060

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

The proposed rezone will not result in the need for additional changes to the functional classification of existing or planned transportation facilities. Accordingly, this section is not triggered.

(b) Change standards implementing a functional classification system; or

The proposed rezone change will not change any standards implementing the functional classification system. Accordingly, this section is also not triggered.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

Having determined that the proposed zone change does impact intersections beyond jurisdictional standards, planning efforts related to the Transportation Planning Rule are not applied, OAR 660.012.0060 Sub-section 9 and no mitigation is required.

Recommendations/Mitigation Measures

Based on operational analysis of the study area, it was determined that the transportation related impacts to the network related to the rezone are anticipated to generally be minimal and no operational mitigations are recommended associated with the rezone.

Both properties are surrounded by major roads that have a rural design, but are quickly becoming more urbanized. These roads currently have limited sidewalks, bicycle lanes, and transit infrastructure. It is recommended that through more detailed development of these properties that infrastructure improvements for these modes of travel be considered and coordinated with the development plans. However, nothing is recommended at the time of the rezone.

The South Property's major access is via NW McClain Drive which does not meet current standards for a local roadway. It is recommended that through the development process of this property that NW McClain Drive be developed to local standards. It is worth noting that the owner of this property also owns another property that will use this roadway as well. If that project is developed first, the roadway will be developed with that project and no more improvements will be needed.

Appendix

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	*NW Mount Washington Dr*
E/W street:	*NW Putnam Rd*
City, State	Bend OR
Study ID #	
Location	44.083485 - -121.345781
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	05:00:00 PM
PHF (15-Min Int)	0.78

Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
51	383	0	0	0	267	29	0	19	0	43	0	0	0	0	0	434	296	62	0	310	402	80	0

Percent Heavy Vehicles

5.9%	1.8%	0.0%	0.0%	0.0%	3.0%	6.9%	0.0%	10.5%	0.0%	14.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	3.4%	12.9%	0.0%	4.5%	2.2%	6.3%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	2		0		4	0	0	0		0	0					6

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
0	1	0		1

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Putnam Rd								15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1	19		0		13	6	0	1		2	0						
04:05:00 PM	3	26		0		11	2	0	2		1	0						
04:10:00 PM	2	28		0		22	0	0	2		1	0					142	
04:15:00 PM	2	24		0		19	2	0	1		6	0					154	
04:20:00 PM	7	17		1		14	4	0	2		3	0					157	
04:25:00 PM	3	22		0		23	1	0	2		0	0					153	
04:30:00 PM	2	23		0		19	3	0	3		4	0					153	
04:35:00 PM	2	26		0		16	1	0	2		4	0					156	
04:40:00 PM	3	29		0		16	2	0	3		5	0					163	
04:45:00 PM	2	30		0		23	4	0	2		1	0					171	
04:50:00 PM	5	23		0		19	3	0	2		3	0					175	
04:55:00 PM	2	18		0		23	4	0	2		4	0					170	628
05:00:00 PM	6	47		0		29	2	0	0		5	0					197	675
05:05:00 PM	7	43		0		20	5	0	1		7	0					225	713
05:10:00 PM	5	44		0		24	0	0	4		5	0					254	740
05:15:00 PM	4	34		0		19	3	0	1		4	0					230	751
05:20:00 PM	3	23		0		23	3	0	2		3	0					204	760
05:25:00 PM	3	36		0		24	1	0	0		3	0					189	776
05:30:00 PM	6	29		0		21	1	0	1		1	0					183	781
05:35:00 PM	5	27		0		26	1	0	1		2	0					188	792
05:40:00 PM	4	18		0		16	5	0	0		4	0					168	781
05:45:00 PM	2	22		0		18	1	0	0		3	0					155	765
05:50:00 PM	0	15		0		20	3	0	4		3	0					138	755
05:55:00 PM	4	13		0		19	2	0	3		4	0					136	747

Bicycles on Road

	Northbound	Southbound	Eastbound	Westbound	

K-D-N
KEY DATA NETWORK

	NW Mount Washington Dr				NW Mount Washington Dr				NW Putnam Rd								15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	1		0		0	0	0	0		0	0						
04:05:00 PM	0	0		0		0	0	0	0		0	0						
04:10:00 PM	0	0		0		1	0	0	0		0	0					2	
04:15:00 PM	0	0		0		0	0	0	0		0	0					1	
04:20:00 PM	0	0		0		0	0	0	0		0	0					1	
04:25:00 PM	0	0		0		1	0	0	0		0	0					1	
04:30:00 PM	0	0		0		0	0	0	0		0	0					1	
04:35:00 PM	0	0		0		0	0	0	0		0	0					1	
04:40:00 PM	0	0		0		0	0	0	0		0	0					0	
04:45:00 PM	0	0		0		0	0	0	0		0	0					0	
04:50:00 PM	0	0		0		0	0	0	0		0	0					0	
04:55:00 PM	0	0		0		0	0	0	0		0	0					0	3
05:00:00 PM	0	0		0		1	0	0	0		0	0					1	3
05:05:00 PM	0	0		0		0	0	0	0		0	0					1	3
05:10:00 PM	0	0		0		0	0	0	0		0	0					1	2
05:15:00 PM	0	0		0		0	0	0	0		0	0					0	2
05:20:00 PM	0	0		0		3	0	0	0		0	0					3	5
05:25:00 PM	0	0		0		0	0	0	0		0	0					3	4
05:30:00 PM	0	2		0		0	0	0	0		0	0					5	6
05:35:00 PM	0	0		0		0	0	0	0		0	0					2	6
05:40:00 PM	0	1		0		0	0	0	0		0	0					3	7
05:45:00 PM	0	4		0		0	0	0	0		0	0					5	11
05:50:00 PM	0	0		0		1	0	0	0		0	0					6	12
05:55:00 PM	0	0		0		0	0	0	0		0	0					5	12

Passenger vehicles and light trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Putnam Rd								15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1	18		0		12	6	0	1		2	0						
04:05:00 PM	3	26		0		11	2	0	1		1	0						
04:10:00 PM	2	27		0		21	0	0	2		1	0					137	
04:15:00 PM	2	24		0		18	2	0	0		6	0					149	
04:20:00 PM	7	16		1		14	4	0	2		3	0					152	
04:25:00 PM	3	21		0		22	1	0	1		0	0					147	
04:30:00 PM	2	23		0		19	2	0	3		4	0					148	
04:35:00 PM	1	25		0		16	1	0	1		4	0					149	
04:40:00 PM	2	29		0		15	2	0	3		4	0					156	
04:45:00 PM	2	30		0		22	4	0	1		1	0					163	
04:50:00 PM	5	22		0		19	3	0	2		3	0					169	
04:55:00 PM	1	18		0		23	2	0	2		4	0					164	604
05:00:00 PM	6	47		0		28	2	0	0		4	0					191	651
05:05:00 PM	7	43		0		18	5	0	1		5	0					216	686
05:10:00 PM	5	44		0		23	0	0	3		5	0					246	713
05:15:00 PM	4	34		0		18	3	0	1		4	0					223	725
05:20:00 PM	3	23		0		23	3	0	2		2	0					200	734
05:25:00 PM	3	32		0		23	1	0	0		3	0					182	748

05:30:00 PM	6	28		0		21	1	0	1		1	0					176	753
05:35:00 PM	4	26		0		26	1	0	1		1	0					179	764
05:40:00 PM	4	18		0		16	5	0	0		4	0					164	756
05:45:00 PM	2	20		0		18	1	0	0		3	0					150	740
05:50:00 PM	0	15		0		20	3	0	4		3	0					136	731
05:55:00 PM	4	13		0		19	2	0	3		4	0					134	726

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

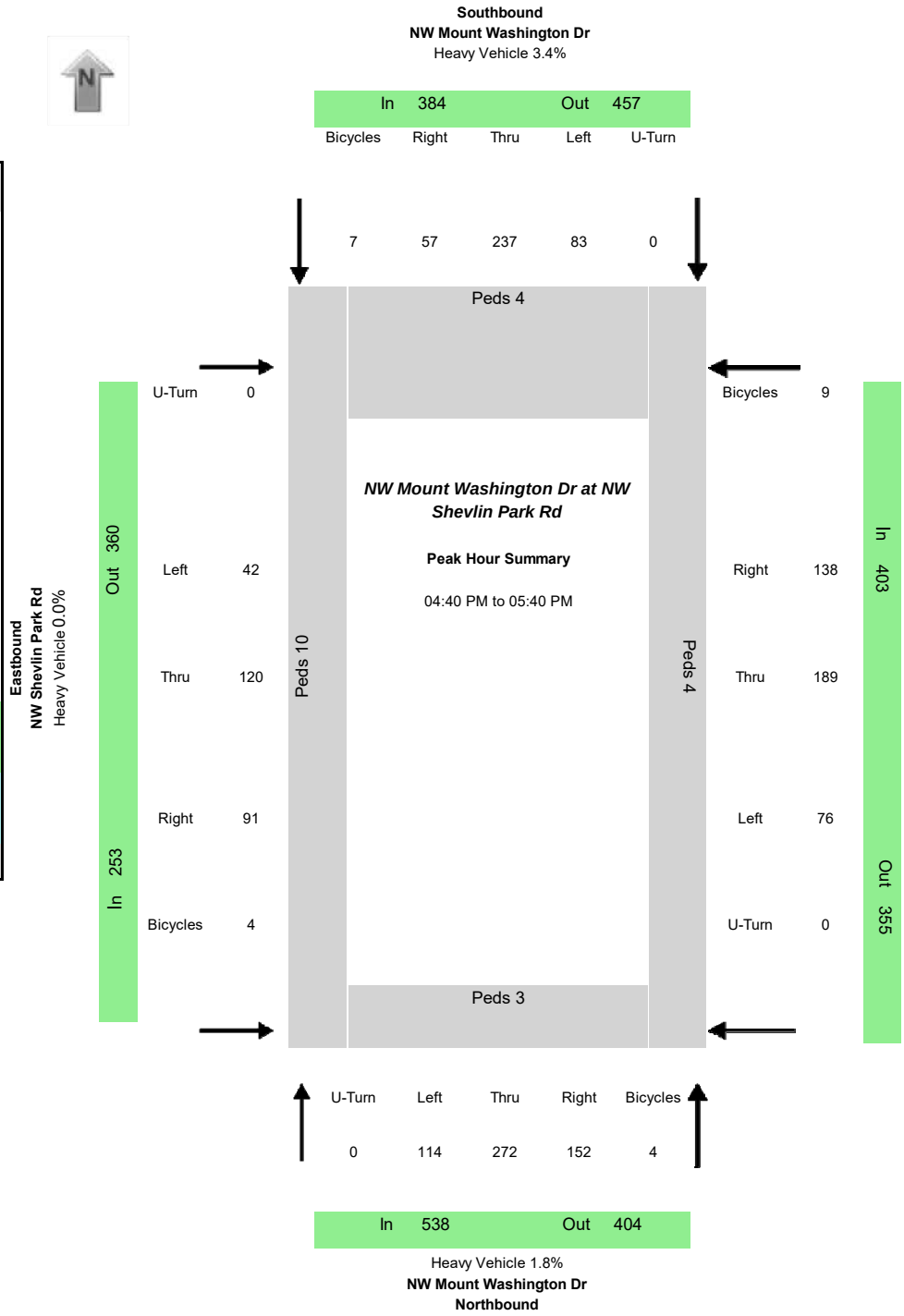
	Northbound				Southbound				Eastbound				Westbound					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Putnam Rd								15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	1		0		1	0	0	0		0	0						
04:05:00 PM	0	0		0		0	0	0	1		0	0						
04:10:00 PM	0	1		0		1	0	0	0		0	0					5	
04:15:00 PM	0	0		0		1	0	0	1		0	0					5	
04:20:00 PM	0	1		0		0	0	0	0		0	0					5	
04:25:00 PM	0	1		0		1	0	0	1		0	0					6	
04:30:00 PM	0	0		0		0	1	0	0		0	0					5	
04:35:00 PM	1	1		0		0	0	0	1		0	0					7	
04:40:00 PM	1	0		0		1	0	0	0		1	0					7	
04:45:00 PM	0	0		0		1	0	0	1		0	0					8	
04:50:00 PM	0	1		0		0	0	0	0		0	0					6	
04:55:00 PM	1	0		0		0	2	0	0		0	0					6	24
05:00:00 PM	0	0		0		1	0	0	0		1	0					6	24
05:05:00 PM	0	0		0		2	0	0	0		2	0					9	27
05:10:00 PM	0	0		0		1	0	0	1		0	0					8	27
05:15:00 PM	0	0		0		1	0	0	0		0	0					7	26
05:20:00 PM	0	0		0		0	0	0	0		1	0					4	26
05:25:00 PM	0	4		0		1	0	0	0		0	0					7	28
05:30:00 PM	0	1		0		0	0	0	0		0	0					7	28
05:35:00 PM	1	1		0		0	0	0	0		1	0					9	28
05:40:00 PM	0	0		0		0	0	0	0		0	0					4	25
05:45:00 PM	0	2		0		0	0	0	0		0	0					5	25
05:50:00 PM	0	0		0		0	0	0	0		0	0					2	24
05:55:00 PM	0	0		0		0	0	0	0		0	0					2	21

Pedestrians Crossing					15 Min	1 HR
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	0	0	0			
04:05:00 PM	0	0	0			
04:10:00 PM	0	0	0		0	
04:15:00 PM	0	0	0		0	
04:20:00 PM	0	0	0		0	
04:25:00 PM	0	0	0		0	
04:30:00 PM	0	0	0		0	
04:35:00 PM	0	0	0		0	
04:40:00 PM	0	1	0		1	
04:45:00 PM	0	0	0		1	
04:50:00 PM	0	0	0		1	
04:55:00 PM	0	0	0		0	1

05:00:00 PM	0	0	0	0	1
05:05:00 PM	0	0	0	0	1
05:10:00 PM	0	0	0	0	1
05:15:00 PM	0	0	0	0	1
05:20:00 PM	0	0	0	0	1
05:25:00 PM	0	0	0	0	1
05:30:00 PM	0	0	0	0	1
05:35:00 PM	0	0	0	0	1
05:40:00 PM	0	0	0	0	0
05:45:00 PM	0	0	0	0	0
05:50:00 PM	0	0	0	0	0
05:55:00 PM	0	0	0	0	0

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NW Mount Washington Dr*
E/W street	*NW Shevlin Park Rd*
City, State	Bend OR
Site Notes	
Location	44.053593 - -121.354737
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
114	272	152	0	83	237	57	0	42	120	91	0	76	189	138	0	538	377	253	403	404	452	360	355

Percent Heavy Vehicles

1.8%	2.2%	1.3%	0.0%	4.8%	1.7%	8.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	1.4%	0.0%	1.9%	3.4%	0.0%	2.0%	1.0%	1.8%	3.6%	1.7%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	3	1	0	2	4	1	0	1	2	0	1	3	5	1	0	24

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
3	4	10	4	21

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	7	8	4	0	9	16	2	0	3	12	7	0	5	10	11	0		
04:05:00 PM	4	18	5	0	10	11	4	0	0	10	8	0	5	9	6	0		
04:10:00 PM	5	11	8	0	3	13	4	0	7	14	8	0	12	11	9	0	289	
04:15:00 PM	9	22	8	0	6	20	2	0	5	11	9	0	6	6	7	1	307	

04:20:00 PM	10	22	3	0	4	24	5	0	8	13	14	0	7	8	1	0	336	
04:25:00 PM	8	22	9	0	5	15	5	0	1	15	10	1	5	9	9	0	345	
04:30:00 PM	13	12	8	0	8	21	1	0	3	13	7	0	4	9	6	0	338	
04:35:00 PM	11	15	5	1	6	11	7	0	4	7	9	0	6	16	15	0	332	
04:40:00 PM	8	19	21	0	10	19	3	0	3	6	8	0	3	16	20	0	354	
04:45:00 PM	6	20	8	0	5	23	5	0	7	11	13	0	10	8	8	0	373	
04:50:00 PM	11	16	10	0	6	15	4	0	2	10	1	0	5	13	4	0	357	
04:55:00 PM	8	19	18	0	5	20	3	0	2	13	7	0	7	14	10	0	347	1335
05:00:00 PM	15	28	13	0	14	18	8	0	2	7	3	0	11	20	19	0	381	1399
05:05:00 PM	12	23	17	0	3	17	9	0	6	15	12	0	7	11	9	0	425	1450
05:10:00 PM	5	20	8	0	6	18	7	0	3	7	8	0	5	17	10	0	413	1459
05:15:00 PM	15	22	15	0	7	23	5	0	4	9	10	0	5	19	18	0	407	1499
05:20:00 PM	11	29	15	0	9	16	7	0	4	10	6	0	10	10	6	0	399	1513
05:25:00 PM	6	28	9	0	6	28	2	0	2	7	11	0	5	19	10	0	418	1532
05:30:00 PM	7	32	10	0	9	22	0	0	1	16	4	0	2	17	17	0	403	1564
05:35:00 PM	10	16	8	0	3	18	4	0	6	9	8	0	6	25	7	0	390	1571
05:40:00 PM	8	21	13	0	4	15	3	2	4	9	9	0	8	10	17	0	380	1558
05:45:00 PM	11	13	8	0	12	19	2	0	2	6	6	0	6	26	16	0	370	1561
05:50:00 PM	6	8	7	0	7	22	4	0	6	8	12	0	4	12	4	0	350	1564
05:55:00 PM	4	12	3	0	5	19	6	3	9	4	15	0	6	15	8	0	336	1547

Westbound
NW Shevlin Park Rd
Heavy Vehicle 1.9%

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	***NW Park Commons Dr***
E/W street:	***NW Shevlin Park Rd***
City, State	Bend OR
Study ID #	
Location	44.079583 - -121.368814
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Peak Hour Start	05:00:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.94

Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
3	4	26	0	13	0	2	0	4	144	3	0	29	162	33	0	33	15	151	224	32	41	167	183

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.7%	4.9%	0.0%	0.0%	6.6%	0.5%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	1	0	0	0	0	0	0	10	0	0	1	9	0	0	21

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
1	3	13	1	18

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
	NW Park Commons Dr				NW Park Commons Dr				NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	4	0	2	1	2	0	0	8	0	0	2	9	1	0		
04:05:00 PM	0	0	7	0	1	0	0	0	0	9	0	0	4	11	1	0		
04:10:00 PM	0	1	5	0	2	0	0	0	0	12	0	0	4	8	2	0	96	
04:15:00 PM	1	0	1	0	6	0	0	0	0	13	0	0	1	13	0	0	102	
04:20:00 PM	0	0	1	0	2	0	1	0	0	12	0	0	2	16	5	0	108	
04:25:00 PM	1	0	3	0	7	0	1	0	1	12	0	0	0	13	2	0	114	
04:30:00 PM	0	0	0	0	4	1	0	0	0	11	0	0	4	12	3	0	114	
04:35:00 PM	0	0	4	0	5	0	0	0	0	7	0	0	4	15	2	0	112	
04:40:00 PM	0	1	3	0	4	0	0	0	0	6	0	0	5	15	1	0	107	
04:45:00 PM	0	0	0	0	2	0	0	0	0	12	0	0	4	12	3	0	105	
04:50:00 PM	0	1	1	0	2	0	0	0	0	9	0	0	4	9	4	0	98	
04:55:00 PM	1	0	0	0	1	0	0	0	0	7	0	0	4	8	1	0	85	402
05:00:00 PM	0	0	5	0	0	0	0	0	0	9	0	0	3	14	4	0	87	408
05:05:00 PM	0	0	3	0	4	0	0	0	0	12	0	0	1	20	1	0	98	416
05:10:00 PM	0	0	1	0	1	0	0	0	0	11	0	0	2	10	3	0	104	410
05:15:00 PM	0	0	1	0	3	0	0	0	1	12	0	0	4	20	3	0	113	419
05:20:00 PM	1	0	4	0	0	0	0	0	0	6	1	0	2	17	3	0	106	414
05:25:00 PM	0	0	5	0	0	0	0	0	0	13	1	0	5	10	1	0	113	409
05:30:00 PM	0	1	0	0	4	0	1	0	1	13	0	0	1	14	1	0	105	410
05:35:00 PM	0	0	1	0	0	0	0	0	0	16	0	0	3	14	2	0	107	409
05:40:00 PM	0	2	1	0	0	0	0	0	1	8	1	0	2	12	2	0	101	403
05:45:00 PM	1	0	1	0	0	0	0	0	0	11	0	0	2	13	4	0	97	402
05:50:00 PM	1	0	2	0	1	0	0	0	1	19	0	0	1	11	3	0	100	411
05:55:00 PM	0	1	2	0	0	0	1	0	0	14	0	0	3	7	6	0	105	423

Bicycles on Road

	Northbound	Southbound	Eastbound	Westbound	

K-D-N
KEY DATA NETWORK

	NW Park Commons Dr				NW Park Commons Dr				NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
04:15:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4	
04:20:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	1	2	0	0	9	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	12
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	13
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	13
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8
05:30:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	6	10
05:35:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	10	14
05:40:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	10	17
05:45:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	18
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	19
05:55:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	6	21

Passenger vehicles and light trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
	NW Park Commons Dr				NW Park Commons Dr				NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	3	0	2	1	1	0	0	8	0	0	2	8	1	0		
04:05:00 PM	0	0	7	0	1	0	0	0	0	9	0	0	4	9	1	0		
04:10:00 PM	0	1	5	0	2	0	0	0	0	11	0	0	4	8	2	0	90	
04:15:00 PM	1	0	1	0	6	0	0	0	0	13	0	0	1	12	0	0	98	
04:20:00 PM	0	0	1	0	2	0	1	0	0	11	0	0	2	15	4	0	103	
04:25:00 PM	1	0	3	0	7	0	1	0	1	11	0	0	0	12	2	0	108	
04:30:00 PM	0	0	0	0	4	0	0	0	0	9	0	0	4	12	3	0	106	
04:35:00 PM	0	0	4	0	5	0	0	0	0	7	0	0	4	13	2	0	105	
04:40:00 PM	0	1	3	0	4	0	0	0	0	6	0	0	5	14	1	0	101	
04:45:00 PM	0	0	0	0	2	0	0	0	0	12	0	0	4	12	3	0	102	
04:50:00 PM	0	1	1	0	2	0	0	0	0	7	0	0	4	9	4	0	95	
04:55:00 PM	1	0	0	0	1	0	0	0	0	7	0	0	4	8	1	0	83	382
05:00:00 PM	0	0	5	0	0	0	0	0	0	9	0	0	3	13	4	0	84	390
05:05:00 PM	0	0	3	0	4	0	0	0	0	12	0	0	1	16	1	0	93	396
05:10:00 PM	0	0	1	0	1	0	0	0	0	11	0	0	2	10	3	0	99	391
05:15:00 PM	0	0	1	0	3	0	0	0	1	12	0	0	4	19	3	0	108	400
05:20:00 PM	1	0	4	0	0	0	0	0	0	6	1	0	2	16	3	0	104	397
05:25:00 PM	0	0	5	0	0	0	0	0	0	13	1	0	5	10	1	0	111	394

05:30:00 PM	0	1	0	0	4	0	1	0	1	13	0	0	1	13	1	0	103	397
05:35:00 PM	0	0	1	0	0	0	0	0	0	16	0	0	3	12	2	0	104	396
05:40:00 PM	0	2	1	0	0	0	0	0	1	8	1	0	2	12	2	0	98	391
05:45:00 PM	1	0	1	0	0	0	0	0	0	11	0	0	2	13	4	0	95	390
05:50:00 PM	1	0	2	0	1	0	0	0	1	18	0	0	1	10	3	0	98	399
05:55:00 PM	0	1	2	0	0	0	1	0	0	14	0	0	3	7	6	0	103	411

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
	NW Park Commons Dr				NW Park Commons Dr				NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	
04:20:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	5	
04:25:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	6	
04:30:00 PM	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	8	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	7	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
04:50:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	18
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	5	20
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	19
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	19
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	17
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	13
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	13
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
05:50:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	12
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12

Pedestrians Crossing					15 Min	1 HR
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	1	0	1	0		
04:05:00 PM	0	0	2	0		
04:10:00 PM	0	0	0	0	4	
04:15:00 PM	0	0	0	0	2	
04:20:00 PM	0	0	8	0	8	
04:25:00 PM	0	0	0	0	8	
04:30:00 PM	0	0	0	0	8	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	1	0	1	
04:45:00 PM	0	0	0	0	1	
04:50:00 PM	0	0	0	0	1	
04:55:00 PM	0	0	1	0	1	14

05:00:00 PM	0	0	6	0	7	18
05:05:00 PM	0	0	0	0	7	16
05:10:00 PM	0	0	0	0	6	16
05:15:00 PM	0	0	0	0	0	16
05:20:00 PM	0	0	0	0	0	8
05:25:00 PM	0	0	0	0	0	8
05:30:00 PM	1	0	0	1	2	10
05:35:00 PM	0	0	0	0	2	10
05:40:00 PM	0	1	3	0	6	13
05:45:00 PM	0	1	1	0	6	15
05:50:00 PM	0	1	2	0	9	18
05:55:00 PM	0	0	1	0	6	18

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	*NW McClain Dr*
E/W street:	*NW Shevlin Park Rd*
City, State	Bend OR
Study ID #	
Location	44.076007 - -121.364808
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:15:00 PM
PHF (15-Min Int)	0.94

Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
1	0	16	0	0	0	0	0	0	189	1	0	9	215	0	0	17	0	190	224	10	0	216	205

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	0.0%	0.0%	0.0%	6.5%	0.0%	0.0%	0.0%	0.0%	4.2%	6.3%	0.0%	0.0%	6.5%	3.9%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0		2	0						2	0	0	0	8		0	12

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
4		0	0	4

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
	NW McClain Dr								NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1		0	0						13	0	0	1	11		0		
04:05:00 PM	0		0	0						15	0	0	0	16		0		
04:10:00 PM	0		2	0						21	0	0	1	13		0	94	
04:15:00 PM	0		2	0						24	0	0	1	15		0	110	
04:20:00 PM	0		1	0						13	0	0	0	21		0	114	
04:25:00 PM	1		2	0						20	0	0	0	15		0	115	
04:30:00 PM	0		1	0						15	1	0	0	18		0	108	
04:35:00 PM	0		0	0						15	0	0	1	23		0	112	
04:40:00 PM	0		2	0						15	0	0	1	19		0	111	
04:45:00 PM	0		1	0						13	0	0	2	20		0	112	
04:50:00 PM	0		1	0						11	0	0	1	16		0	102	
04:55:00 PM	0		1	0						9	0	0	1	14		0	90	410
05:00:00 PM	0		2	0						12	0	0	1	21		0	90	420
05:05:00 PM	0		1	0						21	0	0	0	20		0	103	431
05:10:00 PM	1		0	0						11	0	0	0	15		0	105	421
05:15:00 PM	0		0	0						16	0	0	2	27		0	114	424
05:20:00 PM	0		1	0						11	0	0	0	23		0	107	424
05:25:00 PM	0		1	0						15	0	0	3	19		0	118	424
05:30:00 PM	0		1	0						18	1	0	1	13		0	107	423
05:35:00 PM	0		2	0						16	0	0	2	19		0	111	423
05:40:00 PM	1		0	0						11	0	0	1	15		0	101	414
05:45:00 PM	0		2	0						13	0	0	0	19		0	101	412
05:50:00 PM	0		1	0						19	0	0	2	16		0	100	421
05:55:00 PM	1		0	0						16	0	0	1	14		0	104	428

Bicycles on Road

	Northbound	Southbound	Eastbound	Westbound	

	NW McClain Dr								NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0		0	0						0	0	0	0	0		0		
04:05:00 PM	0		0	0						0	0	0	0	0		0		
04:10:00 PM	0		0	0						0	0	0	0	0		0	0	
04:15:00 PM	0		0	0						1	0	0	0	2		0	3	
04:20:00 PM	0		0	0						0	0	0	0	1		0	4	
04:25:00 PM	0		0	0						0	0	0	0	0		0	4	
04:30:00 PM	0		0	0						0	0	0	0	1		0	2	
04:35:00 PM	0		2	0						0	0	0	0	0		0	3	
04:40:00 PM	0		0	0						0	0	0	0	0		0	3	
04:45:00 PM	0		0	0						0	0	0	0	0		0	2	
04:50:00 PM	0		0	0						0	0	0	0	2		0	2	
04:55:00 PM	0		0	0						1	0	0	0	0		0	3	10
05:00:00 PM	0		0	0						0	0	0	0	0		0	3	10
05:05:00 PM	0		0	0						0	0	0	0	2		0	3	12
05:10:00 PM	0		0	0						0	0	0	0	1		0	3	13
05:15:00 PM	0		0	0						0	0	0	0	0		0	3	10
05:20:00 PM	0		0	0						0	0	0	0	1		0	2	10
05:25:00 PM	0		0	0						0	0	0	0	2		0	3	12
05:30:00 PM	0		0	0						1	0	0	0	2		0	6	14
05:35:00 PM	0		0	0						2	0	0	0	1		0	8	15
05:40:00 PM	0		0	0						5	0	0	0	2		0	13	22
05:45:00 PM	0		0	0						1	0	0	0	0		0	11	23
05:50:00 PM	0		0	0						0	0	0	0	1		0	9	22
05:55:00 PM	0		0	0						0	1	0	1	3		0	7	26

Passenger vehicles and light trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
	NW McClain Dr								NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1		0	0						12	0	0	1	10		0		
04:05:00 PM	0		0	0						15	0	0	0	14		0		
04:10:00 PM	0		2	0						20	0	0	1	13		0	89	
04:15:00 PM	0		2	0						24	0	0	1	13		0	105	
04:20:00 PM	0		1	0						12	0	0	0	20		0	109	
04:25:00 PM	1		2	0						18	0	0	0	12		0	106	
04:30:00 PM	0		1	0						13	1	0	0	18		0	99	
04:35:00 PM	0		0	0						15	0	0	1	21		0	103	
04:40:00 PM	0		2	0						15	0	0	1	18		0	106	
04:45:00 PM	0		1	0						13	0	0	2	20		0	109	
04:50:00 PM	0		1	0						9	0	0	1	16		0	99	
04:55:00 PM	0		1	0						9	0	0	1	14		0	88	389
05:00:00 PM	0		2	0						12	0	0	1	20		0	87	400
05:05:00 PM	0		1	0						21	0	0	0	16		0	98	409
05:10:00 PM	1		0	0						11	0	0	0	14		0	99	399
05:15:00 PM	0		0	0						16	0	0	2	26		0	108	403
05:20:00 PM	0		1	0						11	0	0	0	22		0	104	404
05:25:00 PM	0		1	0						15	0	0	3	19		0	116	409

05:30:00 PM	0		1	0					18	1	0	1	12		0	105	409
05:35:00 PM	0		2	0					16	0	0	2	18		0	109	410
05:40:00 PM	1		0	0					11	0	0	1	15		0	99	402
05:45:00 PM	0		2	0					13	0	0	0	19		0	100	400
05:50:00 PM	0		1	0					18	0	0	2	15		0	98	409
05:55:00 PM	1		0	0					16	0	0	1	14		0	102	416

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

	Northbound				Southbound				Eastbound				Westbound					
	NW McClain Dr								NW Shevlin Park Rd				NW Shevlin Park Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0		0	0						1	0	0	0	1		0		
04:05:00 PM	0		0	0						0	0	0	0	2		0		
04:10:00 PM	0		0	0						1	0	0	0	0		0	5	
04:15:00 PM	0		0	0						0	0	0	0	2		0	5	
04:20:00 PM	0		0	0						1	0	0	0	1		0	5	
04:25:00 PM	0		0	0						2	0	0	0	3		0	9	
04:30:00 PM	0		0	0						2	0	0	0	0		0	9	
04:35:00 PM	0		0	0						0	0	0	0	2		0	9	
04:40:00 PM	0		0	0						0	0	0	0	1		0	5	
04:45:00 PM	0		0	0						0	0	0	0	0		0	3	
04:50:00 PM	0		0	0						2	0	0	0	0		0	3	
04:55:00 PM	0		0	0						0	0	0	0	0		0	2	21
05:00:00 PM	0		0	0						0	0	0	0	1		0	3	20
05:05:00 PM	0		0	0						0	0	0	0	4		0	5	22
05:10:00 PM	0		0	0						0	0	0	0	1		0	6	22
05:15:00 PM	0		0	0						0	0	0	0	1		0	6	21
05:20:00 PM	0		0	0						0	0	0	0	1		0	3	20
05:25:00 PM	0		0	0						0	0	0	0	0		0	2	15
05:30:00 PM	0		0	0						0	0	0	0	1		0	2	14
05:35:00 PM	0		0	0						0	0	0	0	1		0	2	13
05:40:00 PM	0		0	0						0	0	0	0	0		0	2	12
05:45:00 PM	0		0	0						0	0	0	0	0		0	1	12
05:50:00 PM	0		0	0						1	0	0	0	1		0	2	12
05:55:00 PM	0		0	0						0	0	0	0	0		0	2	12

Pedestrians Crossing					15 Min	1 HR
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	0		0	0		
04:05:00 PM	0		0	0		
04:10:00 PM	0		0	0	0	
04:15:00 PM	3		0	0	3	
04:20:00 PM	0		0	0	3	
04:25:00 PM	0		0	0	3	
04:30:00 PM	0		0	0	0	
04:35:00 PM	0		0	0	0	
04:40:00 PM	0		0	0	0	
04:45:00 PM	0		0	0	0	
04:50:00 PM	0		0	0	0	
04:55:00 PM	0		0	0	0	3

05:00:00 PM	1	0	0	1	4
05:05:00 PM	0	0	0	1	4
05:10:00 PM	1	0	0	2	5
05:15:00 PM	0	0	0	1	2
05:20:00 PM	0	0	0	1	2
05:25:00 PM	0	0	0	0	2
05:30:00 PM	1	0	0	1	3
05:35:00 PM	2	0	0	3	5
05:40:00 PM	2	0	0	5	7
05:45:00 PM	0	0	0	4	7
05:50:00 PM	0	0	0	2	7
05:55:00 PM	0	0	0	0	7

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	*NW Crosby Dr*
E/W street:	*NW Skyliners Rd*
City, State	Bend OR
Study ID #	
Location	44.052604 - -121.369393
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:00:00 PM
PHF (15-Min Int)	0.81

Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	14	0	2	2	5	67	0	0	0	64	8	0	0	18	72	72	0	15	66	81
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	#DIV/0!	0.0%	1.4%	0.0%	#DIV/0!	0.0%	0.0%	1.2%

PHV- Bicycles																	PHV - Pedestrians in Crosswalk				
Northbound				Southbound				Eastbound				Westbound									
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
				1		1	0	5	6		0		2	2	0	17		2	7	1	10

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
					NW Crosby Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM					3		0	0	0	3		0		8	2	0		
04:05:00 PM					3		0	0	0	9		0		7	0	0		
04:10:00 PM					1		0	0	1	7		0		4	2	0	50	
04:15:00 PM					1		0	0	2	6		0		3	0	0	46	
04:20:00 PM					0		0	2	1	6		0		6	0	0	42	
04:25:00 PM					0		0	0	0	3		0		3	1	0	34	
04:30:00 PM					0		1	0	0	5		0		4	1	0	33	
04:35:00 PM					1		0	0	0	4		0		2	1	0	26	
04:40:00 PM					1		1	0	1	6		0		7	1	0	36	
04:45:00 PM					0		0	0	0	3		0		4	0	0	32	
04:50:00 PM					2		0	0	0	6		0		9	0	0	41	
04:55:00 PM					2		0	0	0	9		0		7	0	0	42	162
05:00:00 PM					0		0	0	0	7		0		5	2	0	49	160
05:05:00 PM					0		1	0	0	5		0		5	1	0	44	153
05:10:00 PM					0		0	0	0	2		0		3	0	0	31	143
05:15:00 PM					1		0	0	1	2		0		7	3	0	31	145
05:20:00 PM					1		1	0	2	6		0		7	2	0	38	149
05:25:00 PM					0		2	0	0	5		0		7	1	0	48	157
05:30:00 PM					0		0	0	0	7		0		7	0	0	48	160
05:35:00 PM					0		0	0	0	2		0		6	1	0	38	161
05:40:00 PM					0		1	0	0	1		0		4	3	0	32	153
05:45:00 PM					0		0	0	0	4		0		7	0	0	29	157
05:50:00 PM					0		0	0	0	3		0		6	1	0	30	150
05:55:00 PM					2		1	0	0	5		0		3	0	0	32	143

Bicycles on Road

	Northbound	Southbound	Eastbound	Westbound	

					NW Crosby Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM					0		0	0	0	0		0		0	0	0		
04:05:00 PM					0		0	0	0	0		0		0	0	0		
04:10:00 PM					0		0	0	1	3		0		0	0	0	4	
04:15:00 PM					0		0	0	0	0		0		0	0	0	4	
04:20:00 PM					0		0	0	0	2		0		0	0	0	6	
04:25:00 PM					0		0	0	1	0		0		0	0	0	3	
04:30:00 PM					0		0	0	0	0		0		0	0	0	3	
04:35:00 PM					0		0	0	0	1		0		0	0	0	2	
04:40:00 PM					1		0	0	2	0		0		1	0	0	5	
04:45:00 PM					0		0	0	1	0		0		0	0	0	6	
04:50:00 PM					0		0	0	0	0		0		0	1	0	6	
04:55:00 PM					0		1	0	0	0		0		1	1	0	5	17
05:00:00 PM					0		0	0	0	0		0		3	0	0	7	20
05:05:00 PM					0		0	0	1	0		0		2	0	0	9	23
05:10:00 PM					0		0	0	0	0		0		0	0	0	6	19
05:15:00 PM					0		0	0	0	1		0		3	0	0	7	23
05:20:00 PM					0		2	0	0	0		0		1	0	0	7	24
05:25:00 PM					0		0	0	0	2		0		0	0	0	9	25
05:30:00 PM					2		0	0	0	0		0		3	0	0	10	30
05:35:00 PM					0		0	0	0	0		0		4	0	0	11	33
05:40:00 PM					0		0	0	0	0		0		0	0	0	9	29
05:45:00 PM					0		0	0	0	4		0		1	0	0	9	33
05:50:00 PM					0		0	0	0	1		0		0	0	0	6	33
05:55:00 PM					0		0	0	0	0		0		0	0	0	6	30

Passenger vehicles and light trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
					NW Crosby Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM					3		0	0	0	3		0		8	2	0		
04:05:00 PM					3		0	0	0	9		0		7	0	0		
04:10:00 PM					1		0	0	1	6		0		4	2	0	49	
04:15:00 PM					1		0	0	2	6		0		3	0	0	45	
04:20:00 PM					0		0	2	1	6		0		6	0	0	41	
04:25:00 PM					0		0	0	0	3		0		3	1	0	34	
04:30:00 PM					0		1	0	0	5		0		4	1	0	33	
04:35:00 PM					1		0	0	0	4		0		2	1	0	26	
04:40:00 PM					1		1	0	1	6		0		7	1	0	36	
04:45:00 PM					0		0	0	0	3		0		4	0	0	32	
04:50:00 PM					2		0	0	0	6		0		9	0	0	41	
04:55:00 PM					2		0	0	0	9		0		7	0	0	42	161
05:00:00 PM					0		0	0	0	7		0		5	2	0	49	159
05:05:00 PM					0		1	0	0	5		0		5	1	0	44	152
05:10:00 PM					0		0	0	0	2		0		3	0	0	31	143
05:15:00 PM					1		0	0	1	2		0		7	3	0	31	145
05:20:00 PM					1		1	0	2	6		0		7	2	0	38	149
05:25:00 PM					0		2	0	0	5		0		7	1	0	48	157

05:30:00 PM					0		0	0	0	7		0		7	0	0	48	160
05:35:00 PM					0		0	0	0	2		0		6	1	0	38	161
05:40:00 PM					0		1	0	0	1		0		4	3	0	32	153
05:45:00 PM					0		0	0	0	4		0		7	0	0	29	157
05:50:00 PM					0		0	0	0	3		0		6	1	0	30	150
05:55:00 PM					2		1	0	0	5		0		3	0	0	32	143

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

	Northbound				Southbound				Eastbound				Westbound					
					NW Crosby Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM					0		0	0	0	0		0		0	0	0		
04:05:00 PM					0		0	0	0	0		0		0	0	0		
04:10:00 PM					0		0	0	0	1		0		0	0	0	1	
04:15:00 PM					0		0	0	0	0		0		0	0	0	1	
04:20:00 PM					0		0	0	0	0		0		0	0	0	1	
04:25:00 PM					0		0	0	0	0		0		0	0	0	0	
04:30:00 PM					0		0	0	0	0		0		0	0	0	0	
04:35:00 PM					0		0	0	0	0		0		0	0	0	0	
04:40:00 PM					0		0	0	0	0		0		0	0	0	0	
04:45:00 PM					0		0	0	0	0		0		0	0	0	0	
04:50:00 PM					0		0	0	0	0		0		0	0	0	0	
04:55:00 PM					0		0	0	0	0		0		0	0	0	0	1
05:00:00 PM					0		0	0	0	0		0		0	0	0	0	1
05:05:00 PM					0		0	0	0	0		0		0	0	0	0	1
05:10:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:15:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:20:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:25:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:30:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:35:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:40:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:45:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:50:00 PM					0		0	0	0	0		0		0	0	0	0	0
05:55:00 PM					0		0	0	0	0		0		0	0	0	0	0

Pedestrians Crossing					15 Min	1 HR
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM		2	2	0		
04:05:00 PM		0	2	0		
04:10:00 PM		0	0	0	6	
04:15:00 PM		0	1	0	3	
04:20:00 PM		0	0	0	1	
04:25:00 PM		0	0	0	1	
04:30:00 PM		0	1	0	1	
04:35:00 PM		0	0	0	1	
04:40:00 PM		0	0	0	1	
04:45:00 PM		0	0	0	0	
04:50:00 PM		0	0	0	0	
04:55:00 PM		0	1	1	2	10

05:00:00 PM	0	0	0	2	6
05:05:00 PM	0	0	1	3	5
05:10:00 PM	0	0	0	1	5
05:15:00 PM	0	0	0	1	4
05:20:00 PM	0	0	0	0	4
05:25:00 PM	1	0	1	2	6
05:30:00 PM	1	0	0	3	6
05:35:00 PM	2	0	0	5	8
05:40:00 PM	0	0	0	3	8
05:45:00 PM	0	0	0	2	8
05:50:00 PM	0	0	0	0	8
05:55:00 PM	0	0	0	0	6

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	*NW Mount Washington Dr*
E/W street:	*NW Skyliners Rd*
City, State	Bend OR
Study ID #	
Location	44.053615 - -121.355012
Start Date	Tuesday, April 18, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:15:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.95

Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
73	415	54	0	94	372	41	1	38	103	83	0	29	98	114	2	542	508	224	243	484	568	212	253

Percent Heavy Vehicles

0.0%	1.9%	3.7%	0.0%	1.1%	2.4%	2.4%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	1.8%	2.2%	0.9%	0.8%	1.9%	1.8%	0.5%	2.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	1	1	0	0	0	1	0	3	9	2	0	0	3	1	0	21

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
17	10	10	7	44

All Vehicle Volumes

	Northbound				Southbound				Eastbound				Westbound					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	8	25	0	0	6	27	1	0	3	5	11	0	3	14	8	0		
04:05:00 PM	4	25	1	0	6	23	2	0	2	11	3	0	1	7	4	0		
04:10:00 PM	4	40	3	0	6	25	3	0	4	6	7	0	2	3	10	0	313	
04:15:00 PM	2	39	6	0	7	23	4	0	5	10	0	0	5	11	9	0	323	
04:20:00 PM	2	45	7	0	7	33	6	0	2	4	7	0	1	6	11	0	365	
04:25:00 PM	12	34	0	0	7	24	3	0	3	8	2	0	4	5	9	0	363	
04:30:00 PM	10	32	4	0	7	26	4	0	1	5	2	0	4	4	12	0	353	
04:35:00 PM	5	20	2	0	5	29	3	0	5	12	19	0	1	10	7	1	341	
04:40:00 PM	3	40	5	0	9	32	3	0	3	16	14	0	1	6	6	1	369	
04:45:00 PM	7	34	4	0	10	30	1	1	3	9	7	0	2	7	14	0	387	
04:50:00 PM	6	31	5	0	8	38	4	0	3	6	7	0	2	13	9	0	400	
04:55:00 PM	1	33	5	0	9	34	6	0	4	11	8	0	2	10	6	0	390	1435
05:00:00 PM	5	28	4	0	5	39	1	0	2	10	6	0	1	7	7	0	376	1439
05:05:00 PM	14	42	9	0	11	32	3	0	3	10	9	0	3	9	9	0	398	1504
05:10:00 PM	6	37	3	0	9	32	3	0	4	2	2	0	3	10	15	0	395	1517
05:15:00 PM	2	39	2	0	13	21	10	0	6	2	4	0	3	7	12	0	401	1517
05:20:00 PM	7	26	1	0	8	36	3	0	4	6	3	0	2	5	8	0	356	1495
05:25:00 PM	8	26	2	0	10	33	0	0	1	7	3	0	3	6	12	0	341	1495
05:30:00 PM	4	34	3	0	7	27	3	0	2	5	3	0	1	14	12	0	335	1499
05:35:00 PM	5	23	3	0	8	18	3	0	1	6	6	0	2	4	9	0	314	1468
05:40:00 PM	5	23	3	0	13	31	7	2	5	9	1	0	5	8	8	0	323	1449
05:45:00 PM	3	31	3	0	7	30	1	0	1	3	4	0	2	5	9	0	307	1419
05:50:00 PM	2	21	6	0	8	24	3	0	0	6	3	0	1	7	9	0	309	1377
05:55:00 PM	2	21	0	0	7	33	2	0	4	10	1	0	4	2	8	0	283	1342

Bicycles on Road

	Northbound	Southbound	Eastbound	Westbound	

K-D-N
KEY DATA NETWORK

	NW Mount Washington Dr				NW Mount Washington Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
04:20:00 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	5	
04:25:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
04:30:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	7	
04:35:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	
04:40:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	
04:50:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	7	
04:55:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8	19
05:00:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	10	22
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	21
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	21
05:15:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	4	24
05:20:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	21
05:25:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	21
05:30:00 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	1	0	0	7	24
05:35:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	8	25
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	24
05:45:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	6	27
05:50:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	25
05:55:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	9	25

Passenger vehicles and light trucks

	Northbound				**Southbound**				**Eastbound**				**Westbound**					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	8	25	0	0	6	26	1	0	3	5	11	0	3	13	8	0		
04:05:00 PM	4	25	1	0	6	22	2	0	1	11	3	0	1	7	4	0		
04:10:00 PM	4	40	3	0	5	23	3	0	4	6	7	0	2	3	10	0	306	
04:15:00 PM	2	37	6	0	7	23	4	0	5	10	0	0	5	11	8	0	315	
04:20:00 PM	2	44	7	0	7	32	6	0	2	4	7	0	1	6	10	0	356	
04:25:00 PM	12	33	0	0	7	23	3	0	3	8	2	0	4	5	9	0	355	
04:30:00 PM	10	32	3	0	7	26	4	0	1	5	2	0	4	4	12	0	347	
04:35:00 PM	5	19	2	0	5	28	3	0	5	11	19	0	1	10	7	1	335	
04:40:00 PM	3	40	5	0	9	32	3	0	3	16	14	0	1	6	6	1	365	
04:45:00 PM	7	34	4	0	9	28	1	1	3	9	7	0	2	7	14	0	381	
04:50:00 PM	6	31	5	0	8	37	3	0	3	6	7	0	2	13	9	0	395	
04:55:00 PM	1	32	5	0	9	32	6	0	4	11	8	0	2	10	6	0	382	1408
05:00:00 PM	5	27	4	0	5	39	1	0	2	9	6	0	1	7	7	0	369	1412
05:05:00 PM	14	41	8	0	11	32	3	0	3	10	9	0	3	9	9	0	391	1477
05:10:00 PM	6	37	3	0	9	31	3	0	4	2	2	0	3	10	15	0	390	1492
05:15:00 PM	2	39	2	0	13	21	10	0	6	2	4	0	3	7	11	0	397	1494
05:20:00 PM	7	26	1	0	8	36	3	0	4	6	3	0	2	5	8	0	354	1475
05:25:00 PM	8	25	2	0	10	33	0	0	1	7	3	0	3	6	12	0	339	1476

05:30:00 PM	4	34	3	0	7	27	3	0	2	5	3	0	1	14	12	0	334	1481
05:35:00 PM	5	23	3	0	8	18	3	0	1	5	6	0	2	4	9	0	312	1452
05:40:00 PM	5	23	3	0	13	31	5	0	5	9	1	0	5	8	8	0	318	1429
05:45:00 PM	3	31	3	0	7	30	1	0	1	3	4	0	2	5	9	0	302	1402
05:50:00 PM	2	21	6	0	8	24	3	0	0	6	3	0	1	7	9	0	305	1362
05:55:00 PM	2	21	0	0	7	33	2	0	4	10	1	0	4	2	8	0	283	1330

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

	Northbound				Southbound				Eastbound				Westbound					
	NW Mount Washington Dr				NW Mount Washington Dr				NW Skyliners Rd				NW Skyliners Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0		
04:05:00 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	7	
04:15:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	8	
04:20:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	9	
04:25:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8	
04:30:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
04:35:00 PM	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	6	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
04:45:00 PM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	6	
04:50:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5	
04:55:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8	27
05:00:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	27
05:05:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	27
05:10:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	25
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	23
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20
05:25:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	19
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18
05:35:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	16
05:40:00 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	5	20
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	17
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	15
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12

Pedestrians Crossing					15 Min	1 HR
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	1	2	0	0		
04:05:00 PM	0	2	2	0		
04:10:00 PM	2	2	0	2	13	
04:15:00 PM	1	1	2	0	14	
04:20:00 PM	0	2	1	1	14	
04:25:00 PM	1	3	1	1	14	
04:30:00 PM	0	0	0	1	11	
04:35:00 PM	11	0	3	2	23	
04:40:00 PM	1	1	0	1	20	
04:45:00 PM	1	0	1	0	21	
04:50:00 PM	2	1	2	0	10	
04:55:00 PM	0	2	0	0	9	56

K-D-N
KEY DATA NETWORK

05:00:00 PM	0	0	0	0	7	53
05:05:00 PM	0	0	0	1	3	50
05:10:00 PM	0	0	0	0	1	44
05:15:00 PM	0	1	0	2	4	43
05:20:00 PM	0	1	0	0	4	40
05:25:00 PM	1	0	0	0	5	35
05:30:00 PM	0	0	0	3	5	37
05:35:00 PM	0	2	0	0	6	23
05:40:00 PM	0	2	1	1	9	24
05:45:00 PM	1	0	0	0	7	23
05:50:00 PM	0	0	0	0	5	18
05:55:00 PM	0	0	0	0	1	16

Intersection	
Intersection Delay, s/veh	25.4
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	325	519	693	485
Demand Flow Rate, veh/h	325	530	707	499
Vehicles Circulating, veh/h	524	561	318	498
Vehicles Exiting, veh/h	473	464	531	593
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	4	4	10	10
Ped Cap Adj	0.999	0.999	0.999	0.999
Approach Delay, s/veh	12.8	30.7	29.6	22.1
Approach LOS	B	D	D	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	325	530	707	499
Cap Entry Lane, veh/h	669	645	822	687
Entry HV Adj Factor	1.000	0.980	0.980	0.972
Flow Entry, veh/h	325	519	693	485
Cap Entry, veh/h	669	631	805	666
V/C Ratio	0.486	0.822	0.861	0.728
Control Delay, s/veh	12.8	30.7	29.6	22.1
LOS	B	D	D	C
95th %tile Queue, veh	3	9	11	6

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	285	307	691	569
Demand Flow Rate, veh/h	287	309	705	580
Vehicles Circulating, veh/h	564	683	224	258
Vehicles Exiting, veh/h	274	246	627	734
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	17	17	10	10
Ped Cap Adj	0.998	0.998	0.999	0.999
Approach Delay, s/veh	12.4	16.4	20.9	15.5
Approach LOS	B	C	C	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	287	309	705	580
Cap Entry Lane, veh/h	643	571	903	873
Entry HV Adj Factor	0.992	0.993	0.981	0.980
Flow Entry, veh/h	285	307	691	569
Cap Entry, veh/h	636	565	885	855
V/C Ratio	0.447	0.543	0.782	0.665
Control Delay, s/veh	12.4	16.4	20.9	15.5
LOS	B	C	C	C
95th %tile Queue, veh	2	3	8	5

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	34	283	214
Demand Flow Rate, veh/h	9	35	288	218
Vehicles Circulating, veh/h	240	281	2	36
Vehicles Exiting, veh/h	14	9	247	280
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.7	5.6	5.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	9	35	288	218
Cap Entry Lane, veh/h	889	853	1128	1090
Entry HV Adj Factor	1.000	0.971	0.982	0.981
Flow Entry, veh/h	9	34	283	214
Cap Entry, veh/h	889	829	1107	1069
V/C Ratio	0.010	0.041	0.255	0.200
Control Delay, s/veh	4.1	4.7	5.6	5.2
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	13	0	2	3	4	26	4	144	4	29	162	33
Future Vol, veh/h	13	0	2	3	4	26	4	144	4	29	162	33
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	17	0	3	4	5	33	5	185	5	37	209	42

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	538	550	204	520	531	246	264	0	0	204	0	0
Stage 1	211	211	-	317	317	-	-	-	-	-	-	-
Stage 2	327	339	-	203	214	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	457	446	842	470	457	798	1283	-	-	1344	-	-
Stage 1	796	731	-	698	658	-	-	-	-	-	-	-
Stage 2	690	643	-	804	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	417	421	829	450	432	786	1279	-	-	1340	-	-
Mov Cap-2 Maneuver	417	421	-	450	432	-	-	-	-	-	-	-
Stage 1	783	719	-	687	632	-	-	-	-	-	-	-
Stage 2	635	618	-	796	717	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	13.4	10.7	0.2	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1340	-	-	447	673	1279	-	-
HCM Lane V/C Ratio	0.028	-	-	0.043	0.063	0.004	-	-
HCM Control Delay (s)	7.8	-	-	13.4	10.7	7.8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	1	16	189	1	9	215
Future Vol, veh/h	1	16	189	1	9	215
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	1	21	243	1	12	277

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	548	248	0	0	245	0
Stage 1	244	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	501	796	-	-	1298	-
Stage 1	801	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	494	793	-	-	1293	-
Mov Cap-2 Maneuver	494	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	9.8	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1293	-	766	-	-
HCM Lane V/C Ratio	0.009	-	0.029	-	-
HCM Control Delay (s)	7.8	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	67	64	8	14	2
Future Vol, veh/h	5	67	64	8	14	2
Conflicting Peds, #/hr	7	0	0	1	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	7	100	96	12	21	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	115	0	-	0	226	111
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1480	-	-	-	767	948
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	753	940
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	772
HCM Lane V/C Ratio	0.005	-	-	-	0.031
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	26.7
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	331	527	701	476
Demand Flow Rate, veh/h	331	537	715	490
Vehicles Circulating, veh/h	514	572	318	529
Vehicles Exiting, veh/h	505	461	527	580
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	4	4	10	10
Ped Cap Adj	0.999	0.999	0.999	0.999
Approach Delay, s/veh	12.8	33.2	30.7	23.2
Approach LOS	B	D	D	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	331	537	715	490
Cap Entry Lane, veh/h	676	638	822	666
Entry HV Adj Factor	1.000	0.981	0.981	0.971
Flow Entry, veh/h	331	527	701	476
Cap Entry, veh/h	675	625	805	646
V/C Ratio	0.490	0.843	0.871	0.737
Control Delay, s/veh	12.8	33.2	30.7	23.2
LOS	B	D	D	C
95th %tile Queue, veh	3	9	11	6

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	285	320	700	575
Demand Flow Rate, veh/h	287	323	714	587
Vehicles Circulating, veh/h	571	692	227	258
Vehicles Exiting, veh/h	274	249	631	757
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	17	17	10	10
Ped Cap Adj	0.998	0.998	0.999	0.999
Approach Delay, s/veh	12.5	17.6	21.8	15.8
Approach LOS	B	C	C	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	287	323	714	587
Cap Entry Lane, veh/h	638	566	900	873
Entry HV Adj Factor	0.992	0.990	0.981	0.980
Flow Entry, veh/h	285	320	700	575
Cap Entry, veh/h	632	559	882	855
V/C Ratio	0.451	0.572	0.794	0.673
Control Delay, s/veh	12.5	17.6	21.8	15.8
LOS	B	C	C	C
95th %tile Queue, veh	2	4	8	5

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	47	302	214
Demand Flow Rate, veh/h	9	48	308	218
Vehicles Circulating, veh/h	253	281	2	49
Vehicles Exiting, veh/h	14	29	260	280
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.8	5.8	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	9	48	308	218
Cap Entry Lane, veh/h	877	853	1128	1076
Entry HV Adj Factor	1.000	0.979	0.980	0.981
Flow Entry, veh/h	9	47	302	214
Cap Entry, veh/h	877	835	1105	1055
V/C Ratio	0.010	0.056	0.273	0.203
Control Delay, s/veh	4.2	4.8	5.8	5.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	13	0	2	3	4	34	14	144	4	29	162	33
Future Vol, veh/h	13	0	2	3	4	34	14	144	4	29	162	33
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	17	0	3	4	5	36	15	185	5	37	209	42

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	559	570	204	539	550	246	264	0	0	204	0	0
Stage 1	231	231	-	317	317	-	-	-	-	-	-	-
Stage 2	328	339	-	222	233	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	443	434	842	456	446	798	1283	-	-	1344	-	-
Stage 1	776	717	-	698	658	-	-	-	-	-	-	-
Stage 2	689	643	-	785	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	400	406	829	434	418	786	1279	-	-	1340	-	-
Mov Cap-2 Maneuver	400	406	-	434	418	-	-	-	-	-	-	-
Stage 1	756	699	-	680	632	-	-	-	-	-	-	-
Stage 2	632	618	-	770	698	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	13.8	10.7	0.6	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1340	-	-	430	672	1279	-	-
HCM Lane V/C Ratio	0.028	-	-	0.045	0.067	0.012	-	-
HCM Control Delay (s)	7.8	-	-	13.8	10.7	7.8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	1	16	189	1	9	215
Future Vol, veh/h	1	16	189	1	9	215
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	1	21	243	1	12	277

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	548	248	0	0	245	0
Stage 1	244	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	501	796	-	-	1298	-
Stage 1	801	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	494	793	-	-	1293	-
Mov Cap-2 Maneuver	494	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	9.8	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1293	-	766	-	-
HCM Lane V/C Ratio	0.009	-	0.029	-	-
HCM Control Delay (s)	7.8	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	67	64	8	14	2
Future Vol, veh/h	5	67	64	8	14	2
Conflicting Peds, #/hr	7	0	0	1	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	7	100	96	12	21	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	115	0	-	0	226	111
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1480	-	-	-	767	948
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	753	940
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	772
HCM Lane V/C Ratio	0.005	-	-	-	0.031
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	27.1
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	336	538	693	485
Demand Flow Rate, veh/h	336	549	707	499
Vehicles Circulating, veh/h	524	561	329	517
Vehicles Exiting, veh/h	492	475	531	593
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	4	4	10	10
Ped Cap Adj	0.999	0.999	0.999	0.999
Approach Delay, s/veh	13.2	34.1	30.9	23.3
Approach LOS	B	D	D	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	336	549	707	499
Cap Entry Lane, veh/h	669	645	813	674
Entry HV Adj Factor	1.000	0.980	0.980	0.972
Flow Entry, veh/h	336	538	693	485
Cap Entry, veh/h	669	631	796	654
V/C Ratio	0.502	0.852	0.871	0.742
Control Delay, s/veh	13.2	34.1	30.9	23.3
LOS	B	D	D	C
95th %tile Queue, veh	3	10	11	7

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	298	319	700	569
Demand Flow Rate, veh/h	300	321	714	580
Vehicles Circulating, veh/h	564	692	232	279
Vehicles Exiting, veh/h	295	254	632	734
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	17	17	10	10
Ped Cap Adj	0.998	0.998	0.999	0.999
Approach Delay, s/veh	12.9	17.4	22.1	16.3
Approach LOS	B	C	C	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	300	321	714	580
Cap Entry Lane, veh/h	643	566	896	855
Entry HV Adj Factor	0.992	0.993	0.981	0.980
Flow Entry, veh/h	298	319	700	569
Cap Entry, veh/h	636	560	878	837
V/C Ratio	0.468	0.569	0.798	0.679
Control Delay, s/veh	12.9	17.4	22.1	16.3
LOS	B	C	C	C
95th %tile Queue, veh	2	4	9	5

Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	64	301	289
Demand Flow Rate, veh/h	9	66	307	294
Vehicles Circulating, veh/h	316	300	10	36
Vehicles Exiting, veh/h	14	17	315	330
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	5.2	5.9	6.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	9	66	307	294
Cap Entry Lane, veh/h	824	837	1119	1090
Entry HV Adj Factor	1.000	0.970	0.981	0.981
Flow Entry, veh/h	9	64	301	289
Cap Entry, veh/h	824	812	1098	1070
V/C Ratio	0.011	0.079	0.274	0.270
Control Delay, s/veh	4.5	5.2	5.9	6.0
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	13	0	2	3	4	26	4	183	4	29	201	33
Future Vol, veh/h	13	0	2	3	4	26	4	183	4	29	201	33
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	17	0	3	4	5	33	5	195	5	37	214	42

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	553	565	213	535	546	251	269	0	0	213	0	0
Stage 1	221	221	-	323	323	-	-	-	-	-	-	-
Stage 2	332	344	-	212	223	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	447	437	832	459	448	793	1277	-	-	1334	-	-
Stage 1	786	724	-	693	654	-	-	-	-	-	-	-
Stage 2	686	640	-	795	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	407	413	819	440	423	781	1273	-	-	1330	-	-
Mov Cap-2 Maneuver	407	413	-	440	423	-	-	-	-	-	-	-
Stage 1	773	712	-	682	628	-	-	-	-	-	-	-
Stage 2	631	614	-	787	711	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	13.6	10.8	0.2	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1330	-	-	436	666	1273	-	-
HCM Lane V/C Ratio	0.028	-	-	0.044	0.064	0.004	-	-
HCM Control Delay (s)	7.8	-	-	13.6	10.8	7.8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	6	36	189	10	40	215
Future Vol, veh/h	6	36	189	10	40	215
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	6	38	243	11	43	277

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	615	253	0	0	254	0
Stage 1	249	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	458	791	-	-	1288	-
Stage 1	797	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	438	788	-	-	1283	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	675	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	10.4	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1283	-	707	-	-
HCM Lane V/C Ratio	0.033	-	0.063	-	-
HCM Control Delay (s)	7.9	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	67	64	30	29	2
Future Vol, veh/h	5	67	64	30	29	2
Conflicting Peds, #/hr	7	0	0	1	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	7	100	96	37	36	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	140	0	-	0	238	123
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1449	-	-	-	755	933
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1446	-	-	-	741	925
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1446	-	-	-	753
HCM Lane V/C Ratio	0.005	-	-	-	0.052
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	43	51	383	267	29
Future Vol, veh/h	19	43	51	383	267	29
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	13	13	2	2	3	3
Mvmt Flow	29	67	79	594	414	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1190	438	460	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	6.53	6.33	4.12	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.417	2.218	-	-	-
Pot Cap-1 Maneuver	197	596	1101	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	595	1101	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	415	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1101	-	352	-	-
HCM Lane V/C Ratio	0.072	-	0.273	-	-
HCM Control Delay (s)	8.5	-	19	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	13	0	2	3	4	26	4	144	4	29	162	33
Future Vol, veh/h	13	0	2	3	4	26	4	144	4	29	162	33
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	14	0	2	3	4	28	4	153	4	31	172	35

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	448	459	171	433	444	206	220	0	0	170	0	0
Stage 1	177	177	-	265	265	-	-	-	-	-	-	-
Stage 2	271	282	-	168	179	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	524	502	878	537	511	840	1332	-	-	1383	-	-
Stage 1	829	756	-	745	693	-	-	-	-	-	-	-
Stage 2	739	681	-	839	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	486	477	865	517	486	827	1328	-	-	1379	-	-
Mov Cap-2 Maneuver	486	477	-	517	486	-	-	-	-	-	-	-
Stage 1	816	744	-	734	669	-	-	-	-	-	-	-
Stage 2	692	657	-	832	743	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	12.2	10.2	0.2	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1379	-	-	516	726	1328	-	-
HCM Lane V/C Ratio	0.022	-	-	0.031	0.048	0.003	-	-
HCM Control Delay (s)	7.7	-	-	12.2	10.2	7.7	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	1	16	189	1	9	215
Future Vol, veh/h	1	16	189	1	9	215
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	1	17	201	1	10	229

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	206	0	0	202	0
Stage 1	202	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	568	840	-	-	1346	-
Stage 1	837	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	561	837	-	-	1341	-
Mov Cap-2 Maneuver	561	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	9.5	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1341	-	813	-	-
HCM Lane V/C Ratio	0.007	-	0.022	-	-
HCM Control Delay (s)	7.7	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	67	64	8	14	2
Future Vol, veh/h	5	67	64	8	14	2
Conflicting Peds, #/hr	7	0	0	1	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	1	1	0	0	0	0
Mvmt Flow	6	83	79	10	17	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	96	0	-	0	188	93
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	97	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1504	-	-	-	806	970
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1501	-	-	-	792	962
Mov Cap-2 Maneuver	-	-	-	-	792	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1501	-	-	-	810
HCM Lane V/C Ratio	0.004	-	-	-	0.024
HCM Control Delay (s)	7.4	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	7	202	158	4
Future Vol, veh/h	1	6	7	202	158	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	7	8	220	172	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	409	174	176	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	235	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	599	869	1400	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	595	869	1400	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	798	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1400	-	595	869	-	-
HCM Lane V/C Ratio	0.005	-	0.002	0.008	-	-
HCM Control Delay (s)	7.6	0	11.1	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	6	203	6	1	163
Future Vol, veh/h	20	6	203	6	1	163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	7	221	7	1	177

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	403	224	0	0	227	0
Stage 1	224	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	603	815	-	-	1341	-
Stage 1	813	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	602	815	-	-	1341	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	851	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	641	1341	-
HCM Lane V/C Ratio	-	-	0.044	0.001	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Technical Memorandum

REGISTERED PROFESSIONAL ENGINEER
54653PE
OREGON
JULY 9, 2001
TODD E. MOBLEY
RENEWS: 12/31/2018

LANCASTER ENGINEERING
321 SW 4th Ave., Suite 400
Portland, OR 97204
phone: 503.248.0313
fax: 503.248.9251
lancasterengineering.com

To: Tia Lewis, Schwabe Williamson & Wyatt
Myles Conway, Marten Law

From: Todd Mobley, PE
Melissa Webb, PE

Date: July 31, 2018

Subject: Addendum #1 to "Transportation Impact Study for a Zone Change Application"

This memorandum is an addendum to the Transportation Impact Study (TIS) for the Transect properties dated December 19, 2017 and submitted to Deschutes County for review. The present addendum is intended to address comments by the County transportation planner and to supplement the original TIS. The present addendum also incorporates and relies upon more recent, updated transportation projections contained within the WIG (Westside Infrastructure Group) proportionate sharing study prepared by Kittelson and Associates for City infrastructure located inside the city limits and within the newly-adopted City of Bend Urban Growth Boundary (UGB).

Introduction

The original TIS detailed the potential impacts from the proposed change in zoning for a total of 717 acres that are located between the City of Bend and Tumalo Creek in Deschutes County. The 717 acres is comprised of two separate properties that were both part of the original proposal for expansion of the City of Bend's UGB but were not part of the revised proposal that was recently approved and acknowledged in December 2016.

The South Property is 307 acres and is zoned entirely UAR-10 (Urban Area Reserve – 10). The North Property is 410 acres in size and is currently zoned with a mix of UAR-10 and SM (Surface Mining). Both properties are proposed for a zone that will allow rural residential development with a density of 2.5 acres per dwelling unit.

After the original TIS was submitted in late December 2017, the owners of all of the properties on the west side of Bend that were included in the UGB boundary, in collaboration with the City of Bend, jointly addressed the anticipated infrastructure needs in order to accommodate future development densities within the City's newly-adopted boundary. These properties included the "West Area" and "Shevlin Area" UGB expansion areas, which are adjacent to and owned by the owners of the Transect South Property and Transect North Property that were part of the original TIS. Thus, the owners of the Transect properties included those properties in the WIG study at specified densities to address the impacts to City infrastructure.

The resulting list of intersections outlined in the WIG funding plan is intended to provide the necessary intersection improvements needed for the UGB expansion lands and address the impacts from the proposed Transect zone change. The following demonstrates compliance with the Transportation Planning Rule (TPR) outlined in OAR 660-012-0060[1].

Deschutes County Review

Deschutes County reviewed the original TIS and made the following comments, identified in bold font. Responses are shown following the question.

1. The TIA horizon year is 2030, which at first blush makes sense given the County TSP has that as a horizon year and the Bend TSP is 2028. The disconnect is our County code. DCC 18.116.310(E)(4) requires a 20-year TIA for any zone changes. This would make the TIA horizon year between 2038-2040 depending on when the application is submitted.

The analysis has been updated for 2040. This horizon year for analysis is consistent with the WIG proportionate sharing study[2]. The volumes for 2040 are consistent with the analysis from that study which uses a 3% growth rate as developed from the Bend-Redmond travel demand model. A summary of the operational results based on this update and the other adjustments made from the comment received is provided at the end of this document.

2. Trip rate for surface mines uses only one local example, Lower Bridge. I realize Lancaster Engineering has two of the surface mine traffic studies in its database, but why not study some of the sites in Crook County or elsewhere in Deschutes if you are trying to essentially establish a trip rate? Or what about historical data from the surface mine on the site itself already on the north property? KAI also has a recent traffic study within the last year for a rezone from SM to MUA-10 on the surface mine owned by Tumalo Irrigation District off of Tumalo Reservoir Road and up Bill Martin Road. There was also another SM to either RR10 or MUA10 on the NW side of Bend about 8-10 years ago.

The previous trip generation data included three locations for comparison. These locations were in Jackson County, Yamhill County, and Deschutes County. A median rate of 0.056 trips per acre was used as the trip generation, resulting in 16 AM Peak hour trips and 16 PM Peak hour trips. This original trip generation was then built upon with additional data from the local Deschutes County mines for a Tumalo Irrigation District Rezone Memorandum prepared by Kittelson & Associates, Inc.[3] Additional Deschutes County mine data

[1] https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3062
[2] Draft WIG Proportionate Sharing Memo, Kittelson and Associates, May 25, 2018
[3] Tumalo Irrigation District Rezone, Kittelson & Associates, Inc., July 25, 2017

was collected for the Lower Bridge Way Rezone, also prepared by Kittelson & Associates, Inc.[4] Table 1 shows a summary of the local Deschutes County surface mine data obtained from these two memorandums.

Table 1 – Local Deschutes County Surface Mining Trip Generation Data

Mine Site	Average Weekday PM Peak Hour Trips	Site Acreage (estimated based on aerial photography)	Trip Rate (trips/acre)
Hooker Creek (O'Neil Sand & Gravel)	14	90	0.16
Lone Pine (Knife River)	15	120	0.13
Tumalo (Knife River)*	134	30	4.47
Lower Bridge	23	570	0.041
Average of All Sites	**47**	**195**	**1.20**
Average Rate (eliminating highest and lowest trip generators)			**0.145**

**Only two days of data due to equipment malfunction*

As shown in Table 1Table 1, the trip generation rate varies depending on location, site operations, and the rate at which the material is mined. Given this variability, a sensitivity analysis was conducted on the data for the purpose of the proposed rezone.

The mine located in the North Transect property is approximately 297 acres. Using the average trip rate of all the mining sites shown in Table 1 would result in 356 weekday PM peak hour trips (1.20 trips per acre * 297 acres). If the highest and lowest sites were eliminated (i.e. Lower Bridge and Knife River at Tumalo), then the average trip rate would be 43 weekday PM peak hour trips (0.145 trips per acre * 297 acres). The straight average number of trips generated at all four sites listed in Table 1 is 47 weekday PM peak hour trips.

For the purposes of this study, the lowest trip generation potential of the surface mine was used. It is assumed that the surface mine would generate 43 weekday PM peak hour trips in the existing zoning. The estimated number of PM peak hour trips is higher than the trips generated previously (16 PM peak hour trips). However, the updated trip generation uses only data from local Deschutes County mines, rather than data from mines all across Oregon. This updated trip generation is show in Table 2..

3. Table 3 (Trip Gen for Proposed Rezone on North Property) I'm not understanding why the school is omitted from reasonable worst case proposed zoning as it's included in reasonable worst case existing zoning. Has Bend-LP removed the school site? The removal of the surface mine makes sense to me as the resource could well be exhausted by the TIA horizon year.

[4] Lower Bridge Way Rezone, Kittelson & Associates, Inc., December 19, 2007

Table 2 shows an updated trip generation for the proposed rezone on the North Property which includes the school in both the existing and proposed zoning and surface mining in the existing zoning.

Table 2 - Trip Generation for Proposed Rezone on North Property

		ITE	AM Peak Hour			PM Peak Hour			Weekday
	Size	Code	In	Out	Total	In	Out	Total	Total
Reasonable Worst-Case, Existing Zoning									
Single-Family Homes	10 units	210	2	6	8	6	4	10	96
Surface Mining	297 acres	-	21	22	43	22	21	43	---
Elementary School	400 students	520	99	81	180	29	31	60	516
Subtotals			122	109	231	57	56	113	---
Reasonable Worst-Case, Proposed Zoning									
Single-Family Homes	164 units	210	31	92	123	103	61	164	1,562
Elementary School	400 students	520	99	81	180	29	31	60	516
Subtotals			130	173	303	143	92	224	
Net Increase in Trips			**8**	**64**	**72**	**86**	**36**	**111**	

This update to the trip generation table also causes an update in the evening peak hour trip assignment for the North property rezone. Using the same trip distribution assignments created in the previous TIS, the new trip assignments are shown in Figure 3 located in the Appendix.

4. For County roads, we typically require a growth rate of 2%-3% and the TIA uses 1.5%, which is too low.

The information has been updated to include a 3% growth rate. This growth rate was determined through the WIG report which reviewed the growth rate along NW Shevlin Park Road from 2010 to 2040, which is 3%. This updated growth rate was used for all intersections that were analyzed as part of this addendum.

Build-out traffic data was used from the recent WIG memo, and the projected Transect property trips were subtracted out to obtain the Background 2040 data for intersections 3-6. Background 2040 data was obtained for intersections 1-2 by using recent trip counts for these intersections and projecting the traffic volumes out to year 2040 using a 3% growth rate.

The operational results for the evening peak hour analysis with the North and South property rezoning are provided in Tables 3 and 4, and detailed analysis is included in the Appendix. The WIG report includes the Transect properties, as well as additional development areas. As the intersections listed in Tables 3 and 4 meet standards for all of the WIG development, they will also meet standards with just the Transect area development.

Operations Analysis

Deschutes County guidelines outline operational standards as a maximum of LOS D during the evening peak hour. While the zone change is in Deschutes County, all but one of the study intersections are in City of Bend jurisdiction. The City of Bend's Development Code states that significant impacts for signalized intersections or roundabouts occur when v/c ratios are greater than or equal to 1.0. A ratio of less that 1.0 indicates that the intersection is operating within capacity. A summary of the results for both the North and South property rezone is shown in Tables 3 and 4 at the end of this section.

Assuming Master Plan development for the WIG properties, the following intersections were shown to exceed city standards under background year 2040 conditions with the addition of site trips from both the North property and South property proposed rezones.

NW Shevlin Park Road/NW Skyline Ranch Road

The intersection of NW Shevlin Park Road at NW Skyline Ranch Road currently operates at a LOS B during the evening peak hour, with a delay of 12.6 seconds and a v/c ratio of 0.01. With the proposed South property rezone, under year 2040 background conditions, the intersection is projected to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 0.96 during the evening peak hour. With the addition of site trips from the proposed rezone, the intersection is projected to continue to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.14 during the evening peak hour.

With the proposed North property rezone, under year 2040 background conditions, the intersection is projected to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 0.96 during the evening peak hour. With the addition of site trips from the proposed rezone, the intersection is projected to continue to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.21 during the evening peak hour.

To address year 2040 conditions, WIG is proposing to fund mitigations at the intersection of NW Shevlin Park Road at NW Skyline Ranch Road to include the construction of a single lane roundabout. This mitigation does not include any funding by the City of Bend.

NW Mount Washington Drive/NW Skyliners Road

The intersection of NW Mount Washington Drive at NW Skyliners Road currently operates at a LOS B during the evening peak hour, with a delay of 11.9 seconds and a v/c ratio of 0.60. With the proposed South property rezone, under year 2040 background conditions, the intersection is projected to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.33 during the evening peak hour. With the addition of site trips from the proposed rezone, the intersection is projected to continue to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.36 during the evening peak hour.

With the proposed North property rezone, under year 2040 background conditions, the intersection is projected to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.33 during the evening peak hour. With the addition of site trips from the proposed rezone, the intersection is projected to continue to operate at a LOS F with a delay greater than 50 seconds and a v/c ratio of 1.36 during the evening peak hour.

To address year 2040 background conditions, WIG and the City of Bend are proposing to jointly fund mitigations at the intersection of NW Mount Washington Drive at NW Skyliners Road to include modification of the existing single lane roundabout.

NW Mount Washington Drive/Regency Street

Deschutes County guidelines require intersections with more than 20 trips being added during a peak hour be evaluated for operational impacts. Based on this, NW Mount Washington Drive at Regency Street was not required for analysis. However, in the WIG study this intersection is projected to fail under year 2040 background conditions with the addition of site trips from the rezone, and was therefore included in the WIG cost sharing agreement.

To address year 2040 background conditions, WIG and the City of Bend are proposing to jointly fund mitigations at the intersection of NW Mount Washington Drive at Regency Street to include the construction of a traffic signal.

The following intersections are expected to continue to meet City of Bend standards under background year 2040 conditions with the propose rezone included:

- NW Park Commons Drive/NW Shevlin Park Road
- McClain Drive/NW Shevlin Park Road
- NW Mount Washington Drive/NW Shevlin Park Road
- NW Crosby Drive/NW Skyliners Road

Table 3 - Evening Peak Hour Operational Results – South Transect Property

	LOS	Delay (s)	v/c	Meets City of Bend Performance Standards?
NW Park Commons Drive at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	B	12	0.03	Meets
Background 2040	C	18.8	0.12	Meets
Background 2040 + Rezone Site Trips	C	19.2	0.12	Meets
McClain Drive at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	A	9.5	0.02	Meets
Background 2040	B	10.9	0.05	Meets
Background 2040 + Rezone Site Trips	B	11.8	0.09	Meets
NW Skyline Ranch Road at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	B	12.6	0.01	Meets
Background 2040	F	>50.0	0.73	**Exceeds**
Background 2040 + Rezone Site Trips	F	>50.0	0.79	**Exceeds**
NW Mount Washington Drive at NW Shevlin Park Road (Roundabout)				
Existing	B	11.2	0.50	Meets
Background 2040	E	>50.0	0.88	Meets
Background 2040 + Rezone Site Trips	E	>50.0	0.90	Meets
NW Crosby Drive at NW Skyliners Road (Two-Way Stop Controlled)				
Existing	A	9.7	0.05	Meets
Background 2040	B	12.0	0.17	Meets
Background 2040 + Rezone Site Trips	B	12.6	0.20	Meets
NW Mount Washington Drive at NW Skyliners Road (Roundabout)				
Existing	B	11.9	0.60	Meets
Background 2040	F	>50.0	1.13	**Exceeds**
Background 2040 + Rezone Site Trips	F	>50.0	1.40	**Exceeds**

Table 4 - Evening Peak Hour Operational Results - North Transect Property

	LOS	Delay (s)	v/c	Meets City of Bend Performance Standards?
NW Park Commons Drive at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	B	12	0.03	Meets
Background 2040	C	18.8	0.12	Meets
Background 2040 + Rezone Site Trips	C	19.8	0.13	Meets
McClain Drive at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	A	9.5	0.02	Meets
Background 2040	B	10.9	0.05	Meets
Background 2040 + Site Trips	B	10.9	0.05	Meets
NW Skyline Ranch Road at NW Shevlin Park Road (Two-Way Stop Controlled)				
Existing	B	12.6	0.01	Meets
Background 2040	F	>50.0	0.73	**Exceeds**
Background 2040 + Rezone Site Trips	F	>50.0	0.91	**Exceeds**
NW Mount Washington Drive at NW Shevlin Park Road (Roundabout)				
Existing	B	11.2	0.50	Meets
Background 2040	E	>50.0	0.88	Meets
Background 2040 + Rezone Site Trips	E	>50.0	0.93	Meets
NW Crosby Drive at NW Skyliners Road (Two-Way Stop Controlled)				
Existing	A	9.7	0.05	Meets
Background 2040	B	12.0	0.17	Meets
Background 2040 + Rezone Site Trips	B	12.1	0.17	Meets
NW Mount Washington Drive at NW Skyliners Road (Roundabout)				
Existing	B	11.9	0.60	Meets
Background 2040	F	>50.0	1.13	**Exceeds**
Background 2040 + Rezone Site Trips	F	>50.0	1.16	**Exceeds**

Impacts to County Facilities

The following Country roads are near the vicinity of the proposed development:[5]

Johnson Road – Rural Arterial/Rural Collector

Johnson Road is under the jurisdiction of Deschutes County from milepost 0 to milepost 4.532. The first 2.493 miles of Johnson Road are classified as a Rural Arterial, and the remainder of the section is classified as a Rural Collector. This roadway provides access to residential areas as well as Tumalo State Park and the city of Tumalo. The proposed development will likely have little impact on the roadway. Residents of the proposed development may travel along this roadway to access residential areas or the city of Tumalo.

Skyliners Road – Forest Highway

Skyliners Road is under the jurisdiction of Deschutes County from milepost 1.959 to milepost 10.01, which is a section that is approximately west of NW Crosby Drive. Along this area of Skyliners Road are various recreational destinations, such as Phil's Trailhead, Skyliner Sno-Park., and Tumalo Falls. The proposed development will likely have little impact on the roadway. Residents of the proposed development may travel along this roadway to access various recreational destinations.

Skyline Ranch Road – Urban Collector

Skyline Ranch Road is under the jurisdiction of Deschutes County from milepost 0 to milepost 2.796, which runs north-south approximately between Skyliners Road and SW Century Drive. Skyline Ranch Road provides access to residential areas as well as Tetherow Golf Club. The proposed development will likely have little impact on the roadway. Residents of the proposed development may travel along this road to access Tetherow Golf Club, or to access SW Century Drive if they plan to travel west along Cascade Lakes Highway.

NW Metolius Drive – Urban Collector

NW Metolius Drive is under the jurisdiction of Deschutes County and runs east-west between Skyline Ranch Road and NW Mount Washington Drive. This roadway provides access to residential areas. The proposed development will likely have little impact on the roadway. Residents of the proposed development may travel along this roadway to access the residential areas served by NW Metolius Drive.

[5] https://www.deschutes.org/sites/default/files/fileattachments/road/page/538/atlas_2018.pdf

Overall, the proposed development is likely to have a minimal effect on the County roads located in the vicinity. A majority of the new trips generated will be into and out of the city of Bend via NW Shevlin Park Road and NW Mount Washington Drive.

Transportation Planning Rule

The Transportation Planning Rule (TPR) is in place to ensure that the transportation system is capable of supporting the potential increase in traffic intensity that could result from changes to adopted plans and land use regulations. The applicable portions of the TPR are quoted in **bold** below, with responses directly following.

660-012-0060

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

The evidence in the original Transect TIS, the WIG analysis, and this addendum demonstrates there is no need for any future changes to the functional classification of existing or planned transportation facilities. Accordingly, this section is not triggered.

(b) Change standards implementing a functional classification system; or

The evidence in the original Transect TIS, the WIG analysis, and this addendum demonstrates there is no need for any future changes to the standards implementing the functional classification system of either City of Bend or Deschutes County transportation facilities. Accordingly, this section is not triggered.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

The data, planning-horizon analysis, and mitigation measures contained in the WIG analysis and outlined in this addendum are sufficient to address the impacts to the transportation system that will result from the development of the Transect properties following the proposed change in zoning. The mitigation measures for each of the development areas considered in the WIG, including all Transect properties that are the subject of this proposed change in zoning, will be documented in a binding Development Agreement between the WIG property owners and the City of Bend, which will ensure acceptable operation through the planning horizon in 2040.

Similarly, the data and analysis contained in the original TIS, together with this addendum, address the impacts to the transportation system in Deschutes County from the development of the Transect properties following the proposed change in zoning.

The original Transect TIS, the WIG analysis and Development Agreement, and this addendum identify the impacts, mitigation measures, and funding sources necessary to satisfy the TPR for the proposed change in zoning of the Transect lands.

Conclusion

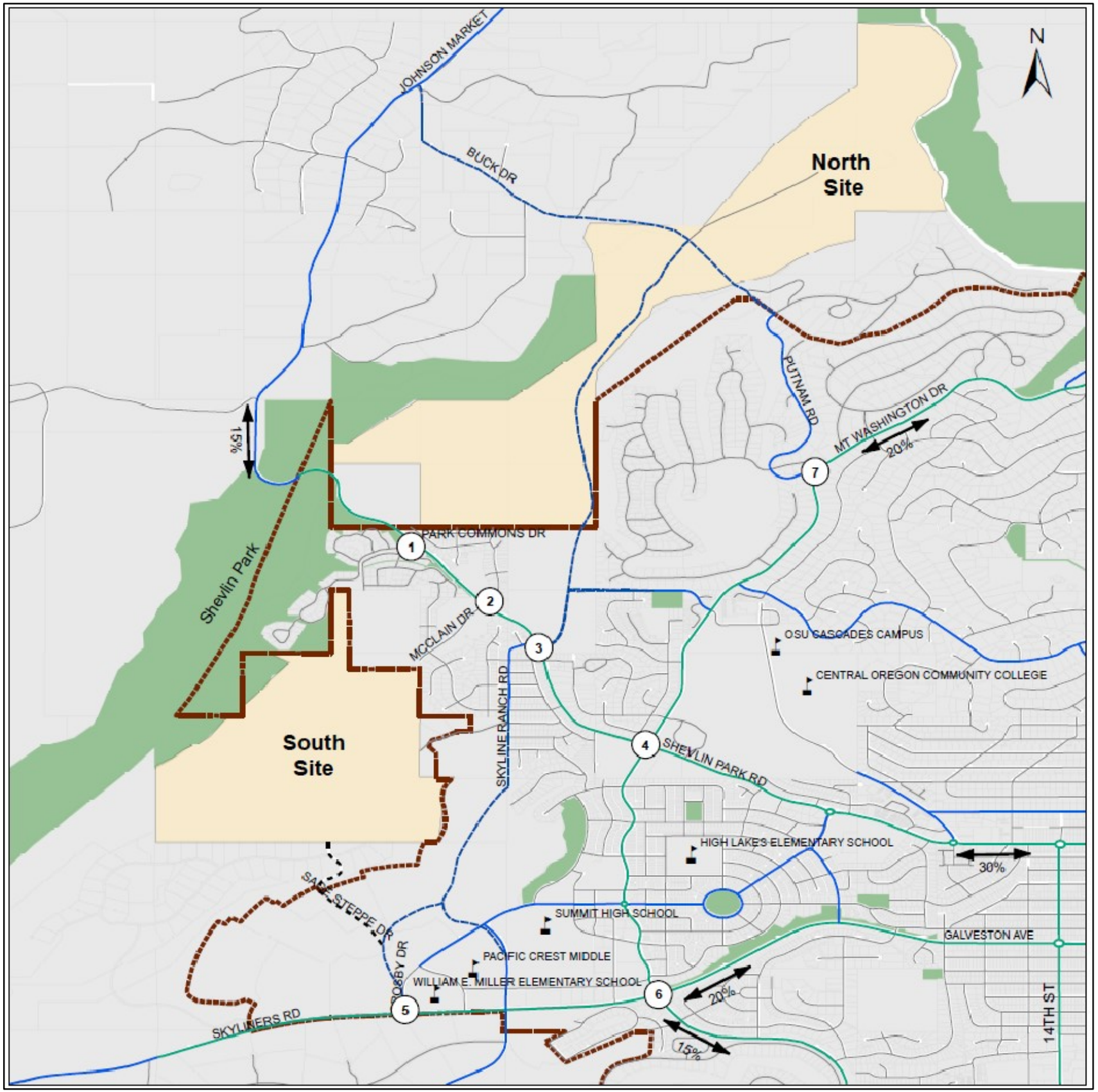
The operational analysis from the original TIS showed that during background year 2030 conditions with site trips from the proposed rezone included, all intersections were anticipated to operate within jurisdictional guidelines. This addendum addresses operational analysis for background year 2040 conditions with site trips from the proposed rezone included. In this scenario, there are three intersections in the city of Bend that are anticipated to operate beyond operational standards with the proposed rezone. No County intersections or roadways are anticipated to be impacted significantly with the rezone.

Of the intersections that are being impacted with the rezone, two have identified mitigations that are planned as part of this development and the surrounding proposed developments. The WIG Development Agreement lists the mitigation measures, which include:

- Modification of the existing single lane roundabout at the intersection of NW Mount Washington Drive at NW Skyliners Road (jointly funded by WIG and the City of Bend)
- Construction of a traffic signal at the intersection of NW Mount Washington Drive at Regency Street (jointly funded by WIG and the City of Bend)
- Construction of a single lane roundabout at the intersection of NW Shevlin Park Road at NW Skyline Ranch Road (funded and constructed entirely by WIG)

Appendix

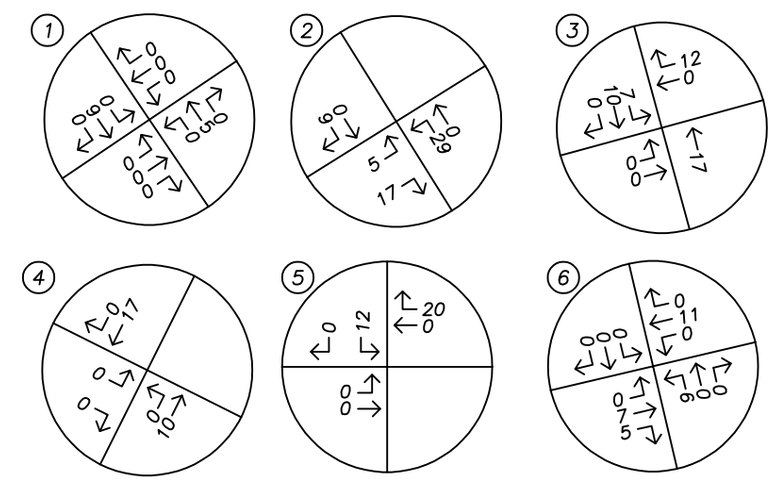
Figure 3 - Trip Distribution and Assignment



Legend

- Schools
- Major Arterial
- Major Collector
- Minor Arterial
- Proposed Major Collector
- Streets
- Proposed Street
- Study Intersections
- Percent of Project Trips (XX%)
- Urban Growth Boundary
- Development Sites
- Parks
- Taxlots

Evening Peak Hour Trip Assignment for South Site Rezone



Evening Peak Hour Trip Assignment for North Site Rezone

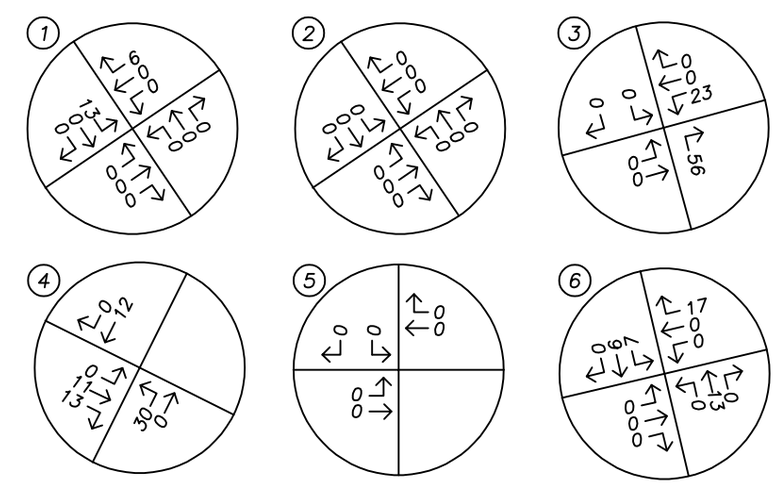
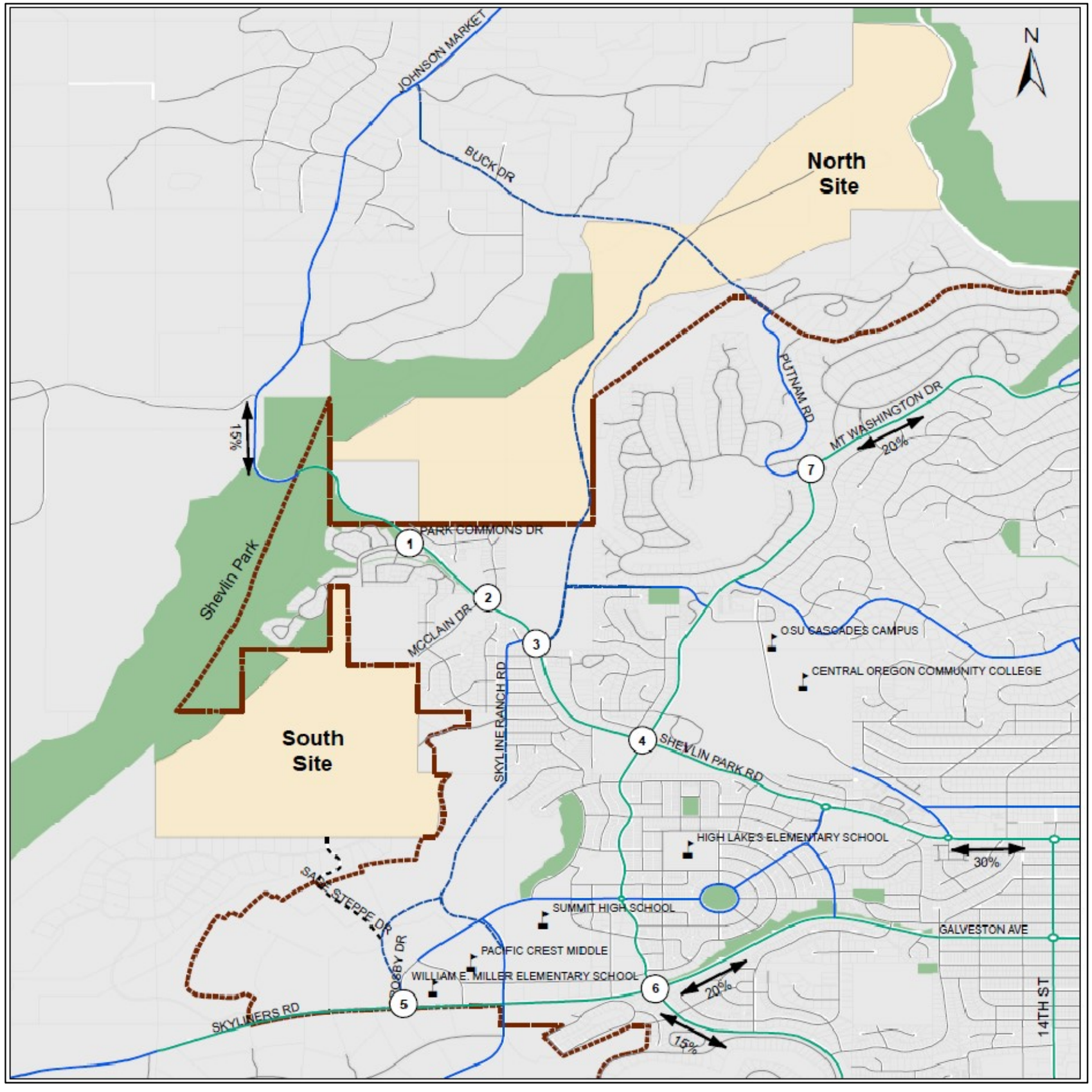


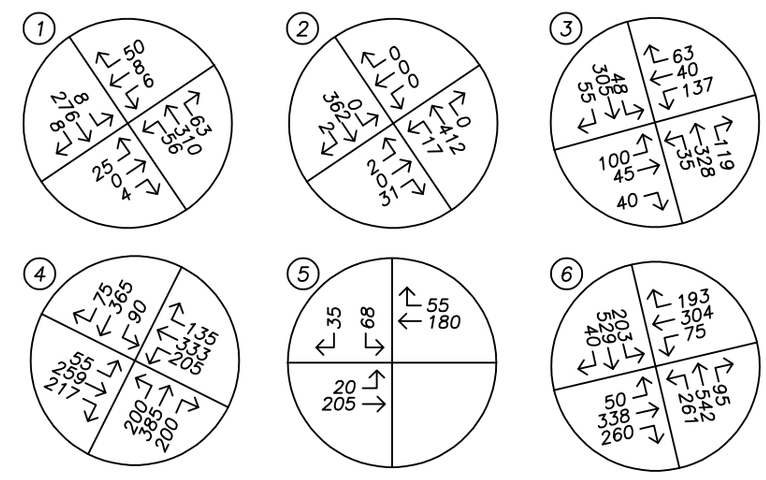
Figure 4 - Background 2040 Traffic Volumes



Legend

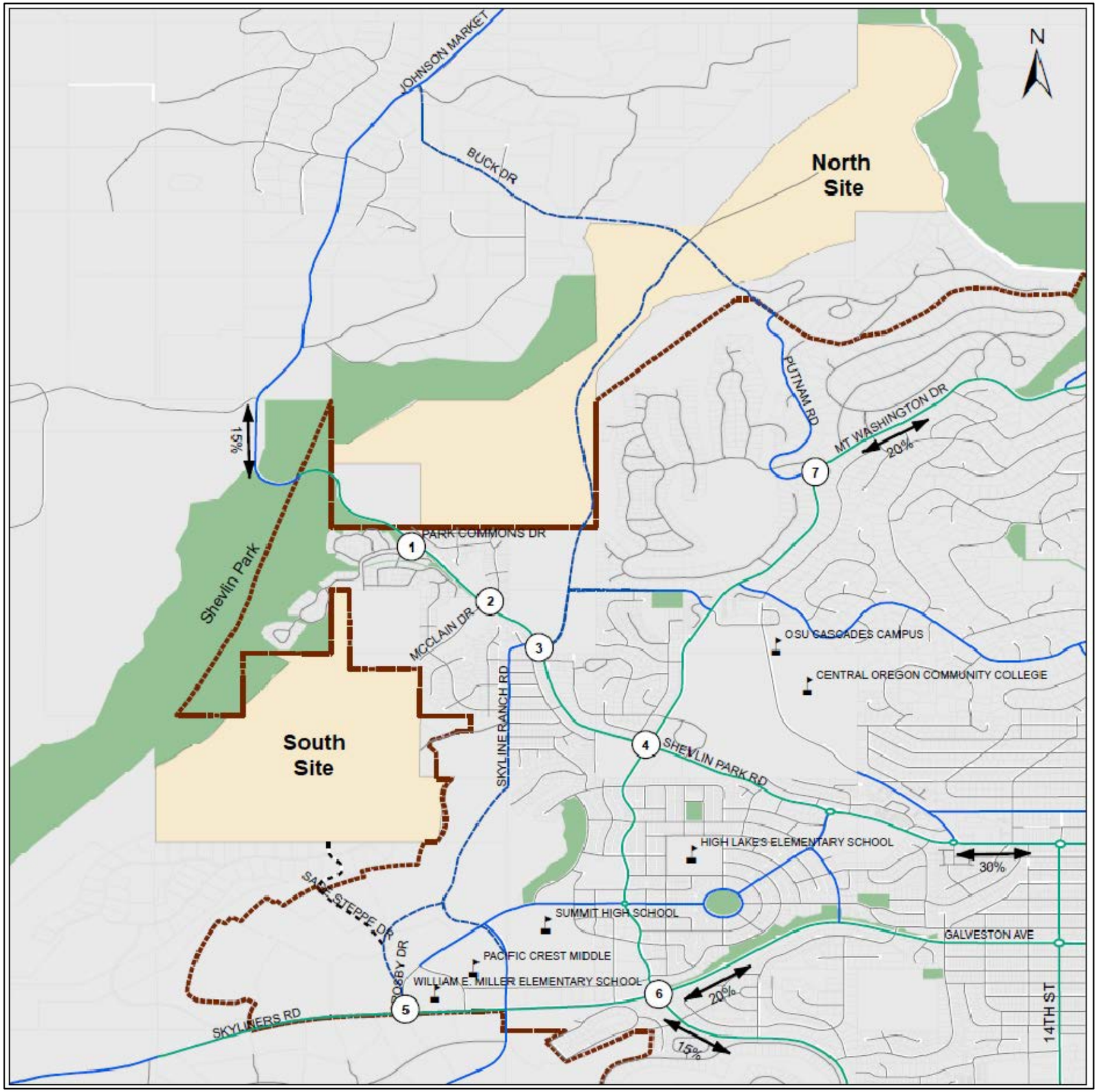
- Schools
- Major Arterial
- Major Collector
- Minor Arterial
- Proposed Major Collector
- Streets
- Proposed Street
- Study Intersections
- Percent of Project Trips (XX %)
- Urban Growth Boundary
- Development Sites
- Parks
- Taxlots

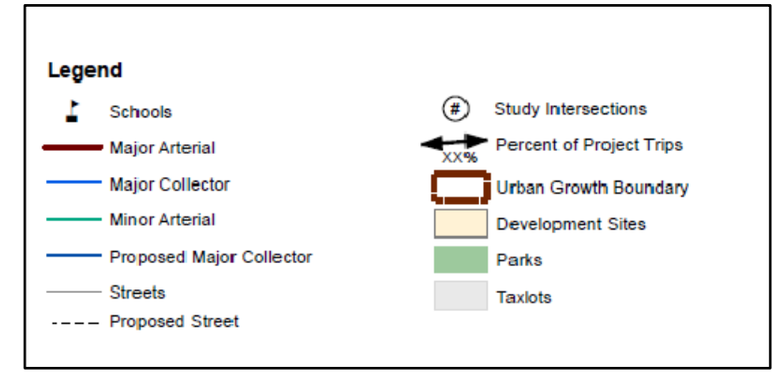
YEAR 2040 BACKGROUND – NORTH AND SOUTH PROPERTIES



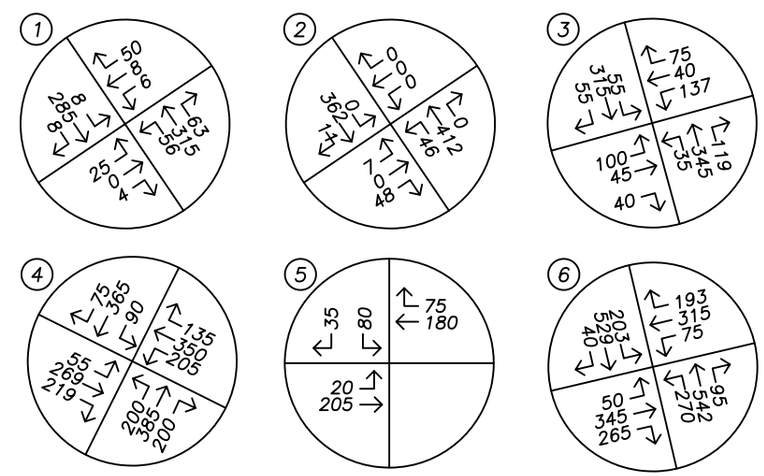
No Scale

Figure 5 - Background 2040 with Rezone Traffic Volumes

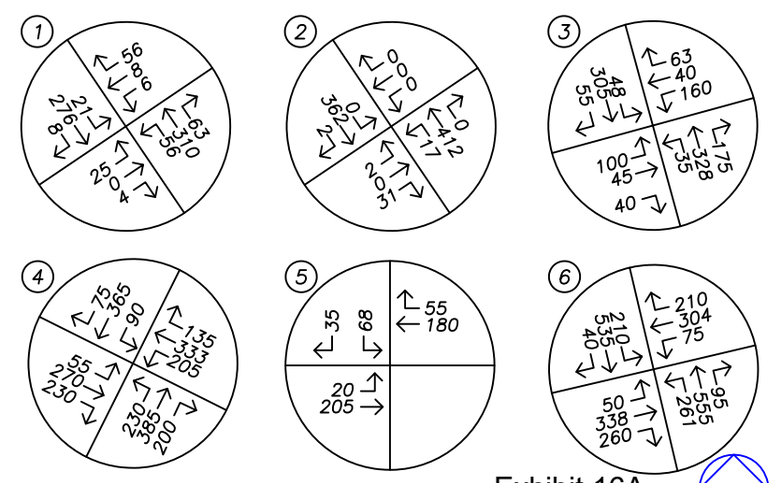




YEAR 2040 BACKGROUND PLUS SOUTH SITE



YEAR 2040 BACKGROUND PLUS NORTH SITE



No Scale

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	25	0	4	6	8	50	8	276	8	56	310	63
Future Vol, veh/h	25	0	4	6	8	50	8	276	8	56	310	63
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	25	0	4	6	8	50	8	276	8	56	310	63

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	795	807	296	768	780	358	386	0	0	297	0	0
Stage 1	309	309	-	467	467	-	-	-	-	-	-	-
Stage 2	486	498	-	301	313	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	308	317	748	321	329	691	1156	-	-	1242	-	-
Stage 1	705	663	-	580	565	-	-	-	-	-	-	-
Stage 2	566	548	-	712	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	264	293	737	302	304	680	1142	-	-	1227	-	-
Mov Cap-2 Maneuver	264	293	-	302	304	-	-	-	-	-	-	-
Stage 1	691	650	-	568	533	-	-	-	-	-	-	-
Stage 2	492	517	-	700	648	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	18.8	12.6	0.2	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1227	-	-	290	535	1142	-	-
HCM Lane V/C Ratio	0.046	-	-	0.1	0.12	0.007	-	-
HCM Control Delay (s)	8.1	-	-	18.8	12.6	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	2	31	362	2	17	412
Future Vol, veh/h	2	31	362	2	17	412
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	2	31	362	2	17	412

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	813	367	0	0	364	0
Stage 1	363	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	351	683	-	-	1173	-
Stage 1	708	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	680	-	-	1173	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	10.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1173	-	642	-	-
HCM Lane V/C Ratio	0.014	-	0.051	-	-
HCM Control Delay (s)	8.1	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	45	40	137	40	63	35	328	119	48	305	55
Future Vol, veh/h	100	45	40	137	40	63	35	328	119	48	305	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	2	0	0	5	8	0	0	0
Mvmt Flow	100	45	40	137	40	63	35	328	119	48	305	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	938	946	333	929	914	388	360	0	0	447	0	0
Stage 1	429	429	-	458	458	-	-	-	-	-	-	-
Stage 2	509	517	-	471	456	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	247	262	713	250	273	665	1210	-	-	1124	-	-
Stage 1	608	584	-	587	567	-	-	-	-	-	-	-
Stage 2	550	534	-	577	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	238	713	188	248	665	1210	-	-	1124	-	-
Mov Cap-2 Maneuver	183	238	-	188	248	-	-	-	-	-	-	-
Stage 1	584	552	-	564	545	-	-	-	-	-	-	-
Stage 2	443	513	-	473	537	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.9	46.7	0.6	1
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1210	-	-	183	713	188	665	1124	-	-
HCM Lane V/C Ratio	0.029	-	-	0.546	0.056	0.729	0.095	0.043	-	-
HCM Control Delay (s)	8.1	0	-	46.1	10.3	63.1	11	8.3	-	-
HCM Lane LOS	A	A	-	E	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.8	0.2	4.7	0.3	0.1	-	-

Intersection Level Of Service Report
Intersection 1: New Intersection

Control Type:	Roundabout	Delay (sec / veh):	39.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Base Volume Input [veh/h]	200	385	200	90	353	75	55	259	217	205	333	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	5.00	2.00	1.00	2.00	5.00	5.00	4.00	2.00	1.00	5.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	385	200	90	353	75	55	259	217	205	333	135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	96	50	23	88	19	14	65	54	51	83	34
Total Analysis Volume [veh/h]	200	385	200	90	353	75	55	259	217	205	333	135
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	418			769			658			674		
Exiting Flow Rate [veh/h]	788			601			640			564		
Demand Flow Rate [veh/h]	200	385	200	90	353	75	55	259	217	205	333	135
Adjusted Demand Flow Rate [veh/h]	200	385	200	90	353	75	55	259	217	205	333	135

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.98	0.97	0.97
Entry Flow Rate [veh/h]	821	530	549	696
Capacity of Entry and Bypass Lanes [veh/h]	901	631	706	694
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	863	617	683	672
X, volume / capacity	0.91	0.84	0.78	1.00

Movement, Approach, & Intersection Results

Lane LOS	D	D	D	F
95th-Percentile Queue Length [veh]	12.99	9.09	7.51	15.99
95th-Percentile Queue Length [ft]	324.68	227.30	187.80	399.63
Approach Delay [s/veh]	34.54	33.32	25.05	60.07
Approach LOS	D	D	D	F
Intersection Delay [s/veh]	39.13			
Intersection LOS	E			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	205	180	55	68	35
Future Vol, veh/h	20	205	180	55	68	35
Conflicting Peds, #/hr	7	0	0	1	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	4	3	0	0	0
Mvmt Flow	20	205	180	55	68	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	242	0	-	0	462	217
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1330	-	-	-	562	828
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1321	-	-	-	545	821
Mov Cap-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	793	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	615
HCM Lane V/C Ratio	0.015	-	-	-	0.167
HCM Control Delay (s)	7.8	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	106.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	648	572	898	772
Demand Flow Rate, veh/h	666	590	909	794
Vehicles Circulating, veh/h	831	869	612	654
Vehicles Exiting, veh/h	617	652	885	805
Ped Vol Crossing Leg, #/h	17	17	7	7
Ped Cap Adj	0.998	0.998	0.999	0.999
Approach Delay, s/veh	103.8	76.6	135.6	96.0
Approach LOS	F	F	F	F

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	666	590	909	794
Cap Entry Lane, veh/h	591	569	739	708
Entry HV Adj Factor	0.973	0.969	0.988	0.972
Flow Entry, veh/h	648	572	898	772
Cap Entry, veh/h	574	550	730	688
V/C Ratio	1.129	1.040	1.231	1.122
Control Delay, s/veh	103.8	76.6	135.6	96.0
LOS	F	F	F	F
95th %tile Queue, veh	21	16	32	23

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	25	0	4	6	8	56	21	276	8	56	310	63
Future Vol, veh/h	25	0	4	6	8	56	21	276	8	56	310	63
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	25	0	4	6	8	56	21	276	8	56	310	63

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	824	833	296	794	806	358	386	0	0	297	0	0
Stage 1	335	335	-	467	467	-	-	-	-	-	-	-
Stage 2	489	498	-	327	339	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	294	307	748	308	318	691	1156	-	-	1242	-	-
Stage 1	683	646	-	580	565	-	-	-	-	-	-	-
Stage 2	564	548	-	690	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	247	280	737	286	290	680	1142	-	-	1227	-	-
Mov Cap-2 Maneuver	247	280	-	286	290	-	-	-	-	-	-	-
Stage 1	660	624	-	560	533	-	-	-	-	-	-	-
Stage 2	485	517	-	669	621	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	19.8	12.7	0.6	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1227	-	-	272	535	1142	-	-
HCM Lane V/C Ratio	0.046	-	-	0.107	0.131	0.018	-	-
HCM Control Delay (s)	8.1	-	-	19.8	12.7	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	2	31	362	2	17	412
Future Vol, veh/h	2	31	362	2	17	412
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	2	31	362	2	17	412

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	813	367	0	0	364	0
Stage 1	363	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	351	683	-	-	1173	-
Stage 1	708	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	680	-	-	1173	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	10.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1173	-	642	-	-
HCM Lane V/C Ratio	0.014	-	0.051	-	-
HCM Control Delay (s)	8.1	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	19.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	45	40	160	40	63	35	328	175	48	305	55
Future Vol, veh/h	100	45	40	160	40	63	35	328	175	48	305	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	0	0	6	0	0	0	0	0	0	0
Mvmt Flow	100	45	40	160	40	63	35	328	175	48	305	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	966	1002	333	957	942	416	360	0	0	503	0	0
Stage 1	429	429	-	486	486	-	-	-	-	-	-	-
Stage 2	537	573	-	471	456	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	7.1	6.56	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.53	-	6.1	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	6.1	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	3.5	4.054	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	236	241	713	239	259	641	1210	-	-	1072	-	-
Stage 1	608	582	-	566	544	-	-	-	-	-	-	-
Stage 2	532	502	-	577	561	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	218	713	176	234	641	1210	-	-	1072	-	-
Mov Cap-2 Maneuver	172	218	-	176	234	-	-	-	-	-	-	-
Stage 1	583	549	-	543	522	-	-	-	-	-	-	-
Stage 2	425	481	-	472	530	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.7	74	0.5	1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1210	-	-	172	713	176	641	1072	-	-
HCM Lane V/C Ratio	0.029	-	-	0.581	0.056	0.909	0.098	0.045	-	-
HCM Control Delay (s)	8.1	0	-	51.5	10.3	98.7	11.2	8.5	-	-
HCM Lane LOS	A	A	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	0.2	6.8	0.3	0.1	-	-

Intersection Level Of Service Report
Intersection 1: New Intersection

Control Type:	Roundabout	Delay (sec / veh):	46.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Base Volume Input [veh/h]	230	385	200	90	365	75	55	270	230	205	333	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	5.00	2.00	1.00	2.00	5.00	5.00	4.00	2.00	1.00	5.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	230	385	200	90	365	75	55	270	230	205	333	135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	96	50	23	91	19	14	68	58	51	83	34
Total Analysis Volume [veh/h]	230	385	200	90	365	75	55	270	230	205	333	135
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	429			801			670			706		
Exiting Flow Rate [veh/h]	814			601			672			576		
Demand Flow Rate [veh/h]	230	385	200	90	365	75	55	270	230	205	333	135
Adjusted Demand Flow Rate [veh/h]	230	385	200	90	365	75	55	270	230	205	333	135

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.98	0.97	0.97
Entry Flow Rate [veh/h]	852	542	574	696
Capacity of Entry and Bypass Lanes [veh/h]	891	610	697	672
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	852	597	675	650
X, volume / capacity	0.96	0.89	0.82	1.04

Movement, Approach, & Intersection Results

Lane LOS	E	E	D	F
95th-Percentile Queue Length [veh]	15.32	10.54	8.77	17.39
95th-Percentile Queue Length [ft]	383.08	263.48	219.33	434.73
Approach Delay [s/veh]	43.00	40.54	29.28	69.92
Approach LOS	E	E	D	F
Intersection Delay [s/veh]	46.57			
Intersection LOS	E			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	205	180	55	68	35
Future Vol, veh/h	20	205	180	55	68	35
Conflicting Peds, #/hr	9	0	0	9	6	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	20	205	180	55	68	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	244	0	-	0	468	225
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1334	-	-	-	557	819
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1323	-	-	-	538	806
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1323	-	-	-	607
HCM Lane V/C Ratio	0.015	-	-	-	0.17
HCM Control Delay (s)	7.8	0	-	-	12.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	115.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	648	589	911	785
Demand Flow Rate, veh/h	666	607	922	807
Vehicles Circulating, veh/h	844	882	619	654
Vehicles Exiting, veh/h	617	659	891	835
Ped Vol Crossing Leg, #/h	17	17	10	10
Ped Cap Adj	0.998	1.000	0.999	0.999
Approach Delay, s/veh	109.6	89.6	146.6	102.8
Approach LOS	F	F	F	F

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	666	607	922	807
Cap Entry Lane, veh/h	583	561	734	708
Entry HV Adj Factor	0.973	0.970	0.988	0.973
Flow Entry, veh/h	648	589	911	785
Cap Entry, veh/h	566	544	724	688
V/C Ratio	1.144	1.081	1.258	1.141
Control Delay, s/veh	109.6	89.6	146.6	102.8
LOS	F	F	F	F
95th %tile Queue, veh	22	18	34	24

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	25	0	4	6	8	50	8	285	8	56	315	63
Future Vol, veh/h	25	0	4	6	8	50	8	285	8	56	315	63
Conflicting Peds, #/hr	3	0	3	1	0	1	13	0	13	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	6	6	6
Mvmt Flow	25	0	4	6	8	50	8	285	8	56	315	63

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	809	821	305	782	794	363	391	0	0	306	0	0
Stage 1	318	318	-	472	472	-	-	-	-	-	-	-
Stage 2	491	503	-	310	322	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.254	-	-
Pot Cap-1 Maneuver	301	312	740	314	323	686	1151	-	-	1232	-	-
Stage 1	698	657	-	576	562	-	-	-	-	-	-	-
Stage 2	563	545	-	705	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	258	288	729	295	298	676	1137	-	-	1217	-	-
Mov Cap-2 Maneuver	258	288	-	295	298	-	-	-	-	-	-	-
Stage 1	684	644	-	564	530	-	-	-	-	-	-	-
Stage 2	488	514	-	694	642	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	19.2	12.8	0.2	1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1217	-	-	283	528	1137	-	-
HCM Lane V/C Ratio	0.046	-	-	0.102	0.121	0.007	-	-
HCM Control Delay (s)	8.1	-	-	19.2	12.8	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	7	48	362	11	46	412
Future Vol, veh/h	7	48	362	11	46	412
Conflicting Peds, #/hr	4	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	7	48	362	11	46	412

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	876	372	0	0	373	0
Stage 1	368	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	322	678	-	-	1164	-
Stage 1	704	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	304	675	-	-	1164	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	11.8	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1164	-	584	-	-
HCM Lane V/C Ratio	0.04	-	0.094	-	-
HCM Control Delay (s)	8.2	0	11.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	16.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	45	40	137	40	75	35	345	119	55	315	55
Future Vol, veh/h	100	45	40	137	40	75	35	345	119	55	315	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	0	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	0	0	6	0	0	0	0	0	0	0
Mvmt Flow	100	45	40	137	40	75	35	345	119	55	315	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	985	987	343	970	955	405	370	0	0	464	0	0
Stage 1	453	453	-	475	475	-	-	-	-	-	-	-
Stage 2	532	534	-	495	480	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	7.1	6.56	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.53	-	6.1	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	6.1	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	3.5	4.054	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	229	246	704	235	254	650	1200	-	-	1108	-	-
Stage 1	590	568	-	574	551	-	-	-	-	-	-	-
Stage 2	535	523	-	560	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	162	221	704	173	229	650	1200	-	-	1108	-	-
Mov Cap-2 Maneuver	162	221	-	173	229	-	-	-	-	-	-	-
Stage 1	566	532	-	551	529	-	-	-	-	-	-	-
Stage 2	420	502	-	453	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.2	53.8	0.6	1.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1200	-	-	162	704	173	650	1108	-	-
HCM Lane V/C Ratio	0.029	-	-	0.617	0.057	0.792	0.115	0.05	-	-
HCM Control Delay (s)	8.1	0	-	57.7	10.4	77	11.3	8.4	-	-
HCM Lane LOS	A	A	-	F	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.4	0.2	5.3	0.4	0.2	-	-

Intersection Level Of Service Report
Intersection 1: New Intersection

Control Type:	Roundabout	Delay (sec / veh):	42.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mt Washington Drive			Mt Washington Drive			NW Shevlin Park Rd			NW Shevlin Park Rd		
Base Volume Input [veh/h]	200	385	200	90	353	75	55	269	217	205	350	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	5.00	2.00	1.00	2.00	5.00	5.00	4.00	2.00	1.00	5.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	385	200	90	353	75	55	269	217	205	350	135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	96	50	23	88	19	14	67	54	51	88	34
Total Analysis Volume [veh/h]	200	385	200	90	353	75	55	269	217	205	350	135
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	428			787			658			674		
Exiting Flow Rate [veh/h]	788			601			658			575		
Demand Flow Rate [veh/h]	200	385	200	90	353	75	55	269	217	205	350	135
Adjusted Demand Flow Rate [veh/h]	200	385	200	90	353	75	55	269	217	205	350	135

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.98	0.97	0.97
Entry Flow Rate [veh/h]	821	530	559	714
Capacity of Entry and Bypass Lanes [veh/h]	892	619	706	694
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	854	606	683	672
X, volume / capacity	0.92	0.86	0.79	1.03

Movement, Approach, & Intersection Results

Lane LOS	E	E	D	F
95th-Percentile Queue Length [veh]	13.41	9.52	7.91	17.31
95th-Percentile Queue Length [ft]	335.26	238.01	197.77	432.65
Approach Delay [s/veh]	36.31	35.65	26.24	66.89
Approach LOS	E	E	D	F
Intersection Delay [s/veh]	42.35			
Intersection LOS	E			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	205	180	75	80	35
Future Vol, veh/h	20	205	180	75	80	35
Conflicting Peds, #/hr	9	0	0	9	6	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	20	205	180	75	80	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	264	0	-	0	478	235
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1312	-	-	-	550	809
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1301	-	-	-	531	796
Mov Cap-2 Maneuver	-	-	-	-	531	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1301	-	-	-	591
HCM Lane V/C Ratio	0.015	-	-	-	0.195
HCM Control Delay (s)	7.8	0	-	-	12.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Intersection Delay, s/veh	217.5
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	660	600	907	772
Demand Flow Rate, veh/h	678	619	918	794
Vehicles Circulating, veh/h	831	878	619	675
Vehicles Exiting, veh/h	638	659	890	822
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	17	17	10	10
Ped Cap Adj	0.998	0.998	0.999	0.999
Approach Delay, s/veh	207.8	184.8	257.4	204.1
Approach LOS	F	F	F	F

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	678	619	918	794
Cap Entry Lane, veh/h	492	470	608	575
Entry HV Adj Factor	0.973	0.970	0.988	0.972
Flow Entry, veh/h	660	600	907	772
Cap Entry, veh/h	478	454	600	559
V/C Ratio	1.381	1.321	1.511	1.382
Control Delay, s/veh	207.8	184.8	257.4	204.1
LOS	F	F	F	F
95th %tile Queue, veh	31	27	46	35

RECEIVED

JAN 2 6 1996

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Pg 2 of 2

Instructions for completing this report are on the last page of this form.

(START CARD) # 83679

(1) OWNER: Well Number #2

Name R.L. COATS
Address 2925 NW SKYLINE RD
City BEND State OR Zip 97701

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger
[ ] Other

(4) PROPOSED USE:
[ ] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 880 ft.
Explosives used [ ] Yes [X] No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
REFER TO PAGE 1						

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
[ ] Perforations Method
[ ] Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? [ ] Yes By whom
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County DESCHUTES Latitude Longitude
Township 17 N or (S) Range 11 (E) or W. WM.
Section 24 NE 1/4 NW 1/4
Tax Lot 100 Lot Block Subdivision
Street Address of Well (or nearest address) SKYLINE RANCH RD

(10) STATIC WATER LEVEL:
778 ft. below land surface. Date 12/22/95
Artesian pressure lb. per square inch. Date 12/22/95

(11) WATER BEARING ZONES:
Depth at which water was first found 778'

From	To	Estimated Flow Rate	SWL
778	836	200 + 6gpm	778
838	847	100 + 6gpm	778
858	873	500 + 6gpm	778
873	880	200 + 6gpm	778

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
MED LAVA	421	430	
MILD LAVA	430	441	
HARD GRAY LAVA	441	448	
MED LAVA	448	474	
BROKEN LAVA + CINDERS	474	503	
MILD BROWN LAVA	503	524	
SANDSTONE + LAVA CONGLOM	524	551	
MILD GRAY LAVA	551	562	
SANDSTONE + LAVA CONGLOM	562	710	
MILD LAVA + CINDERS	710	836	778
REGULAR LAVA + CINDERS	836	847	778
HARD GRAY LAVA	847	858	
CINDERS + LAVA	858	866	778
COARSE SANDSTONE	866	873	
COARSE GRAVEL + CINDERS	873	880	778

Date started 11/2/95 Completed 12/21/95

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1555
Signed William [illegible] Date 1-8-96

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

DESC 60659
8/1/2016

WELL I.D. LABEL# L 122608
START CARD # 1030692
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
t Name KYLE Last Name COATS
ompany
Address 63285 SKYLINE RANCH RD
City BEND State OR Zip 97703

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion
[ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 836.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
12	0	58	Bentonite Chips	0	58	34	S
8	58	836			Calculated	30	
					Calculated		

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other POURED DRY
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
(•)	( )	8	[X]	2	58	.250	(•)	( )	[X]	[ ]
( )	(•)	6	[ ]	0	836	.188	(•)	( )	[X]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]

Shoe [ ] Inside [ ] Outside [ ] Other Location of shoe(s)
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method TORCH
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Liner	6	816	836	.25	6	45	

(8) WELL TESTS: Minimum testing time is 1 hour

( ) Pump ( ) Bailer (•) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		830	1.5

Temperature 54 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount 114 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County DESCHUTES Twp 17.00 S N/S Range 11.00 E E/W WM
Sec 24 NE 1/4 of the NW 1/4 Tax Lot 100
Tax Map Number Lot
Lat ° ' " or 44.09419444 DMS or DD
Long ° ' " or -121.35675000 DMS or DD
(•) Street address of well ( ) Nearest address
63155 NW SKYLINE RANCH RD
BEND,OR

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration			[ ]	
Completed Well	7/29/2016		[ ]	695

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 765.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
7/28/2016	765	836	20		[ ]	695
					[ ]	
					[ ]	
					[ ]	
					[ ]	

(11) WELL LOG

Ground Elevation 3601.00

Material	From	To
SAND PUMICE	0	3
PUMICE CINDERS GRAY	3	45
BASALT FRACTURED	45	52
BASALT	52	88
CINDERS	88	101
SANDSTONE CONGLOMERATE	101	165
SANDSTONE BLACK	165	205
BASALT CREVICED BROKEN	205	251
CONGOMERATE BROWN	251	365
BASALT	365	428
BASALT CONGLOMERATE	428	471
BASALT	471	492
SANDSTONE BROWN	492	505
BASALT	505	545
BASALT BROKEN	545	560
BASALT CONGLOMERATE	560	590
BASALT VESICULAR	590	632
BASALT FRACTURED LAYERS	632	668
BASALT CREVICED BROKEN	668	680

Date Started 7/25/2016 Completed 7/29/2016

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 758 Date 8/1/2016

Signed THOMAS R PECK (E-filed)

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1720 Date 8/1/2016

Signed JACK ABBAS (E-filed)
Contact Info (optional)

Exhibit 17
Page 2 of 9

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version:

WATER SUPPLY WELL REPORT - continuation page

DESC 60659

8/1/2016

WELL I.D. LABEL# L	122608
START CARD #	1030692
ORIGINAL LOG #	

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
					Calculated		
					Calculated		
					Calculated		
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Material	From	To
BASALT VESICULAR CINDERS MIX	680	836

Comments/Remarks

4 YARDS SAND GROUT 30 FEET - 260 FEET
4 YARDS SAND GROUT 160 FEET - 380 FEET
4 YARDS SAND GROUT 450 FEET - 696 FEET

WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

DESC 60659

8/1/2016

Map of Hole

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

LOCATION OF WELL

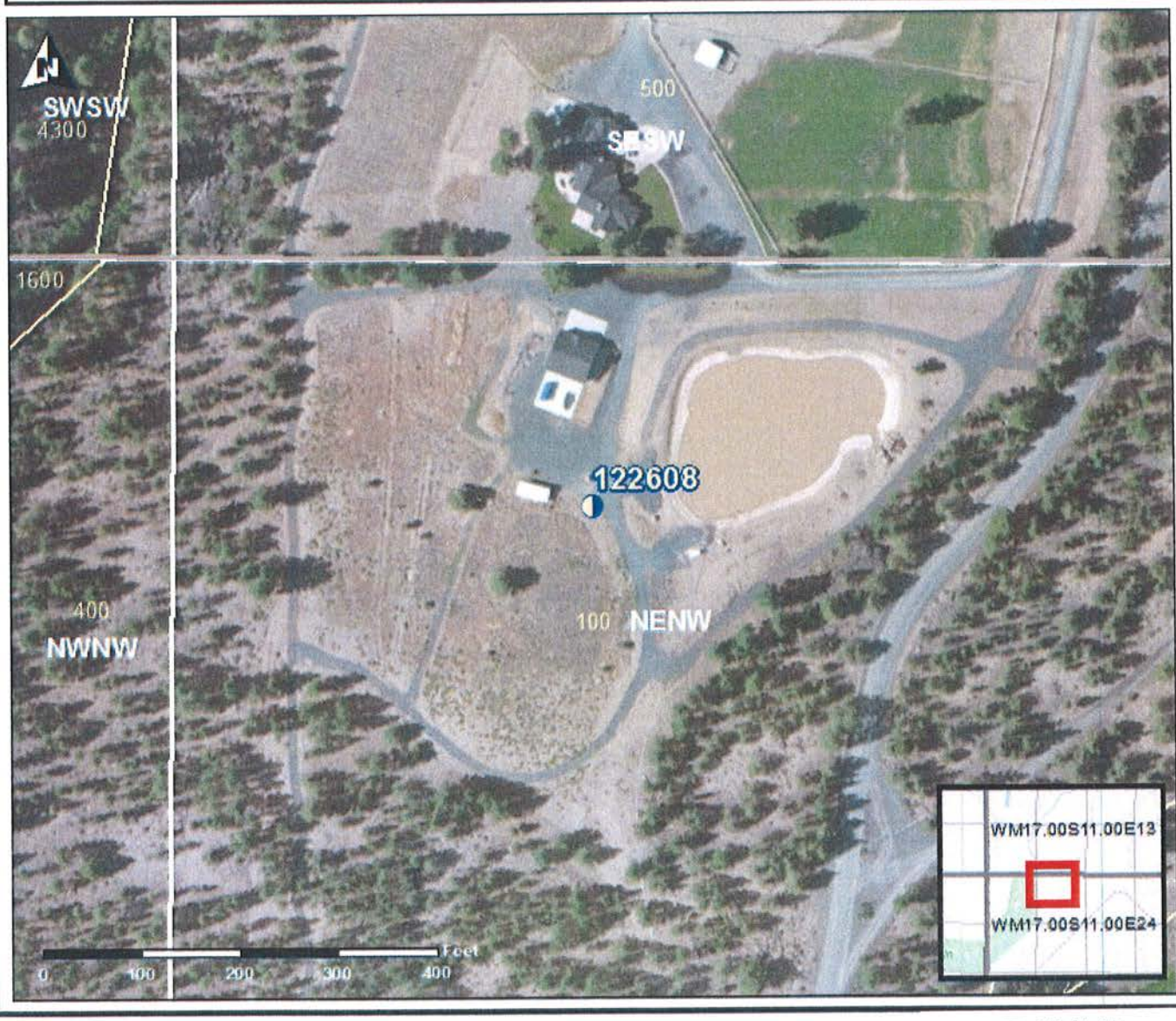
Latitude: 44.09419444 Datum: WGS84
Longitude: -121.35675
Township/Range/Section/Quarter-Quarter Section:
WM 17S 11E 24 NENW
Address of Well:
63155 NW SKYLINE RANCH RD

Well Label: 122608

Printed: August 1, 2016

DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.

Provided by well constructor



STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

DESC 60706

9/4/2016

WELL I.D. LABEL# L 121053
START CARD # 1032015
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name GREG Last Name MACDOWALL
Company
Address 1787 SW TROON
City BEND State OR Zip 97702

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion
[ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 741.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
12	0	42.5	Bentonite	0	42.5	62	S
8	42.5	741			Calculated	48.18	
					Calculated		

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other BENTONITE DRY
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	8	[X]	1.5	42.5	.250	●	○	[X]	
○	●	6	[ ]	6	741	.188	●	○	[X]	
○	○						○	○		
○	○						○	○		
○	○						○	○		

Shoe [ ] Inside [X] Outside [X] Other Location of shoe(s) 741
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method Factory cut
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Liner	6	701	741	.125	3	468	

(8) WELL TESTS: Minimum testing time is 1 hour

○ Pump ○ Bailer ● Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		720	1.8

Temperature 56 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County DESCHUTES Twp 17.00 S N/S Range 11.00 E E/W WM
Sec 13 NW 1/4 of the NW 1/4 Tax Lot 809
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
● Street address of well ○ Nearest address
63582 JOHNSON RD BEND OR 97703

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	9/2/2016			563

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 563.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
9/2/2016	563	741	20			563

(11) WELL LOG

Ground Elevation

Material	From	To
Top Soil	0	12
Dark Top soil with pumis	12	28
lava	28	34
Basalt	34	48
Brown SS	48	96
lava midd Gray	96	112
Creves	112	113
Basalt black	113	125
lava	125	128
soft lava congl	128	135
lava	135	151
Soft brown SS lava	151	187
Clay Stone red soft	187	208
Clay Stone	208	244
Redish SS	244	281
Bronw SS	281	318
Soft Brown SS	318	352
Soft Brown SS	352	394
Basalt hard	394	415

Date Started 9/1/2016 Completed 9/2/2016

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1255 Date 9/4/2016

Signed WILLIAM DOUG AIKEN (E-filed)

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1970 Date 9/4/2016

Signed NEIL M FAGEN (E-filed)
Contact Info (optional) Neil Fagen 1970 541-548-1245

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version:

WATER SUPPLY WELL REPORT - continuation page

DESC 60706

9/4/2016

WELL I.D. LABEL# L 121053
START CARD # 1032015
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
					Calculated		
					Calculated		
					Calculated		
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Material	From	To
Soft Brown SS	415	418
basalt	418	457
Bronw SS soft	457	513
lava	513	518
Brown SS	518	536
lava	536	549
Brown SS	549	568
lava	568	580
Brown SS	580	592
lava	592	603
Brown SS	603	608
lava	608	616
soft Brown SS	616	623
Lava	623	654
Soft brown SS	654	680
Dark Brown SS	680	716
Soft light Bronw SS Congl With Pumis	716	741

Comments/Remarks

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED SEP 23 1971 STATE ENGINEER

DESC #718

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. 17/11-26

State Permit No.

Powell Performance Products Inc. (Owner)

(1) OWNER:
Name CASCADE M.C. CLUB
Address BEND ORE

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED: Threaded ☐ Welded ☒
8 5/8" Diam. from 0 ft. to 21 ft. Gage 250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☐ Yes ☒ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " "
" " "
Bailer test 15 gal./min. with NO ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water 55 Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used CEMENT
Well sealed from land surface to 21 ft.
Diameter of well bore to bottom of seal 12 in.
Diameter of well bore below seal 8 in.
Number of sacks of cement used in well seal 5 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County DESCHUTES Driller's well number
¼ ¼ Section 26 T. 17 S R. 11-E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 360 ft.
Static level 360 ft. below land surface. Date 9-12-71
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 8
Depth drilled 386 ft. Depth of completed well 386 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
OVER BURDEN	0	3	
HARD LAVA	3	51	
CONE.	51	135	
SANDSTONE	135	360	
WATER BEARING			
SAND GRAVEL	360	385	360

Work started 9-12-1971 Completed 9-12 1971
Date well drilling machine moved off of well 9-12 1971

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Thomas Jackson (Drilling Machine Operator) Date 9-12, 1971
Drilling Machine Operator's License No. 370

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Cunningham Well Drilling (Person, firm or corporation) (Type or print)
Address P.O. Box 104 Bend, Ore.
[Signed] Wm. M. Cunningham (Water Well Contractor)
Contractor's License No. 474 Date Sept 18, 1971

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

DESC NOV - 9 1992
1544
WATER RESOURCES DEPT.
SALEM, OREGON

17S/11E/26cd

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # 33203

(1) OWNER:
Well Number: 47
Name: DAVID & JEAN McCLAIN
Address: 9023 S.W. 176TH AVE.
City: BEAVERTON State: OR. Zip: 97007

(2) TYPE OF WORK:
☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD
☑ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☑ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☐ Depth of Completed Well 478 ft.
Explosives used Yes ☐ No ☑ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12"	0"	20'	BENTONITE	0'	20'	3 65KS.
8"	+1'	478				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other POURED DRY
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	+1'	20'	250	☑	☐	☑	☐
Liner:	6"	-5	478	160 PSI	☐	☑	☑	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☑ Perforations Method SKILL SAW
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
438	478	1/16" X 3"	180	6"		☐	☑

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☑ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
50GPM.		477	1 hr.

Temperature of water 50° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County DESCH. Latitude Longitude
Township 17 S. N or S. Range 11 E. E or W. WM.
Section 26 SE ¼ NE ¼
Tax Lot 00103 Lot Block Subdivision
Street Address of Well (or nearest address) 62628 McCLAIN DR
BEND, OR. 97701

(10) STATIC WATER LEVEL:
368' ft. below land surface. Date 11-5-92
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 460'

From	To	Estimated Flow Rate	SWL
460	478	50 GPM.	368

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
BRN SOIL	0	5	
BLACK CINDERS	5	14	
GRAY ROCK HARD	14	35	
RED CINDERS	35	50	
BRN PUMICE	50	120	
BROWNISH RED CLAY CONG.	120	163	
BRN SAND STONE	163	221	
TAN SAND STONE	221	240	
GRAY SAND STONE	240	280	
TAN SAND STONE	280	304	
COURSE SAND MED GRAVEL	304	310	
TAN SAND STONE	310	338	
GRAY ROCK MED.	338	349	
BRN. CLAY CONG.	349	355	
GRAY ROCK MED.	355	370	
BRN. ROCK MED.	370	400	
BRN CLAY CONG.	400	460	
COURSE SAND & MED GRAVEL WB.	460	478	368

Date started 10-26-92 Completed 10-5-92

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1536
Signed Gary McRaley Date 11-5-92

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

DESC 54081

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 49462
START CARD # 139925

(1) LAND OWNER Well Number
Name Dave Swisher
Address 547 S.W. 13th Suite K
City Bend State Ore. Zip 97702

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 395 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
12	0	48½	Bentonite	0	48½	29 sacks
8	48½	395				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other Poured in Dry
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+1½	48½	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	6	-5	395	.188	☒	☐	☒	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☒ Outside ☐ None
Final location of shoe(s) 6" at 395

(7) PERFORATIONS/SCREENS:
☒ Perforations Method Machined
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
365	385	1/16 x 4	228	6		☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
25+	0	390	1 hr

Temperature of water 52° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Deschutes Latitude Longitude
Township 17 N or S Range 11 E or W. WM.
Section 26 SE 1/4 SE 1/4
Tax Lot 500 Lot Block Subdivision
Street Address of Well (or nearest address) Shevlin Park Rd.
Bend, Ore.

(10) STATIC WATER LEVEL:
301 ft. below land surface. Date 8-29-01
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 328

From	To	Estimated Flow Rate	SWL
328	395	25+	301

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
Top soil & Boulders	0	8	
Pumis	8	42	
Brown sand stone	42	111	
Black sand stone	111	130	
Brown sand stone	130	152	
Broken Lava	152	227	
Brown sand stone	227	258	
Broken Lava	258	262	
Basalt	262	328	301
W.B. Brown sand stone	328	395	

RECEIVED
SEP 04 2001
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 8-28-01 Completed 8-29-01

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1276
Signed Date 8-29-01

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1235
Signed Doug Acker Date 8-29-01

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

Fire Protection Disrict Map

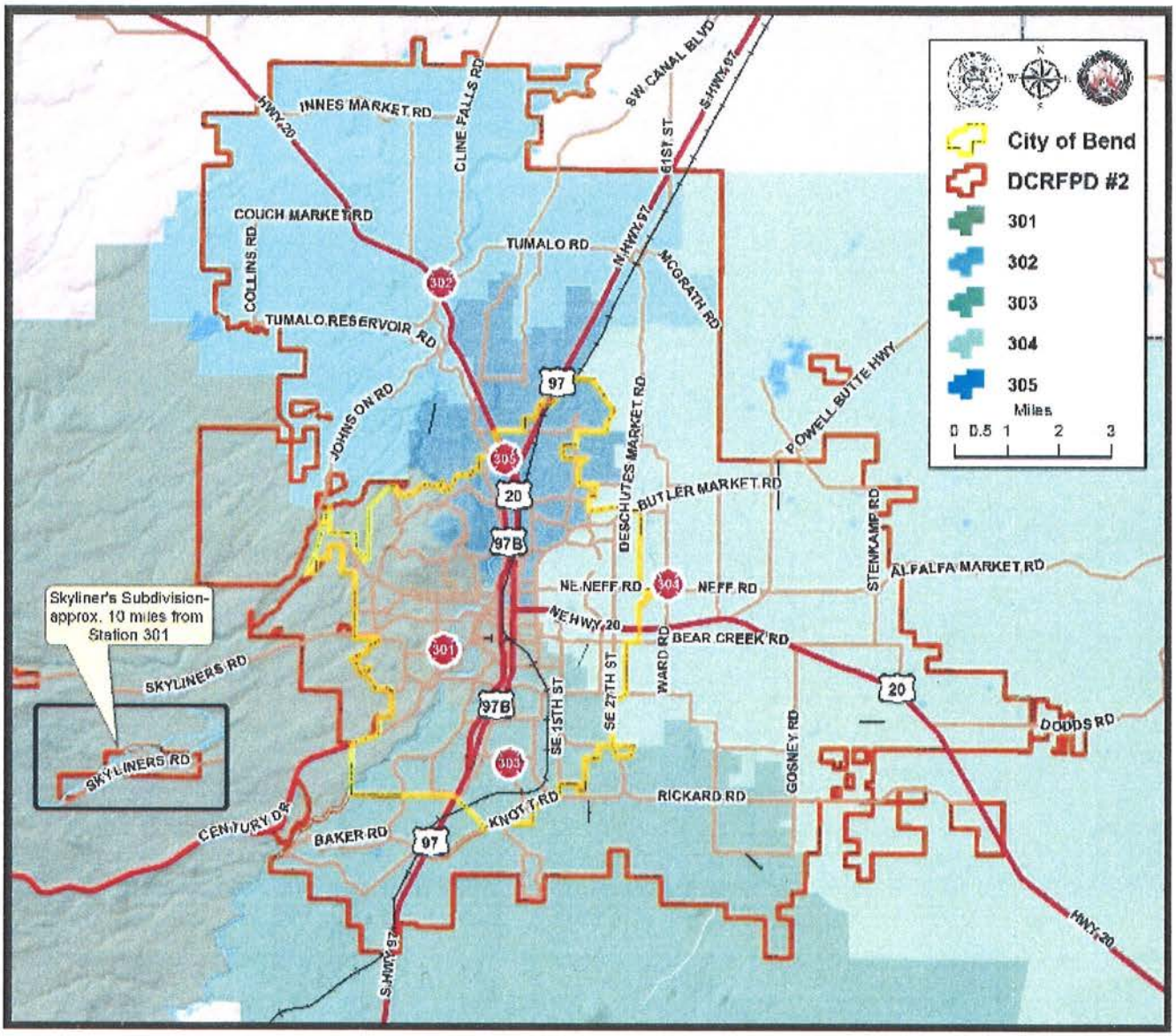


Exhibit 18
Page 1 of 1

Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2540
Phone: (503) 373-0050
Fax: (503) 378-5518
www.oregon.gov/LCD

November 3, 2010

Kathie Eckman, Mayor
City of Bend
710 NW Wall Street
Bend, OR 97701

Dennis Luke, Chair
Deschutes County Board of Commissioners
1300 NW Wall Street
Bend, OR 97701

RE: LCDC Remand and Partial Acknowledgment of City of Bend Urban Growth Boundary Commission's Order 10-Remand-Part Acknowledgment-001795

Dear Mayor Eckman and Chair Luke:

On March 18 and 19, April 22 and 23, and May 12, 2010, the Land Conservation and Development Commission (LCDC) held hearings on the appeal of the decision of the Director of the Department of Land Conservation and Development's Order 001775 regarding the City's Urban Growth Boundary expansion. The Commission took action to remand and partially acknowledge the City's UGB expansion and related actions of the City and Deschutes County. Enclosed you will find the LCDC Order 10-Remand-Partial Acknowledgment-001795.

You may be entitled to judicial review of this order. Judicial review may be obtained by filing a petition for review within 60 days from the service of this final order. Judicial review is pursuant to the provision of ORS 183.482 and 197.650.

If you have any questions please feel free to contact your periodic review team leader and regional representative, Karen Swirsky at (541) 318-2899 or karen.swirsky@state.or.us .

Yours truly,

Richard Whitman
Director

Attachment: Remand and Partial Acknowledgement Order
cc via e-mail:
Objectors
Mel Oberst, Bend Community Development Director
Nick Lelack, Deschutes County Planning Director
Steve Shipsey, Assistant Attorney General, DOJ
Larry French, DLCD Periodic Review Specialist *(e-mail)*
DLCD Staff (Rob Hallyburton, Darren Nichols, Gloria Gardiner, Jon Jinings, Karen Swirsky - *e-mail*)

BEFORE THE
LAND CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF OREGON

IN THE MATTER OF THE REVIEW	**)**	
OF THE URBAN GROWTH	**)**	**REMAND AND PARTIAL**
BOUNDARY EXPANSION FOR THE	**)**	**ACKNOWLEDGEMENT ORDER**
CITY OF BEND; & RELATED	**)**	**10-REMAND-PARTIAL ACKNOW-001795**
ACTIONS OF THE CITY AND	**)**	
DESCHUTES COUNTY	**)**	

This matter concerns certain ordinances adopted by the City of Bend and Deschutes County relating to a legislative amendment of the city's urban growth boundary (UGB). This matter came before the Land Conservation and Development Commission (Commission or LCDC) on March 18 and 19, April 22 and 23, and May 12, 2010, as an appeal of a decision of the Director of the Department of Land Conservation and Development (Director) Order 001775 dated January 8, 2010, pursuant to ORS 197.626, ORS 197.633, ORS 197.644(2) and OAR chapter 660, division 25. The Commission fully considered the City of Bend's submittals; Deschutes County's submittals, the objections to the submittals, Order 001775; the appeals of that order, the Department's Report on the Appeals, exceptions to the Department's Report, and the oral argument of the parties to the appeal.

To the extent that there is any conflict between the analysis in this order and the conclusions set forth in the order, the conclusions will control. In addition, any objection to the submittals not expressly addressed herein is deemed denied for the reasons set forth in Order 001775. Similarly, and basis for appeal of Order 001775 not expressly addressed herein is deemed denied for the reasons set forth in the Department's Report on the Appeals.

The organization of this order is shown in the following table of contents:

Table of Contents

I. Background and Procedural History 3
II. Procedural Matters 6
III. Scope of Review 7
IV. Standard of Review 8
V. Procedural Issues 9
- **1. Jurisdiction 9**
- **2. Adequacy of Local Public Notice of Facilities Plans 13**

VI. Substantive Objections and Appeals 13
- **1. Adequacy of Findings for Review 13**
- **2. Residential Land Needs 17**
- **3. Capacity of the Existing UGB & Efficiency Measures 48**
- **4. Other (Non-Employment) Land Needs 57**
- **5. Employment Land Needs 64**
- **6. Natural Resources and Hazards 86**
- **7. Public Facilities Planning 96**
- **8. Transportation Planning 114**
- **9. Location of the UGB Expansion Area 123**
- **10. Other Issues 138**

VII. Compliance with the Goals, Rules and Statutes 147
VIII. Conclusions 148

I. Background and Procedural History

The submittals before the Commission for review are three City of Bend Ordinances: NS 2111 (Public Facility Plans), NS 2112 (Urban Growth Boundary (UGB)), and NS 2113 (Bend Development Code); and two Deschutes County Ordinances: 2009-001 (Urbanization Code, UGB Comprehensive Plan Map and Transportation System Plan (TSP) Map) and 2009-002 (Urban Holding Zones, UGB Zoning Map).

The history of these submittals is as follows:

1. On June 11, 2007, the City submitted a notice of a proposed 4,884-acre UGB expansion to the Department through a 45-day post-acknowledgement plan amendment notice. The notice also included a 14,775-acre urban reserve proposal, which was withdrawn from further consideration shortly thereafter. Following joint public hearings by the city and county planning commissions, it was decided locally that further work was needed on the UGB.

2. On October 8, 2008 the city submitted notice of a revised 8,943-acre UGB expansion proposal, along with related amendments to its public facilities plan, other elements of its comprehensive plan, and its development code. A joint planning commission hearing occurred on October 27, 2008 (with the Deschutes County Planning Commission). The Bend City Council and Deschutes County Board of Commissioners held a joint public hearing on the proposal on November 24, 2008 and considered certain changes to it. The written public hearing record remained open until December 1, 2008. After deliberation during December 2008 the City adopted the proposal (consisting of three ordinances as described above) on January 5, 2009.

3. The Deschutes County Board of Commissioners co-adopted the UGB amendment and related amendments to the county comprehensive plan and county zoning code (consisting of two ordinances as described above) on February 11, 2009.

4. The City provided local notice of its adoption, and submitted ordinances NS-2112 and NS-2113 to the Department for review on April 16, 2009. The submittal did not include Ordinance NS-2111, which adopted an amended public facilities plan, although a copy of Ordinance NS- 2111 was included in the April 16, 2009 submittal materials.

5. The 21-day objection period for the April 16, 2009 submittal ended on May 7, 2009, with 27 parties filing objections. Also on May 7, 2009, the Department sent the City notice that the submittal was incomplete. The City responded to the department's notice on June 5,

2009.

6. On June 12, 2009, the City provided local notice of its adoption of Ordinance NS-2111 (public facility plan amendments), and submitted that ordinance to the Department for review. This submittal started a second 21-day objection period. This second objection period ended on July 6, 2009 with nine objecting parties, including some who had objected to the UGB submittal, objecting.

7. The department determined that the city's submittals were complete on August 28, 2009, and consolidated the submittals for review in the manner of periodic review. This began the 120-day review period for the director's decision on the consolidated submittal.

8. The 120-day review period was extended to January 8, 2010 by agreement of the City and the Department. On January 8, 2010 the Director issued his Director's Decision, remanding the city's three ordinances, and providing notice to the City and County and all objectors. The Director's Decision held that the objections of two objectors were not valid under the Commission's rules (Simpson and Spencer). Director's Decision, at 11.

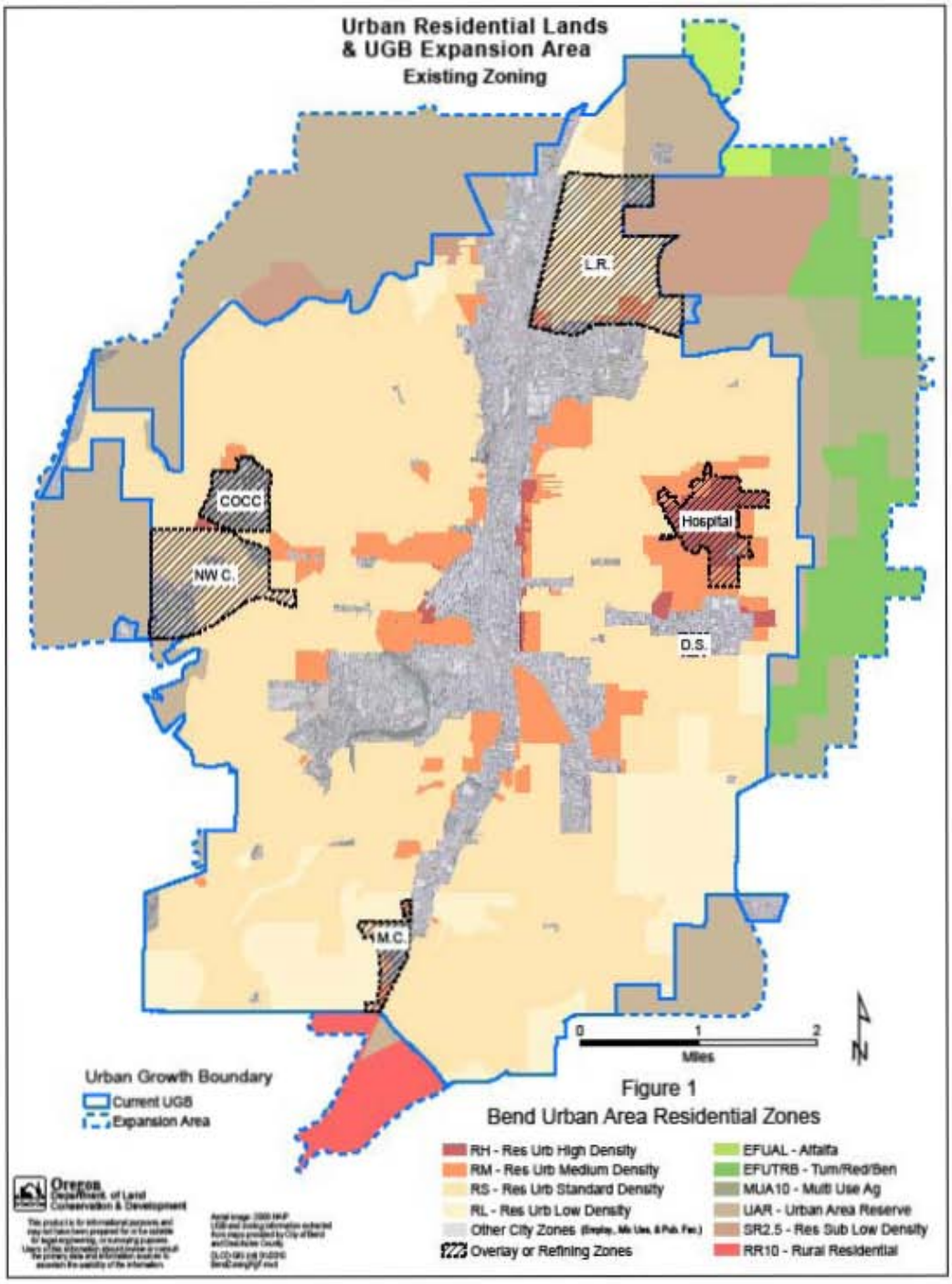
9. Appeals of the Director's Decision were timely filed on or before January 29, 2010 by: the City of Bend (the "City" or "Bend"); the Bend Metropolitan Parks and Recreation District; the Bend-La Pine School District; Swalley Irrigation District (Swalley); Newland Communities (Newland); Shevlin Sand and Gravel Inc. (Shevlin); Rose & Associates, LLC (Rose & Associates); Toby Bayard (Bayard); Central Oregon LandWatch (COLW); Hunnell United Neighborhoods (Hunnell); Terry Anderson (Anderson); and Hilary Garrett (Garrett). Simpson and Spencer did not appeal the Director's Decision holding that their objections were not valid.

10. The Department issued a report on the appeals (Department Report on Appeals) on February 25, 2010.

11. The City; Bend Metro Park & Recreation District; Bend-LaPine School District No. 1; Swalley; Newland Communities; Bayard; COLW filed timely exceptions to the Department's Report, on or before March 8, 2010.

12. The Commission held three public hearings over five days to hear oral argument from the City, objectors and appellants, and to deliberate. The public hearings on March 18 and 19, and May 12, 2010, were held in Bend. The public hearings on April 22 and 23 were held in Lincoln City.

13. The city's UGB expansion area, together with the zoning designations that existed prior to the UGB expansion, are shown in the following figure (taken from the Director's Decision):



II. Procedural Matters

1. Commission Tour

By memorandum dated February 25, 2010, the Department notified appellants and objectors of the commission meeting to consider appeals of Order 001755. The Department also notified appellants and objectors that the Commission requested new evidence or information from the City of Bend pursuant to OAR 660-025-0085, in the form of a tour of the areas affected by the expansion of the Bend UGB. By memorandum dated March 9, 2010, the Department provided supplemental notice to appellants and objectors concerning the tour and tentative meeting schedule and procedures.

On March 17, 2010, prior to the start of the Commission hearings on the appeals of DLCD Order 001775, the Commission toured the area. All appellants and objectors were allowed to participate in the tour. On the tour, the City of Bend distributed three maps: Bend Urban Area Framework Plan Map (R 1235), Suitable/Available Lands in UGB Expansion Study Area by Priority Class (R 155), and Bend Urban Area Roadway System Plan (R 1371), each of which had the tour route and stops indicated.

At the start of the Commission hearing on March 18, 2010, Commissioner Jenkins described what the commissioners observed on the tour, so as to give all parties an opportunity to rebut the information. Other commissioners concurred with Commissioner Jenkins' description. Appellants were given the opportunity to present visual and other materials in response to the tour, and Toby Bayard provided such a presentation to the Commission.

2. Extension of Time

On March 19, 2010, pursuant to ORS 197.633(5)(b), the Commission extended the time for taking action on the appeal, finding that the appeal raised both new and complex issues of fact and law that made it unreasonable to give adequate consideration to the issues within the 90-day limit provided in ORS 197.633(5) and OAR 660-025-0085(2)(b).

3. Official Notice

The Commission took official notice of the 1981 acknowledgment order of the city's Urban Area Reserve as an exception area pursuant to OAR 660-025-0085(5)(e)(B).

4. Oral Argument

Pursuant to OAR 660-025-0085(5)(c), the Commission allowed oral argument. The Commission allowed persons who submitted objections or an appeal to address only those issues raised in their objections or appeal.

III. Scope of Review

The Commission has exclusive jurisdiction to review certain UGB amendments pursuant to ORS 197.626 and OAR 660-025-0040(1)(a). ORS 197.626 provides, in pertinent part, that:

> "a city with a population of 2,500 or more within its urban growth boundary that amends the urban growth boundary to include more than 50 acres * * * shall submit the amendment * * * to the Land Conservation and Development Commission in the manner provided for periodic review under ORS 197.628 to 197.650."

In addition, ORS 197.825(2) provides that:

> "The jurisdiction of the board [the Land Use Board of Appeals]:
> (a) Is limited to those cases in which the petitioner has exhausted all remedies available by right before petitioning the board for review;
> (b) Is subject to the provisions of ORS 197.850 relating to judicial review by the Court of Appeals;
> (c) Does not include a local government decision that is:
> (A) Submitted to the Department of Land Conservation and Development for acknowledgment under ORS 197.251, 197.626 or 197.628 to 197.650 or a matter arising out of a local government decision submitted to the department for acknowledgment, unless the Director of the Department of Land Conservation and Development, in the director's sole discretion, transfers the matter to the board * * *."

Where the Commission reviews an urban growth boundary amendment under ORS 197.626, it does so "in the manner of periodic review." That review is to determine whether the decision(s) amending the urban growth boundary (or urban reserve designation) and any matters arising out of that decision, comply with the applicable statewide planning goals, their implementing rules, applicable state statutes, and applicable local comprehensive plan and land use regulations. OAR 660-025-0175(1); *City of West Linn v. LCDC*, 201 Or. App. 419 (2005) (reviewing LCDC order on review of Metro's UGB decision for compliance with Metro's code).

ORS 197.825 was amended in 2005. According to LUBA:

> "It is fair to characterize the 2005 amendments to ORS 197.825(2)(c) as attempting to eliminate some of the confusion created by shared jurisdiction over the same land use

> decisions by requiring local government decisions amending a UGB to be submitted to DLCD, after which certain matters may potentially be transferred to LUBA by DLCD.
>
> After the 2005 amendments were enacted, DLCD [*sic*] adopted administrative rules to govern its review of UGB amendments and to govern transfers under ORS 197.825(2)(c)(A) to LUBA. OAR 660-025-0175(1) requires that land use decisions amending a UGB must be submitted to DLCD "for review with the statewide planning goals and related statutes and rules * * *." OAR 660-025-0250 specifies which matters that are raised in an appeal of a UGB expansion may be transferred to LUBA under the statute."

Swalley Irrigation Dist. v. City of Bend, __ Or LUBA __ (slip. op., 5/8/2009) (Final Order dismissing LUBA Nos. 2009-012, 2009-013, 2009-031 and 2009-032).

IV. Standard of Review

As described above, the Commission reviews the submittal for compliance with the applicable statutes, goals and administrative rules. OAR 660-025-0040. For periodic review submittals under ORS 197.628 to 197.650, "compliance with the goals" means the submittal "on the whole, conform[s] with the purposes of the goals and any failure to meet individual goal requirements is technical or minor in nature." ORS 197.747.

In determining compliance with Goal 2, the Commission considers whether the submittal is supported by an adequate factual base. The city's and county's decisions on the UGB and related plan and code amendments are legislative decisions. The Goal 2 requirement for an adequate factual base requires that a legislative land use decision be supported by substantial evidence. *1000 Friends of Oregon v. City of North Plains*, 27 Or LUBA 372, 376-378, *aff'd* 130 Or App 406, 882 P2d 1130 (1994), *DLCD v. Douglas County*, 37 Or LUBA 129, 132 (1999). Substantial evidence exists to support a finding of fact when the record, viewed as a whole, would permit a reasonable person to make that finding. ORS 183.482(8)(c) and *Dodd v. Hood River County*, 317 Or 172, 179, 855 P2d 608 (1993). Where the evidence in the record is conflicting, if a reasonable person could reach the decision the city made in view of all the evidence in the record, the choice between the conflicting evidence belongs to the city. *Mazeski v. Wasco County*, 28 Or LUBA 178, 184 (1994), *aff'd* 133 Or App 258, 890 P2d 455 (1995).

Because the UGB amendment and related submittals embody both basic findings of fact and inferences drawn from those facts, substantial evidence review involves two related inquiries: "(1) whether the basic fact or facts are supported by substantial evidence, and (2)

whether there is a basis in reason connecting the inference to the facts from which it is derived." *City of Roseburg v. Roseburg City Firefighters*, 292 Or 266, 271, 639 P2d 90 (1981). Where substantial evidence in the record supports the adopted findings concerning compliance with the goals and the Commission's administrative rules, the Commission nevertheless must determine whether the findings lead to a correct conclusion under the goals and rules. *Oregonians in Action v. LCDC*, 121 Or App 497, 504, 854 P2d 1010 (1993).

V. Procedural Issues

1. Whether the Department and Commission Have Jurisdiction Over the City's Submittal

a. Summary of Issue and Objectors/Appellant

Swalley Irrigation District (Swalley) objected that the Land Use Board of Appeals (LUBA or the Board), and not the Department (or, presumably, the Commission) has jurisdiction over the city's submittal. Swalley based its objection on (1) the "tardiness" of the city's submittal, and (2) the contention that the submittals are not and do not arise from UGB amendments within the department's jurisdiction under ORS 197.825(2)(c)(A). Swalley objected that in order to invoke the exception to LUBA jurisdiction under ORS 197.825(2)(c)(A), a local government submittal to the Department must occur closer to the time of adoption than occurred in this matter (five months after adoption). Swalley objected that the city's submittal is not timely for purposes of ORS 197.825(2)(c)(A) because it occurred after the time for filing a LUBA appeal or intervention. Swalley contended this is because transfers to LUBA can only occur within certain statutory limits, citing ORS 197.830(9). Swalley argued that under ORS 197.825(2)(c)(A), the Director can only transfer a matter to LUBA within the 21-day period in which a notice of intent to appeal a land use decision may be filed under ORS 197.830(9). Swalley argued "DLCD director's transfer authority is only exercisable and thus necessarily must occur in the LUBA 21 day appeal period." Swalley Objection 1, at 14.

b. Legal Standard

Under ORS 197.825, LUBA has exclusive jurisdiction to review any land use decision of a local government with specific statutory exceptions.[1] One exception to the exclusive

[1] ORS 197.825(1) provides:

jurisdiction of the board is for certain matters submitted to the Department. ORS 197.825(2) provides in part:

> "The jurisdiction of the board:
>
> * * * * * *
>
> (c) Does not include a local government decision that is:
>
> (A) Submitted to the Department of Land Conservation and Development for acknowledgment under ORS 197.251, 197.626 or 197.628 to 197.650 or a matter arising out of a local government decision submitted to the department for acknowledgment, unless the Director of the Department of Land Conservation and Development, in the director's sole discretion, transfers the matter to the board[.]"

ORS 197.825(2)(c)(A) excludes submittals pursuant to ORS 197.626, which provides:

> "[A] *city with a population of 2,500 or more within its urban growth boundary that amends the urban growth boundary to include more than 50 acres* or that designates urban reserve under ORS 195.145, or a county that amends the county's comprehensive plan or land use regulations implementing the plan to establish rural reserves designated under ORS 195.141, *shall submit the amendment or designation to the Land Conservation and Development Commission in the manner provided for periodic review under ORS 197.628 to 197.650.* (Emphasis added.)

This Commission adopted OAR 660-025-0040[2] to implement its exclusive jurisdiction under the statute and OAR 660-025-0250[3] to provide for transfers of matters to LUBA.

Except as provided in ORS 197.320 and subsections (2) and (3) of this section, the Land Use Board of Appeals shall have exclusive jurisdiction to review any land use decision or limited land use decision of a local government, special district or a state agency in the manner provided in ORS 197.830 to 197.845.

[2] OAR 660-025-0040 provides:

> (1) The commission, pursuant to ORS 197.644(2), has exclusive jurisdiction to review the evaluation, work program, and all work tasks for compliance with the statewide planning goals and applicable statutes and administrative rules. Pursuant to ORS 197.626, the commission has exclusive jurisdiction to review the following land use decisions for compliance with the statewide planning goals:
>
> (a) If made by a city with a population of 2,500 or more inside its urban growth boundary, amendments to an urban growth boundary to include more than 50 acres;
>
> (b) If made by a metropolitan service district, amendments to an urban growth boundary to include more than 100 acres;
>
> (c) plan and land use regulations that designate urban reserve areas.
>
> (2) The director may transfer one or more matters arising from review of a work task, urban growth boundary amendment or designation or amendment of an urban reserve area to the Land Use Board of Appeals pursuant to ORS 197.825(2)(c)(A) and OAR 660-025-0250.

[3] OAR 660-025-0250 provides:

> (1) When the department receives an appeal of a director's decision pursuant to OAR 660-025-0150(4), the director may elect to transfer a matter raised in the appeal to the Land Use Board of Appeals (board) under ORS 197.825(2)(c)(A).

c. Summary of Local Actions, Director's Decision and Appeal(s)

The City submitted notice of the city's and county's adoption of four ordinances to the department on April 16, 2009. Those four ordinances were the city's ordinances adopting the amended UGB and amending the city's development code in certain respects (Ordinances Nos. NS-2112 and NS-2113), and the county's ordinances co-adopting the amended UGB and making certain amendments to the county's comprehensive plan map and text for the lands within the UGB expansion area. R. at 1050-1051 (city ordinance NS 2112 - UGB); R. at 1836-1844 (city ordinance NS 2113 – development code); see R. at 1854 and county ordinance 2009-1 (UGB map and DCC and TSP map); see R. at 1860 and county ordinance 2009-2 (zoning map and certain DCC amendments). The City did *not* submit ordinance NS 2111, amending the city's Public Facilities Plan element of its General Plan, to the department on April 16, 2009 (although the City included a copy of this ordinance, which the City adopted immediately before the UGB amendment ordinance, in the record for the submittal of the UGB ordinance (NS 2112), and the City submitted a separate notice of adoption of the Public Facilities Plan on January 9, 2009). On June 12, 2009, following LUBA's decision in *Swalley Irrigation District v. City of Bend,* 59 Or LUBA 52 (2009) and order in *Swalley Irrigation District v. City of Bend,* __ Or LUBA __ (LUBA Nos. 2009-010, 2009-011, and 2009-020, May 8, 2009) suspending the appeal of the Public Facilities Plans.[4] The City separately submitted ordinance NS 2111 to the Department for review under ORS 197.626, and provided notice to the objectors, as required by OAR 660-025-0175(3) and (4) and OAR 660-025-0130 and -0140.

---

(2) Matters raised in an appeal may be transferred by the director to the board when:
(a) The matter is an urban growth boundary expansion approved by the local government based on a quasi-judicial land use application and does not require an interpretation of first impression of statewide planning Goal 14, ORS 197.296 or 197.298; or
(b)(A) The matter alleges the work task submittal violates a provision of law not directly related to compliance with a statewide planning goal;
(B) The appeal clearly identifies the provision of the task submittal that is alleged to violate a provision of law and clearly identifies the provision of law that is alleged to have been violated; and
(C) The matter is sufficiently well-defined that it can be separated from other allegations in the appeal.
(3) When the director elects to transfer a matter to the board, notice of the decision must be sent to the local jurisdiction, the appellant, objectors, and the board within 60 days of the date the appeal was filed with the department. The notice shall include identification of the matter to be transferred and explanation of the procedures and deadline for appeal of the matter to the board.
(4) The director's decision under this rule is final and may not be appealed.

[4] LUBA determined that under ORS 197.825(2)(c)(A), it did not have initial jurisdiction to review a decision by a city with a population over 2,500 to amend its urban growth boundary to add more than 50 acres of land where that decision is submitted to the Department of Land Conservation and Development (DLCD) for review under ORS 197.626. LUBA may later acquire jurisdiction over certain matters addressed in the decision if the director of DLCD transfers those matters to LUBA. Swalley Irrigation District v. City of Bend, 59 Or LUBA 52 (2009).

The Director denied Swalley's objection, and did not transfer any of the decisions to the Board, and issued his decision remanding all five of the city and county decisions on January 8, 2010.

d. Analysis

Nothing in ORS 197.830(9) addresses Department transfers to LUBA. Nothing in ORS 197.825(2)(c)(A) or its statutory context prescribes a time frame in which the Director must act to transfer some or all of a local government submittal to LUBA. In construing ORS 197.825(2)(c)(A), the Department may not insert what the legislature has omitted – in this circumstance a 21-day time frame that constrains the director's statutory authority to otherwise transfer a matter to LUBA. ORS 174.010. Nor may the Commission read ORS 197.830(9) as context in such a manner as to give no effect to ORS 197.825(2)(c)(A) in the circumstances presented here. *Id*. In *Swalley Irrigation District,* LUBA held:

> "ORS 197.825(2)(c)(A) and ORS 197.626, and the implementing rules adopted by [LCDC] * * * make clear that after the City of Bend submitted NS-2112 and NS-2113 to DLCD for review under the statutes governing periodic review, LUBA ceased to have jurisdiction over those submitted decisions *or over matters arising out of those submitted decisions* unless the director of DLCD transfers matters to LUBA pursuant to OAR 661-025-0250(2)." 59 Or LUBA at 58-59.[5]

In this case, the city's findings for its amendments to its public facilities plans state that the amendments are intended to address both lands within the (then) existing UGB and lands proposed for the UGB expansion. R. at 211. The City relied on its amendments to its public facilities plan in justifying some aspects of its UGB decision. Director's Decision, at 15. As a result, the Commission concurs with the Director that Ordinance No. NS-2111 is a "matter arising out of" the city's submitted decisions, including its UGB amendment.

e. Conclusion

The Commission concludes that the Director correctly denied this objection. Consistent with LUBA's decisions and orders regarding jurisdiction over the City and county submittals, unless and until the matters are transferred to LUBA pursuant to OAR 661-025-0250(2), jurisdiction over all three of the city ordinances (and the two county ordinances) lies with the Department and not the Land Use Board of Appeals.

---

[5] The Board also dismissed challenges to County Ordinances 2009-01 and 2009-02 submitted to the Department on April 16, 2009. *Swalley Irrigation District v. City of Bend,* 59 Or LUBA 192 (2009).

2. Whether the City Provided Adequate Public Notice of its Amended Public Facilities Plans

Swalley and several other objectors submitted objections relating to the process the City followed for adoption of the amendments to its Public Facilities Plans (Ordinance No. NS-2111). These objections are addressed below, as issues 10.3 and 10.4, under substantive objections.

VI. Substantive Objections and Appeals

1. Whether the City's Findings Are Adequate for Review

a. Summary of Issue and Objectors/Appellants

The Director remanded the city's and county's decisions in a number of instances on the basis that their findings were inadequate. *See, e.g.,* Director's Decision at 21 (no findings); 22 (findings lack explanation of how standard is met); 26 (findings do not explain how the City determined which lands are vacant or redevelopable); 28 (findings do not relate capacity analysis to statutory factors). The City appealed, arguing that detailed findings are not required for a legislative decision (such as this one). City Appeal, at 8-9.

b. Legal Standard

There is no statute, statewide planning goal or administrative rule that generally requires that legislative land use decisions be supported by findings. *Port of St. Helens v. City of Scappoose*, 58 Or LUBA 122, 132 (2008). However, there are instances where the applicable statutes, rules or ordinances require findings to show compliance with applicable criteria. In addition, where a statute, rule or ordinance requires a local government to consider certain things in making a decision, or to base its decision on an analysis, "there must be enough in the way of findings or accessible material in the record of the legislative act to show that applicable criteria were applied and that required considerations were indeed considered." *Citizens Against Irresponsible Growth v. Metro*, 179 Or App 12, 16 n 6, 38 P3d 956 (2002). The Commission's standard of review is further described above, at pages 7-8.

c. Summary of Local Actions, Director's Decision and Appeal(s)

The submittal consists of legislative land use decisions adopted by the City of Bend and Deschutes County. The City points to findings addressing the many applicable standards at R. 1052 *et seq.* City of Bend's Exceptions at 3.

The Department decided that the submittal was deficient and directed that on remand the City must adopt findings that first identify the applicable legal standard, second identify the evidence in the record that is relevant to the identified legal standard, and third explain why that evidence shows that the City has complied with the standard. The City agrees

> "that it must adopt findings to show how its legislative action complied with the statewide goals, statutes and administrative rules. The City also agrees that the findings must allow the Department and the Commission to review whether there is substantial evidence in the record to support the findings." *Id.* (City of Bend's Exceptions at 3.)

The City seeks clarification regarding the nature and extent of the findings required.

d. Analysis

The relevant periodic review statutes place the Department and the Commission in the role of assuring that local land use legislation complies with the statewide goals, applicable statutes and rules. *Oregonians in Action v. LCDC*, 121 Or App 497, 501, 854 P2d 1010 (1993). Legislative decisions are subject to review for adequate support in the record. *City of West Linn v. LCDC*, 201 Or App 419, 428, 119 P3d 285 (2005). The parties agree that the standard of review, derived from the Goal 2 requirement for an adequate factual base, is "substantial evidence." *DLCD v. Douglas County*, 37 Or LUBA 129, 132 (1999). The Commission applies the substantial evidence standard of review to determine whether the local land use legislation complies with the statewide goals, applicable statutes and rules.

With regard to the nature and extent of findings required for the city's legislative decision, the Oregon Supreme Court described the importance of findings in establishing that a land use decision serves established objective and polices:

> "Findings are important only insofar as they relate to the objectives and policies to which the planning government is committed by its plan or by state law, goals or guidelines. Consequently findings must make clear what these objectives or polices are as applied in the concrete situation. Thereafter, findings must describe how or why the proposed action will in fact serve these objectives or polices."

Sunnyside Neighborhood v. Clackamas Co. Comm., 280 Or 3, 22-23, 569 P2d 1063 (1977).

The Court of Appeals further described the obligation of the legislating local government to articulate its thinking. In rejecting an appellant's position that the court should review portions of a record identified by the parties and their arguments to determine whether a criterion was met (in the absence of findings), the Court of Appeals explained:

> "Ryland Homes argues that 'the findings taken as a whole adequately explain why Metro determined, balancing all consideration and impacts,' that expanding the UGB at this location was a better alternative than expanding at other locations. Ryland Homes then points to certain evidence throughout the record and findings under portions of Metro's decision concerning other Goal 14 factors, as well as other portions of its decision, and contends that we should essentially put the pieces of the puzzle together and conclude that Metro did adequately address the ESEE consequences under factor 5. As discussed above our function on review is to determine if LUBA correctly assessed whether the local government has satisfied all applicable legal requirements in making its decision. Metro has an obligation to consider each of the locational factors and to articulate its thinking regarding the factor and the role that each factor played in its balancing of all of the factors."

1000 Friends of Oregon v. Metro, 174 Or App 406, 415-416, 26 P3d 151 (2001); *see also*, *1000 Friends v. LCDC* (Woodburn), __ Or App __ (No. 135375, 9/8/10)(requiring that *LCDC* orders set out the Commission's reasoning in disposing of objections to a UGB decision).

To be clear, parties before the Commission are free to cite material in the record that demonstrates applicable criteria were applied. *Port of St. Helens v. City of Scappoose*, 58 Or LUBA at 132. However, for purpose of Department and Commission review, it is essential that the submitting jurisdiction, in the first instance, explain its decision in written findings that connect the applicable standards with the relevant evidence. Findings should (1) identify the relevant approval standards, (2) set out the facts which are believed and relied upon, and (3) explain how those facts lead to the decision on compliance with the approval standards. *Mountain Gate Homeowners v. Washington County*, 34 Or LUBA 169, 173 (1998).

Adequate findings serve additional purposes. By demonstrating that the legislating body considered the applicable criteria, the risk that LCDC or the Department will substitute its own judgment in review of the record is diminished. Findings also help assure that subsequent land use decisions applying the city's urban growth boundary expansion decision will be consistent with state standards. See *Oregonians in Action*, 121 Or App at 502 ("Moreover, as LCDC contends in its brief, its ability to require that local legislation contain particular provisions or that it spell out with particularity how it complies with statewide standards can be essential to assuring that, after acknowledgment or periodic review, the local legislation will be interpreted and applied by the local government in a manner that is consistent with the state standards.")

e. Conclusion

The Commission concludes that the Director correctly determined that the submittals under ORS 197.626 must be supported by substantial evidence and present adequate findings. The city's findings must:

- articulate the applicable standard that the City is showing it met;
- explain why the city's decision complies with the standard; and
- identify substantial evidence in the record to support its explanation.

The Commission also concludes that in reviewing submittals under ORS 197.626, it will uphold findings that fail to identify the evidence in the record that support them *if* the City on appeal identifies that evidence, *and* the evidence clearly supports the finding. This is *not* intended to (and cannot) alter the Commission's standard of review. Instead it provides a substitute for inadequate evidentiary findings under Goal 2 – analogous to the express authority that the Land Use Board of Appeals has under ORS 197.835(11(b).

2. Residential Land Needs

2.1. Whether the Director Applied the Correct Version of the Commission's Goal 10 and Goal 14 Rules to the City's Decision.

a. Summary of Issue and Objectors/Appellants

No objection was filed concerning this issue. The issue arises from the way in which the Director analyzed one aspect of the city's decision, and the city's subsequent appeal of that aspect of the director's decision.

b. Legal Standard

OAR 660-024 contains specific provisions relating to when particular versions of that rule is applicable to particular decisions.

c. Local Actions, Director's Decision, and Appeal

The City applied the version of OAR 660-024 in effect on April 5, 2007 in making its UGB decision. The Director reviewed the city's decision using a subsequent version of OAR 660-024 (the one in effect at the time of the city's decision). The director's decision determined that the City of Bend failed to comply with the current versions of the commission's rules implementing Goal 10 and Goal 14. The City appealed, arguing that its decision was subject to the earlier version of the Goal 14 implementing rules (OAR 660-024).

d. Analysis

The city's UGB expansion and related decisions are not the approval or denial of a permit or a zone change. As a result, the "goal post" statute, ORS 227.178, does not apply. The city's decision is subject to the version of the commission's rules in effect at the time of its decision, *unless* the rules specifically provide otherwise.

The Commission last amended its Goal 10 rules, OAR chapter 660, division 8, on April 18, 2008. Division 8 does not include a special applicability provision, and the current version applies.

The Commission last amended its Goal 14 rules, OAR chapter 660, division 24, on April 8, 2009. OAR 660-024-0000 contains an applicability provision that provides that the applicable version of the rule is tied to the date a city initiates its UGB amendment. Under the rule, the date the city initiated its UGB amendment is the date it sent 45-day notice of the proposed amendment to the Department. The City initiated the UGB amendment after April 5, 2007.

Following the director's decision, the Department and the City agreed that the version of

OAR 660-024 in effect on April 5, 2007 applies to the city's decision. The Commission concurs.

e. Conclusion

The Commission concludes that the April 2007 version of the commission's Goal 14 rules apply to the city's decision, and affirms the city's appeal. The current version of the commission's Goal 10 rules apply to the city's decision. On remand, the City may need to apply the current version of the Goal 14 rules, depending on the application of OAR 660-024-0000 to its actions on remand.

2.2. Whether the City's Buildable Lands Inventory (BLI) is Adequate for Review. Whether the City Correctly Determined what Lands are "Vacant" and What Lands are "Redevelopable. Whether the City's Estimate of the Development Capacity of those Lands Complied with the Needed Housing Statutes and the Commission's Rules.

a. Summary of Issue and Objectors/Appellants

Swalley objected to the city's buildable lands inventory (BLI), arguing that the City failed to distinguish between vacant and redevelopable lands as required by state law. Swalley Objection, at 63-64. The Director agreed, and determined that the city's BLI was not adequate for review due to an inadequate map of vacant and redevelopable lands, due to the city's use of criteria for categorizing lands as vacant and redevelopable that were inconsistent with the Commission's rules and state statutes, due to inadequate findings concerning what lands were categorized as vacant and redevelopable and why (including an inadequate factual basis for the determinations), and due to inadequate findings concerning the projected capacity of vacant and redevelopable lands over the planning period. Newland also objected to the city's decision, arguing that the city's estimates of residential development capacity on buildable lands *underestimated* the amount of land needed to be added to the UGB by not properly accounting for land needs for schools and parks, by not reflecting infrastructure constraints, and by not considering the location of dwellings on lots. Newland Objection, at 25-26. The Director denied Newland's objection. Director's Decision, at 42.

The City and Newland appealed the director's decision on this subissue. City Appeal, at 18-20.

b. Legal Standard

The statutory requirement for a map of buildable lands is found in ORS 197.296. ORS 197.296(4)(c) provides that:

"Except for land that may be used for residential infill or redevelopment, a local

government shall create a map or document that may be used to verify and identify specific lots or parcels that have been determined to be buildable lands."

In other words, the BLI map must show specific lots and parcels that have been determined to be "buildable." As detailed below, those lands include: (a) vacant lands planned or zoned for residential use; (b) partially vacant lands planned or zoned for residential use; and (c) lands that may be used for a mix of residential and employment uses under the existing planning or zoning. However, lands that may be used for residential infill and redevelopment do not have to be shown on the map.

The statutory requirement for a buildable lands inventory (the determination of the *amount* of buildable land within the existing UGB), along with some direction concerning what lands are to be inventoried as "buildable," is contained in ORS 197.296(3), which provides in pertinent part that:

"* * * a local government shall:

(a) Inventory the supply of buildable lands within the urban growth boundary and determine the housing capacity of the buildable lands;

* * *

(4)(a) For the purpose of the inventory described in subsection (3)(a) of this section, “buildable lands” includes:
(A) Vacant lands planned or zoned for residential use;
(B) Partially vacant lands planned or zoned for residential use;
(C) Lands that may be used for a mix of residential and employment uses under the existing planning or zoning; and
(D) Lands that may be used for residential infill or redevelopment.

The Commission's rules further define what lands are "buildable" for purposes of the buildable lands inventory. OAR 660-008-0005(2) and (6) state that:

(2) “Buildable Land” means residentially designated land within the urban growth boundary, including both vacant and developed land likely to be redeveloped, that is suitable, available and necessary for residential uses. Publicly owned land is generally not considered available for residential uses. Land is generally considered “suitable and available” unless it:
(a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;
(b) Is subject to natural resource protection measures determined under statewide Planning Goals 5, 15, 16, 17, or 18;
(c) Has slopes of 25 percent or greater;
(d) Is within the 100-year flood plain; or

(e) Cannot be provided with public facilities.

* * *

(6) “Redevelopable Land” means land zoned for residential use on which development has already occurred but on which, due to present or expected market forces, there exists the strong likelihood that existing development will be converted to more intensive residential uses during the planning period.

The Commission's division 24 rules also clarify certain aspects of how the BLI must be carried out. OAR 660-024-0050 (2007 version) provides that:

"(1) When evaluating or amending a UGB, a local government must inventory land inside the UGB to determine whether there is adequate development capacity to accommodate 20-year needs determined in OAR 660-024-0040. *For residential land, the buildable land inventory must include vacant and redevelopable land, and be conducted in accordance with* OAR 660-007-0045 or *660-008-0010*, whichever is applicable, *and ORS 197.296* for local governments subject to that statute.* * *

(2) As safe harbors, a local government, except a city with a population over 25,000 or a metropolitan service district described in ORS 197.015(14), may use the following assumptions in inventorying buildable lands to accommodate housing needs:

(a) The infill potential of developed residential lots or parcels of one-half acre or more may be determined by subtracting one-quarter acre (10,890 square feet) for the existing dwelling and assuming that the remainder is buildable land;

(b) Existing lots of less than one-half acre that are currently occupied by a residence may be assumed to be fully developed.

****." OAR 660-024-0050 (emphasis added).

Finally, OAR 660-008-0010 requires that: "* * * the local buildable lands inventory must document the amount of buildable land in each residential plan designation."

Together, the statutes and the Commission's rules make it clear that for purposes of the BLI, vacant land is distinguished from land that is already developed. Vacant lands are further broken down into two subcategories: completely vacant, and partially vacant. ORS 197.296(3). Both types of vacant land, if they are planned *or* zoned for residential use, must be included in the BLI unless one or more of the screens listed in OAR 660-008-0005(2) is present.

Like "vacant" lands, "developed" lands also are further broken down into subcategories: lands with infill potential, lands that are redevelopable, and lands that are developed and that do not have a strong likelihood of redevelopment during the planning period. The context provided by OAR 660-024-0050(2) (2007) shows that developed lands with infill potential are lots or parcels that have one or more existing dwellings on them, but where there is enough land

remaining that one or more additional dwellings could be developed. Redevelopable lands are lots or parcels where there is a strong likelihood that existing residential development is likely to be converted to a more intensive form (more units) during the planning period. OAR 660-008-005(6). For example, a lot with an existing dwelling that is projected to be converted into a duplex would fall into the redevelopment subcategory.

These categories and subcategories matter, because for "redevelopable" lands (unlike vacant and partially vacant lands) the local government must show that there is a strong likelihood of more intensive residential development during the planning period due to present or expected market forces in order to include additional future capacity from this element in determining the residential capacity of the existing UGB over the planning period.. OAR 660-008-0005(6). That is not the case for vacant and partially vacant lands.

c. Local Actions, Director's Decision, and Appeal

The City adopted a map of buildable lands and included that map in the record. However, the map transmitted to the Department by the City as part of the local record was not at a scale sufficient to determine what lots and parcels had been inventoried as buildable. R. at Supplement 1257.

The city's findings state that it assigned each tax lot within the four primary residential plan designations within the Bend UGB to one of the several categories of development status, including vacant acres (platted lots), vacant acres with minimal improvements, vacant acres with physical constraints, and redevelopable acres. R. at 1071. The city's findings also summarize the development capacity it projects over the planning period by several subcategories of vacant lands and redevelopable lands. R. at 1071 (Table III-4). However, these subcategories differ both from the types described under statute and Commission rule, and from the narrative summary in the city's findings.

The Director determined that the BLI map the City provided to the department was not adequate to comply with ORS 197.296, because it did not show specific lots and parcels that have been determined to be "buildable," and more specifically lots and parcels that are: (a) vacant lands planned or zoned for residential use; (b) partially vacant lands planned or zoned for residential use; and (c) lands that may be used for a mix of residential and employment uses under the existing planning or zoning. Director's Decision, at 26.

The Director also determined that the city's BLI was inconsistent with the categories

established by state statute and commission rule, and that the city's findings failed to explain what criteria the City used to determine that specific lots and parcels fell under the particular subcategories of buildable lands. Director's Decision, at 25-26.

The City and Newland appealed the Director's Decision on this subissue. In addition to disagreeing with the Director that state statute and commission rules require the City to document what lands are included in its BLI by categories other than those used by the City, the City and Newland also argued that state law allows a BLI to be organized by comprehensive plan designation (rather than zoning designations).

On appeal, the City provided a map at a sufficient level of detail (by tax lot) to show what lands it inventoried as buildable (copies of this map were provided to the other parties and to the commission as Exhibit 1 to the department's Report). The City also clarified in its appeal that its 2005 BLI was updated with data from 2005 to 2007. City Appeal, at 18. The data were not included in the record submitted to the department, however. City Appeal, at 19-20.

d. Analysis

The mapping the City provided (on appeal) of buildable lands is sufficient to comply with ORS 197.296(4)(c), because it shows what lands the City inventoried as buildable on a tax lot basis (generally, while not all tax lots are necessarily lots or parcels, all lots or parcels typically have a separate tax lot). In addition, the city's BLI is properly based on plan districts rather than zoning districts, as permitted by OAR 660-008-0010.[6]

The city's findings, however, do not adequately explain its determination of what lands are "vacant" (including lands that are "partially vacant") and what lands are "redevelopable" as those terms are used in ORS 197.296 and in OAR 660 divisions 8 and 24. The City inventoried three types of "vacant" land: vacant acres (with platted lots); vacant acres with minimal improvements, and vacant acres with physical constraints. R. at 1071. However, those categories do not correspond to the categories used in Table III-4 of the city's findings, and it is not clear how the City considered the three types of vacant lands.

For example, it is not clear whether vacant lands with "minimal improvements" were treated as "vacant" lands or as "redevelopable" lands. This matters because, as described above,

[6] However, ORS 197.296(4)(a), requires that lands be included in the inventory whether they are planned *or* zoned for residential use. In other words, although the BLI may categorize buildable lands by plan designation, it must include all lands that are planned *or* zoned for residential use. If land is zoned for residential use, but in a non-residential plan designation, it still must be included in the BLI.

under the commission's rules “redevelopable” lands are considered “buildable” only if there is a strong likelihood that they will be converted to a more intensive residential use during the planning period, while “vacant” lands are not subject to this additional test (and are generally considered “suitable and available”). It is not clear why the City distinguished between different types of vacant lands.

Table 5-4 of the city’s Housing Element, which the City identifies as the summary of its final BLI (R. at 1288), uses the terms: “vacant acres,” “vacant acres - pending land use,” and “vacant acres - platted lots.” The city’s findings do not describe how these types are defined or how they relate to the statutory and rule definitions.[7]

There also are several problems with the city’s approach to physical constraints. OAR 660-008-0005 provides that:

> "(2) Land is generally considered 'suitable and available' [for inclusion in the BLI] unless it:
> (a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;
> (b) Is subject to natural resource protection measures determined under statewide Planning Goals 5, 15, 16, 17, or 18;
> (c) Has slopes of 25 percent or greater;
> (d) Is within the 100-year flood plain; or
> (e) Cannot be provided with public facilities.

The City excluded lands from its BLI as “constrained” if the lands had physical constraints over 50 percent or more of the lot. R. at 2042; Director's Decision at 26. The commission’s rule does not authorize a local government to exclude vacant lands from a BLI on the basis that more than half of a lot or parcel is constrained.[8] While that approach *might* be justified for small lots, with larger lots it would potentially exclude a significant amount of land that is in fact buildable over the planning period.

The City also excluded lands within the city's “areas of special interest.” These are lands protected by the City for natural resource values, but which the City has not inventoried or

[7] The city's findings under OAR 660-008-0005 state that: "The city has relied on these definitions to develop the foregoing findings, and the subsequent findings, to demonstrate compliance with Goal 10." However, the findings do not explain how the categories and subcategories the city uses related to the provisions of OAR 660-008-0005 or ORS 197.296. R. at 1097.

[8] OAR 660-024-0050 (2007) does contain a safe harbor authorizing local governments with a population within the UGB of less than 25,000 to assume that one-quarter acre of a lot or parcel over half an acre with an existing dwelling is developed for purposes of calculating the infill potential of the lot or parcel. The City of Bend is not authorized to use this safe harbor, however, as its population is greater than 25,000.

protected as containing significant natural resources under statewide land use planning Goal 5. The commission's rule authorizes a city to exclude lands that are protected under Goal 5, but not lands that the city is protecting under its own local code provisions. OAR 660-008-0005(2)(b).

Additional findings also are necessary to clarify how the City considered "redevelopable" lands. Despite some argument to the contrary,[9] there is not any disagreement about how these lands are defined. Lands that are fully developed are "redevelopable" and included in an inventory as "buildable" only if there is a strong likelihood that the existing development will be converted to more intensive residential uses during the planning period. OAR 660-008-0005(6). The City excluded parcels that contain less than 0.5 acres from its inventory of "redevelopable" lands if they have a land value exceeding improvement value. While this *may* be a reasonable application of OAR 660-008-0005(6), the city's findings do not identify what the factual basis for this assumption is. For instance, the City does not identify whether lands with these characteristics have seen little or no redevelopment since the city's last periodic review.

The City also excluded some lands from its inventory on the basis of covenants, conditions, and restrictions (CC&Rs) imposing restrictions on future development. However, the City's findings do not explain why the CC&Rs make redevelopment less than highly likely, or why they preclude future development of vacant lands covered by the CC&Rs.

The city's summary of its BLI in Table 5-4 of its Housing Element, R. at 1288, shows that it counted about five percent of its lands in its residential plan districts as being "redevelopable" and another five percent were counted as "vacant." *Id.* On remand, the City must analyze the development capacity of the vacant and redevelopment lands in light of the actual trends in redevelopment of developed properties and infill of vacant properties. Those trends include the fact that the city's 2007 Residential Lands Study reported that 12,800 building permits were issued for lands within the prior UGB between 1998 and 2005. R. at 1807. While the Commission understands that this development may have utilized much of the vacant and redevelopable land within the prior UGB, to the extent the City projects that it will deviate from those past trends significantly in the future, the City needs to explain why in its findings. It also appears that some of the redevelopment and infill activity during the 1998-2005 period occurred as a result of significant annexations and subsequent plan and zone changes that provided an increase in the residential capacity of the prior UGB of between 4,259 and 5,950 units. R. at

[9] City Appeal at 20-22, Newland Appeal at 3-7.

1827. It is unclear, however, whether this is the case and, if so, whether this trend is expected to continue, or whether the potential for additional up-zoning within the prior UGB is limited.

The city's findings state that:

> "* * * the city is assuming that development in the RL, RS, and RM designations will meet minimum densities for vacant lands; development in the RH designation will occur at lower than minimum densities because of the parcelized pattern of RH lots in the current UGB. The density of redevelopment will be lower than minimum as well because of the parcelized pattern of redevelopable lots within the current UGB." R. at 1071.[10]

The City also assumed that already platted lots would not further divide. R. at 1071. The city's minimum densities are: RL – 1.1 dwellings per gross acre; RS – 2.2 dwellings per gross acre, RM 6.0 dwellings per gross acre; and RH – 22 dwellings per gross acre. R. at 1287. Most vacant and redevelopable land in the prior UGB was in the RS plan district (2,410 acres out of 2,909 total). R. at 1071 (Table III-3). In other words, the City is projecting that much infill and redevelopment will occur at relatively low densities – an average of about 3 units per acre. Without additional explanation, the Commission finds that this assumption is not justified, either in terms of what has happened in the City in the past, or in terms of what is likely to occur within the UGB in the future.

Without a BLI and findings that follow state statutes and the Commission's definitions of "vacant" and "redevelopable," and that explain the city's projections and policy choices, the commission is left with the summary BLI table in Chapter 5 of the comprehensive plan, the city's findings (which contain no explanation of how the City determined whether lands were vacant or redevelopable), and the BLI map. The commission finds that there is not an adequate explanation in the city's findings, nor an adequate factual basis in the record to determine how the City compiled its buildable lands inventory. Without that key baseline, the Commission is not able to evaluate the city's projections for the residential capacity of its buildable lands over

[10] In its appeal, Newland notes that the City calculated capacity based on plan districts rather than current zoning, which (according to Newland) resulted in the city's determination of capacity being "aggressive." Newland Appeal, at 4-5. However, it is not clear from the city's findings that when it used minimum densities for each plan district, exactly which minimum densities it used. See, e.g., Table 5-3A of the city's Housing Element. R. at 1287 (reporting density ranges by plan district). For the plan district containing the most lands (RS), the City found there are 2,410 acres of vacant or redevelopable lands, and that those lands have a capacity for 7,458 potential units (R. at 1071, Table III-3 and III-4) – an average gross density of about three units to the acre. That figure is very close to the average actual density of single-family housing city-wide at present, R. at 1289. The Commission also notes that the city's findings concerning the capacity of buildable lands for additional residential units (10,059 units plus 1,100 units through measures, R. at 1071) do not match what the City adopted in its Housing Element (10,789 units plus 1,100 units through measures, R. at 1303).

the planning period. This latter issue is addressed further in connection with the requirement in Goal 14 to "reasonably accommodate" future land needs within the existing UGB prior to expanding onto new lands, beginning at page 50, below.

e. Conclusion

The Commission denies the city's and Newland's appeals on this subissue, upholds the Director's Decision, including the director's disposition of objections (for the reasons set forth in the Director's Decision) and remands the city's decision with instructions for it to develop a record and adopt a buildable lands inventory supported by findings that are consistent with state law. The city's findings must explain what criteria it uses (based on ORS 197.296, OAR 660-024 and 660-008) to determine whether particular lands are vacant or redevelopable, examine the amount and type of development that has occurred on the vacant and redevelopable lands since its last periodic review, and project the capacity of the city's buildable lands (prior to additional measures being implemented) based on that analysis (and as further detailed in connection with Goal 14, below). If the amount of redevelopment and infill within the city's UGB is projected to differ significantly from past trends, the City must explain why, and provide an adequate factual and policy basis to support that change.

The city's buildable lands inventory may not exclude lots and parcels smaller than 0.5 acres with no improvements without specific findings consistent with OAR 660-008-0005. Similarly, the City may not exclude lots and parcels subject to CC&Rs unless it adopts specific findings, supported by an adequate factual base, that show why the lands are not available for development or redevelopment during the planning period. In addition, the City has agreed to reexamine lands it identified as "constrained" to determine whether the lands are buildable under OAR 660-008-0005.

Finally, the Commission denies the objection of Newland for the reasons set forth in the Director's Decision, which are incorporated herein by this reference. Director's Decision, at 42-43.

2.3. Whether the City's Housing Needs Analysis and Comprehensive Plan Identify Needed Housing as Required by Goal 10 and the Needed Housing Statutes. Whether the City is Required to Analyze Housing Need by Tenure, Given that it Does Not Regulate Tenure (OAR 660-008-0040). Whether ORS 197.296 Requires an Analysis of Housing Needs for Owner-occupied and Rental Housing?

a. Summary of Issue and ObjectorsAppellants

Newland objected to the City's housing needs analysis, arguing that it must be based only on the factors of ORS 197.296(5), and that the City's use of its "Housing Needs Model" in developing its projections is "outside the scope" of that statute. Newland Objection, at 27-29. DSL objected to the City's housing needs analysis, arguing that it did not comply with ORS 197.296(3)(b) or 197.303. DSL Objection, at 1-2. DSL objected that the City was required to analyze housing need by tenure. *Id.* DSL also objected that the City had failed to show that it planned for needed housing in locations appropriate for needed housing types, or zoned in density ranges likely to be achieved by the market, as required by ORS 197.296(9). *Id.*[11] Swalley also objected to the City's housing needs analysis. Swalley Objection, at 65-68.

The Director found that the City's housing needs analysis failed to comply with Goal 10 and the needed housing statutes (Director's Decision at 32-37), and the City and Newland appealed. City Appeal, at 22-23. Newland Appeal, at 9.

b. Legal Standard

ORS 197.296(2)-(3) and (5) state that:

> "(2) At periodic review pursuant to ORS 197.628 to 197.650 or at any other legislative review of the comprehensive plan or regional plan that concerns the urban growth boundary and requires the application of a statewide planning goal relating to buildable lands for residential use, a local government shall demonstrate that its comprehensive plan or regional plan provides sufficient buildable lands within the urban growth boundary established pursuant to statewide planning goals to accommodate estimated housing needs for 20 years. The 20-year period shall commence on the date initially scheduled for completion of the periodic or legislative review.
>
> (3) In performing the duties under subsection (2) of this section, a local government shall:
>
> (a) Inventory the supply of buildable lands within the urban growth boundary and determine the housing capacity of the buildable lands; and
>
> (b) Conduct an analysis of housing need by type and density range, in accordance with ORS 197.303 and statewide planning goals and rules relating to housing, to determine the number of units and amount of land needed for each needed housing type for the next 20 years. (5)(a) Except as provided in paragraphs (b) and (c) of this subsection, the determination of housing capacity and need pursuant to subsection (3) of this section must be based on data relating to land within the urban growth boundary that has been collected since the last periodic review or five years, whichever is greater. The data shall include:
>
> (A) The number, density and average mix of housing types of urban residential development that have actually occurred;
>
> (B) Trends in density and average mix of housing types of urban residential development;

[11] This specific objection is addressed separately, as part of the next issue area.

(C) Demographic and population trends;

(D) Economic trends and cycles; and

(E) The number, density and average mix of housing types that have occurred on the buildable lands described in subsection (4)(a) of this section.

(b) A local government shall make the determination described in paragraph (a) of this subsection using a shorter time period than the time period described in paragraph (a) of this subsection if the local government finds that the shorter time period will provide more accurate and reliable data related to housing capacity and need. The shorter time period may not be less than three years.

(c) A local government shall use data from a wider geographic area or use a time period for economic cycles and trends longer than the time period described in paragraph (a) of this subsection if the analysis of a wider geographic area or the use of a longer time period will provide more accurate, complete and reliable data relating to trends affecting housing need than an analysis performed pursuant to paragraph (a) of this subsection. The local government must clearly describe the geographic area, time frame and source of data used in a determination performed under this paragraph.

(5)(a) Except as provided in paragraphs (b) and (c) of this subsection, the determination of housing capacity and need pursuant to subsection (3) of this section must be based on data relating to land within the urban growth boundary that has been collected since the last periodic review or five years, whichever is greater. The data shall include:

(A) The number, density and average mix of housing types of urban residential development that have actually occurred;

(B) Trends in density and average mix of housing types of urban residential development;

(C) Demographic and population trends;

(D) Economic trends and cycles; and

(E) The number, density and average mix of housing types that have occurred on the buildable lands described in subsection (4)(a) of this section.

(b) A local government shall make the determination described in paragraph (a) of this subsection using a shorter time period than the time period described in paragraph (a) of this subsection if the local government finds that the shorter time period will provide more accurate and reliable data related to housing capacity and need. The shorter time period may not be less than three years.

(c) A local government shall use data from a wider geographic area or use a time period for economic cycles and trends longer than the time period described in paragraph (a) of this subsection if the analysis of a wider geographic area or the use of a longer time period will provide more accurate, complete and reliable data relating to trends affecting housing need than an analysis performed pursuant to paragraph (a) of this subsection. The local government must clearly describe the geographic area, time frame and source of data used in a determination performed under this paragraph."

ORS 197.303 provides, in pertinent part, that:

"(1) As used in ORS 197.307, until the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing" means housing

types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels. On and after the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing" also means:

(a) Housing that includes, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy;

(b) Government assisted housing;

(c) Mobile home or manufactured dwelling parks as provided in ORS 197.475 to 197.490; and

(d) Manufactured homes on individual lots planned and zoned for single-family residential use that are in addition to lots within designated manufactured dwelling subdivisions."

Goal 10 provides that:

"Buildable lands for residential use shall be inventoried and plans shall encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density."

* * *

"Needed Housing Units – means housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels. On and after the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing units" also includes government-assisted housing. For cities having populations larger than 2,500 people and counties having populations larger than 15,000 people, 'needed housing units' also includes (but is not limited to) attached and detached single-family housing, multiple-family housing, and manufactured homes, whether occupied by owners or renters."[12]

OAR 660-008-0040 provides that:

Any local government that restricts the construction of either rental or owner occupied housing on or after its first periodic review shall include a determination of housing need according to tenure as part of the local housing needs projection.

Finally, OAR 660-024-0040(7)(2007) provides that:

---

[12] Guideline 1 for Goal 10 provides that:

1. In addition to inventories of buildable lands, housing elements of a comprehensive plan should, at a minimum, include: (1) a comparison of the distribution of the existing population by income with the distribution of available housing units by cost; (2) a determination of vacancy rates, both overall and at varying rent ranges and cost levels; (3) a determination of expected housing demand at varying rent ranges and cost levels; (4) allowance for a variety of densities and types of residences in each community; and (5) an inventory of sound housing in urban areas including units capable of being rehabilitated.

The following safe harbors may be applied in determining housing needs under this division:

(a) Local government may estimate persons per household for the 20-year planning period using the persons per household for the urban area indicated in the most current data for the urban area published by the U.S. Census Bureau.

(b) If a local government does not regulate government-assisted housing differently than other housing types, it is not required to estimate the need for government-assisted housing as a separate housing type.

(c) If a local government allows manufactured homes on individual lots as a permitted use in all residential zones that allow 10 or fewer dwelling units per net buildable acre, it is not necessary to provide an estimate of the need for manufactured dwellings on individual lots.

(d) If a local government allows manufactured dwelling parks required by ORS 197.475 to 197.490 in all areas planned and zoned for a residential density of six to 12 units per acre, a separate estimate of the need for manufactured dwelling parks is not required.

c. Summary of Local Actions, Director's Decision, and Appeal(s)

The City of Bend completed three housing needs analyses: an analysis based on past trends since its last periodic review (a "HB 2709 or Trend Forecast"), an analysis of expected future housing needs (a "Housing Needs Forecast"), and a "Transition Forecast" that projects that the City will move from a 77/23 single-family/multi-family mix (during the 1998 to 2007 period) to a 55/45 mix over a period longer than 20 years (and to a 65/35 mix over the 20-year planning period). R. at 1078. Under all three forecasts, the City analyzed its projected housing need for single family housing in one category (combining single family attached and detached housing). In some of the forecasts, the City also analyzed the need for manufactured homes, plexes (2, 3 & 4 units); and multi-family (5 or more unit buildings). R. at 1075.

d. Analysis

The City has carried out much of the analysis required by the commission's rules and the needed housing statutes. In particular, the City has provided an analysis of needed housing based on actual development trends since its last periodic review. That analysis is provided in the most detail in the City of Bend Residential Lands Study (2007). R. at 1798-1835. Some analysis based on actual development trends (the so-called HB 2709 analysis) is also included in the 2005 City of Bend Housing Needs Analysis, R. at 1742-1797, and is summarized in the city's findings. R. at 1075.

With regard to whether the City must separately analyze housing need for rental and owner-occupied housing types, the Commission agrees with the City that its rules do not require

such an analysis in this case. OAR 660-008-0040 provides that such an analysis is required *if* a local government "restricts the construction of either rental or owner occupied housing on or after its first periodic review." The City argued in its appeal that it does not regulate housing according to tenure and, as a result, is not required to analyze housing types by tenure. The Commission agrees, and upholds the city's appeal on this issue based on the wording of OAR 660-008-0040.

However, the needed housing statutes do require the City to identify housing need by *at least* three categories of housing types: single-family detached, single-family attached, and multi-family (a city *may* identify additional types). In turn, the commission's rules define these three basic types of needed housing as follows:

- "Attached Single Family Housing" means common-wall dwellings or roughhouses where each dwelling unit occupies a separate lot. OAR 660-008-0005(1).
- "Detached Single Family Housing" means a housing unit that is free standing and separate from other housing units. OAR 660-008-0005(3).
- "Multiple Family Housing" means attached housing where each dwelling unit is not located on a separate lot. OAR 660-008-0005(5).

While the city's 2007 Residential Lands Study contains much, if not all, of the required *data* concerning these housing types, the city's analysis and findings (including chapter 5 of its comprehensive plan) use different categories of housing types and collapse multiple categories. For instance, the city's findings analyze the amounts of new housing built in the City since its last periodic review by single family dwellings (combining both attached and detached single-family housing into one category), and "plexes" and "multi-family" (more than 5 units) (separating out what the commission's rules define as multi-family into two categories). R. at 1074. While the City is free to *separate* the three basic housing types required to be analyzed by statute into subcategories, it may not *combine* categories as this effectively makes it impossible to do the analysis required by statute.

Goal 10, the Goal 10 implementing rule, and the needed housing statutes also require that the City analyze needed housing types at particular price ranges and rent levels commensurate with the financial capabilities of present and future residents of area residents. The city's record contains much information on projected population and income levels, but neither its adopted plan policies nor its findings clearly tie together how the types and amounts of housing that it is planning for will be affordable for future residents of the area. This issue is addressed in more

detail in the next subsection.

Newland argues that the City *only* may consider past housing trends in its housing needs analysis. Newland Objection at 27-29. The Commission does not agree. ORS 197.296(3)(b) directs local governments to determine the amount of land needed for each housing type for the next 20 years in accordance with ORS 197.303 and the statewide planning goals and rules relating to housing. OAR 660-024-0040(4) provides that:

> "[t]he determination of 20-year residential land needs for an urban area must be consistent with the adopted 20-year coordinated population forecast for the urban area, and with the requirements for determining housing needs in Goal 10, OAR 660, division 7 or 8, and applicable provisions of ORS 197.295 to 197.314 and 197.475 to 197.490.

OAR 660-008-0005(4) defines the "Housing Needs Projection" required by Goal 10 and ORS 197.296 as:

> "* * * a local determination, justified in the plan, of the mix of housing types and densities that will be:
>
> (a) Commensurate with the financial capabilities of present *and future area residents* of all income levels *during the planning period.*

While past development trends are clearly one required part of a local government's housing needs projection, ORS 197.296(5)(a), under Goals 10 and 14 the City also must consider the *future* housing needs of area residents during the (twenty-year) planning period. The purpose of the analysis of both past trends and future needs is that -- if there is a difference – the local government must show how it is planning to alter those past trends in order to meet the future needs. Specifically, if the *future* needs require a different density or mix of housing types than has occurred in the past, then ORS 197.296(7) requires the local government to show how new measures demonstrably increase the likelihood that the needed density and/or mix will be achieved.

e. Conclusion

Based on the foregoing reasons, the Commission upholds the appeals of the City and Newland with regard to whether the City was required to analyze housing need by tenure. Based on the foregoing reasons, the Commission denies the appeals of the City and Newland with regard to the remaining subissues under this section, affirms the Director's Decision with regard

to those other subissues (including the Director's disposition of objections for the reasons set forth in the Director's Decision), and remands the city's decision for it to revise its findings and chapter 5 of its comprehensive plan consistent with the preceding analysis.

2.4. Whether the City Has Planned for an Adequate Land Supply for Needed Housing Types as Required by Goal 10 and the Needed Housing Statutes.

a. Summary of Issue Objectors/Appellants

DSL and Bayard objected that the City had failed to plan for an adequate amount of buildable lands to meet its identified housing needs. DSL Objection, at 1-2. Bayard Objection, at 63. The Director found that the City failed to plan for an adequate amount of land in appropriate plan designations to meet its future housing needs as shown in its housing needs projection. The City of Bend appealed the Director's Decision on this issue. The City asserted that it has already set ambitious targets for multi-family and higher density housing, by planning for housing types that have a higher density than housing that has been built in the City since its last periodic review. City Appeal, at 23-26.

b. Legal Standard

ORS 197.307 and Goal 10 require that when a need has been shown for housing at particular price ranges and rent levels, needed housing shall be permitted in one or more zoning districts with sufficient buildable lands to satisfy that need. ORS 197.307(3)(a).[13]

c. Local Action, Director's Decision and Appeals

As described above, the City carried out three different analyses of housing needs, adopting the third "Transition Forecast." R. at 1077-1081. The Transition Forecast essentially acknowledges that the City will not meet its projected housing needs under Goal 10 and ORS 197.307(3)(a). The Director remanded this aspect of the city's decision because he found it did

---

[13] ORS 197.307(3)(a) provides that:

> "(3)(a) When a need has been shown for housing within an urban growth boundary at particular price ranges and rent levels, needed housing, including housing for farmworkers, shall be permitted in one or more zoning districts or in zones described by some comprehensive plans as overlay zones with sufficient buildable land to satisfy that need."

Goal 10 provides that:

> "Buildable lands for residential use shall be inventoried and plans shall encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density."

not comply with ORS 197.296, 197.307 or Goal 10, and because he found that the city's findings were inadequate. The City appealed this aspect of the director's decision. City Appeal at 23-26.

d. Analysis

The department found that the city failed to comply with the requirement in ORS 197.307 and Goal 10 to permit needed housing in one or more zoning districts with sufficient buildable lands to satisfy housing needs at particular price ranges and rent levels. The city's findings, studies and the Housing Element of its General Plan show a significant need for housing for low and moderate income households, along with a need for workforce housing. R. at 1072-1079 (findings); R. at 1305-13 (Housing Element of the city's General Plan). The city's Transition Forecast of housing needs is intermediary between its analysis of past trends (HB 2709 forecast) and its analysis of needed housing based on expected future population and incomes (HCS Housing Needs Model). R. at 1075-1078 (describing the different models). The Transition Forecast is based on a planned housing mix of 65 percent detached and 35 percent attached for the new housing produced during the planning period. R. at 1078.

The city's findings do not explain how its policy choice to adopt a 65/35 housing mix relates to the housing needs analyses it has prepared. The first paragraph of Bend's Housing Element states:

> "While residents enjoy a variety of housing choices, they also face significant challenges in finding affordably priced housing in Bend as land and housing prices have increased significantly in the past decade, leaving fewer realistic housing options for many Bend residents and workers." R. at 1281.

The city's Housing Element also states:

> "The inadequate supply of land [in the UGB] has led to a lack of multi family units, as high land costs have forced developers to build luxury townhomes rather than more affordable apartments or condominiums. The rapid increase in population has resulted in growth in demand for workforce housing that has outpaced the production of workforce housing units. Between 2000 and 2005, job growth created a demand for 9,057 units of workforce housing while only 8,230 units were produced.
>
> * * *
>
> Affordable housing for service workers, both for individuals and families, is in short supply in Bend. Rapid increases in home prices have combined with growth in the (low wage) service sector to make it difficult for much of Bend's workforce to live in the city." R. at 1282.

The City must (under Goal 10 and the needed housing statutes) plan for an adequate supply of buildable land for affordable housing, including workforce housing (whether that land is inside the prior UGB, on lands in a UGB expansion area, or both). The City has seen a shift away from development of multi-family housing and toward a higher proportion of single-family units over the 1998-2007 period. The City acknowledges the need for more affordable and multi-family housing (including the need for affordable workforce housing as a Goal 9 issue, R. at 1156), but does not state how maintaining its current planning allocations of land or other actions will influence that trend or meet its projected housing needs. The city's findings acknowledge that one reason for the shortage of affordable housing is the "dwindling supply" of land planned for multi-family use. R. at 1075. The city's adopted Housing Element (Chapter 5 of its General Plan), contains repeated references to the shortage of affordable housing in Bend, as a result of an inadequate supply of land planned for multi-family residential use. R. at 1282, 1283. This shortage is, at least in part, a result of the city having planned 87 percent of its residential lands within the prior UGB for its either its low density(1.1 to 2.2 dwellings per gross acre) or standard density (2.2 to 7.3 dwellings per gross acre) plan districts. Housing Element, at 5-9. Similarly, for the UGB expansion area, the city has planned 85 percent of the residential land in the UGB expansion area (based on its Framework Plan) for its low density or standard density plan districts.

In addition, as noted by DSL, ORS 197.296(9) and Goal 10 require the City to show that land planned for needed housing is located in areas that are appropriate for the housing types identified in its housing needs projection. On remand, the City also must explain why it believes particular areas planned to meet the future housing needs of residents are appropriate for the expected housing types.

e. Conclusion

The Commission affirms the Director's Decision, including the Director's disposition of objections for the reasons set forth in the decision, and remands the city’s decision for it to revise its analyses and findings consistent with the foregoing analysis. The City must plan lands within its existing UGB and any expansion area so that there are sufficient buildable lands in each plan district to meet the city's anticipated needs for particular needed housing types. To the extent that the City continues to determine that there is a current and projected future shortage of land for affordable housing that translates into a need for more multi-family housing, the City must

show how it's planning for lands within the exiting UGB and lands in any expansion area will provide sufficient buildable lands in plan districts that are designed to meet that need. If the City continues to project a future housing mix of 65% single-family and 35% multi-family, it must explain why that housing mix will provide sufficient buildable lands to meet its projected future housing needs over the planning period, and that projection and explanation must be supported by an adequate factual base.

2.5. Whether Second Homes are a "Needed Housing Type" for the City of Bend. Is the City Required to Coordinate with Deschutes County Concerning the Regional Need for this Form of Residential Use. Whether the City Adequately Justified its Projected Density for Second Home Development, and Whether the City is Required to Coordinate with Deschutes County on the Regional Demand for Second Homes.

a. Summary of Issues and Objectors/Appellants

Bayard and COLW both objected to how the City addressed land for second homes. Bayard Objection, at 53; COLW Objection, at 11 (arguing that the City should have considered the effect of the Tetherow development on this land need). The Director remanded the city's decision, finding that the City failed to comply with Goal 10 and 14 in its determination of the amount of land needed for this use and the proportion of the use that would occur within the prior UGB. The City of Bend (City Appeal at 36), Central Oregon LandWatch (COLW) (COLW Appeal at 5-6) both appealed the Director's Decision, raising issues related to how second homes were considered in the city's housing needs analysis.

b. Legal Standard

In *Rogue Valley Assoc. of Realtors v. City of Ashland*, 35 Or LUBA 139, 152-53 (1998), *aff'd* 158 Or App 1, 970 P2d 685 (1999), LUBA determined that:

> Under ORS 197.303(1), the first inquiry is whether a local government has identified a need "for housing within an urban growth boundary at particular price ranges and rent levels." If a local government does so, any housing types the local government determines to be necessary to meet the identified need is considered "needed housing."

In that case, the City of Ashland identified (in its comprehensive plan) a need for "highcost" housing. LUBA held that such housing was a "needed housing type" under both 197.303 and Goal 10 because the lists of needed housing types in those provisions is nonexclusive, and the city had identified high-cost housing as needed in its plan.

Goal 14 provides that the:

> Establishment and change of urban growth boundaries shall be based on the following:
>
> (1) Demonstrated need to accommodate long range urban population, consistent with a 20-year population forecast coordinated with affected local governments; and
>
> (2) Demonstrated need for housing, employment opportunities, livability or uses such as public facilities, streets and roads, schools, parks or open space, or any combination of the need categories in this subsection (2).

c. Summary of Local Actions, Director's Decision, and Appeal

The City identified a need for 500 acres of land for second home residences, R. at 1058. It included this use as part of its summary of residential land need. *Id.* The quantity of land was based on the city's estimate of the number on new units of housing that the market would demand for this use, which it found would be eighteen percent (18%) of the total number of new residential units needed during the planning period. R. at 1087. The City based its projected land need for this use on an average density of six units to the net acre. *Id.* The City also determined that this use does *not* provide needed housing, R. at 1086 (as that term is used in the needed housing statutes). However, the City found that because this use consumes lands planned for residential use, the City must provide land for it if the City is to assure a 20-year land supply for needed housing. R. at 1088.

The Director's Decision treated second home development as an other use of land (other than needed housing). Director's Decision, at 48. The Director found that while there was substantial evidence to support the city's determination regarding the number of second home units needed over the planning period, the City had not adequately justified the projected density of such development, nor explained why *all* of those units would be built within the expansion area rather than split between the existing UGB and the expansion area. *Id.* The Director also found that the City was required to coordinate consideration of how to satisfy the need for second home development with Deschutes County. The Director remanded the city's decision for it to:

- "Coordinate with the county specifically concerning the need for second-home housing, and where this need should be satisfied regionally;
- Evaluate whether this need can reasonably be accommodated on lands within the existing UGB; and
- To the extent that additional lands are required, establish a reasonable, specific density of development for this housing type for the next 20 years." Director's Decision, at 48.

The City and COLW appealed the Director's Decision. City Appeal at 35; COLW Appeal at 2, 5-6. The City clarified that (as with its residential land need generally) two-thirds of the demand for second homes would be met on vacant and redevelopable lands within its existing UGB. City Appeal, at 35. See also, R. at 1071-1072 (table III-4 and accompanying text). The City also argued that there is no evidence in the record that second homes will develop at a density different from other housing in the City. City Appeal, at 35.

COLW argued that the city's estimate of needed second home units was not supported by an adequate factual base, and that the analysis should include an examination of second homes being provided by destination resorts in the area (Tetherow). COLW Appeal, at 6.

d. Analysis

The first question under this issue is whether the City did, in fact, consider second homes as a type of needed housing. The city's findings on this point are not clear, as it both lists second homes under its summation of all residential land needs (findings at 6), and then describes second homes as a use other than needed housing, but one that consumes land planned for residential use. R. at 91. Presumably, past second home development also was included in the city's "2709 Forecast"[14] based on building permits issued since its last periodic review.

Nevertheless, based on the city's findings, R. at 1086, the Commission concurs with the City (and the Director) that the City did not identify second homes as a needed housing type.[15] The Commission also concurs with the City and the Director that there is an adequate factual base for the number of second-home units that the City projects for the planning period (3,002). R. at 1087. The City was presented with conflicting evidence concerning future demand for second homes, R. at 1087, and decided to base its estimate on a percentage of the demand for first homes, rather than on the amount of land estimated to be used for this use in the recent past. There was evidence in the record that a reasonable person could rely on, and that is all that the Goal 2 provisions for an adequate factual base require.

With regard to the projected density of second-homes, the City states that second-home purchasers and renters will seek both attached and multi-family housing, and that there is no

[14] The city's "2709 Forecast" is in response to the requirements of HB 2709 (1995), now codified (primarily) at ORS 197.296.

[15] The commission reserves for the future the question of whether a city may include second homes as a needed housing type under Goal 10. The commission notes that unlike other residential uses, the need for second homes may not be tied to the projected population of a community.

evidence in the record that a separate density projection is warranted. Appeal at 36. The Department agreed, after further review, that there was an adequate factual basis for the City to use a density of six units per net acre, and the Commission concurs.

Finally, with regard to the interplay between the city's decision to consider land need for second homes, and destination resort development in the region, COLW argues that the City was required to consider resort development occurring elsewhere, but did not identify a legal basis for its argument. The Department argued that the coordination provisions of Goal 2 and Goal 10 required the City to coordinate its estimate of land need with Deschutes County. The Commission agrees that the County must coordinate with the City on this issue. To the extent that the County amends its comprehensive plan provisions relating to second homes or destination resorts in the future, it must consider the city's planning for this land use within the proposed Bend UGB. On remand, the city's findings also will need to address whether the amount of land need for this use is altered by any of the changes it makes to its estimate of the number of housing units or density for residential uses generally.

e. Conclusion

The Commission upholds the city's appeal and denies the appeal of COLW, for the reasons set forth above, except that the County is directed to consider the extent to which the City has planned for second-home development in any future planning for second homes or destination resorts within the County.

2.6. Whether the City's Decision to Include 2,987 Acres of Land in its UGB that it Determined Were Not Suitable for Urbanization Complies with Goals 10 and 14, and Related State Statutes.

a. Summary of Issue and Related Objections

The City of Bend determined that almost three thousand acres of land adjacent to its urban growth boundary were not suitable for urbanization. Most of these lands contain existing rural residential development, and are planned by Deschutes County as exception lands (UAR and rural residential). The City nevertheless included these lands within its UGB expansion area even though it also determined that they were not suitable for urbanization. Bayard objected to the inclusion of these lands. Bayard Objection, at 43-46.

b. Legal Standard

ORS 197.298 provides that lands planned as an exception area or as non-resource lands are a higher priority for inclusion in an urban growth boundary than resources lands (lands planned for agricultural or forest uses). Goal 14 provides that "land within urban growth boundaries shall be considered available for urban development consistent with plans for the provision of urban facilities and services." Under the Goal 10 implementing rule, OAR 660-008-0005(2), land for general residential needs (as opposed to specific identified land needs) is generally considered to be "buildable" and "suitable and available" unless it meets certain criteria specified in that rule or is shown to be unlikely to develop during the planning period based on an analogous specific reason.

c. Summary of Local Actions, Director's Decision, and Appeal

The City included 2,987 acres of land in its UGB expansion that it determined were not suitable for urban development. The Director found that:

> The city has provided no justification or explanation for the inclusion of these lands [in the UGB expansion] in its findings. As a result, the director remands the city and county decisions, with direction to remove the approximately 3,000 acres of lands from the UGB expansion area that the city has found are not suitable for urbanization, or explain with specificity why their inclusion is justified under Goal 10 and Goal 14." Director's Decision, at 51.

The City appealed, arguing that:

> "These 2,987 acres are comprised of entire parcels that were deemed unsuitable, unsuitable portions of otherwise suitable parcels, and existing rights-of-way. Unsuitable land includes developed land that is not likely to be redeveloped within the 20-years planning period and other land that is not suitable for residential or employment use, such as schools and park land. It also includes land covered by steep slopes and those within the 100-year floodplain. The record adequately justifies the location of the unsuitable land and provides sufficient justification for its inclusion. * * * * [The] maps show how extensively unsuitable land is interspersed with suitable lands, making it impossible to exclude the unsuitable land." City Appeal, at 37-38.

d. Analysis

The City relies on *Hummel v. LCDC*, 152 Or App 404 (1998) for the proposition that a city may include unbuildable lands in its UGB if those lands are necessary to provide urban services to buildable lands, and where excluding the lands would create an illogical boundary. City Appeal at 38. The commission does not agree that the City has shown that these lands are not "buildable" or "suitable" as those terms are used in Goals 10 or 14. Further, even if the lands

were not "buildable" or "suitable" the City has failed to show that inclusion of almost 3,000 acres of such lands is necessary to provide urban services to lands that are buildable.

When a city analyses lands for suitability for a specific identified land need, it may identify characteristics, such as parcel size, topography or proximity, necessary for the land to be suitable for that identified need. Goal 14, OAR 660-024-0060(5). Bend's analysis of expansion lands included a criterion that all parcels smaller than three acres with an existing home are unsuitable to meet any of the city's 20-year residential land needs. In the Director's Decision, the Department determined that this criterion is not consistent with state law, and the Commission agrees. While not all rural exception areas with developed suburban uses are likely to develop at target urban densities during the 20-year planning period, some portion of these parcels will. A city may not include large suburban parcels in its UGB and assume that no further development will occur over a 20-year period.

The Commission also agrees with the Department that a city may not include lands that it has determined are unsuitable for urbanization within its urban growth boundary, except in very limited cases. In this case, the City has made a generalized decision to include lands that it determined to be unsuitable because those lands are mixed with lands it determined are suitable.

Existing rural subdivisions on the periphery of a city always will include a mix of large and smaller parcels, with some developed parcels and some not. State law (ORS 197.298) makes inclusion of such areas a high priority for cities in order to avoid urbanization of resource lands, and in order to address public facility and land inefficiency issues associated with such development. A city may not parse existing rural subdivisions into suitable and unsuitable parcels (portions of parcels) in order to avoid efforts to urbanize such subdivisions when they are added to an urban growth boundary or in order to avoid counting any future development capacity in such lands. A city *may*, with the appropriate factual basis, determine that the quantity of residential land need that is likely to be met on such lands over the 20-year planning period is low due to the existing development patterns. But a city may not determine both that such lands are unsuitable, and then include them in its UGB while determining that they will provide no residential land supply.

The Oregon Court of Appeals addressed this issue directly in *Milne v. City of Canby*, 195 Or App 1 (2004). In that case, the City of Canby amended its UGB to include 30 acres of land that was entirely surrounded by lands already within the UGB. The city did not determine that

the land was needed, but instead included the land in its UGB because it found that the land was committed to urban uses by the surrounding urban development.

The *Milne* court began by noting that under Goal 14, a local government must apply the "need" factors of Goal 14 and establish a need for land before it may amend its UGB to include that land. *Baker v. Marion County*, 120 Or App 50, 54, *rev den* 317 Or 485 (1993). The City of Canby (and the applicant below) argued, however, that the "unneeded but committed" doctrine justified its decision to add the 30 acres to its UGB. That doctrine originated in LCDC's acknowledgment of the City of Salem's UGB, where the commission approved inclusion of an area that was not shown to be needed, but that was shown to be committed to urban use. *City of Salem v. Families for Responsible Govt.*, 64 Or App 238 (1983), *rev'd and rem'd* on other grounds, 298 Or 574 [on remand, 73 Or App 620 (1985)]. That doctrine was again noted with regard to the acknowledgement of a city's *initial* UGB in *Collins v. LCDC*, 75 Or App 517 (1985). There, the City of Jacksonville projected a need of 96.49 acres for planned development, but its UGB contained 792.9 acres. The court rejected the generalized inclusion of large lot rural residential lands that the city had found were not suitable for urbanization in the UGB, and held that the "unneeded but committed" doctrine requires a *property-specific* showing of commitment to urbanization.

In *Milne*, the Court of Appeals was directly confronted with the question of whether the "unneeded but committed" doctrine extends to *amendments* of an urban growth boundary (as opposed to the initial establishment of a UGB). The court held that the text of Goal 14 did not allow it to extend the doctrine to UGB amendments, overruling two prior cases.[16]

As noted below, the Court of Appeals decision in *Hummel* did uphold an LCDC order approving a UGB expansion for the City of Brookings that included a substantial amount of unbuildable land that the city determined must be included within the UGB in order to provide urban services to more distant lands that were suitable for urbanization. The facts of the Bookings case are unusual, however, and Bend has made no similar showing that specific lands cannot be developed without including other specific lands that are unsuitable in order to provide urban services. Instead, the city's decision is more analogous to the efforts of Jacksonville and Salem to include rural subdivisions in their UGBs without a need showing and while ascribing

[16] The two cases that the court overruled are *Halvorson v. Lincoln County*, 82 Or App 302, 305 (1986), and *Baker v. Marion County*, 120 Or App 50 (1993).

no future development potential to them.

Milne was decided by the Court of Appeals in 2004, and the text of Goal 14 was amended in 2006. However, the Commission finds that the amendments did not alter the law on this issue. If anything, the more recent text of Goal 14 is more explicit that the change of urban growth boundaries shall be based on "* * * [d]emonstrated need to accommodate long range urban population, consistent with a 20-year population forecast * * *," e.g., that Goal 14 does not authorize the inclusion of "surplus" lands.

The Commission has previously remanded a city's inclusion of unbuildable lands within a 100-year floodplain for reconsideration. In its partial approval and remand order 04-WKTASK- 001645, the commission remanded to the City of McMinnville for further consideration of the portions of certain UGB expansion areas that lie within the 100-year flood plain in light of *Milne.*

e. Conclusion

The Commission affirms the Director's Decision on this issue (including the Director's disposition of objections, for the reasons set forth in the Director's Decision), denies the appeals, and remands the city's urban growth boundary amendment for it to address the 2,987 acres of land it included within its expansion area. On remand, the City may continue to include these lands in its UGB expansion area if it determines that, in fact, the lands in question are "buildable" (e.g., "suitable and available" under OAR 660-008-0005) and will meet *some part* of the city's land needs over the planning period. As part of this determination, the City could, with an adequate factual base (such as evidence of development trends within other rural subdivisions added to the Bend UGB in recent years), determine that the amount of residential or other future land need that these lands are likely to meet is limited.

2.7. Whether the City's Inclusion of 500 Acres of Land in its UGB in Addition to the Total Land Supply that it has Determined are Needed for Urbanization Complies with Goal 14 and State Statutes.

a. Summary of the Issue and Related Objections

In addition to the 2,987 acres that it found unsuitable, the City also included over 500 acres of "suitable and available" land in its UGB expansion beyond its estimated total need. Rec. at 1058 (4,956 acres of land needed to accommodate forecast growth, and 5,475 acres of suitable

and available land included (in addition to the 2,987 acres of unsuitable land)). Rec. at 1058. Bayard, Swalley and COLW filed objections, arguing that state law does not allow a 519-acre surplus. Bayard Objection at 46; COLW Objection at 11; Swalley Objection at 63.

Newland filed an objection arguing that the "theoretical" surplus of 519 acres was needed to fulfill land needs, and to provide for effective delivery of infrastructure and complete communities.

b. Legal Standard

Goal 14 provides that:

> "Establishment and change of urban growth boundaries shall be based on the following: (1) Demonstrated need to accommodate long range urban population, consistent with a 20-year population forecast coordinated with affected local governments * * *."

OAR 660-024-0040(1), the commission's rule implementing Goal 14, provides that:

> (1) The UGB must be based on the adopted 20-year population forecast for the urban area described in OAR 660-024-0030, and must provide for needed housing, employment and other urban uses such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period consistent with the land need requirements of Goal 14 and this rule. The 20-year need determinations are estimates which, although based on the best available information and methodologies, should not be held to an unreasonably high level of precision.

c. Summary of Local Actions, Director's Decision, and Appeal

As noted above, the City included 519 acres of suitable and available land in its UGB expansion area beyond the amount it estimated as needed. Rec. at 1058. This amount of land represents half of the land need the City estimated over a twenty-year period for new housing units. Rec. at 1054, 1058, Table I-1.

The Director found that once the City *makes* its estimate, state law does not allow the City to simply add a cushion. Instead, state law requires the City to makes its best effort to arrive at a reasonable estimate of land need and then stick with that number. The inclusion of a specific amount of land in the UGB in addition to estimated need appears to be driven by its desire to include particular properties in the expansion area. Director's Decision, at 49.

The City agreed, on appeal, to substantially reduce the amount of surplus land. City Appeal, at 38.

d. Analysis

The Commission concurs with the Director's Decision on this issue. OAR 660-024-0040(1) recognizes that local government estimates of land need for housing, employment and other urban uses are just that, estimates. However, the rule does not allow a local government to make estimates based on an adequate factual base, and consistent with the specific requirements for such estimates, and then add a "modest cushion against the possibility that the total estimate * * * is too conservative." R. at 39.

The Court of Appeals addressed the surplus land issue under Goal 14 in *Milne*, as described at some length above, and (most recently) in *1000 Friends v. City of Woodburn*, __ Or App __ (slip op, Sept. 8, 2010). In *Woodburn*, the court again discussed Goal 14 in terms of a limit on the size of an urban growth boundary, based on a 20-year land supply. *Hummel* (relied on by the City in its appeal) stands for a different proposition, that a city may include specific lands within its UGB that are *not* suitable for urbanization, if the City shows that such lands are necessary to provide urban services to other lands that are suitable for urbanization. The City does not argue that the 500 acres are not suitable and, in any event, has not made that showing in its decision. There are no specific findings showing why the 500 acres are needed to provide services to particular lands or why they are necessary to provide a logical boundary.

As to Newland's appeal, the city's findings do state that "these additional acres are the by-product of the City's desire to configure the expanded UGB in a manner that is logical, provides the best opportunity for cost-effective and efficient provision of public services, and excludes high value farmland to the maximum extent feasible." R. at 39. The findings point to one specific area, Area 6 on the Alternative 4-A map, as an example of lands needed "to facilitate the development of complete neighborhoods * * *." R. at 39. These conclusory findings do not explain why specific lands are necessary for these purposes, or why the one area that is identified as desirable for a complete community must be added to the UGB *in addition* to the quantity of lands the City determined are needed to meet its housing and employment needs. Without such findings, the Commission finds that the City has not made the showing required under Goal 14 and ORS 197.296 to include land for these purposes.

e. Conclusion

For the reasons stated above, the Commission affirms the Director's Decision on this issue (including the Director's denial of Newland's objection and the Director's disposition of

other objections, for the reasons set forth in the Director's Decision), denies the appeals, and remands the city's Ordinance No. NS-2112 for the City to reduce the acreage of the UGB expansion area by 519 acres. The City may include lands to avoid splitting parcels or to create a logical boundary, but those amounts would then be included in the overall acreage added, and result in corresponding reductions elsewhere unless the amount of surplus is very small.

2.8. Whether the City's UGB Expansion Is Consistent with Certain Housing Policies of the Bend Area General Plan.

a. Summary of Issue and Objectors/Appellants

The Director found that the city's decision was inconsistent with policies 4, 17 and 21 of Chapter 5 of its comprehensive plan.

b. Legal Standard

Goal 2 and ORS 197.175 require that the city's decision be in compliance with its comprehensive plan. Policies 4, 17 and 21 of chapter 5 of the city's housing element provide:

> "4. Implement strategies to allow for infill and redevelopment at increased densities, with a focus on opportunity areas identified by the City through implementation strategies associated with this policy.
>
> * * *
>
> 17. Implement changes to the City's code that facilitate the development of affordable housing for very low, low and moderate-income residents, as determined by appropriate percentages of Area median Family income, consistent with recent updates to the City's development code and/or new strategies identified in this Plan.
>
> * * *
>
> 21. In areas where existing urban level development has an established lot size pattern, new infill subdivision or PUD developments shall have a compatible lot transition that compliments the number of adjoining lots, lots size and building setbacks of the existing development while achieving at least the minimum density of the underlying zone. New developments may have similar lots or varying housing types internal to the development." Rec. at 1312-1313.

c. Summary of Local Actions, Director's Decision, and Appeal

No objections were received concerning consistency of the action with Bend's General Plan. However, the Director found that the city's limitation of its efficiency measures to the

Central Plan Area and undefined areas along some transit routs was inconsistent with its plan policy to support higher-density residential use in proximity to commercial services, parks and schools. In addition, the Director determined that the city's findings failed to explain how its decision complied with the policies set forth above. The City appealed, arguing that the Director applied the wrong legal standard, and that its decision was not inconsistent with the identified plan policies. City Appeal at 41-44.

d. Analysis

Upon further review, including review of the city's appeal, the Department agreed with the City that its decision could be found to be consistent with the identified policies of its comprehensive plan. The Department continued to argue, however, that the city's findings on this issue were conclusory, and that the decision should be remanded for the City to provide an explanation of why its decision is consistent with the plan policies. The City agreed to adopt findings clarifying why its decision is consistent, and the Commission concurs that this issue can be resolved by the adoption of findings explaining why the city's decision is consistent with its plan policies.

e. Conclusion

The Commission denies the city's appeal for the reasons stated above, but also clarifies that its remand is solely for the lack of adequate findings by the City. The Commission has not determined that the city's decision fails to comply with the identified policies of the city's comprehensive plan – that question is for the City to address in the first instance through adequate findings.

3. The Capacity of the Prior UGB to Reasonably Accommodate Future Residential Land Needs, and the City's New Efficiency Measures -- Goal 14 and ORS 197.296

3.1. Whether the City's Findings for its Urban Growth Boundary Amendment Adequately Explain How it Met the Requirement in Goal 14 to Determine that it Has "Reasonably Accommodated" its Projected Need for Future Residential Land Uses Over the Planning Period Within It's Existing UGB, Rather than Expanding onto New Lands

a. Summary of Issue, Objectors and Appellants

State law generally requires the city to "reasonably accommodate" as much of its future growth as possible within its existing UGB. The Director found that the City's findings were inadequate with regard to this issue. Director's Decision, at 38-45. The City of Bend, Newland Communities, Bayard, COLW, and Swalley appealed the Director's Decision regarding this issue or filed related objections to the city's decision with regard to this issue. City of Bend Appeal, at 26-33; Newland Appeal at 8-11; Bayard Objections, at 56-57; COLW Objections, at 9, and Swalley Objections, at 63-65, 72, and 77-78.

b. Legal Standard

Before expanding the UGB, Goal 14 and OAR 660-024-0050(4)[17] require the City to establish that its projected needs for future land uses cannot reasonably be accommodated on land within its existing UGB. One of the main ways that the City establishes how much of its future residential land need will be accommodated within its existing UGB is through its estimate of the future development capacity of the vacant and redevelopable lands in its buildable lands inventory. As described previously, beginning at page 26, the city's determination of that capacity must include an analysis of development trends since the city's last period review. ORS 197.296(5). The requirement in Goal 14 to "reasonably accommodate" projected needs for future land uses within the existing UGB before expanding the UGB places

[17] OAR 660-024-0050(4)(2007) provided that:

> (4) If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs determined under OAR 660-024-0040, the local government must amend the plan to satisfy the need deficiency, either by increasing the development capacity of land already inside the city or by expanding the UGB, or both, and in accordance with ORS 197.296 where applicable. *Prior to expanding the UGB, a local government must demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB.* Changes to the UGB must be determined by evaluating alternative boundary locations consistent with OAR 660-024-0060. (Emphasis added).

an additional gloss on the determination of future capacity. The city's determination of its capacity based on its existing planning and land use regulations cannot be unreasonably conservative in the sense of underestimating capacity in order to increase the amount of land added to the UGB.

A second way that the City may accommodate its future residential land need within its UGB is through the adoption of *new* efficiency measures. ORS 197.296(6)(b). Again, Goal 14 applies in addition to this statutory provision, to require the City to consider additional, reasonable, efficiency measures.

Goal 10 and ORS 197.296(9) also require that the City "ensure that land zoned for needed housing is [planned] in locations appropriate for [needed] housing types * * * ." These locational requirements depend on the nature of the City's housing needs, and are in addition to the "efficiency" provisions of Goal 14.

c. Summary of Local Actions, Director's Decision, and Appeals

The City found that under its existing plan designations, the City would accommodate two-thirds of its projected future (2008-2028) need for housing within its existing urban growth boundary. R. at 1071-1072. As noted above, this finding was based on the city's projection that residential development on vacant and redevelopable lands in the RL, RS, and RM plan districts would occur at the minimum densities allowed by the city's code, and that development in the RH plan district would occur at less than the minimum density allowed due to existing parcelization patterns. R. at 1071-1072 (including Table III-4). The total number of housing units that the City estimated could be accommodated within its prior UGB for the twenty-year period from 2008-2028 (including the two new efficiency measures) was 11,159. R. at 1071.[18] The City also reported, however, that the total number of housing units that were built within the same area during the seven-year period (after its last periodic review) from 1998 to 2005 was 12,798. R. at 1074. Nonetheless, the City found that its estimate of "* * * 11,159 new housing units [assumed] that all vacant and redevelopable residential land (2,909 net acres) is developed for housing at recent built densities." R. at 1072.

[18] The estimate for the residential capacity of the prior UGB in the city's findings, of 11,159, differs from the estimate in the city's comprehensive plan, which is 10,789 (R. at 1303, Table 5-20, and R. at 1307, Table 5-26). This results in a difference between the projected future need for residential units (beyond what can be accommodated in the prior UGB) of 5,892 in the comprehensive plan (R. at 1303 and 1307) and 5,422 in the city's findings. R. at 1071-1072. This discrepancy should be resolved by the City on remand.

With regard to efficiency measures, the City stated that under ORS 197.296, it has the option either to expand its UGB, or to adopt efficiency measures (or do both). R. at 1082. The city then described two new efficiency measures that it adopted as amendments to the housing element of its comprehensive plan. R. at 1085. The two new comprehensive plan policies called for the City to: (a) plan for and zone for an unspecified area and amount of "long-term redevelopment along main transit corridors," and (b) complete a two-part, long-term land use and transportation plan for the Central Area ***, [with] special attention *** to redevelopment of the 3rd St. corridor in this area to promote higher-density housing and mixed-use development to strengthen the Central Area's role as the economic and cultural hub of the community." R. at 1311-1312. The measures were described in more detail in the city's *findings* as planning for an additional 500 units of housing in the Central Area Plan, and to plan for up-zoning in areas along transit corridors for another 600 units. R. at 1082-1085.

The Director determined that the City failed to explain adequately how its decision complied with ORS 197.296, Goal 14 and OAR 660-024-0050(4) with regard to the requirement that the City show that it's future residential needs could not be reasonably accommodated within the prior urban growth boundary before expanding the UGB. Director's Decision, at 38-45. The City and Newland appealed the Director's Decision. City Appeal, at 26-33; Newland Appeal, at 8-11.

d. Analysis.

In terms of the projected capacity of the prior UGB for additional residential development, the Commission concurs with the Director's conclusion that the city's findings are inadequate in light of the record and other aspects of the city's decision for the following reasons. First, as determined above, the City must reexamine its buildable lands inventory to assure that it complies with state statutes and rules concerning what lands are vacant and what lands are redevelopable. To the extent that the city's BLI is revised with regard to what lands are included, those revisions will affect the projected development capacity of lands within the prior UGB and the amount of development that can be reasonably accommodated.

Second, with regard to the *capacity* of the lands inventoried as vacant or redevelopable, and as found above in connection with ORS 197.296, Goal 14 also requires that in light of the city's data concerning the amount of residential development that occurred in the *seven*-year period between 1998 to 2005 within the prior UGB (12,798 units) (R. at 1074) the City must

explain why it is projecting *less* development (11,159 units) in the same area over the *twenty*-year period from 2008 to 2028. R. at 1072. This explanation also must address the city's findings that the density of redevelopment and infill was *increasing* during the 1998-2005 period. R. at 1083, 1308. The Commission understands that a likely reason for diminished residential capacity within the prior UGB is that the rapid rate of development during 1998-2005 utilized much of the vacant and redevelopable land, but the extent to which this is the case is not clear, and improved findings would assist in clarifying this point.

Third, Goal 14 and OAR 660-024-0050(4)(2007) require the City to show that it cannot reasonably accommodate future projected land uses and their accompanying land needs within it's prior UGB before expanding the UGB to add lands for urban development. The city has described steps it took in 2008 revisions to its development code to increase the capacity of its prior UGB, and summarized those steps as:

- "Removal or easing of approval standards or procedures;
- Establish minimum density ranges;
- Authorize housing types not previously allowed by the plan or regulations."

R., at 1084 (see also Table III-13, describing those measures in more detail). These measures are laudable, but in spite of them (as described above) the City is projecting that lands in 3 of 4 plan districts will meet minimum densities (which are relatively low), and that lands in the RH district will develop *below* the minimum allowed density. R. at 1071-1072. The city's minimum density levels in its plan districts are low, and (as noted above) most of its residential lands are in low density plan districts. More specifically, 87 percent of the lands within the prior UGB planned for residential use are planned for low-density, single family residential use (either the RL plan district (1.1 dwelling per gross acre minimum density) or the RS plan district (2.2 dwellings per gross acre minimum density)). Multi-family housing (buildings with more than 3 units) is not allowed outright within the RL and RS plan districts (duplexes and triplexes are allowed as conditional uses in the RS district). [Bend Code section 2.1.200, R. 1287-1288].

The City indicates in its Housing Element that it elected not to change allowed densities in the residential districts because its BLI shows recent development is already occurring at higher densities than it did prior to 1999, and because of its new minimum density provisions. R. at 1308. Given that the city's findings show that development is occurring at levels well above its minimum densities (*average* residential density within the City for single family dwellings

has risen to 5 units to the acre, R. at 1083), while minimum density in the predominant single-family (RS) district is 2.2 units per acre, the Commission finds that the City has not shown that it is complying with the requirement in Goal 14 to reasonably accommodate its future land needs for residential uses within its prior urban growth boundary. On remand, the City must address both prior trends (as required by ORS 197.296(5)) and recent existing steps it already has taken to increase density and meet its housing needs. The requirement of Goal 14 to reasonably accommodate future land needs within its UGB does not allow the city to use an unreasonably conservative projection of future development capacity.

Fourth, under Goal 14, the city must *consider* taking additional steps to plan for its projected future residential land needs within its urban growth boundary *and* show that such steps are not reasonable before expanding its boundary, particularly in light of the record and its own findings concerning actual development trends in the 1998-2005 (or 1998-2007) period and its description of its future housing needs. For example, during the period between 1998 and 2007 Bend saw 1,823 acres of residential land within its prior UGB subject to a plan or zone change to increase allowed density. R. at 1827. Much of this increase appears to have been for lands annexed into the city and then planned for the city's standard residential zone (RS). Another 145 acres of land was up-zoned from RS to RM or RH. The Commission understands that the city's projected capacity is based on its plan designations and not its zoning (and that, as a result, upzoning is not directly relevant to projected capacity). Nevertheless, given the apparent market demand for increasing density relative to existing planning and zoning designations, the City must explain why increasing the density allowed, particularly for large blocks of vacant land outside of existing established neighborhoods, is not reasonable during the 20-year planning period.[19] The Director's Decision identifies a number of other efficiency measures that the City should consider (drawn from the city's own Residential Lands Study[20]), but that list is not intended to be exclusive or directive; it is up to the City to determine in the first instance what is reasonable to accommodate its future housing needs within its UGB.

[19] The city's BLI map depicts several areas where there are substantial blocks of vacant lands.

[20] The city's 2007 Residential Lands Study identified other efficiency measures. R. at 1825-1835. One of these, the adoption of refinement plans, appears to have been a successful tool in planning for additional needed housing and providing for higher densities in a form that the market has been responsive to. R. at 1828. On remand, the City should address this and other existing and potential future measures in determining the projected residential capacity of lands within its prior UGB in order to assure that it is complying with the Goal 14 "reasonably accommodate" standard.

The City and Newland argued on appeal that ORS 197.296(3) gives the City the choice of whether to accommodate future need for residential land by expanding its UGB or adopting new measures. The Commission does not agree. The City determined that its UGB will accommodate less development than it has since its last periodic review, that there will be no upzoning except (possibly) in two areas. At the same time, the City found that it has a significant need for affordable multi-family and workforce housing. Under those circumstances, Goals 10 and 14, and ORS 197.307(3), require the city to consider and explain why its determination of capacity based on existing measures is reasonable, and why other, new, measures are not reasonable.

While the Commission agrees with the Director's determination that the City has made the case that a significant expansion of the Bend UGB for future residential growth is justified, the Commission also wants the City to understand that it was not persuaded that the City is meeting its obligations under Goals 10 and 14, and ORS 197.307(3) to plan for an adequate amount of land for needed housing, particularly for land in plan districts that authorize multi-family housing. The Commission is *not* asking the City to amend its plan and zoning designations in established residential neighborhoods; the City has several areas of vacant and redevelopable residential lands where it could consider planning for more multi-family housing.

e. Conclusion

The Commission affirms the Director's Decision on this issue, including the Director's disposition of objections, for the reasons set forth in the Director's Decision. The Commission concludes that the City must reconsider the projected capacity of lands within its prior UGB for residential development during the planning period in light of its revised BLI, recent development trends, and existing and potential new measures to increase that capacity. The measures the City considers must include, but are not limited to, evaluating the infill capacity (including plan and zone changes) of residential lands with more than five acres that are vacant or partially vacant. The City also should consider the measures as listed in the Director’s Decision, at 45-46, that are related to efficiency measures. While the Commission concludes that the City's decision does not comply with the "reasonably accommodate" requirement of Goal 14, it also notes that there is no fixed standard under this aspect of Goal 14. The requirement is read in light of the provisions of ORS 197.296(5)-(9), and the unique factual situation of Bend. *It is up to Bend to determine in the first instance what is reasonable to*

accommodate its future housing needs within its own UGB. It will make this determination in the context of prior trends, projected needs, and adopted policies.

3.2. Whether the City's Findings Show that it's Two New Efficiency Measures "Demonstrably Increase the Likelihood that Residential Development will Occur at the Housing Types and Density and at the Mix of Housing Types Required to Meet Housing Needs Over the Next 20 Years."

a. Summary of Issue and Appellants/Objectors

For *new* measures to increase the capacity of buildable lands within its urban growth boundary, ORS 197.296(5) requires that the City show that the measures "* * * increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next twenty years." Bayard objected that the efficiency measures that were adopted lacked documentation to assure that they will be effective. Bayard Objection, at 57. The Director upheld the objection. Director's Decision, at 41. And the City and Newland appealed. City Appeal, at 27; Newland Appeal, at 10.

b. Legal Standard

To the extent that the City elects to meet its future need for residential land by adopting *new* measures to promote infill and/or redevelopment, ORS 197.296(7) requires that it demonstrate that such measures "demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet needs over the next 20 years." In addition, ORS 197.296(9) provides that:

> "(9) In establishing that actions and measures adopted under subsections (6) or (7) of this section demonstrably increase the likelihood of higher density residential development, *the local government shall at a minimum ensure that land zoned for needed housing is in locations appropriate for the housing types identified under subsection (3) of this section and is zoned at density ranges that are likely to be achieved by the housing market using the analysis in subsection (3) of this section.* Actions or measures, or both, may include but are not limited to:
>
> (a) Increases in the permitted density on existing residential land;
>
> (b) Financial incentives for higher density housing;
>
> (c) Provisions permitting additional density beyond that generally allowed in the zoning district in exchange for amenities and features provided by the developer;
>
> (d) Removal or easing of approval standards or procedures;
>
> (e) Minimum density ranges;
>
> (f) Redevelopment and infill strategies;
>
> (g) Authorization of housing types not previously allowed by the plan or

regulations;

(h) Adoption of an average residential density standard; and

(i) Rezoning or redesignation of nonresidential land [to residential uses]."

c. Summary of Local Action, Director's Decision and Appeals

The city's submittal included two new efficiency measures. As described above, the two new efficiency measures were adopted as amendments to the housing element of its comprehensive plan. R. at 1085. The two new comprehensive plan policies called for the City to: (a) plan for and zone for an unspecified area and amount of "long-term redevelopment along main transit corridors," and (b) complete a two-part, long-term land use and transportation plan for the Central Area ***, [with] special attention *** to redevelopment of the 3rd St. corridor in this area to promote higher-density housing and mixed-use development to strengthen the Central Area's role as the economic and cultural hub of the community." R. at 1311-1312. The measures were described in more detail in the city's *findings* as planning for an additional 500 units of housing in the Central Area Plan, and to plan for up-zoning in areas along transit corridors for another 600 units. R. at 1082-1085. However, the city's adopted plan policies do not include any description of or commitment to particular amounts or specific types or locations of housing. The plan policy for transit corridors does state that this planning will be completed "prior to 2012." R. at 1311.

The Director determined that the city's two new measures were too indefinite to meet the requirements of ORS 197.296(7) and (9). The Director noted that the measures as adopted did not anticipate or commit the City to any particular outcome, and that the City did not provide a timeframe for completing its planning for the Central Area Plan. Director's Decision, at 38-39. The City and Newland appealed. City Appeal, at 27; Newland Appeal, at 10. In its appeal, the City stated that "[t]he City has determined, based on evidence in the record, that these measures will be effective. (Rec.1084-85.)" City Appeal at 27. Newland stated in its appeal that "the City committed to adopt these measures during the planning period." Newland Appeal, at 10.

d. Analysis

Goal 10, ORS 197.296, and OAR chapter 660, division 8 require the City to ensure it has provided a 20-year supply of buildable residential land for needed housing in locations appropriate for the needed types of housing. If the City relies on new measures, they must do more than merely adopt policies encouraging future planning for the development of needed

housing. Under Goal 10 and ORS 197.296 the City must adopt definitive measures and find, based on an adequate factual base, that those measures demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next 20 years.

Although the City and Newland argued that the city had determined that the measures would be effective, there are no findings relating to the requirements of ORS 197.296(7) and (9), and the measures themselves are commitments to a planning process, not to any outcome, let alone any outcome tied to the city's housing needs analysis. The City agreed, on remand, to include provisions in the General Plan requiring adoption and implementation of the Central Area Plan and rezoning of lands along transit corridor as described in its findings. City of Bend's Exceptions at 12.

e. Conclusion

The Commission affirms the Director's Decision on this issue, including the Director's disposition of objections for the reasons set forth in the Director's Decision, and directs the City on remand to address the requirements of ORS 197.296(7) and (9) with respect to any new efficiency measures that it relies on. The City may do this by adopting specific timelines for initiation and completion of efficiency measures, including detail about the outcomes that will be achieved as part of the Housing Element of its comprehensive plan. The City also must adopt findings that show why those outcomes are more likely to occur as a result of the measure(s), and how they relate to needed housing types and locations. In addition, in coordination with its Work Plan for Outstanding Metropolitan Transportation Planning Work (issue area 8), if the City continues to rely on these two particular measures, it must:

1. Within two years following acknowledgement, complete and adopt the Central Area Plan. The Plan must include provisions that plan for at least 500 additional medium-density and high-density housing units over the planning period.

2. Within two years following acknowledgement, complete and adopt provisions of its comprehensive plan that authorize at least 600 additional medium-density and high-density housing units on lands abutting or within ¼ mile of existing or planned transit routes.

4. Other (Non-employment) Land Needs – Goal 14

4.1. Whether the city adequately justified inclusion of an additional 15 percent factor for all "other lands" in its identified need.

a. Summary of Issue and Related Objections and Appeals

Central Oregon LandWatch objected that the City did not establish that its identified need for land for institutional or private rights-of-way and private open space is a need under Goal 14, when land for public parks (and streets) is already included in the city's estimate of future land needs. COLW objected that:

> "There is no showing that these uses are <u>needed</u> for residential purposes over and above the public rights of way, parks and institutions already counted. Just because such private uses may exist due to past policies and decision does not mean that they are needed over and above what is considered needed in a true needs analysis." Central Oregon LandWatch Objections at 10.

The Director sustained this objection. Director's Decision, at 53. The City appealed. City Appeal, at 36-37.

b. Legal Standard

The Commission concluded above that submittals under ORS 197.626 must be supported by substantial evidence and present adequate findings. Goal 14 requires that change of an established UGB be based on *demonstrated* need. OAR chapter 660, division 24 provides clarification of procedures and requirements of Goal 14. OAR 660-024-0000(1). Regarding land need, the rule requires that land need be based on the adopted 20-year population forecast and "provide for needed housing, employment and *other urban uses* such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period." OAR 660-024-0040(1).

c. Summary of Local Action, Director's Decision and Appeal

The City applied a fifteen percent factor to its projected net residential, school, park and employment lands need to reflect the amount of land that is not for housing, employment, public facilities or rights-of-way. R. at 1091. The application of the fifteen percent factor led the City to include 442 acres for other land uses (institutional, private open space, private rights-of-way). R. at 1092. The City testified that it analyzed the present UGB parcel by parcel and determined that 12.8 percent of the land is utilized for uses that it does not categorize as either for housing,

employment opportunities, public facilities, or rights-of-way. The City then determined that 12.8 percent for other land uses was reasonable going forward. In addition, the City sought to account for land that would be utilized for stormwater facilities by increasing the factor to fifteen percent. The "institutional" uses accounted for in this factor include "churches, fraternal/benevolent organizations, utilities, cemeteries, golf courses, and irrigation districts properties." City Appeal at 37.

The Director remanded the city's decision with direction to either remove the fifteen percent factor for private open space and private rights-of-way as categories of land need, or to provide findings to establish that private open space and private rights-of-way are needed within the UGB expansion area in addition to land needs for public parks and public rights-of-way. Director's Decision, at 49. The Director determined the submittal lacked findings to explain why prior development patterns that involved a relatively large amount of private open space are needed in the expansion area, concluding "[s]imply adopting past development patterns is not a sufficient basis to demonstrate a land need under Goal 14 or under ORS 197.296." *Id.*

The City appealed, arguing that the inclusion of the fifteen percent factor is necessary to achieve the overall goal of maintaining Bend as a high-quality, desirable place to live and work. City Appeal, at 36-37; City Exceptions, at 17. The City argues that if the "other land" factor is not added, then land for residential uses will be displaced by these uses. Appeal at 37.

d. Analysis

OAR 660-024-0040(1) requires the City to provide for needed housing, employment and other urban uses such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period consistent with the land need requirements of Goal 14 and division 24. The City opted not to use the safe harbor at OAR 660-024-0040(10).[21] Absent the safe-harbor, the City must demonstrate that the identified need for institutional, private open space and private rights-of-way is an urban need that must be accommodated within the expansion area. The City states that the fifteen percent factor is based on an analysis of the prior UGB, and an increase for future surface stormwater management. Recognizing that the 20-year need

[21] OAR 660-024-0040(10) provides:

> "As a safe harbor during periodic review or other legislative review of the UGB, a local government may estimate that the 20-year land needs for streets and roads, parks and school facilities will together require an additional amount of land equal to 25 percent of the net buildable acres determined for residential land needs under section (4) of this rule, and in conformance with the definition of "Net Buildable Acre" as defined in OAR 660-024-0010(6)."

determinations are estimates that (although based on the best available information and methodologies) are not be held to an unreasonably high level of precision, the City's findings must explain why the City believes that the increase from 12.8 percent to fifteen percent is justified.

e. Conclusion

The Commission remands the city's UGB decision for the City to adopt findings that explain why an increase in the amount of land required for these uses from 12.8 percent to fifteen percent is justified. To the extent the City is basing its estimate on the need for stormwater facilities, it should explain why such facilities can't be located within open space and right-of way areas. While this amount of land need for these uses may well be reasonable, the city's findings should not be based only on past trends, but should include consideration of *future* conditions and needs (and explain why the trend will continue or change over the future planning period).

4.2 Whether the submittal includes adequate findings to support the amount of land identified as needed for parks and schools

a. Summary of Issue and Related Objections

The City of Bend added land to its identified need to provide for parks and schools as required by OAR 660-024-0040(1). Central Oregon LandWatch objected that the City did not justify the projected 192 acres for schools or the projected 474 acre land need for parks. COLW argued that the parks projection was based on plans that have not incorporated into the city's comprehensive plan, and that the city's estimate failed to account for the amount of the identified park need that could be met on lands outside the UGB. COLW Objections, at 10.

b. Legal Standard

The Commission concluded above that submittals under ORS 197.626 must be supported by substantial evidence and adequate findings that explain the city's reasoning connecting the evidence in the record with the legal standard(s). OAR 660-024-0040(1) requires the UGB to include land for needed urban uses, including schools and parks. ORS 195.110 requires large school districts to prepare and adopt a school facility plan in consultation with affected cities and counties. ORS 197.296(6)(a) requires a city to include sufficient lands for new public school

facilities the need for which is derived from a coordinated process between the affected public school district and the city and county that adopt the UGB.

c. Summary of Local Action, Director's Decision and Appeal

The City estimated land need for several uses related to residential use. The City estimated a land need of 192 acres for schools. R. at 1089. The City estimated a land need of 474 acres for parks and trails. R. at 1090. The City based the estimates of land need for public schools and parks on per-capita service standards recommended by the school district and the parks district. The school district facilities plan under ORS 195.100 had not been adopted at the time of the city's decision.

The Director remanded to the city to adopt findings related to whether the identified need could be accommodated within the existing UGB, discussed below. Director's Decision, at 47. The Director also remanded for the City to adopt findings relating the facts relied upon to the city's conclusions concerning the amounts of land needed for these uses. *Id.*

The Bend-La Pine School District No. 1 filed an exception to the director's report. The District has a Sites and Facilities Plan that identifies the need for schools. The District relied on that plan to develop the calculations that it summarized in memo to the City on school land requirements. R. at 10560. The District stated the importance of having flexibility in location and an ample land supply for schools.

The Bend Metropolitan Parks and Recreation District filed an exception. The District adopted a 2005 Parks and Recreation and Green Space Comprehensive Plan, incorporated by reference into the Bend Urban Area General Plan, which includes target standards for providing parks and trail facilities based on acres and miles per one thousand residents. Based on estimated population growth, the District applied the target standard of seven acres per one thousand for combined neighborhood and community parks to estimate a future park need of 362 acres. The District revised its estimate of land need during the planning period to 474 acres, based on providing a distribution of community parks service to specific quadrants of the District. R. at 2724-2727.

d. Analysis

The Commission determined that there is an adequate factual basis supporting the City's determination of the *overall amount* of land needed for parks and schools, but that the City's

findings need to be revised to explain clearly what evidence the city relied on for types of projected school and parks needs and siting criteria and the relation to the districts plans. In addition, to satisfy the requirements of ORS 197.296(6)(a), the city's findings should explain how the City has coordinated with the Bend-La Pine School District. As the school district had not adopted a facilities plan under ORS 195.110 at the time of the city's UGB decision, the City may, but is not required to, consider any such plan subsequently adopted by the school district.

e. Conclusion

The Commission remands the decision to the City to adopt revised findings explaining what evidence it relied on in determining the amount of land needed for parks and schools, and how that evidence relates to the districts plans and analyses. The City may, but is not required to, consider any school district plan adopted under ORS 195.110.

4.3. Whether the submittal includes adequate findings concerning whether the need for land for parks and schools may be accommodated within the prior UGB and (for parks) on lands outside of the UGB.

a. Summary of Issue and Related Objections and Appeals

The Director's Decision remanded the submittal because it lacked findings to establish that the identified need for land for parks and schools could not be accommodated (in part or in whole) within its prior UGB, and (for parks) whether some portion of the need (rural facilities) could be located on lands outside of the UGB. There were no objections on this issue. The City appealed. City Appeal, at 34.

b. Legal Standard

The Commission concluded above that submittals under ORS 197.626 must be supported by substantial evidence and present adequate findings. Goal 14 and OAR 660-024-0050(4) require that prior to expanding a UGB, local government must demonstrate that needs cannot reasonably be accommodated on land already inside the urban growth boundary. *1000 Friends of Oregon v. City of North Plains*, 27 Or LUBA 372, 390, *aff'd* 130 Or App 406, 882 P2d 1130 (1994).

c. Summary of Local Action, Director's Decision and Appeals

The City estimated land need for several uses related to residential use. The City estimated a land need of 192 acres for schools. R. at 1089. The City estimated a land need of

474 acres for parks and trails. R. at 1090.

The Director determined that city's estimated land need, based on per-capita service standards recommended by the school district and the parks district, assumes that all new school and park facilities to serve new residents in Bend will be located on expansion lands *outside* of the prior UGB, even though a major of future housing needs are projected to be met within the prior UGB. The Director found:

> "The findings do not address whether the estimated land needs for schools can reasonably be accommodated within the UGB, as required by OAR 660-024-0050(4). Similarly, the findings for parks do not address whether the estimated need can be met within the UGB, or the extent to which the need may already be met by existing or planned facilities outside of the UGB (some types of park facilities are allowed outside of UGBs; *see* OAR chapter 660, division 34)." Director's Decision, at 47.

The Director remanded the city and county decisions, with direction to determine whether the need for land for public schools could reasonably be accommodated within the existing UGB; and whether the need for land for public parks (including trails) could reasonably be accommodated within the existing UGB, and whether this need is already met in whole or in part by facilities planned or existing outside of the UGB. *Id.* at 47-48.

The City appealed the Director's Decision, contending that it had adequately addressed whether the need for additional land for parks and schools could be met within the existing UGB. Appeal at 34. The Bend Metro Park and Recreation District filed an unrelated objection regarding OAR 660-023-0160 addressed below, but appealed the Director's Decision contending that the need for lands for public parks, including trails could not reasonably be accommodated in the existing UGB, and disagreed that the need for additional parks is already met in whole or in part by facilities planned or existing outside the UGB. The Bend-La Pine School District likewise filed an unrelated objection regarding Goal 2 coordination,[22] but appealed the Director's Decision contending that the need for land for public schools and related facilities could not reasonably be accommodated in the existing UGB and disagreed that the need for additional public school facilities is already met in whole or in part by facilities planned or existing outside the UGB.

[22] The Director determined that the City complied with coordination requirements of Goal 2. Director's Decision, at 152.

d. Analysis

Cities must provide for schools and parks needed over the 20-year planning period consistent with the requirements of Goal 14 and OAR 660-024-0040. OAR 660-024-0040(1). In providing for the identified need for schools and parks, cities must demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB. OAR 660-024-0050(4). Submittals under ORS 197.626 must be supported by substantial evidence and present adequate findings. The City and appellants all provide reasons why the identified need for parks and schools cannot be reasonably accommodated in the existing UGB, but neither the city nor the appellants point to any findings that establish the school and park uses cannot be accommodated in the existing UGB at all. Given that much of the city's future housing and population growth is projected within its prior UGB, the city's findings should explain how it will meet its future needs for these uses.

e. Conclusion

The Commission concludes that the City must make findings to address OAR 660-024-0050(4), regarding the extent to which the estimated need for future parks and schools can reasonably be accommodated inside the existing UGB. The required findings must address how the needs analysis accounts for lands already owned by the districts that are outside of the prior UGB, particularly if those lands were determined to not be suitable for urbanization.

5. Employment Land Needs -- Goals 9 and 14

5.1. Whether the Submittal Establishes that the City Estimated its 20-year Employment Land Need in the Manner Required by OAR 660-009-0015, OAR 660-024-0040 and OAR 660-024-0050.

a. Summary of Issue, and Objectors and Appellants

The Director's Decision concluded that the City had not established that it followed the required analytical steps in determining the amount of employment land need. Swalley Irrigation District, Brooks Resources, and Central Oregon LandWatch had challenged whether the submittal provides an adequate factual basis for the findings and conclusions drawn in the City's Economic Opportunities Analysis (EOA). Swalley Irrigation District Objection, at 47-53, Brooks Resources Objection, at 2-9, and Central Oregon LandWatch Objection, at 11-12. The City appealed, contending the 2008 EOA follows the "main steps" in satisfaction of the rule requirements. City Appeal, at 51. Toby Bayard and Terry Anderson appealed, concurring with the Director's Decision, and asserting in particular that the City did not analyze developed employment land likely to redevelop during the planning period. Bayard Appeal, at 5-7; Anderson Appeal, at 5 and 9-11.

b. Legal Standard

Statewide Planning Goal 9 is "[t]o provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity." The goal requires that comprehensive plans for urban areas provide for at least an adequate supply of sites of suitable sizes, types, locations, and service levels for a variety of industrial and commercial uses. OAR chapter 660, division 9 implements Goal 9. Cities develop an economic opportunities analysis (EOA) that compares the demand for land for industrial and other employment uses to the existing supply of such land. OAR 660-009-0015. In general, an EOA includes an analysis of trends that influence the long-range economic conditions of the city and its competitive advantages in terms of types of employment that it is most likely retain or attract; a description of the characteristics of suitable sites needed for employment activities; an inventory of existing suitable sites, and an evaluation of economic development potential. OAR 660-009-0015. The EOA provides the basis for the determination of 20-year employment land need for an urban area as required by OAR 660-024-0040(5) and provides the inventory of suitable vacant and developed land designated for industrial or other employment use required by OAR 660-024-0050.

c. Summary of Local Action, Director's Decision and Appeal

The Director's Decision describes the city's EOA submittal:

"The EOA is included in the record as Appendix E. [R. at 1498] The EOA includes a discussion of the community's objectives, including target industries. [R. at 1516] The Executive Summary highlights the steps of the complete analysis including demographic trends, historic and expected employment trends, inventory of the current land supply, determination of new employment, land need through 2028, which is reported in the summary as a table [R. at 1503-1506].

"Section 3 of the EOA contains the review of trends used for estimating future employment land uses, as required by OAR 660-009-0015(1). [R. at 1519-1566] It provides a detailed report and analysis of trends, including population and demographics, coordinated population projection, educational attainment, household income, wages and benefits, labor force and unemployment, changing economic markets, current covered employment, employment shifts and land needs, the economic outlook, local economic trends, expectations of disproportionate employment growth, land supply as a threat to employment growth, education's role in the economy, and a need for a large university campus.

"Other sections of the EOA detail characteristics of Bend's employment lands, discuss the employment projection methodology, and the results of the projections. [R. at 1567-1578]. The EOA includes a discussion of the use of employment categories instead of the more common employment sectors. [R. at 1583-1584]

"The EOA includes a note that the analysis and conclusions were modified by the city [R. at 1585]. The modifications, based on input from the planning commission, UGB technical advisory committee, and stakeholders, are discussed in appendices A-H [R. at 1642-1727].

"Appendix A presents the modified employment projections per industrial sector classification as a spreadsheet. [R. at 1642]

"Appendix B is a memo outlining staff recommendations of modifications to economic variables relative to consultant work completed for the city. [R. at 1649-1651] To account for uncovered workers, the employment projection is increased by 11.5 percent, based on interpolation of national and state census data. No local employment data were gathered for this analysis. The memo includes a comment by the Oregon Employment Department regional economist that no analysis exists to suggest how land needs for uncovered workers should be calculated, and suggested a rule-of-thumb instead. The memo also makes recommendations regarding modifications to the employment forecast for employment on residential and public facilities lands.

"The submittal includes findings in support of the UGB expansion for employment lands. [R. at 1103-1165] These findings include: policy direction, incorporation by reference of a 2008 EOA, trend analysis, employment projection, employment land inventory, employment land need, discussion of how to satisfy the requirements of Goal 9, identification of required site types, assessment of economic development potential, meeting the requirement of MPOs for short-term supply, economic development policies,

> designation of employment lands, and findings related to uses with special siting requirements.
>
> "In summary, the EOA says there is need for 1,008 acres of commercial land and between 100 and 250 acres of land for each of the following use categories: industrial and mixed employment, public facilities, economic uses in residential zones, medical, new hospital site, a university site, and two 56-acre industrial sites. The total employment land need shown is 2,090 acres. [R. at 1114] This compares to the "Scenario A" conclusion that there is a 1,380-acre need, which was the result of a relatively simplistic formula of dividing employment projections by employment densities." Director's Decision, at 60-61.

The Department determined that the analysis for the EOA did not follow the methodology of division 9, and that the record is unclear and confusing regarding how the City determined the amount of land needed for employment. Director's Decision, at 62. The Department could not identify any analysis in the submittal that distinguishes developed employment land likely to be developed during the planning period from that not likely to redevelop. *Id*. at 63. The Director remanded, in order for the City, based on factual evidence, to determine the 20-year supply of employment land; inventory existing employment land categorized into vacant, developed land likely to redevelop within the planning period, and developed land unlikely to redevelop within the planning period; identify required site types that are not in the inventory of either vacant or likely to redevelop sites; identify serviceable land; and reconcile need and supply. *Id*. at 64.

The City appealed, contending that it had indeed followed the "main steps" required by law in the 2008 EOA. The Department ultimately agreed. Department Report on Appeals, at A-24. The report states:

> "The city's appeal clarifies the bases for its determination of needed employment lands. The city's 2008 EOA is incorporated by reference into its findings for this part of its decision. R. at 1106, 1137, 1138. The findings and the 2008 EOA contain both an analysis of trends and a projection of employment in 2028 by industry sectors. The city projects 22,891 employees in 2028. R. at 1108, 1139 (findings), R. at 1588 (2008 EOA). The department agrees that the city's projection of employment in 2028 complies with Goal 9 and OAR chapter 669, division 9." *Id*. at 25-26.

The Department recommended that the Commission find that the city followed the main rule requirements, with specific exceptions, discussed below. However, the Department suggested that the City clarify its findings to state that its determination of employment land need is based on scenario B from the 2008 EOA.

d. Analysis

The Department's Report summarizes the "main steps" for determining the amount of employment land supply needed for the 20 year planning period:

> "Determine the total 20-year employment land supply need by reviewing trends (OAR 660-009-0005(13), 660-009-0015(1) and 660-009-0025(2));
>
> "Subtract existing sites that are defined as vacant (OAR 660-009-0005(13))
>
> "Subtract existing sites that are defined as "developed" (e.g., developed, but likely to redevelop) (OAR 660-009-0005(13))
>
> "Add needed sites not available in the inventory of vacant or likely to redevelop (OAR 660-009-0025(2))." Director's Report at A-25.

The 2008 EOA compares the demand for land for industrial and other employment uses to the existing supply of such land as required by OAR 660-009-0015. The EOA contains an analysis of trends and a projection of employment by industry sectors. The Director's Report explains the steps the City took to convert the projection of employment in the year 2028 into a projection of employment land need. *Id.* at A-26. While the City followed the main requirements of Goal 9 and division 9, as discussed below, the Commission is sustaining objections and appeals related to the factual basis for projecting redevelopment of developed lands, and the inclusion of a "market choice" factor.

e. Conclusion

The Commission concludes that the City established that it has followed the steps required under OAR 660-009-0015 for estimating land need. The submittal is remanded for the City to clarify in adequate findings that it is utilizing its 2008 EOA, scenario B, as the basis for estimating employment land needs.

5.2. Whether the City's Use of a 10 percent Factor to Estimate the Amount of Employment Need that Will be Met through Redevelopment of "Developed" Lands is Supported by an Adequate Factual and Policy Base, and Justified by Adequate Findings.

a. Summary of Issue, Objectors and Appellants

This issue is whether the submittal includes an adequate factual base to support use of a 10 percent factor for the amount of employment need that the City estimates will be met through redevelopment of developed lands. Swalley Irrigation District, Brooks Resources, and Central

Oregon LandWatch had challenged whether the submittal provides an adequate factual basis for the findings and conclusions drawn in the City's EOA. Swalley Irrigation District Objection, at 47-53, Brooks Resources Objection, at 2-9, and Central Oregon LandWatch Objection, at 11-12. The Bayard and Anderson appeals assert that the city did not properly analyze whether employment land needs would be met on "developed" lands (e.g., redevelopment) within the city's prior UGB during the 20-year planning period.

b. Legal Standard

Pursuant to OAR 660-009-0015(3) and 660-024-0050(1), the city must determine the amount of land within the prior UGB that is likely to be redeveloped for employment uses during the planning period. OAR 660-009-0015(3) provides the requirements for what a city must included in an EOA with regard to an inventory of "vacant" and "developed" lands:[23]

> "Inventory of Industrial and Other Employment Lands. Comprehensive plans for all areas within urban growth boundaries must include an inventory of vacant and developed lands within the planning area designated for industrial or other employment use.
>
> "(a) For sites inventoried under this section, plans must provide the following information:
>
> "(A) The description, including site characteristics, of vacant or developed sites within each plan or zoning district;
>
> "(B) A description of any development constraints or infrastructure needs that affect the buildable area of sites in the inventory; and
>
> "(C) For cities and counties within a Metropolitan Planning Organization, the inventory must also include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land."

The OAR 660-009-0015 inventory of land inside a UGB, which must include suitable vacant and developed land designated for industrial or other employment use, is a prescribed step in amending a UGB. OAR 660-024-0050(1). The inventory facilitates the analysis of whether the development capacity of land inside the UGB is able to accommodate the estimated 20-year need, including by increasing the development capacity of such land. Ultimately, the city must

---

[23] The Goal 9 rule provides definitions for the terms "vacant" and "developed." OAR 660-009-0005(14) defines the term "vacant" to mean "a lot or parcel:

> "(a) Equal to or larger than one half-acre not currently containing permanent buildings or improvements; or
>
> "(b) Equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements."

OAR 660-009-0005(1) defines "developed land" as "non-vacant land that is likely to be redeveloped during the planning period."

demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB prior to expanding the UGB. Goal 14, OAR 660-024-0050(4).

The Commission concluded above that submittals under ORS 197.626 must be supported by substantial evidence and present adequate findings.

c. Summary of Local Action, Director's Decision and Appeal

The City decided that redevelopment of "developed" lands will accommodate 10 percent of the projected future employment, thus, the 2008 EOA simply adopts a 10 percent factor for "developed land." The EOA states that this factor is based on research by Metro, and other EOAs. R. at 1611. The 2008 EOA notes that the chosen factor is well below the amount of redevelopment for employment that other jurisdictions have determined is likely. Record at 1611. The City also added 119 acres to its UGB as a component of residential land need to account for future employment that would be provided on lands in residential plan districts. ("Economic Uses in Residential Zones" – 119 acres. R. at 1114 (Table 4-3)).

The Department concluded that the City had not adequately justified employing a 10 factor for the amount of employment land need that will be met through redevelopment. Director's Report at A-24-A-25. The Department also questioned whether the factor satisfies the requirement of Goal 14 to demonstrate that land needs cannot reasonably be accommodated on lands within the existing UGB. *Id.* at A-27.

d. Analysis

The City based its redevelopment factor on analyses prepared for the Portland metro region. The City argued that it used the Metro infill/refill factor due to difficulty of predicting what is likely to redevelop in the planning period. The City contends that the 10 percent redevelopment factor is based on best available and readily collectible information in compliance with OAR 660-009-0010(5). The Metro materials the city referred to data collected between 1999 and 2002. However, the City did not explain through findings both how the Metro factor is current and why it is applicable to Bend. The redevelopment factor is not supported by findings examining how the selected rate accounts for differences in commercial redevelopment near the downtown compared to the edge of the UGB or differences between commercial and industrial redevelopment. Additionally, where a premise of the EOA is that some future employment will occur within residential zones, the findings should establish the factual and policy base that

produce a 10 percent factor for the City. This is particularly the case where EOAs for other cities referenced in the city's EOA use a factor of "15 percent or more."

The 10 percent redevelopment rate does not derive from the factual basis required by the rule. As the Department recommended:

> "If the city employs a city-wide factor rather than analyzing particular sites, it *at least* needs to document what the trend has been for the proportion of new employment within the city that has been met through redevelopment, and must project whether that trend is likely to continue. If the city wishes to alter that trend, it must adopt some policy basis for why doing so is consistent with applicable state and local requirements. Those requirements include the Goal 14 requirement that before expanding its UGB, the city demonstrate why its land needs cannot reasonably be accommodated within the prior UGB." *Id*. at A-27.

The City has agreed to provide more detailed findings related to the redevelopment factor. City of Bend's Exceptions at 19.

e. Conclusion

The Commission remands the UGB decision to the City to provide an adequate factual base to support use of a 10 percent redevelopment factor, including an analysis of the amount of redevelopment that has occurred in the past and a reasoned extension of that analysis over the planning period. Alternatively, the City may satisfy Goal 9 and division 9 by other means, for example through a site-by-site redevelopment analysis. However, a site-by-site analysis is not required; the Commission determines that using a factor is acceptable where findings explain evidentiary basis and address the Goal 14 requirement to reasonably accommodate development within the existing UGB.

5.3. Whether the City Must Update its EOA to Reflect More Recent Trends Resulting from the Current Recession.

a. Summary of Issue, Objectors and Appellants

Central Oregon Land Watch argues that the Commission must require the City to update its trends analysis to reflect the more recent downturn in economic conditions. COLW objected that the findings and EOA are outdated, so there is no basis for need demonstrated. COLW Objection, at 11–12. The Director's Decision did not sustain this objection.

b. Legal Standard

OAR 660-024-0040(2) provides that the 20-year planning period for a UGB amendment commences either on the date initially scheduled for final adoption of the amendment specified

by the local government in the initial notice of the amendment required by OAR 660-018-0020, or (if the beginning date for the city's coordinated population forecast is more recent) the beginning date for the population forecast. Regarding what constitutes an adequate planning effort by a city in developing an EOA, OAR 660-009-0010(5) provides that a "jurisdiction's planning effort is adequate if it uses the best available or readily collectable information to respond to the requirements of this division."

c. Summary of Local Action, Director's Decision and Appeal

The city's 45-day notice for its UGB amendment stated that the date initially scheduled for final adoption was November 24, 2008. The city's coordinated population forecast also begins in 2008.

Central Oregon LandWatch objects that the EOA is based on trend analysis that is based on a market bubble that popped two years before the City adopted the EOA and UGB expansion. COLW argues that the Commission must require the City to update its trends analysis to reflect the more recent downturn in economic conditions. COLW objected that the findings and EOA are outdated, and that as a result there is no basis for need demonstrated.

d. Analysis

Applying OAR 660-024-0040(2) to the facts here, the city's 45-day notice for its UGB amendment stated that the date initially scheduled for final adoption was November 24, 2008. The City's coordinated population forecast also begins in 2008. As a result, the Commission's rules do not require the City to review trend or forecast data that became available after that time.

Turning to whether Goal 9 as implemented by division 9 *requires* the City to review the EOA to reflect current downturn in economic conditions, the Department determined that the trend analysis was not so out of date that the City could not rely on it. Director's Report at A-29. The Department stated the "intent" of division 9 provisions requiring review is "to ensure that the local jurisdiction investigates, considers and makes policy decisions regarding significant influences on *long-range* economic and employment conditions." *Id.* Although a local government is certainly not prohibited from revisiting its EOA trends analysis to reflect changing economic conditions, nothing in the Commission's rules requires a local government to continually update an EOA or its estimate of land need to reflect changing economic conditions. If a trend analysis became so out of date that a local government would not reasonably rely on it, the adequate factual base requirement of Goal 2 would then require the City to update the

analysis, but the Department determined that neither the objection nor the appeal established that the City's 2008 EOA is at that point yet.

e. Conclusion

The Commission concludes that although the City may update its EOA to reflect current economic trend data, nothing in the Commission's rules require it to do so under the circumstances presented here.

5.4. Whether the City Established Adequate Factual and Policy Bases for its Decision to Increase its Estimate of Employment Land Need for Commercial, Medical, Residential and Public Facility Plan Districts by FiftyPercent (Except its CG plan (Commercial General) District, which it Increased by 25 percent). Whether the City may Include Additional Employment Lands Beyond What it Shows are Needed Over the Planning Period to Allow for "market choice."

a. Summary of Issue, Objectors and Appellants

Central Oregon LandWatch and Swalley Irrigation District filed objections that the EOA impermissibly adds surplus employment land to the inventory and as a result the UGB was expanded to include more employment land than the City has established a need for. The Director upheld the objections.

The City of Bend appealed, noting that OAR 660-009-0025(2) provides "* * * the total acreage of land designated [for employment land need] must *at least* equal the total projected land need for each industrial or other employment use category identified in the plan during the 20-year planning period." City Appeal, at 53 (emphasis added). The City argues that this language means that it is allowed to include an amount of land in addition to its projected land need for the 20-year period. The City also argues that it is allowed to include additional lands to provide for market choice during the 20-year planning period and that this is, in essence, an element of its 20-year need. City Appeal, at 54.

Toby Bayard and Terry Anderson also appealed on this issue, arguing that the expansion includes more employment land than is justified. Bayard and Anderson argue that in order to justify a need for employment land within the UGB to provide for efficient market functions or to respond to market conditions, the record must contain an adequate factual base and policy directives to support such a decision. Bayard Appeal at
5-7; Anderson Appeal at 5-7.

b. Legal Standard

Goal 14 requires cities to plan for and include in their urban growth boundaries an amount of land estimated to meet the need for a 20-year supply of land for residential, employment and other land uses. Goal 9 does not alter that basic provision of Goal 14. *Volny v. City of Bend,* 37 Or LUBA 493, *aff'd* 168 Or App 516, 4 P3d 768 (2000).[24] The Court of Appeals recently stated that:

> "In other words, even if a local government designates a needed supply of industrial land for use over the 20-year planning period consistently with Goal 9, an amendment to the UGB cannot be accomplished without demonstrating compliance with the requirements of Goal 14."

1000 Friends of Oregon v. LCDC, __ Or App __, __P3d __ (A135375) (September 8, 2010) slip op at 3. The Commission's Goal 9 rule states that the amount of land included in the expansion area must "at least" equal the total projected land need over a 20-year period..[25]

OAR 660-009-0005(13) defines "total land supply" as "* * * *the supply of land estimated to be adequate* to accommodate industrial and other employment uses *for a 20-year planning*

---

[24] "* * * To the extent petitioners argue that Goal 9 itself requires that the city and county designate enough industrial and commercial lands to meet the identified shortfall over the 20-year planning period, Goal 9 merely requires that local governments provide for 'an adequate supply of sites' for industrial and commercial uses, without imposing, as the Goal 9 rule does, any requirement that the supply of sites be adequate over a particular planning horizon." *Volny*, 37 Or LUBA at 518.

[25] OAR 660-009-0025 provides in part:

> "(1) Identification of Needed Sites. The plan must identify the approximate number, acreage and site characteristics of sites needed to accommodate industrial and other employment uses to implement plan policies. Plans do not need to provide a different type of site for each industrial or other employment use. Compatible uses with similar site characteristics may be combined into broad site categories. Several broad site categories will provide for industrial and other employment uses likely to occur in most planning areas. Cities and counties may also designate mixed-use zones to meet multiple needs in a given location.
>
> "(2) Total Land Supply. Plans must designate serviceable land suitable to meet the site needs identified in section (1) of this rule. Except as provided for in section (5) of this rule, the total acreage of land designated must at least equal the total projected land needs for each industrial or other employment use category identified in the plan during the 20-year planning period.
>
> "* * *
>
> "(5) Institutional Uses. Cities and counties are not required to designate institutional uses on privately owned land when implementing section (2) of this rule. Cities and counties may designate land in an industrial or other employment land category to compensate for any institutional land demand that is not designated under this section."

period." The Commission's rule governing a city's determination of land need, OAR 660-024-0040(1), provides:

> "*The UGB* must be based on the adopted 20-year population forecast for the urban area described in OAR 660-024-0030, and *must provide for needed housing, employment and other urban uses such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period consistent with the land need requirements of Goal 14 and this rule*. The 20-year need determinations are estimates which, although based on the best available information and methodologies, should not be held to an unreasonably high level of precision."

In considering the land supply within a UGB, the applicable goals and rules all provide for a 20-year planning period.

A local government is authorized to include employment lands in a UGB expansion for market choice, but only in order to meet the requirements of the commission's rules. This certainly includes lands required for a competitive short-term supply of employment lands. OAR 660-009-0005(10) defines "Short-term Supply of Land" as

> "suitable land that is ready for construction within one year of an application for a building permit or request for service extension. * * * 'Competitive Short-term Supply' means the short-term supply of land provides a range of site sizes and locations to accommodate the market needs of a variety of industrial and other employment uses."

OAR 660-009-0005(13) defines "Total Land Supply" as

> "the supply of land estimated to be adequate to accommodate industrial and other employment uses for a 20-year planning period. Total land supply includes the short-term supply of land as well as the remaining supply of lands considered suitable and serviceable for the industrial or other employment uses identified in a comprehensive plan. Total land supply includes both vacant and developed land."

In short, the Commission's rules do allow the city to plan for a "competitive short-term supply" of employment land that includes a "market choice" element. Whether a local government may include a market choice factor as part of its overall total employment land need over a 20-year planning period is not clear after the court's decision in *Woodburn*, but if it is permissible the local government must establish the policy and factual basis for it.

c. Summary of Local Action, Director's Decision and Appeal

The City included market choice adjustment factors ranging from 25 to 50 percent to increase its determination of the amount of employment land need. *Id.* at A-25. The inclusion of

a redundant supply for market choice added 421 acres to the UGB. R. at 1622. The Director sustained the objections and remanded. Director's Decision, at 66. The City appeal argues "The rules make it clear that plans must at least provide a 20-year supply, but are not limited to a 20-year supply." City Appeal, at 53.

d. Analysis

While OAR 660-024-0040(1) does not require precision in estimates of land need, that recognition does not authorize cities to plan for more than a 20-year employment land need, as the City's decision in this case effectively did for commercial and certain other uses (through its use of adjustment factors). The city may be able to establish a factual and policy basis why it needs more employment land in order to assure that it meets its projected need for employment uses over a 20-year period, but that analysis is not contained in the record at present.

State policy is to require periodic review of comprehensive plans and land use regulations in order to respond to changes and to ensure adequate provision for economic development. ORS 197.628(1). Every ten years, a city the size of Bend must review whether the UGB complies with Goal 9 by revising its plans to provide a 20-year supply of land for economic needs. ORS 197.629(1)(b). Thus, the periodic review process is designed to determine whether the 20-year supply in fact exists on a regular basis. In this context, it will be more difficult to justify the inclusion of lands to provide market choice.

The Department determined that the City's findings and 2008 EOA establish an adequate factual basis and policy rational for including lands beyond the "minimum" (*e.g.* 20-year) estimate based on projected employment in Scenario A. The report stated:

> "For industrial lands, the city documented a need for two large industrial sites. R. 1124-1125. The city notes that without including these additional sites, the only newly-added industrial lands to its UGB would be at the city-owned Juniper Ridge site at the north end of the city. The city also documents a particular need for a new hospital site (112 acres in the south of Bend), and for a new university site (225 acres at Juniper Ridge). R. at 1122-1124. These site needs are based on factual information in the record, as described in the city's findings and the 2008 EOA. The department concurs with these components of the city's decision on employment lands, which together comprise 449 acres (112 acres for new hospital site, 225 acres for university site, and 112 acres for two large industrial sites). R. at 1114, Table 4-3. As noted in the Director's Decision, however, the city does not identify whether there are sites that could reasonably accommodate these particular site needs within the prior UGB. Director's Decision at 69. The department believes that it is highly unlikely that suitable sites are available for these uses within the

prior UGB; however, the city needs to document this aspect of its decision and adopt findings explaining its determination.

"For medical land uses (other than a new hospital site) the city identifies a land need of 252 acres, which is more than double the amount indicated in Scenario A. R. at 1120; R at 1114, Table 4-3. The city's explanation in its findings simply assumes two 100-acre sites, one adjacent to a new hospital site, and the other to the north. R. at 1120. Given the degree to which the size of the sites exceeds the city's employment forecast based estimate, the department believes additional justification is needed for the amount identified as new MDOZ land. Unlike the hospital site, which the city justifies in some detail (R. at 1122-1123), there is little information provided in the findings or the 2008 EOA regarding why particular site needs for medical offices should be added to the city's overall employment projection based estimate of land need. See also, Bayard and Anderson Appeals. Bayard Appeal at 6; Anderson Appeal at 11." Director's Report at A-32 – A-33.

The Department recommended that the Commission remand the submittal, directing the City to eliminate the 50 percent and 35 percent factors used to increase the amount of commercial and industrial land (25 percent for CG) need over the 20-year planning period. *Id.* Appellant Bayard pointed to conflicting acreage (225 and 175) related to identification need for a university site and the City agreed to clarify acreage on remand. The City also agreed to make findings under Goal 14 that particular employment land needs could not reasonably be accommodated on vacant or developed land within the prior UGB.

On September 8, 2010, after the Commission heard this matter, the Court of Appeals issued it decision in *1000 Friends of Oregon v. LCDC*, __ Or App __, __P3d __ (A135375). The court reiterated that a local government may not amend an UGB to include more land than it needs for the planning period. *Id*. at slip op 3. The court described "market choice" as "an infinitely pliable and elastic term," and remanded the case to the Commission for it to explain how market choice is considered under Goals 9 and 14. *Id*. at slip op 7. As a result, in this case, to the extent that the city continues to base some portion of its employment land need on market choice, it must explain how doing so in the factual context provided by the record for the Bend UGB expansion is consistent with the requirements of Goal 9, OAR 660-009-0025, and the "need" factors of Goal 14.

e. Conclusion

The Commission concludes that the City may not include *more* land than is estimated as needed over the 20-year planning period. The City's determination should be based on a

description of past and projected future trends, long-term employment needs, and other policy bases articulated in its findings. On remand, the City must make findings addressing applicable law, including addressing consistency with Goals 9 and 14 as required in *1000 Friends of Oregon v. LCDC,* __ Or App __, __P3d __ (A135375) (September 8, 2010).

5.5. Whether the City adopted adequate plan policies to manage the short-term supply of employment land.

a. Summary of Issue, Objectors and Appellants

The Director's Decision concluded that the short-term land supply management plan does not include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed, as required by OAR 660-009-0020(1) and (2). The City of Bend appealed.

b. Legal Standard

OAR 660-009-0020(2) requires that comprehensive plans for cities within a Metropolitan Planning Organizations (MPOs) "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." The "Short-term Land Supply" includes a "Competitive Short-term Land Supply" that provides a range of site sizes and locations to accommodate the market needs of a variety of industrial and other employment uses." OAR 660-009-0005(10).

c. Summary of Local Actions, Director's Decision, and Appeal

The City adopted economic development policies in chapter 6 of the Bend Area General Plan. R. at 1339. The policies accept the 2008 EOA and associated land needs, establish the short-term supply management plan, establish emphasis on large-lot industrial, and established mixed-use and commercial development guidance.

d. Analysis

Division 9 is flexible, but for MPOs, there is a requirement that certain lands be ready in the short term. Under OAR 660-009-0015(3)(a)(C), the EOA Inventory of Industrial and Other Employment Lands for cities and counties within a Metropolitan Planning Organization, must include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land. This short-term supply analysis required for jurisdictions within MPOs is in addition to the EOA inventory requirements applicable to all comprehensive plans for areas within urban growth boundaries. OAR 660-009-0015(3)(a).

Furthermore, division 9 requires that comprehensive plans for cities such as Bend "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." OAR 660-009-0020(2). These policies must describe dates, events or both, that trigger local review of the short-term supply of land.

e. Conclusion

The Commission concludes that the Goal 9 rule requires the City to include policies for maintaining a short-term supply. The City must plan for required infrastructure and have identified the funding mechanisms, although it is not required to have money "in the bank" to fund required infrastructure.

5.6. Whether the record supports the conclusion that Bend will experience a fifteen percent vacancy rate in its employment lands over the 20-year planning period.

a. Summary of Issue, Objectors and Appellants

The Department commented by letter dated November 21, 2008, that the use of a fifteen percent vacancy rate as a component of the 20-year land supply would require "additional factual evidence supporting its projected vacancy rate based on an evaluation of local conditions." R. at 3765-3766. The Department commented that a fifteen percent vacancy rate may be justifiable for the short-term. *Id.* The City appealed.

b. Legal Standard

Cities are required to conduct an Economic Opportunities Analysis to determine demand for land for industrial and other employment uses and the existing supply of such land. OAR 660-009-0015. As described above, under OAR 660-009-0015(3)(a)(C), the City's EOA Inventory of Industrial and Other Employment Lands, must include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land. Division 9 requires that the City's comprehensive plans "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." OAR 660-009-0020(2). The "Short-term Land Supply" includes a "Competitive Short-term Land Supply" that provides a range of site sizes and locations to accommodate the market needs of a variety of industrial and other employment uses." OAR 660-009-0005(10). A "vacancy rate" can be a component of "market needs" under the competitive short-term land supply. The Goal 2 requirement of an adequate factual base applies to identification of the "vacancy rate" and requires that the record, viewed as a whole,

would permit a reasonable person to make the finding. Here, because the vacancy rate involves both basic findings of fact and inferences drawn from those facts, substantial evidence review involves two related inquiries: "(1) whether the basic facts or facts are supported by substantial evidence, and (2) whether there is a basis in reason connecting the inference to the facts from which it is derived." *City of Roseburg v. Roseburg City Firefighters*, 292 Or 266, 271, 639 P2d 90 (1981).

c. Summary of Local Actions, Director's Decision, and Appeal

In calculating the gross employment land need during the planning period, one of the three factors that the City applied to convert the anticipated employment land demand into gross acres for economic use is a 15 percent vacancy rate. R. at 1615, 1616 and 1111-1112. The City identified the vacancy rate for office and industrial land between 1993 and 2005. R. at 1562, Figure 23. During that time, the identified vacancy rate for industrial fluctuated between four and nine percent; the identified vacancy rate for office ranged from four to 13 percent. R. at 1562, 1616. The City acknowledged that a 15 percent vacancy rate is higher than Bend has experienced, but reasons that the rate is only slightly higher than historic and current conditions. R. at 1616. Further, the City decided the higher rate is warranted to both "lower land and rent prices for business" and "the desire of the Planning Commission and the City Council to increase land supplies in the expanded UGB." R. at 1617. The City determined that a vacancy rate of 15 percent would account for 1,587 acres of land. R. at 1618, Table 40.

The Director determined that the City had not established an adequate factual base for the assumed 15 percent vacancy rate. Director's Decision, at 63. The order decided:

> "The findings state that the local vacancy rates have been approximately half this amount. The city justifies the higher long-term rate on a desire to drive industrial and commercial land rents down. That cannot be a basis for inflating trend data because, taken to its extreme, it would have no limit in terms of the acreage assumed to be committed as a result of commercial and industrial vacancies. While employment land availability, and the effects of availability on rents and land prices, are legitimate considerations in planning for growth, assigning an across the-board vacancy rate that is significant above trends [R. at 1562] does not comply with the Goal 9 rule." *Id.*

The City appealed, contending the vacancy rate is supported by substantial evidence. The Director found the rationale for varying from the trend data unpersuasive. Director's Report at A-34. The Department determined that the short-term evidence cited by the City, some of which was not in the record, does not demonstrate that vacancy rates will ever reach, much less be

sustained at 15 percent. *Id*. The Department recommended that that Commission remand with instructions to utilize a long-term vacancy rate that is consistent with available trend data.

d. Analysis

The City's assumed 15 percent vacancy rate is neither consistent with either the historic or current conditions trend data in the record nor has the City established that it is otherwise based on substantial evidence in the record. Under that circumstance, the City must establish a basis in reason connecting the inference that the planning period will present higher vacancy rates for industrial and office than historic and current conditions to the trend data from which it is derived. The City points in part to the rate range stated in the Department's "Industrial and Other Employment Lands Analysis—Advanced Guidebook 2005 (Guidebook)." In determining long-term demand analysis, the guidebook states:

> "Vacancy rates also apply to built space. As they tend to be cyclical, the assumption should reflect a long-term average and provide a range of choices. For efficient market operation, a minimum vacancy rate for built space is between 5% and 15%. The estimate of total acres of demand should be increased by this percentage as the market often requires more options than the employment estimates seem to require." Guidebook at 2-32.

In commenting on the daft EOA, the Department clarified for the City that the five to 15 percent vacancy rate range applies only to the short-term supply of built commercial and industrial lands. R. at 3765-3766 n 5. However, because a "vacancy rate" can be a component of "market needs" under the competitive short-term land supply, the City may pursue a mechanism to make industrial and commercial rents affordable under the competitive short-term supply, but not by inflating the long-term need beyond what may be supported by substantial evidence in trend data or reasoned inferences there from.

e. Conclusion

The Commission concluded that under division 9, the long-term vacancy factor should be based on past and projected future trends over the planning period. The City has not established that a 15 percent vacancy factor is based on substantial evidence.

5.7. Whether an Urban Expansion Must Consider the Impact on Displaced non-Urban Industries, such as Agriculture and Agricultural Irrigation.

a. Summary of Issue, Objectors and Appellants

Swalley Irrigation District objected and filed an appeal asserting *inter alia* that a provision of Goal 9 requires the City to analyze the impacts of the UGB expansion on Swalley,

and in turn protect Swalley's existing operations. Swalley Irrigation District Appeal at 2; Swalley Objection at 48. Swalley contends that the submittal significantly adversely impacts an existing industry – the industry of providing irrigation water – an agricultural/utility type of industry. Significantly adversely impacting an agricultural water provider likewise impacts the dependent agricultural industry, an impact which Swalley argues the City failed to address in its findings. *Id.*

b. Legal Standard

Statewide Planning Goal 9 provides planning guidelines. Guideline A(4) provides "Plans should strongly emphasize the expansion of and increased productivity from existing industries and firms as a means to strengthen local and regional economic development."

c. Summary of Local Actions, Director's Decision, and Appeal

The Director's Decision denied the objection on this matter, treating it as a locational issue, citing OAR 660-024-0060(8)[26] that specifies how cities apply the Goal 14 boundary location factors to the land in a statutory priority category in order to select the parcels to fulfill the city's 20-year land need for a particular urban use. The Director's Decision did not address the issue as a Goal 9 compliance issue, the position that Swalley initially made in its written appeal. The City agreed with the Department's recommendation and analysis. City of Bend's Exceptions at 26. At the LCDC hearing, Swalley waived this argument.

---

[26] This rule provides:

> "The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. 'Coordination' includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:
>
> "(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;
>
> "(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and
>
> "(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service."

d. Analysis

OAR 660-009-0020(3) and (4) provide that local governments, as part of their Goal 9 responsibilities, *may* adopt policies and take other actions to maintain and encourage the expansion of existing industries. Such industries could include agricultural industries. However, in this case, neither the city nor the county have adopted comprehensive plan policies that require them to manage the urban growth boundary in a manner that maintains or expands agricultural operations. To the extent that Goal 14 and ORS 197.298 require local governments to maintain agricultural industries, those requirements are addressed under those provisions and not generally under Goal 9.

e. Conclusion

The Commission concludes that neither the objection nor the withdrawn appeal present a basis for remand of the submittal and they are rejected.

5.8. Whether the City justified the inclusion of 119 acres of residential land for employment uses

a. Summary of Issue, Objectors and Appellants

The City identified a need for 119 gross acres to accommodate employment uses taking place on residentially zoned land (RH, RM, RS), but not in residential structures. Record at 1113-1114, table 4-3. Objectors questioned the factual basis for the identified need and argued that the City should retain the land for high density residential use. Swalley Irrigation District Objection at 53; Central Oregon Land Watch Objection, at 11. The City appealed.

b. Legal Standard

OAR chapter 660, division 9 requires that a city determine the need for employment land by preparing an EOA. OAR 660-009-0015. Determination of 20-year employment land in an urban area must comply with Goal 9 and division 9. OAR 660-024-0040(5).

OAR 660-009-0005(3) defines industrial use. OAR 660-009-0005(6) defines "other employment uses" as:

> "All non-industrial employment activities including the widest range of retail, wholesale, service, non-profit, business headquarters, administrative and governmental employment activities that are accommodated in retail, office and flexible building types. Other employment uses also include employment activities of an entity or organization that serves the medical, educational, social service, recreation and security needs of the community typically in large buildings or multi-building campuses."

OAR 660-009-0025 requires local governments to adopt measures adequate to implement economic development policies and appropriate implementing measures include amendments to plan and zone map designations. Goals 10 and 14 and OAR chapter 660, divisions 8 and 24 establish the requirements for designation of residential land and UGB expansion considerations for residential uses.

c. Summary of Local Actions, Director's Decision, and Appeal

The City determined that it was appropriate to consider employment uses in residential zones because such uses, which are encouraged by the development code, consume residential land. Record at 1113. To account for neighborhood commercial and other uses that the code permits outright or conditionally, the City identified a need for 119 gross acres to accommodate employment uses taking place on residentially zoned land. Record at 1114.

The Director sustained the objections and remanded the inclusion of 119 acres of residential need for employment land need. Order 001775, at 66-67. The Department decided:

> "It is appropriate to define the portion of projected employment that is expected to take place on residential land in order to gain an accurate approximation of how much will locate in employment zones. However, OAR 660, division 9 does not permit designation of residential land for employment use. Residential land is designated according to the standards of OAR 660, division 8, which permits adjustments to the residential buildable lands inventory to account for non-residential uses." Order 001775 at 67.

The City appealed, reasoning "Where the city has accurately estimated employment taking place in residential general plan designations, the "appropriate implementing measure" is to add small supplies of residential land to the proposal to account for such uses." City Appeal at 55.

d. Analysis

The Department clarified that it had misunderstood the method the city used to determine the need for the 119 acres of residential land. Director's Report on Appeals, at A-35. The City's appeal clarified that a certain percentage of other employment uses (other than home-based employment) is allowed and takes place within its residential zones, and that this percentage is higher in Bend than in most other communities. The City based the forecasted need on an analysis of the demonstrated use at a point in time. Record at 1609. The Department agreed that the acreage at issue represents a small percentage of the overall employment land need and did not necessitate an in-depth analysis in order to make an adequate finding. *Id.* at A-35.

The Department rejected the City's contention that the absence of an express prohibition of designating residential land for employment uses in Goal 9 or division 9 means that it is allowed. *Id.* The Department determined:

> "The entire context of OAR chapter 660, division 9 involves lands designated for industrial or other employment use. Because the rule does not repeat this term at every opportunity does not change the overall framework of the rule. That said, nothing prevents a city from permitting employment uses within residential zones; the statewide planning program in fact promotes mixed-use development. (Although most jurisdictions do this within mixed-use zones, Bend has chosen to allow such development through permitting, rather than planning, decisions.) In order to ensure an adequate supply of residential land, non-residential uses must be accounted for.
>
> "The land need for employment uses in residential zones should be considered within the context of the residential land needs analysis. Accommodation of this neighborhood employment is not part of the city's economic development strategy, but rather a recognition of an existing land use pattern that the city wishes to maintain. There appears to be no strategy regarding where or how many of these uses should be established, since the city does not plan for them; again, the EOA simply recognizes and accounts for them.
>
> "While the EOA is the appropriate location for the analysis of future need for these uses, the need should be demonstrated based on data and analysis in the city's housing needs analysis under Goal 10. This would provide the proper accounting and put these non-residential uses in the context of other residential land needs." *Id.*

The City agreed that on remand it would move the analysis and calculation to the residential/other lands analysis and calculation. City of Bend Exceptions at 26.

e. Conclusion

The Commission remands the submittal to incorporate analysis of land needs for employment uses within residential zones in the City's housing needs analysis.

5.9. Whether the City's decision on employment lands, including its Framework Plan designations, is consistent with Policy 27 and Policy 28 of Chapter 6 of the Bend General Plan.

a. Summary of Issue and Related Objections

Rose & Associates, LLC contend that the submittal did not follow policies of the Bend Area General Plan that prohibit extending commercial development along specific street corridors.

b. Legal Standard

The Bend General Plan includes policies that are statements of public policy, and are used to evaluate any proposed changes to the General Plan. Chapter 6 of the Bend Area Plan

relates to *The Economy and Lands for Economic Growth.* It includes polices on Commercial Development, two of which provide:

> "The existing pattern of commercial designations shown on the Plan Map along Highway 97 and Highway 20, and along arterial streets such as Newport Avenue, Galveston Avenue, SW 14th Street, 27th Street and O.B. Riley Road shall not be extended farther along the street corridors.
>
> "No new strip commercial development or extensions of the commercial designations shall be permitted along arterial or collector streets."[27]

The Commission must review objections, appeals, and exceptions that contend that a local government did not explain how an analysis complied with its local provisions. *City of West Linn v. LCDC*, 201 Or App at 447.

c. Summary of Local Actions, Director's Decision, and Appeal

The Director's decision did not address these policies. Rose & Associates, LLC appealed, maintaining that the City failed to address certain policies of the Bend Area General Plan. The Department agreed that the findings did not address the policies cited by Rose & Associates.

d. Analysis

The City designated a substantial amount of land as Commercial General along Highway 20 in the expansion area. The City concedes that it did not make findings related to the General Plan policies cited by appellant, but agrees to develop findings addressing the policies on remand.

e. Conclusion

The Commission remands the submittal to the City to allow it to address Commercial Development Policy 27 and 28 contained in Chapter 6 of the Bend Area Plan.

---

[27] Following the January 5, 2009– Ordinance NS-2112 amendments to the General Plan, this provision now states:

> "The city shall discourage long continuous strips of primarily commercial development along expressways, principle arterials, arterials or collector streets."

The objection was based on the previous policy language.

6. Natural Resources and Hazards -- Goals 5 and 7

6.1. Whether prior to or contemporaneously with its UGB expansion the city must comply, and to what extent, with the requirements of Goal 5 and OAR chapter 660, division 23.

a. Summary of Issue, Objectors and Appellants

The Department received objections based on Goal 5 generally asserting either that the City failed to apply Goal 5 to the UGB expansion area or that the City identified land within the proposed expansion areas as protected land without adequate justification for the designation. The objections of Central Oregon LandWatch, Swalley Irrigation District, Bayard, Bend Metro Park and Recreation District, Elkins, Department of State Lands, and Tumalo Creek Development, LLP are described in the Director's Report. Director's Decision, at 141-142. The Director's remand of the UGB amendment and the public facility plan submittals was appealed. City of Bend appeal at 98-99, Toby Bayard appeal at 15-17, Terry Anderson appeal at 22-24.

b. Legal Standard

Statewide Planning Goal 5 and OAR chapter 660, division 23 address protection of significant natural, scenic and historic resources and open space. Division 23 specifies the resource categories that local governments must protect in comprehensive plans and which are subject to local discretion and circumstances; the rules establish procedures and criteria for completing inventories and protection programs, and when the rule requirements apply. Division 23 requires cities to inventory significant riparian areas, wetlands and wildlife habitat.

For certain Goal 5 resources the rule authorizes cities to rely on inventories compiled by other agencies, and for other resources the local government must complete their own resource inventory. For all inventoried significant Goal 5 resources, a local government must complete a process to develop and implement appropriate protection measures. If a local Goal 5 resource protection program includes development restrictions, a city must account for any resulting loss of buildable land from such restrictions when determining the amount of land need.

OAR chapter 660, divisions 23 and 24 both specify that a UGB expansion triggers applicability of Goal 5. OAR 660-023-0250(3)(c) and OAR 660-024-0020(1)(c). At a minimum, a local jurisdiction expanding its UGB must complete the following for the expansion

area when factual information is submitted that a Goal 5 resource or the impact area of a Goal 5 resource is included in the UGB expansion area:

- Conduct required Goal 5 resources inventories for which the rule does not rely on state or federal inventories. These are riparian corridors, wetlands, and wildlife habitat
- Adopt local state and federal inventories for resources that require inventories, specifically: federal Wild and Scenic Rivers, Oregon Scenic Waterways, state-designated critical groundwater areas and restrictively classified areas, approved Oregon Parks and Recreation Commission recreation trails, Oregon State Register of Natural Heritage Resources sites, federally designated wilderness areas, and certain specific energy sources.
- Develop a local protection programs for all significant Goal 5 resources that are identified in an inventory, as required by the rule specific to the resource category.

Local jurisdictions have the option of conducting inventories and developing protection programs for historic resources, open space, and scenic views and sites. When using this option at the time of a UGB expansion, the Goal 5 process for these resources must be complete before land can be designated unbuildable or limitations on building can be considered in sizing the expansion area. OAR 660-023-0070. The Goal 5 process is complete for these resources when the local government:

- Collects existing and available information about Goal 5 resource sites. OAR 660-023-0030(2).
- Determines the information on the location, quantity, and quality of the resource is adequate. OAR 660-023-0030(3).
- Determines the significance of resource sites. OAR 660-023-003(4).
- Adopts a list of significant resources as part of the comprehensive plan. OAR 660-023-0030(5).
- Completes an analysis of the economic, social, environmental and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use. OAR 660-023-0040.
- Develops and adopts a program to achieve Goal 5 based on the conclusions of the ESEE analysis. OAR 660-023-0050.

c. Summary of Local Action, Director's Decision, and Appeal

The City's findings state that the proposed UGB expansion and Public Facilities Plan element of the city's General Plan satisfy Goal 5 because, "it avoids to the extent practicable lands with county-inventoried Goal 5 resources." The findings for Goal 5 further state that Deschutes County's Goal 5 program "does not identify any acknowledged riparian corridors, wetlands, wildlife habitat or other Goal 5 resources within the proposed urban growth boundary." R. at 1215. The findings also state that review of the National Wetlands Inventory shows no wetlands within the proposed expansion area, and this serves to satisfy Goal 5 requirements.

The findings describe the county's knowledge of wildlife habitat within its jurisdiction, and explain that the proposed expansion area does not include any lands in the Wildlife Area Combined Zone, "applied to Goal 5 wildlife habitat," and does not include county-mapped deer winter range or elk habitat. R. at 1216. The findings do not state when the county's inventories were last updated.

The findings identify two significant riparian corridors within the proposed expansion area and explain that they are protected through the county's plan and code. The findings also state that "approximately 22 additional [riparian] acres are located in the proposed UGB expansion area outside of the Deschutes River and Tumalo Creek." R. at 1216. The findings also consider the possibility that additional Goal 5 resources will be identified through future planning efforts. The record states that existing city code implementing its Waterway Overlay Zone and its areas of special interest will apply to newly identified Goal 5 resources. R. at 1216.

New policies commit the city to perform "a complete Goal 5 inventory once the new UGB is acknowledged." Other policies prevent urbanizable land from becoming urban until the Goal 5 inventory is complete and protection measures are in place. R. at 1217. The findings apparently use the term "Goal 5 resource" only to refer to resources that have, or will at some point, be identified as significant Goal 5 resources.

The findings do not include information about the approach to areas of special interest (ASI), a city classification described in the Bend General Plan. The ASI classification includes Goal 5 scenic, open space and habitat resources. R. at 1247. Some discussion of the city's intention to identify and manage impacts to ASIs is presented in the findings on the UGB locational analysis. R. at 159. Although the term "Areas of Significant Interest" is not used, the

findings state that about 299 acres will not be available for urban uses, "because of their significance as scenic or natural resource." R. at 159. The bulleted list of evidence for these resources in the proposed expansion area describes landscape features that fit the ASI classification. These include: the presence of the Deschutes River viewshed; presence of the Deschutes River Canyon State Scenic Waterway; and past surveys documenting prominent rock outcroppings, which are potential scenic resources.

Bend has included the Bend Area General Plan as amended January 5, 2009 in the record. Chapter 2, "Natural Features and Open Space," provides some information on riparian areas, wetlands and wildlife habitat, and the city's commitment to protecting these resources. The preservation of water resources, riparian areas and wildlife habitats is identified as one of the goals necessary to ensure Bend's livability by provide long term protection of open space and natural features. R. at 1244. In several places, the Natural Features and Open Space chapter recognizes that the Deschutes River and Tumalo Creek provide important habitat for a variety of aquatic life, birds, reptiles and mammals, both big and small. On page 1251 of the record, it is stated that all of the significant wetlands identified for the local wetland inventory, conducted in 2000, are located along the Deschutes River.

The plan includes several policies for natural features and open space. Policy 4 states:

> Prior to the completion of the Goal 5 inventory, analysis and ordinance by the city, properties seeking annexation shall conduct a Goal 5 inventory pursuant to OAR 660-023. Where a significant Goal 5 resource is identified, amendments to the Bend Area General Plan and the Bend Development Code shall be proposed and adopted, consistent with inventory findings and OAR 660-23, to ensure appropriate protection of the resource, prior to approval of any land use action.

The Director surmised that Policy 4 is one of the policies the City mentioned in the findings. R. at 1217. It would allow development to proceed and provide for a property-by-property approach to the inventory and protection of Goal 5 resources.

The "Natural Features and Open Space" chapter of the plan explains that the identification and preservation of ASIs and natural features is part of an effort to "retain and conserve the natural character of Bend as the community grows and changes." R. at 1247. ASIs are identified as "features typical of Central Oregon, or represent important wildlife areas." R. at 1247. The association of river canyons with wildlife habitat is recognized in this section.

The analysis for UGB amendment alternative 4A includes information on the

environmental consequences of selecting the alternative, and discusses Goal 5 resources for each quadrant. It appears that the term "Goal 5 resource" is used to refer to a resource that has already been identified as significant and placed on the Deschutes County inventory of significant resources, or that may be identified by the city as significant in the future. There are findings of no Goal 5 resources for the northeast priority 2 and priority 4 quadrants and the southeast priority 2 and priority 4 quadrants. It is stated that the southeast priority 4 quadrant is near Townsend bat habitat and has features that could qualify as an ASI. The northwest priority 2 quadrant is described as having one Goal 5 resource, a 200-acre aggregate site, and potential Goal 5 resources within the Tumalo Creek corridor. It is also stated that a State Scenic Waterway designation is recognized for portions of the Deschutes River that run through this quadrant. R. at 2460-2461.

There are findings of "no naturally occurring wetlands" for four of the six quadrants, presumably based on the National Wetlands Inventory. The analysis states that the southwest quadrant "contains some soils that have characteristics that may be indicative of potential areas of special interest," and that the northwest quadrant contains a band of lowlands along the canyon bottom of the Deschutes River and Tumalo Creek which is in the 100-year floodplain. R. at 2430-2462.

Appellants Bayard and Anderson contend that Goal 5 requires the City to inventory wetlands, riparian corridors, and wildlife habitat as part of its UGB expansion. Bayard and Anderson argued that neither the City nor the County have inventoried Goal 5 resources in the 3,196 acres of areas designated Urban Area Reserve. The City of Bend contended that its plan policies commit the City to perform a complete Goal 5 resource inventory and protection program prior to development or annexation.

d. Analysis

OAR 660-023-0250(3) provides, in part:

> "Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:
>
> "* * *
>
> "(c) The PAPA amends an acknowledged UGB *and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area*."

The rule requires the city to evaluate the expansion area where resources are identified and evaluate them for significance and possible protection. The resource sites at issue in this rule are not only sites that have already been identified by the county as significant. The city may use the county's inventory as a starting point, but it must also evaluate other information and make its own determination of significance.

e. Conclusion

The Commission understands that the Department and the City negotiated a resolution to Goal 5 issues. The Commission concludes that the resolution establishes a manner for the City to comply with Goal 5 as implemented by division 23 on remand and, consistent with that resolution, orders as follows:

- State scenic waterway – Should a revised UGB expansion area include any areas within the Middle Deschutes River Scenic Waterway as described in OAR 736-040-0072, the city must adopt local requirements to implement the state plan for protecting the Middle Deschutes Scenic Waterway, including a setback from the canyon rim for structures.

- Riparian protection – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must prepare and adopt an inventory of the significant riparian area that either: 1) finds that the topography along the river does not restrict the use of the safe harbor inventory under OAR 660-023-0090(5)(d) and apply the 75 feet upland from top of each bank safe harbor width provided in OAR 660-023-0090(5)(a); or 2) apply the standard inventory methodology, used within the current UGB, to the expansion area. In either case, the significant riparian area will fall within the canyon walls. For a protection program the city will adopt the county measures that serve to protect the scenic waterway and add restrictions for vegetation removal within the significant riparian area. The City must develop the protection program to meet the safe harbor protection measure standards.

- Wildlife habitat – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must apply OAR 660-023-0110, the Goal 5 wildlife habitat rule, by conducting a safe harbor inventory under OAR 660-023-0110(4). The rule allows the city to limit consideration of significant habitat to the five habitat categories specified in subsections (a)-(e). The Commission understands that the City anticipates that ODFW will provide the City a letter stating that the agency does not have information that any of the five habitat categories are documented, identified or mapped within the portion of the Deschutes River or Tumalo Creek corridors that pass through the expansion area.

- Tumalo Creek – Should a revised UGB expansion area include Tumalo Creek in the final expansion area, the city must apply the Goal 5 safe harbor inventory and protection measures for riparian areas along the creek.

The City has identified areas of special interest (ASIs) – mainly areas of rock outcropping). The City established that such areas are *not* inventoried as Goal 5 resources. Therefore, the Commission concludes that the City may not exclude identified ASIs from its BLI (if they are already inside the prior UGB), or excluded ASIs from inclusion in the expansion area. The Commission understands that this may result in a 299-acre adjustment to expansion area.

6.2. Whether the City is Required to Address Wildfire Risk in Evaluating Alternate UGB Expansion Areas. Whether Goal 7 Requires the City and County to Include Wildland Fire Safety Planning as a Consideration in Planning for its UGB Expansion. Whether Other State Laws Would Implicate an Action through Goal 7.

a. Summary of Issue, Objectors and Appellants

Central Oregon LandWatch, joined by Swalley Irrigation District, objected that the submittal neither describes the risk of wildfire nor acknowledges the recent catastrophic fire near the proposed westside expansion area. COLW Objection, at 17-18. After the Director suggested that the City and County ***should consider*** the information in the Community Wildfire Protection Plan for the Greater Bend Area even though compliance with Goal 7 is not a requirement of a UGB expansion, the City of Bend appealed, arguing that Goal 7 does not require the City to do anything more than it has done. City Appeal, at 100. COLW appealed, arguing that the Director erred in rejecting its objection and determining that Goal 7 did not require the City to address the threat of catastrophic wildfire. COLW Appeal at 4-5.

b. Legal Standard

Goal 7 is to "protect people and property from natural hazards." For purposes of Goal 7, "natural hazards" include "wildfires."

c. Summary of Local Action, Director's Decision and Appeal

Pursuant to the federal Healthy Forests Restoration Act (2003), Deschutes County adopted a Community Wildfire Protection Plan for the Greater Bend Area (2006) that identifies significant wildfire risks for the area and outlines the priorities, strategies and action plans for fuels reduction treatments in the greater Bend wildland urban interface. It also addresses special areas of concern and makes recommendations for reducing structural vulnerability and creating defensible spaces in communities at risk. The Bend City Council and Deschutes County both adopted the Greater Bend Community Wildfire Protection Plan by resolution in 2006. Citing staff meetings with state and county staff to discuss provisions of the Community Wildfire

Protection Plan for the Greater Bend Area and how to incorporate the provisions into annexation agreements and implementing development plans, the City responds that it has taken wildfire risks into consideration in evaluating boundary locations for the UGB expansion. City of Bend's Exceptions at 28.

d. Analysis

COLW contends that the Community Wildfire Protection Plan for the Greater Bend Area (2006) is the type of new data that should trigger natural hazard planning. Goal 7 provides a specific process for addressing new hazard inventory information. When federal and state agencies provide the department with new hazard information, the department reviews such information with affected state and local representatives. Thereafter, the department notifies local governments if the new hazard information requires a local response, which must transpire within three years. Central Oregon LandWatch does not contend that the department notified the City of new wildfire hazard information, thereby triggering a city obligation to respond. As a matter of fact, the department has not done so. Under those circumstances, Goal 7 does not *obligate* the City to respond to the wildfire hazard inventory information in the Community Wildfire Protection Plan for the Greater Bend Area.

Goal 2 requires that city actions related to land use are consistent with *inter alia* county comprehensive plans. Goal 2 also requires that plan and implementation measures be coordinated with the plans of affected local governments, which include those local governments that have programs or responsibilities within the area included in the plan. Deschutes County has not adopted the Community Wildfire Protection Plan for the Greater Bend Area (2006) as part of its comprehensive plan. Under that circumstance, Goal 2 does not *obligate* the City to respond to the wildfire hazard inventory information in the Community Wildfire Protection Plan for the Greater Bend Area.

e. Conclusion

The Commission concludes that under these circumstances, neither Goals 2 nor 7 requires the City to address wildfire risk. This conclusion does not imply that the City should not explain in its findings how it has addressed wildfire risk. It is entirely appropriate and permissible for the City to consider relative risk of wildfire in alternate UGB expansion candidate areas in considering the environmental, energy, economic and social consequences of the alternatives under locational factor 3 of Goal 14.

6.3. Whether the Surface Mining Plan Map Designation for the Shevlin Sand and Gravel Property is Supported by an Adequate Factual Base.

a. Summary of Issue, Objectors and Appellants

Shevlin Sand and Gravel, Inc.[28] owns about 700 acres of land in Bend Urban Reserve Area that the City included in the proposed UGB. Shevlin operates an aggregate extraction and processing facility on a portion of the 700 acres. Shevlin filed an objection and subsequent appeal pertaining to the designation of a portion of its property.

b. Legal Standard

Goal 2 requires an adequate factual base for the establishment of land use plans. Goal 5 requires local governments to adopt programs to protect natural resources and requires that local governments inventory specific resources, including mineral and aggregate resources. Goal 5 provides in part: "In conjunction with the inventory of mineral and aggregate resources, sites for removal and processing of such resources should be identified and protected." OAR chapter 660, division 23 establishes procedures and criteria for inventorying and evaluating Goal 5 resources. OAR 660-023-0000. OAR 660-023-0180 provides specific procedures and criteria for inventorying and evaluating mineral and aggregate resources.

c. Summary of Local Action, Director's Decision and Appeal

A 280-acre portion of the Shevlin property is designated surface mining on the Bend Area General Plan Map dated December 12, 2008. R. at 1226. The Director's Decision presumed the Deschutes County had designated the site a significant Goal 5 resource under OAR 660-023-0180. Order 001775 at 144-145. Shevlin appealed Order 001775, contending that Deschutes County had not designated the property a significant Goal 5 resource and that the Director erred in not sustaining Shevlin's Goal 2 objection that the submittal lacked an adequate factual base to designate a specific 280-acre portion of the property for surface mining. Shevlin appeal at 1. Shevlin argued "the 280 acres designated Surface Mining on the Bend Urban Area General Plan Map (R. 1226) should include only portions of the SSG property that are legally capable of being used as part of SSG's mining operation." Shevlin appeal at 4. Shevlin proposed that the City and County resolve its objection by changing the boundaries of the 280-acre Surface Mining area to include only land subject to DOGAMI Permit 09-0018. *Id.* The

[28] Jon Skidmore appeared as an authorized representative on behalf of the appellant pursuant to ORS 183.457(1)(j).

City agreed that on remand it will reconsider the plan designation for the site. City of Bend exceptions at 28.

d. Analysis

The appellant's property includes an area permitted by Department of Geology and Mineral Industries (DOGAMI) for surface mining and an area that is not on the county's inventory of significant natural resources sites. As in *Urquhart v. Lane Council of Governments*, 80 Or App 176, 179-80, 721 P2d 870 (1986), here, the area raised in the appeal, was not included in the inventory before the amendment was enacted, and the amendment does not affect the county's inventory. The Commission effectively codified the holding in *Urquhart* in OAR 660-023-0250(3) and (4). *Johnson v. Jefferson County (A138263)*, 221 Or App 156, 165, 189 P3d 30 (2008), *rev dismissed* 347 Or 259 (2009). Goal 5 does not provide for land use plans to limit development on property based on potential or actual presence of natural resources without having first completed the inventory, significance determination, conflicting use analysis, and program development process provided in OAR chapter 660, division 23. Because the area subject to the appeal is not on the county's inventory, and no factual information has been submitted to demonstrate the presence of a resource site, there is not an adequate factual basis for placing the SM designation on property outside of the area subject o DOGAMI permit 09-0018.

e. Conclusion

The Commission concludes that the submittal does not comply with Goal 2, Goal 5, and OAR chapter 660, division 23. On remand, if the City includes the property in the revised UGB expansion area, the City should only plan for surface mining that portion of the property within the DOGAMI permit 09-0018 area, as the site is not on the county's acknowledged surface mining inventory. The City agrees to reconsider the plan designation on remand.

7. Public Facilities Planning – Goal 11

7.1. Whether the PFPs Submitted by the City Comply with Goal 11 and the Goal 11 Rules as to Lands Within the City's Prior UGB. Should the Commission Acknowledge the PFPs as to Lands Within the Prior UGB, Even if the PFPs Must be Remanded as to the UGB Expansion Area? May the City, on Remand, First Adopt Amended PFPs for the Lands Within the Prior UGB, and then (later) Amend the PFPs to Address Land Uses Within the Revised UGB Expansion Area?

a. Summary of Issue, Objectors and Appellants

The City submitted amendments to its public facilities plans to the Department for review in connection with its UGB amendment. R. at 35-36. The amendments pertain to facilities needed to serve lands both within the prior UGB of the City, and lands in the UGB expansion area. R. at 211. On appeal, the City asked the Commission to acknowledge the PFP amendments with respect to lands within the prior UGB, and (in the alternative) asked for clarification from the Commission concerning whether it could serially amend its PFPs to address lands within the prior UGB first, and then (at a later date) amend the PFPs to address lands within any proposed UGB expansion area.

b. Legal Standard

Goal 11 and ORS 197.712(2)(e) require cities with a population greater than 2,500 to prepare and adopt public facilities plans for water, sewer and transportation services within the city's UGB. Public Facilities Plans (PFPs) are required primarily to assure that local governments plan for timely, orderly and efficient arrangement of public facilities and services, and to serve as a framework for future urban development. Timely, orderly and efficient arrangement "refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports existing and proposed land uses." Goal 11 and OAR 660-011-0000.

The required contents of a public facility plan are set forth in OAR 660-011-0010(1). At a minimum, public facility plans must include plans for water, sewer and transportation facilities that contain:

> "(a) An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan;

(b) A list of the significant public facility projects which are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary;

(c) Rough cost estimates of each public facility project;

(d) A map or written description of each public facility project's general location or service area;

(e) Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated;

(f) An estimate of when each facility project will be needed; and

(g) A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system." OAR 660-011-0010(1)

For a UGB amendment, OAR 660-024-0060(8) requires that the Goal 14 boundary location determination include evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers.

The evaluation and comparison for the UGB amendment must include:

(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB. * * *" OAR 660-024-0060(8).

In addition, under Goal 11 itself, the City must find in connection with a UGB expansion that the expansion area can be adequately served in terms of water, sewer and other public facilities identified under OAR 660-011. ***1000 Friends v. City of North Plains***, 27 Or LUBA 372 (1994), *aff'd* 130 Or. App. 406 (1994).

c. Summary of Local Actions, Director's Decision, and Appeal

Immediately before it adopted a UGB expansion, the City repealed its 1996 Utilities System Master Plan, and adopted certain specific utilities plans as amendments to the Public Facilities Element of the city's comprehensive plan. R. at 35. Those plans address current and future land uses both within the prior UGB and within the proposed UGB expansion area. R. at 211. The public facility plans adopted by the City are the public facility plans for water and sewer service under Goal 11. R. at 211. The water facility plans are:

- The Water System Master Plan (WSMP) Update – Final Report (2007). Murray, Smith, and Associates;
- The Airport Water System Master Plan (2007). Murray, Smith, and Associates. R. at 211.

The sewer facility plans are:

- Collection System Master Plan (CSMP) Final Report (2007). MWH
- CSMP Addendum #1: Final Executive Summary and "Alternative Technical Analysis; North East Bend" (2007) prepared by MacKay & Sposito, Inc.
- CSMP Addendum #2: Collection System CIP Analysis and Report (2008). Murray, Smith, and Associates.
- CSMP Addendum #3: Technical Memorandum 1.5 – Hamby Road Sewer Analysis (2008). CAMES and CH2M Hill.
- Water Reclamation Facilities Plan (2008), Carollo Engineering. Including technical memoranda nos. 1-10. R. at 211.

The Director reviewed the plans to determine whether they could be acknowledged, either with regard to land uses in the proposed UGB expansion area, or independently with regard to land uses in the area within the prior UGB. The Director found that the plans could not be acknowledged for either purpose because the plans were based on assumptions relating to the location and intensity of future development both inside and outside of the prior UGB that the Director had remanded and that were likely to change as a result. According to the Director, these issues had to be resolved before the public facilities plans could be acknowledged either with regard to the prior UGB or with regard to the proposed expansion. The Director also found that the City must complete its public facility plan for water by including information called for in OAR 660-011-0010 for areas served by the Avion Water Company and Roats Water Company, consistent with the city's urban growth management agreement with each water company. OAR 660-011-0015. As a result, the Director determined that he could not partially

acknowledge the city's public facilities plan based on the current submittal. Director's Decision, at 82.

The city's appeal argued that the Director's Decision confused: (1) the acknowledgement of the city Public Facilities Plans (PFPs) for the area within the current (prior) UGB; and (2) whether the PFPs provide an adequate basis for adoption of the UGB expansion. City Appeal at 61, 67. The City asked the Commission to acknowledge the PFPs for areas within the prior UGB. City's Appeal, at 61, 67.

d. Analysis

As a factual matter, with two exceptions, all of the city's facilities plans address either planned development in the UGB expansion area or development within the prior UGB, or both. The levels and locations of planned future development in these areas may change significantly as a result of the Commission's remand and, as a result, the Commission finds that the "land uses designated in the [city's] comprehensive plan" may change as well, necessitating corresponding changes in the city's facilities plans. OAR 660-011-0010(1). As one example, the "Collection System Master Plan (CSMP) Final Report (2007). MWH" assumes that future development will occur in areas that are not consistent with either the final UGB expansion decision that the city made (the CSMP was based on extending service to areas planned by the City and County as Urban Area Reserve), or with this order in terms of the amount and location of future residential and other development that the city has planned for within the prior UGB (to the extent that the City plans for additional infill or redevelopment).

OAR 660-011-0010(1) requires the public facility plan to include "* * * an inventory and general assessment of the condition of all of the significant public facility systems which support land uses designated in the acknowledged comprehensive plan." And OAR 660-011-0010(2) requires that the plan include a list of significant public facility projects which are to support land uses designated in the acknowledged plan. The City argues that its plans only need address land uses within its prior UGB, because land uses within the expansion area are not acknowledged. That *may* be true,[29] but because its plans do, in fact, address land uses in its expansion area it is impossible for the Commission to determine separately whether the public

[29] Although, as noted above, when the City amends its UGB Goal 11 requires it to address the adequacy of public services to serve development planned within the UGB expansion area. Exactly how that is done and at what level of detail will depend on how the City plans for lands within the expansion area. ***1000 Friends v. City of North Plains,*** 27 Or LUBA 372 (1994).

facility systems described in the plans support the land uses designated within the acknowledged (prior) UGB.

In addition, the city notes that the Department has advised the City that it should not rely on amendments to its public facilities plans that are not adopted and incorporated as elements of its comprehensive plan. City Appeal, at 61 (fn 23). That is correct, and results from the Goal 2 requirement for consistency and from the Goal 2 requirement that the comprehensive plan provide the basis for land use actions. ***See, e.g.***, ***1000 Friends of Oregon v. City of Dundee***, 203 Or App 207, 216 (2005) (an acknowledged comprehensive plan and information integrated into that plan must serve as the basis for land use decisions); ***Lengkeek v. City of Tangent***, LUBA No. 2006-076 (9/11/2006)(same). In this case, the City repealed its 1996 Utilities System Master Plan, requiring that it adopt some form of valid public facility plan prior to amending its UGB. If the city had repealed the Utilities System Master Plan and adopted a public facility plan that *separately* addressed facilities and projects needed for development under its acknowledged comprehensive plan for its existing, acknowledged UGB, and then separately addressed those additional or different facilities needed for planned land uses as a result of its UGB expansion, that approach would have been consistent with Goal 11 and Goal 2. However, that is not what the City did.

Two of the master plans adopted by the City do not depend on or concern planned land uses within the UGB expansion area. These plans are independent of the city's UGB expansion decision. They are the: "Airport Water System Master Plan (2007);" and the "Water Reclamation Facilities Plan (2008), Carollo Engineering. Including technical memoranda nos. 1-10." These two master plans concern facilities outside of the city's UGB that are required regardless of the configuration of the UGB. The City has withdrawn the Airport Water System Master Plan (2007), and (as a result) that plan is not addressed in this order. The Water Reclamation Facilities Plan (2008), contains the elements required by OAR 660-011-0010, and the plan shows that the facilities addressed in it are required regardless of the amount of land added to the city's UGB and regardless of the location of the UGB. As a result, the Commission finds that the Water Reclamation Facilities Plan complies with applicable goals and implementing rules, and acknowledges that plan.

e. Conclusion

The Commission denies the appeal of the City in part, except with regard to the Water Reclamation Facilities Plan, which it acknowledges. Otherwise, the Commission affirms the Director's Decision on this issue. The City may adopt public facilities plans as needed for acknowledged land uses within its prior, acknowledged UGB on remand. The city may then, subsequently, adopt revisions to its public facilities plans for any revised UGB expansion proposal and any other related amendments to its acknowledged comprehensive plan.

7.2 May the city's sewer plans include facilities and capacity intended to serve lands outside the UGB, so long as the plans provide that no service will be permitted or provided until such lands are located inside the UGB and urbanized (rezoned to urban designations)?

a. Summary of Issue, Objectors and Appellants

In connection with its appeal, the City has raised the question of whether it may adopt new or amended public facility plans that include facilities and projects to serve land uses outside of its prior UGB (before it amends its UGB or before its UGB expansion is acknowledged). COLW objected that the city's sewer and water plans impermissibly allowed facilities outside of the UGB. COLW Objection, at 16.

b. Legal Standard

Goal 11 requires local governments to adopt public facility plans and to coordinate the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses. ORS 197.712(2)(e) and OAR 660-011-0000 and 660-011-0010 require local governments to develop and adopt public facility plans for areas *within* an urban growth boundary.

c. Summary of Local Actions, Director's Decision, and Appeal

The City adopted public facility plans for land uses both within its existing, acknowledged urban growth boundary, and for land uses within its UGB expansion area. The Director remanded the city's decision adopting the public facility plans for a number of reasons, including that the plans were premised on locations and levels of future development both within and outside of the acknowledged UGB that would likely change as a result of the Director's remand of the city's UGB expansion decision. The City appealed, arguing that it's decisions to amend its public facilities plans should be reviewed independently of its UGB decision, and that

it could and should consider anticipated future development outside of its acknowledged UGB in its public facilities plans.

d. Analysis

Goal 11 and ORS 197.712(2)(e) require cities and counties to develop and adopt public facility plans for areas *within* an urban growth boundary. However, there is no prohibition in these authorities on a city planning for public facilities on lands that it anticipates adding to its UGB in the future,[30] and (as noted above) if a city is relying on public facility planning in making a UGB expansion decision, the plan may be updated to reflect the proposed expansion and incorporated into the city's or county's comprehensive plan. However, such planning, if adopted into a comprehensive plan, must be consistent with the applicable urban growth management agreement (OAR 660-011-0015), and be coordinated with the appropriate county(ies), any adjoining city(ies), and other service providers. *Id., Goal 11, Guideline A.1.*

e. Conclusion

The City may adopt a public facility plan that plans for future facilities and capacity to serve lands outside its UGB. If the City does so, must follow the applicable provisions of its urban growth management agreement, coordinate with other service providers, and may not authorize sewer systems outside of its acknowledged UGB (except as provided in OAR 660-011-0060 or by exception).

7.3. Whether the City's Public Facilities Plans Were Improperly Used to Determine the Location of the UGB Expansion?

a. Summary of Issue, Objectors and Appellants

Swalley, COLW, Bayard, Anderson, Rose & Associates, and Hunnell United objected that the city's public facilities plans were improperly used to determine the location of the UGB. Swalley Objection, at 25-26; COLW Objection, at 16; Bayard Objection, at 10; Rose & Associates, at 3. Hunnell United Objection, at 2.

b. Legal Standard

Under ORS 197.298(3)(b), exception lands such as lands zoned rural residential may be excluded from a UGB expansion if: "[f]uture urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints." ORS 197.298(3)(b).

30 LUBA has noted that "[t]he first sentence of Goal 11 simply requires planning for 'a timely, orderly and efficient arrangement of public facilities and services.' That language does not prohibit providing public facility capacity that exceeds current or planned demand." *SEIU v. City of Happy Valley*, 58 Or LUBA 261 (2009).

In effect, the appellants argue that the City is attempting to use its public facilities plans to make the showing required by the statute, and that this is improper.

c. Summary of Local Actions, Director's Decision, and Appeal

The city's water and sewer master plans primarily analyzed lands planned as urban area reserve (UAR) that were proposed for inclusion in the expanded UGB in 2007. For the most part, the city did not prepare revised public facilities plans for water or sewer to address the additional exception (rural residential) or resource (EFU) lands added to its UGB expansion study area in 2008. R. at 450-453. Exception lands and agricultural lands to the east that are included in the UGB expansion area are not analyzed in the sewer system collection master plan, while other lands that were dropped from the expansion (such as the DSL lands) are included in the analysis. Exception lands to the south of the city are not analyzed. The water system master plan only examined Tetherow and Juniper Ridge outside of the prior UGB. R. at 249.

The Director remanded the public facility plans due to their inconsistency with the proposed UGB expansion, and due to his finding that they failed to contain the comparison of relative costs, advantages, and disadvantages of alternative UGB expansion areas required by OAR 660-024-0060(8). Director's Decision, at 78-79. The Department noted, however, that "[t]he fact that both the city's water and sewer facilities plans include areas that are outside of the UGB expansion area suggests that the plans were not coordinated as closely with the UGB expansion analysis as appellants suggest." Department Report on Appeals, at A-44.

Swalley, Bayard, Anderson and Hunnell United appealed the Director's Decision on this issue. Bayard Appeal, at 7; Anderson Appeal, at 2-3 and 13-15; Hunnell United, at 1-3.

d. Analysis

According to Bayard and Anderson:

> "The City's Water System Master Plan (WSMP) and Collection System Master Plan (CSMP) appear designed to support pre-existing biases as to which land to include in the expanded UGB rather than to serve the public facilities needs of Bend's existing and future residents. Not all serviceable exception areas are included in the PFPs and there are lands included in the PFPs but not included in the UGB proposal. The City's Goal 11 findings state that it has "based the proposed expansion of the UGB in part on the development of three (3) new sewer interceptors that are located beyond the city's current UGB." However, the Record does not support this finding. The CSMP included an analysis of planned sewer interceptors, but the location of said interceptors is almost entirely on UAR lands or within the existing UGB). Moreover, the CSMP's analysis of what lands will be served in the future is not correlated with the lands in the UGB expansion area. The UGB expansion area includes lands that are evaluated in the master

plans, creating an internal conflict in the city's General Plan contrary to Goal 2 as well as Goals 11 and 14." Bayard Appeal, at 7.

As noted above, the City may rely on provisions of its public facility plans in evaluating where to expand its UGB. In order to exclude high priority lands (such as rural residential, urban area reserve, or other exception lands) from consideration for a UGB expansion on the basis of public facilities, the City must determine that "[f]uture urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints." ORS 197.298(3)(b). The legal standard for an exception to the normal statutory priorities regarding which lands must be included within an urban growth boundary expansion is intended to be exacting, as addressed in more detail under Issue 9, below. However, there is nothing wrong with a city using its public facilities plan to examine whether services can reasonably be provided to a particular area as long as the city's analysis compares areas as required by Goal 14 and OAR 660-024-0060(8). For the reasons set forth with regard to the preceding subissue, the City may address lands outside of its current UGB in its public facilities plans.

e. Conclusion

The Commission affirms the Director's Decision on this issue. If the City utilizes its public facilities plans as the basis for the comparative analysis required by Goal 14 and OAR 660-024-0060(8), it must analyze lands in a manner consistent with the priorities established in ORS 197.298. The role of public facility costs and feasibility in determining the location of a UGB expansion is addressed in connection with issue area 9, below.

7.4. Whether the City's Public Facility Plans Must be Consistent with Proposed Land Uses, Including Measures to Provide Land for Needed Housing.

a. Summary of Issue, Objectors and Appellants

The city maintains that it does not have to examine measures intended to plan for needed housing as part of an effort to gain acknowledgment of its public facility plans for the prior UGB. City Appeal at 62, 66.

b. Legal Standard

Goal 2 requires internal consistency in comprehensive plan provisions, and that comprehensive plans provide the basis for land use actions.

c. Summary of Local Actions, Director's Decision, and Appeal

The city's public facility plans do not consider additional development within the prior urban growth boundary that may be required in order to provide needed housing. The Department agreed with the City on appeal that if the City limits its public facilities plans to acknowledged land uses within its prior UGB, it is not required to address the timing and availability of public facilities for infill and redevelopment or other measures to provide needed housing associated with the City's evaluation of a UGB expansion.

d. Analysis

As noted above, the City could have amended its public facility plans to address only land uses within its existing, acknowledged urban growth boundary. However, the city elected to address areas outside of its prior UGB in connection with its proposed UGB expansion. R. at 211. In order to have an internally consistent, coordinated comprehensive plan that complies with Goal 2, if the city amends its public facility plan to address lands in a proposed UGB expansion area, the facilities plan also must address other measures that the city proposes to comply with ORS 197.296.

Conversely, the City may adopt a public facility plan to meet the requirements of Goal 11 and the Goal 11 rule for land uses only within the prior UGB if it does so prior to acting on its UGB amendment on remand. If it limits its plan to existing acknowledged land uses, it is not required to examine measures intended to meet needed housing at that time. The requirement to consider land uses related to needed housing occurs when the City undertakes a legislative review of its UGB pursuant to ORS 197.296 and OAR 660, div. 24.

e. Conclusion

The city may adopt public facilities plans for its prior UGB only. If it does so, those plans must consider current and potential future land uses allowed under its acknowledged comprehensive plan.

7.5. What Are the City's Obligations Under ORS 195.065 and OAR 660-011-0010(2), if any, with Regard to Coordination with Private Water System Providers?

a. Summary of Issue, Objectors and Appellants

The City of Bend argues that it is not obligated to secure urban service agreements with two private water districts that provide services within the prior UGB and portions of the UGB expansion area. City Appeal at 65. However, the City has agreed to include existing plans of

private water companies in its public facilities plan, and to consider the adequacy of those systems in its revised facilities plan on remand.

b. Legal Standard

ORS 195.065 provides that "units of local government and special districts that provide an urban service to an area within an urban growth boundary that has a population greater than 2,500 persons * * * shall enter into urban service agreements" that specify their respective responsibilities for providing urban services, including future service areas.

OAR 660-011-0010(1)(e) provides that the public facility plan must include: "(e) Policy statement(s) or urban growth management agreement[s] identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated." OAR 660-011-0010(1)(g) provides that the plan must include: "(g) A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system." Finally, OAR 660-011-0015 provides that:

> "(1) Responsibility for the preparation, adoption and amendment of the public facility plan shall be specified within the urban growth management agreement. * * *
>
> (2) The jurisdiction responsible for the preparation of the public facility plan shall provide for the coordination of such preparation with the city, county, special districts and, as necessary, state and federal agencies and private providers of public facilities. * * * *"

c. Summary of Local Actions, Director's Decision, and Appeal

The Public Facilities and Services element of the city's comprehensive plan identifies that there are no remaining special districts or private service providers for sanitary sewer systems within the City. R. at 215 (findings), and 1482 (plan).[31]

The Public Facilities and Services element of the city's comprehensive plan identifies that there are three water suppliers within the City and the UGB expansion area. R. at 215 (findings), and 1484 (plan). The city's 2007 Water System Master Plan Update addresses water facilities

[31] Chapter 8 of the city's comprehensive plan does not state whether there are other service providers for sanitary sewer services within the UGB expansion area. When the City addresses its UGB expansion on remand, it should address whether there are other providers within the expansion area and, if so, comply with the coordination requirements of OAR 660-011-0010(e) and (g).

and projects required to serve the city's service territory within the prior UGB. R. at 1484, 1486. Avion Water Company and Roats Water Company also provide water service within the prior UGB, to approximately 30 percent of the customers in this area. R. at 1486.

The city's findings for Ordinance NS-2111 state that "[t]he water system master plan covers those areas already inside the Bend UGB, and areas outside the current Bend UGB that are not already served by Avion Water Company or another private water utility." R. at 211. The findings also state that the sewer master plans include a Collection System Master Plan (CSMP) that covers those areas inside the existing Bend UGB, areas identified under the Bend Area General Plan as urban reserves, and areas east of Bend under consideration for expansion of the UGB. *Id.*

The Director determined that:

> "The WSMP does not contain any public facility plan components for the Avion Water Company or Roats Water System, as required by OAR 660-011-0005 and -0010 and OAR 660-024-0020(1). The WSMP does not appear to contain composite service maps of the UGB service areas or illustrations of the proposed principle water distribution system operated by the Avion Water Company or Roats Water System.
>
> The UGB expansion proposal includes areas served by the city, Avion Water Company, and Roats Water Company. However, there is no evidence that the WSMP includes plans for these expansion areas, as required by the Goal 11 and 14 rules. The WSMP also does not appear to satisfy the coordination requirements in Goals 2 and 11." Director's Decision, at 81.

The City of Bend appealed the Director's Decision on this issue, arguing that:

> "The coordination requirements of Goal 2 do not apply here because Avion Water Company and Roats Water Company are private utilities, not special districts that provide water service. Both Avion and Roats are regulated by the PUC, and they answer to the PUC for their ability to meet water quality and service criteria within their service areas.
>
> The Water PFP does identify the areas served by each system, thereby providing sufficient information for the City to plan for water service. (Rec. 249, 261, 315.) The City relied on the city's Water System Master Plan and Avion Water Company's master plan to evaluated potential areas for UGB expansion, based on whether the City or Avion would service these areas. (Rec. 6318, 6400-21.) The City included sufficient information about the private water systems to meet the standards of OAR 660 Division 11 and coordinated sufficiently with the two private water system providers." City Appeal, at 66.

The City also argued that the urban service agreement and coordination requirements of ORS 195.065 do not apply to Avion and Roats.

d. Analysis

The Commission concurs with the City that the coordination and urban service provider and agreement provisions of ORS 195.065 do not apply to Avion Water Company or to Roats Water Company. These companies are private water companies, rather than special districts as that term is defined in ORS 195.065 and 195.060.[32]

However, the provisions of OAR 660-011-0010(1)(e) and (g) and 011-015 clearly require the city's public facility plan to designate who the service providers are within the area addressed by the plan, and to include an inventory and assessment of significant systems and projects needed to support the land uses in that area as provided in OAR 660-011-0010(1)(a)-(d) and (f), including systems and projects which are the responsibility of other providers including Avion and Roats.

e. Conclusion

ORS 195.065 (requiring agreements with urban service providers for future urban service areas) does not apply to Avion and Roats water companies. However, the Commission finds that the City must identify what areas are served by these companies within the area it is planning for, and provide the existing plans of these companies and consider those plans in developing its revised public facility plan elements relating to water supply for these areas.

7.6. What Was the City's Obligation to Provide Notice to DLCD of Amendments to its Public Facilities Plans as Part of its October 8, 2008 Supplemental Notice of a Revised UGB Amendment?

The City has agreed to provide new 45-day and adoption notices of its Public Facilities Plan amendments on remand. As a result, the Commission finds that any defects in the city's notices of its plan amendments under ORS 197.610 to 197.625 will be remedied.

---

[32] ORS 195.060 states that: "[a]s used in ORS 195.020, 195.065 to 195.085 and 197.005, unless the context requires otherwise:

(1) "District" has the meaning given that term in ORS 197.010. In addition, the term includes a county service district organized under ORS chapter 451."

In turn, ORS 197.010 defines "district" as a variety of types of districts, but does not include private water companies.

7.7. Whether the City's Wastewater System Collection Master Plan and Water System Master Plan Must Cover All Areas in the UGB Expansion Area?

a. Summary of Issue, Objectors and Appellants

The city's wastewater system collection master plan and water system master plan did not address all areas in the UGB expansion area despite the fact that the city's findings for its public facilities plan adoption state that they do. R. at 211. Several objections raised this as an issue, and the Director remanded the city's Ordinance NS-2111 on this basis. Director's Decision, at 79-80.

b. Legal Standard

Goal 2 requires that the different elements of the city's comprehensive plan be internally consistent. Goal 2 also requires that the city's comprehensive plan be founded on an adequate factual base. And, both Goal 14 and Goal 11 require that the City determine that public facilities can adequately serve the lands and land uses proposed for a UGB expansion area. ***1000 Friends v. City of North Plains***, 27 Or LUBA 372, aff'd 130 Or App 406 (1994); ***Smith v. Douglas County***, __ Or LUBA __ (2000) (Goal 14, Factor 3 (now locational factor 2) requires a local government to demonstrate that public facilities and services can reasonably be provided to the expansion area over the planning period, without leaving the area already within the UGB with inadequate facilities and services). Neither OAR 660-011-0010 nor 660-024-0060 *require* that the City make this determination through an amendment of its public facilities plan to address urbanizable lands within a UGB expansion area at the time of the expansion (that normally will occur later), although that approach is one permissible means of addressing Goal 11 and Goal 14 location factor 2 as they relate to the UGB expansion.

c. Summary of Local Actions, Director's Decision, and Appeal

The City adopted new water and sewer plans as amendments to the city's public facilities plan in Ordinance NS-2111. R. at 35. Those plans replaced the city's 1996 Utilities System Master Plan. *Id.* The city's findings state that the plans cover both the acknowledged (prior) UGB and the expansion area. R. at 211. The Director remanded the city's adoption of the plans, partially on the basis that the plans, in fact, did not cover the entire UGB expansion area. Director's Decision, at 79-80. The City appealed, arguing that its plans were not required to address the UGB expansion area.

d. Analysis

As described above, the Commission agrees that the City could have adopted public facility plan amendments addressing only land uses in the area within the prior (acknowledged) UGB. However, that is not what the City did. It purported to amend its public facility plan to address the entire UGB expansion area as well as the area within its prior UGB. However, as found by the Director, the amendments did not address the entire expansion area, and included some areas outside of the expansion area. This created an internal conflict between the city's public facilities plan and the UGB expansion that it subsequently adopted, violating the Goal 2 requirement for internal consistency in the city's comprehensive plan as well as the requirement under Goal 11 and Goal 14 locational factor 2 to show that the UGB expansion area can be adequately served. [33]

The City was not required to address Goal 11 and Goal 14 locational factor 2 as they applied to its UGB expansion through amendments to its public facilities plans, but the City chose to do so. Having elected to use its water and sewer system master plans in this fashion, the plans were required to address the entire expansion area.

e. Conclusion

On remand, the City must address the entire expansion area under Goal 11 and Goal 14, locational factor 2. The City is not required to do so through amendments to its public facilities plan, although it may do so. If the City elects to carry out the analysis(es) of the feasibility of serving the expansion area independently of its public facilities plan, it should nevertheless

---

[33] Goal 11, Guidelines 4 and 5 clarify how the Commission intends public facility planning and services to apply to areas that are included in a UGB expansion, but that are not yet urbanized.

> "4. Public facilities and services in urbanizable areas should be provided at levels necessary and suitable for existing uses. The provision for future public facilities and services in these areas should be based upon: (1) the time required to provide the service; (2) reliability of service; (3) financial cost; and (4) levels of service needed and desired.
>
> 5. A public facility or service should not be provided in an urbanizable area unless there is provision for the coordinated development of all the other urban facilities and services appropriate to that area."

Public facility plan amendments to address the area within a UGB expansion in the detail required by OAR 660-011-0010 normally are adopted at the time such lands are rezoned with urban zoning designations. Often, this will be at the time such lands are annexed. ORS 197.752(1) provides that: "[l]ands within urban growth boundaries shall be available for urban development concurrent with the provision of key urban facilities and services in accordance with locally adopted development standards."

formally adopt the analysis and incorporate it into the city's comprehensive plan (and the analysis must not conflict with existing provisions of the public facilities plan).

7.8. Whether Swalley Irrigation District is a "Rural Irrigation System" or a "Service Provider" Under OAR 660-024-0060(8), Such that There Is an Additional Coordination Obligation (in Addition to Goal 2) to Evaluate the Relative Costs, Advantages and Disadvantages of Alternative UGB Expansion Areas with Respect to Swalley Irrigation District. Whether the City is Required to Compare the Costs, Advantages and Disadvantages of Alternative UGB Expansion Areas with Respect to Public Facilities and Services Regardless of Whether it is Including Particular UGB Expansion Areas on the Basis of Such Costs.

a. Summary of Issue and Related Objections

Swalley filed objections to the city's decisions, arguing that Swalley is a “service provider” under OAR 660-024-0060(8) and that, as a result, the City was required to evaluate and compare alternative UGB expansion areas with respect to public facilities and services with Swalley (as a service provider). Swalley Objection, at 74; Swalley Appeal, at 8.

b. Legal Standard

OAR 660-024-0060(8) provides that:

> "(8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:
>
> (a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;
>
> (b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and
>
> (c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service."

c. Summary of Local Actions, Director's Decision, and Appeal

The City states that Swalley is not a service provider as that term is used in OAR 660-024-0060 and that, as a result, the City was not required to coordinate with Swalley under that rule. The City also states that it did coordinate with Swalley as that term is used in Goal 2. The

Director denied Swalley's objection, treating it as a locational issue, and determining that an "irrigation system" is not a "water system," based on the definition of that term in Goal 11 as a piped system for human consumption. Director's Decision, at 126. The Director's Decision determined that Swalley Irrigation District is a "rural irrigation system" and therefore is not a "service provider" for purposes of OAR 660-024-0060(8). Swalley appealed, continuing to argue that it is a service provider for purposes of OAR 660-024-0060(8). Swalley Appeal, at 12.

d. Analysis

OAR 660-024-0060(8) concerns the application of Goal 11 to urban growth boundary amendments, and must be read in context with Goal 11. Goal 11 defines "water system" as "a system for the provision of piped water for human consumption subject to regulation under ORS 448.119 to 448.285." (emphasis added). Swalley provides water for irrigation purposes, and therefore is not a water system under Goal 11. As a result, OAR 660-024-0060(8) does not apply to Swalley, and the City was not required to coordinate with Swalley as specified in that rule.

The City has agreed, however, to coordinate its planning on remand with Swalley, in the sense that coordination is used in Goal 2.

e. Conclusion

The Commission concurs with the Director that the City is not required to coordinate with Swalley as a service provider under OAR 660-024-0060(8). However, the City has agreed to coordinate further with Swalley generally as it considers its options on remand.

7.9. Whether the City's Analysis of Public Facilities and Services Underestimates the Cost of Providing Such Facilities and Services to the UGB Expansion Area and, if so, Must the City Revise both its Goal 11 Analysis and its Housing Needs Analysis to Evaluate Whether it is Planning for Needed Housing in Locations Appropriate for the Needed Housing Types.

a. Summary of Issue, Objectors and Appellants

Swalley argues that in evaluating alternative UGB expansion areas, the city's analysis of the relative costs and availability of public facilities and services is inaccurate, and therefore the City fails to comply with ORS 197.296(6) and(9) and 197.752(1). Swalley Appeal at 1-2.

b. Legal Standard

ORS 197.296(6) provides that: "[i]f the housing need determined pursuant to subsection (3)(b) of this section is greater than the housing capacity determined pursuant to subsection

(3)(a) of this section, the local government shall take one or more of the following actions to accommodate the additional housing need: [expand the UGB and/or adopt measures to increase the capacity of the existing UGB]."

ORS 197.296(9) requires that:

> "In establishing that actions and measures adopted under subsections (6) or (7) of this section demonstrably increase the likelihood of higher density residential development, the local government shall at a minimum ensure that land zoned for needed housing is in locations appropriate for the housing types identified under subsection (3) of this section and is zoned at density ranges that are likely to be achieved by the housing market using the analysis in subsection (3) of this section."

c. Summary of Local Actions, Director's Decision, and Appeal

The city analyzed the relative costs of providing public facilities and services to the alternative expansion areas. The adequacy of that analysis is addressed under issue 9 in this order.

d. Analysis

ORS 197.296(6) and (9) are concerned (in this context) with measures to increase the residential development capacity of buildable lands within an existing UGB, not with a UGB expansion area. As a result, these statutes do not provide a basis for the type of analysis that Swalley appears to seek.[34] To the extent that Swalley is arguing that the city's analysis of public facility and service costs is inadequate because it underestimates those costs for the expansion areas relative to infill or redevelopment, Swalley's arguments are not sufficiently developed to be capable of review.

e. Conclusion

Under both Goal 11 and Goal 14, the city will need to reevaluate the relative public facility costs of alternative UGB expansion areas. ORS 197.296 and 197.752 do not provide a legal basis for Swalley's appeal, and as a result the Commission denies the appeal and affirms the Director's Decision.

[34] The requirements for analysis of the feasibility of serving a UGB expansion area stem from Goal 11, Goal 14 locational factor 2, and OAR 660-024-0060(8), as described in more detail above.

8. Transportation Planning – Goal 12

8.1. Whether the City's Findings Adequately Explain the Relative Costs of Providing Transportation Improvements to Serve Alternative UGB Expansion Areas.

a. Summary of Issue, Objectors and Appellants

The Director found that the city had analyzed the relative costs of transportation improvements needed to serve individual UGB expansion areas at the transportation analysis zone (TAZ) level. Department Report on Appeals, at 51. However, the Director determined that the city's findings failed to aggregate these data to allow comparison between different areas in the same priority class under ORS 197.298. The city appealed the Director's decision, arguing that its analysis was adequate.

b. Legal Standard

ORS 197.298 prioritizes which lands a local government must include in a UGB expansion. If there are more lands in a particular priority category than needed, however, the local government must use the locational factors of Goal 14 to compare "alternative UGB expansion areas." OAR 660-024-0060(8). The comparison must include the relative need for new transportation facilities, including existing roadways, and including public transit. OAR 660-024-0060(8)(c). In addition, OAR 660-024-0060(6) provides that:

> "The adopted findings for UGB adoption or amendment must describe or map all of the alternative areas evaluated in the boundary location alternatives analysis. If the analysis involves more than one parcel or area within a particular priority category in ORS 197.298 for which circumstances are the same, these parcels or areas may be considered and evaluated as a single group."

c. Summary of Local Actions, Director's Decision, and Appeal

The city analyzed the relative costs of required transportation improvements of lands it studied for possible inclusion in its UGB expansion area at the TAZ level. City Appeal, at 72. The costs included only costs of required facilities within each TAZ. The city then aggregated the data into ten UGB subareas, which contain lands in a variety of priority classes. City Appeal, at 72. This analysis could be re-aggregated to compare lands in the same priority category under ORS 197.298, but this was not done.

d. Analysis

The city is required to compare lands in the same priority classes under ORS 197.298,

Goal 14 and OAR 660-024-0060 (except when lower priority lands are included as necessary to serve higher priority lands under ORS 197.298(3)(b)). The city may aggregate its underlying data, by TAZs and priority category, and address the results in revised findings.

e. Conclusion

The Commission denies the city's appeal, and upholds the Director's decision. On remand, the city must analyze the relative costs of lands in the same priority category, rather than aggregating its analysis into subareas without regard to the priorities under ORS 197.298.

8.2. Whether the City Must Provide More Detailed Analysis or Findings Regarding the Extent to Which the Costs of Improvements for Major Roadway Improvements in the North Area (Including Proposed Improvements to Highways 20 and 97) Are a Result of and Should be Assigned to Development in the North Area Rather than the City as a Whole. Whether the City's Analysis and Evaluation Assess Whether the Extent of Improvements in the North Area Might be Avoided or Reduced in Scale or Cost if the UGB Was Not Expanded in this Area or if the Extent of the UGB Expansion Was Reduced?

a. Summary of Issue, Objectors and Appellants

According to the City, several major transportation improvements are required in the future regardless of which lands are added to its UGB. In particular, the City identified improvements to Highway 97 north of Colorado Avenue, as improvements that will be needed regardless of the amount or location of lands added to the UGB. City Appeal, at 73. The Director found that the city's findings did not explain why the City was not analyzing the relative costs of these improvements for different areas being evaluated for possible addition to the city's UGB. Several objectors filed objections concerning this issue. Swalley Objection, at 75-76; DSL Objection, at 5; Rose & Associates, Newland Objection, at 21-22; see generally, Director's Decision, at 87-88 (summarizing objections concerning this issue).

b. Legal Standard

As noted above, ORS 197.298, Goal 14 and OAR 660-024-0060 require a local government to compare the relative costs of public facilities and services of alternate areas in the same priority category of lands (under ORS 197.298) proposed for addition to a UGB.

c. Summary of Local Actions, Director's Decision, and Appeal

The city did not compare the relative costs of alternate areas in the same priority category for the costs of major transportation facilities because the city's analysis showed that these costs

would be required regardless of which lands were included. City Appeal, at 73-74. The Director remanded the city's decision for the city to carry out the required comparative analysis. Director's Decision, at 88. The City appealed, and identified some evidence in the record that supported its argument that these costs will be required regardless of what areas are added to the city's UGB. City Appeal, at 74, 77.

d. Analysis

Although the city has identified analysis in the record that supports its argument that there will not be any relative cost differential between areas for improvements required to Highways 97 and 20, the city's findings do not rely on or describe this analysis in determining which lands to include within the UGB expansion area.

e. Conclusion

The Commission denies the appeal and upholds the Director's Decision. On remand, the city must revise its findings to address this issue. If the city chooses to rely on existing analysis that there is no cost differential between alternate lands in the same priority category, that decision must be supported by substantial evidence in the record as a whole. While no specific method or outcome is required, the city must explain its basis(es) for assigning the costs of extraordinary improvements to expansion areas in the same priority category, and consider whether changes in the extent or location of the UGB expansion would reduce the need for major improvements in this area.

8.3. Whether the City Must Provide Comparable Estimates for the Costs of Needed Roadway Capacity for Areas that (Because of Topographic Constraints) May Need to be Served by Different Types of Roadway Networks.

a. Summary of Issue, Objectors and Appellants

The City found that the cost of providing transportation facilities on the west side of the UGB would be lower than on the east and south sides, and justified its inclusion of lands on the west side, in part, on that basis. The Director questioned the city's conclusion, and found that the city's findings were inadequate on this point.

b. Legal Standard

As noted above, OAR 660-024-0060(8) requires a comparison of the relative costs, advantages and disadvantages of lands being evaluated for inclusion in a UGB. The city's findings need to describe these comparisons (of lands in like priority categories) in a manner that

shows that the required factors were considered by the decision-maker.

c. Summary of Local Actions, Director's Decision, and Appeal

The Director's Decision found that the city's analysis of transportation costs of serving different expansion areas was incomplete, because lower costs are assigned to Westside expansion areas – where a complete grid of streets cannot be provided – while higher costs were assigned to other areas where topography and other factors would allow a more complete grid of streets. Director's Decision, at 89. Rose & Associates Objection, at Exhibit 2. The Director questioned whether additional improvements would be needed to adequately serve the Westside areas to compensate for the sparser grid of streets available in that area.

The city's appeal provided further explanation of its analysis of street improvements needed to serve different potential expansion areas. City Appeal at 76-77. The City indicated that during work sessions the planning commission was advised that Westside roads were an exception to the city's street grid spacing due to several factors including existing development pattern, the limited density of the adjacent land uses in the areas the roads would serve, and the lack of future development potential farther west (i.e., the Forest Service lands) and topographic barriers. City Appeal at 76. Topography was considered at a scale that was appropriate to prepare rough cost estimates. City Appeal at 76-77.

The city's response partially addressed the department's concern. Several factors led the city to conclude that a sparser network was appropriate to serve proposed land uses on the west side, and that topographic factors were considered. However, while these factors were apparently presented to and discussed with the planning commission, they were not fully reflected in the city's adopted findings.

d. Analysis

It appears that the city has completed the required analysis, although (again) that analysis must compare areas in the same priority category. However, the results of the city's analysis are not explained in the city's findings as a basis for favoring lands to the west of the city over lands to the east and south.

e. Conclusions

The Commission denies the appeal and upholds the Director's Decision. On remand, the city must revise its findings to address this issue including not only the relative cost of required transportation improvements, but the relative advantages and disadvantages as well. OAR 660-

024-0060(8) (which may include the relative amount of development capacity the city can support for a particular unit of cost). On appeal, at oral argument, the city agreed to strengthen its findings in this area to the extent that lands on the west of the city are included in the UGB expansion area on remand.

8.4. What is the Planning Status of the Deschutes River Bridge? Is Removal of the Proposed Deschutes River Bridge from the City's TSP Sufficient to Resolve the Planning Status of this Facility, Consistent with OAR 660-012-0025(3)?

The city clarified, on appeal, that the bridge is not anticipated or planned during the 20-year planning period. The city agreed to clarify its findings regarding expansion areas on the west of the city (to the extent that they are included in a revised UGB expansion area) to indicate clearly that the bridge is not an improvement or project that is planned within the planning period, and to evaluate the adequacy of the planned transportation system without the bridge.

8.5. Whether the City's Findings Are Sufficient to Show that its Transportation Analysis for Goal 14 is Consistent with City Policies That Restrict Widening of Newport and Galveston Streets Beyond Three Lanes?

a. Summary of Issues, Objectors and Appellants

The Director's Decision upheld objections from Central Oregon Landwatch that asserted that proposed UGB expansions in the northwest area would trigger need for expansion of Newport and Galveston streets from three to five lanes and that such a widening would violate a city plan policy which restricts widening of these streets. Director's Decision, at 88 - 89.

b. Legal standard

The city's UGB expansion must comply with applicable policies in its comprehensive plan. ORS 197.175.

c. Summary of Local Actions, Director's Decision, and Appeal

The city's appeal identified a traffic study included in the record that analyzed potential impacts of inclusion of certain UGB expansion areas on Westside streets, including Newport and Galveston. That traffic analysis, prepared by DKS and Associates, concludes that neither street needs to be widened to accommodate expected traffic from the areas in question. City Appeal, at 75, R. at 2624-2626.

d. Analysis

The city has identified evidence in the record that clearly supports that the UGB expansion complies with the specified plan policy. The city's traffic analysis shows that the UGB expansion would not violate its adopted plan policy concerning Newport and Galveston streets.

e. Conclusion

For the foregoing reasons, the Commission affirms the City Appeal on this issue. On remand, the city's findings should address the DKS analysis if these lands continue to be included in the proposed expansion area.

8.6. What Must the City of Bend do to Comply with the Transportation Planning Rule (TPR) Requirements for Metropolitan Planning Organization (MPO) Areas in Conjunction with its UGB Amendment?

a. Summary of Issues and Related Objections

The Director's Decision found that:

- The metropolitan planning requirements of the TPR are applicable to Bend at this time;
- Bend has not complied with provisions of the TPR applicable to metropolitan areas for adoption of standards and benchmarks to reduce reliance on the automobile; and
- The metropolitan area planning requirements in the TPR must be met prior to a significant amendment of the UGB. Director's Decision, at 96-103.

The City appealed this aspect of the Director's Decision, arguing that it is not required to comply with these requirements before amending its urban growth boundary. City Appeal, at 79-80. The City did not dispute that the requirements are applicable, or that it had not complied with those requirements. Its appeal was limited to the question of whether it may amend its UGB without first complying. The City argued that its obligations are limited by OAR 660-024-0060(8), which only requires an "evaluation and comparison of relative costs, advantages and disadvantages of alternative expansion areas with respect to the provision of public facilities and services [including transportation facilities]."

b. Legal standard

OAR 660-024-0060(1) states that:

> "(1) All statewide goals and related administrative rules are applicable when establishing or amending a UGB, except as follows:

> * * *
>
> (d) The transportation planning rule requirements under OAR 660-012-0060 need not be applied to a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary * * *."

This rule clearly states that *all* goals and rules apply to a UGB amendment, except for the listed exceptions. The listed exception for the TPR is limited to "the requirements under OAR 660-012-0060." There is no exception for the metropolitan area planning requirements specified in OAR 660-012-0035. Those requirements include provisions requiring Transportation System Plans (TSPs) to include standards and policies to increase transportation choices and to reduce reliance on the automobile. OAR 660-012-0035(3)-(7).

In addition, OAR 660-012-0055 specifies when the requirements of 0035 must be met (within one year of adoption of the regional transportation plan). OAR 660-012-0055(1)(b). The rule provides for an extension, but only under certain specific circumstances. OAR 660-012-0055(1)(d).

c. Summary of Local Actions, Director's Decision, and Appeal

As noted above, the city agreed that it has not completed the required elements of its transportation systems plan, but argued on appeal that it was not required to at this time. City Appeal, at 79-80.

d. Analysis

OAR 660-012-0055 allows a local government that is subject to the metropolitan area planning requirements of OAR 660-012-0035, but that is not in compliance with them, to amend its comprehensive plan or land use regulations only under the conditions set forth in OAR 660-012-0055(1)(d). Alternatively, the City could come into compliance with the requirements of OAR 660-012-0035 if it can show that "* * * adopted plans and measures are likely to achieve a five percent reduction in VMT per capita over the 20-year planning period [and adopts interim benchmarks]." OAR 660-012-0035(6).

At oral argument, the City agreed that on remand it will comply with OAR 660-012-0035 through one of three alternative methods, as specified in the conclusions below.

e. ***Conclusions***

The City is required to comply with OAR 660-012-0035 before it may complete its UGB

expansion. The City has agreed to prepare analyses of its baseline VMT per capita in 2003 (with VMT as defined in OAR 660-012-0005), along with an analysis of projected VMT per capita over the planning period with proposed "packages" of land use and transportation measures to reduce VMT per capita. If the City demonstrates that its revised UGB expansion, along with proposed land use and transportation measures, results in an estimated change in VMT per capita:

(a) of a decline of 5% or more per capita, then the City is in compliance with this aspect of the TPR under 0035(6);

(b) of a decline of between 0% and 4.99 percent per capita, then the City may proceed by preparing for DLCD/LCDC review and approval concurrently with the revised UGB, a work program/plan to achieve a reduction of 5% or more over the planning period; or

(c) of an increase in VMT per capita, then the city must prepare, submit and obtain DLCD/LCDC approval of an integrated land use and transportation plan as provided in OAR 660-012-0035(5) prior to approval of a revised UGB.

The Commission concludes that these methods will assure that the city's UGB expansion will comply with the applicable requirements of OAR 660-012-0035 and 0055.

8.7. May the City of Bend rely on its Partially-Acknowledged Transportation Systems Plan (TSP) for its UGB Amendment?

a. Summary of Issues, Objectors and Appellants

Swalley filed an objection asserting that the city’s transportation systems plan (TSP) has not been acknowledged and that, as a result, the city could not rely on its TSP in its UGB expansion. Swalley Objection, at 57. Swalley argued that the commission must direct the city to complete an acknowledged TSP before the city may expand its UGB. Swalley Appeal, at 8-9.

b. Legal standard

OAR 660-012-0015(3) provides that:

"Cities and counties shall prepare, adopt and amend local TSPs for lands within their planning jurisdiction in compliance with this division:

(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;

(b) Where the regional TSP or elements of the state TSP have not been adopted, the city or county shall coordinate the preparation of the local TSP with the regional transportation planning body and ODOT to assure that regional and state transportation needs are accommodated."

c. Summary of Local Action, Director's Decision and Appeal

According to the city's findings:

"The city of Bend and Deschutes County comply with OAR 660-012-0015(3) because the city of Bend and Deschutes County have adopted coordinated Transportation System Plans that address the proposed Urban Growth Boundary (UGB). The City's TSP was adopted by the City Council when they approved Ordinance No. NS-1756 on October 11, 2000, and subsequently amended the TSP by approving Ordinance Nos. NS-1852, NS-1912, NS-1915, NS-1953, NS-2013, NS-2026, NS-2032, NS-2038, NS-2043 and NS-2047 to address DLCD remanded items. Deschutes County adopted a TSP for the Urban Reserve Area, on August 26, 1998, by adopting Ordinance No. 98-044." City of Bend, Exhibit E, TPR Findings, at 2.

d. Analysis

The Bend TSP, adopted in 2000, was *partially* acknowledged. The commission's approval of the TSP itemized a number of relevant TPR requirements with which the City had not fully complied**.** However, notwithstanding this remaining work, the existing TSP is partially-acknowledged and the City may rely upon it. The TSP complies with Goal 12 and OAR 660-012-0015 for the reasons stated in the city's findings, and the objection does not identify any specific areas of remaining work required by the remand that render the TSP inadequate as a basis for the city's evaluation of its UGB expansion.

e. Conclusions

The City has a substantially complete, commission-approved TSP. The objector has not identified specific TPR provisions that require additional work by the City that affect the city's evaluation of its UGB. As a result, the Commission denies the appeal, and upholds the Director's Decision.

9. Location of the UGB Expansion Area

9.1. Whether the City's Use of Suitability Criteria to Determine What Lands to Include Within Its UGB Expansion Area Complied with State Statutes, Goal 14 and the Commission's Goal 14 Implementing Rules

a. Summary of Issue and Appellants/Objectors

The City applied certain criteria as a screen to exclude lands from further evaluation for inclusion in its UGB expansion area. See generally, R. at 1059-1065, 1166-1207, and 7772-7775. Tony Aceti, Terry Anderson, COLW, Hilary Garrett, Miller Tree Farm, Paul Shonka, Tony and Cyllene King (McGraw and Associates, LLC), the Oregon Department of State Lands, Rose and Associates, LLC, Barbara McAusland, Swalley Irrigation District, Newland Communities, Harold Sampson, and Brooks Resources Corporation filed objections to the city's locational analysis for its UGB expansion. Director's Decision, at 113-115 (summarizing the objections on this issue). The City, Swalley Irrigation District, COLW, Garrett, Bayard, and Anderson appealed the Director's Decision on this issue. Department Report on Appeals, at A-59 to A-68.

b. Legal Standard

ORS 197.298,[35] Goal 14[36] and OAR 660-024-0060 (2007)[37] contain the applicable state requirements that establish *where* a city may expand its urban growth boundary (UGB). The

---

[35] ORS 197.298 Priority of land to be included within urban growth boundary:

(1) In addition to any requirements established by rule addressing urbanization, land may not be included within an urban growth boundary except under the following priorities:

(a) First priority is land that is designated urban reserve land under ORS 195.145, rule or metropolitan service district action plan.

(b) If land under paragraph (a) of this subsection is inadequate to accommodate the amount of land needed, second priority is land adjacent to an urban growth boundary that is identified in an acknowledged comprehensive plan as an exception area or non-resource land. Second priority may include resource land that is completely surrounded by exception areas unless such resource land is high-value farmland as described in ORS 215.710.

(c) If land under paragraphs (a) and (b) of this subsection is inadequate to accommodate the amount of land needed, third priority is land designated as marginal land pursuant to ORS 197.247 (1991 Edition).

(d) If land under paragraphs (a) to (c) of this subsection is inadequate to accommodate the amount of land needed, fourth priority is land designated in an acknowledged comprehensive plan for agriculture or forestry, or both.

(2) Higher priority shall be given to land of lower capability as measured by the capability classification system or by cubic foot site class, whichever is appropriate for the current use.

(3) Land of lower priority under subsection (1) of this section may be included in an urban growth boundary if land of higher priority is found to be inadequate to accommodate the amount of land estimated in subsection (1) of this section for one or more of the following reasons:

(a) Specific types of identified land needs cannot be reasonably accommodated on higher priority lands;

(b) Future urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints; or

(c) Maximum efficiency of land uses within a proposed urban growth boundary requires inclusion of lower priority lands in order to include or to provide services to higher priority lands."

[36] Statewide Planning Goal 14 (as amended April 28, 2005) requires the following:

> "The location of the urban growth boundary and changes to the boundary shall be determined by evaluating alternative boundary locations consistent with ORS 197.298 and with consideration of the following factors:
>
> (1) Efficient accommodation of identified land needs;
>
> (2) Orderly and economic provision of public facilities and services;
>
> (3) Comparative environmental, energy, economic and social consequences; and
>
> (4) Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB."

[37] OAR 660-024-0060 (adopted 10-5-06) provides in pertinent part that:

> "(1) When considering a UGB amendment, a local government must determine which land to add by evaluating alternative boundary locations. This determination must be consistent with the priority of land specified in ORS 197.298 and the boundary location factors of Goal 14, as follows:
>
> (a) Beginning with the highest priority of land available, a local government must determine which land in that priority is suitable to accommodate the need deficiency determined under 660-024-0050.
>
> (b) If the amount of suitable land in the first priority category exceeds the amount necessary to satisfy the need deficiency, a local government must apply the location factors of Goal 14 to choose which land in that priority to include in the UGB.
>
> (c) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, a local government must determine which land in the next priority is suitable to accommodate the remaining need, and proceed using the same method specified in subsections (a) and (b) of this section until the land need is accommodated.
>
> (d) Notwithstanding subsection (a) through (c) of this section, a local government may consider land of lower priority as specified in ORS 197.298(3).
>
> (e) For purposes of this rule, the determination of suitable land to accommodate land needs must include consideration of any suitability characteristics specified under section (5) of this rule, as well as other provisions of law applicable in determining whether land is buildable or suitable.
>
> (3) The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and to determine the UGB location, a local government must show that all the factors were considered and balanced.
>
> (4) In determining alternative land for evaluation under ORS 197.298, "land adjacent to the UGB" is not limited to those lots or parcels that abut the UGB, but also includes land in the vicinity of the UGB that has a reasonable potential to satisfy the identified need deficiency.
>
> (5) If a local government has specified characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need, the local government may limit its consideration to land that has the specified characteristics when it conducts the boundary location alternatives analysis and applies ORS 197.298.
>
> (6) The adopted findings for UGB adoption or amendment must describe or map all of the alternative areas evaluated in the boundary location alternatives analysis. If the analysis involves more than one parcel or area within a particular priority category in ORS 197.298 for which circumstances are the same, these parcels or areas may be considered and evaluated as a single group.
>
> (7) For purposes of Goal 14 Boundary Location Factor 2, "public facilities and services" means water, sanitary sewer, storm water management, and transportation facilities.
>
> (8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

Commission's division 24 rules were adopted in 2006, following the Commission's action in 2005 to amend Goal 14. The Commission's division 24 rules, and specifically section 0060, were intended (in part) to clarify the relation between ORS 197.298 and the locational factors of Goal 14 for urban growth boundary expansions.

c. Summary of Local Action, Director's Decision and Appeal(s)

In January 2006, the city established a study area of approximately 27,000 acres for both a proposed UGB expansion and a proposed urban reserve area designation. R. at 45, 1060. In June 2007, the first UGB expansion scenario was prepared and sent to the Department with a 45-day notice prior to the city's first scheduled public hearing. On August 7, 2007, the City and Deschutes County withdrew the urban reserve amendment until the UGB expansion was resolved. DLCD Form 3 Notice of Denial/Withdrawal, Supplemental Record at 1423. In the fall of 2007, the city enlarged the study area to over 44,000 acres (R. at 1061) and to respond to direction from the city council to consider the need for land for employment uses as well as housing. R at 1060.

The city established and applied "threshold suitability criteria" to lands within the enlarged study area. R. at 1062. The suitability criteria were intended to be consistent with the Goal 14 location factors. R. at 1062. The parcels that met all of these criteria were considered suitable to meet Bend's needs for housing and employment (and other land needs). R. at 1168-1170. The suitability criteria included whether the parcel in question:

- Could be served [with sewer] by an existing or proposed city facility detailed in the 2008 Collection System Master Plan [e.g., the amended Public Facilities Plan];
- Is serviceable according to the 2007 City Water Master Plan, as amended, or a private water district service area;
- Scores medium or high for street connectivity;
- Is not an active surface mine, not a state of local park, not a landfill, and is not a destination resort;
- Is vacant or improved with improvement value below $20,000;
- If the parcel is improved with a dwelling, it is a parcel greater than 3 acres;
- If improved with a school or church, it is a parcel greater than 5 acres;
- Is not recreational land;

(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service."

- Is not owned by the Bend/La Pine School District;
- Is not in a commercial farm classification with 23 acres of irrigation water rights;
- Is not subject to restrictive CC&Rs; and
- Is not in private open space. R. at 1169

Lands that did not meet *all* of the criteria were excluded from further study. Director's Decision, at 112. The City then took the remaining properties, and divided them according to the statutory priorities in ORS 197.298. Finally, the City then developed five scenarios of potential new UGB expansion areas, and applied the Goal 14 locational factors to compare the areas and select a preferred scenario. Director's Decision, at 112.

The Director found that the screening criteria used by the City were not sufficiently linked to specific identified future urban land needs to be used to exclude lands under ORS 197.298(3)(a), that the criteria extended beyond what is allowed under OAR 660-024-0060, and that the City lacked an adequate factual base to use its criteria as *per se* screens. The Director also found that the City failed to separate its suitable lands by the statutory priority categories, and then apply the Goal 14 locational factors. See generally, Director's Decision, at 115-123.

d. Analysis

The City argues that under ***Hildenbrand v. City of Adair Village***, 217 Or App 623 (2008) and ***City of West Linn v. LCDC***, 201 Or App 419, 440 (2005), it was authorized to exclude lands on the basis of locally-developed suitability criteria. In ***City of West Linn***, the court determined that, under the former Goal 14, the locational factors of Goal 14 may be used (along with the criteria in ORS 197.298(3) to determine whether there is "inadequate land to serve a need." *Id.*

The Commission notes that the ***Hildenbrand*** and ***West Linn*** opinions involve local decisions made *before* the Commission's amendments to Goal 14 and adoption of Goal 14 implementing rules for urban growth boundary amendments took effect. OAR 660-024-0060 (Boundary Location Alternatives Analysis) was adopted to provide guidance to local governments concerning how to evaluate lands for inclusion into a UGB, harmonizing ORS 197.298 and the Goal 14 location factors.

The Court's basic point in ***Hildenbrand*** was that the "exceptions" of ORS 197.298(3) and the Goal 14 location factors, together with the "priorities" of ORS 197.298(1), have roles to play in determining whether there is adequate land to serve an identified need for urbanizable land. That remains the case after the Commission's amendments to Goal 14 and its adoption of OAR 660-024-0060, but the roles and relationship between these statutory and rule provisions

has been clarified in OAR 660-024-0060.

Under OAR 660-024-0060, when evaluating lands for possible inclusion in its urban growth boundary for *general* residential and employment needs, the first step for the City is to determine whether land in the highest priority category under ORS 197.298(1) (here, exception lands) is "suitable to accommodate" those general land needs. OAR 660-024-0060(1)(a). This legal standard is intended to be exacting. The fact that it may cost more to provide services to some lands than others does not, by itself, mean that the land will not accommodate a general land need. Similarly, the fact that certain lands will yield few new homes or little development relative to other lands does not mean that they will not accommodate a general need for residential or employment uses during the planning period.

If the City can show that lands would not provide any residential or employment uses over the planning period, it may exclude them at this stage. For example, lands that are not "buildable lands" as that term is defined in the Commission's rules interpreting Goal 10 (Housing) (OAR 660-008-0005(2)) would not be included in the city's buildable lands inventory if they were included in the UGB and, as a result, should not be included in the UGB expansion area (unless needed for some other purpose).[38] Similarly, lands that are not "serviceable" and "suitable" as those terms are defined and used in the Commission's rules interpreting Goal 9 (Employment) (OAR 660-009-0005(9) and (12) and 660-009-0025(1) and (2)) would not meet the city's need for employment lands during the planning period if they were included in the UGB and, as a result, should not be included in the UGB expansion area (unless needed for some other purpose).

[38] Under OAR 660-008-0005(2)(e), land is not buildable if it "cannot be provided with public facilities." This test is intended to reflect both physical and practical limitations, including financial limitations. E.g., if it is clearly financially infeasible to provide public facilities to lands during the planning period, they should not be included within the buildable lands inventory or included within a UGB expansion area,

The City may use other suitability criteria based on the Goal 14 locational factors,[39] but in order to exclude lands for generalized housing or employment land needs the City must show, with an adequate factual base, that the lands will not accommodate any of its general land needs during the planning period.[40] Such a showing also may be based on ORS 197.298(3)(b) – e.g., that "[f]uture urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints." Again, the showing will depend of the City having an adequate factual base and supporting findings showing that lands excluded under this provision meet the statutory standard.

As noted above, the Commission intended in adopting OAR 660-024-0060 that this, initial, step in the locational analysis for general land needs of excluding lands *before* any comparative analysis is done between alternatives be a "high bar," in line with how the Land Use Board of Appeals (LUBA) had applied the exceptions test to local decisions excluding exceptions lands from urban growth boundary expansions. See, e.g., ***DLCD v. Douglas County***, 36 Or LUBA 26 (1999) ("Factors that may have the effect of eliminating alternative sites because they are somewhat more expensive to develop are inadequate to demonstrate the eliminated alternative site cannot reasonably accommodate the identified need.); ***1000 Friends of Oregon, et al v. Metro***, 38 Or LUBA 565 (2000)("Metro must determine whether exception lands can reasonably accommodate the proposed use. As we stated in ***Parklane I*** and ***Residents of Rosemont***, exception criterion (ii) is not satisfied by findings that alternative sites to resource lands cannot accommodate the proposed use 'as well as' those resource lands … a finding that the resource land has relatively fewer developmental constraints or a higher percentage of buildable lands than an alternative site is not sufficient to satisfy the 'reasonably accommodate'

---

[39] OAR 660-024-0060(1)(e) provides that:

> "(e) For purposes of this rule, the determination of suitable land to accommodate land needs must include consideration of any suitability characteristics specified under section (5) of this rule, *as well as other provisions of law applicable in determining whether land is buildable or suitable*." (Emphasis added (the terms "buildable" and "suitable" are addressed above)).

And, OAR 660-024-0060(5) provides that:

> (5) If a local government has specified characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need, the local government may limit its consideration to land that has the specified characteristics when it conducts the boundary location alternatives analysis and applies ORS 197.298.

[40] The reference in OAR 660-024-0060(5) to "specified characteristics" * * * "for land to be suitable for an indentified need," is to ORS 197.298(3)(a) "specific types of identified land needs," not to general land needs for future residential and employment uses.

standard”).[41]

For specific types of identified land needs (ORS 197.298(3)(a)), where the City has made a determination supported by an adequate factual base that a particular use with particular locational requirements is needed during the planning period and must be located in a particular location within the expansion area (as a result of its locational requirements), the City may use those requirements to exclude other lands as unsuitable (for that use) at this first stage (before a comparison between alternative sites is done). OAR 660-024-0060(5). This issue is addressed in more detail, in connection with issue 9.2, below.

e. Conclusion

The Commission remands the city's decision for it to conduct a locational analysis for its UGB expansion consistent with the procedures described below. To the extent that any objection or appeal is inconsistent with the analysis above, the Commission denies the objection and denies the appeal, for the reasons stated above.

In evaluating which lands to include within its UGB expansion on remand, the City must follow the following steps:

1. Establish suitability criteria for general housing, employment, and related land needs. These criteria must be consistent with (in the sense of implementing, or being in harmony with) the definitions in OAR 660-008-0005(2) (for lands planned for future general residential uses), and 660-009-0005(9) and (12) and 660-009-0025(1) and (2) (for lands planned for future general employment uses) as well as other provisions of law applicable in determining whether the land will meet the city's general land needs.

2. Document the criteria used to locate lands required to meet any "specific identified needs" as allowed by ORS 197.298(3)(a). The identified land needs include a future university site, a medical center, and two large-lot industrial uses.

3. Document (through existing or supplemental findings) that the sites identified by the City for a university, a medical center, and two large-lot industrial uses. The Commission agrees with the City that these identified future uses are justified under 197.298(3)(a). The City must demonstrate, however, through additional findings, that these future uses cannot reasonably be accommodated within the prior UGB.

[41] See also, ***Residents of Rosemont v. Metro***, 38 Or LUBA 199 (2000) and ***1000 Friends of Oregon v Metro***, 38 Or LUBA 565 (2000).

4. Apply the suitability criteria (from step 1, above) for general housing, employment and related land needs to exception lands within the expansion study area. In this step, the City must identify exception lands (including lands designated by the City as urban area reserve) that will not accommodate any of its general land needs during the planning period. These lands may be "screened out" from further analysis.

5. For its remaining (general) future land needs over the planning period, the City must compare the remaining (after the screening described above for suitability) exception lands using the Goal 14 locational factors to determine which of those lands are best to include in its UGB expansion area.[42] In this step, the City may rely on ORS 197.298(3)(c) (maximum efficiency of land uses *** requires inclusion of [resource lands] *** to include or to provide services to [the exception lands]") to *include* resource lands, particularly resource lands interspersed with exception lands, within its UGB expansion area. Resource lands included under ORS 197.298(3)(c) need not be evaluated for soil capability, as called for under ORS 197.298(2).

6. If the City is unable to accommodate its need for additional lands during the planning period after undertaking the preceding steps, it may then evaluate lands in the next priority category under ORS 197.298(1) (e.g., resource lands) for its general land needs. If theh City does so, it must consider resource lands with lower soil capability first, as specified in ORS 197.298(2). To the extent that resource lands are needed to meet remaining (general) future land needs over the planning period, the City must apply the general suitability criteria used in Step 1 (above) and then compare suitable resource lands using the Goal 14 location factors to determine which of those lands are the best to include in its UGB expansion area.

9.2. Whether the City Applied the Exception (to the Statutory Priorities of What Lands to Include in a UGB Expansion Area) for "Specific Types of Identified Land Needs" (ORS 197.298(3)(a)) in a Manner that Complies with Applicable Statutes, Goal 14, and the Commission's Rules

a. Summary of Issue, Objector and Appellants

The City included three types of employment uses within its UGB expansion area (on resource lands) on the basis that it had a specific need for those particular uses, and that those

[42] "The goal of consideration under [the Goal 14 boundary location factors] is to determine the 'best' land to include within the UGB, based on appropriate consideration and balancing of each factor." The Goal 14 location factors "must be considered together and balanced, but individual factors are not independent approval criteria." *Alliance for Responsible Land Use v. Deschutes Cty*, 40 Or LUBA 304, 318-319 (2001), *aff'd* 179 Or App 348 (2002). *Also see* OAR 660-024-0060(1)(b).

uses had particular locational requirements under the commission's Goal 9 implementing rule (for site suitability). R. at 1181-1182. The issue is whether the city's decision was supported by an adequate factual base and adequate analysis and findings to include land for these uses within the UGB expansion area, and at the particular locations specified. The Director found that the City had adequately justified its need for these three uses, but that the City had not explained why the uses needed to be located in particular locations in the UGB expansion area rather than within the existing UGB. Director's Decision, at 134. The City appealed this aspect of the Director's Decision, arguing that it's findings were adequate. City Appeal, at 86-90.

b. Legal Standard

ORS 197.298(3)(a) provides:

> "(3) Land of lower priority under subsection (1) of this section may be included in an urban growth boundary if land of higher priority is found to be inadequate to accommodate the amount of land estimated in subsection (1) of this section for one or more of the following reasons:
>
> (a) Specific types of identified land needs cannot be reasonably accommodated on higher priority lands * * *."

c. Summary of Local Action, Director's Decision, and Appeals

As described above, the City included land in its UGB expansion for a future university site, a medical center, and two large-lot industrial uses. The Director agreed with the City that it had shown a specific need under ORS 197.298(3)(a), but remanded the decision for adoption of adequate findings explaining why the need could not be accommodated within the prior UGB. The City appealed, arguing that its finding that there were no lands in the current supply for these uses was adequate. City Appeal, at 90.

d. Analysis

The has established site suitability criteria for these three uses The Director found that those criteria complied with the applicable Commission rules under Goal 9, and the Commission concurs. The remaining work for the City on remand is simply to show, using those criteria, that the uses "cannot reasonably be accommodated" within the prior UGB. The Commission concurs with the Director that the city's present findings are conclusory and lack the required reasoning tying the criteria to the facts found.

e. Conclusion

The Commission concludes that the City has made an adequate showing under ORS

197.298(3)(a) that there is a specific identified land need for a future university campus, a site for a future medical center, and for two 50-acre large lot industrial sites. The City must, however, analyze whether these needs could reasonably be accommodated within the prior UGB using its site suitability criteria and buildable lands inventory, and adopt findings explaining its reasoning. The Commission affirms the Director's Decision on this issue, including the Director's disposition of objections for the reasons stated in the Director's Decision, and denies the city's appeal.

9.3. Whether the City Properly Applied ORS 197.298(3)(c), in Determining that the Maximum Efficiency of Land Uses within the Urban Growth Boundary Requires Inclusion of Lower Priority Lands in Order to Include or to Provide Services to Higher Priority Lands

a. Summary of Issue, Objectors and Appellants

The City included some agricultural lands on the east side of the city in its UGB expansion area, and argued that inclusion of these lands was justified under ORS 197.298(3)(c). The Director generally agreed, but remanded the city's decision because it was based on the city's public facilities plan, which the Director had determined did not comply with state requirements. Department Report on Appeals, at A-62. The City and Swalley appealed.

b. Legal Standard

ORS 197.298(3)(c) authorizes a local government to *include* lands that would otherwise be a lower priority for inclusion in an urban growth boundary (typically, resource lands), when those lands are required in order to include higher priority lands or in order to provide services to higher priority lands.

c. Analysis

This issue is addressed, for the most part, under issue 9.1 above. The Commission has previously approved local decisions under this authority that have been upheld by the Oregon Court of Appeals. Examples include the City of Brookings, where agricultural lands were included in order to extend services to exception lands in the hills above the city, and the Bethany area in Washington County, where agricultural lands were included in order to allow a looped sewer system to serve more distant exception lands. The City will need to work through the particular application of ORS 197.298(3)(c) to the facts on remand, and that application may depend, in part, on what the City does with its public facilities plans.

d. Conclusion

The Commission affirms the Director's Decision on this issue, and denies the appeals. ORS 197.298(3)(c) may be used, as described above under issue 9.1., where resource lands are interspersed with exception lands, and in order to urbanize (provide public services to) exception lands that couldn't otherwise be served.

9.4. Whether the County's Urban Area Reserve Lands are Exception Lands or Resource Lands Under ORS 197.298(2)

a. Summary of Issue, Objectors and Appellants

Swalley argued in its objections, and continued to argue on appeal, that lands designated as Urban Area Reserve (UAR) are resource lands because no valid exception was taken to Goal 3 when the lands were planned and zoned UAR. Swalley and COLW also argue that the Director erred in interpreting ORS 197.298(2), because this statute (requiring consideration of lowest quality agricultural soils first for a UGB expansion) applies to all of the priorities in ORS 197.298(1), not just to resource lands. COLW Appeal at 5.

b. Legal Standard

ORS 197.298(1) makes exceptions lands a higher priority for inclusion within a UGB than resource lands. In this context, lands are exceptions lands if they were planned for a rural use other than agriculture or forestry on the basis of existing development or commitment to other uses, or on the basis of a reasons exception.

c. Summary of Local Action, Director's Decision and Appeals

In the applying the statutory priority of lands to be included within an UGB under ORS 197.298, the City considered parcels designated UAR as exception lands. R. at 162, 1177. In addition, the Bend Area General Plan (the city's comprehensive Plan) states that "Lands in this Urban Reserve area [land zoned UAR] are considered first for any expansion of the Urban Growth Boundary." Because of this plan provision, the City ranked UAR-zoned land higher than other exception land and included it in the UGB expansion before considering the other exception parcels zoned Suburban Residential 2.5-acre minimum, MUA 10-acre minimum, and Rural Residential 10-acre minimum. R. at 175, 1190.

d. Analysis

The Director's Decision determined:

> "On June 25, 1981, LCDC acknowledged the City of Bend comprehensive plan, which included city and county exceptions to Goals 3 and 4 for approximately 6,858 acres of land outside the 1981 UGB. These lands were designated UAR, 10-acre minimum parcel size (UAR-10), Suburban Residential, 2.5-acre minimum parcel size (SR 2½), and Surface Mining (SM). Parcels zoned UAR are therefore exception lands. UAR parcels in Deschutes County have not been designated as urban reserves under ORS 195.145. UAR lands in Deschutes County are exception lands." Director's Decision, at 131 (citations and footnote omitted).

On appeal (Swalley Appeal, at 12-15), Swalley confused the issue by ignoring what the Director's Decision said (which is quoted above). The Director determined that LCDC acknowledged the city's comprehensive plan in 1981. The city's proposed UGB included the UAR lands, and the City and County co-adopted the ordinances as referenced in Exhibit A to the Department's Report on the Appeals. The commission's acknowledgement order states that: "Based on these considerations, the City and County are taking an exception to Goal 3 and 4 as they relate to the land between the IUGB and UGB." Exhibit A to Bend UGB, Director's Decision, at 6. The Commission takes official notice of the 1981 Acknowledgement Order of the city's UAR land designations.

In sum, the city's acknowledged plan included Goal 3 and 4 exceptions for the UAR lands, which were placed in several zoning districts including UAR-10 and SR 2 ½, and these lands are exceptions areas for purposes of ORS 197.298.

e. Conclusion

The Commission concludes that the county UAR lands are exceptions lands under ORS 197.298, denies the appeals and related objections for the reasons stated above and in the Director's Decision and in the Department's Report on Appeals, and affirms the Director's Decision on this issue.

9.5 Whether the City Was Required to Exclude Lands from its UGB Expansion Area Because they Would be So Expensive to Develop that They Would Not Meet the City's Need for Affordable Housing

a. Summary of Issue, Objectors and Appellants

Central Oregon LandWatch (COLW) argued on appeal that the city should have excluded exception land west of the Bend UGB from its UGB expansion area because the land will be so expensive to develop that it will not meet the city's need for affordable housing.

COLW Appeal, at 5.

b. Legal Standard

Under ORS 197.298(3)(a), land of lower priority may be included in a UGB if land of higher priority "is inadequate to accommodate the amount of needed land" or because "specific types of identified land needs cannot be reasonably accommodated on higher priority land."

c. Analysis

ORS 197.298(3)(a) provides authority for a local government to *include* particular lands needed for a particular type of use. The statute does not provide a basis for *excluding* lands from a UGB expansion area, particularly to exclude a general type of land need such as land for the housing types a city has determined are needed under Goal 10. Further, the cost of land is not the type of locational requirement for a specific use that is contemplated by ORS 197.298(3)(a), Goal 14, and the Commission's implementing rules.

d. Conclusion

The Commission denies the appeal and affirms the Director's Decision, for the reasons set forth above, and in the Director's Decision.

9.6. Whether the City May Exclude (as Unsuitable) all Lots and Parcels of Less than Three Acres that Contain a House

This issue is a specific application of the general issue addressed above, as issue 9.1. The Commission concludes that due to the scope of the remand, it is premature to determine whether particular suitability criteria may be used as a screen by the City to eliminate lands from further consideration for inclusion in the expansion area. On remand, the City must reexamine its criteria and determine whether and how to apply them, using the steps described above under issue 9.1.

9.7. Whether the Threshold Suitability Criteria Used by the City Have an Adequate Factual Base

This issue is a specific application of the general issue addressed above, as issue 9.1. The Commission concludes that due to the scope of the remand, it is premature to determine whether particular suitability criteria may be used as a screen by the City to eliminate lands from further

consideration for inclusion in the expansion area. On remand, the City must reexamine its criteria and determine whether and how to apply them, using the steps described above under issue 9.1.

9.8. Whether the City and County Must apply Deschutes County Code Section 23.48.030 as a Standard for this UGB Expansion Decision

a. Summary of Issue, Objectors and Appellants

Deschutes County lists the *former* Goal 14 factors in the urbanization element of its comprehensive plan. Swalley Irrigation District argues that these are more restrictive local approval criteria that the County and City must comply with in making a UGB decision.

b. Analysis

Appellant Swalley withdrew its appeal at oral argument. In addition, the Commission does not agree that the cited county comprehensive plan provisions are more restrictive local requirements. Rather, the county's codification of the *former* Goal 14 need and location factors conflicts with the amended Goal 14 and Goal 14 rules (OAR 660-024). In this circumstance, ORS 197.646(4) applies and the local plan provisions are preempted by the revisions to Goal 14 and the Goal 14 rules. Under Swalley's argument, the commission's amendments to Goal 14 and the Goal 14 rules would never become effective until a local government had amended its comprehensive plan to adopt corresponding local plan and code provisions. ORS 197.646(4) was enacted to prevent this result.

c. Conclusion

The Commission denies the appeal, and affirms the Director's Decision on this issue, for the reasons stated above and in the Director's Decision.

9.9. Whether the Commission Should Remand the Submittal Specifically for Reconsideration of the Exception Areas to the Northwest of the Prior UGB

This issue is a specific application of the general issue addressed above, as issue 9.1. The Commission concludes that due to the scope of the remand, it is premature to determine whether these lands should or should not be included in the UGB expansion area. On remand, the City must reexamine these lands and determine whether to include them or not, using the steps described above under issue 9.1.

9.10. Whether the City Established that Excluding the Buck Canyon Area is Consistent with the Statutory Priorities of ORS 197.298

This issue is a specific application of the general issue addressed above, as issue 9.1. The Commission concludes that due to the scope of the remand, it is premature to determine whether ORS 197.298 applies in such a manner as to require the City to meet some of its identified need in the Buck Canyon area. On remand, the City must reexamine these lands and determine whether to include them or not, using the steps described above under issue 9.1.

10. Other Issues

10.1. Whether the Validity of Objections to the City's Decision Is Relevant to the Commission's Decision on Appeals of the Director's Decision?

a. Summary of Issues, Objectors and Appeals

The City argued on appeal that certain objections filed by other parties were not valid under the commission's rules, and argued that those objections should not have been considered by the Commission.

b. Legal Standard

OAR 660-025-0140(2) establishes the commission's requirements for objections. However, OAR 660-025-0150(4) allows *both* persons who filed valid objections, *and* persons who participated orally or in writing at the local level during the local process on the work task to appeal a decision by the director to remand or partially remand a work task to the commission.

c. Summary of Director's Decision and Appeals

The Director rejected the objections of several objectors as being invalid. Director's Decision, at 11. However, the City appealed, arguing that additional objections were invalid under OAR 660-025-0140(2). City Appeal, at 13 and at Appendix B.

d. Analysis

The objections challenged by the City were filed by persons who participated orally or in writing in the proceedings before the city. As a result, under OAR 660-025-0150(4), these persons had the right to participate in the appeal even if a specific objection they raised did not meet the requirements of OAR 660-025-0140(2). In addition, while the Director must consider all objections, the Director is not limited to issues raised by objectors in his evaluation of the submittal (the Director may consider issues even if they also are raised in an invalid objection). As a result, the city's appeal provides no basis for relief under the circumstances of this case.

e. Conclusion

The Commission determines that the parties participating in the appeals properly were before the Commission, and that the issues considered by the Commission were properly raised. At oral argument before the Commission, the City agreed not to contest this issue. As a result, the Commission denies the appeal of the City on this issue.

10.2. Whether the City and County Applied Appropriate Comprehensive Plan and Zoning Designations to the UGB Expansion Area?

a. Summary of Issue and Related Objections

The Director determined that the comprehensive plan and zoning designations adopted by the city and county for the UGB expansion area did not comply with state law. Director's Decision at 56-58. Specifically, the Director found that the zoning designations adopted by the County allowed more intense development than the prior county zoning, that the City and County failed to adopt comprehensive plan designations for lands added to the UGB to meet a "specific identified land need," and that the effect of the city's framework plan in light of the urban growth management agreement between the City and County needed to be clarified. This last point also was raised in an objection filed by Tumalo Creek Development LLC, which contends Bend violated Goal 2 by assigning future plan designations in the proposed Framework Plan to lands outside its jurisdiction. Tumalo Creek Objection, at 2.

b. Legal Standard

Goal 14 provides, in pertinent part, that:

> "Establishment and change of urban growth boundaries shall be a cooperative process among cities, counties and, where applicable, regional governments. An urban growth boundary and amendments to the boundary shall be adopted by all cities within the boundary and by the county or counties within which the boundary is located, consistent with intergovernmental agreements* * *."
>
> * * *
>
> Urbanizable Land
>
> Land within urban growth boundaries shall be considered available for urban development consistent with plans for the provision of urban facilities and services. Comprehensive plans and implementing measures shall manage the use and division of urbanizable land to maintain its potential for planned urban development until appropriate public facilities and services are available or planned."

The statewide planning goal definitions as amended April 28, 2005 define “urbanizable land” as:

> “Urban land that, due to the preset unavailability of urban facilities and services, or for other reasons, either:
>
> (a) Retains the zone designations assigned prior to inclusion in the boundary; or
>
> (b) Is subject to interim zone designations intended to maintain the land’s potential for planned urban development until appropriate public facilities and services are available or planned.”

OAR 660-024-0050(6) provides that:

> "When land is added to the UGB, the local government must assign appropriate urban plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development. The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB."

c. Summary of Local Actions, Director's Decision, and Appeals

The lands added to the UGB were given a comprehensive plan designation of "urban growth boundary" by Deschutes County, and were zoned Urban Holding 10 and Urban Holding 2.5 (some lands were zoned "Public Facilities" and some zoned "Surface Mining"). Within these zones, cluster development is allowed with a minimum lot size of 15,000 square feet and a maximum lot size of ½ acre. DCC section 19.60. The prior zoning of these lands was largely Urban Area Reserve (allowing one home on ten acres) Multiple Use Agriculture 10, and Exclusive Farm Use. In addition, although the city does not have land use jurisdiction over the lands added to the UGB, it adopted a "Bend Urban Area Proposed General Plan Map" with both proposed comprehensive plan designations (for some areas), and proposed master plan designations and general land allocations (for the remaining areas). The county's comprehensive plan text "* * *recognizes the city's comprehensive plan as the policy document that provides the basis for implementing land use plans and ordinances in Bend's Urban Growth Boundary." In addition, the county adopted by reference the city's plan provisions for the UGB – evidently including the proposed general plan map and master plan designations noted above.

d. Analysis

OAR 660-024-0050(6) requires that the comprehensive plan designations for lands added to an urban growth boundary be consistent with the local governments' need determination. In this case, the City of Bend has determined a need to expand its UGB based on three specific identified land needs under ORS 197.298(3)(a) (225 acres for a future university site, 112 acres for a new hospital site, and two, 50-acre Industrial Sites (Targeted Sector and Heavy Industrial Site). Under OAR 660-024-0050, the comprehensive plans of the county and city (maps and

text) must clearly designate the areas planned for these uses to assure that they are, in fact, used for their intended purpose. The adopted plans and maps do not clearly do so.

OAR 660-024-0050(6) also requires that "* * * [t]he local government must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development." The zoning designations adopted by Deschutes County allow a higher level of development than that permitted under the prior UAR, MUA and EFU designations. Of particular concern are several areas of UAR 2.5 zoning and areas where the zoning has changed from EFU to UAR 10. The City and County should either maintain the former county zoning until areas added to the UGB are ready to urbanize, or the City must specifically determine that the new zoning maintains the likelihood that the land will develop for the uses and at the intensity that the city's underlying analysis of the capacity of the lands is based on.

Similarly, under OAR 660-024-0020(1)(d) "the transportation planning rule requirements under OAR 660-012-0060 need not be applied to a UGB amendment *if* the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary." On remand, the City and County must either retain the prior zoning (before the UGB expansion) or expressly analyze and determine that the assigned interim zoning will not generate more vehicle trips than development allowed by the prior zoning.

The final aspect of this subissue is the applicability of the city's comprehensive plan map and policies within the UGB expansion area. The county's comprehensive plan indicates that the city's plan map and policies will control within the expansion area. However, the city's plan map and policies do not contain similar corresponding provisions. On remand, the City and County should clarify the applicability of the city's plan map and plan policies within the UGB expansion area, including the city's Framework Plan map.[43]

[43] Ideally, such provisions should be included within the city's comprehensive plan, and should reference the intergovernmental agreement between the city and the county that details responsibilities for administering planning and zoning responsibilities in this area.

e. Conclusions

For the reasons stated above, the commission denies the city's appeal and affirms the director's decision. On remand, the city and county must:

- Clearly designate on the appropriate comprehensive plan map, the areas planned for the specific identified land needs described in the city's analysis under 197.298(3)(a), and include policies to assure that the lands are, in fact, used for their intended purpose;
- Either maintain the former county zoning districts until areas added to the UGB are ready to urbanize, or specifically determine that interim zoning designations maintain the likelihood that the land will develop for the uses and at the intensity that the city's underlying analysis of the capacity of the lands is based on;
- If the County or City adopt interim zoning for the UGB expansion area, they must determine that the assigned interim zoning in each area will not generate more vehicle trips than development allowed by the zoning designations in place before the UGB expansion; and
- The City and County must coordinate, and clarify the applicability of the city's plan map and plan policies, including its Framework Plan map, within the UGB expansion area.

10.3. Whether the City Complied with ORS 197.610 by Failing to Provide Adequate Notice of the Proposed Amendments to its General Plan?

Several objectors argued that the City failed to comply with applicable requirements for public notice of its hearings on the UGB expansion as well as its public facility plan amendments. The Director's Decision upheld those objections, Director's Decision, at 148-150, and the Commission concurs for the reasons set forth in that decision. The City has agreed to re-notice its hearing(s) on remand on the UGB expansion and related amendments to its General Plan (including its public facilities plan), including providing a new 45-day notice under ORS 197.610.

10.4. Whether the City Met its Goal 2 Coordination Obligations with Regard to Swalley Irrigation District?

a. Summary of Issues and Related Objections

Swalley Irrigation District (Swalley) and Toby Bayard allege that the City and County failed to coordinate with the Swalley and other governmental entities, as required by Goal 2. In particular, Swalley alleges that the submittals were not coordinated with the district in the sense that the district's needs were considered and accommodated as much as possible. Goal 2; ORS 197.015(5). Swalley Objection 2(A), at 28-34. Bayard Objection 2, at 27-33. On appeal, Swalley did not pursue this objection, nor did Bayard. However, neither did they withdraw their objections and, as a result, the Commission addresses them.

b. Legal Standard

The coordination elements of Goal 2 require local governments to exchange information with affected governmental units. In addition, information received from affected governmental units must be used by the adopting local government. *Santiam Water Control District v. City of Stayton*, 54 Or LUBA 553, 558-559 (2007); *DLCD v. Douglas County*, 33 Or LUBA 216, 221 (1997); *Brown v. Coos County*, 31 Or LUBA 142, 145 (1996). The adopting government must provide "notice clearly explaining the nature of the proposal and soliciting comments concerning the proposal." *1000 Friends of Oregon v. City of North Plains*, 27 Or LUBA 372, 394, *aff'd* 130 Or App 406 (1994). A local government's 45-day notice to DLCD is not sufficient for this purpose. *Id*.

Similarly, newspaper notice is not sufficient. *Adkins v. Heceta Water District*, 23 Or LUBA 207, 218 (1992). Finally, the local government's findings must address the concerns raised; simply rejecting the concerns or deferring addressing them to a later time is not sufficient. *Cox v. Polk County*, 49 Or LUBA 78, 89 (2005). *DLCD v. Douglas County, supra*. Goal 2 and ORS 197.015(5) do not mandate success in accommodating the needs or legitimate interests of all affected governmental agencies, but they do mandate a reasonable effort to accommodate those needs and legitimate interests "as much as possible." *Turner Community Association v. Marion County*, 37 Or LUBA 324, 353-354 (1999). From the foregoing, the coordination requirement of Goal 2 is satisfied where the local government has engaged in an exchange of information regarding an affected governmental unit's concerns, put forth a reasonable effort to accommodate those concerns and legitimate interests as much as possible, and made findings

responding to legitimate concerns.

c. Summary of Local Actions, Director's Decision and Appeals

The City adopted findings summarizing its coordination with irrigation districts, including Swalley. [R. at 1214-1215] Those findings describe how the City and Swalley communicated, and the city's consideration of the concerns raised by the district.

According to the city's findings, it removed a 332-acre area entirely within the district. Also according to the City it "cannot balance SID's opposition to urbanization with the need for urbanization of the identified lands, for all of the reasons explained in the city's findings." [R. at 1215]

d. Analysis

The Director concluded that the City complied with the coordination elements of Goal 2. Director's Decision, at 152. The City met with the district; conducted an analysis of the acreage of irrigated lands affected by the proposal; removed some irrigated lands from the proposal; and adopted findings describing the district's concerns and how they were accommodated. Although the notice provided by the City was confusing, it met the requirements of Goal 2, and the district itself has indicated that it was able to make its concerns known in writing.

e. Conclusion

The Commission concurs with the director's conclusion that the city's and county's actions (the three City ordinances, and the two County ordinances) were adopted in compliance with the coordination requirements of Goal 2.

10.5. Whether the City Violated Goal 1 in How it Considered and Provided for Public Participation Regarding its Public Facility Plans?

a. Summary of Issues and Related Objections

Toby Bayard (and to some degree Swalley and Central Oregon LandWatch) alleges that the City failed to provide critical information to the public in a timely fashion, and made substantial last-minute changes in its proposal that had the effect of not allowing the public adequate time to comment. [Bayard Objection 1 at 1-26; Central Oregon LandWatch Objection at 6-8]

b. Legal Standard

Goal 1 is to "develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process." [OAR 660-015-0000(1)] Goal 1 establishes requirements for local citizen involvement programs. Its provisions do not apply to comprehensive plan amendments unless those amendments include the government's citizen involvement program. The city and county submittals do not amend or affect either the city's or county's citizen involvement program. Under those circumstances, the submittals are in violation of Goal 1 only if the submittals include provisions that are inconsistent with the city or county citizen involvement programs. *Homebuilders Assoc. v. Metro*, 42 Or LUBA 176, 196-197 *aff'd Homebuilders Assn. of Metropolitan Portland*, 184 Or App at 669. No objector attempts to establish that the submittals include provisions that are inconsistent with either citizen involvement program. In addition, the objectors do not identify any specific provision of the city's citizen involvement program that has been violated. See, General Plan, Chapter 1.

c. Summary of Local Actions, Director's Decision, and Appeals

The city did not amend its citizen involvement program.

d. Analysis

Because the City is not amending its citizen involvement program, Goal 1 does not establish requirements for the local government actions under review by the Commission.

e. Conclusion

The Commission upholds the director's decision and denies the Bayard, Central Oregon LandWatch and Swalley objections and appeals concerning Goal 1, because the goal does not establish legal requirements for the actions under review.

10.6. Did the City place information in the record after the public hearing was closed and, if so, does this require remand?

The City has agreed to re-notice its hearing(s) on the urban growth boundary expansion, and to allow new evidence to be introduced into the record. As a result, this subissue is no longer relevant to the commission's decision.

10.7. Should the commission more clearly define the scope of the remand?

COLW argued on appeal that the Commission should more clearly identify specific tasks

that the city must complete on remand relative to the Director's Decision. COLW Appeal, at 7-8. The Commission, through this order, has provided an appropriate level of detail in its remand to the City. COLW identified four specific objections that it argues should be sustained or denied:

> "The city must consider Tetherow and other second home development in the region to determine how many units and how much acreage is needed in the UGB."
>
> "EOA assumptions regarding vacancy rates and institutional use, open space and right-of-way must be re-determined."
>
> "The city needs to consider the impact of west side expansion on widening Newport and Galveston Streets which would violate a city plan policy that restricts widening of these streets."
>
> "* * * On pages 118-122. Table 3 should be clarified to include the listing of sustained objections in pages 124-125. Also, an additional sustained objection of LandWatch (page 113) not included in either of these lists and should be: "The city needs to justify its assumption that parcels smaller than three acres with a house are unsuitable." COLW Appeal, at 7-8.

The objections listed above are denied, for the reasons set forth earlier in this order.

VII. Compliance with Applicable Statutes, Statewide Land Use Planning Goals and Implementing Rules

Except as specifically modified in this order, the Commission concurs with the Director's Decision concerning the applicability of the statewide planning goals and their implementing rules to the city's decisions, and whether those decisions comply with the goals and rules. See, Director's Decision, at 154-156 (goal findings). Except as modified in this order, the Commission concurs with the Director's Decision concerning whether the city and county decisions comply with applicable state statutory requirements and applicable implementing rules of the Commission.

Conclusion

Based on its consideration of the record as a whole, including the city's and county's submittals, the objections, the Director's Decision, the appeals of the Director's Decision, the Department's Report, exceptions and oral argument, the Commission concludes and orders that:

1. The City of Bend's Water Reclamation Facilities Plan (2008), Carollo Engineering (including technical memoranda nos. 1 – 10 (2008)), submitted in connection with Ordinance Number NS-2111, complies with the applicable statewide planning goals, their implementing rules and state statutes, and is hereby approved pursuant to OAR 660-025-0150 and 660-025-0160 (partial approval);
2. The remainder of the City of Bend's Ordinance Number NS-2111 and the other accompanying public facilities plans (except the Airport Water System Master Plan, which the City has withdrawn) do not comply with the applicable statewide planning goals, their implementing rules and state statutes for the reasons set forth in this order, and are hereby remanded to the City for further proceedings consistent with this order and (to the extent not appealed) the Director's Decision;
3. The City of Bend's Ordinance Number NS-2112, concerning the city's legislative amendment of its urban growth boundary, along with the accompanying amendments to the city's comprehensive plan (listed R. at 1050-1051) do not comply with the statewide planning goals, their implementing rules and state statutes for the reasons set forth in this order, and are hereby remanded to the City for further proceedings consistent with this order and (to the extent not appealed) the Director's Decision;
4. The City of Bend's Ordinance Number NS-2113, concerning certain amendments to the city's development code to adopt urban holding districts and provide for master plan development within such districts, along with the accompanying amendments to the city's code (R. at 1836-1848) do not comply with the statewide planning goals, their implementing rules and state statutes for the reasons set forth in this order, and are hereby remanded to the City for further proceedings consistent with this order and (to the extent not appealed) the Director's Decision;
5. Deschutes County's Ordinance No. 2009-001, concerning amendments to the county's code, comprehensive plan map, and transportation system plan map, does not comply with the statewide planning goals, their implementing rules and state statutes for the reasons set forth in

this order, and is hereby remanded to the County for further proceedings consistent with this order and (to the extent not appealed) the Director's Decision; and

6. Deschutes County's Ordinance No. 2009-002, concerning amendments to the county's code, and zoning map does not comply with the statewide planning goals, their implementing rules and state statutes for the reasons set forth in this order, and is hereby remanded to the County for further proceedings consistent with this order and (to the extent not appealed) the Director's Decision.

IT IS FURTHER ORDERED THAT:

Pursuant to OAR 660-025-0160(6)(b), the Commission establishes May 2, 2013 (2.5 years from date of this order) as the city's deadline to submit a revised determination under ORS 197.296 concerning its urban growth boundary. As set forth above in this order, the City may separately adopt a post-acknowledgement plan amendment for a public facilities plan or plans addressing facilities serving only lands within the city's prior UGB.

The Commission has considered every objection to the city's decisions and every appeal of the Director's Decision. Except for those that the Commission specifically sustained in this Order, all other objections are denied for the reasons set forth in this order or, if not addressed in this order, in the Director's Report. The Commission also has considered every appeal of the Director's Decision. Except for those appeals that the Commission specifically sustained in this Order, all other appeals are denied for the reasons set forth in this order or, if not addressed in this order, in the Department's Report on the Appeals.

DATED THIS 2nd DAY OF NOVEMBER 2010.

FOR THE COMMISSION:

John VanLandingham, Chair
Land Conservation & Development Commission

NOTE: You may be entitled to judicial review of this order. Judicial review may be obtained by filing a petition for review within 60 days from the service of this final order. Judicial review is pursuant to the provision of ORS 183.482 and 197.650.

Copies of all exhibits are available for review at the department's office at 635 Capitol Street NE, Suite 150, Salem.

DEPARTMENT OF LAND CONSERVATION & DEVELOPMENT

REPORT ON BEND AND DESCHUTES COUNTY'S AMENDMENT TO THE BEND URBAN GROWTH BOUNDARY

DLCD ORDER 001775

January 8, 2010

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 3
II. BACKGROUND AND DESCRIPTION OF UGB PROPOSAL 5
III. OBJECTIONS AND ANALYSIS 9
A. Organization of Review 9
B. Objectors and Status 9
C. Validity of Objections 11
D. DLCD Jurisdiction 12
E. Residential and Related Land Need 16
F. Economic Development Land Need 59
G. Public Facilities Plans 59
H. Transportation Planning 84
I. UGB Location 107
J. Natural Resources and Hazards 137
K. Procedural Issues 147
IV. CONCLUSIONS AND DECISION 154

EXHIBIT A: Excerpts from the July 7, 1981 LCDC Compliance Acknowledgment Order for the Bend comprehensive plan

EXHIBIT B: April 14, 2005 staff report to LCDC regarding UGB location factors

LIST OF FIGURES

1. Bend Urban Residential Lands and UGB Expansion Area 6
2. Medical District Overlay Zone 36
3. Exceptions Lands Zoning 117

LIST OF TABLES

1. Summary of UGB Expansion Needed for Housing and Related Uses (2028) 21
2. City findings and actions related to TPR Requirements for Metropolitan Areas 101
3. Findings Regarding Boundary Location Threshold Suitability Criteria 118

I. EXECUTIVE SUMMARY

The City of Bend is nationally recognized as a high-quality, desirable place to live and work. Bend is the seventh largest city in Oregon, and is one of the fastest growing communities in the state. Over the next twenty years, close to forty thousand new residents are expected in the city. Planning for the homes and jobs that current and future citizens will need is an important responsibility, and the decisions made now will have long-term consequences for the city and region.

The city and Deschutes County have made a substantial effort to plan for the future of the area in their decisions on the Bend urban growth boundary (UGB). The UGB establishes where the city will grow over the next twenty years. Setting this boundary and planning for the lands inside of it directly influences what types of housing are likely to be built, what employment opportunities the city is prepared for, and the future costs of public facilities. It also has important long-term consequences for where people live and work in the region, and the extent to which they need to drive to get from homes to jobs to shopping and other destinations.

This is a decision by the Director of the Oregon Department of Land Conservation and Development about whether the City of Bend and Deschutes County's UGB expansion complies with state land use laws. The decision is to remand the UGB expansion (along with a related amendment to the city's public facilities plan) back to the city and county for revisions needed for the decisions to conform with state requirements.

The director agrees with the city and county that a UGB expansion is needed, but the size of the expansion is over four square miles larger than the amount of land the local governments determined is needed. The director also agrees with the city and county that they have appropriately shown a need for land for a new university site and for a large-site general industrial area. However, the local governments need to complete technical work to document that lands for these important future uses can't be found within the existing city limits.

The director also determines that the city has not done an adequate job of planning for needed housing for current and future residents of Bend and the region. The city has documented a real need for more affordable housing, and for housing for people who work in Bend – to reverse the trend of workers leaving the city to find affordable housing. However, the city's planning for future residential development does not lay the groundwork for these types of housing to be developed in Bend.

State land use laws require cities to work to encourage growth to occur on vacant and underutilized lands within urban areas before expanding into rural areas. Bend has taken tentative steps in this direction, but its indefinite plans do not demonstrate that the city will meet its housing needs over the next twenty years.

Finally, the city and county decisions regarding where to expand the Bend UGB fail to explain (adequately) why certain lands are included, while others are not. An important aspect of this decision is the location of future sewer system investments, and the Director agrees that the planning for those system improvements is an important consideration in deciding where to locate the boundary. However, the findings and technical work supporting the decision are conflicting in some aspects, and do not appear to provide decision-makers with an adequate basis for making decisions about the long-term cost implications of expanding the boundary in particular locations.

The Department of Land Conservation and Development has committed a substantial amount of staff time and funding to working with the city and county to plan for the community's future. This decision is designed to help move that effort forward, and the department will continue to offer its assistance as Bend plans for its future.

II. BACKGROUND AND DESCRIPTION OF UGB PROPOSAL

The City of Bend adopted an 8,462-acre UGB expansion and supporting plan and code amendments on January 5, 2009. (See Figure 1, UGB Map, on the following page.) Deschutes County co-adopted the same UGB expansion along with its own supporting plan and code amendments on February 11, 2009. The city and county decisions were submitted to the department for review on April 16, 2009. In its submittal to the department, the city summarized its proposal as follows:

> The adopted UGB amendment is substantially different from previous submittals dated June 11, 2007 and October 8, 2008. Lands proposed to be included to the west and north are exception lands. Lands proposed to be included to the northeast and due east are a combination of exception and resource lands; lands to the south and southeast are exception lands. [Notice of Adoption of an UGB Amendment form dated April 16, 2009]

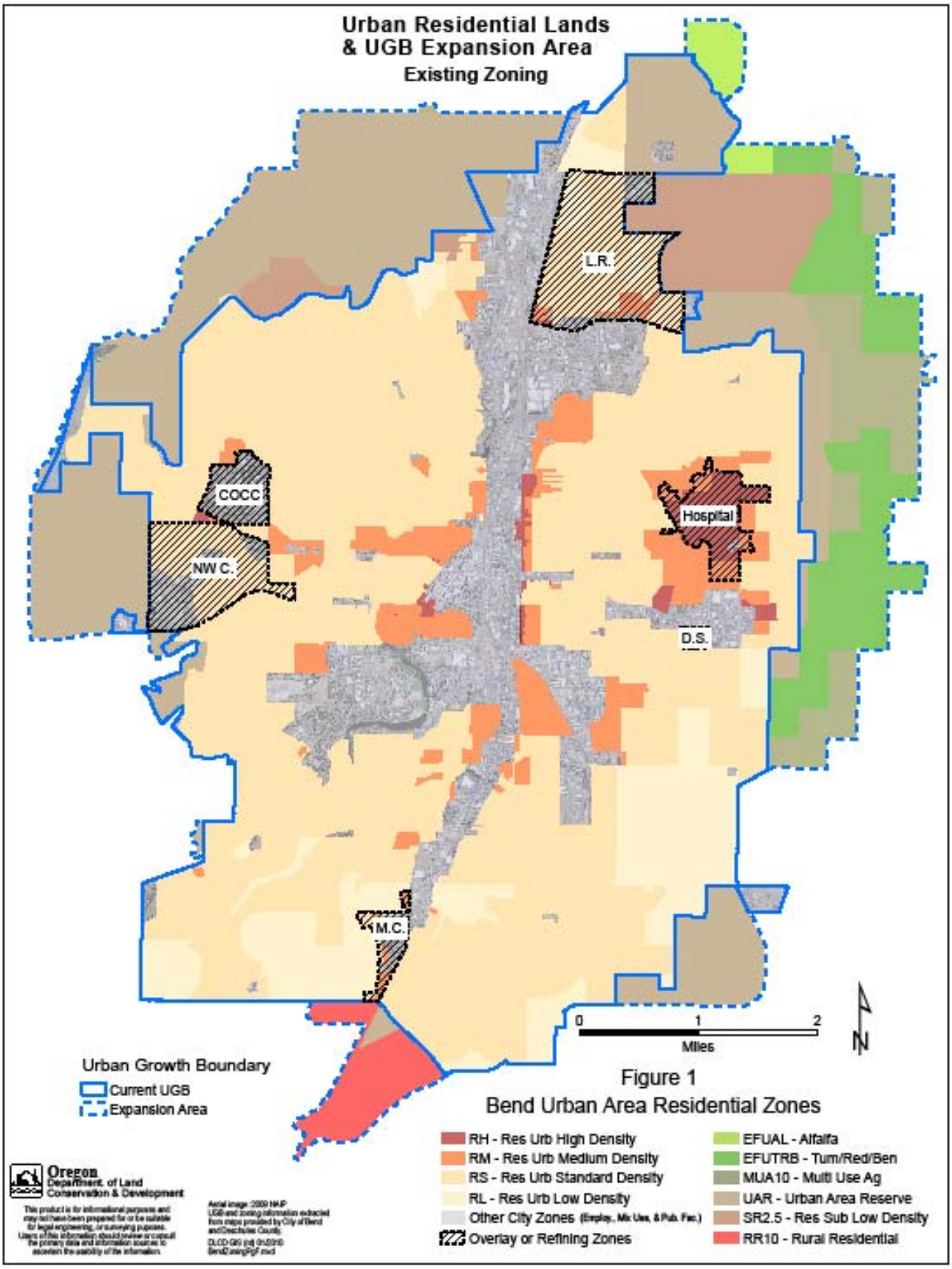
A. Background

The city began review of its need for additional land for housing in 2004, and later added an evaluation of its employment land needs as part of its UGB review. On June 11, 2007, the city submitted a notice of a proposed 4,884-acre UGB expansion to the department through a 45-day post-acknowledgement plan amendment notice. The notice also included a 14,775-acre urban reserve proposal, which was withdrawn from further consideration shortly thereafter. Following joint public hearings by the city and county planning commissions, it was decided locally that further work was needed on the UGB expansion proposal.

On October 8, 2008, the city submitted notice of a revised UGB expansion proposal that included 8,943 acres, 83 percent larger than the June 11, 2007 proposal. A joint planning commission hearing occurred on October 27, 2008, followed the next day by an adoption recommendation by the Bend Planning Commission. The Bend City Council and Deschutes County Board of Commissioners held a joint public hearing on the proposal on November 24, 2008 and considered certain changes to it. The written public hearing record remained open until December 1, 2008. After deliberation during December, 2008, the city council adopted the proposal on January 5, 2009.[1]

The Deschutes County Planning Commission forwarded its recommendation on November 13, 2008 and Board of Commissioners co-adopted the UGB expansion and

[1] The Bend City Council approved Ordinance NS-2111 related to amendments to sewer and water public facility plans involved with the UGB proposal, Ordinance NS-2112 related to justification of the UGB expansion and amendments to the Bend Area General Plan, and Ordinance NS-2113 concerning UGB-related amendments to the Bend Development Code.


Urban Residential Lands
& UGB Expansion Area
Existing Zoning
L.R.
COCC
NW C.
Hospital
D.S.
M.C.
0
1
2
Miles
N
Urban Growth Boundary
Current UGB
Expansion Area
Figure 1
Bend Urban Area Residential Zones
RH - Res Urb High Density
RM - Res Urb Medium Density
RS - Res Urb Standard Density
RL - Res Urb Low Density
Other City Zones (Employ., Mix Use, & Pub. Fac.)
Overlay or Refining Zones
EFUAL - Alfalfa
EFUTRB - Turn/Red/Ben
MUA10 - Multi Use Ag
UAR - Urban Area Reserve
SR2.5 - Res Sub Low Density
RR10 - Rural Residential
Oregon
Department of Land
Conservation & Development

related amendments to the county comprehensive plan and county zoning code on February 11, 2009.[2]

The city provided notice and submittal of the UGB expansion to the department on April 16, 2009. The submittal contained an approximately 14,000-page record, including the adopted ordinances NS-2112 and NS-2113. The submittal did not include Ordinance NS-2111, which adopted an amended public facility plan, although a copy of Ordinance NS-2111 was included in the April 16, 2009 submittal materials.

The 21-day objection period for the April 16, 2009 submittal ended on May 7, 2009, with 27 parties filing objections. Also on May 7, 2009, the department sent the city notice that the submittal was incomplete. The city responded to the department's notice on June 5, 2009.

On June 12, 2009, the city provided notice and submittal of its adoption of the public facility plans related to the UGB expansion, including the notice of adoption for Ordinance NS-2111. This submittal started a second 21-day objection period. This second objection period ended on July 6, 2009 with nine objecting parties, including some who had objected during the objection period for the UGB submittal.

The department determined that the city's submittals were complete on August 28, 2009, and consolidated the record for review in the manner of periodic review. This began the department's 120-day review period to prepare a decision on the consolidated submittal. The 120-day review period was extended to January 8, 2010 by agreement of the city, in response to a request from the department on December 15, 2009.

B. Summary of the UGB expansion

The UGB expansion adds 8,462 acres to the existing 21,247-acre Bend UGB, an approximately 40 percent increase. The expansion includes 2,866 acres for housing needs and related uses and 2,090 acres for employment needs and related uses, for a total land need of 4,956 acres. [R. at 1054, 1057-1058] The amendment includes 5,475 acres considered "suitable" and available for development, leaving a theoretical "surplus" of 519 acres. [R. at 1054] In addition to the 519-acres, the UGB amendment includes 2,987 acres considered unsuitable for satisfying housing and employment land needs.

Of the 5,475 acres considered "suitable" and available for development, 4,069 acres are exception lands, which (under state law) are the highest priority lands for UGB expansions. ORS.197.298. The remaining 1,407 acres are resource (farm) lands, which are the lowest priority lands for UGB expansions. [R. at 1058] The findings do not indicate the land priority of the 3,506 acres of land that have been included in the UGB expansion, but that are either unsuitable for housing and employment land, or are

[2] The Deschutes County Board of Commissioners approved Ordinance No. 2009-01, related to co-adoption of the proposed Bend UGB and associate comprehensive plan policies and Ordinance No. 2009-02, related to the county zoning map and zoning ordinance text for areas within the Bend UGB.

"surplus" according to the findings. These 3,506 acres represent 41.4 percent of the UGB expansion area.

In 2008, the population living within the prior UGB was reported to be 76,551. The city's 2028 planning year population is projected to be 115,063. [R. at 1302]

The city's housing needs analysis identifies a need for 16,681 new dwelling units over the 20-year planning period, of which 11,159 dwelling units would be accommodated in the prior UGB. [R. at 1070-1071, 1083] According to the decision, this leaves the need for 5,522 new dwelling units to expand on 941 net acres of expanded UGB area.[3] [R. at 1080, 1082]

The city projects that non-shift employment in 2028 will include 60,607 jobs citywide, of which 29,602 will be new employees. [R. at 1108, 1140] 2,090 acres of land were included in the UGB expansion to provide the sites necessary for this expanded employment base.

[3] Second homes and vacant homes are not included in these housing needs numbers.

III. OBJECTIONS AND ANALYSIS

A. Organization of Review

Due to the size of the submittals included in this proceeding, the large number of objections provided by objectors and the range of issues subject to objections, the department has consolidated its review of objections by major compliance topics. This review starts in section III.E.

Sections III.B and C address the status of the objectors, determining whether they meet the legal requirements for objections, and whether their objections meet the requirements for valid objections. Section III.D addresses objections to Department of Land Conservation and Development's jurisdiction to review a portion of the submittal – the City of Bend's adoption of Ordinance NS-2111, adopting amended public facilities plans that relate to and are used as one basis for the city and county decisions on the Bend UGB.

Starting with Section III.E, review of each consolidated compliance topic includes (a) a summary of the applicable legal requirements relating to that set aspect of the decisions, (b) a summary of the local government actions, (c) a summary of relevant objections and previous department comments, and (d) the director's analysis and conclusions. The analysis and conclusions in each section are collected together and repeated in the report's final section, which contains the director's conclusions and decision. In the event of any conflict between the conclusions in Section III. and the conclusions in Section IV, those in Section IV will control.

B. Objectors and Status

Persons who participated at the local level orally or in writing during the local process leading to the final decision may file an objection to the local government's UGB expansion with the department, which then must review the expansion decision or refer it to the Land Conservation and Development Commission (LCDC) for review. Pursuant to OAR 660-025-0140(2), to be valid, objections must:

(a) Be in writing and filed with the department's Salem office no later than 21 days from the date the notice of the submittal to the department was mailed by the local government;
(b) Clearly identify an alleged deficiency in the UGB expansion, and the statute, goal or administrative rule the task submittal is alleged to have violated;
(c) Suggest specific revisions that would resolve the objection; and
(d) Demonstrate that the objecting party participated at the local level orally or in writing during the local process.

On May 7, 2009, the 21-day objection period for the city's April 16, 2009 submittal ended with the following 26 parties filing timely objections with the department. The

parties listed all participated at the local level according to materials submitted to the department, with the exception of Mr. and Mrs. Harold Simpson, as set forth in more detail in the next subsection. This list presents objectors in roughly the same order that they were received by the department.

1. Swalley Irrigation District
2. Tony Aceti
3. Terry L. Anderson
4. Toby Bayard
5. Bend-La Pine School District
6. Bend Metro Park and Recreation District
7. Brooks Resources Corporation
8. Richard and Jelinda Carpenter, Jack McGilvary (trustee)
9. Central Oregon LandWatch
10. Cindy Shonka
11. Edward J. Elkins, Doris E. Elkins
12. Fred and Katy Boos
13. Hillary Garrett
14. E. M. Holiday
15. Mark Anderson
16. Barbara I. McAusland
17. Tony and Cyllene King
18. Miller Tree Farm, LLC (Charlie Miller)
19. Newland Communities
20. Oregon Department of State Lands
21. Paul J. Shonka
22. Rose and Associates, LLP
23. Shevlin Sand and Gravel, Inc.
24. Mr. and Mrs. Harold Simpson
25. Keith Spencer
26. Tumalo Creek Development, LLC

On July 6, 2009, the 21-day objection period for the city's June 12, 2009 submittal ended with the following nine parties filing timely objections with the department. The parties listed all participated at the local level according to materials submitted to the department. This list presents objectors in roughly the same order that they were received by the department.

1. Toby Bayard
2. Hunnel United Neighbors
3. Newland Communities
4. Swalley Irrigation District
5. Anderson Ranch
6. Central Oregon LandWatch
7. J. L. Ward Company
8. Rose and Associates, LLC

9. Tumalo Creek Development

C. Validity of Objections

Objections must satisfy the requirements of OAR 660-025-0140(2) in order to be valid and considered by the director. This rule states:

> Persons who participated at the local level orally or in writing during the local process leading to the final decision may object to the local government's work task submittal. To be valid, objections must:
> (a) Be in writing and filed with the department's Salem office no later than 21 days from the date the notice was mailed by the local government;
> (b) Clearly identify an alleged deficiency in the work task sufficiently to identify the relevant section of the final decision and the statute, goal, or administrative rule the task submittal is alleged to have violated;
> (c) Suggest specific revisions that would resolve the objection; and
> (d) Demonstrate that the objecting party participated at the local level orally or in writing during the local process.

Some objectors have provided numerous or multiple objections covering a range of compliance issues, while others focus on a single objection. All of the objectors listed in section III.B filed their objection(s) in a timely matter, satisfying the requirements of OAR 660-025-0140(2)(a).

The objection of Mr. and Mrs. Harold W. Simpson (dated May 1, 2009) does not establish a clearly identified deficiency in the submittal as required by OAR 660-025-0140(2)(b). The objector attached a letter dated December 15, 2008, which apparently was originally sent by another party to the city, but after the City of Bend closed the public record on the matter on December 1, 2008. The objectors have not demonstrated that they participated orally or in writing at the local level as required by OAR 660-025-0140(2)(d). The Simpsons' objections are not valid.

The objection of Keith Spencer (dated April 23, 2009) does not establish a clearly identified deficiency in the submittal, as required by OAR 660-025-0140(2)(b). As a result, Mr. Spencer's objections are not valid.

The remaining objectors provided one or more valid objections. However, as set forth in more detail in the director's analysis section later in this report, specific objections may be found to be invalid based on criteria in OAR 660-025-0140(2)(b) or OAR 660-025-0140(2)(c).

Objections not addressed in the analysis sections of this report are denied.

D. DLCD Jurisdiction

Objector Swalley Irrigation District (Swalley) contends that the Land Use Board of Appeals (LUBA or the Board), and not this department has jurisdiction over the city's submittal. Swalley rests the objection upon (1) the "tardiness" of the city's submittal, and (2) the contention that the submittals are not and do not arise from UGB amendments within the department's jurisdiction under ORS 197.825(2)(c)(A). Swalley objects that in order to invoke the exception to LUBA jurisdiction under ORS 197.825(2)(c)(A), a local government submittal to the department must occur closer to the time of adoption than occurred in this matter. Swalley objects that the city's submittal is not timely for purposes of ORS 197.825(2)(c)(A) because it occurred after the time for filing a LUBA appeal or intervention. Objector Swalley contends this is because transfers to LUBA can only occur within certain statutory limits, citing ORS 197.830(9). Objector Swalley expounds that under ORS 197.825(2)(c)(A), the director can only transfer a matter to LUBA within the 21-day period in which a notice of intent to appeal a land use decision may be filed under ORS 197.830(9). Swalley argues "DLCD director's transfer authority is only exercisable and thus necessarily must occur in the LUBA 21 day appeal period." [Swalley Objection 1, at 14]

a. Legal Standard

Under ORS 197.825, LUBA has exclusive jurisdiction to review any land use decision of a local government with specific statutory exceptions.[4] One exception to the exclusive jurisdiction of the board is for certain matters submitted to the department. ORS 197.825(2) provides in part:

> The jurisdiction of the board:
> * * * * * *
> (c) Does not include a local government decision that is:
> (A) Submitted to the Department of Land Conservation and Development for acknowledgment under ORS 197.251, 197.626 or 197.628 to 197.650 or a matter arising out of a local government decision submitted to the department for acknowledgment, unless the Director of the Department of Land Conservation and Development, in the director's sole discretion, transfers the matter to the board[.]"

ORS 197.825(2)(c)(A) excludes submittals pursuant to ORS 197.626, which provides:

---

[4] ORS 197.825(1) provides:

> Except as provided in ORS 197.320 and subsections (2) and (3) of this section, the Land Use Board of Appeals shall have exclusive jurisdiction to review any land use decision or limited land use decision of a local government, special district or a state agency in the manner provided in ORS 197.830 to 197.845.

> [A] *city with a population of 2,500 or more within its urban growth boundary that amends the urban growth boundary to include more than 50 acres* or that designates urban reserve under ORS 195.145, or a county that amends the county's comprehensive plan or land use regulations implementing the plan to establish rural reserves designated under ORS 195.141, *shall submit the amendment or designation to the Land Conservation and Development Commission in the manner provided for periodic review under ORS 197.628 to 197.650.* (Emphasis added.)

The commission adopted OAR 660-025-0040[5] to implement its exclusive jurisdiction under the statute and OAR 660-025-0250[6] to provide for transfers of matters to LUBA.

---

[5] OAR 660-025-0040 provides:

> (1) The commission, pursuant to ORS 197.644(2), has exclusive jurisdiction to review the evaluation, work program, and all work tasks for compliance with the statewide planning goals and applicable statutes and administrative rules. Pursuant to ORS 197.626, the commission has exclusive jurisdiction to review the following land use decisions for compliance with the statewide planning goals:
> (a) If made by a city with a population of 2,500 or more inside its urban growth boundary, amendments to an urban growth boundary to include more than 50 acres;
> (b) If made by a metropolitan service district, amendments to an urban growth boundary to include more than 100 acres;
> (c) plan and land use regulations that designate urban reserve areas.
> (2) The director may transfer one or more matters arising from review of a work task, urban growth boundary amendment or designation or amendment of an urban reserve area to the Land Use Board of Appeals pursuant to ORS 197.825(2)(c)(A) and OAR 660-025-0250.

[6] OAR 660-025-0250 provides:

> (1) When the department receives an appeal of a director's decision pursuant to OAR 660-025-0150(4), the director may elect to transfer a matter raised in the appeal to the Land Use Board of Appeals (board) under ORS 197.825(2)(c)(A).
> (2) Matters raised in an appeal may be transferred by the director to the board when:
> (a) The matter is an urban growth boundary expansion approved by the local government based on a quasi-judicial land use application and does not require an interpretation of first impression of statewide planning Goal 14, ORS 197.296 or 197.298; or
> (b)(A) The matter alleges the work task submittal violates a provision of law not directly related to compliance with a statewide planning goal;
> (B) The appeal clearly identifies the provision of the task submittal that is alleged to violate a provision of law and clearly identifies the provision of law that is alleged to have been violated; and
> (C) The matter is sufficiently well-defined that it can be separated from other allegations in the appeal.
> (3) When the director elects to transfer a matter to the board, notice of the decision must be sent to the local jurisdiction, the appellant, objectors, and the board within 60 days of the date the appeal was filed with the department. The notice shall include identification of the matter to be transferred and explanation of the procedures and deadline for appeal of the matter to the board.
> (4) The director's decision under this rule is final and may not be appealed.

b. Summary of Local Actions

The city submitted notice of the city's and county's adoption of four ordinances to the department on April 16, 2009. Those four ordinances were the city's ordinances adopting the amended UGB and amending the city's development code in certain respects (Ordinances Nos. NS-2112 and NS-2113), and the county's ordinances co-adopting the amended UGB and making certain amendments to the county's comprehensive plan map and text for the lands within the UGB expansion area. [R. at 1050-1051 (city ordinance NS 2112 - UGB); R. at 1836-1844 (city ordinance NS 2113 – development code); [county ordinance 2009-1 – UGB map and DCC and TSP map]; [county ordinance 2009-2 – zoning map and certain DCC amendments]. The city did *not* submit ordinance NS 2111, amending the city's Public Facilities Plan element of its General Plan, to the department on April 16, 2009 (although the city included a copy of this ordinance, which the city adopted immediately before the UGB amendment ordinance, in the record for the submittal of the UGB ordinance (NS 2112), and the city submitted a separate notice of adoption of the Public Facilities Plan on January 9, 2009). However, on June 12, 2009, following LUBA's decision in *Swalley Irrigation District v. City of Bend*, __ Or LUBA __ (LUBA Nos. 2009-012, 2009-013, 2009-31 and 2009-032 , May 8, 2009) and order in *Swalley Irrigation District v. City of Bend*, __ Or LUBA __ (LUBA Nos. 2009-010, 2009-011, and 2009-020, May 8, 2009) the city separately submitted ordinance NS 2111 to the department, and provided notice to the objectors, as required by OAR 660-025-0175(3) and (4) and OAR 660-025-0130 and -0140.

c. Analysis

The director concludes that this objection is not well-taken. Nothing in ORS 197.830(9) addresses department transfers to LUBA. Nothing in ORS 197.825(2)(c)(A) or its statutory context prescribes a time frame in which the director must act to transfer some or all of a local government submittal to LUBA. In construing ORS 197.825(2)(c)(A), the department may not insert what the legislature has omitted – in this circumstance a 21-day time frame that constrains the director's statutory authority to otherwise transfer a matter to LUBA. ORS 174.010. Nor can the director read ORS 197.830(9) as context in such a manner as to give no effect to ORS 197.825(2)(c)(A) in the circumstances presented here. *Id*.

The director notes that LUBA had not issued its orders on the jurisdictional issues at the time of Swalley's objections. Swalley Objection 1, at 4. LUBA has subsequently ruled on substantively the same jurisdictional arguments presented in this objection. The Board held, "ORS 197.825(2)(c)(A) and ORS 197.626, and the implementing rules adopted by DLCD make clear that after the City of Bend submitted NS-2112 and NS-2113 to DLCD for review under the statutes governing periodic review, LUBA ceased to have jurisdiction over those submitted decisions or over matters arising out of those submitted decisions unless the director of DLCD transfers matters to LUBA pursuant to OAR 661-025-0250(2)." *Swalley Irrigation District*, __ Or LUBA __ (LUBA Nos. 2009-012, 2009-013, 2009-31 and 2009-032 , May 8, 2009) (Slip op at 8). The Board also has dismissed challenges to County Ordinances 2009-01 and 2009-02 submitted to the department on

April 16, 2009. *Swalley Irrigation District v. City of Bend*, __ Or LUBA __ (LUBA Nos. 2009-33 and 2009-034, July 1, 2009).

Swalley also asserts that the City of Bend's ordinance NS-2111, adopting the city's water public facilities plans and the sewer public facilities plans as amendments to the city's comprehensive plan, is not itself an amendment of the city's UGB or "a matter arising out of" the city's UGB amendment. ORS 197.825(2)(c)(A). The director does not agree. The decision concerning where to expand its UGB relies heavily on the amendments to the public facilities plans as a factor in determining where to expand the UGB. See, e.g., R. at 1192 (Collection System Master Plan, and exclusion of exception lands to the southwest due to the feasibility of providing sewer service during the planning period). The city's 45-day notice also identified amendments to its Public Facilities Plan as being a part of its proposed adoption of an amended UGB. As a result, the director finds that Ordinance NS-2111 "arises out of" the city's UGB amendment, declines to transfer jurisdiction for review to LUBA, and determines that the director has jurisdiction to review the ordinance.

d. Conclusion

The director denies this objection. Consistent with LUBA's decisions and orders regarding jurisdiction over the city and county submittals, unless and until the matters are transferred to LUBA pursuant to OAR 661-025-0250(2), jurisdiction lies with the department.

E. Residential and Related Land Need

The City of Bend is the seventh largest city in Oregon, and from 2000 to 2005 the city grew rapidly—more rapidly than projected by the city at the last major update of its comprehensive plan (in 1998). [R. at 2116, 1059] Deschutes County completed a coordinated 20-year population forecast for the cities of Bend, Redmond and Sisters and the remainder of the county in 2004. [R. at 1981] That forecast projects the population of Bend to grow from 52,800 in 2000 to 109,389 in 2025. [R. at 1981] As the first step in its analysis of the capacity of its urban growth boundary (UGB), the city extrapolated the county's population forecast to 2028 (in order to have a 20-year forecast for its review of its UGB). The forecast includes a 2028 population for Bend of 115,063. [R. at 1067, 1301] [ORS 195.034(1)] The city initiated a process for formal analysis of its UGB capacity and the consideration of a potential UGB amendment on June 11, 2007 by mailing notice of its initial evidentiary hearing to the department. [R. at 1053] The city adopted an amendment to the UGB and supporting analysis and related comprehensive plan amendments on (January 5, 2009).

This section of the directors report and decision addresses whether the UGB amendment complies with applicable state laws that guide local governments in determining: (1) the amount of land needed inside a UGB over the 20-year period for housing and other land uses (except for employment-related land need, which is addressed in section III.F of this report), (2) how much of this land need could be provided on land already inside the UGB, and (3) how much of this land need can be met only through expansion of the current UGB. The final subsection addresses the relation between the city's UGB amendment and existing policies in the acknowledged Bend General Plan concerning needed housing.

The director's analysis and decisions are based on his evaluation of the city and county decisions and the objections to those decisions, as well as the information and findings provided in the submittal.

1. The Quantity of Land Required for Needed Housing

a. Legal standards

ORS 197.295–197.314, 197.475–197.492 and 197.660–197.670, Statewide Land Use Planning Goals 10 and 14, and OAR 660, divisions 8 and 24 are the applicable state laws.[1]

The fundamental requirement of these state laws is that cities over 25,000 in population must periodically demonstrate that their comprehensive plans provide for sufficient buildable lands within their urban growth boundary to accommodate needed housing for 20 years. A city meets this requirement by:

1. Forecasting what the population within the UGB will be in 20 years, usually relying on a coordinated population forecast adopted by the county; [ORS 195.036; 195.034; OAR 660-024-0030(3) and (4)]

2. Inventorying the supply of "buildable lands"[7] within the existing UGB and determining the capacity of those lands for additional residential development over the 20-year period under current zoning [ORS 197.296(3)(a)];

3. Determining what is "needed housing" (ORS 197.303[8] and OAR 660-024-0010(3)[9]) for the community by "housing type"[10] and density, and determining the number of

---

[7] Under Statewide Land Use Planning Goal 10, the term "buildable lands – refers to lands in urban and urbanizable [lands within a UGB that still have rural zoning] areas that are suitable, available and necessary for residential use." See also, ORS 197.295(1) (same). The term is further defined by LCDC rule as:

> residentially designated land within the urban growth boundary, including both vacant and developed land likely to be redeveloped, that is suitable, available and necessary for residential uses. Publicly owned land is generally not considered available for residential uses. Land is generally considered "suitable and available" unless it:
>
> (a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;
>
> (b) Is subject to natural resource protection measures determined under Statewide Planning Goals 5, 15, 16, 17, or 18;
>
> (c) Has slopes of 25 percent or greater;
>
> (d) Is within the 100-year floodplain; or
>
> (e) Cannot be provided with public facilities.

[OAR 660-008-0005(2); OAR 660-024-0010 (definitions for UGB management)]

[8] ORS 197.303 provides:

> (1) As used in ORS 197.307 * * * "needed housing" means housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels. * * * "[N]eeded housing" also means:
>
> (a) Housing that includes, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy;
>
> (b) Government assisted housing;
>
> (c) Mobile home or manufactured dwelling parks as provided in ORS 197.475 to 197.490; and
>
> (d) Manufactured homes on individual lots planned and zoned for single-family residential use that are in addition to lots within designated manufactured dwelling subdivisions. * * * *

The housing types listed in the statute, namely "attached single family housing," "detached single family housing," and "multiple family housing" also are defined by LCDC rule. OAR 660-008-0005.

[9] OAR 660-024-0010(3) provides that:

> (3) "Housing need" or "housing need analysis" refers to a local determination as to the needed amount, types and densities of housing that will be:
>
> (a) Commensurate with the financial capabilities of present and future area residents of all income levels during the 20-year planning period;
>
> (b) Consistent with any adopted regional housing standards, state statutes regarding housing need and with Goal 10 and rules interpreting that goal; and

housing units needed and the amount of land needed for each needed housing type for the 20-year period; [ORS 197.296(3)(b)]

4. If a city determines that its housing need (third step) exceeds its UGB's capacity (second step), the city must first determine whether land inside the UGB can be rezoned to accommodate the additional need. If so, the city must also amend its land use regulations to add new measures that demonstrably increase the likelihood that lands within the existing UGB will accommodate the remaining need. If the city determines it must add lands to its UGB to meet some or all of its projected housing needs, it may do so only after demonstrating that those needs cannot reasonably be accommodated on land already inside the UGB. Statewide Land Use Planning Goal 14.[11]

5. As part of step 4, a city must determine the density and mix of needed housing types that must occur to meet projected overall housing needs for the 20-year planning period. If that planned density is greater than the actual density of development that has occurred within the UGB since the last periodic review (1998 in the case of Bend), the city must adopt measures to demonstrably increase the likelihood that future residential development in the UGB will occur at the density required to meet the projected housing needs. Similarly, if the overall mix of needed housing types during the 20-years planning period is different from the actual mix that has occurred within the UGB since the last periodic review (1998 for Bend [R. at 1074]), the city must adopt measures to demonstrably increase the likelihood that future residential development will occur in a manner that meets projected housing needs. [ORS 197.296(7)-(9)]

6. If the city determines that some or all of its additional need cannot be met by rezoning and other efficiency measures inside the current UGB (steps 4 and 5), the city must add land to its UGB to accommodate the remaining need. [See ORS 197.296(6)]

The needed housing statutes at ORS 197.295 to 197.314 and Statewide Land Use Planning Goal 10 require cities to *plan* for an adequate supply of land for needed housing. For the most part, they do not directly require cities to *ensure* that needed housing will be developed; that will depend on the market and other programs such as public and non-profit housing programs, tax incentives, and government subsidies.

(c) Consistent with Goal 14 requirements.

[10] The housing types that must be analyzed include, but are not limited to, owner and renter occupied: attached single-family housing, detached single-family housing, and multiple family housing, along with the other three housing types listed in ORS 197.303(1)((b)-(d)) (in footnote 2, above).

[11] Statewide Land Use Planning Goal 14 provides, in pertinent part, that: "Prior to expanding an urban growth boundary, local governments shall demonstrate that needs cannot reasonably be accommodated on land already inside the urban growth boundary."

Two other important aspects of Goal 10 and the needed housing statutes and rules bear emphasis in this regard. They are: (a) that the Goal 10 rule requires cities and counties to consider the needs of the relevant *region* in arriving at a fair allocation of housing types within the UGB [OAR 660-008-0030]—in other words, the planning requirements of these laws apply regionally to some degree; and (b) ORS 197.296(7) not only requires planning—it requires "measures that demonstrably increase the likelihood that residential development will occur [at particular density levels, and in particular forms or types]." [ORS 197.296(7)] Such measures may include land use planning actions, but may also include financial incentives, density bonus incentives, redevelopment and infill strategies (such as urban renewal), authorization of new housing types, etc. [ORS 197.297(9)]

b. Summary of Local Actions

On January 5, 2009, the City of Bend adopted three ordinances. The first ordinance (Ordinance NS-2111) amended the city's Public Facilities Master Plan. [R. at 35]. The second ordinance (Ordinance NS-2112) amended the city's comprehensive plan map, including its map of its UGB, along with certain provisions of the urban area comprehensive plan text. [R. at 1050-1051] The third ordinance amends the city's development code in certain respects to implement ordinance NS-2112 (the UGB amendment). [R. at 1836-1837]

The city initiated the evaluation and amendment of its UGB in June of 2007. The first step was to develop an estimate of the total number of new housing units needed over the planning period (from 2008 to 2028). [R. at 1069] The city utilized some of the safe harbors set forth in OAR 660, division 24 in projecting the number of new households, and used a vacancy factor based on 2000 census data. [R at 1069] The total number of projected households, and thus the number of housing units, that the city found is needed for the 2008–2028 period is 16,681. [R. at 1070]

The city also produced several iterations of a buildable lands inventory (BLI), beginning in 2005, and updated several times through October of 2008. Based on the BLI, the city determined that there were 2,909 acres of vacant or redevelopable residential land within the UGB (prior to the expansion). [R. at 1071] The city then determined that buildable lands within the UGB had the capacity to accommodate 11,159 housing units (or 67 percent of the projected housing units needed for the 2008–2028 planning period) [R. at 1071-1072], leaving 5,522 units needed, to be accommodated by expanding the UGB.

The city prepared three alternate housing needs assessments: the "2709 Trend Forecast," the "Goal 10 Housing Need Forecast," and the "Transition Forecast." [R. at 1075-1078] The findings state that the Transition Forecast satisfies Goal 10. [R. at 1078] The Transition Forecast projects a need for 10,843 (65 percent) detached units and 5,838 (35 percent) attached units for the 2008–2028 planning period.[12] The city then derived a

[12] The city *adopted* a housing *type* mix of 65 percent detached and 35 percent attached, because this was the built mix in 2008. [R. at 1306-07] The city didn't adopt a separate housing *tenure* mix because it considered the housing type mix of 65 percent detached and 35 percent attached to be "a surrogate measure for tenure." [R. at 1306]

"need" for additional residential land in an expanded UGB totaling 941 acres, based on the projected 65/35 housing type mix, using the same allocation of planning designations for the new units that exists in the current UGB (52 percent RS, 35 percent RM, and 13 percent RH) [R. at 1079-1080] The city's estimate of land need reflects some projected increase in average density within these zones, from approximately four units per net acre within the existing UGB to approximately six units per net acre on the lands added to the UGB for residential purposes. [R. at 1080, 1081]

The city has taken several actions to increase the capacity for residential development within the existing UGB. [R. at 1083-1084] These include amendments to the Bend Development Code in 2006, as well as two new efficiency measure proposed in this amendment (beginning to *plan* for 500 units of attached housing in the Central Area Plan, and plan for 600 units of additional housing along transit corridors). [R. at 1085] These two new efficiency measures are reflected in amendments to Chapter 5 of the city's General Plan. [R. at 1085, note 48; see also R. at 1311 (transit corridor planning to be done prior to 2012, no date is provided for Central Area planning)]

The city also estimated land need for several other uses related to residential use. First, the city prepared a separate estimate of land needed for second homes. [R. at 1086-1088] The city estimates that 18 percent of the number of the total additional housing units projected as needed for the planning period from 2008 to 2028 will be needed for second homes, or an additional 3,002 units. The city also projected that these second-home units will develop at a net density of six units per acre, leading to a land need of 500 acres for second homes. The city estimated that 377 acres of land were consumed over the prior seven years by second home development. [R. at 1086]

The city also estimated land need for schools (192 acres) [R. at 1089], parks (474 acres) [R. at 1090], private open space and private rights-of-way and institutional uses (other than schools and parks). Based on data for the land area of these uses within the existing UGB, the city added 15 percent to the amount of land need for housing to account for these uses. [R. at 1091] Finally, the city added another 21 percent for land needed for streets and other public rights-of-way. [R. at 1092]

The city adopted a Framework Plan Map as part of its UGB expansion. The map identifies seven master plan areas. The General Plan states, "The framework plan functions somewhat like a general plan map by indicating general locations, land use types, and densities of a variety of future urban uses," [p. 1-5] and, "* * * Owners of large parcels will be required to demonstrate how projects will be developed after annexation in ways that are consistent with the illustrations of the framework plan and the identified land need." [p. 1-6]

The following table, which is a copy of table III-14 from the city's findings, summarizes the amount of land the city found was needed for expansion of its UGB for residential and other non-employment purposes during the 2008-2028 planning period. [R. at 1092]

Table 1. Summary of UGB Expansion Needed for Housing and Related Uses (2028)

Acres for new housing units	941
Acres for public schools	192
Acres for public parks and trails	474
Acres for second homes	500
Subtotal	2,107
Acres for other land uses (institutional, private open space, private ROW)	442
Acres for public rights of way	316
Estimate of Total Acres Needed	2,886

The city also included almost 3,000 acres of land in the UGB expansion that are not identified as being needed for housing or employment, or any other land need. [R. at 1054] While it appears that the city considers these acres to be unsuitable for any urban land needs, the city does not explain why these additional lands are included within the UGB if they cannot serve an urban need for land. There are no findings addressing these lands other than the two sentences at R. 1054.

c. Objections

The following subsection summarizes and paraphrases objections filed relating to the amount of land in the UGB expansion area for residential and other non-employment uses. The department also commented on these issues in letters to the city dated October 24, 2008 and November 21, 2008. Responses to these objections are provided in subsections 1.e and 2.e, below.

Anderson – The city and county underestimate the amount of land needed for right-of-way, and therefore fail to comply with OAR 660-024-0040(1). Specifically, the estimate is based on land use within the existing UGB, and fails to account for substandard existing rights-of-way and for needs attributable to stormwater management. [May 7, 2009 letter from Andrew Stamp]

Toby Bayard – The proposal doesn't plan for needed housing types to meet the housing needs of all residents as required by Goal 10, particularly lower income and multifamily housing. The proposal underestimates the land need for housing for lower income households.

The UGB amendment includes approximately 3,500 acres above the city's projected land needs, evidently including a variety of lands that are not suitable for urban uses. These lands include land in rural subdivisions, and appear to include lands that contain Goal 5 resources, but none of the reasons for inclusion are contained in the city's findings. State law does not allow a buffer or cushion (the city included a cushion of 519 acres).

The city has failed to show that residential uses cannot be reasonably accommodated within the existing UGB. The city estimates a potential capacity within the UGB of 44,738 units, but assumes that only 25 percent of this capacity will be utilized. Existing residential density in Bend is less than half that of other Oregon cities of the same size.

The city fails to plan for efficient use of the lands added to the UGB, by assuming that 76 percent of that land will be zoned RS (average density of 4 du/acre). Only 33 acres of the total 941 acres is assumed to be zoned RH (average density of 22 du/acre).

Bend's 1998 General Plan projected a housing mix of 55 percent single-family and 45 percent multi-family (including 10 percent mobile home parks), but actual development since 1998 has been 77 percent single-family and 23 percent multi-family (with 0 percent mobile home parks). The city assumes that housing density and mix will continue to produce the same housing types, without regard for current and future housing needs of the city's population over the next 20 years. The 1998 planned mix of 55/45 percent is identical to the mix provided by the Oregon Housing and Community Services Department's Housing Needs Model, which the city rejected and replaced with a much higher percentage of single-family housing and a much lower percentage of multi-family housing. The city also changed to a different type of housing mix, "detached percent and attached percent" instead of "single-family percent and multi-family percent," which includes single-family housing in the form of high end, low density detached housing, and attached housing in the form of attached housing in the form of high end townhomes, condos, and resort communities. The new mix terminology does less to ensure that both detached and attached housing types more affordable to lower and middle income households are likely to develop. The proposal includes medium and high density development only in the Central Area and on Transit Corridors without demonstrating that this will meet the 20-year housing needs of all residents.

The city has reduced the density in the RL (Residential Low Density) and RS (Residential Standard Density) zones.

The city's estimate of land need for second homes is too high, and is not supported by the evidence in the record.

The city's estimate of land need for public right-of-way is too high.

The city did not sufficiently consider efficiency measures inside the existing UGB as required by ORS 197.296(9). The efficiency measures that were adopted lack documentation to assure that they will be effective. [April 29, 2009 letter]

Carpenter/McGilvary – The city and county underestimate the amount of land needed for right-of-way, and therefore fails to comply with OAR 660-024-0040(1). Specifically, the estimate is based on land use within the existing UGB, and fails to account for substandard existing rights-of-way and for needs attributable to stormwater management. [May 5, 2009 letter from Bruce White]

Central Oregon LandWatch – The city does not explain how or why unsuitable lands are added to the UGB to arrive at a gross acreage total of 8,462 acres. The city's findings do not explain why some lands are considered unsuitable, nor why they are nevertheless added to the UGB. The city's determination that lots less than 3 acres in size are

unsuitable if they have existing development is not explained, not does it comply with Goal 14.

The city has not complied with OAR 660-015-0000(14)(2), in that it has not demonstrated that its projected needs cannot be met within the existing UGB.

The city's projected land need of 500 acres for second home development is not justified and is based on incorrect data.

The city's projected land need of 474 acres for parks is not justified, and is based on plans not incorporated into the city's comprehensive plan. In addition, the city fails to account for the fact that some of this need is and will continue to be met on lands outside of the UGB.

Regarding land need for public right-of-way, the city's estimate is based on existing development patterns and does not consider provisions for skinny streets that can and have reduced the amount of land required in newer developments in the city.

Regarding land needed for private rights-of-way and open space, there is no showing of why this type of private land use is needed under Goal 14, when public parks are already provided.

The city misconstrues 660-024-0040(1) in including a "buffer" of 519 acres over and above its demonstrated land need for residential use.

The city fails to consider the approval of the Tetherow destination resort and its effect on land need within the UGB for this type of use.

The city relied on current market conditions as the basis for determining that a greater degree of redevelopment will not occur within the 20-year planning period. The proposed housing mix of 65 percent single-family detached and 35 percent multi-family will not correct a historic shortfall of land for medium and higher density housing types. The city has not done enough to promote infill and redevelopment within the existing UGB, and must adopt more measures to plan for more multi-family housing. [May 7, 2009 letter from Paul Dewey]

Barbara I. McAusland – Bend's Development Code lacks incentives needed for the construction of affordable housing. Providing for second homes in the residential lands need consumes residential land without providing for the primary affordable housing needs of residents. Too much land is added to the UGB. [May 5, 2009 letter]

Newland Communities – The city underestimates the residential land need through the planning period. The assumptions used by the city concerning redevelopment and infill are overly optimistic, and do not account for various livability land needs such as parks and schools. The city also did not adjust its capacity analysis to reflect infrastructure of lot configuration constraints. The city failed to consider the presence of dwellings on lots

in its capacity analysis. The proposed expansion improperly provides less "room" or "livability" per person than existed during the period 1981–2008. The buildable land inventory within the existing UGB is overly conservative and likely overestimates the number of residential units that could be accommodated within the existing UGB and underestimates the amount of land needed within the proposed UGB.

The city's use of the Oregon Housing and Community Services Department's Housing Needs Model is in error, and will likely result in an underestimate of land need outside the existing UGB during the planning period. The Housing Needs Model should not be used in a UGB expansion, and Bend's use of it should be disregarded. The state should disregard the city's discussion or application of the Housing Needs Model and rely on actual trends (77/23 split) or the transition forecast of 65/35. The city must use the 1998-2005 housing mix and densities as required by HB 2709. [ORS 197.296]

The city is required to project housing density and mix, not housing tenure, and not a particular single family/multi-family split.

The theoretical surplus of 519 acres is needed to fulfill land needs, and to provide for effective delivery of infrastructure and complete communities. [May 7, 2009 letter from Christie White]

Oregon Department of State Lands – The city did not properly analyze housing need by type and density as required by ORS 197.296(3)(b) and failed to plan for needed housing as required by ORS 197.303. The city's conclusion concerning a 65/35 detached/attached housing mix is too generalized to comply with the specificity required under ORS 197.296(3)(b), 197.296(9) and 197.303 for a determination of the number of units and amount of land needed for each housing type (attached and detached single-family housing, and multiple family housing, each for both owner and renter occupancy) for the next 20 years.

The city also fails to adequately consider regional housing needs and a fair allocation of housing types, as required by OAR 660-008-0030.

As a result of these deficiencies, the proposal fails to demonstrate that the UGB will provide sufficient buildable land to accommodate projected housing needs for 20 years. [May 7, 2009 letter from Gary Vrooman]

Swalley Irrigation District – The city and county violated Goal 10 by failing to show that there are measures to achieve needed housing types.

The amount of land determined to be needed is too large and beyond what the city determined was needed. The 519-acre cushion must be removed.

The buildable land inventory does not include all buildable land as defined in ORS 197.295, *e.g.*, by excluding vacant land accessed by private road, by very narrowly defining "redevelopable" land, by excluding "split-zoned" parcels, and by not including

all “partially vacant” land planned or zoned for residential use. The city’s buildable land inventory and housing need analysis ignores or minimizes manufacture home parks as a needed housing type without a factual basis. The city ignores, contrary to Goal 10, the shortage of workforce housing. The city double-counts land need for open space, parks and schools. Parcels 3 acres or smaller with a house are arbitrarily rejected as “unsuitable” for future infill or redevelopment.

The city has selected the most expensive lands to serve with public facilities, making it impossible for affordable housing to be provided.

The city ignored the housing that is planned within two destination resort sites in its housing needs assessment.

The city has failed to include efficiency measures for the existing UGB as required by Goal 14 and ORS 197.296. [May 6, 2009 letter from Wendie Kellington, pp. 63-65, 72, 77-78]

d. Analysis and Conclusions

Population (Statewide Planning Goal 14, Factor 1; and OAR 660-024-0030). The city’s extension of Deschutes County’s acknowledged population forecast, from 2025 to 2028 complies with relevant state law. [ORS 195.036; 195.034] The city used a 1.7 percent annual growth rate for the 2025–2028 period, which is the same average annual growth rate that the County forecast for Bend for 2025. [ORS 195.034(1); R. at 1067-1068]

Buildable Lands Inventory/Capacity Analysis (ORS 197.296(3)–(5); Statewide Planning Goal 10; OAR 660-024-0050; OAR 660-008-0010).
Quantity of Buildable Lands Within the Prior UGB – OAR 660-008-0010 requires that the BLI document the amount of buildable land in each residential plan designation. The BLI must further break down the analysis into the amount of land in each plan designation that is vacant, and the amount that is redevelopable. [OAR 660-024-0050(1)] Buildable lands are residentially designated lands within the UGB that are suitable, available and necessary for residential uses. [OAR 660-008-005(2)] Lands are generally considered suitable and available unless severely constrained by natural hazards, subject to protection measures such as those required by Goal 5, have slopes over 25 percent, are within the 100-year floodplain, or cannot be provided with public facilities. [OAR 660-008-005(2)] In addition, “redevelopable lands” are lands zoned for residential use that are already developed, but where there is a strong likelihood that existing development will be converted to more intense residential uses during the planning period. [OAR 660-008-0050(6)]

Buildable lands include lands that may be used for a mix of residential and employment uses. [ORS 197.296(4)(a)] Finally, the city must create a map or document to verify and identify specific lots or parcels that have been determined to be buildable. [ORS 197.296(4)(c)]

The findings do not clearly explain how the city determined the amount of land that is redevelopable or vacant (the total quantity of vacant and redevelopable lands is determined to be 2,909 acres). [R. at 1071] Generally, the city indicates that the BLI is based on a parcel-level database, where city staff reviewed each tax lot to determine its development status (vacant, vacant platted, vacant with constraints, and redevelopable). [R. at 1071] The city included a summary of the BLI in its newly adopted Chapter 5 of the Bend Area General Plan. [R. at 1288, Table 5-4] However, there does not appear to be a map of the lands determined to be buildable in the record—making it impossible to identify the quantity or location of redevelopable or vacant lands. In addition, the city's most recent BLI indicates in notes that:

(a) Developed residential lots contain existing dwellings and do not meet the [redevelopment] criteria below, or are used for employment, schools, parks, open space, institutional uses, or parking lots[;] and

(b) Redevelopable residential lots can double the number of dwelling units on the lot, are greater than 0.5 acre, have a land value greater than improvement value, [*and*] have no CC&Rs prohibiting future land division[;] and

(c) Constrained lots are those with development constraints (no public road access) or with physical constraints over 50% of the lots (includes slopes greater than 25%, areas of special interest, and floodplains. [R. at 2042]

Based on these notes from the most recent BLI, it appears that the city excluded "constrained" lands that may qualify as "buildable land" under OAR 660-008-005(2). That rule provides that lands are generally considered suitable unless they meet certain specific criteria. It also appears that the city concluded that no redevelopment will occur on lots unless they contain at least 0.5 acres and have a land value exceeding improvement value. The criteria in the rule do not correspond to the criteria used by the city.

It also appears that the city considered some lands as "developed residential lots" that could be redeveloped, such as lands used for open space or parking lots. The criteria for "redevelopable residential lots" do not appear to comply with OAR 660-008-0005(6). Although consideration of land and improvement values and CC&Rs is relevant to the likelihood of existing development being converted to more intense residential uses over 20 years, there is no finding or reasoning in the city's decision that documents the determination required by the rule (i.e., that there is a strong likelihood that existing development will be converted to the capacities the city projects).

Finally, the BLI does not include consideration of potential development in lands that may be used for a mix of residential and employment uses. [R. at 2129] In sum, the department is unable to determine whether the *amount* of vacant and redevelopable land projected by the city for each residential plan designation complies with OAR 660-008-0005, 660-008-0010, 660-024-0050, and ORS 197.295 and 197.296(3) and (4). The director remands the city and county decisions with direction to:

1. Include a map of buildable lands, as required by ORS 197.296(4)(c), as well as a zoning map and a comprehensive plan map for the lands within the prior UGB.

2. Include as its inventory of buildable lands, an analysis for each residential plan district of those lands that are "vacant," and of those lands that are "redevelopable" as those terms are used in ORS 197.296(4)-(5) and OAR 660-008-005(6). As part of this inventory, include an analysis of what amount of redevelopment and infill has occurred, and the density of that development, by plan district, since 1998. The inventory must include the UAR and SR 2 ½ plan districts, as well as the RL, RS, RM and RH districts.

3. If the city excludes lands on the basis that there is not a strong likelihood that existing development will be converted to more intense residential uses during the planning period, include an analysis of lands within all districts showing the extent to which infill and redevelopment has or has not occurred since 1998.

Capacity Analysis for the Prior UGB – In determining the capacity of buildable lands, the city estimated that *all* vacant and redevelopable land will develop during the planning period. [R. at 1071] However, the city also bases its capacity analysis on the assumption that development in the RL, RS and RM plan designations will occur at the minimum density allowed by zoning for vacant lands in these districts, and that development in the RH district will occur at a lower density than the minimum allowed due to parcelization patterns. [R. at 1071] Most of the buildable lands capacity is estimated to be vacant lots and parcels rather than from lands that might redevelop. [R. at 1071, Table III-4]

The findings refer to a March 3, 2008 memorandum as providing the detail for the city's assumptions on buildable land capacity. [R. at 1071, 8408-8414] That memorandum indicates the city used the following assumptions regarding the projected density of new housing units per *acre* through *redevelopment*: one unit per acre for RL; two units per acre for RS; five units per acre for RM; and essentially no redevelopment for RH lands. For *vacant* lands that are *already platted* (or in the process of division), the assumed densities per *lot* are: one unit per lot for RL and RS, and two units per lot for RM and RH. For *vacant acreage*, the densities per *acre* are: two units per acre for RL, four units per acre for RS; eight units per acre for RM; and fourteen units per acre for RH. These calculations net out land for right-of-way (at 31 percent; later changed to 21 percent). [R. at 8409-8410; 1072] The findings do not include an analysis of lands zoned UAR or SR 2½ within the prior UGB (there appear to be UAR areas at Cooley Road, and at Juniper Ridge, and SR 2 ½ areas north of Roper Road, as well as other scattered UAR areas on the west side of the city, all within the prior UGB).

The city's minimum densities for its residential plan designations per its Development Code (Section 2.1.600), and the total acreage within the prior UGB for each as reported by the city, [R. at 8412] are:

- Urban Area Reserve (UAR) one unit per ten gross acres (acreage not listed)

- Suburban Low Density Residential (SR 2½) one unit per 2½ gross acres (single family detached housing) (acreage not listed)

- Low Density Residential (RL) 1.1 units per gross acre (single family detached housing) (1,527 total acres)

- Standard Density Residential (RS) 2.0 units per gross acre (single family detached housing) (9,611 acres)

- Medium Density Residential (RM-10) 6.0 units per gross acre (manufactured homes and attached housing) Note that single-family detached housing is a permitted use in this zone, with no apparent minimum density. (1,336 acres, include RM)

- Medium Density Residential (RM) 7.3 units per gross acre (attached multi-family housing) Note that single-family detached housing is a permitted use in this zone, with no apparent minimum density.

- High Density Residential (RH) 21.7 units per gross acre (attached multi-family housing) (316 acres) [R. at 8411]

While the assumption that *all* buildable lands will be developed during the planning period is aggressive, assumptions regarding the amount of development that will occur on those lands is quite conservative, particularly given the predominance of land planned for lower density within the existing UGB (RL and RS, with the latter allowing a minimum lot size of one-half acre and the former a minimum lot size of just under one acre). In addition, the city apparently failed to analyze lands zoned UAR or SR 2½ at all in terms of development capacity. The final determination of capacity within the existing UGB, which uses these assumptions, yields a total of 10,059 units (before new efficiency measures are considered). [R. at 1071, Table III-4]

Under ORS 197.296(3) and (5)(a), the determination of capacity must be based on data relating to land within the UGB that has been collected since the last periodic review (the city completed its last periodic review in 1998). More specifically, ORS 197.296(5)(a) requires that the determination of housing capacity be based on:

> (A) The number, density and average mix of housing types of urban residential development that have actually occurred;
> (B) Trends in density and average mix of housing types of urban residential development;
> (C) Demographic and population trends;
> (D) Economic trends and cycles; and
> (E) The number, density and average mix of housing types that have occurred on the buildable lands described in subsection (4)(a) of this section.

The findings do not relate the capacity analysis to the factors that the statute requires. Although some of the city's earlier efforts were based on actual infill and redevelopment

data from 1998 to 2008,[13] the decision simply uses assumptions based on minimum allowed density.[14] The analysis also leaves out any analysis of the extent to which lands have been, or are likely to be, rezoned to higher densities. As a result, the director determines that the city's capacity analysis does not comply with Goal 10 or ORS 197.296(3) or 197.296(5)(a). The director remands the city and county decisions with direction to:

1. For each zoning district, analyze the number of units, density and average mix of housing types of urban residential development that has actually occurred since 1998 (including through rezoning) and how much of this occurred on vacant lands, and how much occurred through redevelopment;

2. For each zoning district, analyze whether future trends over the 20-year planning period are reasonably expected to alter the amount, density and mix of housing types that has actually occurred since 1998; and

3. For each zoning district, adopt findings and conclusions regarding the number of units, the density, and the mix of housing types that the city concludes is likely to occur over the planning period, and identify how much is expected to occur on vacant lands, and how much is expected to occur through redevelopment.

Housing Needs Analysis (ORS 197.296(3)(b)(5); Statewide Planning Goal 10; OAR 660-024-0040 and 0050; OAR 660-008-0005, 0010 and 0030; Goal 14). Like the statutorily required analysis of housing capacity within the existing UGB, the scope and basis for the housing needs analysis is largely dictated by state statute. ORS 197.296(3)(b) and (5) require that the city:

> Conduct an analysis of housing need by type and density range, in accordance with ORS 197.303 and statewide planning goals and rules relating to housing, to determine the number of units and amount of land needed *for each needed housing type* for the next 20 years." ORS 197.296(3)(b)(emphasis added); and that
>
> The determination of housing * * * need pursuant to subsection (3) of this section must be based on data relating to land within the urban growth boundary that has

[13] Using 1998-2005 built densities and the current distribution of residential land among the different residential zones would appear to result in a capacity of 12,280 housing units within the existing UGB rather than 10,059 units as the city ended up finding. [Table 13, R. at 2132] The low average built densities in the RL zone (two units per net acre) and RS zone (four units per net acre), and the predominance of those zones (84 percent of the city's total residentially-designated land is RL or RS [Table 5-4, R. at 1288] results in a lower capacity within the existing UGB.

[14] It also appears that the city excluded certain developed lands from consideration for redevelopment potential. Even developed lands must be considered for redevelopment under Goal 10. *Opus Development Corp. v. City of Eugene*, 28 Or LUBA 670, 693-695 (1995).

> [sic] been collected since the last periodic review or five years, whichever is greater. The data shall include:
>
> > (A) The number, density and average mix of housing types of urban residential development *that have actually occurred*;
> > (B) *Trends* in density and average mix of housing types of urban residential development;
> > (C) Demographic and population *trends*;
> > (D) Economic *trends* and cycles; and
> > (E) The number, density and average mix of housing types *that have occurred* on the buildable lands described in subsection (4)(a) of this section. [ORS 197.296(5)] [emphasis added]

In addition, ORS 197.303 defines "needed housing" as:

> * * * housing types determined to meet the need shown for housing within an urban growth boundary *at particular price ranges and rent levels*. On and after the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing" also means:
> > (a) Housing that includes, but is not limited to, *attached and detached single-family housing and multiple family housing for both owner and renter occupancy*;
> > (b) Government assisted housing;
> > (c) Mobile home or manufactured dwelling parks as provided in ORS 197.475 to 197.490; and
> > (d) Manufactured homes on individual lots planned and zoned for single-family residential use that are in addition to lots within designated manufactured dwelling subdivisions." [ORS 197.303(1)] [emphasis added]

OAR 660-008-0005 defines several terms used in the preceding statutes that are pertinent to the scope of a city's required housing needs analysis, including: "attached single family housing," "detached single family housing," "housing needs projection," and "multiple family housing." In particular, the term "housing needs projection" (which is the same as the "housing needs analysis" under 197.296(3)) is:

> * * * a local determination, justified in the plan, of the mix of housing types and densities that will be:
> > (a) *Commensurate with the financial capabilities of present and future area residents of all income levels during the planning period*;
> > (b) Consistent with any adopted regional housing standards, state statutes and Land Conservation and Development Commission administrative ruels; and
> > (c) Consistent with Goal 14 requirements. [OAR 660-008-0005(4)] [emphasis added]

The city must estimate housing need for each housing type for *both* owner and renter occupancy. ORS 197.303(1)(a). Needed housing also requires that the city evaluate the need for housing at particular price ranges (owner occupancy) and rent levels (renter occupancy), and (as noted above) commensurate with the financial capabilities of *current and future* residents. [Statewide Planning Goal 10, Goal 10 definition of "Needed Housing Units;" OAR 660-008-0005(4) (definition of "housing needs projection"] Finally, OAR 660-008-0010 and ORS 197.307(3) require that "[s]ufficient buildable lands shall be designated on the comprehensive plan map to satisfy housing needs by type and density range as determined in the housing needs projection." See generally, *DLCD v. City of McMinnville*, 41 Or LUBA 210 (2001).

OAR 660-024-0040(7) provides several safe harbors used by the city, under which a city is not required to separately estimate the need for certain housing types (government-assisted housing, manufactured dwellings on individual lots, manufactured dwelling parks).

The collective result of these requirements as applied to the City of Bend is that the city is required to estimate housing need for at least three housing types:

- Attached single family housing (common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot, OAR 660-008-0005(1));
- Detached single family housing (a housing unit that is free standing and separate from other housing units, OAR 660-008-0005(3); and
- Multiple family housing (attached housing where each dwelling unit is not located on a separate lot, OAR 660-008-0005(5)).

In addition, the city must estimate housing need for each of these three housing types for *both* owner and renter occupancy. [ORS 197.303(1)(a)] This estimate must be based both on data concerning the development that has actually occurred since the last periodic review, and on demographic and housing trends. [ORS 197.296(5)(a)] The city must consider the housing needs of both present and future residents. OAR 660-008-0005(4) and OAR 660-008-0010. See generally, *DLCD v. City of McMinnville*, 41 Or LUBA 210 (2001).

<u>Projected Overall Need for Housing Units</u> – The city projected its overall need for housing during the planning period by dividing the total forecasted population increase (less persons in group quarters) by its projected household size (based on the 2000 census) to derive a forecast for needed new housing units. [R. at 1070, Table III-2] The city utilized several safe harbor provisions of OAR 660-024-0040 in making these forecasts. The findings show that it is qualified to use of these safe harbor provisions, and that the forecast of new housing units needed in the 2008–2028 period complies with state laws. The total of new housing units needed during the planning period is 16,681. [R. at 1070] The director finds that the city's projection of overall need for housing units complies with applicable state law.

Projected Need by Density and Housing Type – The city carried out three different housing needs analyses: a "HB 2709 Forecast;"[15] a "Housing Needs Model;" and a "Transition Forecast." [R. 1074-1078]. It appears that the city relied on the "Transition Forecast" for its final decision. [R. at 1078 ("The city finds that this final forecast (aka transition forecast) will meet Goal 10.")] However, the city *adopted* as its final housing need analysis a new Chapter 5 of its General Plan. [R. at 1050, 1280-1315 ("This section of Chapter 5 represents Bend's Housing Needs Analysis." R. at 1285] Nevertheless, the city's findings refer to the three prior analyses rather than to Chapter 5, for reasons that are not clear. As a result, it is extremely difficult to understand the city's reasoning.

The beginning of the newly adopted General Plan Chapter 5 includes a series of important findings, including:

- "The inadequate supply of land has led to a lack of multi family units * * *."
- "Central Oregon has the highest net migration in the state. The inadequate supply of land has led to a lack of multi-family units."
- "The rapid increase in population has resulted in a growth in demand for workforce housing that has outpaced the production of workforce housing units. Between 2000 and 2005, job growth created a demand for 9,057 units of workforce housing while only 8,230 units were produced."
- "* * * [M]ore affordable forms of housing, such as multi-family units, are currently being priced out of the Bend market."
- "Affordable housing for service workers, both for individuals and familites, is in short supply in Bend. * * * * While the cost of rental housing has not increased as rapidly as house prices, recent rent increases are starting to place additional

[15] The city states that its "House Bill 2709 trend forecast" -- an "extrapolation of actual housing mix and density trends between 1998 and 2005" [R. at 2121] -- is consistent with ORS 197.296. The department does not agree. ORS 197.296(5) sets out the state's UGB housing capacity and need methodology for cities like Bend that have 25,000 or more people in their UGBs. The UGB data on which the city must rely include:

- The number, density and average mix of housing types of urban residential development that have actually occurred;
- Trends in density and average mix of housing types of urban residential development;
- Demographic and population trends;
- Economic trends and cycles; and
- The number, density and average mix of housing types that have occurred on the buildable lands described in subsection (4)(a) of this section. [ORS 197.296(5)(a)]

Only two of these data sources, the first and last, address *past* housing development; the others address future housing *trends.* This means that the city cannot rely exclusively on past data to determine housing need and capacity within the existing UGB. The analysis must also be based on current and future trends.

pressure on low-income households. Further complicating the issue is the seasonality of many jobs in the region * * * making it difficult for the region to meet peak housing needs. * * *"

- "The lack of affordable housing for the workforce has a negative affect on employers in Central Oregon. * * *"

- "The increasing lack of housing affordable to low and moderate income households is resulting in many area workers purchasing homes and living in other communities, including Redmond, Prineville and others. * * * This is exacerbating traffic congestion and other issues caused by rapid growth in the community. It also affects the ability of area employers to attract workers for jobs at many income levels, including service and professional workers." [R. at 1282-1284].[16]

- "In 2000, there were 2,087 and 2,285 very low and low income households, respectively, in Bend. There were only approximately 1,300 housing units available at prices at or under 30% of these households' monthly income * * *. Over 90% of these were rental units." [R. at 1309]

The city analyzed the housing development that occurred within its prior UGB between 2000 and 2008 for two housing types: attached and detached. [R. at 1286] There is no separate analysis of single family attached housing (the data for this housing type are combined with the detached single family housing data). The data show that the proportion of single family housing within the UGB has increased from 70 percent to 78 percent of all units over this period, while the proportion of multi-family housing has held steady (at 20 percent). The proportion of housing in manufactured home parks has decreased rapidly. [R. at 1286, Table 5-3 (note, there are math errors in the cited percentages)] The city also (in narrative, summary form) analyzed the change in density for single family and multi-family housing, finding that single family housing density has increased by 54 percent since 1999, and that the density of some types of multi-family housing has increased by 10 percent (there is no narrative regarding apartments or condominiums). [R. at 1289-1290] The findings also show a significant *decrease* in rental housing as a proportion of the total between 1990 and 2000. [R. at 1290, Table 5-7].

Like Chapter 5, the findings concerning the Transition Forecast consider housing need only for two categories: detached units and attached units. [R. at 1078, Table III-10] The projected housing mix of these two categories is 65 percent detached, and 35 percent attached. The findings indicate that most detached units will be owner-occupied, and that 38 percent of the attached units also are currently owner-occupied, with that percentage

[16] "It is clear that the city has a shortage of land in the higher density zones. A comparison of the land need and land supply by zones shows an overall deficit of about 250 net acres in the RM zone and a deficit of about 200 acres in the RH zone. From a planning perspective, it doesn't make sense to expect that this shortage of RM and RH land will be met entirely in the UGB expansion area(s)." [R. at 2133, City of Bend, Residential Lands Study, April 25, 2005]

expected to increase. [R. at 1078-1079] In other words, the Transition Forecast assumes that at least 78 percent of the housing needed between 2008 and 2028 will be owner-occupied (65% + 38% of 35%).

There are two main problems with the analysis. First, the lack of a clear connection between the findings and its adopted housing needs analysis (Chapter 5), along with the collapsing of housing types into two summary categories (attached and detached), makes it effectively impossible to determine whether the amendment complies with the substantive requirements of Goal 10 and ORS 197.296 to designate sufficient lands to satisfy housing needs by housing type and density. As a result of the use of varying categories and terminology, the director is unable to determine whether the housing needs analysis complies (in form) with ORS 197.296 and Goal 10.

This is not simply a technical problem; the use of varying housing type categories and labels in the findings makes it impossible to evaluate whether they comply with Goal 10 and ORS 197.296 (compare Tables III-5, III-6, III-8, III-9 and III-10). The terminology also makes it impossible to determine whether and how the city's residential zones provide for various housing types as contemplated by OAR 660, division 8. The "transition forecast," which blends actual development with future needs, provides an estimated future housing *type* mix of 54 percent detached and 46 percent attached. [R. at 2130] It is impossible for the director to compare this result with the other two forecasts, the 1998–2005 built mix, and with the 1998 planned mix, because the findings express housing mix in terms of single-family vs. multi-family housing types, not detached versus attached housing types.

More substantively, it is clear from the findings that there is a current and projected future shortage of land for multi-family housing. [R. at 1075] In addition, the city has identified a significant need for additional workforce housing to reduce the growing trend of commuting into Bend from surrounding communities [R. at 1282], and a need for additional seasonal worker housing. [R. at 1282] Neither the findings nor the Housing Needs Analysis explain how the current and future planning designations of land will provide for these housing needs. Instead, the decision simply assumes (and does not attempt to alter) the recent trends that have created these housing needs.

Specifically, the city has planned most of its residential lands (87 percent) within the prior UGB for low-density, single family residential use (RL (1.1 dwelling per gross acre minimum density) and RS (2.2 dwellings per gross acre minimum density)). Multi-family housing (buildings with more than 3 units) is not allowed within the RL and RS zones (duplexes and triplexes are conditional uses in the RS zone). [Bend Code section 2.1.200, R. 1287-1288].

Further, the city is planning for an equivalent distribution of lands among residential districts for the lands the UGB expansion area. [R. at 1079; 1080] (Table III-12 shows 76 percent of the total acreage as being in the RS zone; note that lands in the RL zone are not included in this table at all because, according to the city, this zone will not provide

needed housing.) [R. at 1079; see also R. at 1098 (Framework Plan[17] allocates 84 percent of (non-employment) lands added to the UGB as RS)]. The record lacks findings on why the existing distribution by zone is appropriate for the expansion area, and why it is appropriate for the 20-year planning period, especially in light of other findings in the record about demographic, household income, and housing affordability trends for the Bend area that indicate the existing distribution is not appropriate for the future.[18]

Conversely, previous planning decisions may have undermined the city's ability to provide needed multi-family and high density housing. The city's 2008 BLI reports that there are 341 acres designated as high density residential (RH), which contained 1,246 dwelling units, of which 172 units are single family dwellings. [Table 5-4, R. at 1288, Table 5-5, R. at 1289] This amounts to a gross density of 3.65 dwelling units per acre for the 341-acre inventory of RH-designated land.

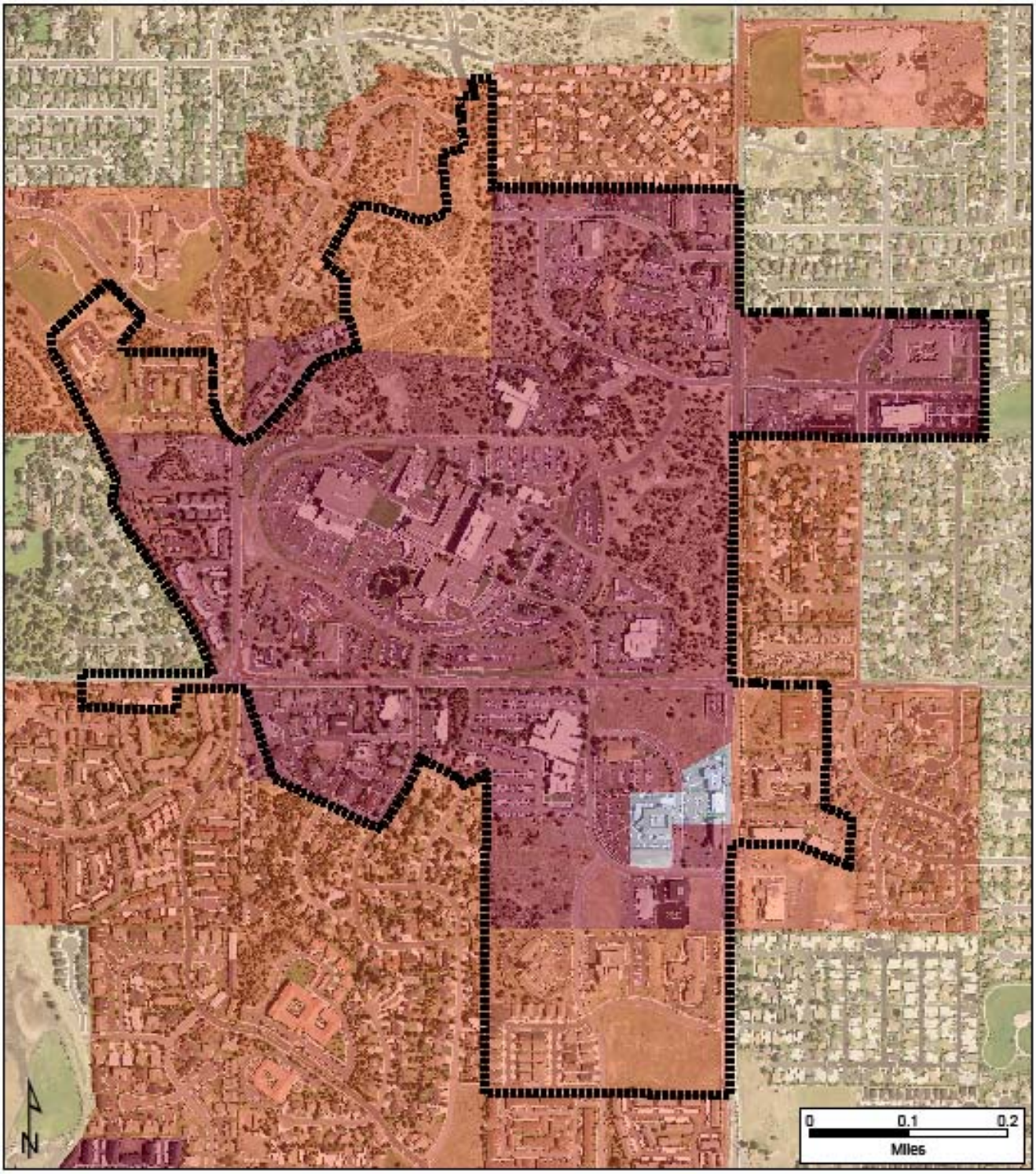
In attempting to understand the low unit per acre yield from the RH inventory, the department has determined that approximately 215 acres of the 341 RH inventory is included within the Medical District Overlay Zone, which is anchored by St. Charles Hospital. (See Figure 2 on the following page). A review of existing land uses within the overlay zone's RH-designated area shows that a majority is devoted to the hospital and related medical uses, including satellite facilities and offices, as well as what appears to be a potential hospital expansion area. Most of the assisted living and nursing home units within the overlay district are actually located on medium density (RM) designated and zoned land. Very little high density housing is found in the approximately 215-acre area of RH. This is partially confirmed by the 2008 BLI, which shows only 29 nursing home dwelling units in the city's RH inventory.

It can be fairly concluded from this data that these approximately 215 acres of RH lands have and will yield very little actual multi-family housing. This "non-yielding" area represents 63 percent of the city's entire RH inventory, leaving only 126 acres of RH land citywide to meet the needs of this needed housing type.

Housing densities within the city appear to have increased to some extent since the last periodic review, and in this sense the city may be moving toward compliance with the intent of Goal 10, OAR 660-008-0020, ORS 197.296 and ORS 197.307(3). Further, the overall amount of land identified as needed by the city for residential uses (941 acres), *may* be reasonable given the city's rapid growth. However, without findings that connect the identification of housing needs with a showing that sufficient lands have been

[17] The Framework Plan referred to in the findings at R. 1098 is referred to elsewhere as the draft Framework Plan. R. 1056]. The Framework Plan is referenced in the City's General Plan, but it is not clear that the city has adopted the Framework Plan.

[18] The city adopted a housing *type* mix of 65 percent detached and 35 percent attached because this was the built mix in 2008. [R. at 1306-07] It is not clear whether this mix applies to the entire amended UGB, or only to the expansion area.



Medical District Overlay Zone

Figure 2

Oregon
Department of Land Conservation & Development

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

RH - Res Urb High Density
RM - Res Urb Medium Density
RS - Res Urb Standard Density
Other City Zones (Employ, Mix Use, & Pub. Fac.)
Overlay Zone Boundary

Aerial image: 2009 NAIP
LSB and zoning information extracted from maps provided by City of Bend and Deschutes County
DLCD GIS (v2) 01/2010
HospitalPgF.mxd

provided to meet those needs, the director is unable to conclude that the city's decision complies with Goal 10, the Goal 10 rules, the needed housing statutes, or Goal 14 and OAR 660, division 24.

For the foregoing reasons, the director remands the city and county decisions, with direction to:

1. Revise the Housing Needs Analysis to comply with ORS 197.296, OAR 660-008-0020, and ORS 197.303. The Housing Needs Analysis must include an evaluation of the need for at least three housing types at particular price ranges (owner occupancy) and rent levels (renter occupancy), and commensurate with the financial capabilities of *current and future* residents. Those housing types include: (a) attached single family housing (common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot pursuant to OAR 660-008-0005(1)); (b) detached single family housing (a housing unit that is free standing and separate from other housing units pursuant to OAR 660-008-0005(3); and (c) multiple family housing (attached housing where each dwelling unit is not located on a separate lot pursuant to OAR 660-008-0005(5));

2. Adopt the revised Housing Needs Analysis as an element of the comprehensive plan, along with findings that demonstrate how the revised Housing Needs Analysis complies with the applicable statutory, goal and rule requirements described above.

<u>Amount of Land Added to the UGB for Residential Land Need</u> – The amendment includes a conclusion that there is a need for 941 acres of additional land for needed housing, for 5,522 dwelling units that cannot be accommodated within the prior UGB. [R. at 1082] As noted above, without findings that connect this amount to needed housing types as identified by the city in its own findings, and as required by state law, the director is unable to determine whether the amount of land added to the UGB is lawful.

A final key assumption used by the city to determine the quantity of land required in an expansion area for needed housing is that new residential development in the expansion area will occur at an overall density of six units to the net acre, not including lands planned for low density development. [R. at 1079, 1080][19] The findings state that this density:

> * * * would be higher than densities seen in recent development because the 2006 Development Code requires minimum densities of development to ensure housing

[19] The General Plan amendments assumed an average net density of 5.9 dwelling units per net acre, for the expansion area only, based on average net densities for the RS, RM and RH Zones. [R. at 1308] These densities don't appear consistent with the 2006 built densities or the planned densities for the existing UGB or the "Needed density by housing types," and the plan doesn't include findings for the decision to use these numbers. Compare Table 13 [R. at 2132], Table 5-28 [R. at 1308], Table 5-29 [R. at 1308], and Table 5-29A [R. at 1309].

> developed in the RM and RH zone occurs at densities higher than the assumed overall overage of six units to the net acre. The city feels compelled to point out that the needed density of six units to the net acre is 50 percent higher than the current net density of just under 4 units to the acre. [R. at 1081]

As described in more detail below, the director does not agree that the minimum density provisions of the city's 2006 Development Code ensure or otherwise encourage any increase in density given the current and planned allocations of land between the SR 2½, RL, RS, RM and RH districts within the city and within the UGB expansion area. There is simply too much land planned as SR 2½, RL and RS, combined with minimum densities for these districts of one unit per 2.5 acres, 1.1 unit per acre, and two units per acre, respectively, to ensure anything but large lot residential development.

The use of an overall average residential density for the UGB expansion area of 6.0 units per net acre assumes that the city will maintain the same proportional allocation of zones within its prior UGB in the expansion area, providing no progress toward planning for more efficient urban development. This results in the city adding more land to its UGB than is necessary to provide needed housing, and in the long term this will only exacerbate the transportation and public facility challenges facing the city. As a result, the director finds that the city has not demonstrated that the amount of land added to the city's UGB for needed housing complies with Goal 10 or Goal 14, or their implementing rules, or with the needed housing statutes. The director remands the city and county decisions, with direction to:

> Analyze what the mix of plan designations should be in the UGB expansion area in direct relation to the city's projected housing needs, and consider the adoption of new residential plan districts that encourage more multi-family, higher density single family housing, and other needed housing types for a greater proportion of the expansion area, in order to meet the city's and the region's demonstrated housing needs.

<u>Measures</u> – In order to approve the UGB expansion, the director also must determine whether the identified needs for residential land can reasonably be accommodated on land within the prior UGB. [Goal 14; OAR 660-024-0050(4)] In addition, Goal 10 and ORS 197.307(3) require that, when the city identifies a need for housing at particular price ranges and rent levels, sufficient buildable lands must be provided to satisfy that need. ORS 197.296(7) also requires adoption of measures that "demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet needs over the next 20 years."

As part of its decision, the city adopted two new measures intended to increase the proportion of its housing need that could be satisfied within the existing UGB. These measures add 500 units of housing in the Central Area Plan, and up-zone areas along

transit corridors for another 600 units. Chapter 5 of the General Plan (Housing) requires that transit corridor amendments be implemented prior to 2012 [R. at 1311]; there is no timeframe associated with the Central Area Plan work. Nor does Chapter 5 include any specific commitment in terms of number of housing units. Although these units are "assumed" to be attached, the numbers are described as an estimate. [R. at 1303] As a result, the director is unable to determine that these measures "demonstrably increase the likelihood" that the additional residential development will occur.

The city also notes in its findings that it has taken *prior* efficiency measures. [R. at 1083] With respect to these measures, the director believes that the main efficiency measures identified by the city are not likely to be effective. The minimum adopted densities range from 1.1 unit per gross acre to 2.0 units per gross acre for most residentially zoned lands. Even in the city's medium-density zones, the minimum densities are 6.0 to 7.3 units per acre. These densities do little or nothing to address the city's identified need for multi-family, lower income, or workforce housing. As noted above, multi-family housing is not allowed at all in the RS zone (other than duplexes and triplexes, which are conditional uses). The 2007 Residential Lands Study does not demonstrate how much these actions have increased housing densities, how many additional housing units they provided, or how much urban land they saved in the past, nor does it show how much of the city's needed housing types and units, and what amount of residential land, these actions will provide within the next 20 years. As a result, the director determines that the city has failed to demonstrate that the estimated needs cannot reasonably be accommodated on land already within the UGB. The director remands the city and county decisions, with direction to:

1. Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers.

2. Consider splitting the existing RS zone, which covers most of the residential areas of the city, into two or more zones in order to encourage redevelopment in some areas while protecting development patterns in well-established neighborhoods.

3. In areas where the city is planning significant public investments, consider up-zoning as a means to help spread the costs of such investments.

4. Consider strengthening the minimum density provisions in the existing UAR and SR 2½ zones by eliminating PUDs and other clustering tools.

5. Consider strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types, rather than relying on low density residential development.

As noted above, the director believes the city likely will be able to make a showing that some amount of residential land is needed in an expanded UGB due to the city's rapid growth rate, but the director believes there are other reasonable measures that the city can

take to accommodate more of the needed housing within the prior UGB over the next 20 years.

e. Response to Objections

Toby Bayard –
Objection: The UGB amendment includes approximately 3,500 acres above the projected land needs, evidently including a variety of lands that are not suitable for urban uses. These lands include land in rural subdivisions, and appear to include lands that contain Goal 5 resources, but none of the reasons for inclusion are contained in the findings. State law does not allow a buffer or cushion (the city included a cushion of 519 acres).
Response: This objection is sustained. As noted in the department's analysis, the findings provide no basis for including lands beyond the roughly 5,000 acres shown as needed for residential and employment related land needs.

Objection: The city has failed to show that residential uses cannot be reasonably accommodated within the existing UGB. The city estimates a potential capacity within the UGB of 44,738 units, but assumes that only 25 percent of this capacity will be utilized. Existing residential density in Bend is less than half that of other Oregon cities of the same size.
Response: This objection is sustained. Goal 14 and OAR 660-024-0050 require the city to show that its needs for urban land cannot reasonably be accommodated within the existing UGB.

Objection: The city has assumed no redevelopment of RL and RS lands within the UGB. Goal 14 and Goal 10 requires the city to analyze what redevelopment has actually occurred on these lands since 1998, and to estimate redevelopment based on actual experience as well as future trends, rather than simply concluding that no redevelopment will occur.
Response: This objection is sustained. As noted above, state statue requires the city to base its estimate of redevelopment on what has actually occurred within the UGB as well as future trends. The city's findings do not address redevelopment or infill that has occurred on UAR, SR 2½, RL, or RS lands.

Objection: The city fails to plan for efficient use of the lands added to the UGB, by assuming that 76 percent of that land will be zoned RS (average density of four dwelling units per acre). Only 33 acres of the total 941 acres is assumed to be zoned RH (average density of 22 dwelling units per acre).
Response: This objection is sustained. The city's Framework Plan and findings, as well as Chapter 5 of the General Plan, indicate that only a very small percentage of land added to the UGB will be planned for moderate or high-density residential uses. Given the findings that there is a shortage of multi-family housing, and shortages of affordable and workforce housing, the decision to follow existing land allocations in the expansion lands violates both Goal 10 and Goal 14, and their implementing rules.

Objection: Bend's 1998 General Plan projected a housing mix of 55 percent single-family and 45 percent multi-family (including 10 percent mobile home parks), but actual development since 1998 has been 77 percent single-family and 23 percent multi-family (with 0 percent mobile home parks). The city assumes that housing density and mix will continue to produce the same housing types, without regard for current and future housing needs of the city's population over the next 20 years. The 1998 planned mix of 55/45 percent is identical to the mix provided by the Oregon Housing and Community Services Department's Housing Needs Model, which the city rejected and replaced with a much higher percentage of single-family housing and a much lower percentage of multi-family housing.

The city also changed to a different type of housing mix, "detached percent and attached percent" instead of "single-family percent and multi-family percent," which includes single-family housing in the form of high end, low density detached housing, and attached housing in the form of attached housing in the form of high end townhomes, condos, and resort communities. The new mix terminology does less to ensure that both detached and attached housing types more affordable to lower and middle income households are likely to develop. The proposal includes medium and high density development only in the Central Area and on Transit Corridors without demonstrating that this will meet the 20-year housing needs of all residents.
Response: This objection is sustained for the reasons set forth in the department's analysis. The form of the city's Housing Needs Analysis makes it impossible to determine what housing needs are, and whether the city's UGB expansion will meet those needs.

Objection: The city did not sufficiently consider efficiency measures inside the existing UGB as required by ORS 197.296(9). The efficiency measures that were adopted lack documentation to assure that they will be effective.
Response: This objection is sustained. As determined above, the city needs to evaluate additional measures to assure that it provides lands for needed housing, and the two efficiency measures that the city has adopted are not adequately assured based on the lack of specificity in Chapter 5.

Central Oregon LandWatch –
Objection: The city has not complied with OAR 660-015-0000(14)(2), in that it has not demonstrated that its projected needs cannot be met within the existing UGB.
Response: This objection is sustained. Both Goal 14 and ORS 197.296 require the city to adopt measure to provide needed housing within its UGB before looking to lands outside of the UGB.

Objection: The city relied on current market conditions as the basis for determining that a greater degree of redevelopment will not occur within the 20-year planning period. The proposed housing mix of 65 percent single-family detached and 35 percent multi-family will not correct a historic shortfall of land for medium and higher density housing types. The city has not done enough to promote infill and redevelopment within the existing UGB, and must adopt more measure to plan for more multi-family housing.

Response: This objection is sustained for the reasons set forth in the director's decision.

Barbara I. McAusland –
Objection: Bend's Development Code lacks incentives needed for the construction of affordable housing. Providing for second homes in the residential lands need consumes residential land without providing for the primary affordable housing needs of residents. Too much land is added to the UGB.
Response: These objections are sustained in part. As set forth in the director's decision above, the city must consider additional measure to assure that lands are provided for the development of needed housing. The director agrees with the city and with the objector that second home development competes with other needed housing types, and should be considered in the city's decisions, and that the city's planning for expansion areas can influence whether the lands are used for second home development or other forms of housing. The director agrees that the city has not justified the amount of land added to the UGB.

Newland Communities –
Objection: The city underestimates the residential land need through the planning period. The assumptions used concerning redevelopment and infill are overly optimistic, and do not account for various livability land needs such as parks and schools. The city also did not adjust its capacity analysis to reflect infrastructure of lot configuration constraints. The city failed to consider the presence of dwellings on lots in its capacity analysis. The proposed expansion improperly provides less "room" or "livability" per person than existed during the period 1981-2008. The buildable land inventory within the existing UGB is overly conservative and likely overestimates the number of residential units that could be accommodated within the existing UGB and underestimates the amount of land needed within the proposed UGB.
Response: The director denies Newland's objection that the city has underestimated the need for residential land through the planning period. As set forth above, the director is unable to determine whether the city has underestimated or overestimated is need for residential land due to problems with the city's BLI and HNA.

The director does not agree that the assumptions used by the city concerning redevelopment and infill are overly optimistic. Again, those assumptions are inadequately documented under ORS 197.296.

The director does not agree that the city failed to consider livability needs. The city has included estimated land need for parks and schools. Again, however, the amounts of land included for these needs are not adequately documented under Goal 14 or OAR 660, division 24.

The director denies the objection that the city's capacity analysis should reflect infrastructure of lot configuration constraints without more specific evidence that lands cannot be served during the planning period. The city did consider the presence of dwellings on lots in its capacity analysis, as set forth above.

The director denies the objection that the proposed expansion improperly provides less "room" or "livability" per person than existed during the period 1981-2008. There is evidence in the record that the density of the city is significantly lower than other large cities in Oregon, and there is nothing in state law that prevents the city from increasing the efficiency of its development pattern and lowering its costs for public services.

The director denies the objection that the buildable land inventory within the existing UGB is overly conservative and likely overestimates the number of residential units that could be accommodated within the existing UGB and underestimates the amount of land needed within the proposed UGB for the reasons set forth in the director's analysis, above. In its current form, it is not possible to conclude whether the city's BLI complies with ORS 197.296 and Goal 10.

Objection: The city's use of the Oregon Housing and Community Services Department's Housing Needs Model is in error, and will likely result in an underestimate of land need outside the existing UGB during the planning period. The Housing Needs Model should not be used in a UGB expansion, and Bend's use of it should be disregarded. The state should disregard the city's discussion or application of the Housing Needs Model and rely on actual trends (77/23 split) or the transition forecast of 65/35. The city must use the 1998-2005 housing mix and densities as required by HB 2709 [ORS 197.296].
Response: Based on the city's findings, it does not appear that the city relied on the Housing Needs Model. Instead, the city relied on the HNA in Chapter 5 of its General Plan and (as set forth in its findings) its "Transition Forecast." The Housing Needs Model is one source of evidence of needed housing, and one which the city apparently did not rely on. As a result, this objection provides no basis for remand of the city's decision. The director agrees that 1998-2008 housing mix and densities (for each of the city's residential districts) is one of the bases that the city must consider (along with future trends), as set forth in the analysis above.

Objection: The city is required to project housing density and mix, not housing tenure, and not a particular single family/multi-family split.
Response: This objection is denied, in part. The city is required to project housing density and mix for both owner-occupied and rental housing, for each residential district, for single family detached, single family attached, and multi-family housing. ORS 197.296(3) and (5).

<u>Oregon Department of State Lands</u> –
Objection: The city did not properly analyze housing need by type and density as required by ORS 197.296(3)(b) and failed to plan for needed housing as required by ORS 197.303. The city's conclusion concerning a 65/35 detached/attached housing mix is too generalized to comply with the specificity required under ORS 197.296(3)(b), 197.296(9) and 197.303 for a determination of the number of units and amount of land needed for each housing type (attached and detached single-family housing, and multiple family housing, each for both owner and renter occupancy) for the next 20 years.
Response: This objection is sustained, for the reasons set forth in the director's analysis, above.

Objection: The city also fails to adequately consider regional housing needs and a fair allocation of housing types, as required by OAR 660-008-0030.
Response: This objection is sustained. The city is obligated under Goal 10, and the cited rule, to consider needed housing on a regional basis. The city's findings indicate that much needed housing for the City of Bend is being provided outside of the city, forcing the region's residents to drive long distances and creating imbalances between cities in Central Oregon. The city and the county must address these regional issues on remand.

Objection: As a result of these deficiencies, the proposal fails to demonstrate that the UGB will provide sufficient buildable land to accommodate projected housing needs for 20 years.
Response: This objection is sustained. Until the city completes the tasks required on remand, it has not demonstrated that its UGB will provide sufficient buildable land to accommodate projected housing needs for 20 years.

Swalley Irrigation District –
Objection: The city and county violated Goal 10 by failing to adopt measures to achieve needed housing types.
Response: This objection is sustained, for the reasons set forth in the director's analysis above.

Objection: The buildable land inventory does not include all buildable land as defined in ORS 197.295, e.g., by excluding vacant land accessed by private road, by very narrowly defining "redevelopable" land, by excluding "split-zoned" parcels, and by not including all "partially vacant" land planned or zoned for residential use. The city's buildable land inventory and housing need analysis ignores or minimizes manufactured home parks as a needed housing type without a factual basis. The city ignores, contrary to Goal 10, the shortage of workforce housing. The city double-counts land need for open space, parks and schools. Parcels 3 acres or smaller with a house are arbitrarily rejected as "unsuitable" for future infill or redevelopment.
Response: This objection is sustained for the reasons set forth in the director's analysis above.

Objection: The city has selected the most expensive lands to serve with public facilities, making it impossible for affordable housing to be provided.
Response: This objection is sustained, in part. ORS 197.296(9) requires cities to ensure that land for needed housing is in locations appropriate for the housing types identified as needed. The city has identified needs for multi-family, workforce, and seasonal worker housing, and a general housing affordability problem, and yet at least some of the lands included within the expansion area are shown by the city's analyses to have very high service costs. The city's revised HNA should address and link needed housing types with its existing analysis of service costs.

Objection: The city ignored the housing that is planned within two destination resort sites in its housing needs assessment.

Response: This objection is sustained for the reasons set forth in response to the similar objection from Central Oregon LandWatch.

Objection: The city has failed to include efficiency measures for the existing UGB as required by Goal 14 and ORS 197.296.
Response: This objection is sustained, in part. The city has included two new efficiency measures and referred to some existing efficiency measures as described in the director's analysis above. However, as set forth in detail above, these measures are both too uncertain, and inadequately related to the city's housing needs, to ensure that the city is complying with the need criteria of Goal 14, or with the requirements of ORS 197.296 to adopt measures to ensure that the city is planning for needed housing.

f. Summary of Decision on Housing and Residential Land Needs

The director remands the UGB amendment with the following instructions:

1. Include a map of buildable lands, as required by ORS 197.296(4)(c), as well as a zoning map and a comprehensive plan map for the lands within the prior UGB;

2. Include as its inventory of buildable lands, an analysis for each residential plan district of those lands that are "vacant," and of those lands that are "redevelopable" as those terms are used in ORS 197.296(4)-(5) and OAR 660-008-005(6). As part of this inventory, include an analysis of what amount of redevelopment and infill has occurred, and the density of that development, by plan district, since 1998. The inventory must include the UAR and SR 2 ½ plan districts, as well as the RL, RS, RM and RH districts;

3. If the city excludes lands on the basis that there is not a strong likelihood that existing development will be converted to more intense residential uses during the planning period, include an analysis of lands within all districts showing the extent to which infill and redevelopment has or has not occurred since 1998;

4. For each zoning district, analyze the number of units, density and average mix of housing types of urban residential development that has actually occurred since 1998 (including through rezoning) and how much of this occurred on vacant lands, and how much occurred through redevelopment;

5. For each zoning district, analyze whether future trends over the 20-year planning period are reasonably expected to alter the amount, density and mix of housing types that has actually occurred since 1998;

6. For each zoning district, adopt findings and conclusions regarding the number of units, the density, and the mix of housing types that the city concludes is likely to occur over the planning period, and identify how much is expected to occur on vacant lands, and how much is expected to occur through redevelopment;

7. Revise the Housing Needs Analysis to comply with ORS 197.296, OAR 660-008-0020, and ORS 197.303. The Housing Needs Analysis must include an evaluation of the need for at least three housing types at particular price ranges (owner occupancy) and rent levels (renter occupancy), and commensurate with the financial capabilities of *current and future* residents. Those housing types include: (a) attached single family housing (common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot pursuant to OAR 660-008-0005(1)); (b) detached single family housing (a housing unit that is free standing and separate from other housing units pursuant to OAR 660-008-0005(3); and (c) multiple family housing (attached housing where each dwelling unit is not located on a separate lot pursuant to OAR 660-008-0005(5));

8. Adopt the revised Housing Needs Analysis as an element of the comprehensive plan, along with findings that demonstrate how the revised Housing Needs Analysis complies with the applicable statutory, goal and rule requirements described above;

9. Analyze what the mix of plan designations should be in the UGB expansion area in direct relation to the city's projected housing needs, and consider the adoption of new residential plan districts that encourage more multi-family, higher density single family housing, and other needed housing types for a greater proportion of the expansion area, in order to meet the city's and the region's demonstrated housing needs;

10. Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers;

11. Consider splitting the existing RS zone, which covers most of the residential areas of the city, into two or more zones in order to encourage redevelopment in some areas while protecting development patterns in well-established neighborhoods;

12. In areas where the city is planning significant public investments, consider up-zoning as a means to help spread the costs of such investments;

13. Consider strengthening the minimum density provisions in the existing UAR and SR 2½ zones by eliminating PUDs and other clustering tools; and

14. Consider strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types, rather than relying on low density residential development.

2. Land Added to the UGB for Related (Non-Employment) Uses

a. Legal standards

Goals 10 and 14 and OAR 660, divisions 8 and 24 are the applicable state laws.

b. Summary of Local Actions

As noted in the introduction to this section, in addition to the 941 acres of land added to the UGB for residential uses, the city has added 1,925 acres to meet its estimated land need for public schools, parks, second homes, private open space and rights-of-way, and public rights-of-way. The amount of land the city estimates is needed for each of these uses (based partially on its analysis of land use within the prior UGB) is summarized in Table 1, in subsection 1.b of this section. [R. at 1092]

c. Objections.

Objections related to land need are itemized in subsection 1.c, above, and the department's responses related to those objections specific to non-residential, non-employment land need are provided in section 2.e, below.

d. Analysis and Conclusions.

Public schools and parks. The estimates of land need for public schools [R. 1088-1089] and parks [R. 1089-1090] are based on per-capita service standards recommended by the school district and the parks district. While there may be no inherent problem with the use of service standards, the city's application of the standards assumes that *all* new school and park facilities to serve new residents in Bend will be located on expansion lands outside of the prior UGB. The findings do not address whether the estimated land needs for schools can reasonably be accommodated within the UGB, as required by OAR 660-024-0050(4). Similarly, the findings for parks do not address whether the estimated need can be met within the UGB, or the extent to which the need may already be met by existing or planned facilities *outside* of the UGB (some types of park facilities are allowed outside of UGBs; see, OAR 660, division 34).

In addition, the land need estimate for public parks was increased from 362 acres to 474 acres at the very end of the city's review process, based not on the district's service standards but on an estimate of land need "on a quadrant basis using the city's Framework Plan." [R. at 1090] The findings do not clearly explain the basis for this increase,[20] and given the director's action with regard to the Framework Plan (see below) do not have an adequate factual base. As a result, the director is unable to find taht there is an adequate factual basis for the increased estimate of land needed for public parks. The director remands the city and county decisions, with direction to:

1. Determine whether the need for land for public schools can reasonably be accommodated within the existing UGB;

[20] The city's acceptance of this estimate was based on city council direction to err on the side of including too much, rather than too little land. [R. at 1090, note 55; R. at 8801]

2. Determine whether the need for land for public parks (including trails) can reasonably be accommodated within the existing UGB, and whether this need is already met in whole or in part by facilities planned or existing outside of the UGB; and

3. Adopt findings that justify the increase in land needed on a "quadrant" basis for parks, or use the prior estimate of the district for a lesser acreage.

Second homes. The director agrees with the city that second homes are a "legitimate Goal 10 issue." The city has estimated a land need for 500 acres for second home development. This acreage represents over half (again) the amount of land added for new housing units (first homes).

The city received testimony estimating that 377 acres of land were developed with second homes during the seven years prior to its decision. [R. at 1086] The city also received testimony that 20 percent of the total number of homes that would be developed during the planning period would be second homes. [R. at 1087] However, the city elected to use an 18 percent factor instead. [R. at 1087]

The director believes there is substantial evidence in the record to support the city's determination concerning the number of *units* of second home development during the planning period (between 18 and 20 percent of the total units needed). However, the city's findings do not identify or explain why the city used an average density of six units per net acre (the same density used for the expansion area generally) for this housing type. The findings do not explain why second homes require the same amount of land as the city is planning for first home development. Nor do the findings evaluate whether (or to what extent) this use might be accommodated within the prior UGB. [OAR 660-024-0050] Instead, the findings assume the entire need must be met on expansion lands at the same density as first home development. The result is that, although the city estimates second homes will be 18 percent of the total units developed over the next 20 years, it then allocates second homes more than half of the amount of land allocated to first home development. As a result, the director is unable to determine that land need for this use complies Goals 10 or 14, or their implementing rules, or with ORS 197.296. The director remands the city and county decisions, with direction to:

1. Coordinate with the county specifically concerning the need for second-home housing, and where this need should be satisfied regionally;

2. Evaluate whether this need can reasonably be accommodated on lands within the existing UGB;

3. To the extent that additional lands are required, establish a reasonable, specific density of development for this housing type for the next 20 years.

Private Open Space and Private Rights-of-way. The city applied a 15 percent factor to its projected residential (and park and school and second home) land needs to reflect projected land need for private open space and private rights-of-way. This figure is based on an analysis of the proportion of land within the prior UGB devoted to this use, and assumes the same land allocation within the expansion area. [R. at 1092] However, projecting a land need for private open space and rights-of-way for public parks and for public schools does not appear logical (unless the 15 percent figure was derived for all non-employment lands within the existing UGB, which is not clear from the findings). Further, there is no explanation in the record why prior development patterns, with a relatively large amount of private open space, is needed within the expansion area. Elsewhere in its decision, the city determines that lots that have access through private rights-of-way are not suitable for urbanization. Simply adopting past development patterns is not a sufficient basis to demonstrate a land need under Goal 14 or under ORS 197.296.For all these reasons, the director is unable to determine that this element of the city's decision complies with Goal 14 or OAR 660-024-0040.

The director remands the city and county decisions, with direction to either remove private open space and private rights-of-way as categories of land need, or justify why private open space and private rights-of-way are needed within the UGB expansion area in addition to estimated land needs for public parks and public rights-of-way.

Surplus Acreage. The amendment expands the UGB by 5,475 "suitable" acres to meet the estimated land need of 4,956 acres, yielding a surplus of 519 acres. [R. at 1193] The city's findings explain this excess acreage by referring to OAR 660-024-0040(1), which acknowledges that 20-year projections of land needs are estimates that should not be held to an unreasonably high level of precision. The city also appears to believe that this amount of acreage is needed for several specific reasons, including efficient provision of public services (e.g., including land on both sides of roads in some expansion areas), to facilitate the development of complete neighborhoods, and to make it possible to distribute employment lands throughout the expansion area. [R. at 1193] The findings, however, simply state these reasons, without explaining where these areas are, or why it is not possible to reduce acreage elsewhere in order to keep the total acreage consistent with its estimated land need.

The state does not require precision in estimating land need, and the city's estimates for residential, employment, and other land needs necessarily involve some degree of uncertainty.[21] But once the city *makes* its estimate, state law does not allow the city to simply add a cushion. Instead, state law requires the city to makes its best effort to arrive at a reasonable estimate of land need and then stick with that number. The inclusion of a specific amount of land in the UGB in addition to estimated need appears to be driven by its desire to include particular properties in the expansion area rather than first

[21] As an example, the Goal 10 findings state that the "[c]ity identified a need for 2,714 acres of additional land for housing based on the inventory, the coordinated population forecast, and the housing needs analysis." [R. at 1219] However, elsewhere the findings state that the estimated residential land need is 2,866 acres. [R. at 1092, 1167]

determining an amount of land need, and then deciding where to satisfy that need. [R. at 1193]

In addition, as noted at the introduction to this section, the city has included almost 3,000 additional acres of land within its UGB expansion area with no need determination at all. The city's decision appears to reflect an interpretation of state law that if lands are not suitable for urbanization,[22] they may nevertheless be included within a UGB with no need showing. That interpretation turns the state's urban growth management statutes, goals and rules on their heads.[23]

The city has provided no justification or explanation for the inclusion of these lands in its findings. As a result, the director remands the city and county decisions, with direction to remove the approximately 3,000 acres of lands from the UGB expansion area that the city has found are not suitable for urbanization, or explain with specificity why their inclusion is justified under Goal 10 and Goal 14.

Buffer Areas and Land Shown as RL in the Framework Plan. The adopted "Alternative 4A" UGB includes a 29-acre strip of Urban Low Density Residential (RL) along the central west edge of the proposed UGB, north of Skyliners Road and west of Master Plan Areas 3 and 4. [*See* Bend Urban Area Framework Plan Map, R. at 3; map of "Alternative 4A – Preliminary UGB Expansion December 3, 2008," Supp. R. at 3; and Supp. R. at 207-08] Neither the 2007 Residential Lands Study nor the General Plan amendments provide an adequate factual basis for a need for this land for this use and, in fact, the findings provide that lands proposed for RL plan designations are not serving an urban need. [R. at 1079] The city has not demonstrated a Goal 10 or 14 need for a very low density residential buffer with housing at two units per acre along the west side of the existing UGB between Skyliners Road and Shevlin Park.

More generally, the Framework Plan shows a substantial amount of lands planned as RL (Low Density Residential, 1.1 to 2.2 dwelling units per acre). As noted above, the city does not anticipate that the housing in these lands will serve any urban need. [R. at 1079] We find no findings explaining why it is appropriate to bring these lands within the UGB or what the urban land need is for them. The Framework Plan indicates that the city has no expectation that these lands will ever become urban. In fact, much of the lands were found by the city to not be suitable for urbanization.

---

[22] The city's bases for determining that lands in the expansion area are not suitable for urbanization also contain multiple problems, including that: (a) the conclusion that a parcel smaller than three acres with an existing dwelling on it is not suitable for urbanization lacks an adequate factual basis, and is not consistent with Goal 14; (b) the city's conclusion that lands within certain rural subdivisions cannot urbanize due to their CC&Rs is not supported by the city's own findings, which do *not* show that these lands cannot undergo additional development except in the case of a couple of the subdivisions. These issues are addressed in more detail in the portion of this decision concerning the city's decision about *where* to expand its UGB.

[23] For example, see *Collins v. LCDC*, 75 Or App 517 (1985).

As a result, the director finds that their inclusion in the UGB violates Goal 14 and Goal 10 and their implementing rules, as well as ORS 197.296. The director remands the city and county decisions, with direction to remove the lands from the UGB expansion area that the city has designated as RL in its Framework Plan map, or explain with specificity why their inclusion is justified under Goal 10 and Goal 14.

e. Response to Objections

Anderson –
Objection: The city and county underestimate the amount of land needed for right-of-way, and therefore fails to comply with OAR 660-024-0040(1). Specifically, the estimate is based on land use within the existing UGB, and fails to account for substandard existing rights-of-way and for needs attributable to stormwater management.
Response: This objection is denied. While additional right-of-way may be required for stormwater management, the city has included a 15 percent factor for private rights-of-way and open space that should provide more than enough land area for stormwater management needs. In addition, the city's assumption that most of the added residential land will be planned RL or RS provides substantial excess land beyond that required for needed housing. There is no specific evidence regarding the quantity of land needed for stormwater management and public right-of-way, or that the amount of land the city has added to the UGB cannot accommodate these uses. The city should evaluate the amount of land needed for stormwater management in connection with its reevaluation of land need for the UGB expansion area, but no separate remand is required.

Toby Bayard –
Objection: The proposal doesn't plan for needed housing types to meet the housing needs of all residents as required by Goal 10, particularly lower income and multifamily housing. The proposal underestimates the land need for housing for lower income households.
Response: This objection is sustained. As noted above, the city's Housing Needs Analysis fails to analyze needed housing types as required by Goal 10, the Goal 10 rule, and ORS 197.296. The city's Framework Plan would devote most of the expansion area to low density residential uses, where large lots would likely not provide needed housing for lower income households.

Objection: The city's estimate of land need for second homes is too high, and is not supported by the evidence in the record.
Response: This objection is denied in part. As noted in the department's analysis, second home housing is an appropriate Goal 10 issue, and there is substantial evidence to support the city's determination concerning the need for second home units. However, as to the acreage of land needed in a UGB expansion area, the objection is sustained. As explained above, the city has not explained whether this need can be accommodated within the existing UGB, or the amount of land needed in the expansion area.

Objection: The city's estimate of land need for public right-of-way is too high.

Response: This objection is denied. There is substantial evidence in the record to support the city's use of a 21 percent factor in estimating right-of-way for lands added to the UGB (the amount of land devoted to right-of-way within the existing UGB).

Carpenter/McGilvary –
Objection: The city and county underestimate the amount of land needed for right-of-way, and therefore fails to comply with OAR 660-024-0040(1). Specifically, the estimate is based on land use within the existing UGB, and fails to account for substandard existing rights-of-way and for needs attributable to stormwater management.
Response: This objection is denied for the same reasons that the objection of Anderson was denied (above).

Central Oregon LandWatch –
Objection: The city does not explain how or why unsuitable lands are added to the UGB to arrive at a gross acreage total of 8,462 acres. The city's findings do not explain why some lands are considered unsuitable, nor why they are nevertheless added to the UGB. The city's determination that lots less than 3 acres in size are unsuitable if they have existing development is not explained, not does it comply with Goal 14.
Response: These objections are sustained. State law does not allow lands that are not needed, and not suitable, for urban development to be added to an urban growth boundary. The city's findings do not explain its justification for adding lands beyond the approximately 5,000 acres of land need shown for housing, housing-related, and employment needs.

Objection: The city's projected land need of 500 acres for second home development is not justified and is based on incorrect data.
Response: This objection is denied in part and sustained in part. The objection is denied with respect to the city's estimate of needed units. The objection is sustained with regard to the acreage needed within the UGB expansion area, for the reason set forth above with regard to the similar Bayard objection.

Objection: The city's projected land need of 474 acres for parks is not justified, and is based on plans not incorporated into the city's comprehensive plan. In addition, the city fails to account for the fact that some of this need is and will continue to be met on lands outside of the UGB.
Response: This objection is denied in part, and sustained in part. The district's plans can serve as substantial evidence for the city's decision, even though those plans have not been adopted by the city as part of its comprehensive plan. As a result, the city could chose to base its decision on evidence including service standards recommended by the district. However, the element of the objection with regard to the location of where this land need may be met is sustained, for the reasons set forth above.

Objection: Regarding land need for public right-of-way, the city's estimate is based on existing development patterns and does not consider provisions for skinny streets that can and have reduced the amount of land required in newer developments in the city.

Response: This objection is denied. The city can choose to rely on evidence consisting of development patterns from lands within the prior UGB in estimating land need in the expansion area for public right-of-way unless there is a showing that doing so would violate the city's code or comprehensive plan.

Objection: Regarding land needed for private rights-of-way and open space, there is no showing of why this type of private land use is needed under Goal 14, when public parks are already provided.
Response: This objection is sustained for the reasons set forth in the director's decision.

Objection: The city misconstrues 660-024-0040(1) in including a "buffer" of 519 acres over and above its demonstrated land need for residential use.
Response: This objection is sustained for the reasons set forth in the director's decision.

Objection: The city fails to consider the approval of the Tetherow destination resort and its effect on land need within the UGB for this type of use.
Response: This objection is sustained. Both the city and the county have an obligation to consider other second-home development in the region in determining how much second-home development is needed within Bend's UGB. The director's decision requires the city and the county to coordinate in determining regional need for this type of housing, and what proportion of that need should be accommodated within Bend.

Newland Communities –
Objection: The theoretical surplus of 519 acres is needed to fulfill land needs, and to provide for effective delivery of infrastructure and complete communities.
Response: This objection is denied, in part. The director agrees that the 519 acres in question may only be included if the city documents a need for that amount of land. Otherwise, the objection is denied because the city has failed to provide the required justification of need under Goal 14, as set forth in detail above.

Swalley Irrigation District –
Objection: The amount of land determined to be needed is too large and beyond what the city determined was needed. The 519-acre cushion must be removed.
Response: This objection is sustained, in part. As set forth in more detail above, the city has not adequately documented its 20-year need for land for housing and other non-employment uses. In addition, the city may not include land in addition to its documented 20-year need (e.g., the 519 acres of "cushion").

f. Summary of Decision on Land Need Not Related to Residential or Employment Needs

The director remands the UGB amendment with the following instructions:

1. Determine whether the need for land for public schools can reasonably be accommodated within the existing UGB;

2. Determine whether the need for land for public parks (including trails) can reasonably be accommodated within the existing UGB, and whether this need is already met in whole or in part by facilities planned or existing outside of the UGB;

3. Adopt findings that justify the increase in land needed on a "quadrant" basis for parks, or use the prior estimate of the district for a lesser acreage;

4. Coordinate with the county specifically concerning the need for second-home housing, and where this need should be satisfied regionally;

5. Evaluate whether this need can reasonably be accommodated on lands within the existing UGB;

6. To the extent that additional lands are required, establish a reasonable, specific density of development for this housing type for the next 20 years;

7. Either remove private open space and private rights-of-way as categories of land need, or justify why private open space and private rights-of-way are needed within the UGB expansion area in addition to estimated land needs for public parks and public rights-of-way;

8. Remove the approximately 3,000 acres of lands from the UGB expansion area that the city has found are not suitable for urbanization, or explain with specificity why their inclusion is justified under Goal 10 and Goal 14; and

9. Remove the lands from the UGB expansion area that the city has designated as RL in its Framework Plan map, or explain with specificity why their inclusion is justified under Goal 10 and Goal 14.

3. Is the UGB amendment consistent with the Bend Area General Plan?

a. Legal standard

Comprehensive Plan data, findings, conclusions, and policies must be complete, comply with the statewide planning goals, and be internally consistent. ORS 197.015(5), ORS 197.250, and Goal 2.

b. Summary of Local Actions

On January 5, 2009, the city adopted a UGB expansion and other Bend Area General Plan amendments. [R. at 1228-1835] The amendments regarding housing and residential land are in Chapter 5 of the Plan. [R. at 1280-1315]

c. Analysis

No objections were received concerning consistency of the action with Bend's General Plan. The UGB amendment findings state: "Adopted policies in the Bend General Plan support the designation of higher-density residential areas in proximity to commercial services, parks and schools." [R. at 2133] However, the only places that the city plans for needed medium density and high density housing is in the Central Plan Area, on some planned transit routes (location undefined), and in the expansion area; no new medium density and high density housing, infill development, or redevelopment is planned for existing neighborhoods. Therefore, this part of the UGB amendment is not consistent with existing plan policies. (For more details, see the discussions in this report regarding (1) compliance with Goal 14 with efficiency measures, and (2) Goal 10 compliance.)

The UGB amendment and related plan amendments are also inconsistent with the following plan policies:

- Housing Policy 4: "Implement strategies to allow for infill and redevelopment at increased densities, with a focus on opportunity areas identified by the city through implementation strategies associated with this policy." [R. at 1311] Evidence of inconsistency: *As discussed elsewhere in this report*, the city is apparently restricting infill and redevelopment to (1) certain areas in the Central Area Plan and along planned fixed route transit corridors, and (2) developed exception parcels in the UGB expansion area that are larger than three acres. The record shows no evidence for planned infill and redevelopment in most of the existing UGB and also much of the exception lands in the expansion area.

- Housing Policy 17: "Implement changes to the city's code that facilitate the development of affordable housing for very low, low and moderate-income residents, as determined by appropriate percentages of Area median Family income, consistent with recent updates to the city's development code and/or new strategies identified in the Plan" [R. at 1313] Evidence of inconsistency: As discussed elsewhere in this report, the proposal does not demonstrate for either the 2006 development code or proposed amendments thereto how the code will facilitate the development of needed housing for households of most income levels.

- Housing Policy 21: "In areas where existing urban level development has an established lot size pattern, new infill subdivision or PUD developments shall have a compatible lot transition that compliments the number of adjoining lots, lot size and building setbacks of the existing development while achieving at least the minimum density of the underlying zone. New developments may have smaller lots or varying housing types internal to the development." [R. at 1313] Evidence of inconsistency: As discussed elsewhere in this report, the proposed UGB and other plan amendments do not plan for—in fact, do not permit—any infill subdivisions in existing neighborhoods.

d. Conclusion and decision

The Bend Area General Plan is internally inconsistent. The UGB amendment and related plan amendments adopted on January 5, 2009 are not consistent with Housing Policies 4, 17 and 21.

The director remands the proposal with direction to revise the proposal to be consistent with Housing Policies 4, 17 and 21 in Chapter 5 of the Bend Area General Plan.

4. Do the UH-10, UH-2½ and SR 2½ zones comply with Goal 14 and OAR 660, division 24?

a. Legal Standard

Goal 14 and OAR 660-024-0050(5) (2006) address the zoning of land brought into a UGB.[24] The goal and rule require county zoning for urbanizable land within the UGB to "maintain [the land's][25] potential for planned urban development until appropriate public facilities and services are available or planned."

Retaining the existing rural zoning on land brought into the UGB maintains large parcel sizes, severely restricts new non-resource uses, and limits new primary structures. Allowing parcelization at well below 10 acres and allowing new primary use structures,

---

[24] Goal 14 provides, in part:

> Urbanizable Land
>
> Land within urban growth boundaries shall be considered available for urban development consistent with plans for the provision of urban facilities and services. Comprehensive plans and implementing measures shall manage the use and division of urbanizable land to maintain its potential for planned urban development until appropriate public facilities and services are available or planned.

The statewide planning goal definitions as amended April 28, 2005 define "urbanizable land" as: "Urban land that, due to the preset unavailability of urban facilities and services, or for other reasons, either:

> (a) Retains the zone designations assigned prior to inclusion in the boundary; or
>
> (b) Is subject to interim zone designations intended to maintain the land's potential for planned urban development until appropriate public facilities and services are available or planned."

[OAR 660, division 15]

Goal 14 planning guideline #2 states: "The size of the parcels of urbanizable land that are converted to urban land should be of adequate dimension so as to maximize the utility of the land resource and enable the logical and efficient extension of services to such parcels."

Likewise, OAR 660-024-0050(5) (adopted October 5, 2006) provides: "When land is added to the UGB, the local government must assign appropriate urban plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development. The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB."

[25] "Its" refers to land within the UGB.

especially if they are placed in the middle of a parcel, fails to maintain the expansion area in parcels and in form that can develop efficiently and where it is possible to provide efficient and economic urban services. As the city's findings regarding suitability indicate, urbanizing areas that have developed as suburban subdivisions can be extremely difficult.

b. Summary of Local Actions

The county adopted two holding zones for the UGB expansion area: the Urban Holding-10 (10-acre minimum parcel size) and the Urban Holding-2½ (2½-acre minimum parcel size), in Title 19 of the Deschutes County Code. [R. at 1877-80] The findings state that these zones:

> * * * respect the existing pattern of development and permit reasonable use of the land in the interim while retaining the rural densities. Both holding zones allow lot sizes as small as 15,000 square feet provided that the overall density of the development does not exceed the density of the zone. This 'cluster development' provision encourages maximum retention of large lot parcels. Too often holding zones with ten acre minimum lot sizes develop with 'hobby' farms and ranchettes that never redevelop to urban potential. Cluster development allows residential development at the same rural density but preserves the majority of the land for urban development. [R. at 1221]

An existing city zone, Suburban Low Density Residential (SR 2½), like the new UH-2½ and UH-10 zones, was intended to hold parcels within the UGB "until these lands are annexed to the city or until sewer service is available, and such lands are rezoned consistent with planned densities and uses in the Bend Area General Plan."

c. Analysis

The findings quoted above fail to recognize that the "cluster" provisions in the "holding" zones allow substantial low-density suburban development to occur on lands that are planned for urban densities. None of the adopted zones will preserve urbanizable land for future urbanization. As a result, the city and county actions violate Goal 14 and OAR 660-024-0050. Fifteen-thousand square-foot lots (approximately three units per acre) are urban-density lots, albeit at a density that is lower the six units per acre that the city has planned for the expansion area. Urban levels and intensities of development are not permitted within a UGB unless and until urban facilities and services are available and the land is annexed to the city. Even without the provision for "clustering" with 15,000 square foot lots, the UH-2½ and SR 2½ zones' 2.5-acre minimum parcel size is too small to protect urbanizable lands for efficient future urbanization once the lands are annexed and provided with urban public services. State law provides for two ways to preserve urbanizable land for future urban development: retain the existing rural resource zoning, or apply an interim holding zone that maintains large parcel sizes and doesn't

increase vehicle trip generation.[26] State law does not allow holding zones that provide for substantial increases in development, increased traffic generation, and inefficient future development patterns prior to urbanization and the application of urban zoning and provision of urban services.

The existing city zone, Suburban Low Density Residential (SR 2½), like the new UH-2½ and UH-10 zones, is intended to hold parcels within the UGB "until these lands are annexed to the city or until sewer service is available, and such lands are rezoned consistent with planned densities and uses in the Bend Area General Plan." The SR 2½ zone applies only to "existing SR 2½ lands within the UGB." At first glance, this appears to prohibit *new* lots as small as 2½ acres in the urbanizable area (*i.e.*, outside city limits) of the city's UGB. However, there is no maximum lot size in this zone, and existing SR 2½ lots larger than 2.5 acres may be divided into lots as small as 2.5 acres.[27] As explained above, 2.5 acres is too small a parcel size for a holding zone in an urbanizable area because it does not maintain land for efficient future urbanization. Therefore, the SR 2½ zone also violates Goal 14 and OAR 660-024-0050.

The department advised the city of these issues by letter on October 24, 2008. [R. at 4372]

d. Conclusion and Decision

The UH-10, UH-2½, and SR 2½ zones do not maintain the potential of urbanizable land for planned urban development until appropriate public facilities and services are available or planned and therefore violate Goal 14 and OAR 660-024-0050. The director remands the city and county decisions with direction to:

1. Eliminate the UH-2½ zone, and eliminate application of the SR 2½ zone to lands within the UGB expansion area; and
2. Revise the UH-10 zone to:
   a. Prohibit land divisions that create any parcels smaller than 10 acres in size; and
   b. Include development siting standards to avoid future conflicts with the extension of efficient urban transportation, public facilities, and land use patterns; and
3. Apply the UH-10 zone to any and all land acknowledged for addition to the UGB.

---

[26] *See, e.g.,* ORS 197.752(1): "Lands within urban growth boundaries shall be available for urban development concurrent with the provision of key urban facilities and services in accordance with locally adopted development standards." *Also see* OAR 660-024-0020(1)(d): "The transportation planning rule requirements under OAR 660-012-0060 need not be applied to a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary."

[27] See Bend Code Section 10-10.9C.

F. Economic Development Land Need

Several objections raise issues related to the assumptions, analysis and conclusions used to determine land need for employment uses. The legal criteria for this portion of the submittal are found in Statewide Planning Goal 9 and OAR 660, division 9. Subsection 1.a, below, provides a description of what the goal and rules require, and this description is relied upon in subsequent subsections addressing related objections to the UGB amendment. Objections relating to land need for employment uses that not specifically addressed are deemed denied for the reasons set forth in this section.

1. Did the city have an adequate factual basis for including and excluding lands for employment uses?

a. Legal Standard

Statewide Planning Goal 9, "Economic Development," requires that comprehensive plans provide opportunities for a variety of economic activities, based on inventories of areas suitable for increased economic growth taking into consideration current economic factors. The goal requires that comprehensive plans provide for at least an adequate supply of suitable sites, and limit incompatible uses to protect those sites for their intended function.

OAR 660, division 9 is the administrative rule that implements Goal 9. Its purpose is to "link planning for an adequate land supply to infrastructure planning, community involvement and coordination among local governments and the state," and "to assure that comprehensive plans are based on information about state and national economic trends." [OAR 660-009-0000]

OAR 660-009-0010(5) provides that the effort necessary to comply with OAR 660-009-0015 through 660-009-0030 will vary depending upon the size of the jurisdiction, the detail of previous economic development planning efforts, and the extent of new information on national, state, regional, county, and local economic trends. A local government's planning effort is adequate if it uses the best available or readily collectable information to respond to the requirements of the administrative rule.

OAR 660-009-0015 requires that comprehensive plans provide an Economic Opportunities Analysis (EOA) that describes a review of economic trends, required site types for likely future employers in the jurisdiction, an inventory of available lands, and assessment of the community's economic development potential. OAR 660-009-0015(1) requires that the review of trends be the principal basis for estimating future employment land uses.

OAR 660-009-0020 requires that comprehensive plans include policies to implement the local economic development objectives, provide a competitive short- and long-term supply of sites for employment, ensure those sites are suitable for expected users, and provide necessary public facilities and services. OAR 660-009-0020(2) states that plans

for cities and counties within a Metropolitan Planning Organization (MPO) must include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed.

OAR 660-009-0025 requires that comprehensive plans adopt measures adequate to implement local economic development policies. These include designation of sites for a 20-year supply of employment land and maintenance of a short-term supply of serviceable lands.

OAR 660, division 24, "Urban Growth Boundaries," provides direction regarding the use of data, findings and conclusions developed to address economic development and Goal 9 during a UGB review. OAR 660-024-0040(5) states that the determination of 20-year employment land need for an urban area must comply with applicable requirements of Goal 9 and OAR 660, division 9, and must include a determination of the need for a short-term supply of land for employment uses. Employment land need may be based on an estimate of job growth over the planning period. Local government must provide a reasonable justification for the job growth estimate, but Goal 14 does not require that job growth estimates necessarily be proportional to population growth.

b. Summary of Local Actions

The EOA is included in the record as Appendix E. [R. at 1498] The EOA includes a discussion of the community's objectives, including target industries. [R. at 1516] The Executive Summary highlights the steps of the complete analysis including demographic trends, historic and expected employment trends, inventory of the current land supply, determination of new employment, land need through 2028, which is reported in the summary as a table [R. at 1503-1506].

Section 3 of the EOA contains the review of trends used for estimating future employment land uses, as required by OAR 660-009-0015(1). [R. at 1519-1566] It provides a detailed report and analysis of trends, including population and demographics, coordinated population projection, educational attainment, household income, wages and benefits, labor force and unemployment, changing economic markets, current covered employment, employment shifts and land needs, the economic outlook, local economic trends, expectations of disproportionate employment growth, land supply as a threat to employment growth, education's role in the economy, and a need for a large university campus.

Other sections of the EOA detail characteristics of Bend's employment lands, discuss the employment projection methodology, and the results of the projections. [R. at 1567-1578]. The EOA includes a discussion of the use of employment categories instead of the more common employment sectors. [R. at 1583-1584]

The EOA includes a note that the analysis and conclusions were modified by the city [R. at 1585]. The modifications, based on input from the planning commission, UGB

technical advisory committee, and stakeholders, are discussed in appendices A-H [R. at 1642-1727].

Appendix A presents the modified employment projections per industrial sector classification as a spreadsheet. [R. at 1642]

Appendix B is a memo outlining staff recommendations of modifications to economic variables relative to consultant work completed for the city. [R. at 1649-1651] To account for uncovered workers, the employment projection is increased by 11.5 percent, based on interpolation of national and state census data. No local employment data were gathered for this analysis. The memo includes a comment by the Oregon Employment Department regional economist that no analysis exists to suggest how land needs for uncovered workers should be calculated, and suggested a rule-of-thumb instead. The memo also makes recommendations regarding modifications to the employment forecast for employment on residential and public facilities lands.

The submittal includes findings in support of the UGB expansion for employment lands. [R. at 1103-1165] These findings include: policy direction, incorporation by reference of a 2008 EOA, trend analysis, employment projection, employment land inventory, employment land need, discussion of how to satisfy the requirements of Goal 9, identification of required site types, assessment of economic development potential, meeting the requirement of MPOs for short-term supply, economic development policies, designation of employment lands, and findings related to uses with special siting requirements.

In summary, the EOA says there is need for 1,008 acres of commercial land and between 100 and 250 acres of land for each of the following use categories: industrial and mixed employment, public facilities, economic uses in residential zones, medical, new hospital site, a university site, and two 56-acre industrial sites. The total employment land need shown is 2,090 acres. [R. at 1114] This compares to the "Scenario A" conclusion that there is a 1,380-acre need, which was the result of a relatively simplistic formula of dividing employment projections by employment densities.

c. Objections and DLCD Comments

DLCD commented on Goal 9 issues prior to local adoption of the UGB amendment. A DLCD letter of October 24, 2008 commented that the EOA lacked findings on site suitability criteria and findings supporting a land need for two approximately 50-acre industrial sites. [R. at 4725]

A DLCD letter of November 21, 2008 commented that assumptions and determinations relating to employment land were either missing, were not calculated accurately, or lacked an adequate factual basis. Specifically, DLCD cautioned against: (1) the use of a 15 percent vacancy rate assumption for the 20-year employment land supply; (2) adding "surplus" employment land to the need calculation to account for market efficiency; and (3) adding residential land need via the EOA based on employment in residential zones.

The letter further comments that these errors led to an overestimation of the need for employment land. [R. at 3765]

Three objectors challenged whether the submittal provides an adequate factual basis for the findings and conclusions drawn: Swalley Irrigation District, Brooks Resources, and Central Oregon LandWatch.

Swalley Irrigation District – The employment forecast is not supported by evidence in the record. [Swalley Irrigation District, May 6, 2009, pp. 47-53]

Brooks Resources – The findings do not demonstrate that at least some of the employment land needs cannot be accommodated within the existing UGB. The record lacks evidence that the Westside UGB expansion area is suitable for employment lands. [Brooks Resources April 29, 2009, pages 2–9]

Central Oregon LandWatch – The findings and EOA are outdated, so there is no basis for need demonstrated. [Central Oregon LandWatch May 7, 2009, pages 11–12]

d. Analysis

A local government's planning effort under Goal 9 is adequate if it uses the best available or readily collectable information to respond to the requirements of the rule. [OAR 660-009-0010(5)] This standard is intended to make the planning effort informative rather than prescriptive. A substantial record of fact gathering and analysis exists in the record.

The methodology for determining employment land need for a legislative UGB amendmentincludes the following main steps:

- Determine the total 20-year employment land supply need by reviewing trends; [OAR 660-009-0005(13), 0015(1) and 0025(2)]
- Subtract existing sites that are defined as vacant; [OAR 660-009-0005(13]
- Subtract existing sites that are defined as likely to redevelop; [OAR 660-009-0005(13)]
- Add needed sites not available in the inventory of vacant or likely to redevelop. [OAR 660-009-0025(2)]

Completing these steps yields the amount of employment land required in a UGB expansion to meet the 20-year employment land supply called for in the Goal 9 rule. It may also identify some amount of surplus employment land. This surplus means that there are currently-zoned employment sites unsuitable to meet the requirements of the 20-year supply, although in usual practice this is absorbed by the need for general employment sites without specific characteristics other than some number of acres in unspecified locations.

The analysis for the EOA did not follow these steps, and the record is unclear and confusing regarding how the amount of land needed for employment was determined. An

EOA was prepared in 2008, and it was incorporated by reference in the findings for the UGB expansion, [R. at 1110] but other, conflicting findings and conclusions were also included, without the differences being reconciled. A table showing the 20-year employment land need in gross acres is included in the findings. [R. at 1114, 1141]

A table showing the existing supply of vacant and developed employment land is also included in the findings. [R. at 1109] However, there is no analysis included that distinguishes developed employment land likely to redevelop during the planning period from that not likely to redevelop. As set forth above, this analysis is key to determining the quantity of land needed for employment uses for a UGB expansion, and is a required part of an EOA. [OAR 660-009-0015 and 660-009-0005(1)] The EOA "* * * assumes that 10 percent of new employment will take place on existing lands." [R. at 1595] However, there is no analysis of trends to support this assumption.

The findings also do not include identification of needed suitable sites (i.e., sites that are not in the inventory of vacant and likely to redevelop sites already in the UGB). The city response to DLCD's request for record clarification [Bend December 7, 2009] refers to sections of the original EOA as the analysis and basis for findings, but the original EOA analysis was significantly modified later in the process [R. at 1585], and it does not appear that the original EOA is still a basis for the city's decision given the findings.

Forecasts and data are not required to be updated once the UGB review process has begun. [OAR 660-024-0040(2)]

Regarding the assumption that Bend will experience a 15 percent vacancy rate on employment land during the planning period, the evidence in the record does not support such a conclusion. [R. at 1616 and 1111-1112]. The findings state that the local vacancy rates have been approximately half this amount. The city justifies the higher long-term rate on a desire to drive industrial and commercial land rents down. That cannot be a basis for inflating trend data because, taken to its extreme, it would have no limit in terms of the acreage assumed to be committed as a result of commercial and industrial vacancies. While employment land availability, and the effects of availability on rents and land prices, are legitimate considerations in planning for growth, assigning an across-the-board vacancy rate that is significant above trends [R. at 1562] does not comply with the Goal 9 rule.

e. Conclusion

Except for the objection from Central Oregon LandWatch that the findings and EOA are outdated, the objections based on adequacy of the factual record, findings and analysis are sustained. The record does not include adequate findings, analysis or evidence to justify the city's determination of employment land need. The director remands with instructions to develop an EOA that includes a determination of the employment land supply consistent with the requirements of OAR 660, division 9. This must at least include the following elements based on factual evidence:

1. Determination of the 20-year supply of employment land;

2. An inventory of existing employment land categorized into vacant, developed land likely to redevelop within the planning period, and developed land unlikely to redevelop within the planning period;

3. Identification of required site types that are not in the inventory of either vacant or likely to redevelop sites;

4. Identification of serviceable land; and

5. Reconciliation of need and supply.

2. Does the analysis show too great a need for employment land?

a. Legal Standard

OAR 660-009-0015 requires that an EOA determine the need for employment land. OAR 660-024-0040(5) establishes the determination of employment land in the context of a UGB amendment. A more complete explanation of the Goal 9 requirements is provided in subsection 1.a of this section. These rules make it clear that the standard is for the city to provide a 20-year supply of land for employment.

In order to justify a need for employment land within the UGB to provide for efficient market functions or to respond to unique market conditions, there needs to be in the record a policy directive to provide additional land to meet some public purpose; a factual basis in the EOA to satisfy OAR 660, division 9; and, to satisfy OAR 660, division 24, a finding that the job growth estimate that supports that land need determination is reasonable.

b. Summary of Local Actions

A general summary of the city's actions is provided in subsection 1.b, above. The EOA discusses the provision of additional employment lands for a variety of locations and sites in addition to the 20-year supply, described in the EOA as Scenario B. [R. at 1620] A summary is provided. [R. at 1632] The land need findings discuss the city's rationale for increasing the supply of employment land 20-year need. [R. at 1115-1165]

Scenario A is characterized as "minimal employment land demand" and is from the 2008 EOA. Scenario B makes several adjustments to the employment land need from Scenario A, based on input from a stakeholder group. Scenario B reduces the land need as determined by a review of trends from 1,380 to 898 acres, reduces the resulting amount of vacancy-rate adjustment from 207 to 134 acres, adds 421 acres of redundant supply for market choice, increases the resulting 21 percent right of way adjustment to 235 acres, and adds 15 percent or 168 acres for other land needs. The total estimated employment land need in Scenario B is unclear [R. at 1622].

The city adopted economic development policies in chapter 6 of the Bend Area General Plan. [R. at 1339] The policies accept the 2008 EOA and associated land needs, establish the short-term supply management plan, establish emphasis on large-lot industrial, and established mixed-use and commercial development guidance. The short-term land supply management plan requires staff to report to council and do not include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed as required by OAR 660-009-0020(2).

c. Objections and DLCD Comments

The department commented that the city erred in increasing its estimated long-term (20-year) employment land supply by 50 percent based on analysis perhaps appropriate for the required short-term supply, and by adding residential land need in the EOA based on employment in residential zones. [R. at 3765-3766] Also see the description of DLCD comments in subsection1.c of this section.

The department received objections from four parties alleging a variety of deficiencies with the submittal related to the amount of employment land the city needs: Swalley Irrigation District, Central Oregon Land Watch, and Brooks Resources Corporation.

Swalley Irrigation District – The UGB was expanded to include more employment land than was justified. The city used an erroneous definition of "developed land" and "serviceable land." [Swalley Irrigation District, May 6, 2009, pp. 47-53]

Brooks Resources – The findings do not demonstrate that at least some of the employment land needs cannot be accommodated within the existing UGB. [Brooks Resources April 29, 2009, pages 2–9]

Central Oregon LandWatch – The EOA employed an inappropriate assumption regarding vacancy rates and institutional use, open space, and right of way. The EOA does not demonstrate a need for several specific uses. The EOA impermissibly adds surplus employment land to the inventory. [Central Oregon Land Watch May 7, 2009, pages 11–12]

Barbara I. McAusland – Barriers to locating industry in Bend argue against the need for an oversupply of industrial land. The findings do not demonstrate a need for an oversupply of employment land. [McAusland May 5, 2009, page 3]

d. Analysis

The determination of the employment land supply is based on the review of trends the local government expects to influence the decision. The local government then identifies the sites that are expected to be needed to accommodate anticipated employment growth. There is in the record policy direction, fact-based analysis of an employment projection, and market analysis of the rationale for providing employment land above the minimum 20-year need. No upper limit is established in rule or statute, but OAR 660-009-0015(2) states that the EOA "must identify the number of sites by type *reasonably expected to be*

needed to accommodate the expected employment growth. . .” [emphasis added] and OAR 660-024-0050 and Goal 14 require an analysis showing that the needs cannot reasonably be accommodated on land already inside the UGB.

The EOA includes two estimates of employment land need [R. at 1618, 1622]. Both scenario A and B include policy directives to increase the base land need for a variety of factors including vacancy, redundant supply, and right-of-way. There is policy direction and ample discussion. However, as noted in subsection 1.c of this section, the city’s findings do not explain the land need determination in a fashion that demonstrates it complies with OAR 660, division 9.

In order to justify an increase in the need for certain types of employment land within the UGB over what a trends-based analysis would conclude, there would need to be a policy directive to provide additional land for economic development purposes in the record; a factual basis in the EOA to satisfy OAR 660, division 9; and, to satisfy OAR 660, division 24, a finding that the job-growth estimate that supports the land need determination is reasonable and cannot be accommodated within the existing UGB.

As noted in subsection 1.c above, the findings do not include identification of needed suitable sites. The EOA does not make a distinction between built sites that are likely to redevelop and those that are not, as required by OAR 660-009-0015(3).

e. Conclusion

The objection is sustained. The director remands with the same instructions explained in subsection 1.e, above.

3. Did the city err in designating 114 acres for employment in residential areas?

a. Legal standard

OAR 660, division 9 requires that an EOA determines the need for employment land. [OAR 660-009-0015] OAR 660-024-0040(5) establishes the determination of employment land in the UGB. A more complete explanation is provided in subsection 1.a of this section, above.

OAR 660-009-0005(3) defines industrial use. OAR 660-009-005(6) defines “other employment uses” as:

> All non-industrial employment activities including the widest range of retail, wholesale, service, non-profit, business headquarters, administrative and governmental employment activities that are accommodated in retail, office and flexible building types. Other employment uses also include employment activities of an entity or organization that serves the medical, educational, social service, recreation and security needs of the community typically in large buildings or multi-building campuses.

OAR 660-009-0025 requires local governments to "adopt measures adequate to implement [economic development] policies" and "(a)ppropriate implementing measures include amendments to plan and zone map designations…"

Goals 10 and 14 and OAR 660, divisions 8 and 24 establish the requirements for designation of residential land and UGB expansion considerations for residential uses.

b. Summary of Local Actions

The findings regarding employment land need in Table 4-3 include 119 acres for employment uses on residentially zoned land. [R. at 1114] The trends analysis includes the number of employees expected to find employment on 119 acres zoned for residential [R. at 1113].

The 2008 EOA recommends an increase to the employment projection for jobs that are typically based in residential zones, such as certain public facilities, schools, churches and home occupations, and that may not be captured by traditional forecast methods, and recommends that additional residential land be designated to accommodate the forecast. [R. at 1651]

c. Objections and DLCD Comments

The department received objections regarding designation of residential areas for employment from Swalley Irrigation District and Central Oregon LandWatch. DLCD had also commented on this issue**.** The department's letter asserts that the EOA allocates a significant amount of employment to the high-density residential districts based on a methodology that does not protect lands for needed multi-family housing from commercial development. [R. at 3767]

Subsequent review has revised this analysis. The city's 2008 EOA [R. at 1651] recommends an increase to the employment projection for jobs typically based in residential zones, such as certain public facilities, schools, churches and home occupations that may not be captured by traditional forecast methods, and recommends that additional residential land be designated to accommodate the forecast.

d. Analysis

It is appropriate to define the portion of projected employment that is expected to take place on residential land in order to gain an accurate approximation of how much will locate in employment zones. However, OAR 660, division 9 does not permit designation of residential land for employment use. Residential land is designated according to the standards of OAR 660, division 8, which permits adjustments to the residential buildable lands inventory to account for non-residential uses.

e. Conclusion

The objection is sustained. The 119 acres of residential land is not justified, and must be removed from the employment land need.

4. Did the city err in including land for a hospital, university campus, and two 50-acre industrial sites?

a. Legal standard

OAR 660-009 requires that an EOA determines the need for employment land. [OAR 660-009-0015] OAR 660-024-0040(5) establishes the determination of employment land in the UGB. OAR 660-009-0025(8) provides requirements for designating employment uses with special siting characteristics.[28] A more complete explanation of OAR 660, division 9 requirements is provided in subsection 1.a of this section, above.

In order to justify an increase in the need for certain types of employment land within the UGB there must be a factual basis in the EOA to satisfy OAR 660, division 9, a policy directive to provide the sites for economic development purposes, and measures to protect the sites for the intended uses.

b. Summary of Local Actions

The EOA discusses the provision of additional employment lands for specific uses including a new hospital, a university campus and two 50-acre industrial sites [R. at 1506, 1517, 1628, 1724]. Policies are included as an appendix to the EOA [R. at 1674]. Findings are included [R. at 1103-1165], with specific use references [R. at 1107, 1114, 1115, 1116, 1120, 1122, 1123, 1124, 1126, 1128, 1140].

c. Objections and DLCD Comments

The department received objections alleging the city lacked justification to add to its estimated need land for a hospital, a university campus and two 50-acre industrial sites. [Central Oregon LandWatch May 7, 2009, p. 11] The department had commented that the city lacked substantial findings to support the addition of large sites for a new hospital, an auto mall, a university campus and two 50-acre industrial sites [R. at 3770, 3771, 3776].

d. Analysis

A jurisdiction's planning effort is adequate if it uses the best available or readily collectable information to respond to the requirements of this division per OAR 660-009-0010(5). There is in the record policy direction, fact-based analysis of an employment

[28] OAR 660-009-0025(8): * * * Cities and counties that adopt objectives or policies providing for uses with special site needs must adopt policies and land use regulations providing for those special site needs. Special site needs include, but are not limited to large acreage sites, special site configurations, direct access to transportation facilities, prime industrial lands, sensitivity to adjacent land uses, or coastal shoreland sites designated as suited for water-dependent use under Goal 17. Policies and land use regulations for these uses must:

(a) Identify sites suitable for the proposed use;

(b) Protect sites suitable for the proposed use by limiting land divisions and permissible uses and activities that interfere with development of the site for the intended use; and

(c) Where necessary, protect a site for the intended use by including measures that either prevent or appropriately restrict incompatible uses on adjacent and nearby lands.

projection and market analysis of the rationale for providing employment land for a hospital, a university campus, and two 50-acre industrial sites.

The justification for these specific uses is undermined, however, by other deficiencies in the EOA. The EOA does not adequately identify land already in the UGB that could be developed for some or all these uses. There city does not appear to have adopted policies or other mechanisms to ensure the land included in the UGB is protected for the intended use and from conflicting uses.

e. Conclusion

While the analysis of the need for the specific employment uses is present, the EOA must also analyze whether these uses can reasonably be accommodated within the existing UGB. Additionally, the city has not adopted policies that provide adequate protections to ensure the sites remain available for the intended uses.

The objection is sustained. The director remands with instructions to analyze whether the identified uses can reasonably be accommodated within the existing UGB, and for the adoption of measures so that employment land with special siting characteristics complies with OAR 660-009-0025(8) regarding protection of the site for the intended use and from conflicting uses.

G. Public Facilities Plans

This section addresses whether the City of Bend's ordinance NS-2111, adopting new public facilities plans for the city and a new Chapter 8, complies with Goal 11, Goal 14, applicable administrative rules, and OAR 660-024-0060, or whether the ordinance takes exceptions to those goals.

a. Legal Standard

Goal 11 and ORS 197.712(2)(e) require cities with a population greater than 2,500 to prepare and adopt public facilities plans for water, sewer and transportation services within the city's UGB. Public Facilities Plans (PFPs) are required primarily to assure that local governments plan for timely, orderly and efficient arrangement of public facilities and services, and to serve as a framework for future urban development. Timely, orderly and efficient arrangement "refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports existing and proposed land uses." Goal 11 and OAR 660-011-0000.

The required contents of a public facility plan are provided in OAR 660-011-0010(1), and are not intended to cause duplication or to supplant technical documents supporting facility plans and programs. OAR 660-011-0010(3). At a minimum, public facility plans shall include plans for water, sewer and transportation facilities and the responsibility(ies) for preparation, adoption and amendment of a public facility plan shall be specified within an urban growth management agreement. OAR 660-011-0015(1).

When evaluating a proposed UGB amendment, OAR 660-024-0060(8) requires that:

> The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:
>
> (a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;
> (b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB
> * * *

b. Summary of Local Actions

The city prepared certain water and sewer system master plans in 2007, which evaluated the capacity of existing public facilities to serve areas already within the UGB, as well as areas being studied at that time for possible inclusion in a UGB expansion area. Those master plans also identified significant system improvements needed both to serve lands and uses within the existing UGB (a significant number of homes in the prior UGB utilize septic systems) and to serve lands being considered for inclusion in a UGB expansion area. The master plans evaluate future service needs for a UGB expansion area containing only lands zoned UAR. They did not evaluate other exception lands, including a large area of rural residential development to the south of the city, or most of the lands zoned and planned for farm use to the east that were included in the UGB expansion area. See, e.g. R. at 467 (map of study area); R. at 500-504 (SE interceptor). The sewer collection master plan also did not evaluate the cost of some improvements identified as needed (North interceptor crossing of Deschutes River, R. at 497 "For this river crossing to be cost-effective, a bridge must be constructed over the river. * * * Costs for the bridge structure were not included in the cost for this interceptor."]

In the first half of 2008, the city had certain addenda to the master plans prepared. [R. at 211]. Those include several analyses specific to particular areas (Newlands property; Hamby Road area). On October 8, 2008, the city provided the department an amended 45-day notice of its proposed UGB amendment that included a summary statement that it was also proposing to amend its public facilities plan element of the General Plan. However, no draft of the PFP Chapter (chapter 8) of the city's General Plan was provided until October 20, 2008 (seven days before the first evidentiary hearing).

Bend Ordinance NS-2111 adopts certain Water Public Facilities Plans and Sewer Public Facilities Plans as amendments to the Public Facilities Element of the Bend General Plan. [R. at 35]. The ordinance also appears to adopt the city's sewer and water public facilities plans in support of and associated with its UGB expansion proposal. [R. at 35-1049] Exhibit A (Findings in Support of UGB Expansion) [R. at 37-210], Exhibit B (Findings in Support of the Amendments to the Public Facilities Plan) [R. at 211-224] and Exhibit C (Facilities Plans and all supporting components, addenda and supplements) [R. at 225-1049] are attached to Ordinance NS-2111.

Ordinance NS-2111 states:

> * * * the Public Facilities serve the goals, objectives and policies of the General Plan by addressing the provision of public facilities and services within the urban growth boundary (UGB), services to areas outside the UGB, locating and managing public facilities and financing public facilities. [Record at Page 35] The city's Goal 11 findings state "the proposed amendment to Chapter 8 of the Bend General Plan incorporates the city's water system master plan and collection system master plan as Goal 11 public facility plans," and "[i]n addition, the city has based the proposed expansion of the UGB in part on the development of three

> (3) new sewer interceptors that are located beyond the city's current UGB. [R. at 205]

Exhibit C [R. at 225] includes documents that comprise the adopted Public Facilities Plan. The following is a general description of the facilities plan and incorporated documents provided in the findings:

> The water system master plan covers those areas already inside the Bend UGB, and areas outside the current Bend UGB that are not already served by the Avion Water Company or another private water utility. The sewer master plans include a Collection System Master Plan (CSMP) that covers those areas inside the existing Bend UGB, and areas identified under the (prior, 2007) Bend Area General Plan as urban reserves. The sewer master plans also include a master plan for the reclamation facility, which is located north and east of Bend and treats effluent collected through the city system. [R. at 211]

The proposal includes a new chapter 8 of the Bend Area General Plan dated October 20, 2008. [R. at 1478-1498] No facility collection, distribution or service area maps are provided in chapter 8 of the plan. Map information is contained only in incorporated documents. The findings also incorporate by reference the adoption of water and sewer collection master plans and supporting documentation as the public facility plans for water and sewer service under Goal 11. [R. at 211]

The incorporated water and sewer collection master plans and supporting documents are described as follows. The adopted water public facility plan (WPFP) includes:

- Water System Master Plan (WSMP) Update-Final Report (2007) [R. at 225-340]
- Airport Water System Master Plan (2007) [R. at 341-384]

The adopted sewer public facilities plan (SPFP) includes:

- Collection System Master Plan (CSMP) Final Report (2007) [R. at 385-516]
- CSMP Addendum No. 1 – Final Executive Summary and Alternative Technical Analysis: North East Bend (2007) [R. at 517-550]
- CSMP Addendum No. 2 – Collection System CIP Analysis and Report (2008) [R. at 551-692]
- CSMP Addendum No. 3 – Technical Memorandum 1.5 – Hamby Road Sewer Analysis (2008) [R. at 693-703]
- Water Reclamation Facilities Plan (2008) and Technical memos No. 1-10 [R. at 705-1048]

In a footnote, the city's findings state, "The record on the Bend UGB expansion also includes a 2007 draft of the CSMP, including nine study area plans that were submitted to DLCD on June 11, 2007." [R. at 211, see footnote 1].

A number of technical memos related to sewer planning appear in the city's supplemental submittal provided to the department on May 6, 2009. However, Ordinance NS-2111 and its associated findings do not appear to include these technical memos, and they are not listed as part of the incorporated public facilities plans adopted as part of the UGB adoption package which is described above from page 211 of the record.[29]

The adopted public facilities plan includes sewer, stormwater and water services only. Transportation plans are not included in the public facilities plan amendment. The city's submittal and this report, however, do address transportation separately.

c. Objections and Analysis

The city did not prepare revised public facilities plans for water or sewer to address the additional lands added to its UGB expansion study area in 2008. Although there are parts of the city's submission that address parts of the additional expansion area, the primary two master plans limit their analysis to lands that were planned UAR in 2007. [R. at 450-453] Exception lands and agricultural lands to the east are not analyzed in the sewer system collection master plan. Nor are exception lands to the south of the city. The water system master plan only examined Tetherow and Juniper Ridge outside of the prior UGB. [R. at 249]

Nine objecting parties raised 13 specific concerns related to the city's public facilities plans. Four of the 13 parties filed public facilities plan objections during the city's first UGB submittal to the department on April 16, 2009, and in response to the city's June 12, 2009 supplemental submittal of public facilities plans as part of the UGB expansion proposal.

A list of objectors and a summary of objections filed in response to the city's public facilities plans follows. Parties filing objections on both submittals are noted with an asterisk.

Swalley Irrigation District *
Central Oregon LandWatch *
Rose and Associates, LLC *
Tumalo Creek Development, LLC *
Toby Bayard
Hunnel United Neighbors
Newland Communities
Anderson Ranch
J. L. Ward Company

Swalley Irrigation District – The May 6, 2009 objection states that no notice was provided to DLCD or others for the city's public facilities plans, nor was notice provided advising of hearings on the plans. The objection further states that there was never a time when the city provided opportunity for meaningful input on the location of public

[29] Supplemental Items 99, 99A through 99M, Supplemental R. at 985 – 1210.

facilities. [p. 1]. The city's October 8, 2008 and October 20, 2008 revised notice to DLCD indicated that the city planned to adopt a variety of public facility plans on November 24, 2008, yet those plans were not attached to the revised DLCD notice, making the notice void. [p. 22]

The objection also states that draft public facilities plans were improperly used to influence the location of the UGB without adequate public input, thereby violating Goal 1. [pp. 25-26]

The objection points out that Goal 11 requires the city to (1) evaluate the carrying capacity of "air, land and water resources of the planning area" and not exceed such carrying capacity, (2) provide an orderly and efficient arrangement of public facilities and services, and (3) provide rough cost estimates for planned facilities. According to the objection, the city fails these requirements, particularly in the service areas of the Swalley Irrigation District. [p. 55]

The objection argues that, for reasons generally discussed above, chapter 8 of the Bend Area General Plan does not comply with OAR 660, divisions 11 or 24. [p. 80]

The objection points out that the city's Consolidated Sewer Master Plan (CSMP, 2007) acknowledges significant funding gaps. At the same time, the CSMP fails to compare the cost of sewer upgrades and enhancements to areas of failing onsite system or areas with infill and redevelopment capacity versus the CSMP's program. [pp. 88-89] The objection discusses several areas where the CSMP is allegedly deficient. [pp. 89-95]

The objection asks that the department remand and instruct the city to select public facility options that are reasonably affordable and can demonstrate reasonable costs for needed housing, and that the city be required to examine "undisputed" exception areas in the south and southwest quadrants of the city.[30] [p. 103]

Swalley Irrigation District also submitted objections in a July 6, 2009 letter (herein noted as SID2) on the city's public facility plan submittal. The objection's arguments regarding whether the department and the LCDC have jurisdiction to decide the adequacy of Bend's public facilities plan are examined in section III.D of this report. [SID2, pp. 8-12]

The objection argues that the public facility plan submittal failed to clearly identify what adoption decisions were submitted, leaving objectors to guess what the city actually submitted. [SID2, pp. 12-13]

The objection argues that since the UGB proposal does not demonstrate compliance with Goal 14, ORS 197.298 and OAR 660-0024-0060, the city must start over with its public facilities planning after it develops a new UGB proposal that follows and meets those requirements. [SID2, p. 43] The objection provides a number of technical challenges to

[30] Swalley Irrigation District has objected that lands zoned Urban Area Reserve (UAR) were not acknowledged exception lands.

the city's sewer master plan, which are similar to the objector's earlier May 2009 submittal. [SID2, pp. 45-55]

Central Oregon LandWatch – The May 7, 2009 objections argue that the sewer and water facility plans impermissibly provide infrastructure on lands outside the current UGB. [Page 16 of 18] The objector's June 30, 2009 objections argue that the city predetermined "so many aspects" of its UGB decision on the location of infrastructure, that it has not properly prepared public facility plans for lands inside the current UGB. The objection argues that the city has not recognized its overarching priority "to provide sewer to the thousands of acres and people currently lacking this service within the City." The objection points out that, while the city's Central Area needs infrastructure improvements and capacity to handle substantial infill development, it assumes only 500 new residential units due to Central Area sewer deficiencies. [p. 2] The objection incorporates by reference the June 28, 2009 objections of Toby Bayard.

Rose and Associates, LLC – The objector filed during both submittal phases. In its May 5, 2009 objection, it is argued, "The city erred by adopting the sewer and water master plans as part of the UGB rather than through an independent process." In addition, the city failed to comply with Goal 1 when it adopted the plans without separate public hearings. [p. 3] (See section III.K concerning Goal 1 objections.) The objection also points to technical errors regarding gravity sewer serviceability for specific property excluded from the UGB proposal. [p. 5]

The objector's June 29, 2009 submittal argues that the city sewer plan is inconsistent with the UGB amendment and does not provide for timely, orderly and efficient service, as required by Goal 11. The objection points out specific lands included in the UGB proposal but not in the sewer facilities plan, and other properties included in the sewer facilities plan but not in the UGB proposal. [p. 2]

Tumalo Creek Development, LLC – The objector's July 2, 2009 submittal states that the public facilities plan violates Goal 11 and OAR 660, division 11, because it does not consider more cost effective sewer alternatives. The objection cites its submittal of alternative lower cost technical solutions (e.g., membrane technology associated with satellite treatment facilities) for serving portions of the west side and Central Area, which it determined would provide much needed additional capacity in the city's urban core. According to the objection, however, the city did not consider objector's alternative proposal and the city's findings do not address the proposed alternatives. [p. 2] This objection is also included in the objector's May 7, 2009 submittal.

The objection argues that the sewer facility plan does not provide service in a "timely, orderly, and efficient" manner. The objection specifically points to the ability of the city to serve areas needing a Deschutes River crossing via the proposed North Interceptor as an area that will likely have to wait years and probably decades for sewer service, due to high costs and environmental concerns. The city has not adequately addressed these cost and environmental concerns, according to the objection. [pp. 2-3]

Toby Bayard – The objector's June 28, 2009 objection argues that the city adopted its public facilities plans without the benefit of a public hearing, "having failed to advertise, properly notice, or inform the public that it was accepting testimony on the PFP." (See section III.K of this report, dealing with Goal 1.)

While the objector's June 28, 2009 objections include concerns over how the city adopted its public facility plans and how it used the same plans in determining its Goal 14 boundary location analysis, these issues are addressed elsewhere in this report. (See report discussions on Goal 1 and ORS 197.298.). The objection lays out a number of Goal 11 concerns as follows:

- There is no clear statement demonstrating how various public facilities plan infrastructure costs will be funded [pp. 7, 23]
- The public facilities plans and related documents provide conflicting information [p. 7]
- The sewer facilities plan contemplates provision of services to areas not part of the UGB proposal. [p. 15] At the same time, certain land included in the UGB proposal is not included in the sewer facilities plans. [p. 18]
- The sewer facilities plan does not satisfy Goal 11 requirements for a timely, orderly and efficient arrangement. [p. 20]
- The city's sewer facilities plan was not coordinated with other entities, including state and federal agencies. [p. 20-21]
- The sewer facilities plan and Bend Area General Plan Chapter 8 (Facilities Plan) conflict with each other and with the city's findings. [p. 21-22]
- Key Goal 11 determinants were not properly applied when developing the sewer facilities plan. [p. 22]
- The Northern Interceptor cost estimates omit crucial cost components. [p. 22-23]
- Goal 11 requires that estimates use current year costs but the city used 3-year old cost estimates. [p. 23]

Hunnel United Neighbors – The objection argues that the city failed to provide a sewer facility plan that is internally coordinated or provides for an orderly, timely and efficient arrangement of services. The objection challenges whether the Northern Interceptor produces an orderly arrangement of sewer service, given that Goal 11 directs that priority should be given to the large supply of unsewered land to the southeast and south which is located in the current UGB. The objection questions whether the Northern Interceptor will accommodate timely development in an area that is already subject to "serious transportation issues" and cost of service issues. The objection also questions whether the Northern Interceptor's full cost, which has not been "determined or disclosed" related to the crossing of the Deschutes River, will demonstrate an efficient arrangement of its sewer service plans. [pp. 3-4]

Newland Communities – Most of the objection's concerns raise jurisdictional issues related to review of the public facilities plans; these are addressed in section III.D of this report. The objection provides a single objection directly pertinent to Goal 11, which is stated in precautionary terms as follows: "If DLCD exercises jurisdiction over the PFPs,

DLCD's review must conform with OAR 660-011-0010(1) and OAR 660-011-0050." The objection then argues that the city's decision meets these requirements. [July 2, 2009, letter from Christe C. White]

Anderson Ranch – The objection argues that in preparing its public facility plans, the city failed to comply with the citizen involvement requirements of OAR 660-015-0000(1). This objection is addressed in section III.K of this report under Goal 1 compliance.

J. L. Ward Company – The objection questions whether the sewer facility plan adequately addresses which existing and amended UGB areas are to be served by the proposed Southeast Sewer Interceptor and asks that this be clarified by the city. [June 22, 2009, letter from Jan Ward]

d. Analysis

In this section, the department examines whether the public facilities plans satisfy the requirements of Goal 11 and its rule, and whether those plans are consistent with the land use provisions of Goal 14, ORS 197.298 and OAR 660, division 24 relating to a UGB expansion. The following examination is based on the objections above and on the department's own concerns.

Public notice, hearing issues and public involvement. Under OAR 660-025-0175(3) and ORS 197.610, the city is required to provide the department with notice of a proposed amendment 45 days prior to the city's first evidentiary hearing on the proposal. The notice is required to contain the text of the amendment and any supplemental information that the local government believes is necessary to inform the director as to the effect of the proposal. [ORS 197.610(1)] The department received notice of the city's June 2007 public hearings on its first UGB proposal, including draft public facility plans for a 4,884-acre UGB amendment considered at that time.[31] [32] The city's October 8, 2008 revised notice,[33] however, which proposed to nearly double the size of its UGB proposal to 8,943 acres, did not include updated public facility plans, as pointed out in department letters sent to the city in October 2008 and November 2008.

[31] While the city's June 11, 2007, 45-day notice and submittal included a draft public facilities plan, it did not include other information necessary to review that proposal at that time. Specifically, the submittal did not contain any comparative analysis as required by ORS 197.298 and Goal 14 locational factors.

[32] On March 30, 2007, the city submitted a plan amendment to the department that proposed to amend Chapter 8 – Public Facilities and Services element to the Bend Area General Plan. (DLCD file Bend 002-07, local file 07-012) The proposal included changing the plan text to incorporate by reference two new facility master plans, a Water Master Plan and a Sewage Collection System Plan, with no changes to existing policies or the UGB. The intent of these amendments was to support re-calculation of system development charges for water and sewer services and for capital improvement programming. In April, 2007 the city indefinitely postponed hearings on the amendment. (Source: DLCD plan amendment files)

[33] The city's October 8, 2008 revised 45-day notice was revised on October 20, 2008; neither of the notices contained an updated public facility plan for the 8,943-acre UGB proposal.

Several parties raise objections regarding adequate public involvement and the city's public hearings process related to adoption of its public facility plans; these objections are addressed in sections III.K in this report. Objections have also raised jurisdictional questions relating the city's public facility plan adoption; these objections are addressed in section III.D.

Public facility plans were improperly used to determine the location of the UGB. A key question raised by objector is whether the sewer collection and water distribution master plans are consistent with the city's UGB expansion, and whether these plans provided the analysis required to evaluate alternate locations for a UGB expansion, as required by ORS 197.298, Goal 14 and OAR 660, division 24.

The first step in making such a determination is to examine the capacity of the city's public facilities to serve the existing UGB area, as well as areas proposed for addition to the UGB. OAR 660-024-0060(8).

The next step is a comparative analysis of the relative costs, advantages, and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services. OAR 660-024-0060(8).

The data and findings from the second step may be used in two situations:

1. When a city prepares findings supported by an adequate factual base to demonstrate that future urban services could not reasonably be provided to higher priority lands (such as exception lands) due to topographical or other physical constraints, the city may then exclude these lands from the prioritization otherwise required by ORS 197.298(1). ORS 197.298(3)(b).

2. In addition, if the total amount of land in a particular priority category exceeds the amount needed, the city may apply, weigh and balance the four Goal 14 location factors to select which lands will be added to the UGB. One of those four factors is the "orderly and economic provision of public facilities and services" (see OAR 660-024-0060(1)).

The requirements for analyzing alternate UGB expansion areas are contained in OAR 660-024-0060(8).

The city's Goal 11 findings state, "The city has based the proposed expansion of the UGB in part on the development of three (3) new sewer interceptors that are located beyond the city's current UGB." [Record at 205] The record does not support this finding. The sewer collection master plan included an analysis of planned new sewer interceptors, but the location of those interceptors was (for the most part) not identified as being on agricultural lands (the interceptors are located almost entirely on UAR lands, or within the existing UGB). Further the analysis of what lands will be served in the future in the master plans does not correlate with the lands in the UGB expansion area. The UGB expansion area includes substantial lands that are evaluated in the master plans,

creating an internal conflict in the city's General Plan contrary to Goal 2 as well as Goals 11 and 14. Nor do the master plans contain an analysis of the relative costs, advantages and disadvantages of alternative UGB expansion areas as required by OAR 660-024-0060(8). Instead, they simply analyze the feasibility of serving the existing UGB and UAR lands.

Not all serviceable exception areas were included in the public facility plans. Several objections point to certain lands included in the amended UGB but not included in the public facility plans, and certain other lands included in the public facility plans but not included in the UGB proposal. The Collection System Master Plan (CSMP) study area includes the area within the prior UGB, UAR exception lands adjacent to the existing UGB, all of the 1,500-acre Juniper Ridge area in the north one square mile of EFU lands,[34] and the Tetherow destination resort located southwest of the current UGB. [R. at 410] The CSMP has also included some exception lands adjacent to the UGB designated as SR 2½, and property owned by the Department of State Lands (DSL). The UGB expansion area does not include the DSL and Tetherow properties, and only a portion of the Juniper Ridge site (as location of a future university site); nor does it include a large area of rural residential development south of the city.

The city also adopted CSMP Addendum No. 1–Final Executive Summary and Alternative Technical Analysis: North East Bend (2007) which expands the territorial scope of the CSMP approximately 1.5 miles eastward north of Butler Market Road to include both exception and resource lands in the northeast area of the UGB proposal. [R. at 517-550] The main purpose of this study is to propose a more southerly alignment for the Plant Interceptor sewer line to the treatment plant. It is not clear from the record what disposition occurs between the CSMP's original version of the Plant Interceptor expansion and alignment and the North East Bend supplement, which appears as an alternative to the original CSMP Plant Interceptor proposal. Chapter 8 of the General Plan appears to provide that the CSMP (rather than the Addendum) controls. [R. at 1495 ("[The CSMP] shall direct the development of the system and be the basis for all sewer planning and capital improvement projects." R. at 1495, Policy 2.)[35]

---

[34] Land referred to as Section 11 owned by the Oregon Department of State Lands, zoned for exclusive farm use and located adjacent to the current UGB on the east side.

[35] The city also adopted CSMP Addendum No. 3–Technical Memorandum 1.5–Hamby Road Sewer Analysis (2008) which proposes an alternative sewer interceptor approximately one mile east of the existing UGB on a mix of exception and resource land. The newly proposed route at least partially replaces an earlier proposed Southeast Interceptor alignment along 27th Street. [R. at 693-703] This proposed alternative interceptor, proposed as an alternative alignment for the Southeast Interceptor, would flow north from Stevens Road (Department of State Lands property located at Section 11) along Hamby Road to one of the Plant Interceptor alternatives described above. Similar to the Plant Interceptor alternatives, the findings do not explain the disposition between the CSMP's original alignment for the Southeast Interceptor expansion and the Hamby Road alternative. The Addendum No. 3 shows the costs of the two alignments to be very similar, and indicates that there are disadvantages to the Hamby Road alignment. [R. at 698]

Approximately 640 acres of exception land adjacent to the prior (and current) UGB in the southwest area in the vicinity of Bucks Canyon Road and west of Highway 97 are not evaluated in the CSMP. This area meets the city's suitability criteria, but is not included in the UGB or in the CSMP. [R. at 2449] The Bucks Canyon Road exception area is zoned RR-10 and consists of mostly large-lot exception properties. This exception area was included in the September 2008 UGB alternatives analysis in Alternatives 1 and 2, and a significant portion of Alternative 3. [R. at 5983, 5986 and 5989, respectively] Each alternative map showed proposed sewer interceptors and major roadway facilities. These exception lands are not considered in the CSMP although they meet the suitability criteria for residential development and are located at a higher elevation than gravity sewers in CSMP Planning Study Area No. 8 served by the CSMP's proposed Southeast Sewer Interceptor. [R. at 463, 476]

The Water System Master Plan Update does not cover all the existing UGB or expanded UGB area. The Water System Master Plan (WSMP) update was completed in March 2007. [R. at 226] According to the WSMP, the city serves 53,000 people within its existing UGB at the time the study was completed. The remaining population within the UGB was served by two private water providers, the Avion Water Company and Roats Water System. [R. at 236] The WSMP goes on to point out that the plan includes the "current service area within the UGB and the Tetherow development area as well as the Juniper Ridge area." [R. at 236]

The WSMP does not contain any public facility plan components for the Avion Water Company or Roats Water System, as required by OAR 660-011-0005 and -0010 and OAR 660-024-0020(1). The WSMP does not appear to contain composite service maps of the UGB service areas or illustrations of the proposed principle water distribution system operated by the Avion Water Company or Roats Water System.

The UGB expansion proposal includes areas served by the city, Avion Water Company, and Roats Water Company. However, there is no evidence that the WSMP includes plans for these expansion areas, as required by the Goal 11 and 14 rules. The WSMP also does not appear to satisfy the coordination requirements in Goals 2 and 11.

Sewer plans undercut providing adequate and timely services to unserved, underserved and areas with high infill and redevelopment potential, such as the Central area. This objection is closely related to the Goal 14 requirement to promote efficient patterns of urban development; adequate provision of density measures called for by ORS 197.296 and Goal 14; and OAR 660-024-0050(4), which calls for demonstration that land needs cannot reasonably be accommodated on land already inside the UGB prior to expanding the boundary.

The most significant CSMP project to affect the service capacity of the Central area is the need for a threefold increase in capacity of the Westside pump station, which is a major regional facility serving west and central Bend. The CSMP shows that ultimate buildout of the service area relying on the Westside pump station will require rerouting some of the increased flow from the pump station to a new Westside Interceptor, hence

connection to a new Northern Interceptor near Highway 97, all to relieve the current central interceptor, which follows a northeasterly alignment to the treatment plan. [R. at 493, 494, 495, 497] The CSMP's cost estimate for upgrading the Westside pump station, Westside Interceptor and Northern Interceptor to near Highway 97 is almost the same as building the entire Northern Interceptor, including an alignment that crosses the Deschutes River and follows the contour around the north and west quadrants of Awbrey Butte. [R. at 488, 499, 504]

The CSMP notes that 53 percent of the acreage, or 9,468 acres, within the existing UGB does not currently receive sanitary sewer service based on the city's 2005 database. [R. at 407] The city identifies 2,909 acres of vacant and redevelopable residential land by plan designation in UGB in 2008. [R. at 1071, 1083] The CSMP describes its UGB buildout conditions as the number of dwelling units "calculated assuming all parcels developed on a net acreage basis at the average zoning density for the specific land use type for each parcel." [R. at 407] For areas within the current UGB, the CSMP utilizes average densities for new housing construction over the last six years, as inventoried by the city planning department.[36] [R. at 417] The city's RS designation is estimated to build out at 5.3 dwelling units per acre during the planning period.

For UAR areas located outside the existing UGB, the CSMP assumes an average residential density of 5.3 dwelling units per acre. [R. at 417] However, nothing in the record demonstrates how almost 3,000 acres of land "unsuitable" for urban development, and 519 acres of buildable "surplus," are analyzed and accounted in the sewer facility plan. The effect of these approximately 3,500 acres of "unsuitable" and "surplus" land on the capability and capacity of service cannot be determined from the record when it provides little or no information on the location of such "unsuitable" and "surplus" lands.

On the other hand, the city's housing needs analysis assumes that vacant and redevelopable residential land within the current UGB, will build out at the current average density of 3.96 units per acre. [R. at 1071, 1289] For the expanded UGB area, however, the housing needs analysis assumes an average density of just under 5.9 units per acre on 941 net acres of residential development spread over 2,866 acres. [R. at 1080, 1082] In essence, the city proposes to provide higher densities in UGB expansion areas on the city periphery than on existing vacant and redevelopable land inside the existing UGB.

Both needs analysis numbers are inconsistent with those used by the CSMP. For areas in the existing UGB, the city's needs analysis density is significantly less than that of the CSMP, which from a sewer service perspective, effectively leaves more development capacity inside the UGB than reported by the city.

[36] This residential density data is provided in Table 2-7 of the CSMP. [Record at Page 418] An average overall density and period of measurement is not provided, though. The department believes this data shows recent density of new construction for the period of 1998 to 2005.

The Bend General Plan incorporates a defective PFP. The discussion above highlights internal inconsistencies between the city's water and sewer facilities plans and the UGB expansion. Chief among these inconsistencies are that the sewer plans include areas that are not part of the UGB expansion area, and the UGB expansion area includes areas not analyzed in the CSMP. Similar deficiencies appear for the water system plan. These internal inconsistencies are incorporated into the Bend General Plan in chapter 8, Public Facilities and Services, do not provide an adequate public facilities plan required by Goal 2 and Goal 11 or as required by the Goal 11 rules or the UGB amendment rules (OAR 660, divisions 11 and 24, respectively). [R. at 1480, 1483]

No timely, orderly and efficient arrangement of public facilities. Timely, orderly and efficient arrangement refers to "a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses." [Goal 11 and OAR 660-011-0000] If the public facility plan is found to be incomplete, as described immediately above, then the water and sewer facility plans, as a whole, cannot demonstrate the "timely, orderly and efficient arrangement of public facilities."

Did not evaluate carrying capacity. "Carrying capacity" is a term used by Statewide Planning Goal 6. This term does not apply directly to Goal 11 unless a water or air quality violation is found. Since the UGB expansion does not directly implicate water or air quality standards, there is no Goal 11 compliance issue.

Can the city's public facilities plan be acknowledged for areas of the existing UGB, only? At the city's request, the department considered whether the updated public facilities plan could be partially acknowledged for use in planning sewer and water services within the existing UGB. In order to be acknowledged, the adopted plan would need to demonstrate compliance with Goal 11 and its rules, including those parts of the goal and rules that prohibit extension of sewer collection systems beyond the UGB to serve properties located outside of the current UGB. The exception includes mitigating circumstance for specifically recognized health hazards.

Internal inconsistencies identified in this section, including density assumptions related to infill and redevelopment, and the efficient development of vacant land, need to be resolved between the city's needs analysis and its public facilities plans before the public facilities plans may be acknowledged. In addition, the city must complete its public facility plan for water by including information called out in OAR 660-011-0010 for areas served by the Avion Water Company and Roats Water Company, consistent with the city's urban growth management agreement with each water company. [OAR 660-011-0015] As a result, the director determines that he cannot partially acknowledge the city's public facilities plan based on the current submittal.

d. Conclusions

The director remands the public facilities plans for sewer and water, and directs the City of Bend to complete the work described below.

The city is directed to prepare revised public facility plans and amend chapter 8 of the Bend Area General Plan to clearly identify what sewer and water projects are needed to accommodate development in the UGB expansion area, including the elements listed below. To the extent that the city is relying on relative costs of public facilities and services to justify inclusion of particular lands within the UGB expansion area, it must include the comparative analysis required by OAR 660-024-0060(8).

Revised public facilities plans shall contain the items listed in ORS 660-011-0010(1), which outlines the minimum content for a public facility plan, including:

a. An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan;

b. A list of the significant public facility projects which are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary;

c. Rough cost estimates of each public facility project;

d. A map or written description of each public facility project's general location or service area;

e. Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated;

f. An estimate of when each facility project will be needed; and

g. A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system.

H. Transportation Planning

Several objections raise issues related to whether the transportation planning component of UGB planning complied with relevant requirements. The legal criteria for this portion of the submittal are primarily found in Statewide Planning Goal 12 and OAR 660, division 12 (the "Transportation Planning Rule" or "TPR").

1. Did the amendments to the transportation plan violate Goal 12 or OAR 660, division 12 and related portions of Goal 14 and OAR 660-024-060?

Several objections allege the amendments to the City of Bend's urban-area transportation plan violate Goal 12 and the TPR and related portions of Goal 14 and OAR 660-024-060, which require consideration of cost and feasibility of providing transportation facilities needed to serve planned urban development. The department submitted comments to the city prior to adoption of the amendments, and these comments along with the objections raise issues with whether the evaluation of transportation facility improvement needs (i.e., major road and highway improvements) provide a complete and accurate evaluation and comparison of the costs, advantages, and disadvantages of alternative UGB expansion areas.

a. Legal Standard

OAR 660-024-0060(8) sets forth how cities must evaluate and compare public facility costs of alternative boundary expansion areas:

> The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:
>
> * * *
>
> (c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

b. Summary of Local Actions

The city has adopted findings that reflect a transportation analysis of UGB alternatives conducted in 2007 by DKS (Bend UGB Expansion: Transportation Analysis), which has been incorporated into amendments to the city's transportation system plan (TSP), and the transportation element of the general plan. [R. at 2184-2303] The city's evaluation and comparison of transportation costs, advantages and disadvantages follows the city's overall approach to evaluation of alternatives, which combines multiple individual areas into a few composite options for UGB expansion.

The major findings of the city's transportation analysis are as follows:

- Overall impacts, needed mitigation measures, and costs are similar under any of the alternatives analyzed.

- State highways will be severely congested..... The most severe congestion would be on US 97 north of Colorado Avenue to the city limits. Significant system expansion, new facilities or new management measures would be needed to comply with state mobility standards."

- The four land use scenarios for UGB expansions have very similar relative impacts on the Capacity Street network. ....The location, function and scale of needed additional improvements on the state and city street network had very many common elements among the scenarios. That means that the total expected investment will be very similar no matter which combination of areas within the planning area is selected for UGB expansion.

- Development in the Juniper Ridge area does have several unique roadway elements associated with the state highway that do not occur with the other land use scenarios considered. These potentially could include upgraded junctions with US 97 at Cooley Road, US 97 at Deschutes Market Road and a potential additional connection in between. The scale of these projects would require additional review and approvals with ODOT.

- The total cost estimated for mitigations to the transportation system resulting from UGB expansion ranges from $154 million to $232 million .... A major element of this cost range is targeted for improvements at the US 97 / US 20 junction area which is under study by ODOT for a preferred alternative solution (cost estimated at $125 million to $185 million in 2006 Refinement Plan.)

- Further study is required to select the best options on state facilities in the US 97 and Cooley Road areas that were identified for the Juniper Ridge development scenario. Recommendations made in this study are preliminary only. Specifically the concept of upgrades at Cooley Road and Deschutes Market Road require further study in conjunction with the Juniper Ridge Master Plan to understand the best combination of

investments on the state highway system. (Findings in Support of UGB Expansion, page 150-151; [R. at 1202-1203]

c. Objections and DLCD Comments

The department and the Oregon Department of Transportation (ODOT) expressed concerns about the city's evaluation and comparison of transportation costs of different UGB expansion alternatives prior to adoption. The department raised this issue in its comment letters in July 2007 and October 2008.

In November 2007, the department advised that the city needed to do more work and coordination with ODOT to compare costs, advantages and disadvantages of expanding UGB to the north. [R. at 10378] In October 2008, the department again expressed concern that the city's process for evaluating transportation costs was not complete or detailed enough to comply with requirements in OAR 660, division 24. The department's comments questioned the city's decision to assign costs of major roadway improvements in the north area of Bend to the entire city, and the city's overall conclusion that the extent of needed transportation improvements was essentially the same regardless which lands were included in the UGB.

ODOT expressed significant concern about the proposal to extend commercial and other intensive zoning along both ends of Highways 20 and 97. Of particular concern was the northerly portion of Highway 97 and 20. Intensifying land use in this area will further complicate the process of identifying transportation solutions and, given that it will likely be 15-20 years before a long-term solution could be constructed, these more intensive uses will exacerbate the existing congestion and safety issues. (ODOT Preliminary Comments on City of Bend UGB Expansion, October 27, 2008) [R. at 4392]

ODOT also commented on the April 2007 DKS Traffic Report: "It is unclear to what extent this analysis reflects the impacts and needed mitigation for the currently proposed "Alternative 4." We are currently comparing this report to the Alternative 4 proposal but it is clear that the preferred alternative has not been sufficiently analyzed to determine what the transportation investment costs will be." (ODOT Preliminary Comments on City of Bend UGB Expansion, October 27, 2008) [R. at 4392]

Five objectors challenged whether the city has adequately evaluated and compared transportation costs, advantages and disadvantages of alternative UGB expansion areas:

- Swalley Irrigation District
- Rose and Associates
- Central Oregon LandWatch
- Newland Communities
- Department of State Lands

Each of these objectors made objections to the city's analysis that can be characterized as follows:

- The city failed to analyze relative costs of serving individual areas and instead assigned the cost of major improvements to the city or UGB as a whole, when in fact, these improvements are primarily needed to serve a particular area. Several objectors referred to comments provided by ODOT expressing concern about improvements proposed to in the North area, to Highway 20 and 97.

- The analysis of roadway improvements needs did not use a consistent or accurate method to evaluate transportation of roads needed to serve development in different areas of the city.

Individual objectors provided additional specific objections to the city's analysis, as follows.

Swalley Irrigation District – The city assigned costs of major roadway projects that appear to be needed primarily to serve UGB expansion to the NW to the entire city. These include a proposed new bridge crossing the Deschutes River and improvements to state highways 97 and 20. The city fails to provide a detailed cost estimate for the Deschutes River bridge construction. [Swalley, May 6, 2009, page 75]

Department of State Lands – The city excluded transportation infrastructure improvement costs directly associated with specific alternative UGB expansion areas, leading to flawed conclusions and decisions. The city excluded from its analysis expensive transportation improvements at Cooley Road that are required to serve the Juniper Ridge expansion area. The city also excluded the expensive bridge over the Deschutes River that is necessary to serve select northwest UGB candidate expansion areas. These projects are by far the largest improvements in the city's transportation infrastructure list, yet those improvements are not applied to the UGB expansion areas they uniquely serve. If the candidate UGB expansion areas served by these infrastructure improvements were not included in the UGB, then these expensive projects would not be needed or built to the same extent, and the extraordinary costs of the projects would not be incurred to the same degree. [DSL, May 7, 2009, page 5 of 6]

Rose and Associates, LLC – North end highway and bridge improvements are estimated at $300-$500 million with no clue as to where funding might come from. Rather than analyze the direct impacts of adjacent properties upon development, the city spread these costs evenly through out the system. This same methodology was not employed at the south end interchange, for example. There is not consistency in the methodology creating an unfair advantage for the north and west properties in terms of cost per acre to develop. [Rose and Associates, May 1, 2009, Exhibit 2]

The city used different local roadway spacing standards (arterials and collectors) for the north and west areas than they did for the southeast area. Due to steep slopes, the Deschutes River and other natural features, it would not be practical to build a standard grid system as is required in the southeast. Therefore, in the city's analysis, the cost to serve the southeast area is higher than serving the north and west areas. What they didn't

take into account was the extraordinary cost of building roadways on steep terrain. They also didn't take into account the extraordinary cost of building a bridge across the river and the north end interchange. The relative cost comparison is fundamentally flawed. [Rose and Associates, May 1, 2009 Exhibit 2]

Newland Communities – The city did not properly consider costs and advantages of its property (and others) in the southeast area that will rely on the existing collector and arterial street system and not require trips on the heavily impacted Highway 97 and 20 for access to employment and other local trips. [Newland Communities, May 7, 2008, pages 21-22]

Central Oregon LandWatch – The city did not provide a detailed transportation analysis for the UGB expansion that it ultimately adopted. The analysis the city relied upon covers earlier proposals that are significantly different than the one ultimately adopted by the city and county.

Expansion in the northwest area would require widening of Newport and Galveston Streets from three to five lanes, which would violate a city plan policy that restricts widening of these streets (Street System Policy 21 of the Bend Area General Plan). [LandWatch, May 7, 2009, page 16]

d. Analysis

The city's evaluation of transportation costs of serving different areas is improper and incomplete. By bundling combinations of different areas into UGB expansion alternatives, the city has not properly conducted the evaluation of "alternative areas" called for in OAR 660-012-0060(8) because the analysis does not disclose unique costs associated with serving individual areas.

The city has not justified assignment of cost for key major highway improvements in Highway 97/20 area to all of the possible UGB expansion areas. State highway and related improvements in the north Highway 97/20 area are the single largest transportation cost identified in the city's evaluation. The city's estimate, based on a 2006 refinement plan is that facilities will cost $125 million to $185 million. These improvements makes up roughly 80 percent of the total cost of transportation improvements needed to serve the proposed UGB expansion areas. The city's findings assert that these improvements will be needed for any of the possible UGB expansion areas the city is considering. The city's position is not supported by the findings provided and is contrary to the information that is in the record and as a result does not have an adequate factual base.

The city's findings, summarized above, state that Juniper Ridge has unique additional costs, but does not itemize or otherwise identify these costs, and indicates that the further study of appropriate solutions is needed, and that this would need to be done "in conjunction with the Juniper Ridge Master Plan." By contrast, the city has provided a

detailed estimate of individual street improvements needed to serve most of the other proposed expansion areas.

Also, as Central Oregon LandWatch notes, the city's analysis does not appear to have considered existing plan policies that that restrict widening of Newport and Galveston.

The DKS analysis that the city relies on was conducted prior to the development of the city's adopted UGB amendment, Alternative 4A. Alternative 4A is significantly different from the UGB expansion alternatives analyzed by DKS and as a result the city's analysis does not comply with OAR 660-024-0060.

e. Conclusion

The director remands the evaluation of transportation costs of UGB expansion alternatives for further work consistent with the requirements of OAR 660-024-0060(8). The findings and analysis need to be revised to:

1. Identify and assign costs of individual UGB expansion areas, rather than combinations of different areas;
2. Provide additional information regarding the costs of providing transportation facilities to serve individual areas, including any extraordinary costs related to overcoming topographic barriers or rights of way;
3. Provide more detailed analysis of the extent to which the costs of improvements for major roadway improvements in north area (including proposed improvements to Highways 20 and 97) are a result of and should be assigned to development in the north area rather than the city as a whole. (That is, the city's analysis and evaluation should assess whether the extent of improvements in north area might be avoided or reduced in scale or cost if the UGB was not expanded in this area, or if the extent of the UGB expansion was reduced.); and
4. Provide comparable estimates for providing needed roadway capacity for areas that, because of topographic constraints, may need to be served by different types of road networks. For example, growth on the east side can apparently be served by a fairly complete grid of streets, while topographic barriers limit potential for a full street grid in this area.

2. Does the UGB amendment violate Goal 12 because the urban-area Transportation System Plan has not been acknowledged to be in compliance with the Transportation Planning Rule?

a. Legal Standard

The TPR requires that cities and counties adopt TSPs establishing a system of planned transportation facilities and services to adequate to support planned land uses.

b. Summary of Local Actions

The city's findings note that the city adopted a TSP that was approved in periodic review. [R. at page 1202]

c. Objections

Swalley Irrigation District contends that the city's UGB amendment does not comply with various portions of the TPR that require the city to adopt a TSP, which sets forth a system of planned facilities and services to meet identified transportation needs.

d. Analysis

The Bend TSP, adopted in 2000, was *partially* approved by the commission in periodic review. The commission's approval of the TSP itemized a number of relevant TPR requirements with which the city had not fully complied**.** However, the department believes that, notwithstanding this remaining work, the existing TSP is partially acknowledged and the city may rely upon it. The TSP complies with Goal 12 and the TPR except for those provisions where the periodic review order specifically indicated additional work remains to be done. The objector does not indicate how the UGB amendment is inconsistent with specific provisions of the TPR where the city has additional work to do.[37]

e. Conclusion

The city has a substantially complete, commission-approved TSP. Because the objector has not identified specific TPR provisions that require additional work by the city that affect the UGB decision, the department disagrees that the TPR requirement that the city have an adopted TSP has been violated.

3. Does the UGB amendment violate Goal 12 and the Transportation Planning Rule because findings do not demonstrate there are adequate planned transportation facilities to serve the planned land uses?

a. Legal standard

OAR 660, division 24 requires that UGB amendments comply with all statewide planning goals and rules, including Goal 12 and the TPR. OAR 660-012- 0020(1)(d) allows cities to defer addressing requirements of OAR 660-012-0060 (to demonstrate that there are adequate planned transportation facilities) until property is re-designated or rezoned to allow urban development.[38]

---

[37] The department has separately identified outstanding work related to TPR planning requirements for metropolitan areas that the city has not completed. These are discussed below, but were not raised by Swalley and so are not considered here.

[38] OAR 660-024-0020(1)(d) The transportation planning rule requirements under OAR 660-012-0060 need not be applied to a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary;

b. Summary of Local Actions

The findings indicate that the city has elected to defer addressing OAR 660-012-0060 to subsequent plan amendments and zone changes as provided for in OAR 660-024-0020. The findings supporting the UGB amendment indicate that adopted zoning for UGB expansion areas put in place interim plan and zone designations that are intended to restrict development to levels that would not result in more traffic generation than allowed by existing zoning. [R. at 1202]

c. Objection

Swalley Irrigation District contends that the UGB amendment fails to comply with provisions of OAR 660-012-0060, applicable to plan amendments and zone changes, which require that the city plan for adequate transportation facilities and services to accommodate planned land uses.

d. Analysis

The city is required to address OAR 660-012-0060 requirements as part of its UGB decision *only* if it that decision also authorizes more intense use of the land (in terms of trip generation) than allowed under current zoning. In this case, the UGB decision defers addressing OAR 660-012-0060 to a separate process that would involve a plan amendment and zone change. In short, while the city has the option to address and comply with the OAR 660-012-0060 now, it has chosen instead to defer compliance with the TPR to a subsequent plan amendment or zone change, which it is allowed to do if its interim zoning does not allow development that would generate more vehicle trips than the prior zoning.

As noted in section III.E.4 of this report, however, the interim zoning applied by the city and the county includes provisions that *may* allow for development that would generate more vehicle trips. The director is unable to determine whether the city and county have complied with this provision because their findings do not address it and there does not appear to be a comparison of prior and current zoning of the expansion area for Alternative 4A in the record.

e. Conclusion

The objection is sustained. OAR 660, division 24 specifically allows local governments to address OAR 660-012-0060 in a subsequent plan amendment or zone change, but only if they show that the interim zoning adopted for the UGB expansion area will not generate more traffic than the prior zoning. The expansion area includes a significant amount of land that had prior resource zoning (mainly EFU), that now is zoned UAR-10, as a result, the director concludes that the city and county have failed to show that they are entitled to defer the application of OAR 660-012-0060.

The director remands with direction to either retain current zoning within the expansion area or evaluate and adopt findings and measures to address OAR 660-012-0060.

4. Planning Status of the Proposed Deschutes River Bridge Crossing

a. Legal Standard

OAR 660-012-0025 describes how local governments are to comply with the statewide planning goals in preparing TSPs. This rule includes three major requirements:

- It directs that TSPs are to include land use decisions regarding planned transportation facilities (OAR 660-012-0025)(1));
- It directs that TSPs include findings showing that planned facilities are consistent with applicable goal requirements (OAR 660-012-0025)(2)); and
- It allows, under certain conditions, that local governments may defer required planning decisions to a subsequent refinement plan. (OAR 660-012-0025(3))[39]

b. Summary of Local Actions

The TSP indicates that the city "contemplates" a new bridge over the Deschutes River in northwest Bend. The TSP also includes two new minor arterial street segments that would extend from existing roadways to either side of the Deschutes River to the location where the proposed bridge is contemplated:

> The transportation circulation plan for the greater Bend urban area also contemplates a new bridge over the Deschutes River. This new bridge would join an extension of Skyline Ranch Road on the west to an extension of Cooley Road on the eastside. *Arterial street connections are included in the plan to accommodate that facility.*
>
> The exact location and alignment of the affected roadways and bridge crossing is the subject of further study and evaluation. Also, the *final* determination of need, evaluation of state land use Goal 5 and other impacts is being deferred to a refinement study. Findings of need and impact will be incorporated into the TSP once that study has been completed. [R. at 1472, emphasis added]

---

[39] (3) A local government or MPO may defer decisions regarding function, general location and mode of a refinement plan if findings are adopted that:

(a) Identify the transportation need for which decisions regarding function, general location or mode are being deferred;

(b) Demonstrate why information required to make final determinations regarding function, general location, or mode cannot reasonably be made available within the time allowed for preparation of the TSP;

(c) Explain how deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP;

(d) Describe the nature of the findings which will be needed to resolve issues deferred to a refinement plan; and

(e) Set a deadline for adoption of a refinement plan prior to initiation of the periodic review following adoption of the TSP.

The proposed bridge is also shown on the adopted roadway system map.[40]

While the TSP appears to be deferring key planning decisions about the bridge to a refinement study, the adopted findings addressing OAR 660-012-0025(3)[41] say:

> [The city is] not proposing to defer decisions regarding function, general location and mode of a refinement plan to a later date. [Exhibit D, Bend UGB Expansion Study – Statewide Planning Goal 12 Findings, pages 15 and 41 of 55]

In the process of conducting its review, the department has learned that the city may have adopted the wrong findings.[42]

c. Objection and DLCD Comments

Swalley Irrigation District contends that the UGB amendment violates several provisions of the TPR, including OAR 660-012-0025. [Swalley Irrigation District, May 6, 2009, page 56] As discussed in detail in objections related to Goals 5, 11, and 14, Swalley argues that the sewer plan assumes a crossing of the Deschutes River—in the form of either a bridge or tunnel under the river—but does not incorporate the cost of this crossing in its cost estimates, or address relevant goal requirements that would apply to this decision.

DLCD's October 24, 2008 letter asked that the city clarify the planning status of the proposed bridge:

> While this improvement is included in the plan's list of "outstanding issues" the text of the plan suggests that the city has made key land use decisions about need, mode, function and general location of this planned improvement [in]…. Section 9.6.3 (quoted above)
>
> If the city is making a decision that this roadway and bridge are planned facilities subject only to subsequent decisions about selecting a precise alignment, the plan

[40] The river crossing is highlighted with a large asterisk with this note: "Bridge subject to further study of need and location (see TSP Chapter 9)" [R. at 1476]

[41] The city's adopted Goal 12 and TPR findings are referenced in the record at page 1220. The referenced exhibit, Exhibit D, was included in the city's 2007 notice to the department, but was not included in the adopted record.

[42] In response to a request from the department to confirm the contents of the city's record and findings, city staff advised the department that the wrong set of TPR findings were adopted. [Bend letter, December 7, 2009, page 8 of 9] The adopted findings are a draft version dating from June 2007. The record includes "replacement" findings developed in 2008 that are somewhat different than the 2007 findings, but these were not adopted by the city or county as their official findings. In addition, the city advises that it has posted a *third* set of TPR findings on its website that were not part of the city's record. Due to time constraints in preparing this report, the department has not been able to analyze these findings in detail. And, in any event, the director must base his decision on the city's adopted findings.

needs to (1) address the relevant goals, including Goal 5, (2) establish an overall corridor within which the roadway may be located; and (3) specify the process and standards by which a subsequent decision selecting an alignment for the roadway and bridge will be made. [R. at 4735]

d. Analysis

OAR 660-012-0025 directs that TSPs clearly make or defer decisions about proposed transportation improvements. In this case, the plan is ambiguous. It neither clearly authorizes the proposed bridge, with findings demonstrating that the bridge is consistent with relevant goals, nor clearly defers specific planning decisions about the bridge to a subsequent process.

It appears that the city may have intended to defer a decision on a possible bridge in the northwest area to some point in the future. However, the TSP does not accomplish deferral consistent with OAR 660-012-0025. The TSP does not include findings and provisions required to properly accomplish deferral consistent with the OAR 660-012-0025(3). In addition, parts of the TSP and other parts of the UGB submittal suggest a decision to plan a bridge at this location (i.e., the statement that the bridge is contemplated, and decision to plan for minor arterial roadways extending to either side of the river at to the proposed bridge location).

In short, further work is needed to either authorize the bridge as a planned facility, or defer decisions to a subsequent refinement plan consistent with OAR 660-012-0025. Also, whichever path the city chooses to take in addressing OAR 660-012-0025, its work should be conducted in concert with work addressing two other requirements: OAR 660-024-0060(8) evaluating and comparing costs of different UGB expansion alternatives and evaluating whether widening of Newport and Galveston streets is consistent with the city's adopted plan policies for these streets.

e. Conclusion

The objection is sustained. The plan policy language does not comply with OAR 660-012-0025. As described above, OAR 660-012-0025 requires specific findings and actions when a local government acts to defer required planning decisions to a refinement plan. The city's findings and policies do not fulfill requirements of OAR 660-012-0025(3). The director remands the decision with instructions to either revise the TSP to include planning decisions required to comply with the TPR and applicable goals or properly accomplish deferral consistent with OAR 660-012-0025(3).

Because the bridge is an expensive improvement and appears intended to serve a specific area, the city should, as part of its Goal 14 work, consider whether the bridge improvement is needed to serve a specific areas proposed for UGB expansion, and consider the costs of such an improvement as part of its evaluation of expansion alternatives consistent with OAR 660-024-0060(8).

5. Is the city obligated to complete overdue requirements to reduce reliance on the automobile?

This subsection addresses several issues related to TPR requirements that apply specifically to city's within metropolitan planning areas (MPOS), and whether these requirements must be satisfied prior to significantly amending its UGB. The TPR establishes planning requirements for cities within MPO areas to develop a strategy to reduce reliance on the automobile through the adoption of transportation and land use measures. This section of the report addresses three related issues:

1. Whether the metropolitan planning requirements of the TPR are applicable to Bend at this time;

2. Whether Bend's plan is in compliance with provisions applicable to metropolitan areas for adoption of standards and benchmarks to reduce reliance on the automobile; and

3. Whether the planning requirements in the TPR must be met prior to a significant amendment of the UGB.

Goal 12 and the TPR apply to the UGB expansion decision. Bend is subject to TPR requirements for metropolitan areas, and is well past deadlines for completing the required work. The outstanding work is significant because it is likely to require that the city take additional steps to promote mixed-use land use patterns that support multiple modes of transportion. This work relates directly to requirements in Goal 14 that the city maximize efficiency of urban land uses, and demonstrate that lands within the UGB cannot reasonably accommodate anticipated housing, employment and other land needs.

Issue 1: Whether Bend is Subject to Metropolitan Transportation Planning Requirements at this time.

a. Legal standard

OAR 660-012-0016 and -0055 require that each MPO prepare a regional transportation system plan (RTSP) in coordination with adoption of the federally-required regional transportation plan (RTP). Under both provisions, MPO plans and the city's conforming amendments to its TSP must be adopted no later than one year after the federally required RTP.[43]

[43] OAR 660-012-0016: (1) In metropolitan areas, local governments shall prepare, adopt, amend and update transportation system plans required by this division in coordination with regional transportation plans (RTPs) prepared by MPOs required by federal law. Insofar as possible, regional transportation system plans for metropolitan areas shall be accomplished through a single coordinated process that complies with the applicable requirements of federal law and this division. * * *

(2) When an MPO adopts or amends a regional transportation plan that relates to compliance with this division, the affected local governments shall review the adopted plan or amendment and either:

b. Summary of Local Actions

The city asserts that obligations in OAR 660-012- 0016 and -0055 to conduct metropolitan planning are not applicable at this time:

> OAR 660-012-0016…[and]…OAR 660-012-0055(1)…[do] not apply to the City of Bend because at the time the 2000 Bend Urban Area Transportation System Plan was prepared and adopted on October 11, 2000, the city of Bend was not part of an MPO. [Exhibit D, Bend UGB Expansion Study – Statewide Planning Goal 12 Findings, pp. 15 and 41 of 55]

However, the city's findings, prepared in 2007 and adopted by reference in its submittal, indicate that the city understood the one-year deadline for adoption of an RTSP:

> An RTP that meets federal requirements is expected by the end of June 2007 and an RTP that meets the requirements of this division is expected by the end of December 2007. The City of Bend is committed to amending the City's TSP to be consistent with the adopted RTP within one year of the adoption of the RTP. [Exhibit D, Bend UGB Expansion Study – Statewide Planning Goal 12 Findings, page 42 of 55]

c. DLCD Comments

The department advised the city that the metropolitan transportation planning requirements in the TPR are applicable to Bend at this time. The department raised this issue in its comment letters in July 2007 and October and November 2008:

> The Transportation Planning Rule (TPR) requires that metropolitan areas adopt transportation and land use plans and measures that significantly increase the availability and convenience of alternative modes of transportation and reduce reliance on the automobile. Bend is past due in completing this work. The City of

---

(a) Make a finding that the proposed regional transportation plan amendment or update is consistent with applicable provisions of adopted regional and local transportation system plan and comprehensive plan and compliant with the applicable provisions of this division; or,

(b) Adopt amendments to the relevant regional or local transportation system plan that make the regional transportation plan and the applicable transportation system plans consistent with one another and compliant with the applicable provisions of this division. Necessary plan amendments or updates shall be prepared and adopted in coordination with the federally-required plan update or amendment. Such amendments shall be initiated no later than 30 days from the adoption of the RTP amendment or updated and shall be adopted no later than one year from the adoption of the RTP amendment or update or according to a work plan approved by the commission. * * *

OAR 660-012-0055(1)(b): When an area is designated as an MPO or is added to an existing MPO, the affected local governments shall, within one year of adoption of the regional transportation plan, adopt a regional TSP in compliance with applicable requirements of this division and amend local transportation system plans to be consistent with the regional TSP.

> Bend is currently obligated to work with department to prepare a work plan and schedule for completing the required work. (DLCD, November 21, 2008) [R. at 3781]

d. Analysis

The metropolitan transportation planning requirements were applicable at the time the city adopted its amended UGB and amended its TSP. As outlined above, the TPR includes two separate but essentially equivalent requirements for adoption and update of transportation system plans in metropolitan areas.

OAR 660-012-0016 was adopted in 2006 and specifically addresses the relationship of state and federally required transportation plans. This was intended to minimize duplication of effort in meeting state and federal transportation planning requirements. As noted above, the rule specifically directs that TPR required planning "…be accomplished through a single coordinated process" and allows up to one year for local governments to adopt conforming amendments when a federally adopted plan is adopted or amended. (OAR 660-012-0016 also allows local governments to request an extension to the one year deadline, but the city has not requested an extension.)

OAR 660-012-0055, adopted in 1991, requires local governments in a newly designated or expanded MPO to adopt a TSP within one year of adoption of a federally required RTP.

The Bend MPO was designated in 2002, and the MPO adopted an RTP on June 27, 2007. Consequently, the city was obligated to adopt amendments to its TSP meeting relevant TPR requirements no later than June 27, 2008.[44]

The fact that the city was not part of an MPO in 2000 when it adopted its TSP does not affect the applicability of the metropolitan planning requirements. OAR 660-012-0016 clearly directs that metropolitan planning requirements be addressed *at the same time* and *through the same process* that is used to develop the RTP.

The MPO has been working on preparation of an RTP since the area was designated as a metropolitan area in 2002. The city's proposed UGB expansion proposal, TSP, and the RTP have been developed at the same time (2006-2007), and all three plans cover the same planning period: through 2030. Under the terms of the TPR, the city's TSP is subject to metropolitan planning requirements and must include these in its transportation plan.

e. Conclusion

The TPR requirements for metropolitan areas are applicable to Bend at this time.

[44] The city could also have requested that the commission approve a work program extending the date for completion of the required plan as provided in OAR 660-012- 0016, but it has not done so.

Issue 2: Whether the adopted TSP complies with TPR requirements for metropolitan areas.

a. Legal Standard

OAR 660-012-0035 includes requirements regarding planning for transportation choices, and reduced reliance on the automobile. The rule includes a specific target for reduction in vehicle miles traveled (VMT) and provides timeframes for completion and review procedures.[45]

b. Summary of Local Actions

The submittal includes conflicting findings on its compliance with metropolitan transportation planning requirements. As noted above, city argues that provisions of the TPR for metropolitan areas do not apply to Bend at this time. However, the city's findings also say that the city has adopted performance measures and benchmarks as required by 0035 and that it can demonstrate that it has planned for a five percent reduction in vehicle miles travelled (VMT) per capita, as required by the rule:

> * * * the TSP includes benchmarks to assure satisfactory progress towards meeting the approved standard or standards adopted pursuant to this rule at

[45] OAR 660-012-0035: (4) In MPO areas, regional and local TSPs shall be designed to achieve adopted standards for increasing transportation choices and reducing reliance on the automobile. Adopted standards are intended as means of measuring progress of metropolitan areas towards developing and implementing transportation systems and land use plans that increase transportation choices and reduce reliance on the automobile. It is anticipated that metropolitan areas will accomplish reduced reliance by changing land use patterns and transportation systems so that walking, cycling, and use of transit are highly convenient and so that, on balance, people need to and are likely to drive less than they do today.
OAR 660-012-0035(5) *MPO areas shall adopt standards to demonstrate progress towards increasing transportation choices and reducing automobile reliance* as provided for in this rule:
(a) *The commission shall approve standards by order upon demonstration by the metropolitan area* that:
(A) Achieving the standard will result in a reduction in reliance on automobiles;
(B) Achieving the standard will accomplish a significant increase in the availability or convenience of alternative modes of transportation;
(C) Achieving the standard is likely to result in a significant increase in the share of trips made by alternative modes, including walking, bicycling, ridesharing and transit;
(D) VMT per capita is unlikely to increase by more than five percent; and
(E) The standard is measurable and reasonably related to achieving the goal of increasing transportation choices and reducing reliance on the automobile as described in OAR 660-012-0000.
(6) *A metropolitan area may also accomplish compliance with requirements of subsection (3)(e), sections (4) and (5) by demonstrating to the commission that adopted plans and measures are likely to achieve a five percent reduction in VMT per capita over the 20-year planning period*. The commission shall consider and act on metropolitan area requests under this section by order.
(7) *Regional and local TSPs shall include benchmarks* to assure satisfactory progress towards meeting the approved standard or standards adopted pursuant to this rule at regular intervals over the planning period. MPOs and local governments shall evaluate progress in meeting benchmarks at each update of the regional transportation plan. Where benchmarks are not met, the relevant TSP shall be amended to include new or additional efforts adequate to meet the requirements of this rule. [emphasis added]

> regular intervals over the planning period. [Exhibit D, Bend UGB Expansion Study – Statewide Planning Goal 12 Findings, page 27 of 45]
>
> * * * the City can demonstrate to the commission that adopted plans and measures are likely to achieve a five percent reduction in VMT per capita over the 20-year planning period.[46] In addition, the City has adopted interim benchmarks for VMT reduction and shall evaluate progress in achieving VMT reduction at each update of the TSP. [Exhibit D, Bend UGB Expansion Study – Statewide Planning Goal 12 Findings, page 27 of 55]

c. DLCD Comments

The Bend metropolitan area does not have commission-approved standards or benchmarks for achieving reduced reliance on the automobile as required by OAR 660-012-0035. The department raised this issue in its comment letters of October 24, 2008 and November 21, 2008:

> We…recommend that the city revise or delete the finding related to TPR Section 0035. This section of the rule relates to adoption of measures to implement an adopted, Commission-approved standard (required of 0035(5)-(6). As noted above, work related to these requirements remains as an outstanding work task. (DLCD, October 24, 2008, page 16.) [R. at 4737]
>
> The key outstanding [TPR] requirement relates to adoption of a plan and measures to significantly increase the availability and convenience of alternative modes of transportation and reduce reliance on the automobile. This includes development and adoption of specific targets for accomplishing reduced reliance. (TPR Section 035(5)) (DLCD, November 21, 2008) [R. at 3781]

d. Analysis

While the city has adopted several benchmarks for adding bike and pedestrian facilities and transit service, it has not formally proposed or adopted a performance measure as required by provisions of OAR 660-012-0035, and has not obtained or sought commission approval of such a standard as required by OAR 660-012-0035(5)(a).

Further, although the city asserts that it can demonstrate that its TSP is likely to achieve a five percent reduction in VMT—thus meeting relevant requirements of the TPR—nothing in city's TSP or adopting findings provide evidence to support this assertion, or that would provide a basis for a commission order approving this finding as provided under OAR 660-012-0035(6).

---

[46] Under terms of OAR 660-012-0035(6), a metropolitan area can meet the requirement to adopt standards for accomplishing reduced reliance on the automobile in sections 0035(4) and (5) "…by demonstrating to the commission that adopted plans and measures are likely to achieve a 5% reduction in VMT per capita over the 20 year planning period."

e. Conclusion

The city's amended TSP does not satisfy TPR requirements for metropolitan planning. The city must develop a standard and benchmarks that show how the city's transportation and land use plans will significantly increase the availability and convenience of alternative modes of transportation and reduce reliance on the automobile and obtain commission approval of those measures.

Issue 3: Whether the TPR's requirements for metropolitan area planning must be completed prior to or contemporaneously with the city's UGB amendment

a. Legal standard

OAR 660-024-0020 requires that the city address all of the statewide planning goals in its decision to amend its UGB:

> (1) All statewide goals and related administrative rules are applicable when establishing or amending a UGB, except as follows:
>
> * * *
>
> (d) The transportation planning rule requirements under OAR *660-012-0060* need not be applied to a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary …. OAR 660-024-0020 (emphasis added).[47]

This rules allows deferral of the application of OAR 660-012-0060, but not of other provisions of the TPR. The TPR includes several specific requirements for metropolitan areas that affect or are implemented through changes to land use densities, designations and design standards to meet specific requirements in the TPR to significantly increase transportation options and significantly reduce reliance on the automobile. These include:

- Adoption of local standards, approved by LCDC, that demonstrate the city's TSP will significantly increase transportation options and reduce reliance on the automobile. (OAR 660-012-0035(4)-(6))

- Adoption of a parking plan and a transit plan (OAR 660-012-0020(2)(c) and (g))

- Adoption of ordinance amendments to allow for transit-oriented developments, and transit-supportive uses and densities along transit routes (OAR 660-012-0045(4))

[47] As noted above, the director sustained an objection from Swalley Irrigation District concerning this requirement as it relates to deferring application of OAR 660-012-0060 of the TPR to subsequent plan and zone change decisions.

b. Summary of Local Actions

Table 2 below summarizes the city's actions and findings that relate to planning requirements for metropolitan areas. As noted above, for the most part the city contends that these requirements do not apply to the city at this time. Individual findings appear to suggest that the city has nonetheless adopted actions that comply with metropolitan planning provisions in the TPR.

Table 2. City findings and actions related to TPR Requirements for Metropolitan Areas

TPR Section	Summary	Goal 14 Related Outcome	City Findings/Status
0035(4)–(7)	Performance standards for increasing trans-portation options and reducing reliance on the automobile	Plan and zoning changes to allow more mixed use higher density residential and employment development; especially in close-in areas, and infill and redevelopment	City has not adopted performance standards. The TSP includes several "benchmarks" for TDM, bike and pedestrian improvements that were adopted as part of city's 2000 TSP that predate Bend's designation as an MPO[48]
0020(2)(g) 0045(5)(c)	Parking Plan to reduce per capita parking by 10% or adopt parking management reforms	Supports increased employment density, multifamily housing density	City findings assert city has met this requirement of the rule. Nothing in TSP or record includes a parking management plan that meets applicable requirements
0020(2)(c)(C)	Transit Plan designating major transit routes and major stops	Supports higher residential and employment densities	TSP includes a map of potential routes and three potential major stops.[49] [50] Policies dating from 2000 TSP direct city to continue work on transit planning
0045(4)–(5)	Ordinances allowing transit-oriented developments and transit supportive uses and densities along transit routes	Increased housing and employment densities along transit routes	City has adopted some changes to ordinances as a result of 2000 TSP work and PR remand. Policies direct city to continue work.[51] No new ordinance provisions as part of this amendment.

c. DLCD Comments

The department raised this issue in its comment letters in October and November 2008:

[48] TPR requires benchmarks that measure progress in implementing adopted, LCDC approved performance standards. Since Bend does not have an adopted, approved performance standard, these benchmarks do not meet -0035 requirements.

[49] At present, the following are proposed as major transit stops: the downtown transit center, St. Charles Medical Center and Central Oregon Community College. Also, as the system grows, evaluation of major transit stops in the northern and southern reaches of the Bend area should be conducted. [R. at 1388]

[50] "The final determination of public transit routes, facilities and amenities within the UGB areas will be subject to further analysis and funding availability. [R. at 1453]

[51] "Major transit corridors shall be opportunity areas within ¼ mile of either side of a corridor shall be a priority for medium to high density residential designations to implement the Framework Plan. [TSP, R. at 1354]

> In our July 2007 comments we recommended that the city clarify the relationship of proposed TSP amendments to the city's obligations to prepare and adopt a regional transportation system plan (RTSP) in compliance with the TPR. Of particular note are TPR requirements to plan for reduced reliance on the automobile. Because land use strategies play an important role in accomplishing this objective, this work should be integrated with the city's consideration of UGB amendments. (DLCD, October 24, 2008) [R. at 4737]

> The key outstanding [TPR] requirement relates to adoption of a plan and measures to significantly increase the availability and convenience of alternative modes of transportation and reduce reliance on the automobile. This includes development and adoption of specific targets for accomplishing reduced reliance. (OAR 660-012-035(5)) Because urban growth patterns affect reliance on the automobile, the proposal needs to assess how expansion to different areas would affect city's efforts to reduce reliance on the automobile. In general, reduced reliance on the automobile is accomplished by planning for compact, mixed use development, with an emphasis on focusing development in close in areas and along major transit routes. This is especially true for major trip generating uses, including regional commercial development, the proposed university and hospital medical center. For these uses, the proposal should evaluate whether needs can be met through increased infill or redevelopment or more intense development of close in sites. (DLCD, November 21, 2008) [R. at 3781]

d. Analysis

The city is required to address portions of Goal 12 and TPR related to metropolitan planning in its UGB amendment. The UGB expansion adds a significant quantity of land and residential and employment capacity to the Bend urban area that will affect transportation systems and that will have long-term effects on the extent to which area residents must rely on automobiles. Compliance with these provisions of the rule is important now because the work needed to meet these requirements relates to and affects the city's decisions about how to accommodate future urban growth. Generally, this portion TPR is met by changes to land use designations and densities that result by planning and zoning additional areas for compact, mixed use development and higher densities, through increased rates of infill and redevelopment and through development of transit oriented development or mixed use centers or neighborhoods:

> It is anticipated that metropolitan areas will accomplish reduced reliance by changing land use patterns and transportation system so that walking, cycling and use of transit are highly convenient and so that, on balance, people need to and are more likely to drive less than they do today. [OAR 660-012-0035(4)]

In addition, the TPR includes detailed guidance about the kinds of land use actions that metropolitan areas should consider to accomplish this objective.[52]

As the department stated in its comments to the city, this work must be integrated into the city's analysis of future land use needs as part of the UGB amendment process. As discussed above, the Goal 14 rule requires the city to consider and adopt efficiency measures to attempt to accommodate future land use needs on lands that are currently within the UGB. Since city must comply with the TPR as part of its UGB amendment, the city's efficiency measures must also include land use related actions that comply with the TPR.

e. Conclusion

The city's plan does not comply with key portions of the TPR related to planning for reduced reliance on the automobile. The city does not have a commission-approved standard for accomplishing reduced reliance on the automobile; a transit or parking plan; or related implementing measures allowing for transit oriented development.

Compliance with this part of the TPR is likely to require that the city take steps to plan and zone lands to encourage more compact, mixed use development, either through infill and redevelopment in the central area, or more detailed planning for transit oriented development or mixed use centers along transit routes. This work is closely related to work city is otherwise required to complete in order to comply with Goal 14 to adopt "efficiency measures." The city's decision is remanded to address these portions of the TPR, and to coordinate this work with its proposed UGB expansion.

---

[52] OAR 660-012-0035(2) lists the types of land use changes that local governments are encouraged to consider to reduce reliance on the automobile:
(a) Increasing residential densities and establishing minimum residential densities within one quarter mile of transit lines, major regional employment areas, and major regional retail shopping areas;
(b) Increasing allowed densities in new commercial office and retail developments in designated community centers;
(c) Designating lands for neighborhood shopping centers within convenient walking and cycling distance of residential areas; and
(d) Designating land uses to provide a better balance between jobs and housing considering:
(A) The total number of jobs and total of number of housing units expected in the area or subarea;
(B) The availability of affordable housing in the area or subarea; and
(C) Provision of housing opportunities in close proximity to employment areas.

6. Did the rezoning of lands within the UGB expansion area violate Goal 2, OAR 660-024-0050(5) and the Transportation Planning Rule?

a. Legal standard

OAR 660-024-0050(5) (2006)[53] provides that at the time a city and county adopt a UGB amendment, they must also adopt comprehensive plan and zoning designations that are consistent with the 20-year land need determinations for all land that is being added to the UGB. This rule codifies long-standing appellate case law.[54] For Bend, this rule applies to revisions to plan and zoning maps to address future urban residential, commercial, industrial, institutional, park, and other uses in the expansion area. There are two ways to zone the land being added to the UGB: (1) retain the existing rural zoning, such as rural residential or exclusive farm use, or (2) apply interim urban holding zones that limit or prohibit land divisions, maintain large parcel sizes, limit uses, and prohibit increased vehicle trip generation.[55] The purpose of this requirement is to maintain the potential of the urbanizable land[56] within the UGB for future planned urban development.

b. Summary of Local Actions

In addition to adopting new interim plan and zoning designations, the city also designated future land uses for the expansion area on the Urban Area Framework Plan Map [R. at

---

[53] The text of OAR 660-024-0050(5) (2006):

> When land is added to the UGB, the local government must assign appropriate urban plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation or may maintain the land as urbanizable land until the land is rezoned for the planned urban uses, either by retaining the zoning that was assigned prior to inclusion in the boundary or by applying other interim zoning that maintains the land's potential for planned urban development. The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB.

[54] A UGB expansion based on a specific need must be conditioned on zoning and development the subject property to achieve the result of providing for the identified need. *Concerned Citizens vs. Jackson County*, 33 Or LUBA 70 (1997).

[55] *See, e.g.*, ORS 197.752(1): "Lands within urban growth boundaries shall be available for urban development concurrent with the provision of key urban facilities and services in accordance with locally adopted development standards." *Also see* OAR 660-024-0020(1)(d): "The transportation planning rule requirements under OAR 660-012-0060 need not be applied to a UGB amendment if the land added to the UGB is zoned as urbanizable land, either by retaining the zoning that was assigned prior to inclusion in the boundary or by assigning interim zoning that does not allow development that would generate more vehicle trips than development allowed by the zoning assigned prior to inclusion in the boundary."

[56] The definitions in OAR 660, division 15 define "Urbanizable land" as: "Urban land that, due to the present unavailability of urban facilities and services, or for other reasons:

(a) Retains the zone designations assigned prior to inclusion in the boundary; or
(b) Is subject to interim zone designations intended to maintain the land's potential for planned urban development until appropriate public facilities and services are available or planned."

"Urban land" is defined as "land inside an urban growth boundary."

4897]. Part of the expansion area was designated as six master plan areas: four on the west side, one on the south side, and one on the northeast side. The map specifies the approximate gross "available acres" for various urban uses for each master plan area.

c. Objection

Tumalo Creek Development LLC contends Bend violated Goal 2 by assigning future plan designations in the proposed Framework Plan to lands outside its jurisdiction. This would be lawful only if the designations are guidelines. If the map designations are binding, the city must coordinate with Deschutes County and comply with statutes and rules regarding re-zoning, including Goal 2. Objector states that it owns the land designated as Master Plan Area 3. [May 7, 2009 letter, p. 2]

d. Analysis

The city designated future urban land uses on the Urban Area Framework Plan Map. This designation was coordinated with Deschutes County through the county's co-adoption of the UGB amendment, Framework Plan amendments, and plan and zoning map amendments, in compliance with OAR 660-024-0050(5)(2006). However, the city did not apply the *appropriate* plan designations and zoning as required by OAR 660-024-0050(5).[57]

---

[57] The proposal does not comply with the OAR 660-024-0050(5) requirement to apply appropriate plan designations and zoning to the expansion area. This rule states:

> When land is added to the UGB, the local government must assign appropriate *urban* plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation, or may maintain the land as urbanizable land either by *retaining the zoning* that was assigned prior to inclusion in the boundary *or* by applying other *interim zoning that maintains the land's potential for planned urban development until the land is rezoned for the planned urban uses.* The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB. [Emphasis added]

The city applied the following *plan designations* to the expansion area: Urban Reserve Residential, Urban Reserve Commercial, Urban Reserve Industrial, Surface Mining, and Public Facilities. [Bend Urban Area Proposed General Plan Map, R. at 40, 174, 1189, 1055, 1226, 1232] Except for the last two, these are rural, not *urban* plan designations.[57] The city has in the past zoned a large amount of land outside the UGB as "urban reserve"[57] but has not used such zoning inside the UGB.

The proposed *zoning* for the expansion area also does not comply with OAR 660-024-050(5). The county adopted two new zones for the expansion area, the Urban Holding-10 (10-acre minimum parcel size) and the Urban Holding-2½ (2½-acre minimum parcel size), in Title 19 of the Deschutes County Code. [R. at 1852] The code also states that an existing city zone, Suburban Low Density Residential (SR 2½), like the new UH-2½ and UH-10 zones, is an urban holding zone. Please see the detailed discussion in section III.E regarding the department's position that these three zones will not preserve urbanizable land for future urbanization and therefore are not urban holding zones in violation of Goal 14 and OAR 660-0050(5). The "land uses" that appear on the Bend Area Framework Plan Map [R. at 1235] are neither land use designations nor the pre-expansion zoning or interim holding zones; they are the intended future urban uses, only.

e. Conclusion and Decision

The city and county did not violate Goal 2 by adopting future urban plan designations for lands within the proposed UGB expansion area. The city appropriately coordinated with Deschutes County. The director denies this objection.

However, as described in more detail immediately below, the city violated OAR 660-024-0050(5) by applying *rural* plan designations (Urban Reserve Residential, Urban Reserve Commercial, Urban Reserve Industrial) to portions of the expansion area, and by applying zoning designations that fail to maintain the expansion area as urbanizable land either by retaining the zoning that was assigned prior to inclusion in the boundary *or* by applying other interim zoning *that maintains the land's potential for planned urban development until the land is rezoned for the planned urban uses.*

I. UGB Location

1. Do the UGB locational analysis and UGB amendment comply with the requirements of ORS 197.298, Goal 14 and OAR 660, division 24?

a. Legal standard

ORS 197.298, Goal 14 and OAR 660-024-0060[58] contain the applicable state requirements that establish *where* a city may expand its urban growth boundary (UGB).

---

[58] ORS 197.298 Priority of land to be included within urban growth boundary:

(1) In addition to any requirements established by rule addressing urbanization, land may not be included within an urban growth boundary except under the following priorities:

(a) *First* priority is land that is *designated urban reserve* land under ORS 195.145, rule or metropolitan service district action plan.

(b) If land under paragraph (a) of this subsection is inadequate to accommodate the amount of land needed, *second* priority is land adjacent to an urban growth boundary that is identified in an acknowledged comprehensive plan as an *exception area or non-resource land*. Second priority may include *resource land that is completely surrounded by exception areas* unless such resource land is high-value farmland as described in ORS 215.710.

(c) If land under paragraphs (a) and (b) of this subsection is inadequate to accommodate the amount of land needed, *third* priority is land designated as *marginal land* pursuant to ORS 197.247 (1991 Edition).

(d) If land under paragraphs (a) to (c) of this subsection is inadequate to accommodate the amount of land needed, *fourth* priority is land *designated in an acknowledged comprehensive plan for agriculture or forestry*, or both.

(2) Higher priority shall be given to land of lower capability as measured by the capability classification system or by cubic foot site class, whichever is appropriate for the current use.

(3) Land of lower priority under subsection (1) of this section may be included in an urban growth boundary if land of higher priority is found to be inadequate to accommodate the amount of land estimated in subsection (1) of this section for one or more of the following reasons:

(a) Specific types of identified land needs cannot be reasonably accommodated on higher priority lands;

(b) Future urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints; or

(c) Maximum efficiency of land uses within a proposed urban growth boundary requires inclusion of lower priority lands in order to include or to provide services to higher priority lands."
[emphasis added]

Statewide Planning Goal 14 (as amended April 28, 2005) requires the following:

Boundary Location
The location of the urban growth boundary and changes to the boundary shall be determined by evaluating alternative boundary locations consistent with ORS 197.298 and with consideration of the following factors:
(1) Efficient accommodation of identified land needs;
(2) Orderly and economic provision of public facilities and services;
(3) Comparative environmental, energy, economic and social consequences; and

(4) Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.

The relevant rules in OAR 660-024-0060 (adopted 10-5-06) are as follows:

Boundary Location Alternatives Analysis

(1) When considering a UGB amendment, a local government must determine which land to add by evaluating alternative boundary locations. This determination must be consistent with the priority of land specified in ORS 197.298 and the boundary location factors of Goal 14, as follows:

(a) Beginning with the highest priority of land available, a local government must determine which land in that priority is suitable to accommodate the need deficiency determined under 660-024-0050.

(b) If the amount of suitable land in the first priority category exceeds the amount necessary to satisfy the need deficiency, a local government must apply the location factors of Goal 14 to choose which land in that priority to include in the UGB.

(c) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, a local government must determine which land in the next priority is suitable to accommodate the remaining need, and proceed using the same method specified in subsections (a) and (b) of this section until the land need is accommodated.

(d) Notwithstanding subsection (a) through (c) of this section, a local government may consider land of lower priority as specified in ORS 197.298(3).

(e) For purposes of this rule, the determination of suitable land to accommodate land needs must include consideration of any suitability characteristics specified under section (5) of this rule, as well as other provisions of law applicable in determining whether land is buildable or suitable.

(3) The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and to determine the UGB location, a local government must show that all the factors were considered and balanced.

(4) In determining alternative land for evaluation under ORS 197.298, “land adjacent to the UGB” is not limited to those lots or parcels that abut the UGB, but also includes land in the vicinity of the UGB that has a reasonable potential to satisfy the identified need deficiency.

(5) If a local government has specified characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need, the local government may limit its consideration to land that has the specified characteristics when it conducts the boundary location alternatives analysis and applies ORS 197.298.

(6) The adopted findings for UGB adoption or amendment must describe or map all of the alternative areas evaluated in the boundary location alternatives analysis. If the analysis involves more than one parcel or area within a particular priority category in ORS 197.298 for which circumstances are the same, these parcels or areas may be considered and evaluated as a single group.

(7) For purposes of Goal 14 Boundary Location Factor 2, “public facilities and services” means water, sanitary sewer, storm water management, and transportation facilities.

(8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. “Coordination” includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and

The department provided a detailed explanation of how to complete an analysis of UGB locational alternatives in letters to the city dated May 27, 2008, October 24, 2008, and November 21, 2008 [R. at 3758, 4356, 4722, and 7268]. Deschutes County legal counsel also provided public written advice concerning the locational analysis on September 17, 2007 that is consistent with the department's letters. [R. at 8870] The process is set forth in Goal 14, ORS 197.298, and OAR 660, division 24, and is summarized as follows.

Once a local government has accommodated as much of its total 20-year identified needs for housing and employment as it reasonably can in the current UGB,[59] it then proceeds to analyze lands within a study area outside the existing UGB from which to select lands to satisfy any remaining needs. Goal 14, ORS 197.296, OAR 660-024-0050(4).

The first step is to determine a study area around the existing UGB. Next, the government determines which lands in the study area are the highest priority lands under ORS 197.298(1). For Bend, since there are no acknowledged urban reserves that were adopted under OAR 660-024-0060(1)(a) and ORS 197.298(1)(b), the highest priority lands for urbanization are exception areas (areas that are not subject to the agricultural or forest lands goals, and that usually are planned for rural residential, rural industrial, rural commercial or other rural uses). In the case of Bend, exception areas include properties zoned UAR, RR-10, and SR 2½, as Goal 3 and Goal 4 exceptions were taken for all of these lands (the status of the UAR zoned lands is addressed in more detail later in this section).

Once the highest priority lands are identified, the local government must develop a list of the lands and/or map them. The list or map, along with other data, is then used to analyze the lands for their suitability.

The suitability analysis relates directly to how the local government has justified its need for additional lands. If the additional lands are for general needed housing (e.g., for single family residential) the suitability criteria that may be used as a screen to eliminate lands from consideration (at this stage) are the same general criteria used in determining what residential lands are "buildable" (housing) or "suitable vacant and developed land" (employment). OAR 660-024-0060(1)(e) and 660-024-0010(1)(lands for housing are not buildable if they: have severe natural hazards, are protected by Goal 5, have slopes over 25 percent, are within the 100-year floodplain, can't be provided with public facilities); OAR 024-0010(8))(lands for employment are not "suitable" unless they are "serviceable" (OAR 660-009-0005(9) and are either "vacant" (a lot greater than 1/2 acre not containing permanent improvements or greater than 5 acres where less than 1/2 acre is occupied by

---

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

[59] The adequacy of the city's accommodation of identified need and efficiency measures for land within the existing UGB is addressed in more detail elsewhere in this report.

improvements, OAR 660-009-0005(14)) or developed but likely to be redeveloped during the planning period. OAR 660-009-0005(1).

If, however, the additional lands are for an "identified need" with "specified characteristics" in terms of location, then the local government may use the required locational characteristics identified in the need showing as a screen to eliminate lands from consideration. OAR 660-024-0060(5). An example is rail-dependent industrial uses. If the local government's economic opportunities analysis demonstrates a need for this type of employment use, lands without rail access could (and should) be excluded from review under the priority of lands statute (ORS 197.298(1)). Similarly, if the local government's housing needs analysis shows a need for high-density, multi-family housing that needs to be located close to a university, or that is located on a planned bus route (in the comprehensive plan), then the city or county may specify suitability criteria that limit its locational analysis to lands that will satisfy the identified need. OAR 660-024-0060(5).

Once the local government has determined the quantity of suitable first priority lands adjacent to the existing UGB, it compares that quantity with the amount of land need it has demonstrated in its housing needs analysis and/or economic opportunities analysis. OAR 660-024-0060(1)(b). If the amount of suitable land in the first priority category exceeds the amount needed, it then uses the Goal 14 location factors to identify which first priority lands to include in its UGB. OAR 660-024-0060(1)(b). The Goal 14 location factors are not criteria, they are considerations that are applied to each alternative parcel or group of parcels. The parcel or parcels that, on balance, best satisfy the factors are selected. In other words, no single one of the four location factors may be the sole basis for selecting a particular parcel(s) to add to the UGB.

If the amount of suitable land in the first priority category does *not* exceed the amount needed, the city or county then proceeds to evaluate the second priority category in the same manner, and so on until sufficient lands are included in the UGB.OAR 660-024-0060(1)(c).

As noted above, ORS 197.298(3)(a) allows a city or county to limit the application of the priority of lands for urbanization established in ORS 197.298(1) if the need being addressed is specific type of identified need with particular locational requirements. Similarly, ORS 197.298(3)(b) and (c) also provide bases for not including lands that would otherwise be a higher priority for a UGB expansion. See also, OAR 660-024-0060(1)(d). The exceptions to the priority statute for the difficulty of providing future urban services (ORS 197.298(3)(b), and for maximum efficiency of land use within the proposed UGB are narrowly construed as exceptions to the general rule for where UGBs are to expand.[60]

[60] ORS 197.298(3) allows a city or county to exclude higher priority parcels from consideration up-front, before the city selects suitable parcels in that priority; and, if the land supply in that priority category exceeds need, before the city applies the Goal 14 boundary location factors. There is a high threshold to exclude higher priority land, such as exception land (including land zoned UAR) and instead add lower

This step provides a tentative list of highest priority parcels (within the exception lands category) to add to the UGB.[61]

If the amount of suitable exception land is *not* sufficient to meet the land need, the local government adds all of the suitable exception lands to the UGB expansion area, and then evaluates lands in the next highest priority category in ORS 197.298(1). For Bend, the next highest priority of land for urbanization is resource land with low resource production capability.

If the analyses do not yield enough land to meet the housing and employment needs the city has identified, then city may consider lower priority lands (i.e., the next set of higher capability farm and forest lands) and produce a tentative list of suitable lands in this final priority category for addition to the UGB.

If there remains an unmet need after this process, the next step is to expand the study area and begin the process described above again from the beginning.

b. Summary of Local Actions

The following is a summary of the city's and county's analyses of where to expand the UGB:

In January 2006, the city established a study area of approximately 27,000 acres for both a proposed UGB expansion and a proposed urban reserve area designation. [R. at 45, 1060] In June 2007, the first UGB expansion scenario was prepared and sent to the department with a 45-day notice. On August 7, 2007, the city and Deschutes County

---

priority lands, such as farmlands. For example, the fact that it may cost more to provide public services to one area than others does not satisfy ORS 197.298(3)(b) or OAR 660-024-0060. Likewise, the fact that one parcel will yield fewer new homes or less development than others does not allow a local government to exclude that land from a UGB expansion area in favor of other, lower priority lands. LUBA and the courts have construed the ORS 197.298(3) exceptions narrowly to allow inclusion of lower priority lands at the exclusion of higher priority lands only in cases with compelling facts. *See, e.g., DLCD v. Douglas County*, 36 Or LUBA 26 (1999) ("Factors that may have the effect of eliminating alternative sites because they are somewhat more expensive to develop are inadequate to demonstrate the eliminated alternative site cannot reasonably accommodate the identified need.); *1000 Friends of Oregon, et al vs. Metro*, 38 Or LUBA 565 (2000)("Metro must determine whether exception lands can reasonably accommodate the proposed use. As we stated in *Parklane I* and *Residents of Rosemont*, exception criterion (ii) is not satisfied by findings that alternative sites to resource lands cannot accommodate the proposed use 'as well as' those resource lands … a finding that the resource land has relatively fewer developmental constraints or a higher percentage of buildable lands than an alternative site is not sufficient to satisfy the 'reasonably accommodate' standard").

[61] "The goal of consideration under [the Goal 14 boundary location factors] is to determine the 'best' land to include within the UGB, based on appropriate consideration and balancing of each factor." The Goal 14 location factors "must be considered together and balanced, but individual factors are not independent approval criteria." *Alliance for Responsible Land Use v. Deschutes Cty*, 40 Or LUBA 304, 318-319 (2001), *aff'd* 179 Or App 348 (2002). *Also see* OAR 660-024-0060(1)(b).

.

withdrew the urban reserve amendment until the UGB expansion was resolved. [DLCD Form 3 Notice of Denial/Withdrawal, Supplemental Record at 1423] In the fall of 2007, the city enlarged the study area to over 44,000 acres,[R. at 1061] and to respond to direction from the city council to consider the need for land for employment uses as well as housing. [R at 1060]

The city established and applied "threshold suitability criteria" to lands within the enlarged study area. [R. at 1062] The suitability criteria were intended to be consistent with the Goal 14 location factors. [R. at 1062] The parcels that met all of these criteria were considered suitable to meet Bend's needs for housing and employment (and other land needs). [R. at 1168-1170] Those suitability criteria included:

- Whether the parcel can be served [with sewer] by an existing or proposed city facility detailed in the 2008 Collection System Master Plan [e.g., the amended Public Facilities Plan]
- Whether the parcel is serviceable according to the 2007 City Water Master Plan, as amended, or a private water district service area
- If the parcel scores medium or high for street connectivity
- Not an active surface mine, not a state of local park, not a landfill, not a destination resort
- Vacant or improved with improvement value below $20,000
- Improved with a dwelling, if on a parcel greater than 3 acres
- Improved with a school or church, if on a parcel greater than 5 acres
- Not recreational land
- Not owned by the Bend/La Pine School District
- Not in a commercial farm classification with 23 acres of irrigation water rights
- Not subject to restrictive CC&Rs
- Not in private open space
  [R. at 1169]

The "suitable" parcels were then separated into the ORS 197.298 priority groups. The city then applied the Goal 14 location factors to the exception lands by ranking them. The city developed five alternate UGB expansion scenarios after performing additional analysis and evaluation under planning commission direction.

Alternative 1 "places a strong emphasis on the statutory priorities of ORS 197.298(1)" and has "an overriding emphasis on including higher priority lands under the statute."[62] [R. at 1186] The Planning Commission recommended Alternative 4 to the city council, which modified Alternative 4 as a new Alternative 4A. The city council adopted Alternative 4A on January 5, 2009, and Deschutes County adopted it on February 11, 2009. Alternative 4A between 8,462 and 8,943 acres of land to the UGB. The city's

[62] Alternative 1 is the only one of the total seven scenarios for which the city makes this statement. Alternative 1 included 87 percent exception land and 13 percent resource land. Alternative 4A, which the city council adopted on January 5, 2009, reduced the amount of exception land to 74 percent and increased the amount of resource land to 26 percent.

findings report the total acreage as 8,462 acres [R. at 1054], but the city's post-adoption notice to the department reports the acreage as 8,943 (which *may* be the "total" acreage of 8,462 plus the city's "surplus" of another 519 acres). [R. at 1054]. Of the 8,500 plus acres added, it appear the city included approximately 3,500 to 4,000 acres of land that it determined are not "suitable" for inclusion in the UGB. [R. at 1054]

Of the 5,475 acres of "suitable" land included in the UGB, 4,069 acres (74 percent) was first priority exception land (79 percent of which is zoned Urban Area Reserve), and 1,406 acres (26 percent) was resource land.[63] [R. at. 47-48, 153-154, 156, 171-178, 1050, 1062-63, 1166-1207, including Figures V-6 and V-7 and Table V-9]

c. Objections

Tony Aceti – The amendment includes too much EFU land and not enough exception land. [May 4, 2009 page 1]

Terry L. Anderson – The southwest Buck Canyon area, which is suitable exception land, should be included in the amended UGB. [May 6, 2009, page 1]

Central Oregon LandWatch – The amendment does not justify its assumption that the following lands are unsuitable:

- Parcels smaller than three acres with a house,
- Split-zoned parcels, and
- Parcels that did not score "medium" or "high" for street connectivity.

In applying the Goal 14 boundary location factors, the city did not adequately consider the "economic" part of the factor that considers "[o]rderly and economic provision of public facilities and services." The city also fails to apply one of the location factors, "Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB." (May 7, 2009, pp. 9, 13, 15-16]

Hilary Garrett – The amendment passed over suitable high-priority exception land in the southwest Buck Canyon area for actively farmed EFU lands east of Hamby Road for the indefensible reason that the farm parcels will help build the southeast sewer interceptor. One of the suitability criteria was not evenly applied to like lands; *i.e.*, objector's residential subdivision of lots largely smaller than three acres was included while parcels smaller than three acres in another part of the UGB study area were excluded. No parcels smaller than three acres should be included in the amendment. [April 18, 2009, pp. 1-2]

Miller Tree Farm – The city's threshold suitability criteria impermissibly allowed the city to add resource land in place of much of the available exception land. The city gave these criteria more weight than the ORS 197.298 priorities, without justification in the record for doing so. As LUBA ruled in *Residents of Rosemont v. Metro*, 38 Or LUBA 199

[63] In response to a department request for direction to location in the record, the city identified the following pages as constituting the city's boundary location analysis: 1059-1065, 1166-1207, and 7772-7775.

(2000) and *1000 Friends of Oregon v. Metro*, 38 Or LUBA 565 (2000), it isn't sufficient to determine that exception lands cannot accommodate the proposed use as well as resource lands can accommodate the same use(s). Development must be directed to exception lands rather than the resource lands if the exception lands can reasonably accommodate the proposed development. For example, a finding that exception lands can't accommodate as much or as dense residential development per acre as resource lands does not justify excluding those exception lands. The city did not properly apply and balance the Goal 14 boundary location factors. [May 5, 2009, pp. 1-2, 8-10]

Paul J. Shonka – The amendment includes too much EFU land and not enough exception land. [May 1, 2009, pp. 1-2]

Cindy B. Shonka – The amendment includes too much EFU land and not enough exception land. [May 1, 2009, pp. 1-2]

Tony and Cyllene King (McGraw and Associates, LLC) – The amendment includes too much EFU land and not enough exception land. [May 1, 2009, p. 1]

Oregon Department of State Lands – The selection of land does not comply with the ORS 197.298 priorities to add land to a UGB. The "Stevens Road Tract," a large parcel of EFU land abutting the east side of Bend's UGB and owned by the objector, should be included in the expansion if any resource land is included, because the tract is the city's "top-ranked UGB candidate expansion area." [May 7, 2009, pp 4-5]

Rose and Associates, LLC – The city's sewer, water and transportation plans dictated the location of the UGB expansion and predetermined the outcome of the location analysis, in violation of Goal 14. The location analysis fails to include one of the four Goal 14 boundary location factors: "Comparative environmental, energy, economic and social consequences." The location analysis inappropriately deferred the evaluation and comparison of alternate sites for provision of public facilities and services, which is required by OAR 660-024-0060(8). [May 5, 2009, p. 3]

Barbara I. McAusland – The correct lands were not selected in the location analysis. [May 5, 2009, pp. 1-2]

Swalley Irrigation District The correct lands were not selected in the location analysis and the city's suitability findings are inadequate, in violation of Goal 14. The city fails to adequately consider adding thousands of acres of highest priority exception lands in the southwest area. The amendment lacks a factual basis for its claim that all suitable exception land has been included. The city's suitability criteria, including exclusion of parcels smaller than 3 acres with a dwelling, are not consistent with State law. The city fails to comply with its own ordinance that requires application of the Goal 14 boundary location factors and the Goal 2 exception process that were in effect before LCDC amended Goal 14, Goal 2, and OAR 660-004-0010 on April 28, 2005. Exception land in the northwest area should be removed from the amendment. The location alternatives analysis should have considered the impacts of urbanization on rural irrigation systems,

which are water systems under OAR 660-024-0060(8). [May 6, 2009, pp. 40, 42-43, 60-61, 71-73, 75-79]

Newland Communities – The findings support inclusion of the objector's 149 agriculturally designated acres in the northeast area that are surrounded by exception lands on the northeast, north, west, and south. Inclusion of this land should be augmented with a better "legal and factual argument" based on the record, which the objector provides. The city properly followed the location analysis in Goal 14, OAR 660-024-0060, and ORS 197.298. [May 7, 2009, pp. 3, 9-10, 22]

Harold W. Sampson – The city should include the exception lands east of N. Highway 97 bordered by the Burlington Northern Railroad and Juniper Ridge and should eliminate the auto mall and industrial area west of N. Highway 97. [May 1, 2009, p. 1]

Brooks Resources Corporation – Land selected for employment uses is not suitable for that use. [April 29, 2009, pp. 5-8]

d. Analysis

The city and county locational analysis of where to expand its UGB does not comply with ORS 197.298, Goal 14 or the pertinent provisions of OAR 660, division 24 as summarized above. The analysis does reflect a substantial effort to examine what lands are best suited for addition to the UGB, but the methodology and approach used improperly excluded a substantial amount of land planned and zoned as exception lands (including a significant amount of land in existing suburban subdivisions, many of which rely on septic systems) from consideration for inclusion in the UGB. This resulted from the city's use of suitability criteria, some of which did not correspond to the future housing and employment needs identified by the city, and some of which simply do not comply with state law.[64]

Generally, the analysis of suitability is not transparent and lacks clear explanations linking its analysis to the data in the record. In addition, once they began considering farm land for the UGB expansion, the city and county were required to analyze farm lands with the poorest soils first, which they failed to do. The record does not demonstrate that all resource lands within the study area are grouped by soil capability, and then considered and added according to capability (lower capability lands before higher capability lands), in accordance with Goal 14, ORS 197.298, and OAR 660-024-0060.

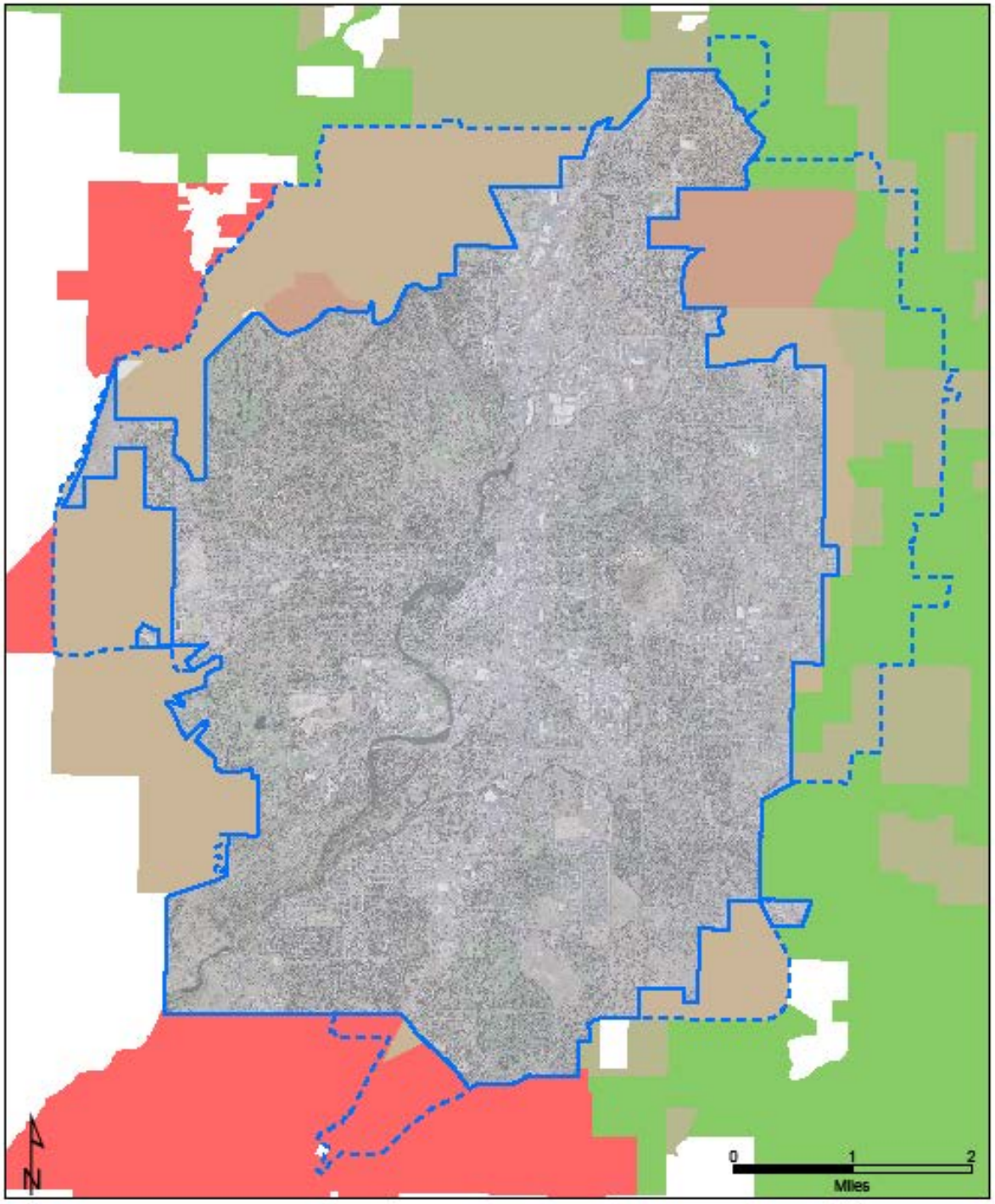
[64] On or about April 10, 2008, the city planning commission was presented with a proposed "strategy" for the city's boundary alternatives analysis. [R. at 7772-75] The memorandum quoted relevant portions of Goal 14, OAR 660-024-0060, and ORS 197.298, but its explanation of how those laws must be applied was incorrect. In letters dated May 27, 2008, October 24, 2008, and November 21, 2008, the department advised the city of the deficiencies in its UGB location analysis, and offered detailed direction on how to complete the analysis correctly under state law. [R. at 3758, 4356, 4722, and 7268] The incorrect "strategy" proposed in the memorandum appears to be the methodology that the city used to arrive at Alternative 4A, which the city council adopted on January 5, 2009.

The city and county did, generally, attempt to avoid land planned as agricultural land. However, the present findings and record do not justify (at this point) any significant inclusion of agricultural lands in the UGB expansion area. The city has begun to make an adequate showing that expansion onto some agricultural lands to the east may be necessary to provide public services to higher priority lands (ORS 197.298(3)(c) [R. at 1183-1186], but given the uncertainty concerning the *amount* of land needed, the director cannot determine that the city has made the showing required by the statute at this time. There also are several, technical, problems with the submittal. The record does not include a map or description of all resource parcels in the study area, as required by OAR 660-024-0060(6). The boundary location analysis map shows only those parcels determined to be "suitable" because they met all of the city's threshold suitability criteria. [R. at 165, 1180, Figure V-4] The department has prepared a map showing the zoning of lands in the study area as Figure 2, using GIS data from Deschutes County.

The record does not include a map or description of all exception parcels in the study area, which is required by OAR 660-024-0060(6). But see Figure 3 on the following page, prepared by the department based on the county's official zoning maps. The boundary location analysis map in the record shows only those exception parcels that are determined "suitable" because they met all of the "threshold suitability criteria." [R. at 164, 1179 - Figure V-3] The city removed all other exception parcels from the study area prior to the boundary location analysis, using the "threshold suitability criteria" that appears to be developed *after* the completed need analysis. Other exception lands are not part of the need analysis in the record. [R. at 47-48,153-160, 1062-63, 1168-75]

Suitability. As described above, in order to eliminate lands from consideration for inclusion in a UGB expansion, they either must be found to be generally unsuitable based on the criteria in OAR 660, division 8 ("buildable" lands for housing) or division 9 ("suitable and available lands" for employment), or (if the lands are being added for a specific identified land need) the suitability criteria must be based on the applicable needs analysis (HNA or EOA). In addition, lands in a study area may be unsuitable for one need, and suitable for another (for example, suitable for single family housing, but unsuitable for a medical center). The underlying housing and employment needs analyses establish a generalized housing need – mainly for single family housing, as well as general commercial uses, and do not identify why these general uses can't be met (at least in part) on adjacent exception lands identified as unsuitable. As shown in Figure 2, there is a substantial amount of exception land to adjacent to the southern boundary of the city. The city's analysis of these lands is addressed in more detail, below.

The city's application of site criteria to *all* planned urban uses before the study area parcels were divided into the ORS 197.298(1) priorities was overbroad. This step prematurely rejected many parcels that are suitable for one or more of the city's future land needs before those parcels could be analyzed under OAR 660-24-0060 and ORS 197.298. The city improperly "refined and reduced the size of the study area for the 20-year UGB expansion (2028) in an iterative fashion." [R. at 152, 1167]



Exception Lands Zoning

Figure 3

Oregon
Department of Land Conservation & Development

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Unincorporated County Areas
- EFU Resource
- SR2.5 - Res. Suburb. Low Density
- UAR - Urban Area Reserve
- MUA10 - Multi Use Agriculture
- RR10 - Rural Residential

Urban Growth Boundary
- Current UGB
- Expansion Area

Aerial image: 2008 NAIP
UGB and zoning information extracted from maps provided by City of Bend and Deschutes County
DLCD GIS jcb 010910
AreaZoning.mxd

The suitability criteria for a UGB amendment for a *general* residential or employment land need are identified in OAR 660-024-0010(8) (for employment uses) and in OAR 660-024-0010(1) (for general housing needs). OAR 660-024-0060(5) allows local governments to apply additional suitability criteria, but only for an "identified need." That term is a term of art, from ORS 197.298(3)(a) – e.g. an "identified need" that has specific locational requirements that are unique to that particular use. The city could, for instance, determine that there is a need for and identified housing type, such as higher density attached multi-family housing along transit routes (where there is access to multiple modes of travel), and thereby justify not following the statutory direction to include exception lands before agricultural lands, if the only locations for this identified type of housing that are along planned or current transit (bus) lines are zoned for agriculture. Similarly, if the economic opportunities analysis identified a need for a site with rail access, and the only such site is on agricultural lands, then the city could use rail access as a suitability criterion and screen out exception lands if there are no exception lands with rail access.

Some of the city's suitability criteria do follow the general suitability criteria allowed under OAR 660-024-0010(1) and 0010(8). Others are appropriate only for an "identified need" for a particular planned urban use that has specific locational requirements. To assist the city on remand, the director provides his evaluation of the city's criteria in the following table.

Table 3. Findings Regarding Boundary Location Threshold Suitability Criteria

Criterion	Analysis
Lot is not entirely within the 100-year floodplain.	This criterion is based on OAR 660-008-0005(2) (for housing)[65] and OAR 660-009-0005(2) (for employment),[66] and is a permissible screen for both general land need and specific identified land needs.
Lot is serviceable for *city* sanitary (does not include private or public systems other than the city).	This criterion is a permissible screen under OIAR 660-008-0005(2)(e) (cannot be provided with public facilities), except for the limitation to *city* facilities. So long as sanitary sewer is available or feasible during the planning period, the property cannot be excluded as unsuitable.
Lot is serviceable for city water.	This criterion is permissible, see analysis immediately above.
Lot is in regional stormwater plan service area.	This criterion is permissible, see analysis immediately above.

Criterion	Analysis
The lot scores medium or high for street connectivity.	This criterion is not a permissible suitability screen. As long as street access is feasible during the planning period, the property can be provided with public facilities. This criteria can, however, be used as a Goal 14 factor for determining what exception lands to include in the event there is an excess amount of such lands and the city and the county are deciding which exception lands to include.
Lot is a public or private right-of-way for roads, sidewalks, and/or landscaping.	Publicly owned land generally is not considered buildable (Goal 10 – within the existing UGB) or suitable (OAR 660-024), and is an appropriate suitability screen. However, *private* right-of-way and open space land is "generally considered "suitable and available."
Lot does not contain an active surface mine in the county's Goal 5 inventory.	This criterion, which is based on OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment), is a permissible suitability screen for general land need.
Lot is not designated by the county as a Goal 5 resource.	This criterion, which is based on OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment), is a permissible suitability screen for general land need.
Lot is not a cemetery.	This criterion, which is based on OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment), is a permissible suitability screen for general land need.
Lot is not owned by the federal government.	This criterion, which is based on OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment), is a permissible suitability screen for general land need.
• Lot is not a state park; • Lot is not owned by the Bend Metro Park and Recreation District (listed twice). • Lot is not owned by Bend-La Pine School District	These criteria, which are based on OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment), are permissible suitability screens for general land need.

Criterion	Analysis
Lot is not a public or private open space.	This criterion is a permissible suitability screen for *publicly owned* open space, but not for private open space. OAR 660-008-0005(2).
Lot is developed with a school or church and is larger than 5 acres.	(1) Some church and school land may be redeveloped. Such lands may be screened as "unsuitable" only based on findings and an adequate factual base that they are not likely to be redeveloped during the 20-year planning periodLarger lots with substantial vacant land generally will be considered to be suitable (at least in part)..
Lot is not a landfill.	This criterion may be used only if based on findings and an adequate factual base that the lands are not likely to be redeveloped during the 20-year planning period. OAR 660-008-0005(2) (for housing) and OAR 660-009-0005(2) (for employment).
Lot is not a destination resort approved by the county.	This criterion may be used only if based on findings and an adequate factual base that the lands are not likely to be redeveloped during the 20-year planning period.
Lot has recorded CC&Rs prohibiting further division.	This criterion may be used only if based on findings and an adequate factual base that the lands are not likely to be redeveloped during the 20-year planning period. The director finds that the evidence citied in the city's findings, R. at 1171-1174, does not support the city's conclusion that the listed subdivisions cannot be redeveloped. The comments in Table V-6 [R. at 1173] show that additional residential development is not prohibited in almost all of the subdivisions listed. Even for those few subdivisions where additional land divisions are prohibited by CC&Rs, the findings do not address whether there are vacant lots, or whether additional housing not involving a land division, such as an "in-law" apartment or "granny flat" may be feasible.

Criterion	Analysis
Lot has improvements with a value of less than $20,000.	This criterion may be used only if based on findings and an adequate factual base that the lands are not likely to be redeveloped during the 20-year planning period. The valuation threshold used by the city is very low in relation to the potential value of residential redevelopment, and would appear to effectively define lands that have minimal improvements as being developed rather than vacant.
Lot has 1 dwelling and is larger than three acres.	This criterion may be used only if based on findings and an adequate factual base that the lands are not likely to be redeveloped during the 20-year planning period. The acreage threshold used by the city is very high. A lot with an existing home and several acres of land normally could accommodate some additional residential development during a twenty-year planning period. As noted in the section of this report addressing housing need, the city has not analyzed the actual level of redevelopment that has occurred on such lands, making it impossible to reach definitive conclusions about the amount of redevelopment that is likely to occur, as those terms are used in OAR 660-008-0005(2) and 660-024-0010(1) and 0060(1)(e) and (5). The city appears to have excluded a substantial amount of exception lands based on this criterion.

Criterion	Analysis
Lot is zoned EFU-TRB with 23 acres of high value soils when irrigated OR zoned EFU-UAL with 36 acres of high value soils when irrigated.	The capability of soils on commercial farm parcels becomes relevant only if and when (a) all suitable exception parcels have been added, (b) some amount of 20-year land need remains, (c) the city goes to the next highest priority under ORS 197.298(1), which is agriculture or forest land, (d) lower capability agriculture or forest parcels have been given priority over higher capability resource parcels per ORS 197.298(2), (e) lower capability resource parcels are not suitable for the identified need, or there is not enough lower capability resource land to meet that remaining need, and (f) lowest priority high value resource land must be considered.

By excluding a large amount of adjacent exception lands as "unsuitable" based on suitability criteria that are not tied to a specific identified need for housing or employment, or are not based in the general criteria allowed under OAR 660-024-0060, the city and county have not complied with Goal 14, ORS 197.298, and OAR 660, division 24. The analysis creates an artificial shortage of first priority exception lands, and then uses that shortage to justify including lower priority resource land, effectively undermining the statutory priorities in ORS 197.298.[67]

[67] In *D.S. Parklane Development, Inc. v. Metro*, 35 Or LUBA 516 (1999), *aff'd as modified* 165 Or App 1 (2000), LUBA found that Metro, in part, created its own inadequacy of higher priority lands to accommodate urban land need. LUBA concluded that this error undermined the urban reserve rule's priority scheme "and hence the urban reserve rule." "[W]e conclude that Metro's failure to study enough higher priority lands created in part the inadequacy that Metro relied upon to designate lower priority lands, and further that Metro's application of Subsections 2, 3 and 4 [of OAR 660-021-0030] as described above effectively undermines the urban reserve rule's priority scheme and hence the urban reserve rule." *Id.* at 554.

"The relationship between the elements of ORS 197.298(1) through (3) is essentially the same as the relationship between the elements of OAR 660-021-0030(3) and (4), and LUBA's and the Court of Appeals' interpretation of the latter should guide the interpretation of the former." *Residents of Rosemont v. Metro*, 38 Or LUBA 199, 249 (2000), *aff'd in part, rev'd and rem's on other grounds* 173 Or App 321 (2001). The statutory exceptions to the priorities to add land to a *UGB* in ORS 197.298(3), enacted in 1995, were based on the statutory exceptions to the priorities to add land to *urban reserves* in OAR 660-021-0030(4), which LCDC had previously adopted in 1992. Therefore, interpretations of the OAR 660-021-0030(4) priority exceptions in *Parklane* apply to Bend's use of the ORS 19.298(3) priority exceptions in this UGB amendment, including the magnitude of error caused by improper use of both the priorities and the exceptions to the priorities.

In conclusion, even assuming that (1) the city's 20-year land need estimate of 4,956 acres [R. at 39, 43, 152, 1054, 1058, 1167] is correct, and (2) the city does not need to adopt any additional efficiency measures to accommodate housing need within the existing UGB, its appears that the city could meet all of its 20-year land needs within adjacent exception lands.[68]

Aggregation of Lands for Alternatives Analysis. A second general problem with the locational analysis is that large areas grouped for evaluation do not have similar circumstances as required by OAR 660-024-0060(6). The analysis:

- Aggregates all parcels in the study area and then applied the same "threshold suitability criteria" for all urban land needs;
- Did not separate resource parcels by soil capability before applying site need criteria;
- Did not map or describe the resource parcels in the study area by soil capability;
- Classified resource lands by current use, which is not a valid "common circumstance" under Goal 14, ORS 197.298, and OAR 660-024-0060;
- Segregated exception parcels with potential scenic or natural resources from other exception parcels, without any Goal 5 inventory and regulatory protection program as a basis for doing so;
- Grouped together exception and resource parcels into UGB alternative scenarios based, in part, on cost to extend sewer lines, instead of following the methodology for selecting parcels to include in Goal 14, ORS 197.298 and OAR 660-024-0060;
- Segregated exception parcels into two different groups—parcels zoned Urban Area Reserve and all other exception parcels—when all exception parcels are the same priority and must be treated alike under ORS 197.298(1)(b).

As a result, the analysis does not comply with the OAR 660-024-0050(5) requirement to apply appropriate plan designations and zoning to the expansion area. This rule states:

> When land is added to the UGB, the local government must assign appropriate *urban* plan designations to the added land, consistent with the need determination. The local government must also apply appropriate zoning to the added land consistent with the plan designation, or may maintain the land as urbanizable land either by *retaining the zoning* that was assigned prior to inclusion in the boundary *or* by applying other *interim zoning that maintains the land's potential for planned urban development until the land is rezoned for the planned urban uses.* The requirements of ORS 197.296 regarding planning and zoning also apply when local governments specified in that statute add land to the UGB. [emphasis added]

[68] The findings provide that only 5,733 acres of the adjacent exception lands in the study area are "suitable," and only 5,434 acres are both "suitable and available." [R. at 159, 175-176, 1174, 1190-91]

Response to Objections. For the reasons set forth above, the following objections are sustained by the director:

- The amendment includes too much EFU land and not enough exception land (Tony Aceti, Paul J. Shonka, Cindy B. Shonka, Tony and Cyllene King (McGraw and Associates)).

- The amendment does not justify excluding parcels that have a house and are smaller than three acres (Central Oregon LandWatch, Swalley Irrigation District).

- The amendment does not justify excluding parcels that are split-zoned or don't score medium or high for street connectivity (Central Oregon LandWatch)

- The correct parcels were not selected for inclusion in the UGB. (Barbara I. McAusland, Swalley Irrigation District).

- The city improperly excluded suitable high priority exception land in the SW Buck Canyon area (Hilary Garrett).

- One of the suitability criteria was not evenly applied to like lands; i.e., objector's residential subdivision containing lots smaller than three acres was included, while parcels smaller than three acres in another part of the UGB study area were excluded (Hilary Garrett).

- The use of threshold suitability criteria impermissibly allowed the city to add resource land in place of much of the exception land. Development must be directed to the exception lands instead of resource lands if the exception lands can reasonably accommodate the proposed development. A finding that exception lands cannot accommodate as much or as dense residential development per acre as resource lands does not justify excluding those exception lands (Miller Tree Farm).

- The selection of land does not comply with the ORS 197.298 priorities to add land to a UGB (Department of State Lands).

- The suitability findings are inadequate, in violation of Goal 14 (Swalley Irrigation District).

- The amendment fails to adequately consider adding thousands of acres of highest priority exception lands in the SW area (Swalley Irrigation District).

- The amendment lacks a factual basis for its claim that all suitable exception land has been included (Swalley Irrigation District).

- Suitability criteria, including exclusion of parcels smaller than three acres with a dwelling, are not consistent with State law (Swalley Irrigation District).

- The SW Buck Canyon Area is suitable exception land and should be included in the expansion if needed (Terry L. Anderson).

- The city fails to apply one of the location factors, "Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB" (Central Oregon LandWatch).

- The location analysis fails to include one of the four Goal 14 boundary location factors: "Comparative environmental, energy, economic and social consequences" (Rose and Associates, LLC).

- The amendment does not properly apply and balance the Goal 14 boundary location factors (Miller Tree Farm).

The following objections are denied:

- The "Stevens Road Tract," a large parcel of EFU land abutting the east side of Bend's UGB that is owned by the objector, should be included in the UGB expansion if any resource land is included, because it is the city's "top-ranked UGB candidate expansion area" (Department of State Lands). Reason for denial: Because of the improper application of relevant state goals, statutes and rules in the city's urban growth boundary location analysis, it is not possible to determine, until the city redoes the location analysis on remand, whether any resource land must be added to the UGB, and if so, where. In addition, there is no showing that these lands have lower capability soils, under ORS 197.298(2).

- The amendment fails to comply with a city ordinance that requires application of the Goal 14 boundary location factors and the Goal 2 exception process that were in effect before LCDC amended Goal 14, Goal 2, and OAR 660-004-0010 on April 28, 2005 (Swalley Irrigation District). Reason for denial: LCDC adopted amendments to Goal 14, Goal 2, and OAR 660-004-0010 on April 28, 2005, effective April 28, 2006. These amendments, among other things, revised the Goal 14 location factors and eliminated the need for Goal 2 exception findings for a UGB amendment. A city that began the UGB amendment process prior to LCDC's action had the option of proceeding with either the "old" Goal 14 or the "new" Goal 14. The city submitted a 45-day notice of the UGB amendment on June 11, 2007[69] and adopted the UGB amendment on January 5, 2009; Deschutes County adopted the UGB amendment on February 11, 2009; and the city and county submitted a revised UGB amendment to the department on April 16, 2009[70], after the goal amendments took effect. Between the time that the city submitted its notice and the time the city and county adopted the revised UGB amendment, the city made several changes to the findings and conclusions and used the amended Goal 14. Any provisions in the city's plan or code to the contrary are not consistent with current State law and are not valid or enforceable. The goals and that apply to this UGB amendment are those in effect after LCDC amended Goal 14, Goal 2, and OAR 660-004-0010.

---

[69] See Notice of Proposed Amendment in the department's City of Bend PAPA file 010-007.

[70] See Notice of Adoption of UGB Amendment in the department's City of Bend UGB file 2009-01.

- Exception land in the northwest area should be removed from the amendment (Swalley Irrigation District). Reason for denial: The director cannot determine based on the current record whether these lands should or should not be included.

- The location alternatives analysis should have considered the impacts of urbanization on rural irrigation systems, which are water systems under OAR 660-024-0060(8) (Swalley Irrigation District). Reason for denial: OAR 660-024-0060(8)[71] specifies how cities apply the Goal 14 boundary location factors to the land in a statutory priority category in order to select the parcels to fulfill the city's 20-year land need for a particular urban use. This rule addresses application of only one of the four factors, "orderly and economic provision of public facilities and services," which must be weighed and balanced when applied to all parcels in the relevant priority. Goal 14 and OAR 660, division 24 use the term "public facilities and services," but public facilities and their component systems are defined in Goal 11 and OAR 660, division 11. Goal 11 defines "water system" as "a system for the provision of piped water for human consumption subject to regulation under ORS 448.119 to 448.285." (emphasis added) Irrigation is "the watering of land by artificial means to foster plant growth." (emphasis added)[72] Thus, an irrigation system is not a water system under Goal 11, Goal 14, and their implementing rules, and a city does not consider irrigation systems in a UGB location analysis.

The following objections are addressed in other sections of this report:

- The location analysis inappropriately deferred the evaluation and comparison of alternate sites for provision of public facilities and services, which is required by OAR 660-024-0060(8) (Rose and Associates, LLC) (see Goal 12).

---

[71] This rule statess:

> (8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:
>
> (a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;
>
> (b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and
>
> (c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

[72] Definition from Merriam-Webster On-Line Dictionary.

- Land selected for employment uses is not suitable for that use (Brooks Resources Corporation) (see Goal 9).

d. Conclusion and decision

The UGB location analysis and UGB amendment do not comply with the boundary location requirements in Goal 14, ORS 197.298, and OAR 660, division 24.

The director remands the UGB amendment with direction to submit a UGB location analysis that is consistent with requirements of Goal 14, ORS 197.298, and OAR 660, division 24, as described in this report.

2. Do the UGB location analysis and UGB amendment comply with ORS 197.298?

This section addresses the following additional issues related to the location analysis under Goal 14 and ORS 197.298:

- Which lands in Bend's UGB study area are considered exception lands under ORS 197.298(1)(b)?
- Are lands zoned UAR urban reserves under ORS 197.298(1)(a), exception lands under ORS 197.298(1) (b), or something else?
- Do ORS 197.298(2) requirements to rank parcels by soil capability apply to all of the land priorities in ORS 197.298(1)(a) through (d), or does it apply only to designated resource lands in ORS 197.298(1)(d)?
- Does the UGB expansion comply with the ORS 197.298(2) requirement to give higher priority to resource land of lower capability?
- Does the UGB expansion comply with ORS 197.298(3)(a) in including certain agricultural lands to satisfy identified needs for a future university site, and for large site, general industrial center?
- Does the UGB expansion comply with ORS 197.298(3)(c) in eliminating higher priority exception lands to the south of the city from consideration for inclusion in the UGB?

a. Legal standard

The relevant state law is ORS 197.298. As the department explained in comment letters to the city on May 27, 2008, October 24, 2008, and November 21, 2008 [R. at 3758, 4356, 4722, and 7268], ORS 197.298 requires Bend's UGB location analysis to include the following:

> First, determine which parcels in the study area are the highest priority lands under ORS 197.298(1). For Bend, these are exception parcels under ORS 197.298(1)(b)

because there are no acknowledged urban reserves under ORS 195.145 and ORS 197.298(1)(a).[73] Make a list of these parcels and/or map them. Determine which of these parcels are suitable for an identified land need[74] by analyzing each parcel according to specific site suitability characteristics for the intended use, if any (*i.e.*, residential, commercial or industrial), that were identified in the earlier need analysis (for example, if the city's EOA identified special size, location and access characteristics necessary for regionally significant industrial sites).

The city may determine that study area parcels are not suitable by applying: (1) one or more of the physical site need characteristics that were identified during the need analysis, if any; or (2) one or more of the three exceptions to the statutory priorities in ORS 197.298(3), which may or may not overlap with the previously identified physical site need characteristics; or (3) both.[75]

The remaining parcels after this analysis form a preliminary list of suitable highest priority (exception) parcels. If the amount of suitable exception land under ORS 197.298(1) (b) *exceeds* the land need deficiency amount outside the existing UGB, then the city applies the four Boundary Location Factors in Goal 14 to all of the suitable exception parcels or areas, in order to narrow down the list and select the best exception parcels for the amount of the land need.[76] This provides a tentative list of highest priority parcels to add to the UGB.

If the total amount of suitable exception land is *not sufficient* to meet the amount of land need, the city must first add all of the suitable exception parcels, and then

---

[73] Bend's exception areas consist primarily of parcels zoned UAR, RR-10, and SR 2½.

[74] To determine whether the land in any of the ORS 197.298(1) priorities is "inadequate to accommodate the amount of land needed" for a particular urban use under ORS 197.298(1), a local jurisdiction must consider both quantity and suitability. *City of West Linn vs. LCDC*, 201 Or. App. 419, 440 (2005).

[75] In order to exclude lands in any priority category in favor of land in a lower priority, a city or county must provide data, analysis, and findings consistent with one or more of the three exceptions in ORS 197.298(3). ORS 197.298(3) allows a city to remove higher priority parcels from consideration up-front, before the city selects suitable parcels in that priority; and, if supply in that priority exceeds need, before the city applies the Goal 14 boundary location factors. However, there is a high threshold to exclude higher priority land, such as exception land (including land zoned UAR) and instead add lower priority lands, such as farmlands. For example, the fact that it may cost more to service one parcel than to service others does not satisfy ORS 197.298(3)(b). Likewise, the fact that one parcel will yield fewer new homes or less development than others does not satisfy ORS 197.298(3)(c). LUBA and the courts have construed the ORS 197.298(3) exceptions narrowly to allow inclusion of lower priority lands at the exclusion of higher priority lands only in cases with compelling facts.

[76] Because they are factors and not criteria, the considerations embodied in the factors are applied to each alternative parcel or group of parcels. The parcel or parcels that, on balance, best satisfy the factors should be selected. In other words, no single one of the four location factors, such as "orderly and economic provision of public facilities and services" or "efficient accommodation of identified land needs," may be the sole basis for selecting particular parcels to add to the UGB. See OAR 660-024-0060(1) (b).

evaluate all of the parcels and/or areas of similar parcels in the next highest priority category in ORS 197.298(1). For Bend, the next highest priority of land for urbanization is resource land with low resource production capability in ORS 197.298(1) (d).

This evaluation *may* start with a suitability analysis based on: (1) one or more physical site need characteristics that were identified during the need analysis, if any, or (2) one or more of the exceptions to the priorities in ORS 197.298(3) if there are adequate data and findings to support one or more of the three exceptions, or (3) both. (See OAR 660-024-0060(1)(c) and (2).) The steps described for highest priority exception land above are applied to each available parcel of lower-capability farmland, providing a tentative list of suitable parcels in this priority to add to the UGB Note that the Goal 14 boundary location factors are *not* triggered and applied in this situation. The Goal 14 factors are applied only when there is an excess amount of suitable land in a priority category.

If, after the previous analyses, the city still does not have enough land to meet all of its 20-year identified need for the particular use, the city may consider lower priority lands (*i.e.*, the next set of higher capability farm and forest lands) under ORS 197.298(2), using the same analytical methodology used to select higher priority lands, and produce a tentative list of suitable parcels in this final priority to add to the UGB.

b. Summary of Local Actions

The analysis classified parcels designated UAR as exception lands. [R. at 162, 1177] In addition, the Bend Area General Plan (the city's comprehensive Plan) includes a statement that "Lands in this Urban Reserve area [land zoned UAR] are considered first for any expansion of the Urban Growth Boundary." Because of this plan provision, the amendment ranked UAR-zoned land higher than other exception land and included it in the UGB expansion before considering the other exception parcels zoned Suburban Residential 2.5-acre minimum, MUA 10-acre minimum, and Rural Residential 10-acre minimum. [R. at 175, 1190]

It is unclear from the record whether the city selected resource parcels in accordance with ORS 197.298(2), which includes mapping or describing the soil capability of all resource parcels in the study area, grouping them according to soil capability, considering low capability parcels before high capability parcels, and applying the Goal 14 boundary location factors if there is more resource land than needed.[77]

[77] The record is missing a map showing the soil capability of all resource parcels in the original or revised study area. The boundary location analysis map that shows resource lands does not show soil capability. [See R. at 165,1180, Figure V-4]

Consideration of resource parcels assumes that all of the 20-year needed cannot reasonably be accommodated on land within the existing UGB through efficiency measures, and on exception land outside the existing UGB. Whether the city can reasonably accommodate more or all of its 20-year land needs within the existing UGB or on exception land is addressed elsewhere in this report.

The amendment includes resource lands for a future university site on the city-owned property known as Juniper Ridge, and for a large-site general industrial center adjacent to the East State Highway 20/Hamby Road intersection. The city's analysis is that land of lower priority (*e.g.*, exception land), could not reasonably accommodate these uses, justifying an exception to the statutory priorities to add land to a UGB under ORS 197.298(3)(a). [R. at. 166-167, 1181-82]

The amendment also includes 1,253 acres of resource land identified as Areas A through D on the east and northeast side of the existing UGB. The primary justification for including these lands is that planned sanitary sewer lines must cross these intervening resource parcels in order to serve exception parcels elsewhere. The findings state that maximum efficiency of land uses within the proposed UGB requires inclusion of these lower priority resource lands in order to include or provide services to the higher priority exception lands, pursuant to an exception to the statutory priorities to add land to a UGB in ORS 197.298(3) (c). [R. at 168-171, 1183-86, including Figure V-5]

c. Objections

Tony Aceti – The amendment includes too much EFU land and not enough exception land. [May 4, 2009, p. 1]

Paul J. Shonka – The amendment includes too much EFU land and not enough exception land. [May 1, 2009, pp. 1-2]

Cindy B. Shonka –The amendment includes too much EFU land and not enough exception land. [May 1, 2009, pp. 1-2]

Tony and Cyllene King (McGraw and Associates, LLC) – The amendment includes too much EFU land and not enough exception land. [May 1, 2009, p. 1]

Oregon Department of State Lands (DSL) – The amendment's selection of land does not comply with the ORS 197.298 priorities to add land to a UGB. [May 7, 2009, p. 4]

Barbara I. McAusland – The correct lands were not selected in the location analysis. [May 5, 2009, pp. 1-2]

Swalley Irrigation District – The correct lands were not selected in the location analysis. The amendment fails to adequately consider adding thousands of acres of suitable highest priority exception lands in the southwest area. The amendment lacks a factual basis for its claim that all suitable exception land has been included. The amendment's suitability criteria are not consistent with state law, including exclusion of parcels smaller than three acres with a dwelling. The amendment's suitability findings are inadequate. The analysis was not based on appropriately adopted public facilities plans (see Goal 11 objections). ORS 197.298(2)'s requirement to rank parcels by soil capability applies to all of the types

of land in ORS 197.298 (1)(a)–(d) being considered for addition to a UGB (*i.e.*, urban reserves, exception areas, non-resource lands, and marginal lands), and not just rural resource land under ORS 197.298(1)(d). The lands designated "Urban Area Reserve" were never properly excepted from Goals 3 and 4 and therefore are Agricultural lands not exception lands under ORS 197.298(1)(b) (except for one small area designated "Industrial Park"). [May 6, 2009, pp. 34-40, 59-61, 68, 70, and 77-78]

Newland Communities – The amendment properly followed the location analysis in Goal 14, OAR 660-024-0060 and ORS 197.298. The amendment properly included much of objector's land. Objector's property, although designated Agricultural, has the high priority of exception or non-resource land because a private consultant's report concludes that 85 percent of the tract is non-agricultural land. [May 7, 2009, pp. 3, 9, and 11-12]

Rose and Associates, LLC – The lands designated "Urban Area Reserve" were never properly excepted from Goals 3 and 4 and therefore are Agricultural lands not exception lands under ORS 197.298(1)(b) (except for one small area designated "Industrial Park"). [May 5, 2009, pp. 1-2]

The requirements, objections, and analysis of the UGB location are complex. The following subsection is comprised of issues and sub-issues paired with a summary of the results of the department's findings.

d. Analysis

Which lands in Bend's UGB study area are exception lands evaluated under ORS 197.298(1)(b)? Are lands zoned UAR urban reserves evaluated under ORS 197.298(1)(a), exception lands evaluated under ORS 197.298(1)(b)? On June 25, 1981, LCDC acknowledged the City of Bend comprehensive plan, which included city and county exceptions to Goals 3 and 4 for approximately 6,858 acres of land outside the 1981 UGB. These lands were designated UAR, 10-acre minimum parcel size (UAR-10), Suburban Residential, 2.5-acre minimum parcel size (SR 2½), and Surface Mining (SM). Parcels zoned UAR are therefore exception lands. UAR parcels in Deschutes County have not been designated as urban reserves under ORS 195.145.[78] UAR lands in Deschutes County are exception lands. [R. at 7268; Excerpts from the July 7, 1981 LCDC Compliance Acknowledgment Order for the Bend comprehensive plan are attached as Exhibit A]

Does the ORS 197.298(2) requirement to rank parcels by soil capability apply to all of the land types in ORS 197.298(1)(a) through (d), or does it apply only to resource lands in ORS 197.298(1)(d)? The ORS 197.298(2) requirement to rank parcels by soil capability applies only to designated resource lands under ORS 197.298(1)(d). The types of land specified in ORS 197.298(1)(a)–(c) being considered for addition to a UGB (*i.e.*,

[78] In fact, it is impossible for land zoned Urban Area Reserve to be statutory urban reserves. ORS 195.145 was adopted by the Legislative Assembly in 1993, 12 years after Bend's comp plan, including Goal 3 and 4 exceptions for UAR parcels, was acknowledged.

urban reserves, exception areas, non-resource lands, and marginal lands) are not ranked by soil capability, and soil capability is not a criterion or factor to determine whether those parcels are added to the UGB.

LUBA has agreed that the ORS 197.298(2) priority ranking scheme is applicable only to resource lands. In its decision remanding expansion of the Myrtle Creek UGB, LUBA stated: "ORS 197.298(2) and Goal 14, factor 6[79] establish a second priority system for including agricultural lands."[80]

"The relationship between the elements of ORS 197.298(1)–(3) is essentially the same as the relationship between the elements of OAR 660-021-0030(3) and (4), and LUBA's and the Court of Appeals' interpretation of the latter should guide the interpretation of the former."[81] The statutory exceptions to the priorities to add land to a *UGB* in ORS 197.298(3), enacted in 1995, were based on the statutory exceptions to the priorities to add land to *urban reserves* in OAR 660-021-0030(4), which LCDC had previously adopted in 1992. Therefore, appellate interpretations of the OAR 660-021-0030(4) priority exceptions[82] apply to Bend's use of the ORS 197.298(3)(a) and (c) priority exceptions in this UGB amendment, including assigning the same meaning to the second sentence of OAR 660-021-0030(3)(c) and ORS 197.298(2). In 2000, the commission amended OAR 660-021-0030 to move the text that was a separate sub-rule, OAR 660-021-0030(3)(d), into 660-021-0030(4), apparently for consistency with ORS 197.298. In 1995, the rule text originally adopted as OAR 660-021-0030(3)(d) was codified in its own statutory subsection, ORS 197.298(2), instead of being included within ORS 197.298(1)(d).

The language of ORS 197.298(2) and the second sentence of OAR 660-021-0030(3)(c) indicates that their use is limited to resource lands by referring to the resource capability as "appropriate for the current use." This could not apply to exception land or non-resource land (ORS 197.298(1)(b) and OAR 660-021-0030(3)(a) because once an exception has been taken to land outside a UGB, it is no longer farm or forest land.

---

[79] Before LCDC amended Goal 14 in 2005, the goal contained seven factors. Factor 6 was: "Retention of agricultural land as defined, with Class I being the highest priority for retention and Class VI the lowest priority." The 2005 amendments separated the factors into two groups: need criteria and location factors. At the same time, location factor 6 was deleted because LCDC considered a reference to ORS 197.298 in the new preface to the location factors an adequate representation of state policy to retain agricultural land. [See April 14, 2005 staff report to LCDC, attached as Exhibit B]

[80] *DLCD vs. Douglas County*, 36 Or LUBA 26, 36-37 (1999). LUBA also stated: "Like ORS 197.298(2), Goal 14, factor 6 requires that when agricultural lands are added to the UGB higher priority must be given to land of lower agricultural capability." *DLCD vs. Douglas County*, 36 Or LUBA at 37, fn 14.

[81] *Residents of Rosemont*, 38 Or LUBA at 249.

[82] *See, e.g., D.S. Parklane Development, Inc. v. Metro*, 35 Or LUBA 516 (1999).

Does the amendment comply with the ORS 197.298(2) requirement to give higher priority to resource land of lower capability? The amendment submittal does not contain the data and findings that constitute an ORS 197.298(2) soil capability comparison and analysis. The amendment does not include a map showing the soil capability of all resource parcels in the study area. The boundary location analysis map that shows resource lands does not show soil capability. The record lacks the data, analysis, and (particularly) findings that resource lands within the study area were grouped by soil capability, with lower capability lands being considered before higher capability lands, in accordance with Goal 14, ORS 197.298, and OAR 660-024-0060.[83]

The analysis in the city and county's decisions relies on the current use of resource parcels as a factor in determining which resource parcels to include in the UGB [R. at 178-184, 1193-99]; however, under state statute, resource lands must be selected for inclusion in a UGB based exclusively on soil capability. [See ORS 197.298(1)(d) and (2)]

Does the city's UGB expansion comply with ORS 197.298(3)(a)in including certain specified areas to satisfy an identified need for land?

Does the UGB expansion comply with ORS 197.298(3)(c) in including certain resources lands in order to provide services tohigher priority exception lands?

The decisions rely on both ORS 197.298(3)(a) and (c)[84] to include resource lands on the North and East side of the city. [R. at 1181-86] Two specific employment needs are identified that must be met on agricultural lands: a need for a future university campus with approximately 150 acres of land, and a need for a large site general industrial center on county-owned land adjacent to the intersection of E. Highway 20 and Hamby Road. [R. at 1181]

The director has previously determined that the decision adequately establishes a need for these two employment uses, but that there has not been an analysis of whether they may reasonably be accommodated within the prior UGB. If the city and county conduct an analysis of lands within the existing UGB, and conclude that these uses cannot be reasonably accommodated, and that analysis is supported by appropriate findings and an adequate factual base, then they will have made the showing required by ORS 197.298(3)(a) and Goal 14 for a specific identified land need. At this point, however, due

---

[84] ORS 197.298(3):

(3) Land of lower priority under subsection (1) of this section may be included in an urban growth boundary if land of higher priority is found to be inadequate to accommodate the amount of land estimated in subsection (1) of this section for one or more of the following reasons:

(a) Specific types of identified land needs cannot be reasonably accommodated on higher priority lands;

(b) Future urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints; or

(c) Maximum efficiency of land uses within a proposed urban growth boundary requires inclusion of lower priority lands in order to include or to provide services to higher priority lands.

to the absence of the required analysis of whether the use can occur within the existing UGB, the director is unable to conclude that the decision complies with ORS 197.298(3)(a).

The UGB expansion also includes 1,253 acres of agricultural lands included in Areas A-D on the East side of the city, based on the need to include them to serve adjacent exception lands. ORS 197.298(3)(c). [R. 1183-1186]. The findings generally demonstrate that inclusion of *some* of these lands may be necessary in order to provide services to lands already within the (prior) UGB and to serve exception lands in the expansion area. However, the findings also state that some agricultural lands in these areas were included "in order to achieve a logical boundary." In addition, the decision relies on the city's newly adopted public facilities plan and, as determined in that section of this decision, there are deficiencies in those plans.

"Area A" appears to consist of two non-contiguous groups of parcels totaling 143 acres adjacent to the northeast corner of the current UGB. [R. at 169-170, 1184-85 including Figure V-5] The amendment justifies adding this resource land as follows: "Inclusion of this area will allow for extension of urban services from the current UGB to the Pioneer Loop Exception land. Inclusion of Area A will allow for the extension of Cooley Rd. eastward to Deschutes Market Rd. and eventually to a link with Hamehook/Hamby Rd. In addition, the planned North Sewer Interceptor will pass through Area A as it is extended westward from the wastewater treatment plant. This interceptor is included in the city's adopted Sewer Public Facility Plan." [R. at 168-169, 1183-84] The problem with this rationale is that it is not clear why the entire area of resource lands must be included in order to serve lands within the UGB and exception parcels adjacent to the northeast of the current UGB. [see Figure V-5, R. at 169, 1184].

"Area B" is a 422-acre area on both the west and east sides of Hamehook Road and both north and south of Butler Market Road, east of the current UGB. It is separated from the east boundary of the UGB by a large area of exception parcels also proposed for inclusion. [See Figure V-5, R. at 169, 1184] The amendment states that "[t]his resource is included in order to provide urban services (specifically the planned Hamby Rd. sewer interceptor) from exception lands abutting Pioneer Loop in the north to exception lands on both sides of Hamby, south of Nelson Rd.…the Hamby interceptor…must pass through these resource lands in order to reach higher priority exception areas to the south." [R. at 169, 1184] The record does not demonstrate the need to add Area B, a large area of resource parcels, in order to provide public services to a small exception area east of Hamehook Road. [See Figure V-5, R. at 169]

"Area C" is 536 acres of resource land on both sides of Hamehook Road. Again, the amendment states that this land is needed to extend the sewer interceptor – and also parks and schools -- to exception land farther south; however, the Alternative 4A map shows that the exception areas farther south are accessible from the existing UGB. [Figure V-5, R. at 169, 1184]

"Area D" is 152 acres of resource land east of the current UGB, south of Areas A through C. The Alternative 4A map shows that the exception parcels adjacent to Area D are accessible from the existing UGB. [See Figure V-5, R. at 169, 1184] The findings do not explain why the entire area of resource lands must be include in order to serve the exception areas.

In conclusion, at this time the director is unable to determine that the inclusion of these agricultural lands complies with ORS 197.298(3)(c). It appears that once the problems with the public facilities plans are resolved, the city may be able to make the showing required by the statute to include some of these lands, but at present there is too much uncertainty regarding the overall amount of land need to determine that these lands must be included (it may not be necessary to include the adjacent exception lands if the overall quantity of land need is substantially lower). In addition, the city's findings must determine with specificity that inclusion of the agricultural lands is necessary in order to serve nearby exception lands.[85]

Response to Objections. The following objections are denied by the director:

- ORS 197.298(2)'s requirement to rank parcels by soil capability applies to all of the types of land in ORS 197.298 (1)(a)–(d) being considered for addition to a UGB (*i.e.*, urban reserves, exception areas, non-resource lands, and marginal lands), and not just rural resource land under ORS 197.298(1)(d) (Central Oregon LandWatch, Swalley Irrigation District). Reason for denial: As explained in the issues discussion above, the ORS 197.298(2) requirement to prioritize land by soil capability applies only to resource lands.

- Environmental impacts to natural resources, the barrier of high land cost to affordable housing, or the impact to irrigation districts may justify rejecting suitable exception land for resource land under the ORS 197.298(3) exceptions to the ORS 197.298 (1) and (2) statutory priorities (Central Oregon LandWatch). Reason for denial: The only bases for rejecting exception parcels are:

    - They are not suitable for a particular use based on physical site need criteria established during the need analysis, or

    - An adequate factual record justifies one of the three exceptions to the statutory priorities in ORS 197.298(3).

[85] "Subsection 4(c) applies where the inclusion of lower priority lands is <u>*required*</u> in order * * * to achieve a maximally efficient urban form, either because higher priority lands *cannot be included* absent inclusion of lower priority lands, or because urban services *cannot be provided* to higher priority lands absent inclusion of those lands. If a proposed urban reserve area can achieve '[m]aximum efficiency of land uses,' that is, develop at urban densities and efficiencies, *without* including lower priority lands, then inclusion of such lands is not required, and Subsection 4(c) does not apply." *D.S. Parklane Development, Inc.*, 35 Or LUBA at 617.

- Environmental impacts to natural resources, the barrier of high land cost to affordable housing, and the impact to irrigation districts are neither Goal 14 physical site need characteristics, nor ORS 197.297(3) exceptions to the statutory priorities to add land to a UGB. In addition, the record does not justify the city's rejection of any exception land for either of those reasons.

- Lands zoned UAR are highest priority for inclusion in the UGB under ORS 197.298(1)(a) (Miller Tree Farm). Reason for denial: As discussed in the issues section above, for the City of Bend, all exception lands are first priority under ORS 197.298(1)(b) for addition to the UGB; UAR-zoned parcels do not have any higher priority than other exception parcels.

- The lands designated "Urban Area Reserve" were never properly excepted from Goals 3 and 4 and therefore are Agricultural lands, not exception lands under ORS 197.298(1)(b) (except for one small area designated "Industrial Park") (Swalley Irrigation District, Rose and Associates, LLC). Reason for denial: As discussed in the issues section above, parcels zoned Urban Area Reserve were acknowledged as exception lands in 1981.

- The city properly followed the location analysis in Goal 14, OAR 660-024-0060, and ORS 197.298 (Newland Communities). Reason for denial: As discussed in the issues section above, the UGB location analysis was not consistent with Goal 14, OAR 660-024-0060, and ORS 197.298.

- The city properly included much of Objector's land (Newland Communities). Reason for denial: Because of the improper application of relevant state goals, statutes and rules in the city's urban growth boundary location analysis, it is not possible to determine, until the city redoes the location analysis on remand, whether any resource land may be added to the UGB, and if so, where.

- Objector's property, although designated Agricultural, has the high priority of exception or non-resource land because a private consultant's report concludes that 85 percent of the tract is non-agricultural land (Newland Communities). Reason for denial: ORS 197.298(1)(b) exception lands are only those that have been acknowledged as such by LCDC. Unless and until Deschutes County re-designates the objector's land as non-resource land or marginal land, this land is in the lowest priority of designated agricultural or forest land under ORS 197.298(1)(d).

e. Conclusion and decision

The UGB location analysis and UGB amendment do not comply with the ORS 197.298 priorities for adding land to an urban growth boundary.

J. Natural Resources and Hazards

The department submitted comments and received objections related to compliance with Statewide Planning Goal 5 and received one objection related to Statewide Planning Goal 7. These goals relate to natural resource areas and natural hazards.

1. Did the city and county comply with Goal 5 and its implementing rules in amending the city's UGB?

The department received a variety of objections that the city failed to comply with Goal 5 by not adequately applying Goal 5 to the UGB expansion area, and by identifying land within the proposed expansion area as protected land without adequate justification for the designation.

a. Legal Standard

Statewide Planning Goal 5 and OAR 660, division 23 address protection of significant natural, scenic and historic resources and open space. Rules in OAR 660, division 23 specify which resource categories must be protected by comprehensive plans and which are subject to local discretion and circumstances; the rules provide guidance on how to complete inventories and protection programs, and when the rule requirements apply. OAR 660, division 23 requires cities to inventory significant riparian areas, wetlands and wildlife habitat.

For some Goal 5 resources the rule allows cities to rely on inventories compiled by other agencies, and for other resources the local government must complete their own inventory of the resource. For all inventoried significant Goal 5 resources, a local government must complete a process to develop and implement appropriate protection measures. If a local program to protect a Goal 5 resource includes development restrictions, the loss of buildable land that results from these restrictions must be accounted for when determining the amount of land need.

OAR 660, divisions 23 and 24 both specify that a UGB expansion triggers applicability of Goal 5. [OAR 660-023-0250(3)(c) and OAR 660-024-0020(1)(c)] At a minimum, a local jurisdiction expanding its UGB must complete the following for the expansion area when factual information is submitted that a Goal 5 resource or the impact area of a Goal 5 resource is included in the UGB expansion area:

- Conduct an inventory of Goal 5 resources that are required to be inventoried and for which the rule does not rely on state or federal inventories. These are riparian corridors, wetlands, and wildlife habitat
- Adopt the local state and federal inventories as described in the rule for resources that require inventories. These are: federal Wild and Scenic Rivers, Oregon Scenic Waterways, state-designated critical groundwater areas and restrictively classified areas, approved Oregon Parks and Recreation Commission recreation trails, Oregon

State Register of Natural Heritage Resources sites, federally designated wilderness areas, and certain specific energy sources.
- Develop a local protection programs for all significant Goal 5 resources that are identified in an inventory, as required by the rule specific to the resource category.

Local jurisdictions have the option of conducting inventories and developing protection programs for historic resources, open space, and scenic views and sites. When using this option at the time of a UGB expansion, the Goal 5 process for these resources must be complete before land can be designated unbuildable or limitations on building can be considered in sizing the expansion area. [OAR 660-023-0070] The Goal 5 process is complete for these resources when:

- Existing and available information about Goal 5 resource sites is collected [OAR 660-23-0030(2)]
- Information on the location, quantity, and quality of the resource is determined to be adequate [OAR 660-23-0030(3)]
- The significance of resource sites is determined [OAR 660-23-003(4)]
- A list of significant resources is adopted of as part of the comprehensive plan [OAR 660-23-0030(5)]
- An analysis is completed of the economic, social, environmental and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use [OAR 660-23-0040]
- A program to achieve Goal 5 is developed and adopted based on the conclusions of the ESEE analysis [OAR 660-23-0050]

b. Summary of Local Actions

Findings in the submittal state that the proposed UGB expansion and Public Facilities Plan element of the city's General Plan satisfy Goal 5 because, "it avoids to the extent practicable lands with county-inventoried Goal 5 resources." The findings for Goal 5 further state that Deschutes County's Goal 5 program "does not identify any acknowledged riparian corridors, wetlands, wildlife habitat or other Goal 5 resources within the proposed urban growth boundary." [R. at 1215] The findings also state that review of the National Wetlands Inventory shows no wetlands within the proposed expansion area, and this serves to satisfy Goal 5 requirements.

The findings describe the county's knowledge of wildlife habitat within its jurisdiction, and explains that the proposed expansion area does not include any lands in the Wildlife Area Combined Zone, "applied to Goal 5 wildlife habitat," and does not include county-mapped deer winter range or elk habitat [R. at 1216]. The findings do not state when the county's inventories were last updated.

The findings identify two significant riparian corridors within the proposed expansion area and explain that they are protected through the county's plan and code. The findings also state that "approximately 22 additional [riparian] acres are located in the proposed UGB expansion area outside of the Deschutes River and Tumalo Creek." [R. at 1216]

The findings also consider the possibility that additional Goal 5 resources will be identified through future planning efforts. The record states that existing city code implementing its Waterway Overlay Zone and its areas of special interest will apply to newly identified Goal 5 resources. [R. at 1216]

New policies commit the city to perform "a complete Goal 5 inventory once the new UGB is acknowledged." Other policies prevent urbanizable land from becoming urban until the Goal 5 inventory is complete and protection measures are in place. [R. at 1217] The findings apparently use the term "Goal 5 resource" only to refer to resources that have, or will at some point, be identified as significant Goal 5 resources.

The findings do not include information about the approach to areas of special interest (ASI), a city classification described in the Bend General Plan. The ASI classification includes Goal 5 scenic, open space and habitat resources. [R. at 1247] Some discussion of the city's intention to identify and manage impacts to ASIs is presented in the findings on the UGB locational analysis. [R. at 159]. Although the term "Areas of Significant Interest" is not used, the findings state that about 299 acres will not be available for urban uses, "because of their significance as scenic or natural resource" [R. at 159] The bulleted list of evidence for these resources in the proposed expansion area describes landscape features that fit the ASI classification. These include: the presence of the Deschutes River viewshed; presence of the Deschutes River Canyon State Scenic Waterway; and past surveys documenting prominent rock outcroppings, which are potential scenic resources.

Bend has included the Bend Area General Plan as amended January 5, 2009 in the record. Chapter 2, "Natural Features and Open Space," provides some information on riparian areas, wetlands and wildlife habitat, and the city's commitment to protecting these resources. The preservation of water resources, riparian areas and wildlife habitats is identified as one of the goals necessary to ensure Bend's livability by provide long term protection of open space and natural features. [R. at 1244] In several places, the Natural Features and Open Space chapter recognizes that the Deschutes River and Tumalo Creek provide important habitat for a variety of aquatic life, birds, reptiles and mammals, both big and small. On page 1251 of the record, it is stated that all of the significant wetlands identified for the local wetland inventory, conducted in 2000, are located along the Deschutes River.

The plan includes several policies for natural features and open space. Policy 4 states:

> Prior to the completion of the Goal 5 inventory, analysis and ordinance by the city, properties seeking annexation shall conduct a Goal 5 inventory pursuant to OAR 660-023. Where a significant Goal 5 resource is identified, amendments to the Bend Area General Plan and the Bend Development Code shall be proposed and adopted, consistent with inventory findings and OAR 660-23, to ensure appropriate protection of the resource, prior to approval of any land use action.

This appears to be one of the policies mentioned in the findings. [R. at 1217]. It would allow development to proceed and provide for a property-by-property approach to the inventory and protection of Goal 5 resources.

The "Natural Features and Open Space" chapter of the plan explains that the identification and preservation of ASIs and natural features is part of an effort to "retain and conserve the natural character of Bend as the community grows and changes." (R. at 1247] ASIs are identified as "features typical of Central Oregon, or represent important wildlife areas." [R. a 1247]. The association of river canyons with wildlife habitat is recognized in this section.

The analysis for UGB amendment alternative 4A includes information on the environmental consequences of selecting the alternative, and discusses Goal 5 resources for each quadrant. It appears that the term "Goal 5 resource" is used to refer to a resource that has already been identified as significant and placed on the Deschutes County inventory of significant resources, or that may be identified by the city as significant in the future. There are findings of no Goal 5 resources for the northeast priority 2 and priority 4 quadrants and the southeast priority 2 and priority 4 quadrants. It is stated that the southeast priority 4 quadrant is near Townsend bat habitat and has features that could qualify as an ASI. The northwest priority 2 quadrant is described as having one Goal 5 resource, a 200-acre aggregate site, and potential Goal 5 resources within the Tumalo Creek corridor. It is also stated that a State Scenic Waterway designation is recognized for portions of the Deschutes River that run through this quadrant. [R.. at 2460-1261]

There are findings of "no naturally occurring wetlands" for four of the six quadrants, presumably based on the National Wetlands Inventory. The analysis states that the southwest quadrant "contains some soils that have characteristics that may be indicative of potential areas of special interest," and that the northwest quadrant contains a band of lowlands along the canyon bottom of the Deschutes River and Tumalo Creek which is in the 100-year floodplain. [R. at 2430-2462]

c. Objections and DLCD Comments

DLCD provided comments regarding Goal 5 requirements to the city in letters of October 24 and November 8, 2008. [R. at 4728-4729 and 3782] There were two main issues raised with respect to Goal 5: the Goal 5 *procedures* that are required prior to land being identified as non-buildable, and the *inventory* requirements for Goal 5 resources that are triggered at the time of a UGB expansion.

In the October 24 letter, DLCD described several Goal 5 resource categories that overlapped with the "areas of special interest" designation used by the city, and described some options for meeting the objectives of preserving the values of these land both within and outside the confines of Goal 5. The November 8th letter recognized the city's intent to complete the Goal 5 requirements following completion of the UGB expansion, and stated this was not sufficient to comply with the rule. Both letters explained that it was the city's obligation to inventory riparian areas, wetlands and wildlife habitat and assess

resource sites for significance when factual information was submitted that these resources exist in the expansion area.

Objectors have raised concerns regarding the decision to postpone application of the Goal 5 process to known resources that exist within the proposed expansion area. In particular, riparian areas, wetlands, wildlife habitat and state Scenic Waterways need to be inventoried and protected as part of the UGB expansion planning process.

The following comments have been submitted regarding compliance with OAR 660-023 and OAR 660-024-060.

Swalley Irrigation District – Avoidance of county-designated Goal 5 resources (e.g., big game habitat) does not comply with the Goal 5 rule. At the time of a UGB expansion, resources within the expansion area must be reevaluated due to the new conflicting uses allowed. The city failed to apply Goal 5 protections to state scenic waterways. The designation of land along the Deschutes River and canyon as unbuildable was made without completion of the Goal 5 process. It is premature to adopt the Combined Sewer Master Plan and the transportation plan without an adequate inventory of Goal 5 resources. [Swalley, May 6, 2009, p. 45]

Toby Bayard – The city failed to complete Goal 5 inventories of natural areas, scenic and historic areas and open space. Land set aside for protection within the proposed expansion area was not adequately identified as a Goal 5 resource. Reliance on county Goal 5 inventory is not sufficient to meet Goal 5 requirements that apply to the proposed UGB expansion. The city failed to maintain an inventory of historic, open space, and scenic views and sites. [Bayard, April 29, 2009, pp. 1 and 34]

Bend Metro Park and Recreation District – The city failed to provide an adequate Goal 5 analysis as part of the proposed UGB expansion, pursuant to OAR 660-023-0250. The city inappropriately defers Goal 5 analysis to after the adoption of the UGB. [Bryant Lovlien & Jarvis, PC for Bend Metro Parks & Recreation District, May 5, 2009, pp. 1-2]

Central Oregon Land Watch – The city wrongly interpreted OAR 660-024-0020(1)(c) and 660-023-0250(3)(c) and failed to apply Goal 5 requirements as part of the proposed UGB expansion. The designation of 299 acres as restricted due to the presence of Goal 5 resources is not based on a Goal 5 inventory. The city wrongly relies on existing county Goal 5 inventory information to identify to satisfy Goal 5 requirements triggered by the UGB expansion. [Paul Dewey Attorney at Law for Central Oregon Land Watch, May 7, 2009, pp. 5 and 14-15]

Edward J. and Doris E. Elkins – City failed to justify their designation of available lands and constrained lands since no Goal 5 analysis has been completed. A portion of the land was identified as constrained without adequate inventory and assessment. [Elkins, April 26, 2009, pp 1-3].

Department of State Lands – The city failed to conduct Goal 5 inventories and analysis in the proposed UGB expansion areas. [Vrooman, Oregon Department of Justice for Oregon Department of State Lands, May 7, 2009, p. 4]

Tumalo Creek Development, L.L.P. – The city's proposed areas of special interest do not comply with Goal 5. The city failed to conduct a Goal 5 process to properly identify the location of and potential conflicts with ASI designated land. [David C. Allen Attorney, for Tumalo Creek Development, LLC, May 7, 2009, p. 3]

Toby Bayard (PFP) – The city failed to meet its Goal 5 obligations. Specifically, the city did not perform a Goal 5 inventory in advance of recommendations to construct a major sewer system interceptor. [Bayard, July 2, 2009, pp. 11-14]

Swalley Irrigation District (PFP) – The city failed to apply the Goal 5 process during adoption of the public facilities plan, which was required due to the presence of a designated State Scenic Waterway in the northwest quadrant. This objection is also included in the objections made to the UGB expansion. The city failed to address the habitat conservation planning effort that is underway for the bull trout and to recognize constraints on sewers and other infrastructure that are likely to result from the federal endangered species listing. Potential impacts to Tumalo Creek have not been evaluated. [Swalley Irrigation District, July, 6 2009, pp. 29-31]

d. Analysis

The city states that the proposal "avoids to the extent practicable lands with county-inventoried Goal 5 resources," and that Deschutes County's Goal 5 program "does not identify any acknowledged riparian corridors, wetlands, wildlife habitat or other Goal 5 resources within the proposed urban growth boundary." [R. at 1215] These statements may be accurate if Goal 5 resources are understood to mean only resources that the *city* has determined to be significant, but it does not appear that the city made that decision. Even so, there appears to be some contradiction. The findings also state that the Deschutes County Code, Chapter 23.112, identifies two Goal 5 riparian areas within the expansion area. The findings go to explain that "most of these areas are along the Deschutes River and Tumalo Creek…[but] approximately 22 additional acres are located in the proposed UGB expansion area outside of the Deschutes River and Tumalo Creek." [R. at 1216]

OAR 660-23-0250(3)(c) specifies that that the requirements of Goal 5 apply when a post-acknowledgment plan amendment "amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area." The resource sites at issue in this rule are not only sites that have already been identified by the county as significant. The rule requires the city to independently evaluate the expansion area where where resources are identified and evaluate them for significance and possible protection. The city may use the county's inventory as a starting point, but it must also evaluate other information and make its own determination of significance.

The city has factual information that natural resource sites may exist in the UGB expansion area. The alternatives analysis and associated maps clearly show that the Deschutes River and Tumalo Creek run through proposed expansion areas. The Bend Area General Plan recognizes the association between these two landscape features and important wildlife habitat. [R. at 1251 and 1254]

The plan also recognizes the association between the Deschutes River and wetlands. [R. at 1251] Four out of the six quadrants in Alternative 4 are described as having "no naturally occurring wetlands," [R. at 2432, 2437, 2442 and 2447] presumably based on National Wetland Inventory data. The southwest quadrant is described as having soils with "characteristics that may be indicative of areas of special interest." [R. at 2453] The northwest quadrant is described as having land along the Deschutes River and Tumalo Creek that is within the 100-year floodplain. [R. at 2461] The descriptions of these latter two quadrants may indicate the likelihood of wetlands. The record also acknowledges the State Scenic River designation for the Deschutes River [R. at 2460], and the existence of a Goal 5 aggregate resource in the northwest quadrant. [R. at 2460-2461]

Based on the evidence in the record of Goal 5 resources, the city needs to conduct an inventory, identify conflicting uses, and complete the Goal 5 process for the following resources in the proposed expansion area: riparian corridors, wetlands, and wildlife habitat. Potential impacts from new uses that will result from the proposed UGB expansion on the significant Goal 5 resources that are located in the expansion area must also be identified. These include State Scenic Waterways along the Deschutes River and the aggregate resource site in the northwest quadrant.

The city will also need to complete the Goal 5 process for areas of special interest, if these lands are to be considered unavailable for urban use within the proposed UGB expansion area. The Goal 5 process includes the identification of potential impacts from allowed uses and an assessment of the consequences of allowing, limiting or prohibiting uses and activities that conflict with a significant resource. This process is intended to generate findings that justify the final decision to alter or not alter development options. It is possible that the city will be able to rely on significance criteria and portions of the impact analysis that were completed to implement the ASI program within the existing UGB. However, if the ASI program development was competed under OAR 660, division 16, additional work will be needed. The fact that the ASI definition includes wildlife habitat, and implementation of protection measures serve in part to protect habitat, the city will need to consider the requirements of OAR 660-23-0110, when applying Goal 5 to these resources.

Failure to complete an inventory of historic resources was mentioned by one objector, but local governments are not required to identify and protect significant historic resources under Goal 5. If a jurisdiction chooses to identify historic resources, the process and criteria described in OAR 660-23-0200 must be followed. Another objector stated that the city had not adequately addressed current efforts to develop a habitat conservation plan for bull trout in the Deschutes River. Although the listing of bull trout under the

federal Endangered Species Act may be an important consideration for UGB expansion, Goal 5 does not require fish habitat to be included in a wildlife inventory. The inclusion of fish habitat will depend on choices made by the city when applying the rule (OAR 660-23-0110(4)), and is a consideration in protection of riparian corridors.

The director concurs with the objectors that the city has not completed the steps necessary to asses Goal 5 resources within the UGB expansion area for significance, and has not adequately addressed potential impacts to known significant Goal 5 resources as required by OAR 660-023-0250(3)(c) and OAR 660-024-060. The director also concurs that the areas of special interest identified by the city have not been evaluated sufficiently by the city at this point in time for land to be set aside for their protection. Furthermore, the director agrees with objectors that planning for transportation, housing and parks is undermined by the lack of analysis of the location, quantity, and quality of Goal 5 resources.

e. Conclusion

The UGB amendment and the amendments to the Public Facilities Plan do not comply with OAR 660, division 23. The director remands with direction to complete the inventory, assessment, and program development work needed to comply with Goal 5.

2. Is the designation of Surface Mining on certain property appropriate?

a. Legal Standard

OAR 660-023-0180 addresses identification of significant aggregate resources, approval of mining activity, and protection of the resource from conflicting uses. The rule sets criteria for significance and prescribes a process for evaluating potential impacts from the proposed mining activity. The rule requires a plan amendment for amending the local inventory of significant aggregate resources, changes to the mining activities allowed on the site, changes to the post-mining use of the site, and changes to the restrictions imposed in the impact area on new uses that could conflict with a protected mining activity.

b. Summary of Local Actions

The Bend Urban Area General Plan Map, dated December 12, 2008, shows the comprehensive plan designation for property owned by Shevlin Sand and Gravel to be surface mining. [R. at 1226]

c. Objection

One objector, Shevlin Sand and Gravel (SSG), raised a concern about a comprehensive plan map designation of surface mining that does not correlate with the Department of Aggregate and Mineral Industry (DOGAMI) permit authorizing mining. The objector does not cite a violation of local or state regulations, but explains that the plan designation depicted on the Bend Urban Area Proposed General Plan Map creates a problem with making use of their property. More land is designated as surface mining

than is covered under the DOGAMI permit for their mining operation. The land not covered by the DOGAMI permit can't be mined, and it can't be used for other purposes due to the plan designation. The objector does not state when the plan designation was made.

The objection is, "The surface mining designation makes [the] portion of the property [not covered by the DOGAMI permit] useless, because it is legally impossible for SSG to conduct mining and processing operations in this area." The objector recommends that the City of Bend change the boundary of the area designated surface mining to include only the area subject to the DOGAMI permit. The objector has provided a diagram showing the DGAMI permit boundary. Some land would need to be removed and other land added to the area designated as surface mining for the boundaries to be coincident. [Johnson & Sherton Attorney for Shevlin Sand and Gravel, May 7, 2009, pp. 1-2]

d. Analysis

The map designation is presumably based on a previous action by Deschutes County to designate the Shevlin Sand and Gravel property as a significant aggregate resource. A UGB expansion does not trigger a requirement for the city to conduct a new inventory of aggregate resources within the expansion area. Local jurisdictions are only required to amend the significant aggregate resource inventory in response to an application for a post-acknowledgement plan amendment. [OAR 660-23-0180(2)] A change in the boundaries of this site will require consideration of a separate plan amendment and will need to be based on findings developed consistent with OAR 660-23-0180.

e. Conclusion.

The objection is not sustained.

3. Does the UGB amendment comply with Goal 7 when the findings do not address wildfire hazard?

a. Legal Standard

Goal 7 is: "To protect people and property from natural hazards." There is no administrative rule associated with this goal.

The goal requires local governments to "adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards." The definition of natural hazard includes wildfires. The goal provides how local governments are to implement the goal, and avoiding development in hazard areas is one of the principles to be considered.

b. Summary of Local Actions

The UGB amendment findings, analysis and conclusions do not address wildfire risk as a consideration regarding where to locate the boundary.

c. Objection

Central Oregon LandWatch objected that the UGB amendment does not address wildfire risk and specifically that emergency preparedness and emergency access are not addressed. The objector submitted evidence that the City of Bend "is one of four western cities at the greatest risk of wildfire." The objector cites to Goal 7 provisions, and states the department should review new fire hazard information and notify local governments (presumably Bend and Deschutes County in this case) that the information requires a local response, as required by Goal 7. The objection does not identify this new information. [Central Oregon LandWatch, May 7, 2009, p. 17]

d. Analysis

Deschutes County has adopted a community wildfire protection plan for the Greater Bend Area that identifies significant wildfire risks for the area. The department agrees that the county and city should consider wildfire risk in evaluating the location and type of development for the city's UGB expansion. However, at present, the Goal 7 does not *require* such an action by the county and city.

e. Conclusion

The director denies this objection. However, the director also believes that the city and county should consider the information in the Community Wildfire Protection Plan for the Greater Bend area on remand as they determine where to expand the UGB and how to plan for the expansion area.

K. Procedural Issues

Several objections raise issues related to whether the city and county have complied with certain procedural requirements in adopting the five ordinances at issue in this review. The legal criteria for this portion of the submittal are primarily found in ORS 197.610, OAR 660-025-0175 and OAR 660-018-0020, and Goals 1 and 2. This section addresses objections relating to local procedure and coordination for both the four ordinances initially submitted to the department (the two county ordinances, and city ordinances NS 2112 (UGB) and NS 2113 (code amendments), and the city's public facilities plan, adopted as ordinance NS 2111.

1. Did the city properly notice its submittal of the ordinances and plan amendments to the department?

Swalley Irrigation District (Swalley) alleges that the City of Bend's April 16, 2009 notice of its submittal to the department is inadequate to meet ORS 197.626, 197.633(2)(b), OAR 660-025-0175(3), and OAR 660-025-0100 (as well as Goal 1) in that the notice does not identify with clarity what decisions were submitted to the department for review. Swalley Objection 2(A), at 17-18.

a. Legal Standard

OAR 660-025-0175 sets forth how local governments must provide notice of UGB amendments, and the requirements for submittal of their final decision:

> (3) The local government must provide notice of the proposed amendment according to the procedures and requirements for post-acknowledgement plan amendments in ORS 197.610 and OAR 660-018-0020.
> (4) The local government must submit its final decision amending its urban growth boundary, or designating urban reserve areas, to the department according to all the requirements for a work task submittal in OAR 660-025-0130 and 660-025-0140.

In turn, OAR 660-025-0130 governs what must be submitted to the department and when, and OAR 660-025-0140 governs notice of the submittal and objections.

b. Summary of Local Actions

The city submitted notice of the city's and county's adoption of four ordinances to the department on April 16, 2009. Those four ordinances were the city's ordinances adopting the amended UGB and amending the city's development code in certain respects (Ordinances NS-2112 and NS-2113), and the county's ordinances co-adopting the amended UGB and making certain amendments to the county's comprehensive plan map and text for the lands within the UGB expansion area. [R. at 1050-1051 (city ordinance NS 2112 - UGB); R. at 1836-1844 (city ordinance NS 2113 – development code);

[county ordinance 2009-1 – UGB map and DCC and TSP map]; [county ordinance 2009-2 – zoning map and certain DCC amendments].

The city did *not* submit ordinance NS 2111, amending the city's Public Facilities Plan element of its General Plan, to the department on April 16, 2009 (although a copy of this ordinance, which was adopted immediately before the UGB amendment ordinance, was included in the record for the submittal of the UGB ordinance (NS 2112), and the city submitted a separate notice of adoption of the Public Facilities Plan on January 9, 2009). However, on June 12, 2009, following LUBA's decision and May 8, 2009 order in LUBA Nos. 2009-010, 2009-011 and 2009-020, the city did separately submit ordinance No. NS-2111 to the department, and provided notice to the objectors, as required by OAR 660-025-0175(3) and (4) and OAR 660-025-0130 and -0140.

c. Analysis

Although the city's action in adopting the Public Facility Plan elements of its General Plan as a separate ordinance from its UGB amendment may have caused confusion, there is no legal prohibition on what the city did. The city's 45-day notice covered both the UGB amendment and amendments to elements of the city's comprehensive plan, including the Public Facilities Plan. The city properly gave post-adoption notice of its submittals to the department and those entitled to notice.

d. Conclusion

The director denies this objection. The city properly gave pre- and post-adoption notice of its submittals to those entitled to notice, include Swalley.

2. Did the city provide required notice and hearings for its ordinances?

Swalley, Bayard, Hillary Garrett, and Central Oregon LandWatch allege that the local processes leading to the submittals were unreasonably confusing and provided inadequate notice. Swalley Objection 2(B), at 18-28; Bayard Objection 1, at 23-25; Central Oregon LandWatch Objection at 6-8; Hillary Garrett, at 3-4.

a. Legal Standard

OAR 660-018-0020 sets forth how local governments must provide notice to the department 45 days in advance of the first evidentiary hearing on a proposed comprehensive plan amendment:

> (1) A proposal to amend a local government acknowledged comprehensive plan * * * must:
>
> > (a) Be submitted to the director at least 45 days before the first evidentiary hearing on adoption. * * *
> >
> > (c) Contain two copies of the text and any supplemental information the local government believes is necessary to inform the director as to the effect of the proposal. One of the required copies may be an electronic copy;

* * *

(e) In the case of a map change, include a map showing the area to be changed as well as the existing and proposed designations. Wherever possible, this map should be on 8-1/2 by 11-inch paper;

* * *

(2) The text submitted to comply with subsection (1)(c) of this rule must include the specific language being proposed as an addition to or deletion from the acknowledged plan or land use regulations. A general description of the proposal or its purpose is not sufficient. In the case of map changes, the text must include a graphic depiction of the change, and not just a legal description, tax account number, address or other similar general description.

These provisions concern the required notice to the department. They do not prohibit changes to a proposed action. If a local government substantially amends a proposed plan amendment, then it must describe the changes in its notice of adoption. [OAR 660-018-0045]

Statewide Planning Goal 1 sets forth what must be contained in a local government's citizen involvement program. The city's citizen involvement program is acknowledged for compliance with Goal 1. The city's hearings procedures for legislative amendments do include a local code requirement for 20-day advance local notice of public hearings on legislative plan amendments, which is cited by Bayard and Garrett. BDC Section 4.1.315.

b. Summary of Local Actions

The city provided an amended 45-day notice to the department of its revised proposal to amend the UGB and certain provisions of its comprehensive plan, including the Public Facilities element of its plan, and including its development code, on October 8, 2008. [R. at 4820] Swalley, Garrett and Bayard identify several respects in which they and other local participants were frustrated or confused about what was proposed, and allege that the proposed Public Facilities Plan was not submitted to the department until October 20, 2008, and that the local newspaper notice did not separately identify that amendments to the Public Facilities Plan were to be heard.

The record indicates that the proposed amendments to Chapter 8 (Public Facilities) of the General Plan were first presented to the city's planning commission on or about August 15, 2008. [R. at 6150, 6250] The record also indicates that the location and, to some extent, size of the proposed UGB amendment was changed significantly on or about October 3, 2008, and that the city and county planning commissions met to consider the submittals on October 27, 2008. [R. at 1211] The city gave public notice of the planning commissions' hearing on October 7, 2008; [R. at 4756] and public notice of the city council hearing on November 7, 2008. [R. at 3954-55] It is not clear when the city provided the text of the proposed changes to Chapter 8 of its General Plan (Public Facilities); it appears that the text was sent on or about October 20th.

c. Analysis

Swalley, Garrett and Bayard are correct that the city's notices failed to comply with OAR 660-018-0020 and ORS 197.610, in that the submittal was late (in relation to the first evidentiary hearing) and may not have initially been complete. It also appears that the city's notice of the planning commissions' joint hearing and the city council hearing violated BDC section 4.1.315 by failing to provide notice 20 days in advance of the hearings. However, Swalley, Garrett and Bayard also note that they were allowed to and did provide written testimony to the planning commissions (and city council) at public hearings on the proposals.

Whether a violation of the notice requirements of ORS 197.610 requires a remand depends on whether the objector(s) were prejudiced by the late or inadequate notice. See, *No Tram to OHSU, Inc. v. City of Portland*, 44 Or LUBA 647, 658 (2003). In this case, Swalley and other objectors allege that they were prejudiced by the lack of time to review the extensive submittal, which was changed substantially by the city in early October. The objectors have identified substantial prejudice in the sense of not having been able to present their concerns to the local decision-makers.

d. Conclusion

Goal 1 is violated in the context of a legislative comprehensive plan amendment only if the local government does not follow its citizen involvement program. *Casey Jones Well Drilling, Inc. v. City of Lowell*, 34 Or LUBA 263, 284 (1998); *Wade v. Lane County*, 20 Or LUBA 369 (1990). Swalley and Bayard have not identified a violation of Goal 1.

However, as set forth above, the record shows that the city did violate ORS 197.610 by failing to provide timely and adequate notice of its proposed amendment to its General Plan. As a result, the director concludes that remand is required in this case.

3. Did the city otherwise violate Goal 1?

Toby Bayard (and to some degree Swalley and Central Oregon LandWatch) alleges that the city failed to provide critical information to the public in a timely fashion, and made substantial last-minute changes in its proposal that had the effect of not allowing the public adequate time to comment. [Bayard Objection 1 at 1-26; Central Oregon LandWatch Objection at 6-8]

a. Legal Standard

Goal 1 is to "develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process." [OAR 660-015-0000(1)] Goal 1 establishes requirements for local citizen involvement programs. Its provisions do not apply to comprehensive plan amendments unless those amendments include the government's citizen involvement program. The city and county submittals do not amend or affect either the city's or county's citizen involvement program. Under those circumstances, the submittals are in violation of Goal 1 only if the submittals include provisions that are inconsistent with the city or county citizen involvement programs.

Homebuilders Assoc. v. Metro, 42 Or LUBA 176, 196-197 *aff'd Homebuilders Assn. of Metropolitan Portland*, 184 Or App at 669. No objector attempts to establish that the submittals include provisions that are inconsistent with either citizen involvement. In addition, the objectors do not identify any specific provision of the city's citizen involvement program that has been violated. See, General Plan, Chapter 1.

b. Summary of Local Actions

The city is not amending its citizen involvement program.

c. Analysis

Because the city is not amending its citizen involvement program, Goal 1 does not establish requirements for the local government actions before the director.

d. Conclusion

The director denies the Bayard, Central Oregon LandWatch and Swalley objections concerning Goal 1, because the goal does not establish legal requirements for the actions that are before the director for review.

4. Did the local governments fail to coordinate with Swalley Irrigation District, Central Oregon Irrigation District, or ODOT in violation of Goal 2?

Swalley Irrigation District (Swalley) and Toby Bayard allege that the city and county failed to coordinate with the Swalley and other governmental entities, as required by Goal 2. In particular, Swalley alleges that the submittals were not coordinated with the district in the sense that the district's needs were considered and accommodated as much as possible. Goal 2; ORS 197.015(5). [Swalley Objection 2(A), at 28-34. Bayard Objection 2, at 27-33]

a. Legal Standard

The coordination elements of Goal 2 require local governments to exchange information with affected governmental units. In addition, information received from affected governmental units must be used by the adopting local government. *Santiam Water Control District v. City of Stayton*, 54 Or LUBA 553, 558-559 (2007); *DLCD v. Douglas County*, 33 Or LUBA 216, 221 (1997); *Brown v. Coos County*, 31 Or LUBA 142, 145 (1996). The adopting government must provide "notice clearly explaining the nature of the proposal and soliciting comments concerning the proposal." *1000 Friends of Oregon v. City of North Plains*, 27 Or LUBA 372, 394, *aff'd* 130 Or App 406 (1994). A local government's 45-day notice to DLCD is not sufficient for this purpose. *Id*.

Similarly, newspaper notice is not sufficient. *Adkins v. Heceta Water District*, 23 Or LUBA 207, 218 (1992). Finally, the local government's findings must address the concerns raised; simply rejecting the concerns or deferring addressing them to a later time is not sufficient. *Cox v. Polk County*, 49 Or LUBA 78, 89 (2005). *DLCD v. Douglas County, supra*. Goal 2 and ORS 197.015(5) do not mandate success in accommodating

the needs or legitimate interests of all affected governmental agencies, but they do mandate a reasonable effort to accommodate those needs and legitimate interests "as much as possible." *Turner Community Association v. Marion County*, 37 Or LUBA 324, 353-354 (1999). From the foregoing, the coordination requirement is satisfied where the local government has engaged in an exchange of information regarding an affected governmental unit's concerns, put forth a reasonable effort to accommodate those concerns and legitimate interests as much as possible, and made findings responding to legitimate concerns.

b. Summary of Local Actions

The city adopted findings summarizing its coordination with irrigation districts, including Swalley. [R. at 1214-1215] Those findings describe how the city and the district communicated, and the city's consideration of the concerns raised by the district. According to the city's findings, it removed a 332-acre area entirely within the district. Also according to the city it "cannot balance SID's opposition to urbanization with the need for urbanization of the identified lands, for all of the reasons explained in the city's findings." [R. at 1215]

c. Analysis.

The director concludes that the city has complied with the coordination elements of Goal 2. The city met repeatedly with the district; conducted an analysis of the acreage of irrigated lands affected by the proposal; removed some irrigated lands from the proposal; and adopted findings describing the district's concerns and how they were accommodated. Although the notice provided by the city was confusing, it appears to have met legal requirements, and the district itself has indicated that it was able to make its concerns known in writing.

d. Conclusion

The director concludes that the city's and county's actions (the three city ordinances, and the two county ordinances) were adopted in compliance with the coordination requirements of Goal 2. The objection is denied.

5. Did the city improperly adopt the Public Facilities Plan?

Toby Bayard and Hillary Garrett and Central Oregon LandWatch, and Hunnel United Neighbors and Anderson Ranch all allege that the city improperly adopted the Public Facilities Plan in NS 2111. Specifically, they allege there was no public hearing on the ordinance, and that the city's public notice only referenced the UGB amendment. Bayard Objection 2, at 25; Garret Objection, at 3.

a. Legal Standard

BDC section 4.1.310 requires a public hearing before the city's planning commission and its city council on any legislative change to the city's plan or land use regulations. BDC 4.1.315 requires public notice of the hearing 20 days prior to the date of the hearing.

b. Summary of Local Actions

The city held a public hearing on the proposed Public Facilities Plan. The planning commission held a hearing on October 27, 2008 and the city council held a hearing on November 24, 2008. The city provided public notice of the proposed UGB amendment, which included the proposed adoption of Chapter 8 of the General Plan (Public Facilities).

c. Analysis

BDC section 4.1.310 requires a public hearing on the legislative change to the city's General Plan. The code does not prevent the city from splitting proposed changes to its comprehensive plan into two ordinances, so long as a public hearing was held that covers all of the changes. The city's hearings appear to have met the code requirement. The objectors have not identified a legal requirement concerning the level of detail required in the city's public notice.

d. Conclusion

Based on the reasoning above, the director denies these objections.

IV. CONCLUSIONS AND DECISION

1. Conclusions

The scope of the director's review of the decisions is whether they comply with the statewide planning goals and relevant statutes and administrative rules. The foregoing sections of this report explain the analysis and findings for the relevant provisions of law. The conclusions resulting from of the director's review are as follows.

Goal 1

As explained in section III.K.2 and 3, the local governments comply with Goal 1.

Goal 2

As explained in sections III.H.5 and III.K.4, the local government actions and decisions generally comply with Goal 2. However, as explained in sections III.E. and III.G., there are inconsistencies between the housing needs analysis and the UGB decision, and between the public facilities master plans and the UGB decision such that the decisions do not comply with the Goal 2 requirement for consistency with the comprehensive plan. Bend and Deschutes County complied with the requirement of Goal 2 that it coordinate the UGB amendment with affected units of local government. The director concludes that the decisions do not comply with Goal 2, for the reasons stated above and in the analysis sections of this report.

Goal 3

Compliance with Goal 3 in the context of a UGB amendment relies on satisfaction of Goal 14 requirements. See the section for Goal 14, below. Because the local governments have not demonstrated that the UGB amendment has satisfied the need criteria or location factors in Goal 14, the director cannot conclude that agricultural land is preserved and maintained pursuant to Goal 3. The director concludes that the decisions do not comply with Goal 3.

Goal 4

Compliance with Goal 4 in the context of a UGB amendment relies on satisfaction of Goal 14 requirements. In this case, no land subject to Goal 4 is affected by the decision. The director concludes that, as a result, Goal 4 does not apply to the decisions.

Goal 5

As discussed in section III.J, the UGB submittal does not comply with the requirements of Goal 5. The city has not completed the steps necessary to asses Goal 5 resources within the UGB expansion area for significance, and has not adequately addressed potential impacts to known significant Goal 5 resources as required by OAR 660-023-

0250(3)(c) and OAR 660-024-060. The director concludes that the decisions violate Goal 5.

Goal 6

Goal 6 ensures compliance with state and federal environmental laws. No person has objected that the decisions violate Goal 6, or that Goal 6 compliance will be affected by the UGB expansion. The city's amended public facilities plans indicate that the city will be in compliance with state and federal water quality laws. As a result, the director concludes that the UGB expansion complies with Goal 6.

Goal 7

As discussed in section III.J.3, the director concludes that the decisions do not conflict with the requirements of Goal 7.

Goal 8

The city's analysis of land needs included an analysis of lands required for parks. No person has objected that the UGB expansion violates Goal 8. The director concludes that the expansion complies with Goal 8.

Goal 9

This goal is addressed in section III.F. The UGB amendment does not appropriately identify land for employment uses for the planning period. The data and analysis in the adopted economic opportunities analysis are inadequate to justify the amount and location of employment land includes in the UGB expansion. As a result, the director concludes that the decisions violate Goal 9.

Goal 10

As explained in section III.E, the adopted housing needs analysis does not demonstrate that the comprehensive plan will permit appropriate housing types and densities that accommodate housing affordability needs for Bend's population. The residential land needs analysis contains data, assumptions, and conclusions that are not supported by the evidence in the record. As a result, the director concludes that the decisions do not comply with Goal 10.

Goal 11

The public facilities plans and comprehensive plan amendments prepared in conjunction with the UGB amendment do not comply with the requirements of Goal 11 or OAR 660, division 11. As a result, the director concludes that the decisions do not comply with Goal 11.

Goal 12

The decision did not properly evaluate transportation impacts or clearly make or defer decisions about proposed transportation improvements. The city, as a member of a

metropolitan planning organization, needs to address requirements for increasing the availability and convenience of alternative modes of transportation and reducing reliance on the automobile and it has not done so. As a result, the director concludes that the decisions do not comply with Goal 12.

Goal 13

Compliance with Goal 13 in the context of a UGB amendment relies on satisfaction of Goal 14 requirements. See the section for Goal 14, below. Because the local governments have not demonstrated that the UGB amendment has satisfied the need criteria or location factors in Goal 14, particularly as they relate to efficient arrangement of land uses, the director cannot conclude that energy is conserved pursuant to Goal 13. As a result, the director determines that the decisions do not comply with Goal 13.

Goal 14

Primary considerations for evaluating compliance with Goal 14 include 20-year land need and the appropriate location for the UGB. Need is addressed in section III.E and F while boundary location is addressed in section III.I. The findings and conclusions supporting the decision do not adequately justify the amount of land included in the UGB amendment for residential, employment, or other uses. The findings supporting the decision on UGB location do not adequately address the requirements of the goal. As a result, the director determines that the decisions do not comply with Goal 14.

ORS 197.296, 197.298, 197.303, 197.307

2. Decision

The director remands the decisions to the City of Bend and to Deschutes County for further action, consistent with this report and order.

VICTOR ATIYEH
GOVERNOR

Department of Land Conservation and Development

1175 COURT STREET N.E., SALEM, OREGON 97310 PHONE (503) 378-4926

July 7, 1981

The Honorable Ruth Burleigh
Mayor, City of Bend
P.O. Box 431
Bend, OR 97701

Dear Mayor Burleigh:

It gives me a great deal of pleasure to confirm that the Land Conservation and Development Commission, on June 25, 1981, officially acknowledged the comprehensive plan and implementing ordinances of the City of Bend as being in compliance with the Statewide Planning Goals.

The acknowledgment signifies a historic step for the City's land use planning efforts.

I would like to commend the local officials, staff, and citizens of your City for their hard work and foresight in the field of land use planning.

Congratulations,

W. J. Kvarsten
Director

WJK:DZ:af
5980A/5B

Enclosure

cc: Deschutes County Board of Commissioners
Betsy Shay, Coordinator
Brent Lake, Field Representative
Dick Wilson, Real Estate Division
Claire Puchy/Dale Blanton, Lead Reviewers
Jim Knight, DLCD
DLCD Library
Portland Field Office

BEFORE THE
LAND CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF OREGON

IN THE MATTER OF THE CITY OF BEND'S COMPREHENSIVE PLAN AND IMPLEMENTING MEASURES	)	COMPLIANCE ACKNOWLEDGMENT ORDER

On January 14, 1981, the City of Bend, pursuant to ORS 197.251(1) (1977 Replacement Part), requested that its comprehensive plan and implementing measures be acknowledged by the Land Conservation and Development Commission to be in compliance with the Statewide Planning Goals.

The Commission reviewed the attached written report of the staff of the Department of Land Conservation and Development on June 25, 1981 regarding the compliance of the aforementioned plan and measures with the Statewide Planning Goals. Section IV of this report constitutes the findings of the Commission.

Based on its review, the Commission finds that the City of Bend's comprehensive plan and implementing measures comply with the Statewide Planning Goals adopted by this Commission pursuant to ORS 197.225 and 197.245.

THEREFORE, IT IS HEREBY ORDERED THAT:

The Land Conservation and Development Commission acknowledges that the aforementioned comprehensive plan and implementing measures of the City of Bend are in compliance with the Statewide Planning Goals.

DATED THIS 7TH DAY OF JULY, 1981.

FOR THE COMMISSION:

W. J. Kvarsten, Director
Department of Land
Conservation and Development

WJK:DZ:af
5982A/5B

Attachment

LAND CONSERVATION AND DEVELOPMENT COMMISSION
ACKNOWLEDGMENT OF COMPLIANCE

RESPONSE TO CONTINUANCE ORDER OFFERED

January 22, 1980

City of Bend

DATE RECEIVED:
January 14, 1981

DATE OF COMMISSION ACTION:
June 26, 1981

I. REQUEST

Acknowledgment of Compliance with the Statewide Planning Goals for the comprehensive plan and implementing measures.

II. SUMMARY OF RECOMMENDATIONS

Staff:

Recommends the Commission acknowledge the City of Bend's comprehensive plan and implementing measures to be in compliance with the Statewide Planning Goals.

Local Coordination Body:

None received.

FIELD REPRESENTATIVE: Brent Lake
Phone: 389-2253

LEAD REVIEWER: Dale Blanton/Claire Puchy
Phone: 378-4926

COORDINATOR: Betsy Shay
Phone: 382-4000

Date of Report: June 17, 1981

III. BACKGROUND INFORMATION

The Commission reviewed the City of Bend's initial acknowledgment request in December, 1979, and offered to continue the request 120 days to allow the City time to complete work to comply with Statewide Planning Goals 1, 2, 4-6 and 8-14. Major problems were primarily due to the fact that the UGB and major portions of the plan were established prior to the adoption of the Statewide Planning Goals. Most plan policies were advisory rather than mandatory, and there was an inadequate factual base for a number of goals. The location and size of the UGB were not supported with adequate findings.

IV. ADDITIONAL MATERIALS

The following additional materials have been submitted by the City as part of its second acknowledgment request:

City and urban area plan amendments, and UGB amendments	City Resolution No. 1557 (12-17-80) County Ordinance No. 80-216 (12-18-80)
City Zoning Ordinance amendments	City Ordinance No. NS-1308 (1-7-81)
City Zoning Map amendments	City Ordinance NS-1314 (2-18-81)
Urban Area Zoning Map and ordinance amendments	County Ordinance No. 80-217 (12-18-80)
Historic Preservation Ordinance	City Ordinance No. NS-1289 (9-17-80) County Ordinance No. PL-21 (9-17-80)
Joint Urban Area Planning Commission	City Ordinance No. NS-1300 (11-19-80) County Ordinance No. 80-226 (12-18-80)
City of Bend - Water System Master Plan	(July 1980)

V. FINDINGS AND REASONS

Previously Approved Goals:

In making its continuance offer in December, 1979, the Commission found the City of Bend's request in compliance with Statewide Planning Goal 7. The amendments made do not conflict with that action taken by the Commission.

Requirement 2

All lands remaining outside the boundary established in 1. above, but inside the current UGB must be designated as natural resource, rural or urban reserve, and zoned in the UAR-10 or other protective zone classification until such time as a boundary change is justified.

Response

Lands between the IUGB and out UGB have been designated as Agriculture or Open Space on the plan map and zoned in UAR-10 (Urban Reserve), SM (Surface Mining) and SR-2 1/2 (Residential Suburban).

An exceptions statement has been adopted for the area between the IUGB and the outer UGB. This document states:

> "The City and County have agreed to a new Initial Urban Growth Boundary that excludes approximately 25 percent of the land contained in the 1979 Urban Growth Boundary. These lands are designated as urban reserve and surface mining, and zoned SR-2 1/2, UAR-10, and SM. The majority of the SR-2 1/2 areas are currently developed with lot sizes of that size or smaller.
>
> The inventory of soil data indicates that most of the agriculture lands are Class VI and are interspersed between lava ridges of scabland Class VIII. The forest soils are site 6 except for a small area of 4 contained within the Tumalo Creek Canyon which is Shevlin Park. The conclusion from this analysis is that these lands are marginal resource lands. Much of the land is surrounded by existing one to five acre subdivisions. These areas have been excepted in the Deschutes County Comprehsive Plan.
>
> The urban reserve area acts as a buffer to the more rural and resource lands beyond the UGB. The use of the urban reserve will promote more orderly and efficient development, and still retain the 1972 planning commitments which have resulted in financial commitments from both the public and private sectors. The minimum lot sizes of 2 1/2 to 10 acres will be compatible with the adjacent land uses, and in most cases are the same as the adjacent MUA-10 and RR-10 zoning outside the UGB.
>
> The provisions of these areas as urban reserve will enable the community to convert these areas when needed, and hopefully reduce any impact of the small number of individual owners of larger parcels within the IUGB. It is important to pre-plan future expansion areas for compatibility and consistency with

adjacent uses and services. These areas offer opportunities important to the Bend's and Deschutes County's economy for destination resorts. These areas offer the community an opportunity to review rural urban conflicts and develop more compatible urban and rural relationships.

No alternatives were considered, since this would require the enlargement of the 1979 UGB.

Based on these considerations, the City and County are taking an exception to Goals 3 and 4 as they relate to the land between the IUGB and the UGB."

Objection

1000 Friends of Oregon has objected to acknowledgment of the Bend Plan for Goal 14 (see Attachment A). The objection raises the following issues:

1. Unjustified use of a double UGB.

2. Inadequate demonstration of need and commitment for lands included in the UGB.

3. Inappropriate urban densities.

4. Inappropriate inclusion of lands within the UGB.

Response

The concept of a second UGB as a longer term boundary for planning purposes does not violate Goal 14 or other resource Goals in this instance. The concept here can be an effective long-range tool for facilities and urbanization planning. Adopted plan policies cited earlier in this section of the report ensure the orderly provision of facilities and services within the IUGB. Although no specific policy prohibits annexation beyond the IUGB, this has not been a compliance requirement. Even though not explicitly stated as policy, the City cannot under Goal 14, annex beyond the IUGB. If the plan indicated that such an annexation could occur, this would violate Goal 14. The combination of quality of resource lands, holding zones and a requirement to amend the IUGB before more intense development insures the IUGB will function as an effective Goal 14 boundary.

As noted in the conclusion to this section of this report, the City has adequately considered the seven factors of Goal 14 in establishing the IUGB. Although the boundary contains more land than needed, the area is justified based upon commitment and other locational factors.

The SR 2 1/2 outside the IUGB is justified because the area is relatively parcelized and for the most part, surrounded by a Deschutes County exception to Goals 3 and 4 based upon commitment. This area is clearly a

dividing line between the larger urbanizable parcels inside the IUGB and the agricultural areas beyond the outer UGB and as such provide for an orderly transition between urban, rural and resource lands.

The RL lands (20,000 square foot) do not impact the City's ability to meet its housing needs, but are not efficient in terms of economy of services. However this area is, for the most part already developed to these lot sizes and is outside the Phase II service area. According to the City:

> "These RL areas have supplied a substantial amount of the recently developed lots providing modest priced housing within the urban area. In most cases, until such time as the sewer would become available, these areas will not be further divided.
>
> The County's subdivision ordinance does contain replatting provisions. The Urban Area Planning Commission is working on a redraft of the subdivision ordinance to bring standards, procedures, and requirements into uniformity within the urban area. We will add provisions for redivision as part of this process" (see Attachment C).

Finally, the inclusion of a 177 acre parcel inside the UGB, but outside the IUGB does not impact the County's ability to preserve all or portions of the parcel as a habitat area. This parcel's inclusion in the outer UGB does not violate Goal 14.

Conclusion: The City of Bend complies with Goal 14.

The City has revised its urban growth boundary to exclude 6,858 acres which are not needed and could not be justified based upon Goal 14 requirements. The revised boundary is justified because the land is committed to urban development through facilities or existing development. Locational considerations of Goal 14 (Factors 3-7) are addressed by the findings document through general findings and specific findings for each geographic segment of the boundary. This initial urban growth boundary serves as a viable Goal 14 UGB. Any land use changes outside the IUGB will require an amendment pursuant to the seven factors of the Goal. The outer UGB will work as a longer term growth area, which will be retained for potential urbanization at the time the land is needed. In the interim, UAR-10, SM and SR-2 1/2 zoning will retain the area in a land use pattern which will enable more intensive development in the future.

OVERALL CONCLUSION

The City of Bend has made extensive modifications to its comprehensive plan and implementing measures to correct deficiencies identified by the Commission in December, 1979. Among the major changes were a completely updated land use and buildable lands inventory, a new water plan, a new

parks plan, and a revised economic base analysis. Perhaps the most significant change has been the establishment of a UGB and IUGB with Deschutes County. The City now has a sound plan upon which land use decisions can be based.

V. RECOMMENDATION

Staff:

Recommends the Commission acknowledge the City of Bend's comprehensive plan and implementing measures to be in compliance with the Statewide Planning Goals.

Local Coordination Body:

None received.

CP:kb
5514A
6/15/81

Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2524
Phone: (503) 373-0050
First Floor/Coastal Fax: (503) 378-6033
Second Floor/Director's Office: (503) 378-5518
Web Address: http://www.oregon.gov/LCD

April 14, 2005

EXHIBIT: 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 4/28/05
PAGES: 22
SUBMITTED BY: DLCD staff

TO: Land Conservation and Development Commission (LCDC)

FROM: Bob Rindy and Jim Hinman, DLCD

SUBJECT: **Agenda Item 6; April 28, 2005, LCDC meeting**

WORK SESSION AND POSSIBLE ADOPTION OF PROPOSED AMENDMENTS TO GOAL 14 AND RELATED ADMINISTRATIVE RULES CONCERNING URBAN GROWTH BOUNDARIES

AGENDA ITEM SUMMARY

This item is a work session intended for Land Conservation and Development Commission (LCDC) to discuss and potentially adopt proposed amendments to Goal 14 and two related administrative rules – OAR 660, Divisions 004 and 026. The proposed amendments (Attachments A through C to this report) are intended to clarify and streamline the state's urban growth boundary (UGB) requirements and procedures. LCDC held a final public hearing on these proposals February 3, 2005, and extended the time for written comments until February 28, 2005. The Commission held a work session on March 17, 2005, to discuss the proposals and the comments regarding the proposals. At that time, the Commission indicated its intent to consider adoption of the goal and rule amendments at its April 28, 2005, meeting.

For more information about this agenda item, contact Bob Rindy, at (503) 373-0050, Ext. 229, or email at bob.rindy@state.or.us.

SUMMARY OF RECOMMENDED ACTION

The department recommends that the Commission adopt the proposed Goal 14 amendments and related rule amendments, OAR 660, Divisions 004 and 026.

BACKGROUND AND HISTORY

The Commission initiated this policy project on June 11, 2004. The intent is to clarify and streamline the UGB amendment process by amending Goal 14 and by adopting new administrative rules outlining procedures and requirements for UGB amendments. An addition new rule (not presented with this report) would include "safe-harbors" that will specify optional methods for local governments to use in order to save time and expense in the UGB amendment process.

LCDC appointed an advisory workgroup to guide the department and Commission with this project, consisting of twenty four members from a variety of backgrounds representing local governments, state agencies, citizens and interest groups concerned about the UGB amendment process. The workgroup began meeting in July 2004 and has met twelve times.

The workgroup discussion of amendments to Goal 14 resulted in proposed changes to the existing text that would more clearly express longstanding UGB policy and other requirements, and improve wording that is currently ambiguous or unclear. The workgroup has also recommended the elimination of a major step in the UGB process – the "exceptions process" – and replacing it with more clearly expressed requirements intended to accomplish the same purposes. The workgroup discussion resulted in proposed amendments to Goal 14 and two related rules (Divisions 004 and 026), published October 20, 2004, that were the subject of ten public hearings statewide conducted by the department in November 2004 through January 2005, and also the subject of two LCDC public hearings and one work session.

In addition to consideration of Goal 14 itself, the workgroup's primary purpose has been to draft a new set of rules (under a proposed new Division 024 under OAR 660) in order to clearly set forth the procedures and requirements for UGB amendment, and to provide a higher level of detail than the goal itself concerning these procedures and requirements. Most important, the draft rules would establish new "safe harbor" provisions intended to reduce local government time and cost in amending a UGB. An initial draft of these new rules was published on October 20, 2004, and was also a subject of the department's ten public hearings in November 2004 through January 2005. Based on comments received in the initial ten public hearings, the workgroup determined that there had not been enough time for study and discussion of the new rules, especially the proposed safe harbors. In response, at its December 8, 2004, meeting, LCDC directed the department and the workgroup to extend the time period for study and consideration of the proposed new UGB rules under Division 024. The workgroup will meet at least through the Fall of 2005 in order to refine the proposed new rules for LCDC's consideration later in 2005.

In its February and March 2005, meetings, LCDC indicated its intent to consider adoption of the proposed amendments to Goal 14 (and the two related rules). The workgroup met December 18, 2004, and January 6, 2005, in order to respond to the Commission's direction with regard to the proposed Goal 14 amendments. Based on this discussion, the department issued a new draft of the goal amendments (and two related rules at OAR 660, Divisions 004 and 026) on January 7, 2005.

On February 3, 2005, the Commission held a final public hearing on the proposed amendments to Goal 14 and related rules. After the close of that hearing, LCDC directed the department to extend the period for written comments. The comment period was extended to February 28, 2005, based on a revised draft of the Goal amendments dated February 9, 2005, and a written proposal for the applicability dates of the new goal and rule amendments should they be adopted by the Commission (See Attachment D).

NOTE: This report does not include detailed descriptions of the intended goal amendments. The department's November 29, 2004, and January 19, 2005 staff reports provided detailed descriptions as to the intent of the various changes in the proposed Goal 14 and related rule amendments, and these descriptions were also summarized and attached to the department's March 3, 2005, staff report to LCDC.

SUMMARY OF MARCH 17, 2005, LCDC WORKSESSION

At its March 17, 2005, meeting, the Commission held a work session on the proposed amendments. At that time the Commission discussed the various issues that had been raised in testimony regarding the proposal. The Commission's discussion is summarized below.

1. Timeline for Goal Adoption

The Commission discussed postponing action to amend Goal 14 until the broad "30-year review" of the land use program contemplated in the department's legislative proposal, Senate Bill 82. The Commission decided the proposed amendments to Goal 14 should not be put off to that longer-term review of the program.

2. Potential for Litigation regarding Changes to Goal 14

The Commission agreed that, although changes to the goal should be made very carefully because they are likely to be the subject of litigation in the future, the potential for unintended consequences as a result of such litigation should not deter action to clarify and streamline Goal 14.

3. Livability

The Commission favored leaving the term "livability" in the Land Need section of the goal, but also leaving the clarifying language on page 1, lines 30 through 32 of Attachment A, that had been crafted in order to replace "livability". In its discussion the Commission indicated that, although the term livability, as interpreted in the past, does not provide a different standard than the new clarifying language, there is a public perception that omitting the term could in some manner affect a change in the goal. The Commission asked the department to omit Option 1 in the proposed goal amendments, and prepare a version for Commission consideration in April that carries forward Option 2 retaining the word "livability" (See Attachment A).

4. The "and" Between Need Factors 1 and 2

The Commission discussed the two need factors, and agreed that local governments need to address both of these factors (1) and (2), and may not choose either one or the other. This was in response to a suggestion that prior policy allowed local governments to consider both factors, but then address only one or the other. The department pointed out that the seven factors were always connected by an "and," i.e., there had not been

previous policy suggesting only one of the need factors could be addressed. Thus, to change the "and" to "or" would be a change in policy.

The discussion also highlighted the fact that authorizing only one of the need factors to be addressed could imply that a local government may ignore Factor 1 and approve a UGB amendment without support of a 20-year population forecast. The amended goal states that the determination of a land need is a two-step process: First, calculate the 20-year population forecast, and then calculate the amount of land needed for one or more need categories. As part of this discussion, the Commission also directed that the department's staff report clarify that a new 20-year population forecast is not necessarily required in order to amend a UGB. Rather the local government must show that the proposed UGB amendment "is consistent with" the 20-year forecast, either a new forecast or the current forecast. Thus, a "quasi-judicial UGB amendment" proposed by a property owner could still be considered based on the current population forecast.

5. The "or" in the list of uses under Factor 2

Proposed amendments to Need Factor 2 link the list of land need categories with the term "or", rather than "and" as in the current list ("Demonstrated need for land suitable to accommodate housing, employment opportunities, livability "or" uses such as public facilities, streets and roads, schools, parks or open space"). The department explained that this was done in order to clarify that a local government could pursue a UGB amendment in order to accommodate only one of the categories of needs on the list while not addressing the other, for example, to accommodate the need for housing land while not simultaneously examining the need for employment land. In the discussion, it was brought out that the term "and/or" may have been more appropriate, but that term is discouraged by legal counsel and protocols for rule drafting. The Commission directed the department to propose wording that accomplishes the same thing without using "and/or," and that more clearly indicates the intent to authorize a UGB amendment for one or more need categories. The department has proposed the following:

> "(2) Demonstrated need for land suitable to accommodate housing, employment opportunities, and livability ***or any combination of the foregoing***, and uses such as public facilities, streets and roads, schools, parks or open space."

6. Special Characteristics for Need

The Commission discussed the new proposed wording indicating that local government may specify characteristics of needed land, and the alternative wording proposed by Jeff Bachrach, which provides more specificity than the department's proposed wording. The Commission discussed whether the language should remain fairly broad, as in the current draft proposal, or provide a higher order of specificity, as in Mr. Bachrach's proposal. It was concluded that the general direction in the workgroup's proposal provides a greater degree of discretion for local governments.

7. The Reference to ORS 197.298

The Commission discussed whether to include this reference in the goal, and whether or not there is need for more detailed guidance on the manner in which cities address this statute and the locational factors. The Commission decided to include the reference, and to consider the question of additional guidance in the new UGB rules under consideration by the workgroup. Proposed legislation affecting this statute was also discussed and the Commission agreed that we would not likely know whether this bill would pass by April 28, and we should not delay action due to that uncertainty.

It was also noted that this statute is the only place in the goal that provides for consideration of the preservation of farm and forest land in UGB amendments. If at any point in the future that statute is deleted or modified, the Commission indicated it would need to revise the locational factors to return Factor (6) or something equivalent.

8. If "livability" is retained as a need, should it be remove it as a location factor?

The Commission asked whether the decision to retain "livability" as a need factor would mean that it is no longer appropriate to add it as a locational factor (the term is included as a new Location Factor 2, see Page 2, Line 12 of Attachment A). The department notes that Location Factor 2 also includes the term "efficient urban form", which is not currently a location factor.

By retaining the word "livability" in both the sections, the Commission may be implying – and a Court could well conclude - that "livability" is something different in each section, and that is not necessarily what the UGB workgroup intended. The department indicated that there might conceivably be some aspects of "livability" that are purely locational, and therefore this term could logically remain under the Boundary Location section of the goal. On the other hand, the goal does not currently require local governments to address "livability" as a locational factor. As such, this would arguably be a *modification* of the goal, *not* a *clarification.* If the rationale for retaining "livability" in the land needs section is to *not* change the Goal, then the Commission might also consider *not* adding the term to the locational factors.

If the commission decides to *not* add "livability" as a new location factor, the department would recommend that the commission also consider whether the remaining piece of that factor, regarding "efficient urban form," should stand alone as a new Location Factor 2, or should be combined with the proposed modified Location Factor 1, which also addresses efficiency.

9. Urbanizable land available "over time"

The discussion brought out concerns regarding the phrase "over time" and whether this might be misinterpreted to mean there would be some sort of sequence for making UGB land available. This discussion also raised the fact that the proposed goal should do more