



KITTELSON & ASSOCIATES, INC.

TRANSPORTATION ENGINEERING / PLANNING

610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

TECHNICAL MEMORANDUM

OR 66 Green Springs Highway IAMP

Technical Memorandum #3: Existing Conditions Analysis

Date: May 31, 2012 Project #: 11881
To: Project Team
From: Hermanus Steyn, PE & Matt Kittelson, Kittelson & Associates
Shayna Rehberg, Darci Rudzinski, Angelo Planning Group

INTRODUCTION

This memorandum documents the existing conditions analysis conducted for the OR 66 Green Springs Highway Interchange Area Management Plan (IAMP). The following sections detail the interchange study area, existing land use, and existing roadway details relating to form, operations, safety, and access.

INTERCHANGE MANAGEMENT STUDY AREA (IMSA)

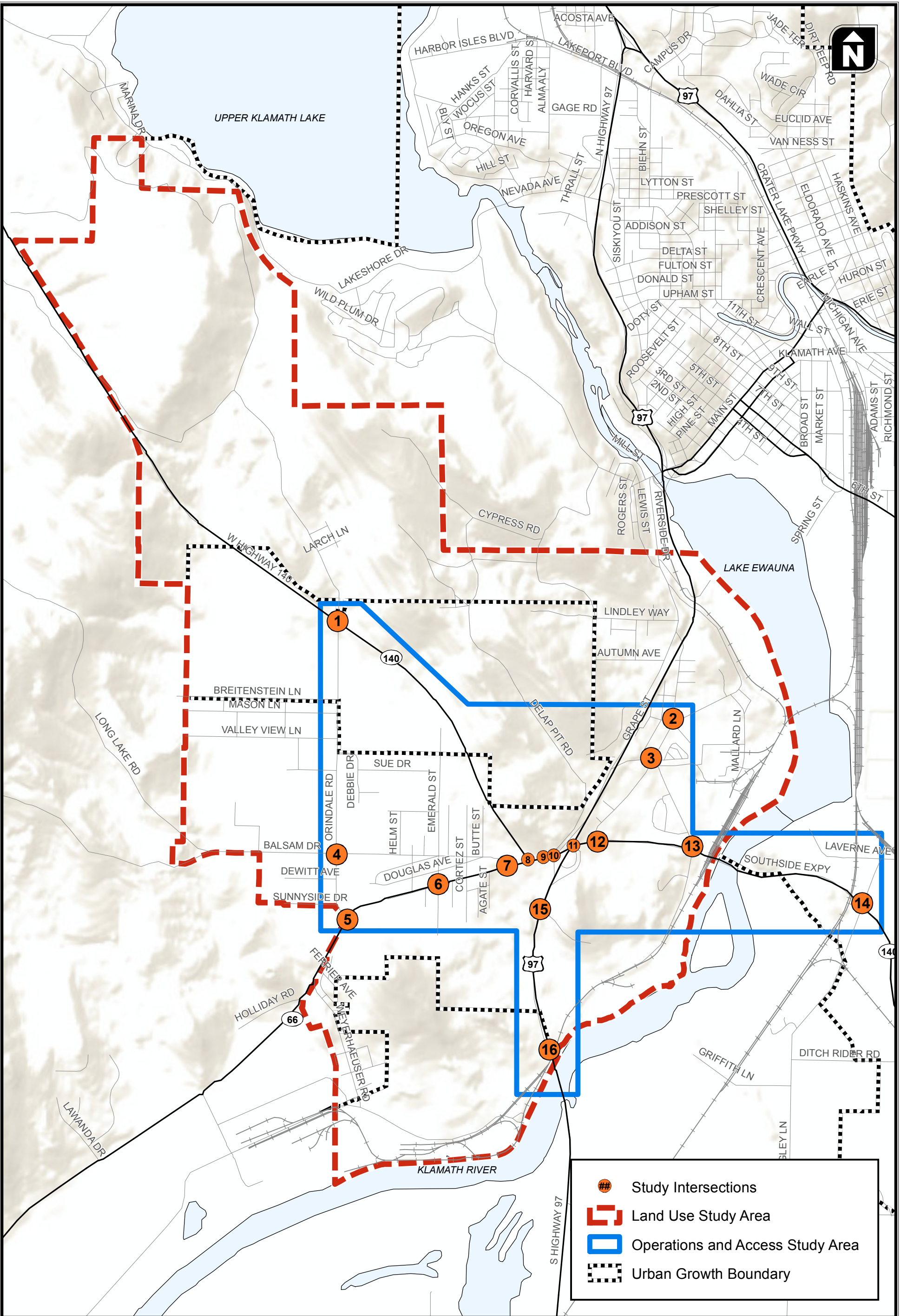
The OR 66 Green Springs Highway IAMP will evaluate the long-term development potential of the area in the vicinity of the existing interchange, identify the preferred interchange functional form alternative, and identify funding mechanisms to construct the preferred alternative. To accomplish these tasks, a study area was developed for both the land use and operational perspectives.

Figure 1 and Figure 2 show the area in the vicinity of the interchange and IMSA extents for the operational and land use study area, respectively. As shown, two study boundaries are identified: the **IAMP Operations and Access Study Area** and the **Land Use Study Area**. The following describes the criteria used to create the IMSA map.

Operations and Access Study Area

The Operations and Access Study Area includes all access points and intersections within the study area and encompass key intersections that have potential to affect traffic operations in the interchange area over the planning period. This study boundary identifies the area for which operational analysis will be completed and the area that will be considered for the Access Management Plan (although access spacing requirements from the interchange are only $\frac{1}{4}$ mile). The proposed study intersections include the locations listed below and are shown on Figure 1.

1. OR 140/Orindale Road
2. Green Springs Drive/Riverside Drive
3. Green Springs Drive/Memorial Drive
4. Orindale Road/Balsam Drive
5. OR 66/Orindale Road
6. OR 66/Emerald Road
7. OR 66/Balsam Street
8. OR 66/OR 140
9. OR 140/Delap Road
10. OR 140/US 97 Southbound Ramps
11. OR 140/US 97 Northbound Ramps
12. OR 140/Green Springs Drive
13. OR 140/Memorial Drive
14. OR 140/Midland Road/Tingley Lane
15. US 97/Reames Country Club
16. US 97/Columbia Plywood



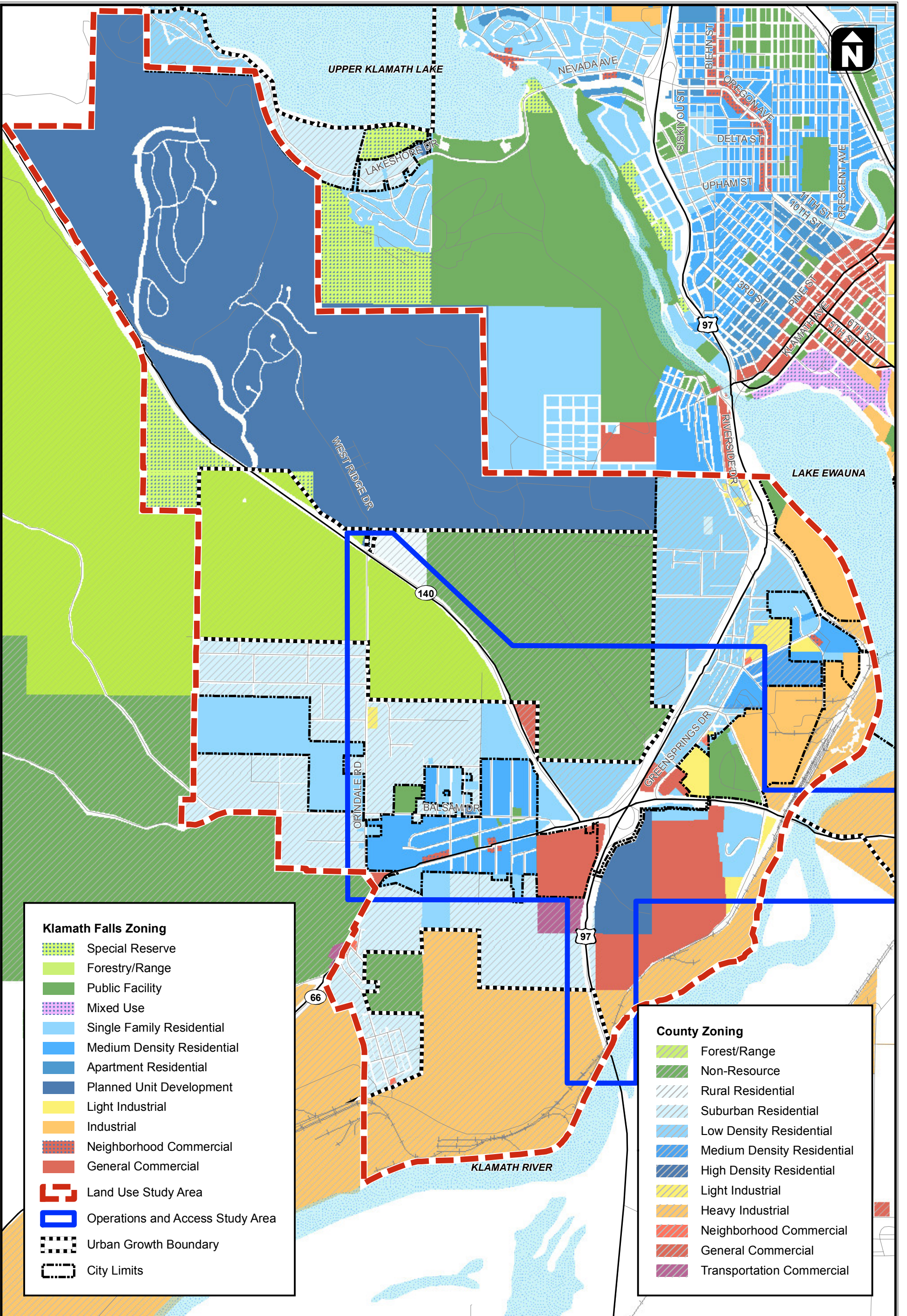
- Study Intersections
- Land Use Study Area
- Operations and Access Study Area
- Urban Growth Boundary



Site Vicinity / IAMP Study Areas

Figure 1

H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig01_Site Vicinity - IAMP Study Areas.mxd



H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig02_Land Use Zoning Destinations - IAMP Study Areas.mxdBasemap



Land Use Zoning Designation / IAMP Study Area

Figure 2

EXISTING LAND USE

Pursuant to the requirements stated in the Oregon Administrative Rule 734-051-0155 for the preparation of an IAMP, a land use inventory has been prepared for the OR 66 Green Springs Highway IAMP study area. This section provides a description of the existing land-use patterns and zoning regulations that currently exist within the IMSA.

The Land Use Study Area was delineated to include land in the immediate vicinity of the interchange as well those properties that have the potential to develop or re-develop over the planning period. The study area includes properties that are expected to use the Green Springs Interchange as a primary connection to US 97 as well as those that properties that may be involved or affected by recommended improvements to local traffic circulation in the interchange area.

The land use study area is roughly 5,660 acres. Being on the southwest edge of the City of Klamath Falls, the area can generally be described as either undeveloped or developed at low densities. Existing development is predominantly residential with some instances of supporting commercial services, industrial uses, and special uses such as a country club/golf course and cemetery.

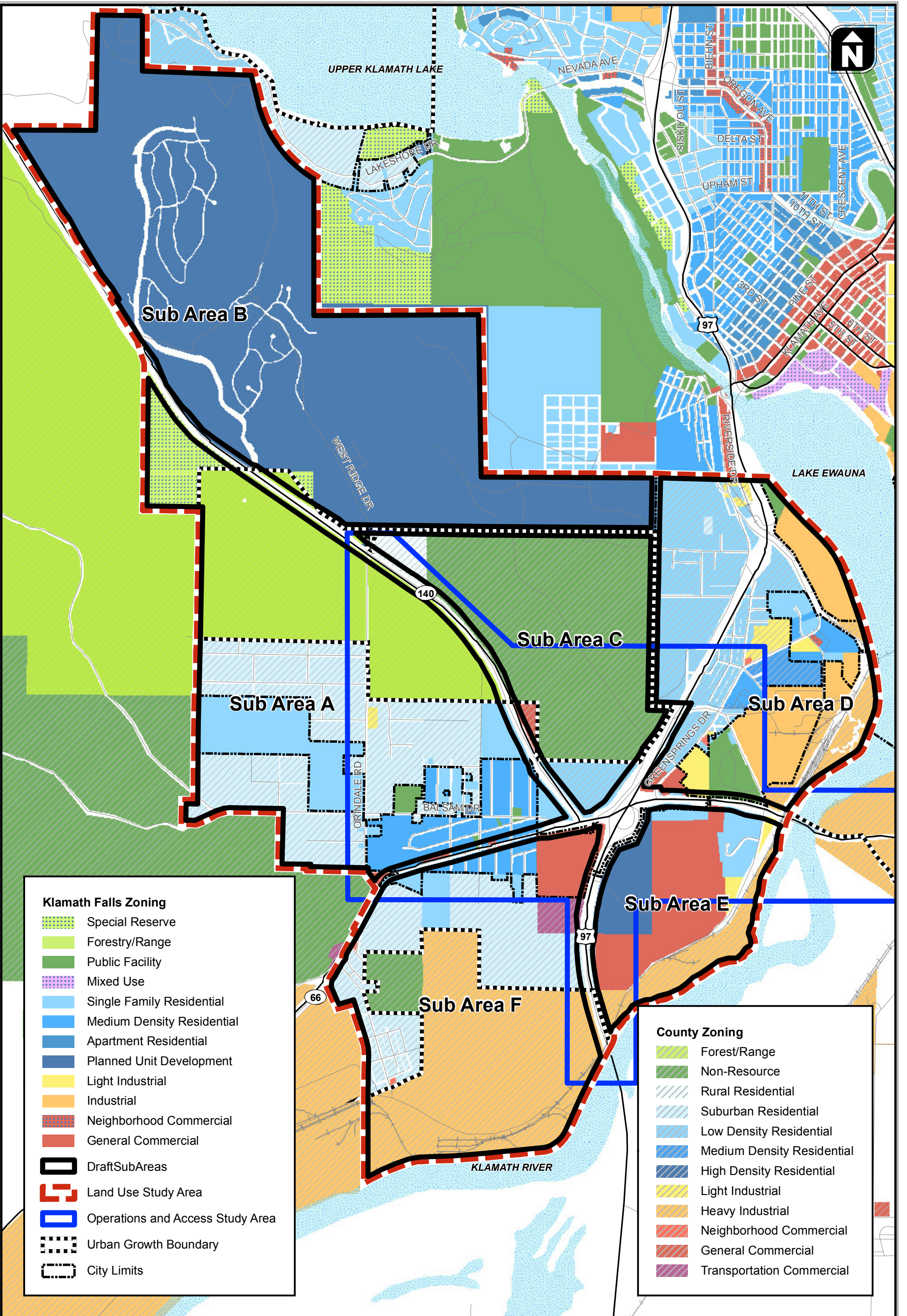
The Land Use Study Area includes land both inside and outside of the Klamath Falls urban growth boundary (UGB). The land inside the UGB includes areas both inside and outside the city limits. Land outside the UGB is under Klamath County jurisdiction. An intergovernmental agreement establishes jurisdiction and procedures in the area outside the city limits but inside the UGB. According to the Klamath County Comprehensive Plan¹, this land is subject to the Klamath County Land Development Code and Urban Growth Boundary Management Agreement with the City.

Sub-Areas

The Land Use Study Area has been divided into sub-areas for the purpose of organizing and discussing information about land uses. It is important to note that the use of sub-areas is simply an organization tool for purposes of describing land uses in the vicinity of the interchange and does not necessarily define areas for future transportation and land use management strategies, which have yet to be developed through the IAMP process. The sub-areas have been determined based on man-made and natural landscape features: major roadways in the interchange area, the UGB, hillsides and slopes, and areas of similar zoning. A map of the sub-areas is shown in Figure 3.

¹ Klamath County Comprehensive Plan, Goal 2, Land Use Planning, Policy 6, and Goal 14, Urbanization, General Discussion

The sub-areas roughly correspond to – and in some cases are aggregated from – the Transportation Analysis Zone (TAZ) areas that have already been established by ODOT and will be used for operational analysis in this project.



Klamath Falls Zoning

- Special Reserve
- Forestry/Range
- Public Facility
- Mixed Use
- Single Family Residential
- Medium Density Residential
- Apartment Residential
- Planned Unit Development
- Light Industrial
- Industrial
- Neighborhood Commercial
- General Commercial
- DraftSubAreas
- Land Use Study Area
- Operations and Access Study Area
- Urban Growth Boundary
- City Limits

County Zoning

- Forest/Range
- Non-Resource
- Rural Residential
- Suburban Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Light Industrial
- Heavy Industrial
- Neighborhood Commercial
- General Commercial
- Transportation Commercial

H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig03_Land Use Sub Areas.mxdBasemap



Land Use Sub Areas

Figure 3

Existing Land Use Summary

Table 1 provides an overview of land uses in the Land Use Study Area **by sub-area**. Information in the table includes jurisdiction, zoning, and existing uses, and highlights special circumstances that indicate the potential for significant development over the planning period.

Table 1 Existing Land Uses in the Green Spring IAMP Land Use Study Area

Sub-Area	Jurisdiction	Zoning	Existing Uses	Significant Land Uses or Opportunities
A TAZs in Sub-Area: TAZ 364, TAZ 365, TAZ 366 (partial)	City and County	<p><i>City zoning:</i></p> <p>General Commercial</p> <p>Neighborhood Commercial</p> <p>Single Family Residential</p> <p>Medium Density Residential</p> <p>Apartment Residential</p> <p>Public Facility</p> <p>Special Reserve</p> <p><i>County zoning:</i></p> <p>Forest/Range (FR)</p> <p>Suburban Residential (RS)</p> <p>Low Density Residential (RL)</p> <p>Medium Density Residential (RM)</p> <p>High Density Residential (RH)</p>	<p>Areas within the city are developed mainly as single-family homes with some supporting commercial uses along the highway.</p> <p>Areas outside the city but within the UGB area have some low density (rural) residential development and fields.</p> <p>Areas outside the UGB are largely undeveloped and some appear to be in light agricultural use (e.g., grazing).</p>	<p>ODOT owns approximately 10.75 acres in the northwest corner of the intersection of OR 140 and OR 66 in this sub-area.</p> <p>An application for a rural subdivision called Badger Flats has been submitted to the County for residential development in this sub-area on land outside the UGB.</p>
B TAZs in Sub-Area: TAZ 147, TAZ 153	City	<p><i>City zoning:</i></p> <p>Planned Unit Development (PUD)</p> <p>(Note: There is a very small section of County Forest/Range (FR) zoning that extends across from the south side of OR 140)</p>	<p>This sub-area is designated for Planned Unit Development (PUD). Residential development in the Ridgewater Subdivision was begun in the north portion of the PUD.</p>	<p>Development in the Ridgewater Subdivision has been suspended during the economic downturn of the last few years.</p>

Sub-Area	Jurisdiction	Zoning	Existing Uses	Significant Land Uses or Opportunities
C TAZs in Sub-Area: TAZ 363	County	<i>County zoning:</i> Non-Resource (NR) Rural Residential (R10) General Commercial (CG) Low Density Residential (RL)	Land in this sub-area is sloped and either undeveloped or sparsely developed. There are a few scattered homes (with good views) that are part of a rural subdivision known as Castle Ridge. The Oregon Department of Forestry has offices in this sub-area near the interchange.	There is a lot of undeveloped land in this sub-area but, as noted, it is mostly steeply sloped and outside of the UGB. A rural subdivision called Badger Flats has been working on an application applied to the County for residential development in this sub-area on land outside the UGB. A potential developer is considering to propose convenience commercial uses at the entrance to Southview PUD.
D TAZs in Sub-Area: TAZ 300, TAZ 301, TAZ 302 (partial)	City and County	<i>City zoning:</i> General Commercial (GC) Neighborhood Commercial (DC) Single Family Residential (SF) Medium Density Residential (MD) Public Facility (PF) Industrial (I) Light Industrial (LI) <i>County zoning:</i> Low Density Residential (RL) Medium Density Residential (RM) Transportation Commercial (CT) General Commercial (CG) Light Industrial (IL) Neighborhood Commercial (CN) Heavy Industrial (IH)	This sub-area is basically evenly split between being inside and outside city limits, and between residential and non-residential or undeveloped uses. A motel in the northeast quadrant of the interchange is no longer operates as a motel. It is now is other residential use. A cemetery is located east of the motel. The rest of the land use in the area is a mixture of low-density residential, industrial (the Northern Santa Fe (NSF) railroad borders the east and lake/river side of the sub-area), and vacant land or buildings.	As noted, the motel directly adjacent to the interchange is vacant. There is also a weigh station between the motel and cemetery.

Sub-Area	Jurisdiction	Zoning	Existing Uses	Significant Land Uses or Opportunities
E TAZs in Sub-Area: TAZ 361	City and County	<i>City zoning:</i> General Commercial (GC) Light Industrial (LI) Single Family Residential (SF) Planned Unit Development (PUD) <i>County zoning:</i> Heavy Industrial (IH)	The Reames Country Club and golf course are the predominant land use in this sub-area. There are a few homes in the sub-area and industrial uses adjacent to the railroad and Klamath River, including a quarry on the west side of Memorial Drive.	As discussed later, the land where the country club and golf course is located is zoned a combination of commercial, PUD, and single family residential. This indicates that there is additional development possible for that site.
F TAZs in Sub-Area: TAZ 368 (partial)	City and County	<i>City zoning:</i> General Commercial (GC) Neighborhood Commercial (NC) Single Family Residential (SF) Medium Density Residential (MD) <i>County zoning:</i> Transportation Commercial (CT) Suburban Residential (RS) Heavy Industrial (IH) Non-Resource (NR)	There are residential and limited commercial uses inside the city limits along OR 66 west of the interchange and the intersection with OR 140 that are essentially an extension of the Stewart-Lennox community north of OR 66. There is a large undeveloped commercial site in the southwest quadrant of the interchange. There is also vacant industrial land outside UGB in the southern half of this sub-area.	Development applications for commercial and employment uses have been submitted for the site (Crossroads) site owned by Terry McDonald. There have been industrial uses proposed for the County industrial land in the southern part of this sub-area.

Zoning and Development Standards

Any development in the vicinity of the interchange will have some impact on the facility, so it is important to review the existing zoning and permitted uses for parcels surrounding the interchange and connecting roads. Permitted land uses and the applicable standards associated with the zone designations are an indicator of the potential for growth in the area. Recommendations for restricting uses or modifying development standards (e.g. restricting uses with high traffic generation rates or limiting building size) could play a key role in the outcome of the IAMP process. Zoning for areas within the Land Use Study Area were shown in Figure 2. This map includes both City and County zoning, as the Land Use Study Area includes land that is inside the city limits and

UGB, outside the city limits but inside the UGB, and outside the city limits and UGB. For viewing purposes, the zoning in Figure 2 has been generalized.

Klamath County Zoning

Klamath County zoning is found primarily in Sub-Areas A, C, D, and F in the Land Use Study Area.

- Sub-Area A – County zoning is predominantly rural and low density residential on land outside the city limits and inside the UGB, and then farm/forestry on land outside both the city limits and UGB.
- Sub-Area C – This sub-area is made up of land mostly outside the UGB and the zoning on this land is farm/forestry.
- Sub-Area D – Land outside the city limits but inside the UGB is found along the US 97 corridor in this sub-area. County zoning here is largely low density residential with a small amount of industrial.
- Sub-Area F – The southern half of this sub-area is land outside the UGB, zoned mostly heavy industrial.

County zoning regulations are established in the Klamath County Land Development Code, Ordinance Series 45. Table 2 shows the County zones found within the IAMP Land Use Study Area, along with the purpose, the types of uses permitted outright and conditionally, and the density of development allowed in each zone.

Table 2 Klamath County Zoning Regulations in the Green Spring IAMP Land Use Study Area

Zone	Purpose	Uses Permitted Outright	Uses Permitted Conditionally	Allowed Densities
Rural Residential (R10)	The zone is intended for large lot residential uses and small-scale hobby farming. The zone also serves as a buffer between urban uses and natural resource areas.	Uses permitted outright include single-family homes, care facilities, emergency and essential services, community parks, and accessory buildings and uses.	Uses permitted conditionally include specialty animal raising, bed and breakfasts, churches, schools, cemeteries, kennels, and high impact services and utilities.	Minimum lot size – 10 acres One dwelling per lot/parcel
Suburban Residential (RS)	This zone helps implement the Comprehensive Plan calling for use of 1 to 4 dwellings units per acre, with lots large enough to maintain domesticated animals.	Similar to the R10 zone, uses permitted outright include single-family homes, care facilities, essential services, community parks, and accessory buildings and uses.	Similar to the R10 zone, uses permitted conditionally include churches, schools, cemeteries, kennels, high impact services and utilities, as well as manufactured home parks, additional homes for lots that are at least 20,000 square feet, and emergency services.	Minimum Lot Size – 10,000 square feet One dwelling per lot/parcel, or one dwelling per 10,000 square feet

Zone	Purpose	Uses Permitted Outright	Uses Permitted Conditionally	Allowed Densities
Low Density Residential (RL)	This zone is intended to implement the Comprehensive Plan designation calling for an optimum residential density between 1 and 6 dwellings per acre.	Uses permitted outright include single-family homes, care facilities, essential services, community parks, and accessory buildings and uses.	Uses permitted conditionally include churches, schools, cemetery, high impact services and utilities, and emergency services.	Minimum lot size – 7,000 square feet One dwelling per lot
Medium Density Residential (RM)	The zone is intended to establish and maintain areas for single-family and duplex residences and implement the Comprehensive Plan calling for an optimum residential density up to 8 dwelling units per acre.	Uses permitted outright include single-family homes, duplexes, mobile home parks, care facilities, essential services, community parks, and accessory buildings and uses.	Uses permitted conditionally include multi-family dwellings, churches, schools, cemeteries, high impact services and utilities, and emergency services.	Minimum lot size – 5,000 square feet One single-family dwelling unit per lot, or one duplex or multi-family dwelling per 8,000 square feet
High Density Residential (RH)	The purpose of this zone is to provide and maintain higher densities of dwelling units where urban levels of public services can accommodate such development. The zone is appropriate in areas near schools, recreation, employment, and transportation services.	Uses permitted outright include multi-family dwellings, care facilities, community parks, essential services, and accessory buildings and uses	Uses permitted conditionally include single-family dwellings, duplexes, churches, schools, cemeteries, emergency services, and high impact services and utilities.	Minimum lot size – 10,000 square feet, 10-24 units per acre One single-family dwelling per lot, or one multi-family dwelling unit per 2,000 square feet
Neighborhood Commercial (CN)	The purpose of this zone is to establish and maintain places for limited retail sales and services that are accessible and convenient to nearby residents, without creating impacts that are incompatible with nearby residential uses.	Uses permitted outright include offices, retail sales, personal services, medical services, repair services, community parks, essential services, parking, and accessory buildings and uses.	Uses permitted conditionally include food and beverage services, auto service stations, churches, schools, emergency services, and high impact services and utilities.	Minimum lot size – 10,000 square feet Maximum building gross floor area per use – 3,000 square feet (The gross floor area for one structure or group of structures treated shall not exceed 15,000 square feet.)

Zone	Purpose	Uses Permitted Outright	Uses Permitted Conditionally	Allowed Densities
General Commercial (CG)	The purpose of this zone is to establish and maintain places for a full range of retail goods and services available to a large area.	Uses permitted outright include offices, retail and general merchandise sales, personal services, repair services, medical services, food and beverage sales and services, parking, auto repair and services stations, entertainment facilities, farm supplies, farm and heavy equipment sales and rentals and services, building and garden sales, warehouse storage and distribution (light), custom manufacturing, hotel/motel (in UGB), essential services, emergency services, and accessory buildings and uses.	Uses permitted conditionally include Churches, schools, indoor sports and recreation, truck stop, heavy equipment repairs, manufactures home park, RV park, and high impact services and utilities.	Minimum lot size – 5,000 square feet Building size maximum – 8,000 square feet in an urban unincorporated community. Building size maximum – 4,000 square feet outside of an urban unincorporated community.
Transportation Commercial (CT)	The purpose of this zone is to establish and maintain places for sales and services primarily related to transportation and utility industries. The zone is appropriate for commercial uses associated with highway, rail, or air transportation.	Uses permitted outright include the same uses allowed in general commercial with the exception of allowing truck stops outright and not allowing farm supplies and equipment, building and garden sales, and entertainment facilities outright.	Uses permitted conditionally include indoors sports and recreation, farm equipment sales and rentals and service, warehouse storage and distribution (heavy), and high impact services and utilities.	Minimum lot size – 5,000 square feet Building size maximum – 8,000 square feet in an urban unincorporated community. Building size maximum – 4,000 square feet outside of an urban unincorporated community.

Zone	Purpose	Uses Permitted Outright	Uses Permitted Conditionally	Allowed Densities
Light Industrial (LI)	The purpose of this zone is to establish and maintain places where manufacturing, storage and wholesale distribution can be undertaken in close proximity to one another without encroaching upon the character of the adjacent land uses.	Uses permitted outright include custom and general manufacturing, warehouse storage and distribution (light and heavy), building and garden sales, parking, auto sales and rentals and service and repairs, heavy equipment sales and rentals and service and repairs, farm supplies and services, agricultural processing and packing, mineral processing, essential services, emergency services, and accessory buildings and uses.	Uses permitted conditionally include stockyards, auto wrecking and scrap operations, food and beverage services, and high impact services and utilities.	No further partition or subdivision of lots Lot size and shape pursuant to Article 61 – Minimum width 50 feet Minimum depth 100 feet Standards may be modified where property is zoned/ deeded for business or industrial use. Bu shall be adequate to provide for the off-street parking and service facilities required for the type of proposed use and development.
Heavy Industrial (IH)	The purpose of this zone is to establish and maintain places where large areas of land are needed for the fabrication, processing, and movement of raw materials and where the potential impacts of noise, odor, vibration, glare, and/or heat are least likely to affect adjacent land uses.	Uses permitted outright include warehouse storage and distribution (light and heavy), custom and general manufacturing, agricultural packing and processing and waste processing, stockyards, auto wrecking and scarp operations, and essential services.	Uses permitted conditionally include mining and mineral processing, explosive and hazardous materials, food and beverage service, and high impact services and utilities.	Same regulations as in Light Industrial (IL)
Forestry/Range (FR)	The purpose of this zone is to promote management and conservation of lands of mixed farm and forest use. This productive potential of this land is considered to be greater than that of Non-Resource (NR) zoned lands, but less than that of Farm (EFU) or Forestry (F) zoned lands. This zone has no forest productivity rating or is predominantly rated as Class VII forest lands.	Uses permitted outright and conditionally are not explicitly listed in the zoning code. Permitted uses are assumed to be farm and forestry uses.		Minimum lot size – 80 acres

Zone	Purpose	Uses Permitted Outright	Uses Permitted Conditionally	Allowed Densities
Non-Resource (NR)	This zone includes lands that have been found to have a low Forest Site Class value, are predominantly SCS Soil Capability Class VII and VIII, are not identified as important fish and wildlife habitat, are not necessary for watershed protection or recreational use, are not irrigated or irrigable, or are not necessary to permit farm or forest practices to be undertaken on adjacent or nearby lands.	Uses permitted outright include single-family homes, one additional dwelling for family members if the lot or parcel size is equal to or greater than 20 acres, animal raising (small and large), and all uses permitted in Exclusive Farm Use, Forestry, and Forestry/Range zones (such as farm and forest uses, resource industry operations, transportation facilities, wetland mitigation, wineries, destination resorts, and schools and churches subject to other provisions.)	Uses permitted conditionally include specialty animal raising, kennels, cemeteries, and all uses permitted conditionally in the Exclusive Farm Use, Forestry, and Forestry/range zones (such as farm and forest product and waste processing, stockyards, kennels, other natural resource uses, waste storage/disposal, private parks and campgrounds, golf courses, private airports, utilities, transportation improvements.)	Minimum lot size – 20 acres

Special standards and approval criteria are specified for dwellings, conditional uses, and land divisions in permitted in Exclusive Farm Use, Forestry, Forestry/Range, and Non-Resource Zones, Articles 54-56 in the County Land Development Code.

City of Klamath Falls Zoning

City of Klamath Falls zoning is focused in the parts of Sub-Areas A, D, E, and F nearest the interchange, with the exception of Sub-Area B, where there is a large area of city zoning about one to two miles northwest of the interchange.

- Sub-Area A – City zoning in this sub-area largely covers the Stewart-Lennox neighborhood and is mostly low and medium density residential with very small sections of public facility, general commercial, and neighborhood commercial zoning.
- Sub-Area B – This sub-area is zoned Special Reserve (SR) and Planned Unit Development (PUD), including the Ridgewater Subdivision. Even though it is more distant from the interchange than other sub-areas, this area takes access off of OR 140 and, as it develops, is expected to heavily use the Green Springs interchange in order to reach points north and south on US 97.
- Sub-Area D – This sub-area is set away from US 97 and closer to Lake Ewauna. While there is some City residential zoning in this area, City zoning is predominantly industrial and public facility (cemetery) here.
- Sub-Area E – Most of this sub-area is within the city limits and is zoned a mix of PUD, commercial, and residential.
- Sub-Area F – The part of this sub-area within the city limits is an extension of the Stewart-Lennox community from across OR 66 to the north and, like that neighborhood, is zoned mainly low and medium density residential. Otherwise, a large piece of land exactly in the southwest quadrant of the interchange is zoned commercial.

City zoning regulations are established in the City of Klamath Falls Community Development Ordinance (CDO). The CDO consists of Chapters 10 through 14 of the City's Code. The CDO regulates all land development within the city limits.

Table 3 provides a list of the City zones found in the IAMP Land Use Study Area and their permitted uses and development densities. Purpose statements are not established for standard base zones in the city as they are in Klamath County, with the exception of PUD zoning.²

² The purpose of the Planned Unit Development zone is: “to provide for the classification and development of parcels of land as coordinated, comprehensive projects so as to take advantage of the superior environment which can result from large scale community planning. The Planned Unit Development authorization serves to encourage developing as one project tracts of land that are sufficiently large to allow a site design for a group of structures. Furthermore, the Planned Unit Development provides the flexibility necessary to facilitate the desired mixing of residential, commercial and industrial uses in accordance with appropriate development and use standards.” (CDO 12.360) The City has master plans of PUDs showing all proposed uses.

Table 3 Klamath Falls Zoning Regulations in the Green Spring IAMP Land Use Study Area

Zone	Uses Permitted Outright	Uses Permitted Conditionally	Development Standards
Single Family Residential (SF)	<p>Residential uses permitted outright include single-family homes, home occupations, residential homes, and accessory uses.</p> <p>Public uses permitted outright include parks and recreation facilities.</p>	<p>Service uses permitted conditionally include bed & breakfasts, care and treatment facilities, and private schools.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 35%</p> <p>Minimum lot size – 7,000 square feet</p>
Medium Density Residential (MD)	<p>Residential uses permitted outright include single-family homes, home occupations, residential homes, and accessory uses.</p> <p>Service uses permitted outright include residential facilities.</p> <p>Public uses permitted outright include parks and recreation facilities.</p>	<p>Residential uses permitted conditionally include tri plexes, four plexes, and manufactured home parks.</p> <p>Service uses permitted conditionally include bed & breakfasts, care and treatment facilities, and private schools.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 40%</p> <p>Minimum lot size – 5,000 square feet</p>
Apartment Residential (A)	<p>Residential uses permitted outright include single-family homes, duplexes, tri plexes, four plexes, apartments, manufactured homes, home occupations, and accessory uses.</p> <p>Service uses permitted outright include residential facilities.</p> <p>Public uses permitted outright include parks and recreation facilities.</p>	<p>Residential uses permitted conditionally include manufactured home parks.</p> <p>Service uses permitted conditionally include bed & breakfasts, business and professional offices, care and treatment facilities, private schools, telecommunication facilities.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 60%</p> <p>Minimum lot size – 5,000 square feet (Multi-family homes with more than four units must provide an additional 1,000 square feet per unit over four units.)</p>
General Commercial (GC)	<p>Residential uses permitted outright include duplexes, tri plexes, four plexes, apartments, and accessory uses.</p> <p>Trade uses permitted outright include retail, vehicle sales and service and rental, and wholesale.</p> <p>Service uses permitted outright include athletic clubs, auto repair/maintenance and service stations, bed & breakfasts, offices, personal services, residential facilities, restaurants, and vet clinics.</p> <p>Public uses permitted outright include parks and recreation facilities.</p>	<p>Residential uses permitted conditionally include manufactured home parks.</p> <p>Service uses permitted conditionally include care and treatment facilities, hotels/motels, private schools, RV parks, and telecommunications facilities.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 100%</p> <p>Minimum lot size – 5,000 square feet</p>

Zone	Uses Permitted Outright	Uses Permitted Conditionally	Development Standards
Neighborhood Commercial (NC)	<p>Residential uses permitted outright include single family homes, duplexes, tri plexes, four plexes, apartments, manufactured homes, home occupations, residential homes, and accessory uses.</p> <p>Trade uses permitted outright include retail (indoor), resale, and wholesale.</p> <p>Service uses permitted outright include adult businesses, athletic clubs, auto repair/maintenance and service stations, bed & breakfasts, offices, day care, hotels/motels, personal services, printing services, residential facilities, restaurants, and vet clinics.</p> <p>Public uses permitted outright include parks and recreation facilities.</p>	<p>Residential uses permitted conditionally include manufactured home parks.</p> <p>Service uses permitted conditionally include child care and treatment facilities, private schools, telecommunications facilities.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 75%</p> <p>Minimum lot size – 5,000 square feet</p> <p>(Dwellings shall conform to setbacks established in the Apartment Residential zone.)</p>
Light Industrial (LI)	<p>Trade uses permitted outright include vehicle sales and service and rental, and wholesale.</p> <p>Service uses permitted outright include athletic clubs, auto repair/maintenance and service stations, bed & breakfasts, offices, personal services, residential facilities, restaurants, and vet clinics.</p> <p>Industrial uses permitted outright include repair/maintenance, storage/warehousing, manufacturing/assembly, and light industrial.</p>	<p>Services uses include hotels/motels and telecommunications facilities.</p> <p>Public uses permitted conditionally include churches, government offices, hospitals, schools, and public utilities.</p>	<p>Maximum lot coverage – 100%</p> <p>Minimum lot size – 5,000 square feet</p>
Industrial (I)	<p>Trade uses permitted outright include vehicle sales and service and rental, and wholesale.</p> <p>Service uses permitted outright include athletic clubs, auto repair/maintenance and service stations, bed & breakfasts, offices, personal services, residential facilities, restaurants, and vet clinics.</p> <p>Industrial uses permitted outright include repair/maintenance, storage/warehousing, manufacturing/assembly, and light industrial.</p> <p>Public uses permitted outright include public utilities.</p>	<p>Service uses permitted conditionally include hotels/motels.</p> <p>Public uses permitted conditionally include churches.</p>	<p>Maximum lot coverage – 100%</p> <p>Minimum lot size – 5,000 square feet</p>
Public Facility (PF)	<p>Public uses permitted outright include churches, government offices, hospitals, schools, and public utilities, and parks and recreation facilities.</p>	<p>Services uses permitted conditionally include RV parks and telecommunications facilities.</p>	<p>Maximum lot coverage – 100%</p> <p>Minimum lot size – 5,000 square feet</p>

Zone	Uses Permitted Outright	Uses Permitted Conditionally	Development Standards
Planned Unit Development (PUD)*	<p>Uses permitted outright include:</p> <p>(1) Those uses designated on the development plan for the particular Planned Unit Development zone as approved by the Council.</p> <p>(2) The continuation of land uses including agricultural and forestry that existed in the district at the time of adoption of the development plan, except as otherwise provided.</p>	<p>Uses permitted conditionally include public facilities and telecommunication facilities.</p>	<p>As set out in a Master Plan that is approved by City Council</p>
Special Reserve (SR)	<p>Accessory uses permitted outright include garages, antenna and dishes, sheds, and pools.</p>	<p>Residential uses permitted conditionally include single family homes, duplexes, tri plexes, four plexes, apartments, manufactured homes and parks, home occupations, residential homes, and accessory uses.</p> <p>Trade uses permitted conditionally include retail and wholesale.</p> <p>Service uses permitted conditionally include adult businesses, athletic clubs, auto repair/maintenance and service stations, bed & breakfasts, offices, child care and treatment facilities, day care, hotels/motels, personal services, residential facilities, restaurants, vet clinics, and telecommunications facilities.</p> <p>Public uses permitted conditionally include churches, hospitals, parks and recreation facilities, schools, and public utilities.</p> <p>Industrial uses permitted conditionally include repair and maintenance, manufacturing and assembly, storage and warehousing, and light industrial</p>	<p>Maximum lot coverage – 20%</p> <p>Minimum lot size – 20,000 square feet</p> <p>Proposed uses are subject to Sections 12.415 to 12.445, Special Reserve Development Standards</p>

EXISTING TRANSPORTATION INVENTORY

This section details the conditions of the roadways within the operational study area. This analysis includes a description of major roadways in the vicinity of the interchange, an operational and safety analysis of the study intersections, and a documentation of access points along the highways served by the interchange.

Roadway Facilities

The roadways within the study area include state, county, and city roadways. A description of each of the roadway facilities is summarized below and in Table 4.

US 97 is designated as a Statewide Highway (Expressway) and serves as a major north-south connection from California to Washington through Central Oregon east of the Cascade mountains. The route serves a variety of regional traffic and has historically been a major freight route.

OR 140 is designated as a Statewide Highway west of the interchange and a Statewide Highway (Expressway) east of the interchange. This highway originates in the west in Medford, Oregon and serves as a mountain pass between Mt. McLoughlin and Brown Mountain. Within Klamath Falls, the highway serves as the Southside Expressway, a southern bypass around the urban core of Klamath Falls. The highway then extends generally east and serves a variety of small communities in Southern Oregon, eventually terminating at US 95 in Nevada. OR 140 shares an alignment with OR 66 in the vicinity of the interchange.

OR 66 is designated as a District Highway. This facility serves as a connection between Ashland, Oregon in the west and Klamath Falls in the east. OR 66 terminates at an intersection with OR 140 approximately 550 feet west of the interchange. OR 66 shares an alignment with OR 140 in the vicinity of the interchange.

Delap Road intersects with the shared alignment of OR 140 and OR 66 just west of the interchange. This facility is a local road operated by Klamath County. It serves a small number of uses northwest of the interchange before terminating.

Greensprings Drive is designated as a collector and is operated by Klamath County. This facility intersects with OR 140 approximately 540 feet east of the interchange. To the north, the road serves a mixture of industrial and residential uses before terminating at Riverside Drive, serving as a local street alternative to US 97 to access downtown Klamath Falls.

Memorial Drive is an extension of a second northbound US 97 off-ramp just north of the interchange and intersects with Greensprings Drive. It terminates just north of the Southside Expressway (no access is provided to the Southside Expressway from Memorial Drive from the

north). However, Memorial Drive does intersect with the Southside Expressway (OR 140) on the south side and extends south to serve industrial uses and single-family homes.

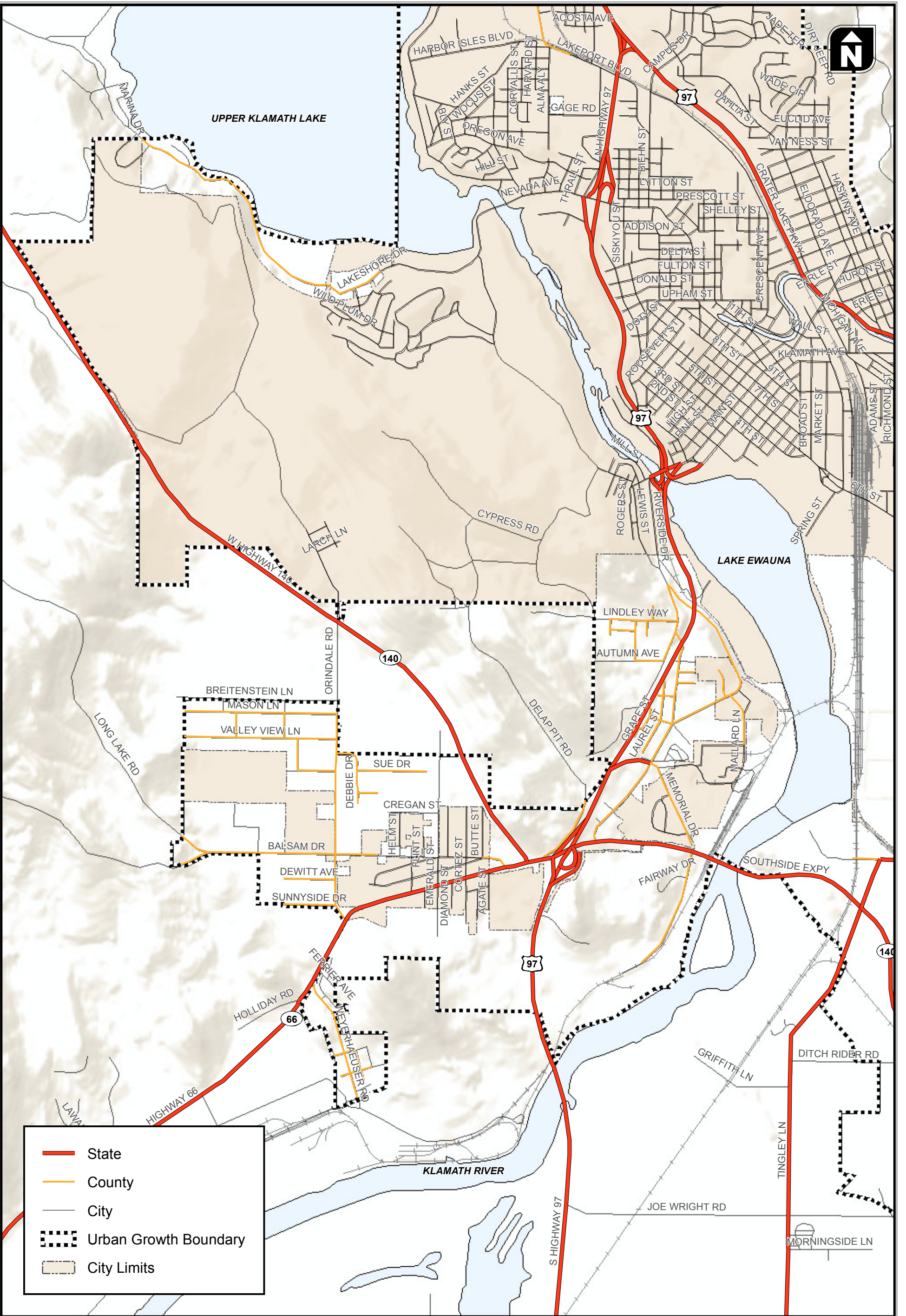
Balsam Drive is designated as a collector and has portions of the roadway operated by both the City of Klamath Falls and Klamath County within the study area. The facility serves as a major east/west connection for residents within the Orindale-Balsam area.






Orindale Road is north/south collector that serves as a connection between OR 66 and OR 140 west of the interchange. This facility provides Orindale-Balsam residents access to OR 66 and OR 140 and provides an alternative for area residents to make local connections other than using the state highway system.

Table 4 Existing Transportation Facilities and Roadway Designations

Roadway	Functional Classification	Cross-section	Surface Type	Posted Speed (mph)	Side-walks?	Bicycle Lanes?	On-Street Parking?
US 97	Statewide Highway (Expressway)	4 lanes	Paved	55	No	No	No
OR 140	Statewide Highway/ Statewide Highway (Expressway)	2-3 lanes	Paved	55	No	No	No
OR 66	District Highway	2-4 lanes	Paved	35/45/55	No	No	No
Delap Road	Local Road/ Klamath County	2 lanes	Paved	Not posted	No	No	No
Greensprings Drive	Collector/ Klamath County	2-lanes	Paved	35	No	No	No
Memorial Drive	Local Road/ Klamath County	2-lanes	Paved	Not posted	No	No	No
Balsam Drive	Collector/ Klamath County	2-lanes	Paved	35/55	No	No	No
Orindale Road	Collector/ Klamath County	2-lanes	Paved	45	No	No	No

Roadways in the vicinity of the interchange are managed and maintained by ODOT, the City of Klamath Falls, or Klamath County. Figure 4 shows jurisdictional control of roadways near the interchange. Figure 5 shows the functional classification of area roadways based on the pending update to the Klamath Falls Urban Area Transportation System Plan.



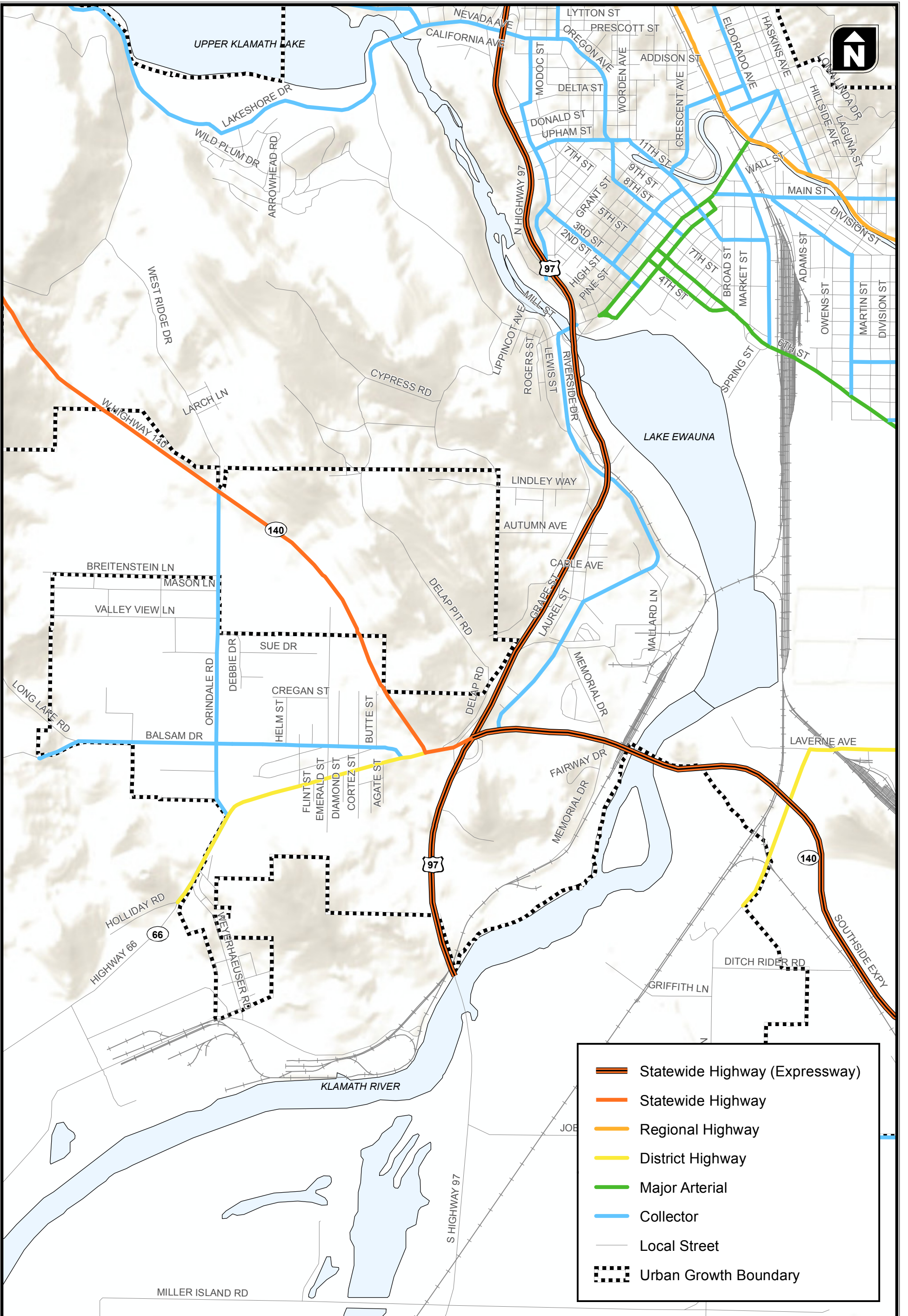
	State
	County
	City
	Urban Growth Boundary
	City Limits



Transportation Facilities by Jurisdiction

**Figure
4**

H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig04 - Transportation Facilities.mxdBaseMap



H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig05_Functional Classification Map.mxdBasemap



Functional Classification Map

Figure 5

Public Transportation Facilities

The area in the vicinity of the interchange is served by the Basin Transit Service, the transit provider for the Klamath Falls urban area. Specifically, the area is served by Route 3 which provides service between the Stewart-Lennox area and downtown Klamath Falls via OR 66 and Greensprings Drive. The route provides fixed route service from 6:00 a.m. to 6:00 p.m. Monday-Friday on 1 hour headways. Saturday service is provided from approximately 10:00 a.m. to 4:00 p.m. No service is provided on Sunday.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities in the vicinity of the interchange are limited. No defined sidewalks or bicycle lanes exist on the state highway system or collector network within the study area. However, the signalized intersection of OR 140/OR 66 does have push-button activated pedestrian signals on three of the four approach legs. In addition, OR 140 and OR 66 has shoulders but these are not designated bike lanes.

Analysis Methodology and Performance Standards

All operations analysis described in this report were performed in accordance with the procedures in the *2000 Highway Capacity Manual* (Reference 1).

Per the ODOT *Analysis Procedures Manual* (APM – Reference 2), intersection operational evaluations were conducted based on the peak 15-minute flow rate observed during the weekday p.m. peak hour. Using the peak 15-minute flow rate ensures this analysis is based on a reasonable worst-case scenario. For this reason, the analysis reflects conditions that are likely to occur for 15 minutes out of each average weekday p.m. peak hour. The transportation system will likely operate under conditions better than those described in this report during other typical time periods.

The operational analysis results were compared with mobility standards used by the local agencies to assess performance and potential areas for improvement.

Klamath County Intersection Traffic Operations Performance Standards

Klamath County has established LOS “E” for the poorest operating approach as the performance standard for unsignalized intersections. No Klamath County controlled study intersections are signalized. The performance of the study intersections under control of the County will be compared to this performance standard.

ODOT Intersection Traffic Operations Performance Standards

ODOT uses volume-to-capacity (v/c) ratio standards to assess intersections operations. Table 6 of the *Oregon Highway Plan* (OHP - Reference 3) provides the maximum volume-to-capacity ratios for all signalized and unsignalized intersections outside the Metro area. The OHP ratios are used to evaluate existing conditions.

Intersection Performance Standards

Table 5 below shows the applicable governing jurisdiction, intersection control, and performance standard for each study intersection.

Table 5 Study Intersection Performance Standard

Intersection	Jurisdiction	Control	Performance Standard	
			HDM	Control
1. Orindale Road & OR 140	ODOT	Stop-Controlled	0.70 v/c	0.90 v/c
2. Greensprings Drive & Riverside Drive	Klamath County	Stop-Controlled	-	LOS "E"
3. Greensprings Drive/Memorial Drive	Klamath County	Stop-Controlled	-	LOS "E"
4. Orindale Road & Balsam Drive	Klamath County	Stop-Controlled	-	LOS "E"
5. Orindale Road & OR 66	ODOT	Stop-Controlled	0.75 v/c	0.90 v/c
6. Emerald Street & OR 66	ODOT	Stop-Controlled	0.75 v/c	0.90 v/c
7. Balsam Drive & OR 66	ODOT	Stop-Controlled	0.75 v/c	0.90 v/c
8. OR 140 & OR 66	ODOT	Signalized	-	0.70 v/c
9. Delap Road & OR 66	ODOT	Stop-Controlled	0.70 v/c	0.90 v/c
10. US 97 Southbound Ramp Terminal & OR 140	ODOT	Stop-Controlled	0.70 v/c	0.85 v/c
11. US 97 Northbound Ramp Terminal & OR 140	ODOT	Stop-Controlled	0.70 v/c	0.85 v/c
12. Greensprings Drive & OR 140	ODOT	Stop-Controlled	0.70 v/c	0.90 v/c
13. Memorial Drive & OR 140	ODOT	Stop-Controlled	0.70 v/c	0.90 v/c
14. Tingley Lane & OR 140	ODOT	Signalized	0.70 v/c	0.70 v/c
15. US 97/Reames Country Club Access	ODOT	Stop-Controlled	0.65 v/c	0.80 v/c
16. US 97/Columbia Plywood Access	ODOT	Stop-Controlled	0.65 v/c	0.80 v/c

Traffic Volumes

The following sub-sections discuss the weekday evening (PM) peak hour traffic volume development and the seasonal adjustment factor used to adjust the 2010 traffic counts.

Weekday Evening (PM) Peak Hour Development

Because the travel demand model that will be used to generate the future conditions analysis will produce traffic volumes representative of a 1-hour weekday p.m. peak that is assumed to occur between 4:00 and 6:00 p.m., intersections were assumed to peak within this time frame. A system-

wide peak hour factor was found to occur between 4:30 and 5:30 p.m. As such, the analysis for this study considers traffic volumes for each intersection during that time period. Table 6 summarizes the total entering volume for a sample of major study intersections for each hour from 4:00 p.m. to 6:00 p.m. As shown, the intersections in the vicinity of the interchange were observed to peak during the 4:30-5:30 p.m. hour.

Table 6 Total Entering Volume For All Study Intersections

Sample of Major Study Intersections		
Time	Total Entering Volumes	% Difference from Peak
4:00-5:00	7,360	-5.93%
4:15-5:15	7,626	-2.53%
4:30-5:30	7,824	0.00%
4:45-5:45	7,704	-1.53%
5:00-6:00	7,541	-3.62%

Seasonal Adjustment Factor

30th Hour Volumes (30 HV) for Klamath Falls were calculated based on the traffic counts collected over the period from February to September in 2010 and some in winter 2011/2012 and the application of a seasonal adjustment factor. The APM identifies three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATR) located in select locations throughout the State Highway System that collect traffic data 24-hours a day/365 days a year. Each method was evaluated to determine the most appropriate method for the study area.

The *On-Site ATR Method* requires that the ATR be located within or near the project area. If the ATR is located outside the project area, there should be no major intersections between the ATR and the project area. *Information on AADT for highway segments throughout Oregon can be found in ODOT's Transportation Volume Tables.* One ATR station exists near the project study area. That station (18-018) is located on the Klamath Falls-Malin Highway 0.46 miles south of Main Street in Klamath Falls. However, this station is located on a different highway with potentially different seasonal characteristics. As such, the *On-Site ATR Method* was not used.

Other season adjustment methods, including using the *Seasonal Trend Table Method* or the *Characteristic Table Method* were evaluated for use on this project. The *Characteristic Table Method* was not used because representative ATR stations for the study area were not located. Since neither the *On-Site ATR Method* or the *Characteristic Table Method* provide suitable adjustment factors, the *Seasonal Trend Table Method* was used. Specifically, the commuter trend line and the summer trend line were averaged to develop a seasonal profile consistent with the characteristics of the study area.

Table 7 below shows the monthly Seasonal Adjustment values used for this analysis.

Table 7 Seasonal Trend Table Adjustment Values

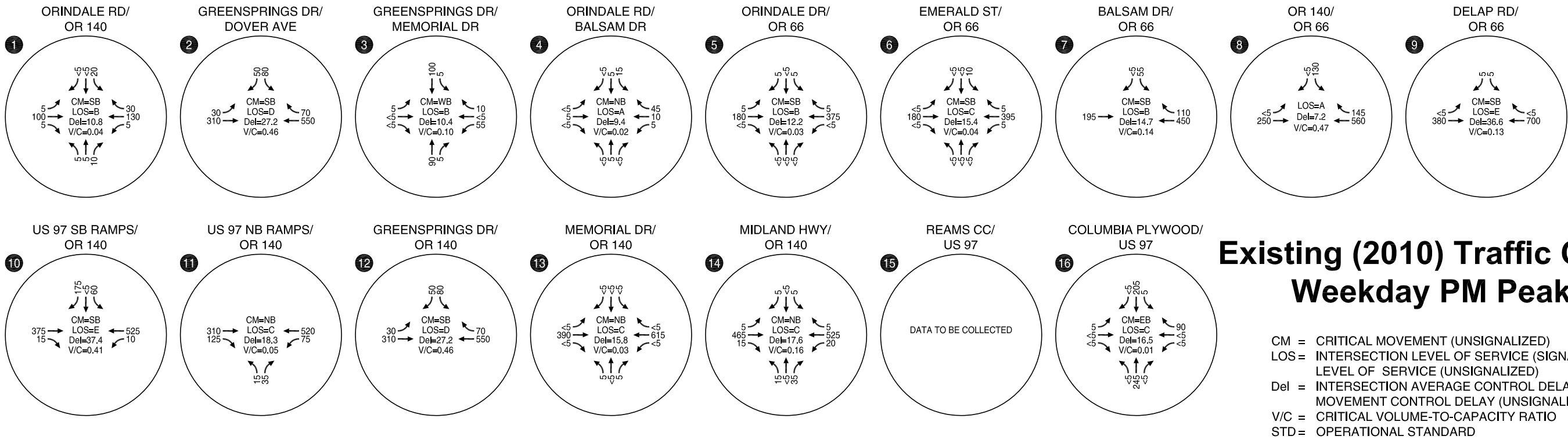
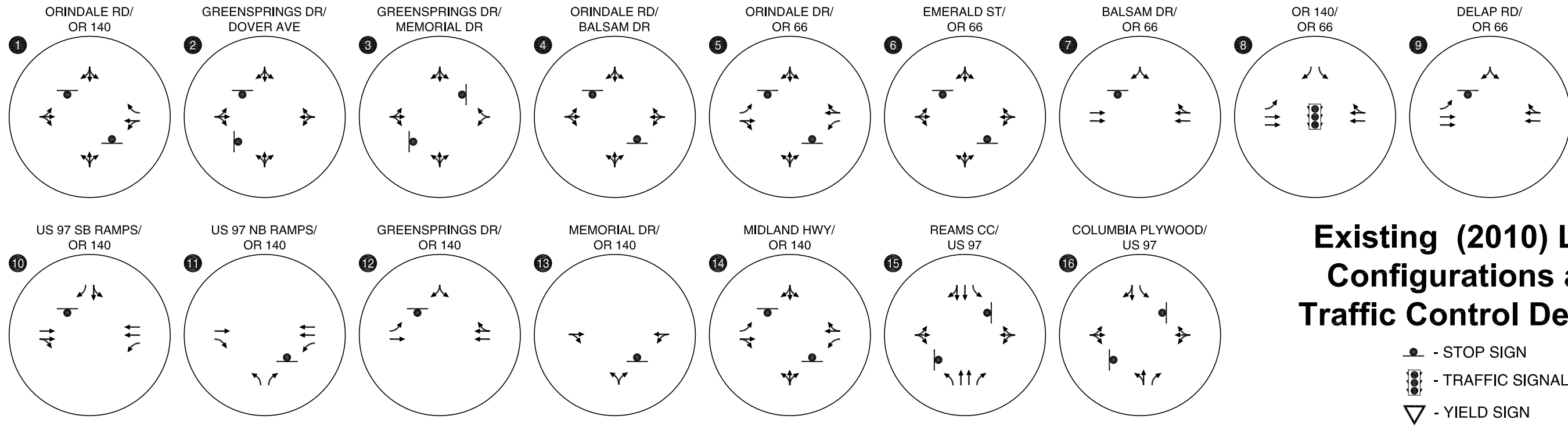
ATR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
18-018	1.28	1.22	1.17	1.14	1.10	1.04	1.00	1.00	1.06	1.10	1.21	1.23

The traffic counts for this study were collected over a number of months. As such, a singular Seasonal Adjustment value cannot be used. Rather, the values from the table above were used to adjust each traffic count based upon the month it was collected.

Traffic Operations Analysis Results

Level-of-service (LOS) and volume-to-capacity (v/c) ratios were calculated for each of the study intersections based on the parameters described previously.

Figure 6 shows the existing lane configurations, traffic control, and operational analysis results of the study intersections. As shown, all study intersections were observed to operate acceptably during the analysis period.



H:\profile\11881 - Greensprings IAMP\dwgs\figs\11881_Fig02.dwg May 01, 2012 - 10:57am - jsommerville Layout Tab: b



Existing (2010) Lane Configurations and Traffic Control Devices / **Existing (2010) Traffic Conditions Weekday PM Peak Hour**

Figure 6

Traffic Safety

This section documents the crash history of the study intersections from 2006-2010. The data used for this analysis was obtained from the ODOT Crash Analysis and Reporting Unit.

Intersection Historical Crash Inventory

Table 8 summarizes the crash data by study intersection. The table summary provides the number of crashes, type of crashes, and severity of crashes reported from 2006 through 2010.

Segment Historical Crash Inventory

Table 9 summarizes the crash data collected by study segment, which includes the state highways within the study area. The table summary provides the number of crashes, type of crashes, and severity of crashes reported from 2006 through 2010. The crash rates for these segments were compared to similar facilities in the state based on rates contained in ODOT Crash Table II, which publishes such information.

Table 8 Summary of Reported Crashes at Study Intersections

Intersection	Total	Crash Rate	Crash Type					Severity		
			Angle	Rear-end	Turning	Head On	Other	PDO ¹	Injury	Fatal
1. Orindale Road & OR 140	2	0.38	0	1	1	0	0	0	2	0
2. Green Springs Drive & Riverside Avenue	0	0.00	0	0	0	0	0	0	0	0
3. Green Springs Drive/Memorial Drive	0	0.00	0	0	0	0	0	0	0	0
4. Orindale Road & Balsam Drive	0	0.00	0	0	0	0	0	0	0	0
5. Orindale Road & OR 66	0	0.00	0	0	0	0	0	0	0	0
6. Emerald Street & OR 66	0	0.00	0	0	0	0	0	0	0	0
7. Balsam Drive & OR 66	0	0.00	0	0	0	0	0	0	0	0
8. OR 140 & OR 66	5	0.26	0	4	0	0	1	4	1	0
9. Delap Road & OR 66	0	0.00	0	0	0	0	0	0	0	0
10. US 97 SB Ramps & OR 140	5	0.25	0	2	3	0	0	2	3	0
11. US 97 NB Ramps & OR 140	1	0.05	0	0	1	0	0	1	0	0
12. Green Springs Drive & OR 140	7	0.37	1	1	5	0	0	4	3	0
13. Memorial Drive & OR 140	1	0.06	0	1	0	0	0	0	1	0
14. Midland Highway & OR 140	3	0.16	0	0	2	0	1	1	2	0
15. US 97/Reames Country Club Access	1	-	1	0	0	0	0	1	0	0
16. US 97/Columbia Plywood Access	2	0.20	1	0	0	0	1	1	1	0

Note: ¹PDO – Property Damage Only

Table 9 Summary of Reported Crashes on Roadway Segments

Roadway Section	Segment Length (Miles)	Number of Crashes	Crash Type					Severity			Crash Rate	Statewide Comparison	
			Fixed Object	Rear-End	Sideswipe	Turning	Other	PDO ¹	Injury	Fatality			
OR 66: Agate Street to OR 140	1.50	22	1	11	2	6	2	11	10	1	1.14	Rural Cities: Minor Arterials	1.41
OR 140: Orindale Road to OR 66	1.50	7	2	1	1	0	3	2	5	0	1.28	Rural Cities: Minor Arterials	1.41
OR 140: OR 66 to Memorial Drive	0.65	17	1	5	1	7	3	10	7	0	1.04	Rural Cities, Other Principal Arterials	1.28
US 97: Columbia Plywood to Greensprings Drive Off-ramp	1.70	22	13	0	1	3	5	10	12	0	1.69	Rural Cities, Other Principal Arterials	1.28

Note: ¹PDO - Property Damage Only

Shading indicates the calculated crash rate exceeds comparison to similar statewide facilities

As shown, no crashes were reported for the following study intersections:

- Greensprings Drive & Dover Avenue
- Greensprings Drive/Memorial Drive
- Orindale Road & Balsam Drive
- Orindale Road & OR 66
- Emerald Street & OR 66
- Balsam Drive & OR 66
- Delap Road & OR 66

No fatal crashes were reported at the study intersections during the analysis period. Further, crash rates were reported to be less than 0.38 crashes per million entering vehicles (MEV) for all locations. In addition, crash patterns were reviewed at each intersection. Based on these observations, no discernible trends in crash occurrences have been observed at those locations.

The segment crash analysis found that all segments were observed to have a lower crash rate than other facilities within the state with the exception of US 97. This facility was observed to have a crash rate of 1.69 crashes/MEV where similar facilities were observed to have a rate of 1.28 crashes/MEV. This rate is driven by a relatively high number of fixed object crashes along the segment. These crashes were overwhelmingly contributed to drivers driving too fast for conditions.

One fatal crash was reported along OR 66. In this case, a vehicle traveling eastbound on OR 66 near Diamond Street was stopped to turn left. Another eastbound vehicle failed to stop, causing a rear-end collision. The driver of the striking vehicle was killed. The driver of the stopped vehicle was not injured. The crash occurred during daylight hours on a clear day.

Existing Roadway Access Conditions

Figure 7 shows the existing and planned access locations within the OR 66 Green Springs IAMP study area. As shown, several roadways have access points relatively close to the existing OR 66/US 97 ramp terminals. The roadways include (measured from nearest ramp terminal intersection):

- OR 140, 725 feet
- Delap Road, 350 feet
- Greensprings Drive, 540 feet

The required access spacing based on OAR 734-051 for this location is 1,320 feet (1/4 mile). Based on this requirement, these existing access points do not meet the required minimum spacing standards.

Two access points along US 97 are also closely spaced to the existing OR 66/US 97 interchange. These include (measured from end of entrance ramp taper):

- Reames Country Club Access Road, 450 feet
- Greensprings Drive off-ramp, 975 feet

Based on OAR 734-051, the required access spacing for these locations is 2,640 feet (1/2 mile).

Further, many existing access locations along OR 140, OR 66, and US 97 in the vicinity of the interchange do not meet current access spacing standards. Many of these are existing residential driveways. In particular, the area along OR 66 west of Agate Street has many closely spaced access locations. However, this area developed some time ago and, as a result, documentation on these locations does not exist. Further investigation is needed to more clearly understand these existing spacing conditions in that area.

Specific roadway spacing standards for the study area are included in Technical Memorandum #1 and shown on Figure 7.

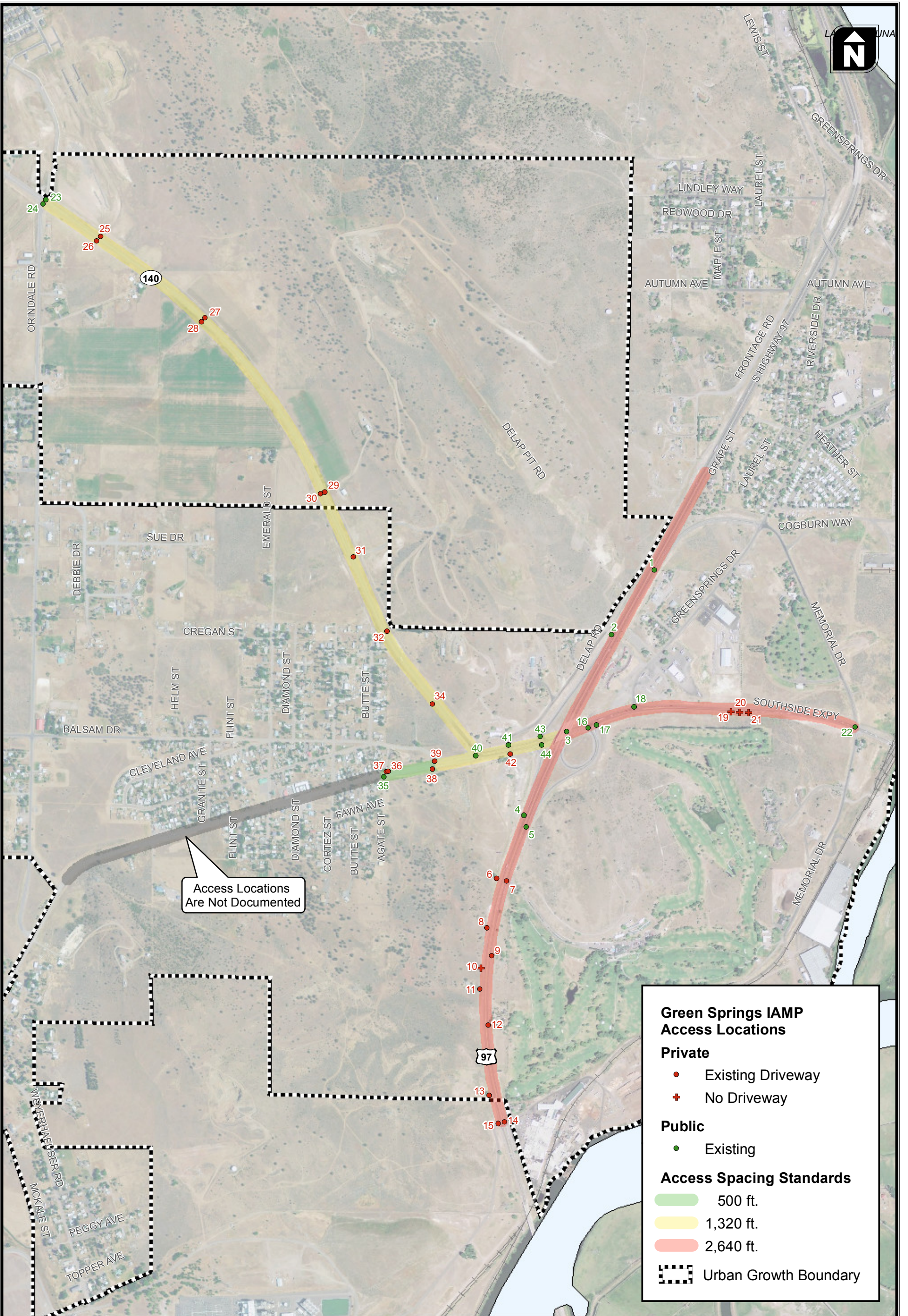
Existing and planned access locations within the study area are shown on Figure 7. Specific information about each access location is included in Table 10.

Table 10 Approach Inventory

Access Number	Mile Point	RoA Station	Permit #, Year	Highway Side	Use	Note
US 97 (The Dalles-California Highway No. 004)						
1	276.74	-		E	Public Road	Northbound off-ramp, ODOT
2	276.88	-		W	Public Road	Southbound off-ramp, ODOT
3	277.07	-		E	Public Road	Northbound on-ramp, ODOT
4	277.33	-		W	Public Road	Southbound on-ramp, ODOT
5	277.36	-		E	Public Road	Northbound off-ramp, ODOT
6	277.47	255+00	35159, '92	W	Vacant	McDonald Property, Permitted Agricultural Use
7	277.47	30+85	16938, '68	E	Reames Golf & Country Club	Frontage Road Language
8	277.59	261+75		W	Vacant	Frontage Road Language
9	278.06	39+50		E	Vacant	Frontage Road Language
10	278.10	266+25		W	Vacant	Frontage Road Language
11	278.13	267+68		W	Vacant	Frontage Road Language
12	278.21	271+75		E	Residential	Frontage Road Language
13	278.36	279+55	29875, '87	W	Vacant	Frontage Road Language, Permitted Residence/Auto Shop
14	278.42	283+10	30126, '87	E	Columbia Plywood	Frontage Road Language
15	278.42	285+00	35481, '99	W	CoGen	Frontage Road Language, Approach & Permit not at RoA station
OR 140 (South Klamath Falls Highway No. 424)						
16	0.04	-		S	Public Road	Northbound on-ramp, ODOT
17	0.08	-		S	Public Road	Northbound off-ramp, ODOT
18	0.16	-		N	Public Road	Greensprings Drive, CKFO
19	0.16	95+32		S	Serves only 400	Owned by Sarah Drier
20	0.25	100+00		S	Serves only 1100	Owned by High Desert LLC
21	0.42	109+00		S	Serves 12 & 1500	Owned by Reames Golf & Country
22	0.64	-		S	Public Road	Memorial Drive, CKFO
OR 140 (Lake of the Woods Highway No. 270)						
23	67.23	369+05	51867, *	N	Public Road	West Ridge Drive, Southview Access
24	67.23	369+00		S	Public Road	Orindale Road, K. Co.
25	67.37	377+00		N	Emergency Access only	Frontage Road Language, Emergency access for Southview
26	67.37	377+00		S	Agricultural	Frontage Road Language
27	67.66	392+00		N	Agricultural	Frontage Road Language
28	67.66	392+00		S	Agricultural	Frontage Road Language
29	68.11	416+00		N	Agricultural	Frontage Road Language
30	68.11	416+00		S	Agricultural	Frontage Road Language
31	68.26	424+00	C#3337, *	N	Residential	Frontage Road Language Castle Ridge PUD
32	68.43	433+30		N	Residential	Frontage Road Language
33	68.61	443+00		S	Vacant	ODOT owns TL 701 & 800, on the west side, at the intersection

Table continued on next page

Access Number	Mile Point	RoA Station	Permit #, Year	Highway Side	Use	Note
OR 66 (Green Springs Highway No. 021)						
35	58.67	-		S	Public Road	Agate Street, CKFO
36	58.66	13+68		N	Residential	Frontage Road Language
37	58.68	14+50		N	Residential	Frontage Road Language
38	58.77	19+25	35160, '92	S	Private Property	Frontage Road Language Permitted Use: Field Use
39	58.79			N	Public Road	Balsam Drive, CKFO
40	58.86			N	Public Road	OR 140, ODOT
41	58.94	80+58		N	Public Road	Delap Pit Road, CKFO
42	58.94			S	Material Site, ODOT	Gravel Road
43	58.97	-		S	Public Road	Leg to southbound on-ramp, ODOT
44	58.99	-		N	Public Road	Leg from southbound off-ramp, ODOT
45	59.01	-		S	Public Road	Southbound off-ramp, ODOT
46	59.01	-		N	Public Road	Southbound on-ramp, ODOT



H:\profile\11881 - Greensprings IAMP\gis\Task 3\Fig07_Current - Planned Access Locations.mxd



Current / Planned Access Locations

Figure 7

Existing Roadway Deficiencies

The existing traffic operational analysis does not highlight any major issues at the study intersections. In addition, the safety evaluation did not discover safety issues at the study intersections. There are numerous access points as well as intersections at undesirable locations, but due to the relative low traffic volumes these have not had any major issues and deficiencies.

From a roadway perspective, the interchange has an intersection angle of approximately 50 degrees, which influences the following:

- The southbound ramp terminal has an intersection angle of approximately 50 degrees and motorists turning onto OR 140 have challenges identifying a gap in oncoming traffic as they need to look over the shoulder, especially the southbound right-turners.
- OR 140 has a combination of horizontal and vertical curves through the interchange. This geometry impacts the southbound left-turn movement at the US 97 Southbound Ramp Terminal and the driver's ability to identify a gap in the westbound approaching vehicles.
- The southbound off-ramp as it approaches OR 140 does not have a landing area for cars to queue along a flatter grade. Observations have shown that some drivers (especially right-turning vehicles) tend to roll through the intersection rather than come to a complete stop.
- The loop ramp in the southeast quadrant of the interchange has a series of curves and spirals (i.e., arrangement of compound curves) that is undesirable from a driver perspective.
- The northbound ramp terminal and the Greensprings Drive intersections are closely spaced with overlapping back-to-back left-turn lanes. Future traffic growth combined with a lack of area for queuing and deceleration may become problematic.

Other geometric observations within the IMSA include:

- The Greensprings Drive/Riverside Drive intersection as an acute intersection angle and significantly different longitudinal approaching grades, which complicates intersection sight distance (especially for the northbound right-turn from Riverside Drive to Greensprings Drive).
- The Greensprings Drive/Riverside Drive/Dover Avenue/Heather Street is a five-legged unconventional intersection. This configuration is less than ideal for accommodating long-term traffic growth.
- The second US 97 Northbound Off-ramp that provides access directly to Greensprings Drive is closely spaced to the OR 66/US 97 interchange. This ramp was observed to serve minimal trips during the p.m. peak hour.

- The location of the Reames Country Club access south of the US 97/OR 140-OR66 interchange provides insufficient spacing to merge and weave from the US 97 Southbound On-Ramp to the southbound left-turn at the Reames Country Club access.
- The OR 140/Memorial Drive intersection is located immediately west of the two-lane bridge across the Klamath River on OR 140 (Southside Express Bypass). This spacing may make it challenging to add a future westbound left-turn (if warranted by future traffic growth).
- The roads with the Stewart-Lennox neighborhood are still striped with a skip yellow line along the center line to allow for passing. The character of this neighborhood has changed and a double yellow center line stripe would be more appropriate.
- The road network in the Stewart-Lennox neighborhood adjacent to OR 66 does not have a typical grid layout; therefore, resulting in numerous intersections with acute intersection angles, as well as different approach angles through the intersections.
- The multiple intersections and private driveways along OR 66 west of OR 140 have resulted in a higher concentration of conflict points.

Natural and Cultural Resources

Based on the PT meetings and follow-up with the respective agencies it appears there are no natural and cultural resources of concern within the IMSA. Special attention will be given to any proposed improvements within the vicinity of the cemetery in the northeast quadrant of the intersection.

Utilities

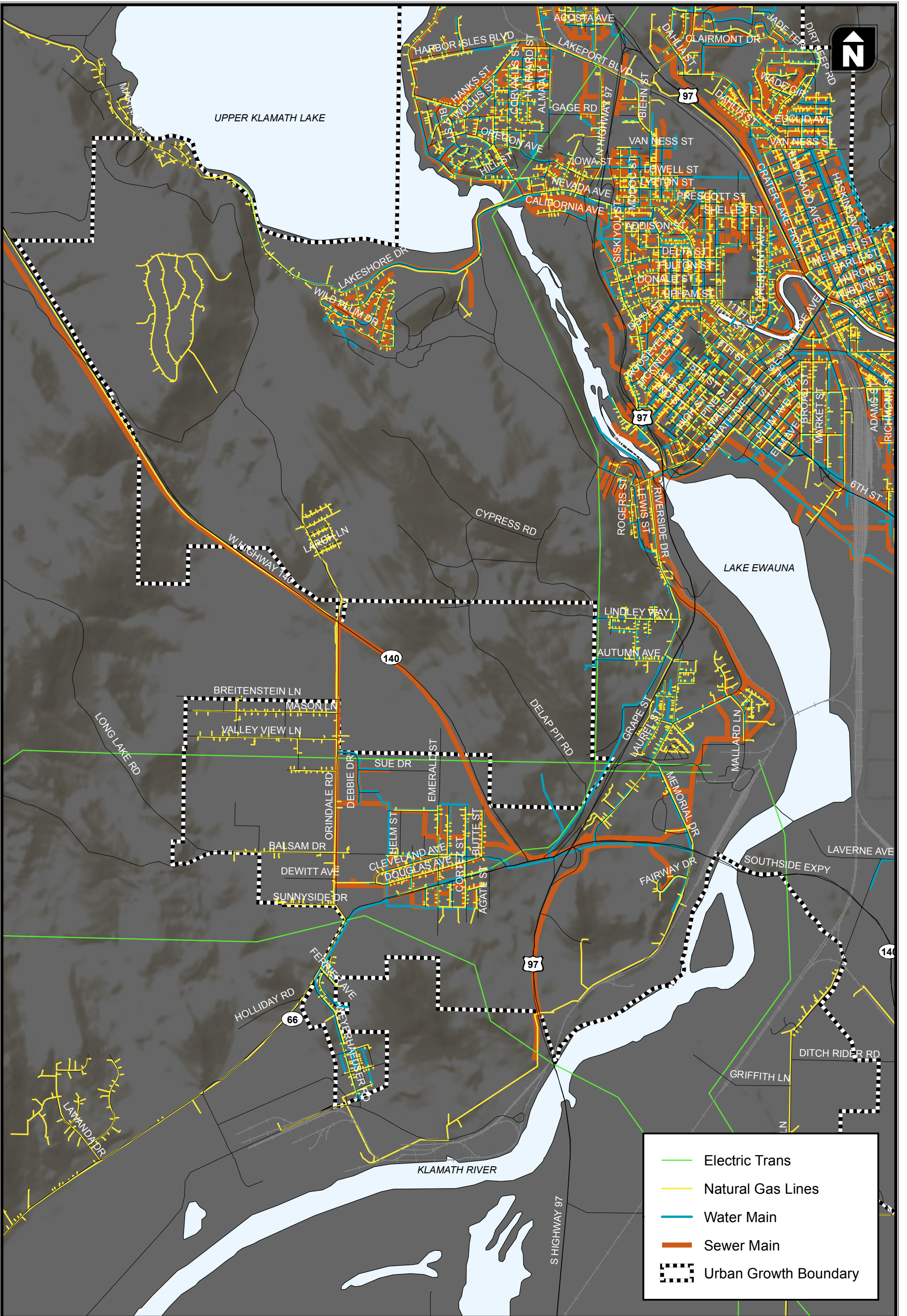
Natural gas lines and electrical lines are documented within the County GIS system. These utilities that exist within the vicinity of the OR 66/US 97 interchange are shown in Figure 8.

References

1. Transportation Research Board. Highway Capacity Manual. 2000.
2. Oregon Department of Transportation. Analysis Procedures Manual. 2006.
3. Oregon Department of Transportation. 1999 Oregon Highway Plan. 1999.

Attachments

- A. Traffic Counts
- B. Existing Conditions Worksheets
- C. Crash Data



	Electric Trans
	Natural Gas Lines
	Water Main
	Sewer Main
	Urban Growth Boundary



Utility Map

**Figure
8**