Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
Fax (503) 378-5518
www.lcd.state.or.us

NOTICE OF ADOPTED AMENDMENT

02/10/2012

TO: Subscribers to Notice of Adopted Plan or Land Use Regulation Amendments

FROM: Plan Amendment Program Specialist

SUBJECT: Klamath County Plan Amendment
DLCD File Number 003-11

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Thursday, February 23, 2012

This amendment was submitted to DLCD for review prior to adoption pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

*NOTE: The Acknowledgment or Appeal Deadline is based upon the date the decision was mailed by local government. A decision may have been mailed to you on a different date than it was mailed to DLCD. As a result, your appeal deadline may be earlier than the above date specified. NO LUBA Notification to the jurisdiction of an appeal by the deadline, this Plan Amendment is acknowledged.

Cc: Bill Adams, Klamath County
Jon Jinings, DLCD Community Services Specialist

<paa> YA

FORM 2 DLCD Notice of Adoption

This Form 2 must be mailed to DLCD within **5-Working Days after the Final Ordinance is signed** by the public Official Designated by the jurisdiction and all other requirements of ORS 197.615 and OAR 660-018-000

DATE STAMP

☐ In person ☐ electronic ☐ mailed

DEPT OF

FEB 06 2012

LAND CONSERVATION AND DEVELOPMENT

For Office Use Only

Jurisdiction: **Klamath**

Local file number: **Ord. 44.92**

Date of Adoption: **1/30/2012**

Date Mailed: **2/2/2012**

Was a Notice of Proposed Amendment (Form 1) mailed to DLCD? ☒ Yes ☐ No Date:

☒ Comprehensive Plan Text Amendment

☐ Comprehensive Plan Map Amendment

☒ Land Use Regulation Amendment

☐ Zoning Map Amendment

☐ New Land Use Regulation

☒ Other: **Transportation System Plan**

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

The county adopted an updated Transportation System Plan for the Klamath Falls Urban area. The TSP includes facilities plans for the roadway, pedestrian, bicycle, and transit systems. It includes a funding plan for needed projects and documents "vision projects" (adopted in sub-area plans but which may not be necessary in the 2035 planning horizon). Amendments include changes to the Land Development Code.

Does the Adoption differ from proposal? No, no explaination is necessary

Plan Map Changed from: **n/a** to: **n/a**

Zone Map Changed from: **n/a** to: **n/a**

Location: **Countywide** Acres Involved: **0**

Specify Density: Previous: **n/a** New: **n/a**

Applicable statewide planning goals:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐

Was an Exception Adopted? ☐ YES ☒ NO

Did DLCD receive a Notice of Proposed Amendment...

35-days prior to first evidentiary hearing? ☒ **Yes** ☐ **No**

If no, do the statewide planning goals apply? ☐ **Yes** ☐ **No**

If no, did Emergency Circumstances require immediate adoption? ☐ **Yes** ☐ **No**

DLCD File No. 003-11 (18975) [16932]

DLCD file No. _____
Please list all affected State or Federal Agencies, Local Governments or Special Districts:

Local Contact: **Bill Adams, Planning Director** Phone: **(541) 883-5121** Extension: **3079**
Address: **305 Main Street** Fax Number: **541-885-3644**
City: **Klamath Falls** Zip: **97601-** E-mail Address: **badams@co.klamath.or.us**

ADOPTION SUBMITTAL REQUIREMENTS

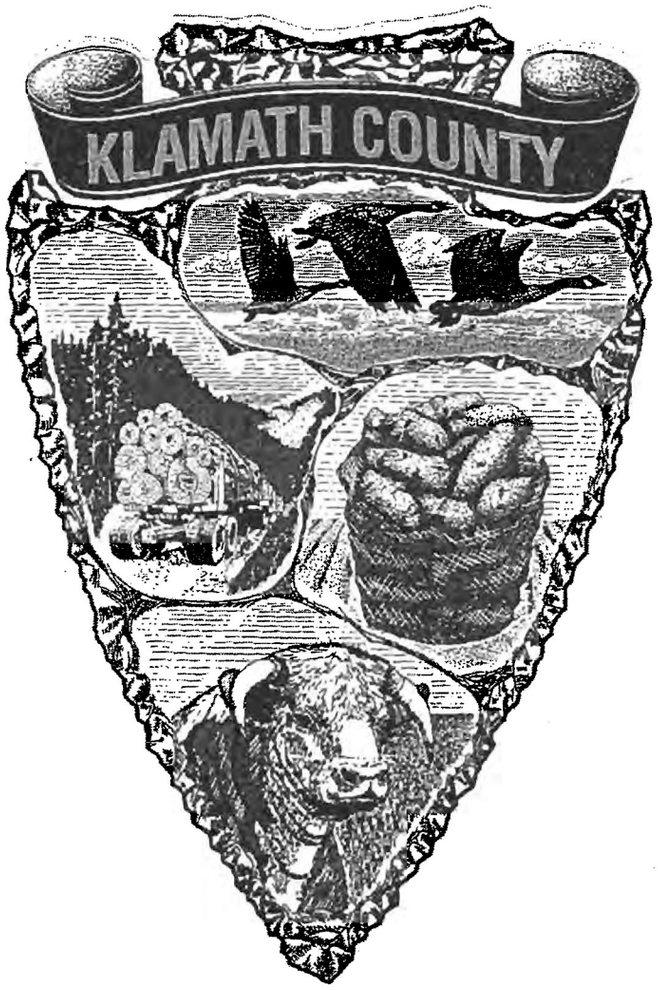
This Form 2 must be received by DLCD no later than 5 working days after the ordinance has been signed by the public official designated by the jurisdiction to sign the approved ordinance(s)
per ORS 197.615 and OAR Chapter 660, Division 18

1. This Form 2 must be submitted by local jurisdictions only (not by applicant).
2. When submitting the adopted amendment, please print a completed copy of Form 2 on light **green paper if available.**
3. Send this Form 2 and **one complete paper copy** (documents and maps) of the adopted amendment to the address below.
4. Submittal of this Notice of Adoption must include the final signed ordinance(s), all supporting finding(s), exhibit(s) and any other supplementary information (ORS 197.615).
5. Deadline to appeals to LUBA is calculated **twenty-one (21) days** from the receipt (postmark date) by DLCD of the adoption (ORS 197.830 to 197.845).
6. In addition to sending the Form 2 - Notice of Adoption to DLCD, please also remember to notify persons who participated in the local hearing and requested notice of the final decision. (ORS 197.615).
7. Submit **one complete paper copy** via United States Postal Service, Common Carrier or Hand Carried to the DLCD Salem Office and stamped with the incoming date stamp.
8. Please mail the adopted amendment packet to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

9. **Need More Copies?** Please print forms on **8½ -1/2x11 green paper only if available.** If you have any questions or would like assistance, please contact your DLCD regional representative or contact the DLCD Salem Office at (503) 373-0050 x238 or e-mail **plan.amendments@state.or.us**.

Klamath County



Klamath Falls Urban Area **Transportation System Plan**

Ordinance 44.92
Adopted January 30, 2012

Return to Commissioner's Journal

2012-001181
Klamath County, Oregon

00113422201200011810190196

02/01/2012 11:28:00 AM Fee: NO FEE

BEFORE THE BOARD OF COMMISSIONERS
FOR THE COUNTY OF KLAMATH

ORDINANCE 44.92

IN THE MATTER OF AN ORDINANCE AMENDING THE COMPREHENSIVE PLAN ATLAS & THE LAND DEVELOPMENT CODE TO ADD AND AMEND STANDARDS NECESSARY TO ADOPT; AND, TO ADOPT THE KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

PART 2 (ATLAS) & PART 3 (LAND DEVELOPMENT CODE)

Part 2

Adoption of the 2011 Klamath Falls Urban Area Transportation System Plan

Part 3

Amend the Land Development Code:

ARTICLES/Sections: 11; 20/20.040.A; 21/21.040; 32/32.030.C & D; 41/41.060.O; 44/44.030.C & D; 46/46.030.B; 46/46.050; 47/47.030.B; 48/48.030.B; 49/49.030.B; 50/50.040; 68/68.030; 71/71.010; 71/71.020; 71/71.050; 71/71.100.C; 71/71.150.B; 71/71.190 & .200

WHEREAS, the Klamath County Planning Department requests, as part of the Comprehensive Plan and Land Development Code Update Program, to amend County Plan Goals 5, 12, & 13; including, County Land Development Code Chapter 40 Articles 41.060.N, 46.030.B.5; Chapter 60 Articles 62.040, 62.050.C, 68.030, 68.070.A; Chapter 70 Article 71.020, 71.040.H; Chapter 80 Articles 83.040.C.7.a, and 88.060.G with regard to provisions of Statewide Planning Goal 12 and the Oregon Transportation Planning Rule OAR 660 Division 12 that apply to all development of transportation systems outside jurisdictional boundaries of incorporated cities and town within Klamath County; and

WHEREAS, these amendments will be applied subject to all applicable provisions of the Klamath County Comprehensive Plan and Land Development Code; and

WHEREAS, the Klamath County Planning Department submitted no request for an exception to Statewide Planning Goals and presented the request in due form for consideration; and

WHEREAS, the Klamath County Planning Department published proper public and agency hearing notice as required by Code and State Law; and

WHEREAS, the Klamath County Planning Commission held a joint public hearing on January 24, 2012 before the Board of County Commissioners; and

WHEREAS, based on testimony entered and consideration of the whole record, including the proposed Findings of Fact identified in the Staff Report, the Klamath County Planning Commission concluded the application was in conformance with Article 49, a legislative amendment, of the Klamath County Land Development Code and Comprehensive Plan, and forwarded a recommendation of Approval for Planning File CLUP 3-11 (ORDINANCE 44.92) to the Board of County Commissioners; and

WHEREAS, the amendments applied are subject to all applicable provisions of the Klamath County Comprehensive Plan and Land Development Code; and

WHEREAS, based on testimony entered and consideration of the whole record, including the proposed Findings of Fact identified in the Staff Report and recommendation by the Planning Commission, the Board of County Commissioners, on January 24, 2012 APPROVED amending the Klamath County Comprehensive Plan and Land Development Code by adoption of Ordinance 44.92.

NOW, THEREFORE, THE BOARD OF COMMISSONERS OF KLAMATH COUNTY ORDAINS AS FOLLOWS:

SECTION 1

1. The Board recognizes that the Klamath Falls Urban Area Transportation System Plan was last amended by Ordinance 44.68, on October 12, 1998.

2. Subsequent ongoing planning efforts of the City, County, and ODOT indicate a need to update the Klamath Falls Urban Area Transportation System Plan to facilitate future planned development.

3. The Board takes note that from time to time such changes to the planning documents are necessary for the benefit of the residents of Klamath County, Oregon.

4. Under provisions of the Klamath County Land Development Code, legal responsibilities for public notification; and, the Planning Commission has conducted one or more public hearings on the

proposed amendments and has submitted its recommendation to the Board. The Board finds that this Ordinance is based on that recommendation and any modifications made by the Board, as a result of the public hearing process.

5. The Board finds and takes public notice that it is in receipt of all matters and information necessary to consider this Ordinance in an adequate manner, and that this Ordinance complies with the Statewide Planning goals and other relevant standards and criteria set forth in Chapters 195, 197, and 215 of the Oregon Revised Statutes, and the Klamath County Land Development Code.

SECTION 2

The following exhibits, attached hereto and incorporated herein by reference, are hereby adopted as the 2011 Klamath Falls Urban Area Transportation System Plan (Urban TSP) as follows:

1. Exhibit A, amending Part III of the Comprehensive Plan – the Land Development Code - Articles and Sections as specified in the Exhibit.

2. Exhibit B, amending Part II of the Comprehensive Plan Atlas by the addition of the 2011 Klamath Falls Urban Area Transportation Systems Plan.

SECTION 3

Ordinance 44.68, adopted by the Board on October 12, 1998 - which adopted the 1998 Klamath Falls Urban Area Transportation System Plan by amending the Comprehensive plan – is HEREBY REPEALED. This Ordinance (Ordinance 44.92) supersedes said prior ordinance for purposes of adopting the Klamath Falls Urban Area Transportation System Plan. All other Comprehensive Plan provisions that have been adopted by prior ordinance, that are not expressly amended or repealed herein, shall remain in full force and effect.

SECTION 4

All applications received prior to the effective date shall be processed in accordance with ORS 215.427 (2011 Edition).

SECTION 5

If any portion of this Ordinance, including the exhibits, shall for any reason be held invalid or unconstitutional by a body of competent jurisdiction, the remainder shall not be affected thereby and shall remain in full force and effect, and any

provision of a prior land use ordinance amended or repealed by the stricken portion of this Ordinance shall be revived and again be considered in full force and effect.

SECTION 6
The County Counsel and the Community Development Department – Planning Division, hereafter known as the Planning Department are authorized to prepare planning documents to reflect the changes adopted under Section 2 and 3 of this Ordinance, including deleting and adding textual material and maps, renumbering pages or sections, and making any technical changes not affecting the substance of these amendments as necessary to conform to the Klamath County Comprehensive Plan and Land Development Code format.

SECTION 7
This Ordinance shall take effect thirty (30) days after adoption.

Approved on: Jan. 30, 2012

FOR THE BOARD OF COMMISSIONERS

Chair

Commissioner

Commissioner

1/26/17
Reviewed by County Counsel

EXHIBIT A (Ordinance 44.92)

Amendments to Comprehensive Plan Part III
(LAND DEVELOPMENT CODE)

To Implement Klamath Falls Urban Area Transportation System Plan

(Deleted text is shown in ~~strike-through~~ and new text is shown in **bold and underline**)

Chapter 10, Article 11 Definitions:

ESSENTIAL SERVICES:
Facilities and services which are necessary and accessory to the principle land use or development, and involve infrastructure such as pipelines, power lines and poles, distribution feeders, meter boxes and pump-houses. Essential services may include, but are not limited to water, sewer, natural gas, cable and electric power service**, and certain transportation improvements, as specified in Section 50.040.A.**

EXTENSIVE IMPACT SERVICES AND UTILITIES:
Any public or private facilities, services and utilities which may have a substantial impact on surrounding land uses. Typical uses include, but are not limited to: airports, detention and correction institutions, fairgrounds, disposal sites, incinerators, commercial power generating facilities, sports arenas and stadiums, outdoor theaters and amphitheaters, vehicular raceways, electrical transmission towers over 200 feet in height, commercial communication towers, recycle centers, natural gas or petroleum transmission pipelines**, and certain transportation improvements, as specified in Section 50.040.B**.

Chapter 20, Article 20, Section 20.040:

A. General Authorization to Impose Conditions of Approval

In approving any type of development application, the Review Body is authorized to impose such conditions as may be necessary to assure compliance with the **applicable provisions of this code, the Comprehensive Plan, the Urban Area Transportation System Plan, the state Transportation Planning Rule,** or other requirements of law. Any conditions attached to approvals will be directly

related to the impacts of the proposed use or development and will be roughly proportional in both extent and amount to the anticipated impacts of the proposed use or development.

1. **In the case of transportation impacts, conditions needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system may be imposed. Conditions of approval that may apply include but are not limited to:**
   a. **Crossover and/or reciprocal easement agreements for all adjoining parcels to facilitate future access between parcels.**
   b. **Access for new developments that have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.**
   c. **Right-of-way dedications for future planned roadway improvements.**
   d. **Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.**

Chapter 20, Article 21, Section 21.040:

Because a pre-application conference is not a land use decision, no notice, hearing or appeals shall be provided. The discussions of a pre-application conference shall not be binding on any party. **For application sites located adjacent to a state roadway or where proposals are expected to have an impact on a state transportation facility, ODOT shall be invited to participate in the conference.**

Chapter 30, Article 32 PUBLIC NOTICE
32.030 – TYPES OF NOTICE

Add to C.1:

h. **Any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the County or is otherwise potentially affected by the proposal. For application sites located adjacent to a state roadway or where proposals may have an impact on a state transportation facility, notice of the decision shall be sent to ODOT.**

Add to D.1:

d. To any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the County or is otherwise potentially affected by the proposal. For application sites located adjacent to a state roadway or where proposals are expected to have an impact on a state transportation facility, notice shall be sent to ODOT.

Chapter 40, Article 41 SITE PLAN REVIEW
41.060 SITE PLAN REQUIREMENTS:

O. Other appropriate information that otherwise may be required by this code, **including a Traffic Impact Study pursuant to Section 71.200**;

Chapter 40, Article 44 CONDITIONAL USE PERMIT
44.030 – REVIEW CRITERIA:

C. The location, size, design, and operating characteristics of the proposed use will not have a significant adverse impact on the livability, value or appropriate development of abutting properties and the surrounding area. **This includes impacts on the transportation system to be determined pursuant to Section 71.200.**

D. Conditions - The review body may grant a Conditional Use Permit subject to such reasonable conditions, **pursuant to Section 20.040,** based on findings of fact that it deems necessary to ensure compliance with the Klamath County Comprehensive Plan, Land Development code, **Urban Area Transportation System Plan,** and sound land use planning principles.

Chapter 40, Article 46 LAND SUBDIVISION
46.030 – REVIEW CRITERIA:

B. A subdivision plat shall be reviewed against the following criteria:

1. The subdivision development complies with policies of the Comprehensive Plan, **including the policies and standards of the Urban Area Transportation System Plan**;

. . . .

4. The street plan for the proposed subdivision will permit its development in a safe and efficient manner in accordance with the Comprehensive Plan and this code **and transportation improvements, consistent with the findings from a Traffic Impact Study pursuant to Section 71.200**;

. . . .

Chapter 40, Article 46
46.050 – PRELIMINARY SUBDIVISION PLAT REQUIREMENTS

D. Required Information - All preliminary subdivision plats shall show the following information:

. . . .

2. Proposed Development:

   a. All streets showing the location, widths, names, approximate grades, and approximate radii of curves and the relationship of all streets to any projected streets**. This shall include any walkways and pedestrian connections as required by Article 71, Vehicular and Non-Vehicular Access and Circulation;**

. . . .

H. A Traffic Impact Study as may be required by Section 71.200.

Chapter 40, Article 47
CHANGE OF ZONE DESIGNATION (QUASI-JUDICIAL)
47.030 – REVIEW CRITERIA

B. A request for a change of zone designation shall be reviewed against the following criteria:

3. The property affected by the proposed change of zone designation is properly related to streets and roads and to other public facilities and infrastructure to adequately serve the types of uses allowed in conjunction with such zoning **and the proposed change is in compliance with the Transportation Planning Rule (TPR) OAR 660-012-0060 (to**

demonstrate compliance with the TPR the applicant shall submit a Traffic Impact Study pursuant to Section 71.200);

Chapter 40, Article 48
CHANGE OF COMPREHENSIVE PLAN DESIGNATION (QUASI-JUDICIAL)
48.030 – REVIEW CRITERIA

B. A request for a change of the Comprehensive Plan designation shall be reviewed against the following criteria:

2. The proposed change complies with policies of the Comprehensive Plan **and policies and standards of the Urban Area Transportation System Plan**; and

3. The proposed change complies with the Oregon State wide Planning Goals and Administrative Rules**, including compliance with the TPR (OAR 660-012-0060). To document compliance with the TPR the applicant shall submit a Traffic Impact Study pursuant to Section 71.200.** Exceptions to the Statewide Planning Goals, shall be based upon Statewide Planning Goal 2, Part II (Exceptions) as interpreted by Oregon Administrative Rules (OAR Chapter 660, Division 4).

Chapter 40, Article 49
LEGISLATIVE AMENDMENT TO THE KLAMATH COUNTY COMPREHENSIVE PLAN, LAND DEVELOPMENT CODE, OR ZONING MAP
49.030 – REVIEW CRITERIA

B. An amendment to the Comprehensive Plan or Land Development Code shall be reviewed against the following criteria:

2. The proposed amendment complies with policies of the Comprehensive Plan **and policies and standards of the Urban Area Transportation System Plan**; and

3. The proposed amendment complies with the Oregon Statewide Planning Goals, ~~and~~ state statutes**, and administrative rules, including compliance with the TPR (OAR 660-012-0060). To document**

compliance with the TPR the applicant shall submit a Traffic Impact Study pursuant to Section 71.200.

Chapter 50, Article 50 BASIC PROVISIONS

50.040 added:

50.040 – TRANSPORTATION-RELATED USES

A. **The following transportation-related improvements and activities are considered "Essential Services" uses and are permitted outright in all County zones, unless otherwise specified in individual zones.**

1. **Normal operation, maintenance, repair, and preservation activities of existing transportation facilities.**
2. **Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.**
3. **Projects specifically identified in the Klamath Falls Urban Area Transportation System Plan and the County Wide Transportation System Plan.**
4. **Landscaping as part of a transportation facility.**
5. **Emergency measures necessary for the safety and protection of property.**
6. **Acquisition of right-of-way for public roads, highways, and other transportation improvements designated in the Urban Area Transportation System Plan, except for those that are located in exclusive farm use or forest zones.**
7. **Construction of a street or road as part of an approved subdivision or land partition approved that is consistent with the applicable land division regulations.**

B. **The following transportation-related improvements and activities are considered "Extensive Impact Services and Utilities" uses and are permitted conditionally in all County zones, unless otherwise specified in individual zones.**

1. **Construction, reconstruction, or widening of highways, roads, bridges or other transportation projects that are:**
   a. **Not improvements designated in the Urban Area Transportation System Plan; or**

b. Not designed and constructed as part of a subdivision or planned development subject to site plan and/or conditional use review.

c. An application for site plan review is subject to review under Article 41. In addition, the site plan permit shall comply with the Urban Area Transportation System Plan and applicable standards of this section, and shall address the criteria below. For State projects that require an Environmental Impact Statement (EIS) or EA (Environmental Assessment), the draft EIS or EA shall be reviewed and used as the basis for findings to comply with the following criteria:

(1) The project is designed to be compatible with existing land use and social patterns, including noise generation, safety, and zoning.

(2) The project is designed to minimize avoidable environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.

(3) The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.

(4) The project includes provision for bicycle and pedestrian circulation as consistent with the Comprehensive Plan and other requirements of this Code.

Chapter 60, Article 68 OFF-STREET PARKING AND LOADING
68.030 – OFF-STREET PARKING REQUIREMENTS

A. The following off-street parking requirements shall apply to all buildings, structures, developments and land uses unless otherwise specified in this code.

[Parking standards table remains unchanged.]

B. Carpool and Vanpool Parking. Large employers (those with 50 employees or more working the same hours or shift) shall dedicate 10% of the required parking spaces for carpools and vanpools.

1. These designated spaces shall be the closest parking spaces to the building entrance normally used by employees, with the exception of disabled/handicap accessible parking spaces.

2. **Carpool and vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only" along with specific hours of use.**
3. **Any other use establishing carpool and vanpool spaces may reduce the minimum parking requirement by 3 spaces for each carpool/vanpool space created.**

C. Transit-related parking reduction. The number of minimum required parking spaces may be reduced by up to 10% if:

1. **The proposal is located within a ¼ mile of an existing or planned transit route, and;**
2. **Transit-related amenities such as transit stops, pull-outs, shelters, park-and-ride lots, transit-oriented development, and transit service on an adjacent street are present or will be provided by the applicant.**

D. Bicycle Parking Standards

1. The following bicycle parking standards are applicable only inside an Urban Unincorporated Community or within an Urban Growth Boundary for which Klamath County has jurisdiction. **Bicycle parking within t**he Klamath Falls Urban Area is **governed by the provisions of subsections 3 and 4 below.**~~exempt from this Bicycle Parking Standards section due to an adopted Urban Area Transportation System Plan (KC ORD. 44.68 Acknowledged November 12, 1998).~~

[Subsection 2 and the County Bicycle Standards remain unchanged]

3. **In the Klamath Falls Urban Area, bicycle parking facilities shall be provided for all new or expanded multi dwelling residential, institutional, commercial and industrial uses. Bicycle parking shall be provided as follows:**
   a. **One bicycle parking space shall be provided for every twelve (12) required off street parking spaces, with a minimum of one bicycle parking space.**
   b. **Required bicycle parking facilities shall be located no further than fifty feet (50') from a public entrance.**
   c. **Bicycle parking facilities may be provided in a dedicated area within a building that is accessible to bicycle storage.**

4. **Bicycle Parking Design Guidelines. The following guidelines are applicable to bicycle parking facilities in the Klamath Falls Urban Area:**
   a. **Bicycle parking facilities shall either be stationary racks, which accommodate bicyclist's locks securing the frame and both wheels or lockable rooms or enclosures in which the bicycle is stored.**

b. **Bicycle parking spaces shall be at least six feet (6') long and two feet (2') wide. Upright bicycle storage structures are exempted from the parking space length standard.**

c. **A five-foot (5') aisle for bicycle maneuvering shall be provided and maintained beside or between each row of bicycle parking.**

d. **Bicycle racks or lockers shall be anchored to the ground surface or to a structure.**

Chapter 70, Article 71
VEHICULAR **AND NON-VEHICULAR** ACCESS AND CIRCULATION

71.010 - PURPOSE

The purpose of these standards is to ensure safe ingress and egress to and from properties; to minimize street congestion and traffic hazards; to provide safe and convenient access to businesses, public services, and places of public assembly; and to make vehicular **and non-vehicular** circulation more compatible with surrounding land uses.

71.020 - ACCESS STANDARDS

A. Vehicular Access - Vehicular access shall be provided to all lots or parcels from a dedicated street. Developments fronting on an arterial **or collector** street or road may be required to provide a frontage or service road.

. . . .

F. Klamath Falls Urban Growth Area Access Spacing Standards - All new development and redevelopment shall meet the access spacing standards in Table 4-3 of the Urban Area Transportation System Plan.

G. When the site of development or redevelopment in the Urban Area has frontage on roads with different functional classifications, the site shall take access on the road with the lower functional classification.

H. The County or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and

efficient operation of the street and highway system. In the Klamath Falls Urban Growth Area, access to and from off-street parking areas shall not permit backing onto a public street.

Chapter 70, ARTICLE 71

71.050 – IMPROVEMENTS IN THE KLAMATH FALLS URBAN AREA
The following roadway improvements shall be required for all **developments**~~subdivisions~~ within the Klamath Falls Urban Growth Area unless otherwise specified, and shall be provided at the expense of the developer:

~~A. Concrete curbs, gutters, sidewalks and paved roadways a minimum width of 36 feet shall be provided where the average lot size of the development is not greater than 20,000 square feet;~~
~~B. Concrete curbs, gutters and paved roadways a minimum width of 36 feet shall be provided where the average lot size of the development is greater than 20,000 square feet and not greater than 43,560 square feet (1 acre);~~
~~C. Roadways paved to a minimum width of 24 feet with gravel shoulders improved to a minimum width of 4 feet and drainage facilities as required by the Director of Public Works shall be provided where the average lot size of the development is greater than 43,560 square feet (1 acre);~~
All roads that are functionally classified as arterials or collectors shall provide sidewalks and bikeways (e.g. bicycle lanes) on both sides of the roadway, except as determined otherwise by the Director of Public Works. All roads shall be designed and constructed in accordance with Public Works Standard Drawings in Appendix A.
~~D~~ **B.** . . .
. . .
~~E~~ **C.** . . .
. . .
~~F~~ **D.** . . .
. . .

Chapter 70, Article 71
71.100 – CUL-DE-SACS

. . .
C. In urban areas a cul-de-sac shall not exceed 500 feet in length or serve more than 18 dwelling units. **The review body may require a pedestrian way or bikeway between the cul-de-sac and adjacent streets in order to enhance accessibility and connectivity. Pedestrian ways shall be no less than 10 feet in width with an improved surface no less than 8 feet in width, and shall be dedicated to the public**

Chapter 70, Article 71
71.150 – BLOCKS

B. Blocks shall not exceed 1,320 feet when measured from road centerline to road centerline. **In the Klamath Falls Urban Growth Area, block length shall not exceed 600 feet to improve connectivity for vehicular and non-vehicular traffic.**

Chapter 70, Article 71:

71.190 – NON-VEHICULAR ACCESS AND CIRCULATION

A. For new commercial, light industrial, and multi-family residential development, internal pedestrian circulation shall be provided through sidewalks and walkways/pathways, pursuant to the following standards:

1. **Walkways shall be provided connecting building entrances and streets adjoining the site.**
2. **Connections shall be direct and driveway crossings minimized.**
3. **Walkways shall be at least five-feet-wide, raised, include curbing, or have different paving material when crossing driveways.**
4. **Pedestrian connections to adjoining properties shall be provided except where such a connection cannot be accommodated due to topographical constraints or where existing development on adjacent sites preclude connections. Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property.**

B. Transit Access. New commercial and light industrial buildings within 600 feet of an existing or planned transit facility, as identified in the Urban Area TSP, shall provide for pedestrian access to transit through the following measures:

1. Either locate buildings within 20 feet of the transit facility, a transit street, or an intersecting street or provide a pedestrian plaza at the transit facility or a street intersection;
2. Provide a reasonably direct pedestrian connection between the transit facility and building entrances on the site;
3. Provide a transit passenger landing pad accessible to disabled persons;
4. Provide an easement or dedication for a passenger shelter if requested by the transit provider; and
5. Provide lighting at the transit facility.

Chapter 70, Article 71

71.200 – Traffic Impact Study

A. A traffic impact study shall be developed by a Professional Engineer under any of the following conditions:

1. The proposed development generates 50 or more peak-hour trips or 500 or more daily trips.
2. An access spacing exception is required for the site access driveway(s) and the development generates 25 or more peak-hour trips or 250 or more daily trips.
3. The proposed development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.
4. The proposed development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.
5. Major construction projects anticipated to have temporary traffic impacts or cause disproportionate damage on existing infrastructure, as determined by the Public Works Director.

B. Submittal requirements: The study shall include the following minimum requirements:

1. The analysis shall include alternates other than what the developer originally submits as a proposal for access.
2. The analysis of alternate access proposals shall include:
   a. Existing daily and appropriate design peak hour counts, by traffic movements, at intersections that would be affected by traffic generated by the development.
   b. Projected daily and appropriate design peak hour volumes for these same intersections and at the proposed access points after completion of the development. If the development is to be constructed in phases, projected traffic volumes at the completion of each phase shall be determined.
   c. Trip Generation shall be calculated using the Institute of Transportation Engineers' manual "Trip Generation – 5th Edition" or other, more current, and/or applicable information.
   d. A determination of the need for a traffic signal based on warrants in the "Manual on Uniform Traffic Control Devices".
3. The internal circulation of parking lots must be analyzed to the extent that it can be determined whether the points of access will operate properly.
4. An analysis of the impacts to neighboring driveway access points and adjacent streets affected by the proposed new development driveways.
5. A discussion of bike and pedestrian use and the availability of transit to serve the development.
6. The recommendations made in the report shall be specific and based on a minimum level of service when the development has been completed. As an example, if a traffic signal is recommended, the recommendations should include the type of traffic signal control and what movements should be signalized. If a storage lane for right turns or left turns is needed, the recommendations should include the amount of storage needed. If several intersections are involved for signalization, and an interconnected system is considered, specific analysis should be made concerning progression of traffic between intersections.

C. Review criteria and procedure. The following criteria should be used in reviewing a transportation impact analysis:

1. The road system is designed to meet the projected traffic demand at full buildout.

2. Proposed driveways do not adversely affect the functional characteristics of the surrounding roadways.
3. Adequate intersection and stopping sight distance is available at all driveways.
4. Proposed driveways meet the County's access spacing standard or sufficient justification is provided to allow a deviation from the spacing standard.
5. Opportunities for providing joint or crossover access have been pursued.
6. The site does not rely upon the surrounding roadway network for internal circulation.
7. The road system provides adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.
8. A pedestrian path system is provided that links buildings with parking areas, entrances to the development, open space, recreational facilities, and other community facilities in accordance with the state Transportation Planning Rule.

D. Conditions of Approval. As part of every land use action, Klamath County and the City of Klamath Falls, and ODOT (if access to a state roadway is proposed) will be required to identify conditions of approval needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of approval that may apply include:

1. Crossover easement agreements for all adjoining parcels to facilitate future access between parcels.
2. Conditional access permits for new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.
3. Right-of-way dedications for future planned roadway improvements.
4. Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

EXHIBIT B (Ordinance 44.92)

Amendments to the Comprehensive Plan Part II Atlas:

Adoption of:

2011 KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

Return to Commissioner's Journal

2012-001180
Klamath County, Oregon

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BEFORE THE KLAMATH COUNTY BOARD OF COMMISSIONERS

IN THE MATTER OF FILE NUMBER CLUP 3-11	FINAL ORDER

WHEREAS, Klamath County Planning and Public Works Departments, hereafter know as Applicant, requested approval of a Legislative Amendment to the COMPREHENSIVE PLAN, Part II – Atlas; and, Part III – Land Development Code for the purpose of adopting the 2011 Klamath Falls Urban Area Transportation System Plan; and

WHEREAS, the subject property is described as that area within the Klamath Falls Urban Growth Boundary not within the incorporated city limits of the city of Klamath Falls; and

WHEREAS, the Klamath County Planning Department provided proper notice prescribed by law for a public hearing held on January 24, 2012 before the Klamath County Planning Commission and Board of County Commissioners; and

WHEREAS, based on testimony entered and consideration of the whole record, including the proposed Findings of Fact identified in the Staff Report, the Klamath County Planning Commission concluded the application was in conformance with Article 49 of the Klamath County Land Development Code and Comprehensive Plan; including Oregon State Statute and Administrative Rules; adopted said Findings of Fact as their own; and, forwarded a positive recommendation of Approval to amend the Comprehensive Plan Parts II and III referenced as Planning File CLUP 3-11 to the Board of County Commissioners; and

WHEREAS, based on testimony entered and consideration of the whole record, including the Planning Commission adopted Findings of Fact identified in the Staff Report, the Board of County Commissioners APPROVED Planning File CLUP 3-11, adopting the 2011 Klamath Falls Urban Area Transportation System Plan.

NOW, THEREFORE, THE BOARD OF COMMISSONERS OF KLAMATH COUNTY ORDERS AS FOLLOWS:

The Klamath County Planning Director shall prepare an Ordinance for Board signature amending the Comprehensive Plan to include:

Amend Comprehensive Plan Part II – Atlas

Adopt in full:

The 2011 Klamath Falls Urban Area Transportation System Plan

Amend Comprehensive Plan Part III – Land Development Code

Chapter 10	*Article 11*	
Chapter 20	*Article 20*	*Section 20.040.A*
Chapter 20	*Article 21*	*Section 21.040*
Chapter 30	*Article 32*	*Section 32.030.C & D*
Chapter 40	*Article 41*	*Section 41.060.O*
Chapter 40	*Article 44*	*Section 44.030.C & D*
Chapter 40	*Article 46*	*Section 46.030.B*
Chapter 40	*Article 46*	*Section 46.050.D & H (new)*
Chapter 40	*Article 47*	*Section 47.030.B*
Chapter 40	*Article 48*	*Section 48.030.B*
Chapter 40	*Article 49*	*Section 49.030.B*
Chapter 50	*Article 50*	*Section 50.040(new)*
Chapter 60	*Article 68*	*Section 68.030*
Chapter 70	*Article 71*	*Section 71.010*
Chapter 70	*Article 71*	*Section 71.020.F & H (new)*
Chapter 70	*Article 71*	*Section 71.050*
Chapter 70	*Article 71*	*Section 71.100.C*
Chapter 70	*Article 71*	*Section 71.150.B*
Chapter 70	*Article 71*	*Section 71.190 & .200 (new)*

All amendments are show in Exhibits A & B of Ordinance 44.92.

Dated this 30 day of January, 2012

FOR THE BOARD OF COMMISSIONERS

Chairman

Commissioner

Commissioner

County Counsel 1/20/12
Approved as to form

Transportation System Plan

Klamath Falls Urban Area Transportation System Plan

Klamath Falls, Oregon

September 2011

Transportation System Plan

Klamath Falls Urban Area Transportation System Plan

Prepared For:
City of Klamath Falls, Oregon & Klamath County, Oregon

Prepared By:
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September 2011

This project was funded by the Oregon Department of Transportation.

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LIST OF APPENDICES

Appendices, Volume 1

Technical Appendices, Volume 2 (Separate Document)

ABBREVIATIONS

ADT	Average Daily Traffic
AMM	Access Management Manual
APM	Analysis Procedures Manual
BTS	Basin Transit Services
BNSF	Burlington Northern Santa Fe
CAC	Citizen Advisory Committee
CDO	Community Development Ordinance
DLCD	Department of Land Conservation and Development
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HSM	Highway Safety Manual
IAMP	Interchange Area Management Plan
ITE	Institute of Transportation Engineers
KCC	Klamath Community College
LDC	Land Development Code
LOS	Level of Service
MUTCD	Manual on Uniform Traffic Control Devices
MMLOS	Multimodal Level of Service
MPH	Miles per Hour
NCHRP	National Cooperative Highway Research Program
NTM	Neighborhood Traffic Management
OC&E	Oregon, California and Eastern
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OIT	Oregon Institute of Technology
ORS	Oregon Revised Statues
PMT	Project Management Team

SDC	System Development Charge
SOV	Single Occupancy Vehicle
SRTS	Safe Routes to School
STP	Surface Transportation Program
SPIS	Statewide Priority Index System
TAC	Technical Advisory Committee
TDM	Transportation Demand Management
TPR	Transportation Planning Rule
TSP	Transportation System Plan
TPAU	Transportation Planning and Analysis Unit
UGB	Urban Growth Boundary
UP	Union Pacific
V/C	Volume-to-Capacity
VMT	Vehicle Miles Traveled
VHT	Vehicle Hours Traveled

PREFACE

The development of this TSP update was guided by the Project Management Team (PMT), the Technical Advisory Committee (TAC), and the Citizen Advisory Committee (CAC). Members of the PMT, TAC, and CAC are identified below, along with members of the consultant team. The members listed devoted substantial amounts of time towards the development of the Klamath Falls Urban Area Transportation System Plan (TSP) Update. In particular, members of the TAC and CAC should be applauded for the volunteer efforts that each contributed to this plan update. The PMT and consultant team appreciate their dedication to achieving the TSP contained herein.

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Klamath Falls City Schools

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SPOKES

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Chamber of Commerce

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City Council

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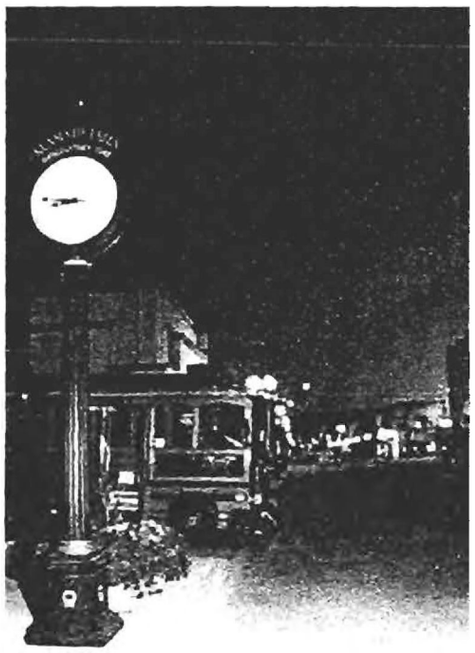
Matt Kittelson

Angelo Planning Group, Inc.

Darci Rudzinski, AICP

Section 1 Introduction

1 INTRODUCTION



The City of Klamath Falls and Klamath County, in conjunction with the Oregon Department of Transportation (ODOT), initiated an update of the urban area's Transportation System Plan (TSP) in 2010. This plan is intended to guide the management and implementation of the transportation facilities, policies, and programs, within the urban area over the next 25 years. This plan blends the vision of the City and County as it relates to the future of the transportation system while remaining consistent with state and other local plans and policies. The plan also provides the necessary elements for adoption by the governing bodies into both the City and County's respective Comprehensive Plans.

State of Oregon planning rules require that the TSP be based on the current comprehensive plan land use map and must provide a transportation system that accommodates the expected 20-year growth in population and employment that will result from implementation of the land use plan. The contents of this TSP update are guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR). These laws and rules require that jurisdictions develop the following:

- a road plan for a network of arterial and collector streets;
- a bicycle and pedestrian plan;
- an air, rail, water, and pipeline plan;
- a transportation financing plan; and
- policies and ordinances for implementing the TSP.

The TPR requires that the transportation system plan incorporates the needs of all users and abilities. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide bicycle and pedestrian facilities between residential, commercial, and employment/institutional areas. It is further required that local communities coordinate their respective plans with the applicable county, regional, and state transportation plans.

TSP Process

The Klamath Falls Urban Area TSP was updated through a process that identified transportation needs, analyzed potential options for addressing those needs over the next 25 years, and provided a financial and implementation plan. The following steps were involved in this process:

- Review of state, regional, and local transportation plans and policies that the Klamath Falls Urban Area TSP must either comply with or be consistent with.
- Gathering community input through public workshops at key points in the project.
- Working with technical and citizen advisory committees to establish goals and objectives, identify and assess alternatives, and prioritize future needs.
- Using a detailed inventory of existing transportation facilities to serve as a foundation to establish needs near- and long-term.
- Identifying and evaluating future transportation needs to support the land use vision and economic vitality of the urban area
- Prioritizing improvements and strategies that are reflective of the community's vision and fiscal realities.
- Preparing for review and adoption by local agencies, including the Klamath Falls City Council, Klamath County Commissioners, and the City and County Planning Commissions.

Public Involvement

The TSP update process provided City and County residents the opportunity to share their respective visions for the future of the transportation system. Comments were gathered at two public open house events held during the TSP development process as well as during two Virtual Open House events where residents who could not attend the in-person meetings could still hear the latest information and provide feedback. Lastly, a project website was maintained throughout the project that provided interested parties with the most recent documents available, information on upcoming meetings, and the ability to provide general comments to the project team. All of this input informed the development of the TSP goals and policies as well as the planned improvements.

The planning process was guided by a Technical Advisory Committee (TAC) and a Citizen Advisory Committee (CAC). The TAC was comprised of local and state officials from key agencies including the City of Klamath Falls Planning and Public Works Departments, Klamath County Planning and Public

Works Departments, Oregon Department of Transportation Planning and Rail Divisions, Kingsley Field, and Basin Area Transit. The CAC was comprised of community leaders including members of the City Council, County Commissioners, City and County Planning Commissions, and other local groups and committees.

Members of the TAC and CAC reviewed the technical aspects of the TSP. They held five joint meetings that focused on all aspects of the TSP development, including the evaluation of existing deficiencies and forecast needs, the selection of transportation options, the presentation of the draft TSP, and the review of ordinance amendments.

In addition to the established advisory committees, the draft plans were discussed with the City and County Planning Commissions, County Commissioners, and City Council at work sessions and at public hearings. A summary of the meetings and dates related to the public involvement process is provided below.

TABLE 1-1: PLAN DEVELOPMENT & ADOPTION PUBLIC INVOLVEMENT SUMMARY

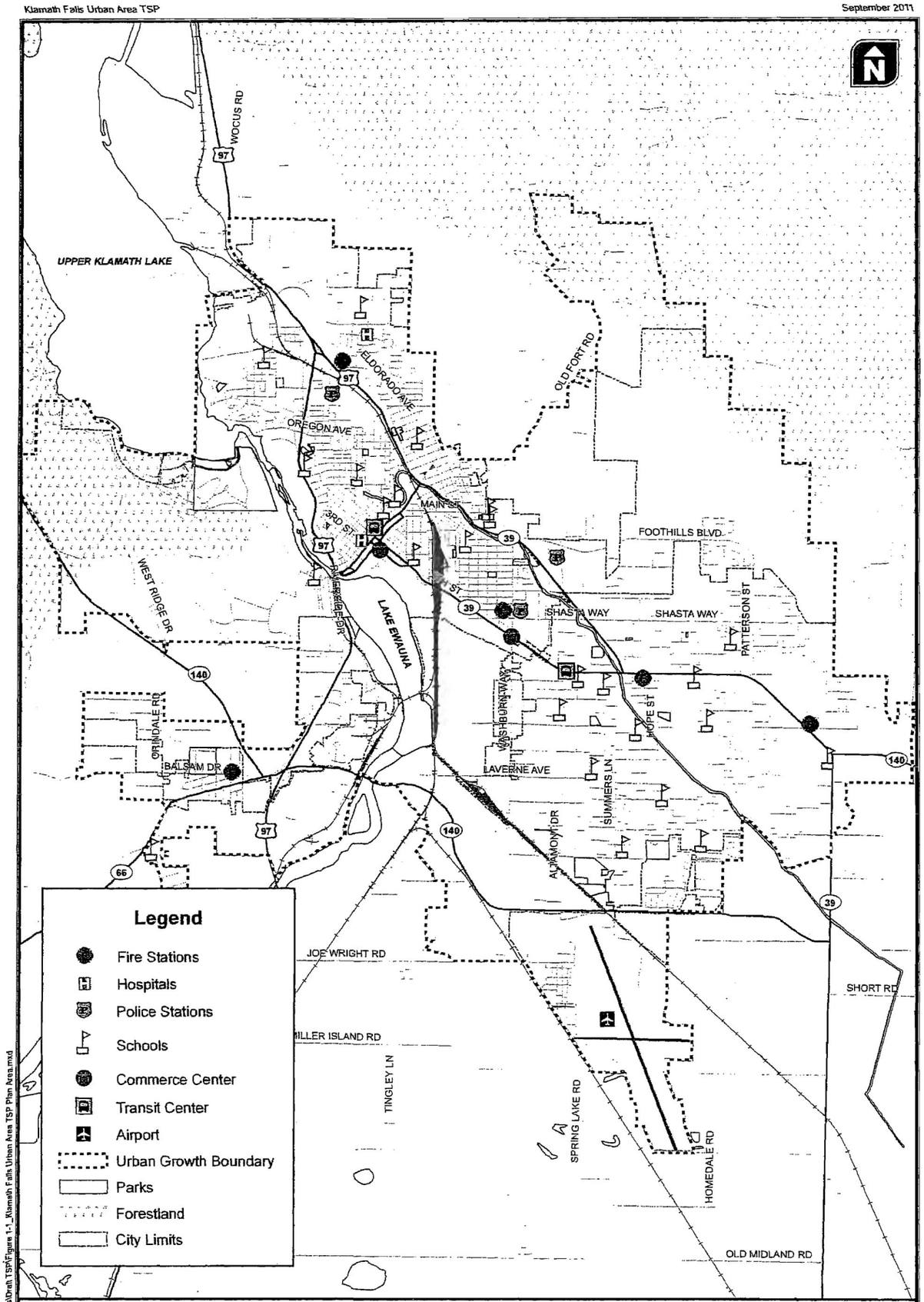
Meeting Event	Date/Location	Meeting Purpose/Objectives
TAC/CAC Meeting #1	Monday, November 15, 2010 City of Klamath Falls	Provided an opportunity for project stakeholders to become familiar with the project scope, schedule and key deliverables. Discussed draft Technical Memorandum #1 and #2, which present the policy and plan review and the goals and evaluation criteria, respectively.
TAC/CAC Meeting #2	Wednesday, January 19, 2011 City of Klamath Falls	Discussed Technical Memorandum #3 and #4, which evaluated existing and future conditions and presented the results.
Public Workshop #1	Wednesday, January 19, 2011 Community Meeting Room 133 North 4th Street Klamath Falls, OR	Provided an opportunity for community members to share their ideas, thoughts, concerns and desires related to Klamath Falls in its present state and the future of Klamath Falls. Also presented the results of the existing and future conditions analyses. A Virtual Open House was also available for those unable to attend to have information discussed available online and to submit their comments electronically.
TAC/CAC Meeting #3	Tuesday, March 29, 2011 City of Klamath Falls	Discussed Technical Memorandum #5, which summarized the alternatives analysis conducted.
Adopting Bodies Joint Work Session #1	Tuesday, March 29, 2011 Klamath County Commissioners Chambers	Discussed project findings to date and outlined project tasks yet to be completed.
Access Spacing Discussion	Monday, June 6, 2011 City of Klamath Falls	Discussed existing and potential access spacing standards with City, County, and ODOT staff.

TAC/CAC Meeting #4	Monday, June 6th, 2011 City of Klamath Falls	Discussed Technical Memorandum #6, which summarizes the preferred plan and the cost constrained plan.
Public Workshop #2	Wednesday, June 29, 2011 Klamath Falls City Council Chambers 500 Klamath Avenue Klamath Falls, Oregon	Provided an opportunity for community members to hear review the projects included in the draft preferred plan and provide input. A general project update was also provided. A Virtual Open House was also available for those unable to attend to have information discussed available online and to submit their comments electronically.
TAC/CAC Meeting #5	Tuesday, September 6th, 2011 City of Klamath Falls	Discussed the Draft TSP.
Adopting Bodies Joint Work Session #2	Monday, September 19, 2011 TBD	To be completed.
City Planning Commission Public Hearing	TBD	To be completed.
County Planning Commission Public Hearing	TBD	To be completed.
City Council Public Hearing	TBD	To be completed.
Board of County Commissioners Public Hearing	TBD	To be completed.

Note: Appendix 1A provides the detailed public involvement plan

Plan Area

This TSP covers publicly owned transportation facilities within the existing Klamath Falls urban growth boundary (UGB) as reflected in Figure 1-1. Per TPR, the plan focuses on arterial and collector streets and their intersections, pedestrian and bicycle facilities along the arterial and collector streets and at other off-street locations, public transportation, and other transport facilities and services, including rail service, air service, pipelines and water service.



Klamath Falls Urban Area TSP
Plan Area

Figure
1-1

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TSP Organization and Methodology

Development of the TSP began with the development of transportation goals and objectives to guide development of the TSP and the long-term vision for the transportation system. These goals and objectives are presented in Section 2 of this plan. Section 3 summarizes a review of relative policies, codes, and plans and how each applies to the Klamath Falls Urban Area TSP update.

Section 4, Section 5, Section 6, Section 7, and Section 8 present the Roadway, Pedestrian Facilities, Bicycle Facilities, Transit System, and Rail, Air, Pipeline, & Surface Water Plans, respectively. These sections discuss the existing conditions analysis that was conducted for each travel mode, the future conditions (year 2035) analysis (where applicable), and any relative plan elements that have been included in the TSP.

Section 9 documents "Vision Projects" that are included in the Klamath Falls Urban Area TSP. These are projects that have been identified as needed based on sub-area analysis that have been conducted throughout the urban area, but were not identified as needs through the horizon year of the TSP. However, varying development patterns or intensities could result in these projects being needed earlier than anticipated.

Section 10, Transportation Funding Plan, provides an analysis and summary of funding sources to finance the identified transportation system improvements as well as the constrained and unconstrained plan elements.

Finally, Section 11, Implementation Ordinances, presents the adoption ordinances required for the adopting agencies to formally adopt the TSP, including specific changes in local zoning policies to implement the TSP and to achieve compliance with the Oregon TPR (OAR 660 Division 12).

Sections 1 through 11, in combination with Appendices 1A through 1E, comprise Volume 1 of the TSP and provide the main substance of the plan. These are supplemented by Technical Appendices in Volume 2 that contain the technical memoranda documenting the existing conditions analysis, forecast needs, alternatives analysis, and the sub-area plans that informed the TSP update.

Section 2 Goals and Policies

2 GOALS AND POLICIES

The goals and objectives presented in the section were developed based on input from the TSP Technical Advisory Committee (TAC) and Citizen Advisory Committee (CAC). These guidelines are intended to define the short- and long-term priorities for the urban area transportation system. Ultimately, the goals and objective presented here represent the collective vision for the transportation system and emphasize what areas future transportation system improvements or modifications should focus on. These goals are discussed in more detail in *Technical Memorandum #2: Goals, Objectives, and Evaluation Criteria* which is provided in the *Technical Appendix 2B.*

Transportation Goals

Seven goals were developed by the PMT, TAC, and CAC to guide the future vision of the Klamath Falls urban area transportation system and are presented below.

1. Ensure a safe and efficient transportation system for all users.
2. Provide access to the transportation system for all users.
3. Integrate adequate bicycle and pedestrian pathways, sidewalks, and bicycle lanes through the community, particularly to connect residential areas with schools and activity centers.
4. Improve the local circulation system to reduce the community's reliance on State Highways to travel to local destinations.
5. Build and maintain the transportation system to facilitate economic development in the region.
6. Improve system performance by balancing mobility and access, particularly along main travel routes.
7. Minimize the impacts of transportation system development on the natural and built environment.

Transportation Goals, Objectives, and Evaluation Criteria

A detailed description of the objectives of each goal and the criteria by which progress towards meeting each goal can be evaluated throughout implementation of the plan is provided below.

Goal #1: Ensure a safe and efficient transportation system for all users

Objectives

1A. Coordinate with existing safe routes to school (SRTS) plans and identify potential engineering components for future SRTS plans for local schools.

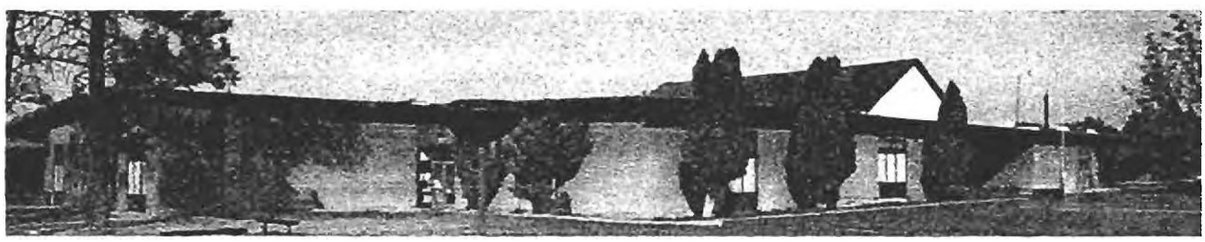
1B. Strategically plan for safety and operational improvements for bicyclists and pedestrians.

1C. Incorporate the Highway Safety Manual (HSM) into development review and capital project evaluation processes.

1D. Reduce the number of fatal and serious crashes in the plan area by 50% in the next 20 years.

1E. Reduce the frequency of bicycle and pedestrian related crashes in the plan area by 50% in the next 20 years.

1F. Meet applicable City, County, or State operational performance measures.



Criteria

1C1. Project includes pedestrian and bicycle improvements located within existing or potential SRTS plan areas.

1C2. Influence of proposed project on developing new SRTS plans and/or enhancing existing SRTS plans.

1C3. Number of conflict points between all modes of travel including crossing points for pedestrians and bicyclists along major arterials.

1C4. Miles of designated facilities (on-street and off-street) for bicyclists and pedestrians provided.

1C5. Intersection visibility and sight distances available to motorists, pedestrians, and bicyclists at intersections and key decision points.

1C6. Estimated number of fatal and serious injury crashes.

1C7. Estimated number of bicycle and pedestrian related crashes.

1C8. Percent of facilities meeting applicable operational performance measure.

Goal #2: Provide access to the transportation system for all users

Objectives

2A. Provide transportation mode choices to all users of the transportation system.

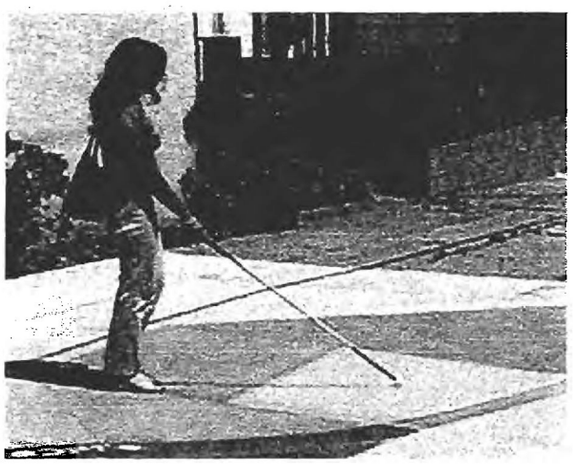
Criteria

2C1. Impact of transportation projects on low income and minority populations

2C2. ADA Compliance.

2C3. Viability of non-auto travel.

2C4. Incorporation of safe, convenient, and comfortable multimodal facilities.



Goal #3: Integrate bicycle and pedestrian pathways, sidewalks, and bicycle lanes through the community, particularly to connect residential areas with schools and activity centers.

Objectives

3A. Provide safe and convenient connections between travel modes.

3B. Identify ways to improve street connectivity to provide additional travel routes for bicyclists, pedestrians, and autos.

3C. Prioritize projects that improve pedestrian and bicycle system connectivity in areas near schools.

3D. Provide signing and pavement markings to identify bicycle and pedestrian networks through the City and to help bicycle and pedestrians reach their destinations via the network.

Criteria

3C1. Potential impact on bicycle and pedestrian volumes.

3C2. Impact on connectivity of bicycle and pedestrian systems.

3C3. Average trip length for bicyclists from residential areas to activity centers via the bicycle/pedestrian networks.

3C4. Average trip length for pedestrians from residential areas to activity centers via the bicycle/pedestrian networks

3C5. Incorporation of wayfinding signs and pavement markings for pedestrians and bicyclists.

3C6. Number of uncontrolled crossing conflict points between vehicles and pedestrians/bicyclists on the bicyclist/pedestrian network.

Goal #4: Improve the local circulation system to reduce the community's reliance on State Highways to travel to local destinations.

Objectives

4A. Provide alternative routes to the state highways.

4B. Provide adequate capacity on alternative routes to state highways.

4C. Develop local circulation plan identifying valuable new local circulation routes and connections.

4D. Sign local routes for local destinations.

Criteria

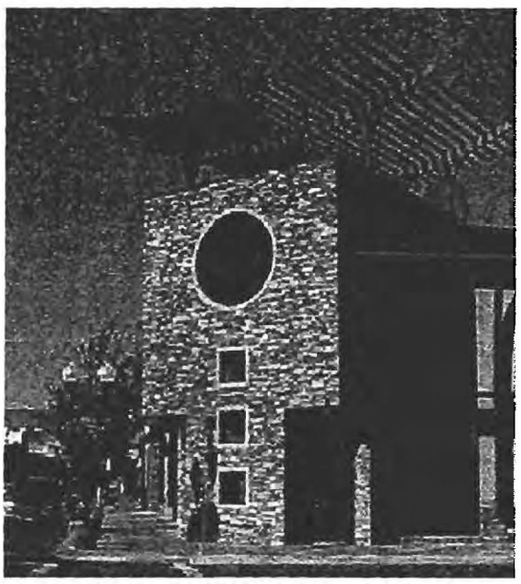
4C1. Average trip length.

4C2. Percent of capacity on regional facilities used for reaching local destinations.

4C3. Volume-to-capacity (V/C) ratios on parallel routes to highways.

Goal #5: Build and maintain the transportation system to facilitate economic development in the region.

Objectives



5A. Improve the movement of goods and delivery of services throughout the region using a variety of travel modes.

5B. Ensure adequate capacity for future travel demand and multiple modes on collector and arterial streets and on the local highways to enable economic development in the community.

5C. Identify lower cost alternatives or provide funding mechanisms for transportation improvements necessary for development to occur.

5D. Program transportation improvements to facilitate the development of desired land uses.

5E. Provide adequate capacity at rail crossings to meet demand.

5F. Review transportation and land-use code and regulations and identify changes to attract and facilitate desired development.

Criteria

5C1. Roadway geometry accommodates freight movement where it is needed.

5C2. Traffic operations performance on designated freight routes.

5C3. Potential increased attraction to desired businesses and developers.

Goal #6: Improve system performance by balancing mobility and access, particularly along main travel routes.

Objectives

6A. Develop an access management plan that reflects desired character and operations of roadways and is feasible in terms of adoption and enforcement.

6B. Incorporate the HSM analysis into corridor planning, operations and design activities to help improve safety.

6C. Incorporate multimodal level-of-service (MMLOS) analysis from the Highway Capacity Manual (HCM) 2010 to improve mobility for multiple modes.

Criteria

6C1. Number of access points for motorists based on street classification and desired street character.

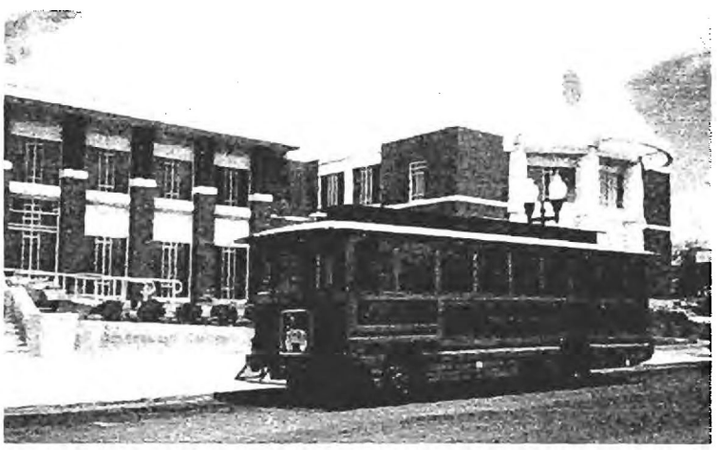
6C2. Estimated number of future crashes along the corridor.

6C3. Estimated MMLOS performance along the corridor.

6C4. Access provided for freight, bicyclists, and pedestrians.

Goal #7: Minimize the impacts of transportation system development on the natural and built environment.

Objectives



7A. Reduce vehicle miles traveled (VMT) to reduce emissions.

7B. Increase the non-auto mode split to reduce emissions.

7C. Update City design standards to reduce water run-off and street maintenance costs.

7D. Use technology to improve efficiency and safety of the transportation system.

7E. Assess the ability of the

transportation system to handle proposed changes to, or development of, adjacent land uses.

7F. Promote transportation demand management strategies (carpooling, flexible work hours, telecommuting, etc.) to reduce VMT on the transportation system.

7G. Base planned future improvements on available funding.

Criteria

7C1. City-wide VMT and vehicle hours traveled (VHT).

7C2. Prevailing (i.e., 85th percentile) corridor travel speed on major thoroughfares compared to the desired operating speeds given roadway function, class, and desired character.

7C3. Travel mode split.

7C4. Effectiveness of City design standards to limit the environmental impact of the transportation system.

7C5. Vehicle occupancy along commuting corridors during the peak periods.

7C6. Installation of ITS devices.

7C7. Compatibility of transportation system and adjacent land use.

7C8. Compatibility of planned future improvements and available funding.

Section 3 Policy and Code Review

3 POLICY AND CODE REVIEW

One of the project objectives of the Klamath Falls Urban Area TSP Update is to ensure that this transportation policy document is consistent with local and state transportation policies and standards, and that it is implemented through the City of Klamath Falls and Klamath County land development ordinances. To meet these objectives, a review and evaluation of existing plans, policies, standards, and laws that are relevant to local transportation planning was conducted. Detailed information from this review, including a complete list of the documents reviewed, can be found in *Technical Appendix 2A*.

The summary of state, regional, and local documents, as they relate to transportation planning in the Klamath Falls Urban Area, provides the policy framework for the TSP planning process. An overview of State policy and regulations, including those pertaining to the highway system, freight movement, public transportation, aviation, and bicycle and pedestrian facilities, guided the development of the local system and ensured consistency with State transportation objectives. Notably, the regulatory review included an examination of the City of Klamath Falls Community Development Ordinance and the Klamath County Land Development Code for compliance with the requirements of the TPR (OAR 660, Division 12). The review summarizes the requirements of TPR Section -0045, Implementation of the Transportation System Plan, lists the applicable implementation elements of the TPR, and demonstrates where the adopted City and County regulations comply, or where amendments to code language need to comply, with the TPR. These recommendations guided the development of draft ordinance language (see *Appendix 1B, Recommended Ordinance Amendments*).

A number of local documents were also reviewed for adopted policies or requirements that could have possible impacts on the transportation system and implications for the Urban Area TSP Update. Reviewed documents include the Klamath Falls Urban Area Economic Opportunities Analysis, Klamath Falls Airport Master Plan, and Oregon Parks Master Plan. Several other Klamath Falls area plans were reviewed for development assumptions and requirements and transportation improvements that impact the transportation system. The Klamath Falls West Side Refinement Plan, Orindale/Balsam Sub-Area Transportation Master Plan, Campus Area Sub-Area Master Plan, and Basin View PUD Standards were all reviewed to ensure that the Urban Area TSP reflects the assumptions and recommendations of these documents.

Section 4 Roadway Facility Plan

4 ROADWAY FACILITY PLAN

The Klamath Falls urban area has a variety of transportation facilities that serve all types of travel including pedestrians, bicyclists, transit riders, and vehicular traffic. However, the majority of travel within the urban area is served via the roadway system which accommodates vehicular traffic as well as many of the other modes mentioned previously.

The following subsections describe in detail the existing characteristics of the roadway system within the urban area and how each roadway is utilized. The forecast 2035 traffic conditions are described and deficiencies are identified. Based on these analysis, future roadway projects, intersection projects, safety projects, and studies are outlined to address deficiencies. Policies and strategies to manage traffic demands in the future are also identified.

Existing Roadway System

This subsection describes the existing roadway system within the Klamath Falls urban area. Specifically, roadway jurisdiction, functional classification, and designated truck routes are addressed.

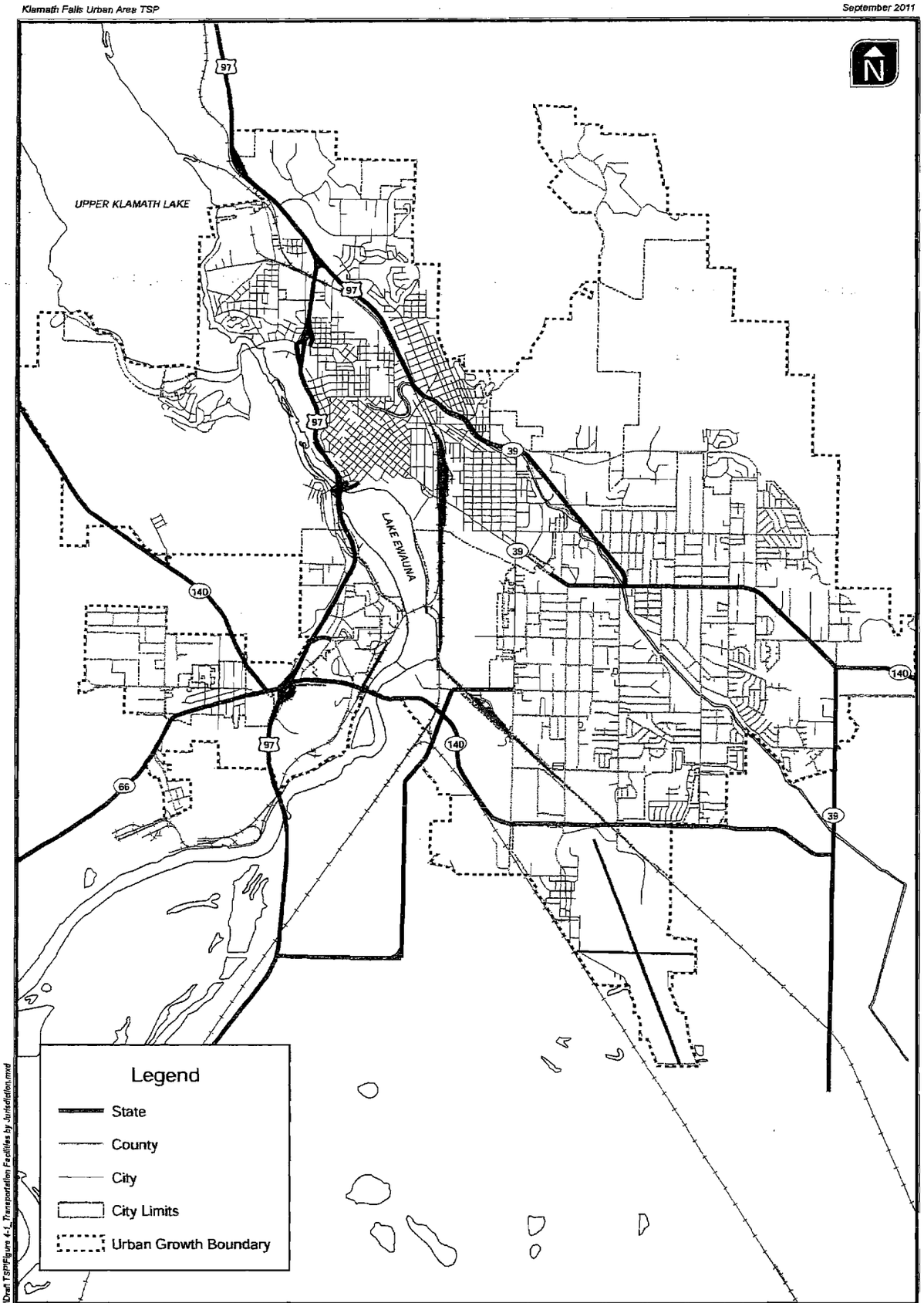
JURISDICTION

Public roads within the UGB are operated and maintained by three separate jurisdictions: the City of Klamath Falls, Klamath County, and the Oregon Department of Transportation (ODOT). Each jurisdiction is responsible for the following:

- Determining the road's functional classification;
- Defining the roadway's major design and multimodal features;
- Maintenance and operations; and,
- Approving construction and access permits.

Coordination is required among the three jurisdictions to ensure that the transportation system is planned, operated, maintained, and improved to safely meet public needs. Figure 4-1 illustrates the existing street system and which agency is responsible for each street within the UGB.

Many of the major routes throughout the urban area are maintained by ODOT. As such, local trips made within the urban area have a tendency to rely heavily upon the state highway system. Figure 4-1 shows roadway jurisdictional control within the urban area.



H:\proj\fla\11172 - Klamath Falls TSP\gis\Draft TSP\Figure 4-1_Transportation Facilities by Jurisdiction.mxd

Transportation Facilities by Jurisdiction

Figure 4-1

FUNCTIONAL CLASSIFICATION

A street's functional classification reflects its role in the transportation system and defines desired operational and design characteristics such as pavement width, right-of-way requirements, driveway (access) spacing requirements, and the appropriate type of pedestrian and bicycle facilities. The Klamath Falls Urban Area TSP includes the following classifications:

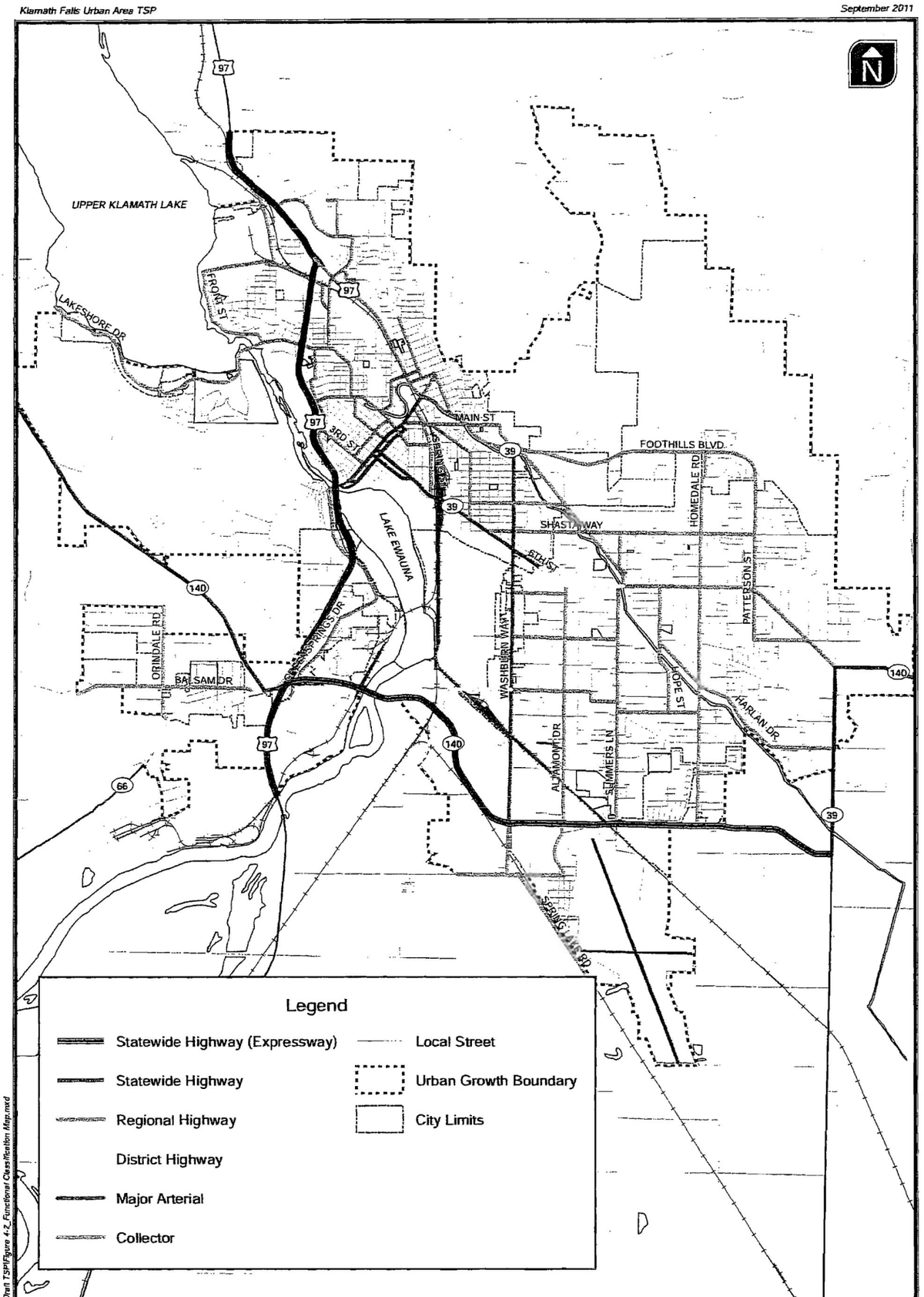
State Highways serve as the primary gateways in the Klamath Falls urban area, and carry the majority of all the vehicle trips entering, leaving, or passing through the Klamath Falls urban area. These highways are critical to the urban area because they generally serve the highest traffic volumes and longest trips. Access control is critical on these facilities to ensure that they operate safely and efficiently.

Major Arterials connect the state highways and link major, high concentration commercial, residential, industrial, and institutional areas. Major arterial streets are typically spaced to assure accessibility and reduce the incidence of longer distance trips using collectors and local streets in lieu of well-placed major arterials.

Collector streets generally facilitate the movement of traffic within the urban area. Collectors provide for circulation and mobility for all users of the system. Collectors carry lower volumes than arterials and typically have facilities to accommodate a variety of travel modes. They serve as the primary routes into residential neighborhoods. Although they carry higher volumes than local streets, they are intended to provide direct access to adjacent land rather than serving through traffic.

Local Streets are primarily intended to provide access to abutting land uses. Local street facilities offer the lowest level of mobility and consequently tend to be short, low-speed facilities. As such, local streets should primarily serve passenger cars, pedestrians, and bicyclists; heavy truck traffic is discouraged. On-street parking is common. Sidewalks are typically present, though the relatively low travel speeds and traffic volumes allow bicycles to share the vehicle travel lanes.

Figure 4-2 illustrates the functional classification designations of the streets within the UGB as amended through the TSP update process.



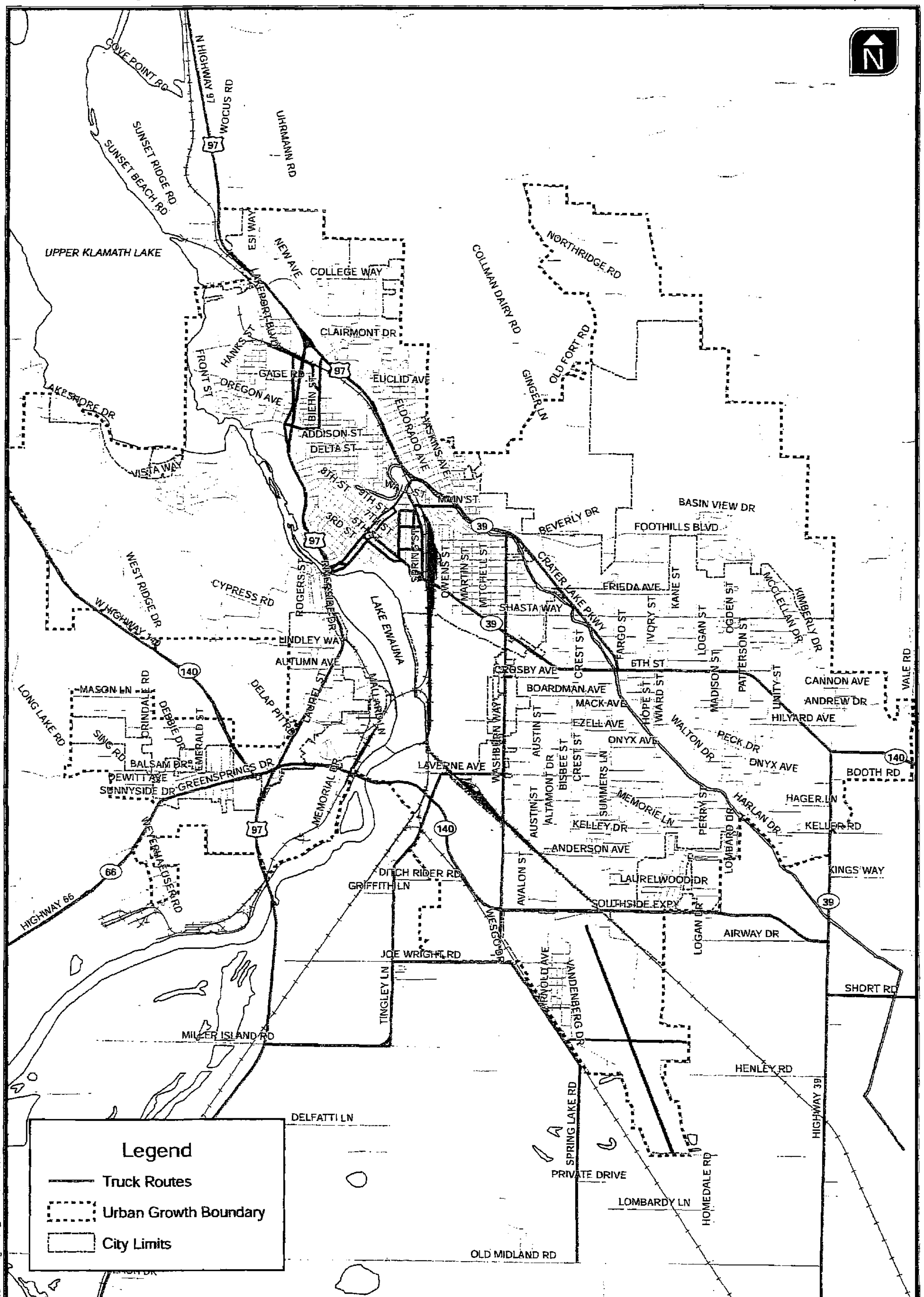
Functional Classification Map

Figure 4-2

H:\projfile\111172 - Klamath Falls TSP\gis\Drah TSP\Figure 4-2_Functional Classification Map.mxd

TRUCK FREIGHT ROUTES

All four state highway facilities within the Klamath Falls urban area (US 97, OR 140, OR 39, and OR 66) are designated as State Highway Freight Routes. Figure 4-3 illustrates the truck freight routes within the Klamath Falls urban area. National and regional truck freight movements are intended to occur via US 97, which is part of the National Highway System. Local and other regional truck freight movements are intended to occur on OR 140, OR 39, and OR 66.



Truck Freight Routes

Figure 4-3

H:\projfile\11172 - Klamath Falls TSP\gis\Draft TSP\Figure 4-3_Truck Routes.mxd

Year 2010 Intersection Operations

The operational and safety analyses conducted as part of the TSP is intended to provide an understanding of regional needs and strategies to guide the management of the urban area's street system. These analyses are not intended to provide a comprehensive listing of improvement needs, but rather to identify some of the key roadway and intersection needs. To understand system needs, the operational and safety performance of the existing transportation system was reviewed at 75 intersections throughout the urban area. Additional information related to current intersection operations, including details of the operations analyses performed at the study intersections is included in *Technical Memorandum 3: Existing Conditions*, which is provided in *Technical Appendix 2C.*

PERFORMANCE STANDARDS

All operational analyses were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (Reference 1). In addition, all intersection operational evaluations were conducted based on the peak 15-minute flow rate observed during the weekday p.m. peak hour. The operational analysis results were compared with mobility standards used by the applicable agency to assess performance and potential areas for improvement.

City and County Intersections

Traffic operations at City and County intersections are generally described using a measure known as "level of service" (LOS). Level of service represents ranges in the average amount of delay that motorists experience when passing through the intersection. LOS is measured on an "A" (best) to "F" (worst) scale. At signalized and all-way stop-controlled intersections, LOS is based on the average delay experienced by all vehicles entering the intersection. At two-way stop-controlled intersections, LOS is based on the average delay experienced by the critical movement at the intersection, typically a left-turn from a stop-controlled street.

The City of Klamath Falls and Klamath County have established LOS "E" for the poorest operating approach as the performance standard for unsignalized intersections and LOS "D" as the performance standard for signalized intersections. The performance of the study intersections under control of either of these jurisdictions is compared to these performance standards.

ODOT Intersections

ODOT presently uses volume-to-capacity ratio standards to assess intersections operations. Table 6 of the Oregon Highway Plan (OHP - Reference 2) provides maximum volume-to-capacity ratios for all

signalized and unsignalized intersections. The ODOT controlled intersections within the UGB are located along state operated facilities, including US 97, OR 39, OR 140, and OR 66.

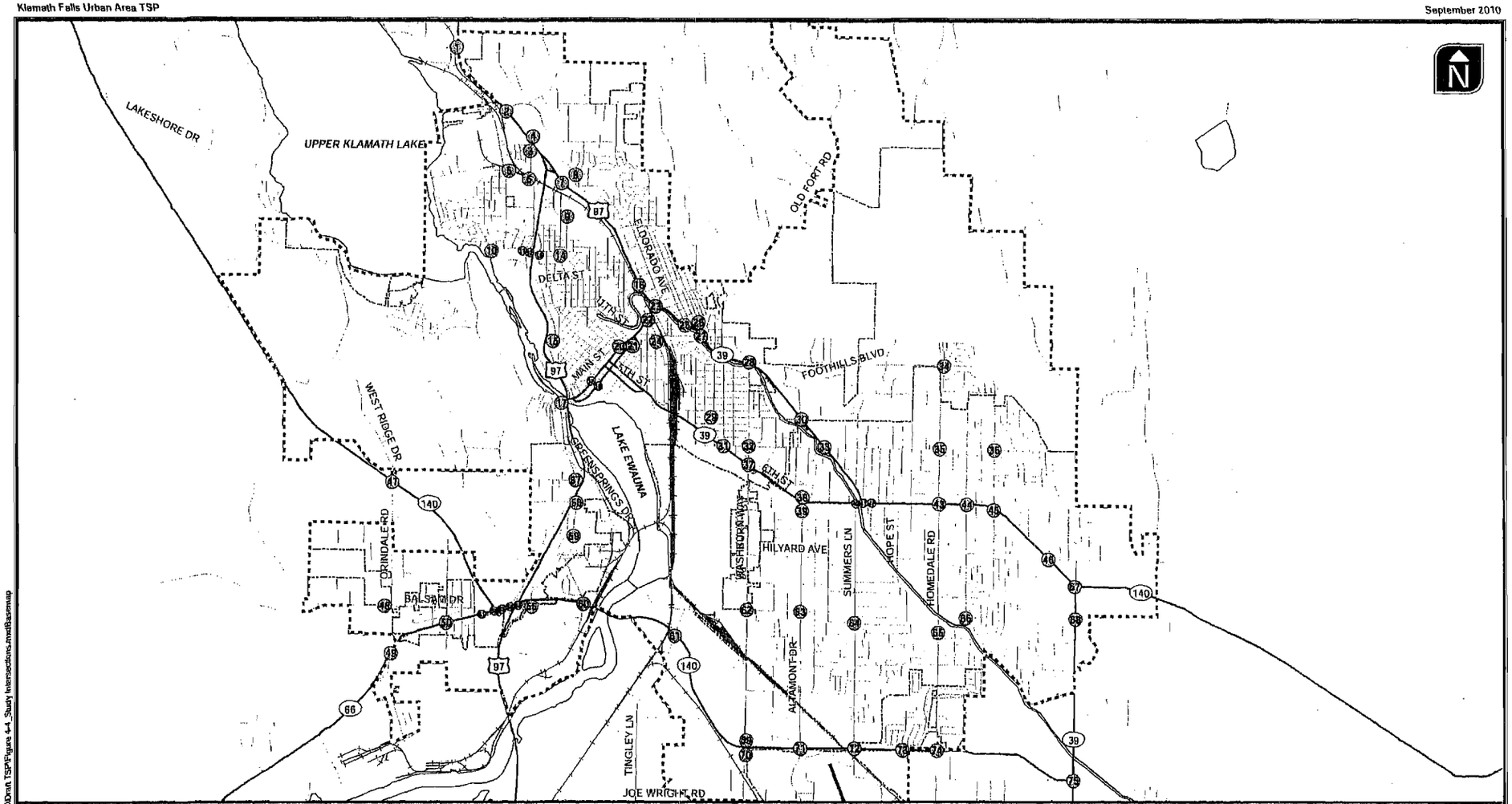
Study Intersection Performance Standards

Technical Memorandum 3: Existing Conditions, which is provided in *Technical Appendix 2C* presents the applicable performance measures for the study intersections.

TRAFFIC VOLUMES AT TSP STUDY INTERSECTIONS

TSP study intersections were selected based on input from ODOT, City, and County staff. Figure 4-4 shows the location of each of these study intersections and Figures 4-5A and 4-5B illustrate the existing lane configurations and traffic control devices at each location.

Manual turning-movement counts were collected by ODOT at the study intersection between February and September in 2010. The peak hour of intersections was found to occur between 4:30 and 5:30 p.m. Figures 4-6A and 4-6B provides a summary of the seasonally adjusted year 2010 turning movement counts, which are rounded to the nearest five vehicles per hour for the weekday p.m. peak hour. Figures 4-6A and 4-6B also reflect the existing operations at the intersections. As shown, three study intersections, Homedale Road & OR 39/140, OR 39 & OR 140, and Washburn Way & OR 140 EB Ramps, do not meet the applicable performance standards during the weekday p.m. peak hour.



Legend

- Urban Growth Boundary
- City Limits
- Study Intersection

Study Intersections

Figure 4-4

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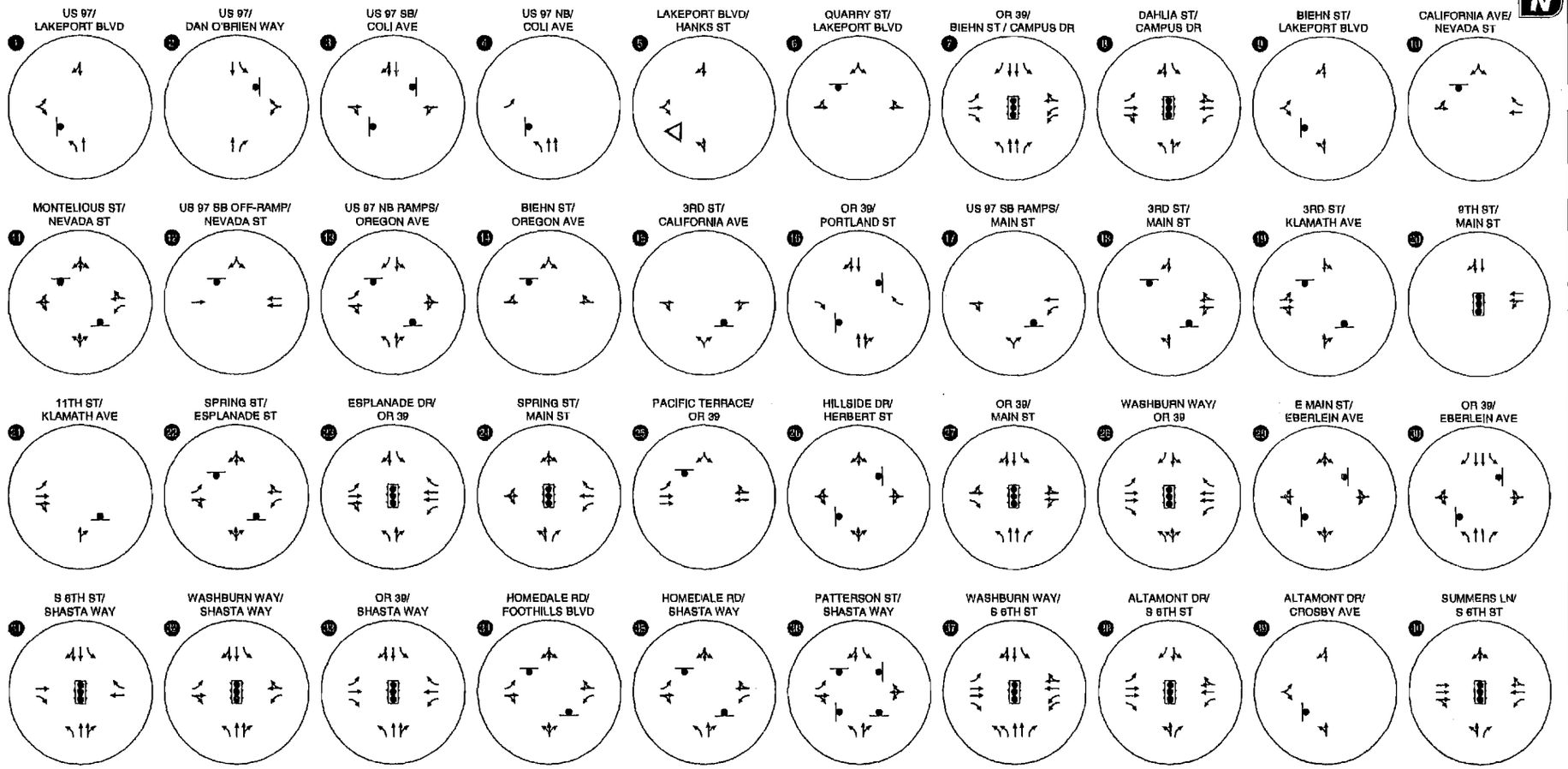
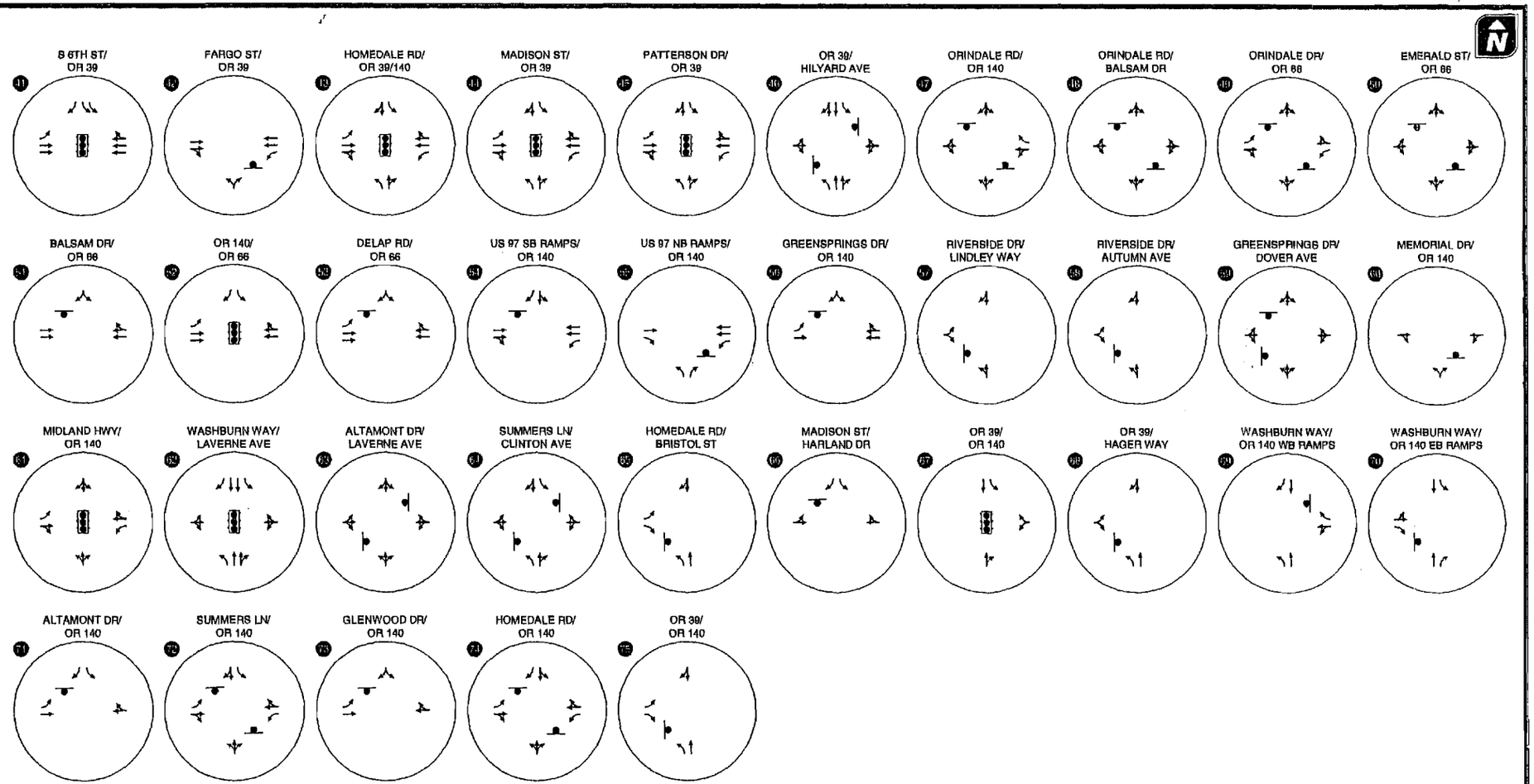


Existing Lane Configurations and Traffic Control Devices

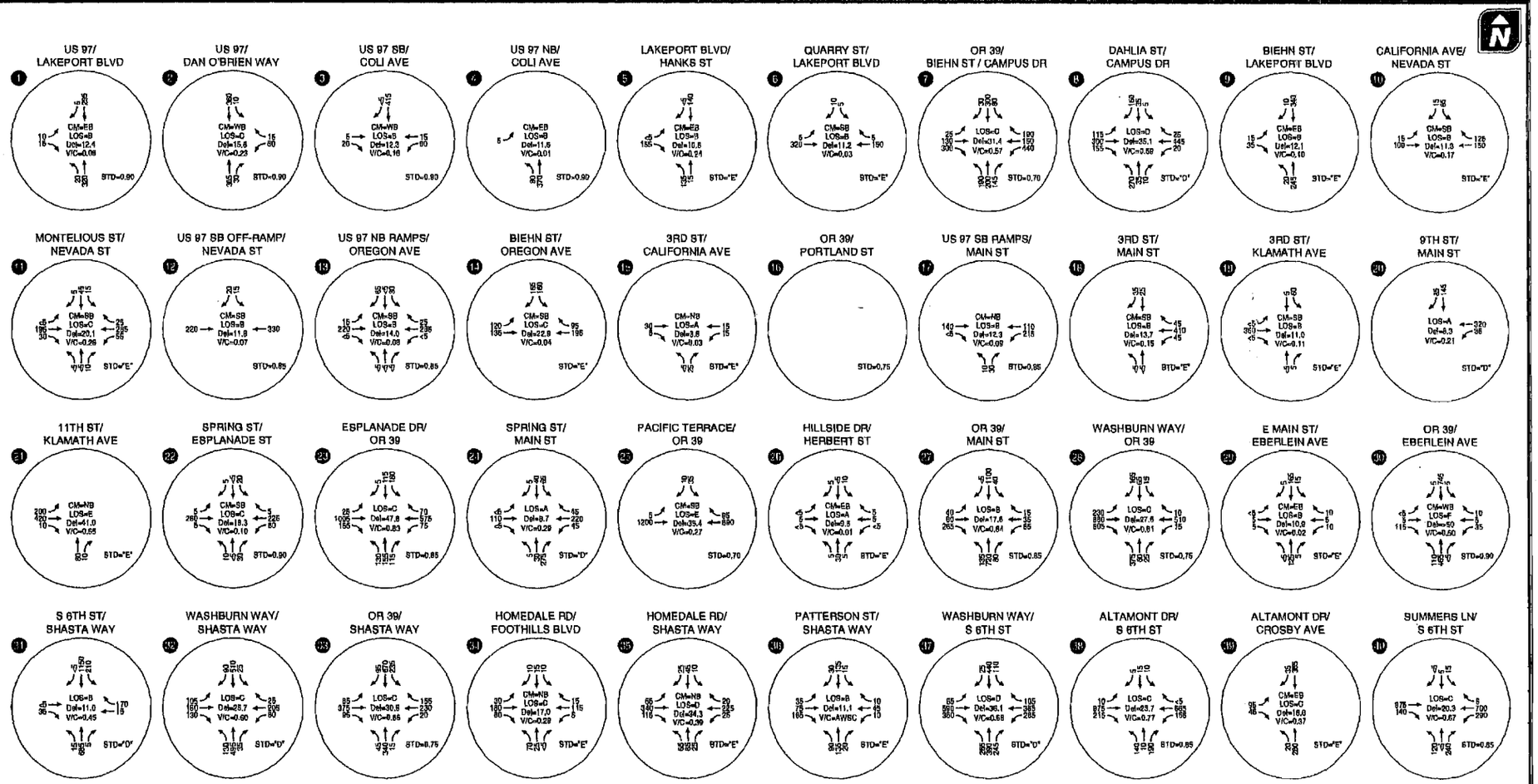
Figure 4-5A



- STOP SIGN
- TRAFFIC SIGNAL
- YIELD SIGN

Existing Lane Configurations and Traffic Control Devices

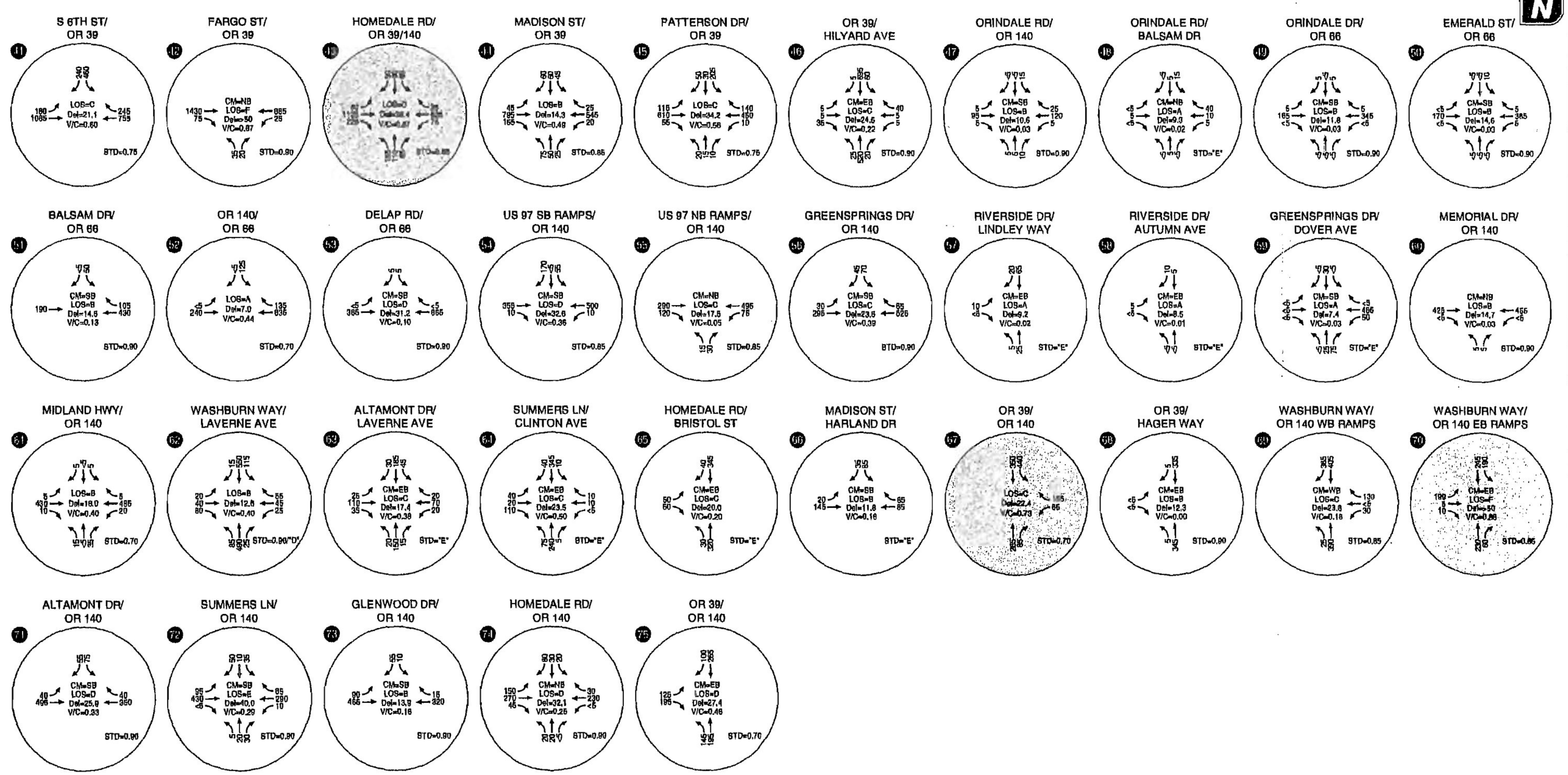
Figure 4-5B



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD

Existing Traffic Conditions
Weekday PM Peak Hour

Figure
4-6A



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD

Existing Traffic Conditions
Weekday PM Peak Hour

Figure 4-6B

Safety Analysis

Crash data for the year 2005-2009 was collected from ODOT for the study intersections and key roadway segments within the Klamath Falls urban area. Crash analysis was conducted using the data obtained from ODOT. As part of the analysis, the Statewide Priority Index System (SPIS) was also reviewed to determine if ODOT has identified any hazardous locations along US 97, OR 39 and/or OR 140 within the study area. ODOT's SPIS analysis uses the most recent three years of crash data (i.e., 2007 through 2009 for this analysis); the intersection and segment crash analysis conducted as part of this TSP update uses the five most recent years of crash data (i.e., 2005 through 2009).

Findings from the existing safety analysis indicated the following.

- Segments of US 97, OR 39 and OR 140 are rated as a SPIS Category 3 (of five categories with Category 5 the most severe rating) or below within the Klamath Falls urban area.
- There are two intersections within the Klamath Falls urban area that are categorized as top 5% SPIS sites: 1) OR 140 (Southside Expressway)/Summers Lane; and 2) OR 39 (Klamath Falls-Malin Highway)/South 6th Street.
- There are six study intersections with crash rates higher than expected compared to crash rates at intersections in Klamath Falls urban area with the same type of traffic control; including:
  - OR 39 & Eberlein Avenue;
  - Washburn Way & Shasta Way;
  - Altamont Drive & Laverne Avenue;
  - OR 140 & Summers Lane;
  - OR 140 & Homedale Drive; and
  - OR 140 & OR 39 (south of the Big Y).
- From 2005 through 2009, 55% of crashes along key roadways in Klamath Falls were property damage only, 43% were injury crashes, and 2% were fatal crashes.

The existing conditions analysis is described in more detail in *Technical Memorandum #3: Existing Conditions* which is provided in the *Technical Appendix 2C.*

Year 2035 Forecast Transportation Conditions

This section presents the year 2035 forecast transportation conditions for the Klamath Falls urban area. Included in this section is a summary of the future "no-build" traffic conditions analysis conducted for the Klamath Falls urban area to identify transportation system deficiencies that may exist by the year 2035 if no additional improvements to the system are made in the next twenty to twenty-five years. This analysis was used to inform the identification and evaluation of transportation system options summarized in *Section 6*. Additional information related to year 2035 forecast transportation conditions, including details on the operations analyses performed at the study intersections, is included in *Technical Memorandum #4: Future Conditions*, which is provided in the *Technical Appendix 2D*.

2035 TRAFFIC VOLUME FORECAST

The turning movement counts provided by the Oregon Department of Transportation (ODOT) for the existing conditions analysis were used in conjunction with the link volumes provided by ODOT Transportation Planning and Analysis Unit (TPAU) to derive future turning movements at the study intersections. The link volumes shown in the base year 2008 and future year 2037 TPAU traffic models were distributed at study intersections based on the existing distribution shown in the ODOT counts to derive base and future year turning movements at the study intersections. A summary of the growth assumed for the Klamath Falls urban area in the model is shown in Table 4-1.

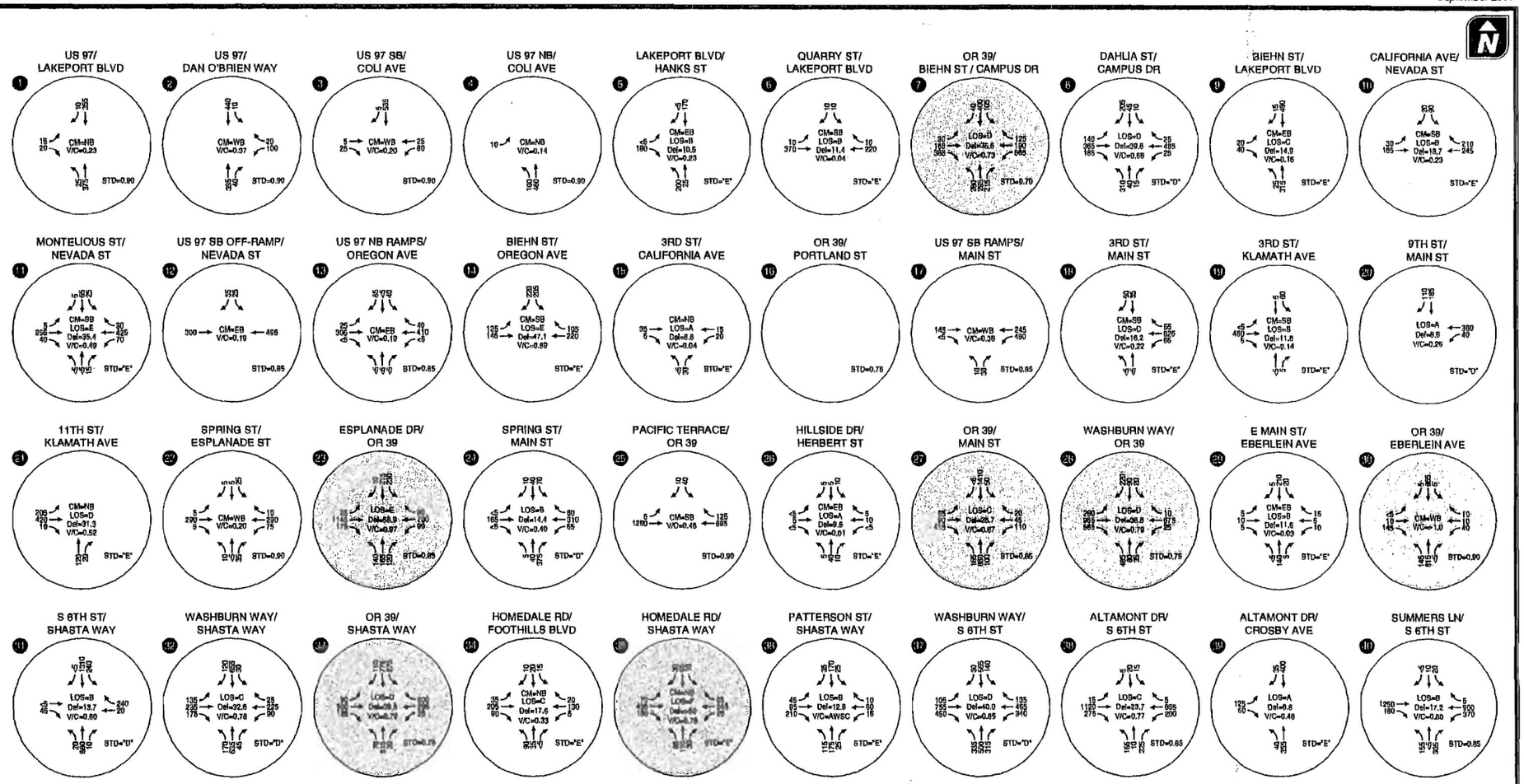
TABLE 4-1: PERCENT CHANGE IN POPULATION AND EMPLOYMENT FOR KLAMATH FALLS URBAN AREA

Land Use Type	2008	2037	Increase	Total Percent Increase	Average Yearly Percent Increase
Households	**18,818**	**22,911**	**4,093**	**21.75%**	**0.68%**
All Jobs	**19,951**	**24,024**	**4,073**	**20.42%**	**0.64%**
Agricultural/Industrial Jobs	2,371	2,388	17	0.72%	0.02%
Commercial/Service Jobs	11,940	14,708	2,768	23.18%	0.72%
Education/Government Jobs	3,286	4,258	972	29.58%	0.90%
Other Jobs	2,354	2,670	316	13.42%	0.44%

From Table 4-1, it is evident the jobs to housing balance will remain close to a 1:1 ratio in the future. . The largest growth in employment in terms of number of jobs is estimated to occur in service related employment, while the larges percent increases are forecasted for education and government related employment.

2035 TRAFFIC CONDITIONS

The 2035 forecast no-build traffic volumes are shown in Figures 4-7A and 4B, which also shows the results of an operations analysis performed at each of the study intersections.



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LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
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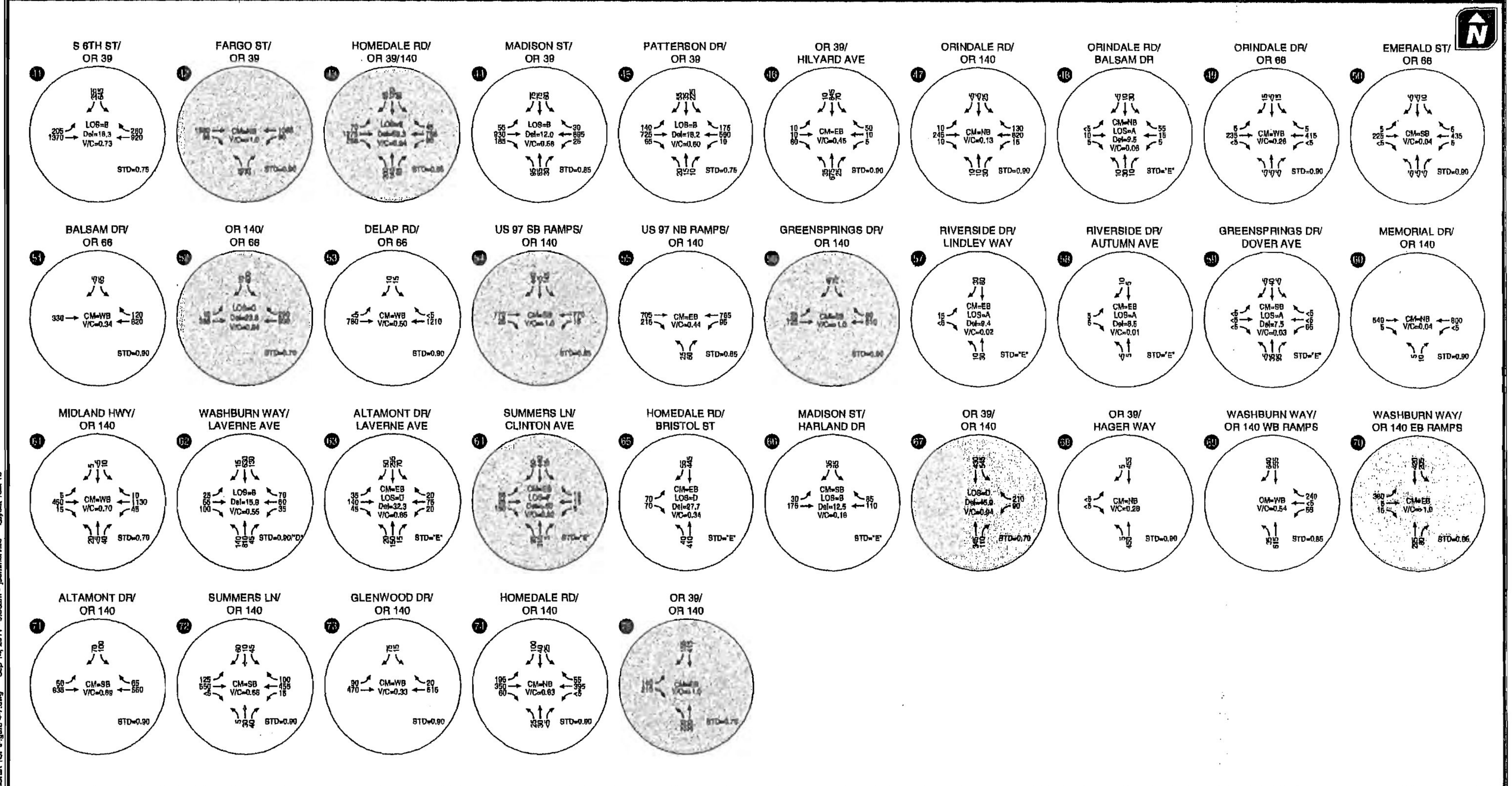
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD

Future Year 2035 Alternative Analysis Traffic Conditions Weekday PM Peak Hour

Figure 4-7A



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD

Future Year 2035 Alternative Analysis Traffic Conditions Weekday PM Peak Hour

Figure
4-7B

As can be seen in Figures 4-7A and 4-7B, 16 study intersections are forecasted to operate in excess of the applicable performance standard under 2035 conditions.

A summary of the future 2035 no-build traffic conditions findings is shown below.

- 16 of the 75 study intersections were found to operate in excess of applicable performance standards under future conditions.
- 12 of the 16 intersections that do not meet performance standards under future conditions are located on state facilities.
- Of the 16 study intersections that did not meet performance standards, 9 are unsignalized locations and 5 of the 9 met the eight-hour signal warrants based on Manual on Uniform Traffic Control Devices (MUTCD) standards.

The results of the future "no-build" traffic conditions analysis indicate that Klamath Falls is expected to have moderate levels of traffic growth over the next 25 years. However, several detailed subarea plans have been conducted within the Klamath Falls urban area that indicated future growth patterns (some beyond the 2035 forecast year) may result in higher traffic demand in the vicinity of potential developments. *The potential for this type of growth is discussed in Section 9.*

Street Section Standards

Currently, the City and County maintain and implement roadway cross-section standards within the urban area. Although there are some differences for the same classifications, the City and County have determined that the roadway standards being applied by each jurisdiction are similar enough that a uniform set of cross-section standards is not needed. As such, both intend on maintaining their respective roadway cross-section standards. Below is the location where the respective roadway cross-sectional standards are referenced by the City and County.

- **City of Klamath Falls Cross-Sectional Standards:** City of Klamath Falls Engineering Standards
- **Klamath County Cross-Sectional Standards:** Klamath County Land Development Code

Access Spacing Standards

Access management is the systematic implementation and control of the locations, spacing, design, and operations of driveways, median openings, interchanges, roundabouts, and street connections to a roadway, according to the Access Management Manual (AMM - Reference 3). It involves roadway design applications, such as median treatments and auxiliary lanes, and the appropriate spacing and design of signalized intersections. Access management strives for a balanced transportation network with appropriate proportions and distributions of arterials, collectors, and local streets that are integrated with local land use activities.

Access management techniques and strategies help to preserve the transportation system investment, and guard against deteriorations in safety and increased congestion. Land use activities and property parcels are served with appropriate access by access management solutions, while safe and efficient movement of traffic is preserved.

Access management generally becomes more stringent as the functional classification level of roadways increases and the corresponding importance of mobility increases. Exhibit 4-1 illustrates the general relationship between access and mobility.

EXHIBIT 4-1: RELATIONSHIP BETWEEN ACCESS, MOBILITY, AND FUNCTIONAL CLASSIFICATION

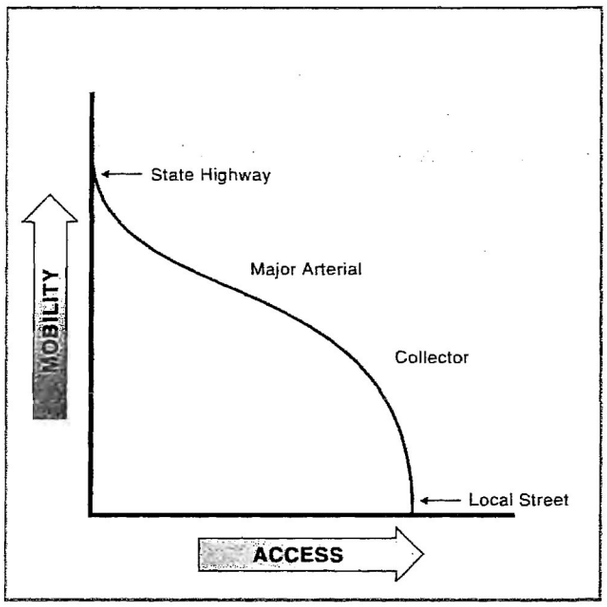


Table 4-2 identifies the appropriate spacing standards within both City and County owned roadways. It should be noted that the driveway access spacing is measured from center-to-center of each driveway to the upstream or downstream driveway or intersection on one side of the roadway. It should be noted these are ideal standards that may take many years to achieve on existing roadways.

TABLE 4-2: CITY AND COUNTY ACCESS SPACING STANDARDS

Street Functional Classification	Intersection Spacing	Minimum Driveway Access Spacing	Residential Uses	Commercial Uses Industrial Uses
Major Arterial	¼ mile	300 feet	No Direct Access	Shared Access Encouraged Left-Turn Lanes Determined through Review
Collector	¼ mile	100 feet	Shared Access Encouraged New Development to Access Local Streets	Shared Access Encouraged Left-Turn Lanes Determined through Review
Local Street	Min. 400 feet Max. 600 feet	None	Curb Cut Minimum 50 feet to Curb Return	Curb Cut Minimum 50 feet to Curb Return

ODOT has jurisdiction over several roadways within the urban area. With the exception of sections of Washburn Way and South Sixth Street, the ODOT facilities are highways with clearly defined access spacing standards. ODOT's access spacing standards are organized by intersection traffic control and a specific state highway's level of importance. A spacing of a ½-mile between traffic signals is desired for statewide and regional urban highways (i.e., US 97, OR 140, and OR 39). Table 4-3 summarizes ODOT's

spacing standards for unsignalized intersections on urban highways of various levels of importance. Washburn Way and South Sixth Street are District Highways.

TABLE 4-3: ODOT ACCESS SPACING STANDARDS FOR UNSIGNALIZED PRIVATE AND PUBLIC APPROACHES

	Minimum Space Required (feet)			
Posted Speed Limit	Statewide (Expressway)	Statewide	Regional	District
≤ 25 mph	-	520	350	350
30 mph and 35 mph	-	720	425	350
40 mph and 45 mph	2,640	990	750	500
50 mph	2,640	1,100	830	550
≥ 55 mph	2,640	1,320	990	700
Klamath Falls Facilities	US 97	OR 140	Crater Lake Parkway South 6th Street (portion)	OR 66 South 6th Street (portion) Laverne Avenue (portion)

Access Management Policies

Adopting a common set of standards will ensure that new access locations meet uniform standards throughout the urban area. However, many existing access locations do not meet the adopted standards. As such, an effort should be made to consolidate access locations by governing jurisdictions where spacing is too dense, over time, as redevelopment occurs.

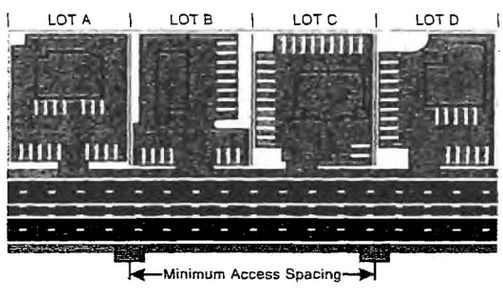
The following policies will be implemented by the City of Klamath Falls and Klamath County, as part of every land use action, in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways. Access decisions should be based upon the review of an approved traffic study prepared according to the *Traffic Impact Analysis guidelines (see Appendix 1C)* and the *Recommended Ordinance Amendments (Appendix 1B).*

- Developments with frontage on two roadways should locate their driveways on the lower functional classified roadway.
- Access driveways should be located to align with opposing driveways.
- Multiple driveways may be permitted so long as they meet the driveway access spacing standards.
- If spacing standards cannot be met, effort should be made to consolidate access points with neighboring properties.

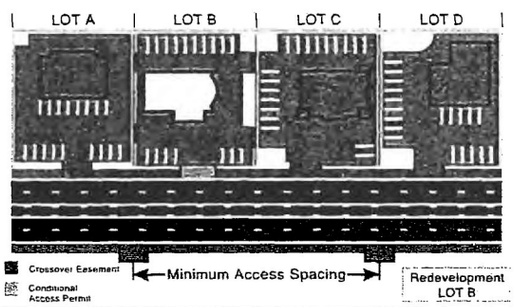
- Where standards cannot be met and joint access is not feasible, temporary conditional access can be granted with the provision of crossover easements on compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels.
- Right-of-way dedications may be provided to facilitate the future planned roadway system in the vicinity of proposed developments, thus creating additional off-street access locations.
- Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) shall be provided along site frontages that do not meet applicable roadway cross-sections standards at the time of development unless otherwise directed by the public works director.

Exhibit 4-2 on the following page illustrates the application of cross-over easements and conditional access permits that can be implemented over time to achieve the desired access management objectives. The individual implementation steps are described in Table 4-4. As illustrated in the figure and supporting table, through the application of these guidelines, all driveways along city, county, and state roadways can eventually move in the overall direction of the access spacing standards as development and redevelopment occur along a given street.

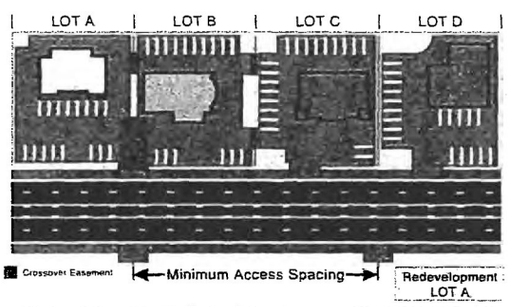
EXHIBIT 4-2 EXAMPLE OF CROSS-OVER EASEMENT/INDENTURE/CONSOLIDATION/CONDITIONAL ACCESS PROCESS



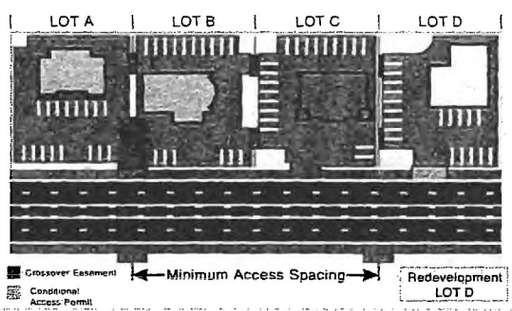
EXISTING CONDITIONS



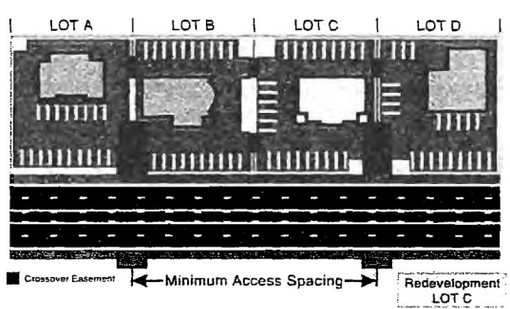
STEP 1
REDEVELOPMENT OF LOT B



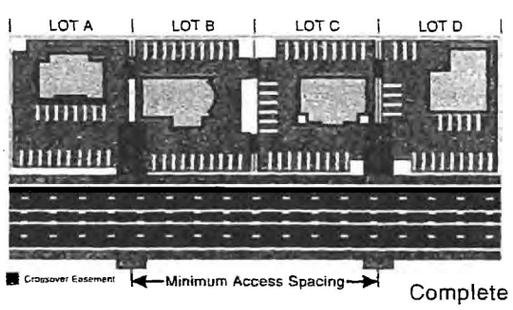
STEP 2



STEP 3



STEP 4



STEP 5

TABLE 4-4: EXAMPLE OF CROSSOVER EASEMENT/INDENTURE/CONSOLIDATION - CONDITIONAL ACCESS PROCESS

Step	Process
1	EXISTING – Currently Lots A, B, C, and D have site-access driveways that neither meet the access spacing criteria of 300 feet nor align with driveways or access points on the opposite side of the roadway. Under these conditions motorists are into situations of potential conflict (conflicting left turns) with opposing traffic. Additionally, the number of side-street (or site-access driveway) intersections decreases the operation and safety of the roadway.
2	REDEVELOPMENT OF LOT B – At the time that Lot B redevelops, the City or County would review the proposed site plan and make recommendations to ensure that the site could promote future crossover or consolidated access. Next, the City/County/ODOT would issue conditional permits for the development to provide crossover easements with Lots A and C, and City/County/ODOT would grant a conditional access permit to the lot. After evaluating the land use action, the City/County/ODOT would determine that LOT B does not have either alternative access, nor can an access point be aligned with an opposing access point, nor can the available lot frontage provide an access point that meets the access spacing criteria set forth for segment of roadway.
3	REDEVELOPMENT OF LOT A – At the time Lot A redevelops, the City/County/ODOT would undertake the same review process as with the redevelopment of LOT B (see Step 2); however, under this scenario the City/County/ODOT would use the previously obtained cross-over easement at Lot B consolidate the access points of Lots A and B. City/County/ODOT would then relocate the conditional access of Lot B to align with the opposing access point and provide and efficient access to both Lots A and B. The consolidation of site-access driveways for Lots A and B will not only reduce the number of driveways accessing the roadway, but will also eliminate the conflicting left-turn movements the roadway by the alignment with the opposing access point.
4	REDEVELOPMENT OF LOT D – The redevelopment of Lot D will be handled in same manner as the redevelopment of Lot B (see Step 2)
5	REDEVELOPMENT OF LOT C – The redevelopment of Lot C will be reviewed once again to ensure that the site will accommodate crossover and/or consolidated access. Using the crossover agreements with Lots B and D, Lot C would share a consolidated access point with Lot D and will also have alternative frontage access the shared site-access driveway of Lots A and B. By using the crossover agreement and conditional access permit process, the City/County/ODOT be able to eliminate another access point and provide the alignment with the opposing access points.
6	COMPLETE – After Lots A, B, C, and D redevelop over time, the number of access points will be reduced and aligned, and the remaining access points will meet the access spacing standard.

ADDITIONAL ACCESS MANAGEMENT TREATMENTS

Several corridors including Washburn Way, Shasta Way, and South 6th Street, warrant more attention to access management than the above proposed programmatic improvement of access spacing over time as part of land use actions. Sound access management principals should be emphasized at these locations to improve access management more rapidly as development and redevelopment occur. In addition, more proactive improvements to control permitted turning movements should be considered.

This could include treatments such as center raised medians that restrict access to right-in/right-out only, or right-in/right-out/left-in in some cases. Medians with openings for left-turn lanes off of a facility resulting in right-in/right-out/left-in access points provide significant improvement in safety while still providing a high level of property access. Consolidating driveways from multiple parcels to mid-block locations is critical to being able to provide effective right-in/right-out/left-in access in locations where medians are warranted due to safety concerns.

According to Action 3B.3 of the Oregon Highway Plan, non-traversable medians should be considered on state highways when any of the following criteria are met. Similar consideration should be given on City and County major arterials and collectors:

- Forecast average daily traffic is anticipated to be 28,000 vehicles per day during the 20-year planning period;
- The annual crash rate is greater than the statewide annual average accident rate for similar roadways;
- Pedestrians are unable to safely cross the highway, as demonstrated by an crash rate that is greater than the statewide annual average crash rate for similar roadways; and/or
- Topography and horizontal or vertical roadway alignment result in inadequate left-turn intersection sight distance and it is impractical to relocate or reconstruct the connecting approach road or impractical to reconstruct the highway in order to provide adequate sight distance.

Based on this criteria, the following roadways in Table 4-5 should take into consideration the installation of medians during capital improvements and/or private development related projects.

TABLE 4-5: OBSERVED AVERAGE ACCESS POINT SPACING VS. STANDARD

Corridor	Segment	Jurisdiction	Average Spacing	Spacing Standard
South 6th Street	Shasta Way to Washburn Way	City	145 feet	300 feet
	Washburn Way to Altamont Drive	City	150 feet	300 feet
	Altamont Drive to Crater Lake Parkway	County	120 feet	300 feet
Washburn Way	Shasta Way to South 6th Street	City	120 feet	300 feet
	South 6th Street to Hilyard Avenue	City	290 feet	300 feet
	Hilyard Avenue to Laverne Avenue	City	245 feet	300 feet
Shasta Way	South 6th Street to Washburn Way	City	130 feet	100 feet
	Washburn Way to Avalon Street	City	130 feet	100 feet
	Avalon Street to Crater Lake Parkway	County	160 feet	100 feet

Washburn Way

Washburn Way south of Shasta Way serves as a major commercial area within Klamath Falls. Many existing developments along this corridor have undefined access to and from Washburn Way. This arrangement creates operational and safety concerns that will likely increase as future develop occurs in the area. The intersection of Washburn Way/Shasta Way has been identified as having a crash rate that exceeds the critical crash rate.

South 6th Street

South 6th Street serves as a commercial center for Klamath Falls residents as well as a route for regional trips passing through the urban area. As such, access and mobility along this corridor should be carefully considered and balanced. The segments along South 6th Street from Summers Lane to Fargo Street and from Homedale Road to Madison Street have been identified as having a crash rate that exceeds the critical crash rate.

Shasta Way

Shasta Way is a corridor that runs parallel to South 6th Street and serves as an alternative route. As development occurs within the urban area, congestion along Shasta Way will likely increase. As such, specific standards should be outlined that maintain a high level of mobility while allowing for additional development in the area to occur.

The intersection of Washburn Way/Shasta Way and the segment along Shasta Way from South 6th Street to Crater Lake Parkway have been identified as having a crash rate that exceeds the critical crash rate.

Roadway Policies and Studies

The following subsection describe polices related to the future management of the transportation system as well as recommended studies to better plan for the long term vision of specific corridors or transportation management areas.

TRAFFIC IMPACT STUDY REQUIREMENTS/DEVELOPMENT REVIEW STANDARDS

Uniform requirements for development review with regard to the triggers, analysis level, and study area required for Traffic Impact Letter and Traffic Impact Analyses are included in *Technical Appendix 1C*. The scoping process includes coordination with the City, County and ODOT where the study area would include roadways within their jurisdiction. All development should document their level of

reliance on the state highway system and how their site plan could help reduce reliance on the state highway system.

ALTERNATIVE MOBILITY STANDARDS ON STATE HIGHWAY

Alternative mobility standards should be considered for key intersections on the state highway system in the Klamath Falls urban area in cases where applicable mobility standards are expected to be exceeded and feasible mitigation measures do not exist or are not economically feasible.

Because facilities that exceed mobility standards can limit economic development in the vicinity of that facility, alternative mobility standards allow some development to occur in exchange for higher levels of congestion.

Locations where an alternative mobility standard may be necessary if the identified improvements remain unfunded include the following:

- OR 39/Biehn Street/Campus Drive
- Main Street/OR 39
- OR 39/Shasta Way
- OR 39/Fargo Street

TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures include any method intended to shift travel demand from single occupant vehicles to non-auto modes or carpooling, travel at less congested times of the day, or to locations with more available vehicle capacity. Some common examples of TDM strategies include programs such as carpool matching assistance or flexible work shifts; parking management strategies; direct financial incentives such as transit subsidies; or facility or service improvements, such as bicycle lockers or increased bus service.

Some of the most effective TDM strategies are best implemented by employers and are aimed at encouraging non-single occupancy vehicle (SOV) commuting. Strategies include preferential carpool parking, subsidized transit passes, and flexible work schedules. The City and County can play a critical role in support of TDM through provision of facilities and services, as well as development policies that encourage TDM.

Towards this end the City and County should practice access management and connectivity strategies that support TDM. Other strategies include provision of facilities (sidewalks, bicycle lanes, transit amenities) and management of existing resources (parking). Another critical role that cities play is in the policies related to development activities. Through support, incentive, and mandate, the City and

County can ensure that new development supports a balanced transportation system. Several broad TDM strategies and their typical implementation strategies are summarized in Table 4-6.

TABLE 4-6: TDM STRATEGIES AND TYPICAL IMPLEMENTING ROLES

	TDM Strategy	City/County	Transportation Management Association[1]	Developers	Transit Provider	Employers	State
TDM-1	Public parking management	P		S	S	S	
TDM-2	Flexible parking requirements	P		S		S	
TDM-3	Connectivity standards	P		S			P
TDM-4	Pedestrian facilities	P		S		S	S
TDM-5	Bicycle facilities	P		S			S
TDM-6	Transit stop amenities	S		S	P		
TDM-7	Parking management	P		S		S	
TDM-8	Limited parking requirements	P		S			
TDM-9	Carpool match services	S	P			S	
TDM-10	Parking cash out		S		S	P	
TDM-11	Subsidized transit passes				S	P	
TDM-12	Carsharing program support	P	S	S	S	S	

Note: [1]A Transportation Management Association does not currently exist in Klamath Falls
P: Primary role
S: Secondary/Support role
* Primary implementation depends on roadway jurisdiction

While all the strategies listed in Table 4-7 could be implemented in Klamath Falls, the urban area faces difficult challenges related to TDM strategies. Given the climate and culture, not all of the options listed would receive strong public support or involvement. As such, care should be taken to implement strategies that are consistent with Klamath Falls lifestyles, while still effectively reducing travel demand. Below is a list of specific strategies with the greatest potential to be effective in Klamath Falls

- Connectivity Standards
- Pedestrian Facilities
- Bicycle Facilities
- Parking Management
- Developer Incentives

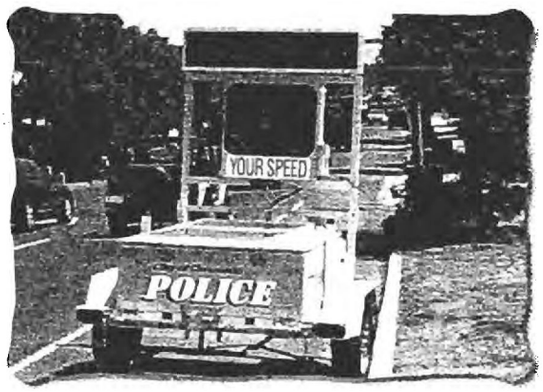
Incentives can also be used to encourage development to incorporate facilities, strategies and programs that promote TDM. For example, a tiered system of System Development Charge (SDC) credits could be provided to developers that implement two or more TDM strategies such as paid parking, special carpool parking, free transit passes, shower facilities, electric vehicle charging stations, etc.

Many of the above TDM strategies would require coordination between the City/County and future developments that occur within the Klamath Falls Urban Area. This can be accomplished by outlining clear standards related to access management, connectivity, complete street design, and parking requirements, to name a few. When developing these standards, however, it is important for consistency between the City and County to maximize the effectiveness of those standards.

NEIGHBORHOOD TRAFFIC MANAGEMENT

Neighborhood Traffic Management (NTM) is used to describe traffic control devices typically used in residential neighborhoods to slow traffic or possibly reduce the volume of traffic. NTM is often called traffic calming due to its ability to improve neighborhood livability. The following subsections provide illustrations and descriptions of neighborhood traffic management strategies that could be applied in the Klamath Falls urban area to address traffic issues that arise over time:

Speed Wagon (reader board that displays vehicle speed)



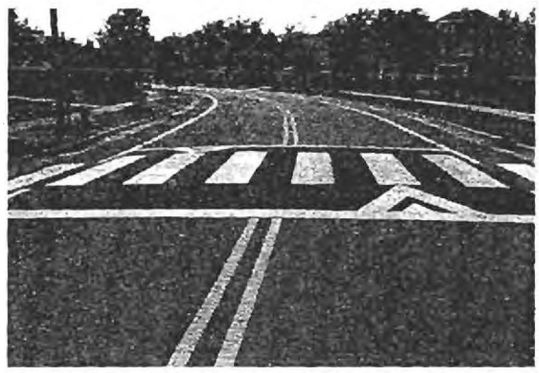
Pros:

- Inexpensive
- Low operating costs
- Mobile

Cons:

- Penalties for speeding not enforced
- Not permanent

Speed Humps



Pros:

- Permanent
- Can be used to provide raised pedestrian crossings
- Can be modified to accommodate emergency vehicles

Cons:

- Placement of speed humps can be contentious
- Can impede snow removal
- Requires maintenance

Traffic Circles

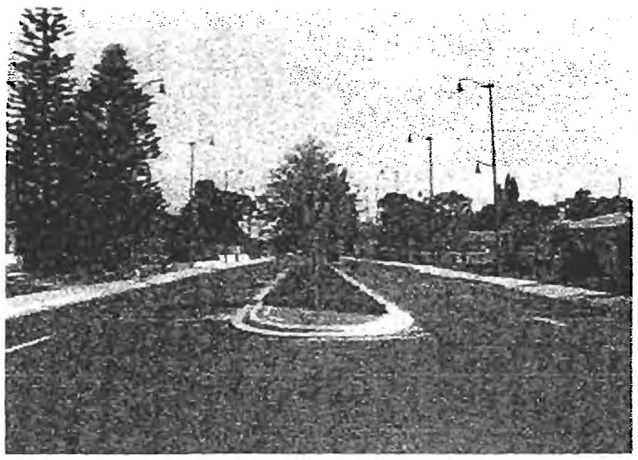
Pros:

- Can have aesthetic value
- Physical barrier encourages lower speeds

Cons:

- Can impede snow removal
- Can impede emergency vehicles or freight/delivery truck movement
- Increased maintenance costs

Medians



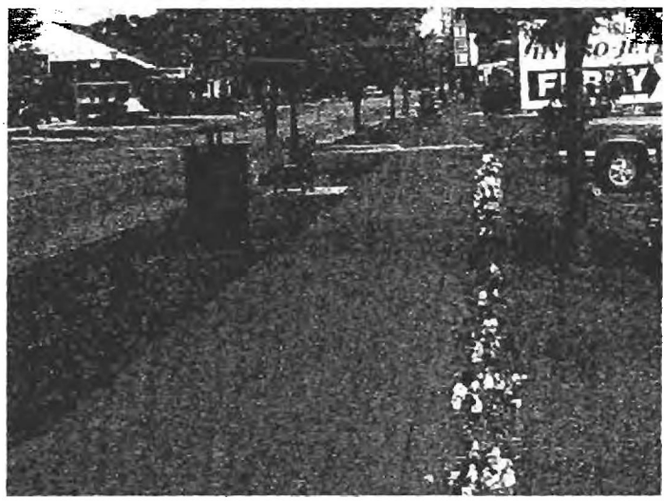
Pros:

- Eliminates potential conflict points
- Provides pedestrian refuge
- Can benefit access management

Cons:

- Expensive to construct
- Can impede roadway connectivity
- Can impact business access

Landscaping



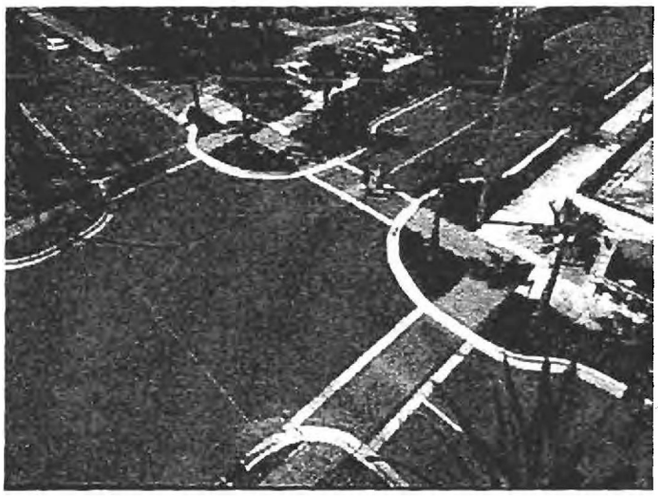
Pros:

- Aesthetic value
- Provides buffer for pedestrians
- Can have traffic calming effect

Cons:

- Requires additional maintenance, including weed management
- Requires additional right-of-way allocation
- Can impede sight distance

Curb Extensions



Pros:

- Reduces pedestrian crossing distance
- Can have a traffic calming effect

Cons:

- Expensive to construct
- Can impede snow removal
- Can impede freight movements

Chokers (narrows roadway at spots in street)

Pros:

- Can be used in conjunction with a midblock pedestrian crossing
- Can have traffic calming affect

Cons:

- Expensive to construct
- Can impede snow removal

Narrow Streets

Pros:

- Reduces pedestrian crossing distance
- Can have a traffic calming effect
- Less asphalt to maintain

Cons:

- Can impede emergency vehicles
- Can limit availability of on-street parking
- Can impede snow removal

Closing Streets

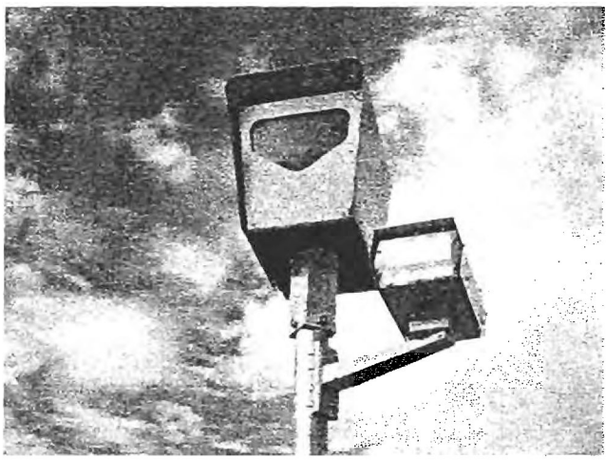
Pros:

- Lack of direct through routes can reduce speeds

Cons:

- Can create connectivity issues, counter to TSP goals
- May increase speeds on alternative routes
- May increase volumes on alternative routes

Photo Radar



Pros:

- Permanent speed enforcement
- Strong deterrent for excessive speeds

Cons:

- Expensive initial investment required
- Not portable

On-Street Parking

Pros:

- Increase available parking
- Naturally narrows the street

Cons:

- Adequate right-of-way must exist or be created
- Can conflict with bicycle lanes
- Can create additional conflict points for vehicles
- Can impede snow removal
- Can reduce sight distance

Selective Enforcement

Pros:

- Mobile
- Can target identified problem areas

Cons:

- Requires allocation of enforcement resources
- May only result in temporary improvement

Neighborhood Watch

Pros:

- Constant presence
- Operated on a volunteer basis
- Enforcement personal have vested interested

Cons:

- Requires large neighborhood commitment
- Interest may wane over time

NTM should be considered in an area-wide manner to avoid shifting impacts between areas and should only be applied where a majority of neighborhood residents agree that it should be done. Research of traffic calming measures demonstrates their effectiveness in reducing vehicle speeds. Table 4-7 summarizes nationwide research of over 120 agencies in North America.

TABLE 4-7: NEIGHBORHOOD TRAFFIC MANAGEMENT PERFORMANCE

Measures	No. of Studies	Speed Reduction (MPH)			Volume Change (ADT)			Public Satisfaction
		Low	High	Ave.	Low	High	Ave.	
Speed Humps	262	1	11.3	7.3	0	2,922	328	79%
Speed Trailer	63	1.8	5.5	4.2	0	0	0	90%
Diverters	39	-	-	0.4	85	3,000	1102	72%
Circles	26	2.2	15	5.7	50	2,000	280	72%
Enforcement	16	0	2	2	0	0	0	71%
Traffic Watch	85	0.5	8.5	3.3	0	0	0	98%
Chokers	32	2.2	4.6	3.3	45	4,100	597	79%
Narrow Streets	4	5	7	4.5	0	0	0	83%

Source: Survey of Neighborhood Traffic Management Performance and Results, ITE District 6 Annual Meeting, by R S. McCourt, July 1997.

Typically, NTM receives a favorable reception by residents adjacent to streets where vehicles travel at speeds above 30 MPH. However, NTM can also be contentious because it may be perceived by one neighborhood as just moving the problem from one neighborhood to another rather than solving it. Traffic calming may also be perceived as impacting emergency travel or raising liability issues.

PLANNED STUDIES

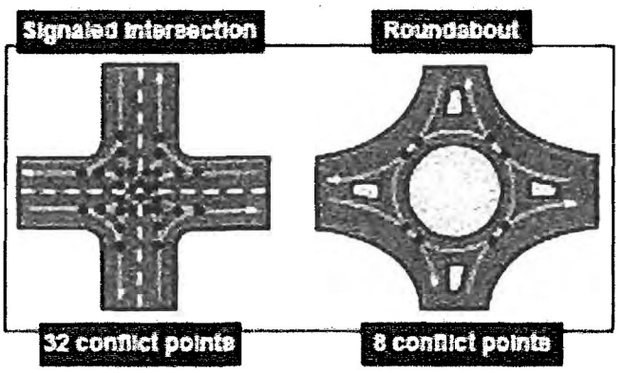
Klamath Falls has key transportation corridors that would benefit from a detailed refinement plans to help guide future development and transportation improvements. In addition, the need for a more advanced traffic signal system within the urban area has been discussed and should be evaluated.

In response to those needs, the TSP identifies the need to conduct the following studies described in Table 4-8.

TABLE 4-8: RECOMMENDED STUDIES

Project Number	Name	Description	Cost	Priority
ST1	Crater Lake Parkway Corridor Improvement Study	Would conduct a study that would identify and evaluate key intersections along the corridor and identify improvements needed to serve users.	$100,000	High
ST2	Shasta Way Corridor Improvement Study	Would conduct a study that would identify and evaluate key intersections along the corridor and identify improvements needed to serve users.	$100,000	Low
ST3	Traffic Signal Retiming Study	Would conduct a study that would evaluate existing signalized intersections and optimize timing plans to better serve traffic conditions, resulting in a more efficient traffic signal system.	$150,000	High
ST4	Advanced Signal Systems Study	Would conduct a study that would evaluate adaptive signal systems in Klamath Falls focused on study and implementation along key travel corridors.	$150,000	High
		Total:	$500,000	

Planned Safety Improvements



A number of safety focus intersections have been identified through this planning process that each warrant a more in-depth evaluation to determine the countermeasures that have the potential to provide the most benefit. In addition, the critical crash areas are likely to change over the course of the plan horizon. As such, a programmatic approach to safety (i.e., dedicating a specified sum of capital improvement dollars to studying and improving identified safety deficiencies each year) is planned, including:

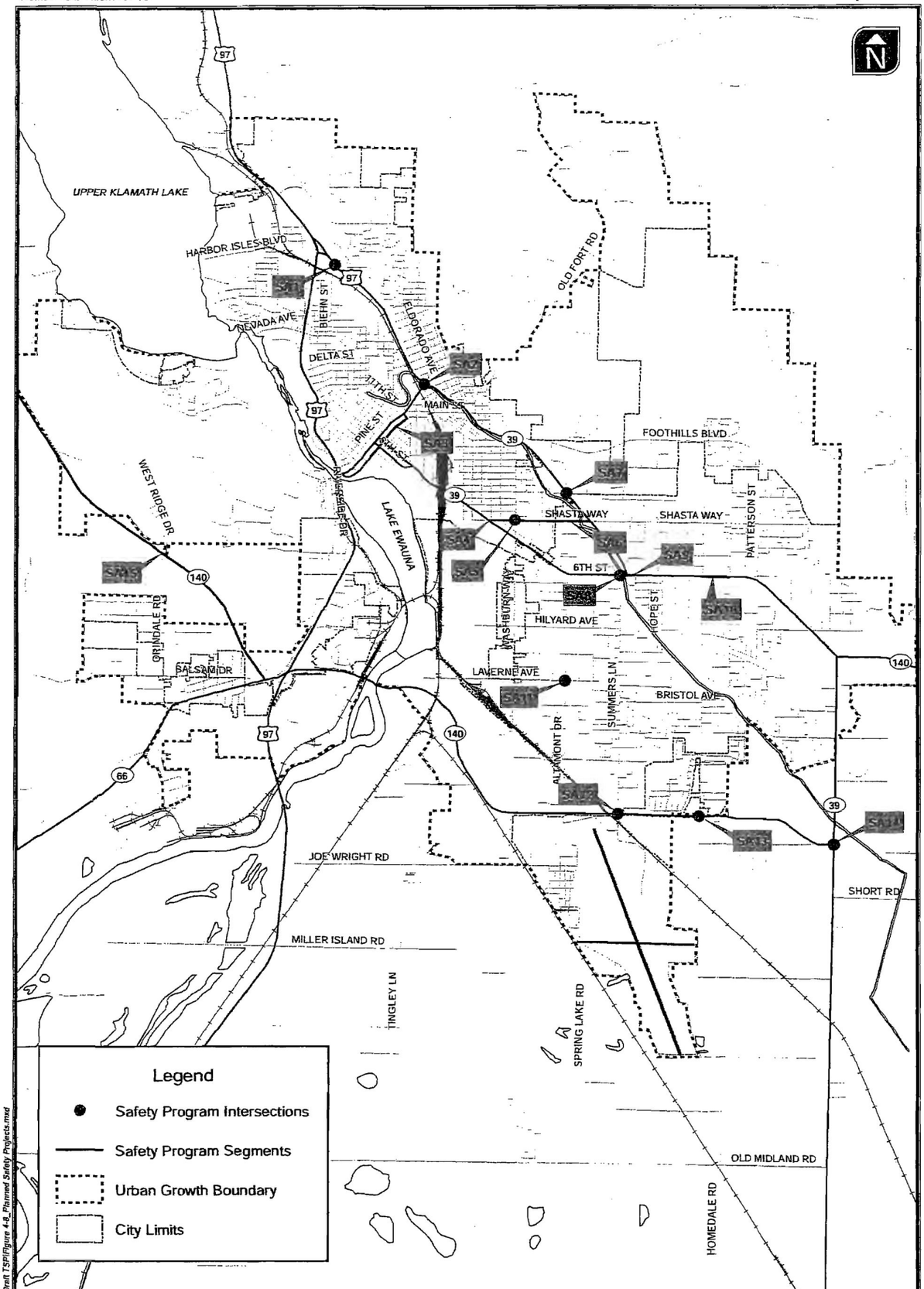
- $30,000 - $50,000/year – Study of safety deficiencies
- $100,000 - $120,000/year – Safety related capital improvements

Table 4-9 outlines the locations where safety deficiencies were identified and potential mitigation measures identifed. These projects are also shown in Figure 4-8.

TABLE 4-9: PLANNED SAFETY STUDIES

Project Number	Name	Description	Cost	Priority
SA1	Improve bicycle facilities at the intersection of Biehn Street/Campus Drive	Would provide clearer routes through the intersection for bicycle users.	$30,000	High
SA2	Bicycle crossing of OR 39	Would provide a bicycle connection across OR 39 from Esplanade Avenue to Melrose Street	$30,000	High
SA3	Safety Improvements on Klamath Avenue from Main Street to 3rd Street	City monitor on an annual basis.	$50,000	Low
SA4	Safety Improvements on Shasta Way from South 6th Street to Washburn Way	Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street. Investigate feasibility of installing a raised median.	$50,000	Low
SA5	Safety Improvements at Washburn Way & Shasta Way	Conduct site visit to confirm traffic signal head visibility on southbound approach. Depending on visibility, investigate ways to improve signal head visibility such as installing near-side traffic signals for approaching vehicles.	$30,000	Low
SA6	Safety Improvements on Shasta Way from Washburn Way to OR 39	Conduct a focused safety study of the segment in conjunction with Project I4. Focus of study to identify contributing factors to crashes and determine potential countermeasures to reduce crashes.	$50,000	Medium
SA7	Safety Improvements at OR 39 & Eberlein Avenue	Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate. Evaluate possible realignment options.	$30,000	Low
SA8	Improve bicycle facilities at the intersection of Summers Lane/South 6th Street	Would improve bicycle and pedestrian facilities at the intersection of Summers Lane/South 6th Street. Should be considered in conjunction with project I18.	$30,000	High
SA9	Safety Improvements on South 6th Street from Summers Lane to Fargo Street	Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street.	$50,000	High
SA10	Safety Improvements on South 6th Street from Homedale Road to Madison Street	Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street. Investigate feasibility of installing a raised median.	$50,000	Medium
SA11	Safety Improvements at Altamont Drive & Laverne Avenue	Conduct intersection study to determine existing available sight distance, prevailing speeds on major street, and feasibility of a roundabout. Develop and compare alternative improvement measures to reduce crashes.	$30,000	High

Project Number	Name	Description	Cost	Priority
SA12	Safety Improvements at OR 140 & Summers Lane	Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate. Consider rail crossing treatments.	$30,000	Medium
SA13	Safety Improvements at OR 140 & Homedale Drive	Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate.	$30,000	Low
SA14	Safety Improvements at OR 140 & OR 39 (South of Big Y)	Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate.	$30,000	Medium
SA15	Safety Improvements on OR 140 from Western UGB to OR 66	Conduct study to determine feasibility of shoulder rumble strips, increased roadside delineation and other similar measures to mitigate crashes. Based on study, implement mitigation measures.	$50,000	Low
		Total:	$570,000	



H:\proj\fall\111172 - Klamath Falls TSP\gis\Draft TSP\Figure 4-8_Planned Safety Projects.mxd

Planned Safety Projets

Figure 4-8

Planned Roadway Projects

The projects presented in Table 4-10 have been identified as future roadway extensions needed throughout the urban area. Many are labeled as "development driven," meaning that the need for these particular projects will be determined based on future development patterns. As such, public capital improvement funds will likely not play a major role in financing the future construction of these projects. These projects are also shown in Figure 4-9. Figure 4-10 shows the proposed lane configuration changes at applicable study intersections. Further, these projects are described in more detail in *Appendix 1D.*

The development of these projects, as wells as the subsequent multimodal focused projects, are described in more detail in *Technical Appendix #5*: Alternatives Analysis which is included in the *Technical Appendix 2E.*

No improvement is proposed at the intersection of Fargo Street/OR 39 due to the intersection's close proximity to the prominent South 6th Street/OR 39 intersection. As such, an alternative mobility standard will be considered as needed at this location. Similarly, no improvements are shown for the intersection in the vicinity of the OR 66/US 97 interchange because of a forthcoming Interchange Area Management Plan (IAMP) for the vicinity. The IAMP will define the specific improvements that will subsequently be amended into the TSP.

TABLE 4-10: PLANNED ROADWAY IMPROVEMENTS

Project Number	Name	Description	Cost	Priority
R1	New Minor Collector from Dan O'Brien Way to Dahlia Street	Would create a new connection from Dan O'Brien Way to Dahlia Street.	$8,216,000	Development Driven
R2	Daggett Avenue Extension	Would extend existing Daggett Avenue alignment north to Dan O'Brien Way.	$1,738,000	Development Driven
R3	Dahila Street Extension	Would extend existing Dahila Street alignment north to Dan O'Brien Way (near Industrial Park Drive)	$882,000	Development Driven
R4	Crescent Avenue Extension	Would extend the existing Crescent Avenue alignment north to Biehn Street.	$6,753,000	Development Driven
R5	Basin View Roadway	Roadway would serve Basin View development area.	$8,654,000	Development Driven
R6	Roadway from Foothill Blvd to Old Fort Road	Roadway would extend north from Foothills Boulevard to Old Fort Road.	$17,455,000	Development Driven
R7	East Main Street Extension	Would extend East Main Street from the intersection of East Main Street/South 6th Street to the intersection of Washburn Way/Crosby Avenue.	$11,820,000	High
R8	Upgrade Emerald Street	Would upgrade Emerald Street south of OR 66 to serve future development in the area.	$1,666,000	Development Driven
R9	New Roadway South of OR 66/OR140	Would construct a new roadway that would extend south from the OR66/OR140 intersection.	$2,574,000	Development Driven
R10	Hilyard Avenue Extension	Would connect the eastern portion of Hilyard Avenue to Homedale Road.	$2,169,000	Medium
R11	New Collector from Hilayrd Avenue to Harlan Drive	Would create a new connection from Hilyard Avenue to Harland Drive.	$6,651,000	Development Driven
R12	Washburn Way Realignment	Would realign Washburn Way to connect with Joe Wright Road east of the railroad track alignment	$2,389,000	High
R13	Brett Way Extension	Would extend Brett Way from Summer Lane to Homedale Road	$9,824,000	Development Driven
I1	OR 39/Biehn Street/Campus Drive Intersection	Construct a northbound left-turn lane. Would require the construction of an additional receiving lane.	$839,000	Low
I2	Biehn Street/Oregon Avenue Intersection	Construct a southbound left-turn lane.	$164,000	Medium
I3	Main Street/OR 39 Intersection	Modify signal timings to better serve existing and future demand.	$195,000	Low
I4	OR 39/Washburn Way Intersection	Modify signal phasing to provide protected/permitted phasing northbound, permitted phasing southbound, overlap phasing for eastbound right-turn, and overlap phasing for southbound right-turn.	$195,000	High
I5	Eberlein Avenue/OR 39 Intersection	Install traffic signal.	$507,000	Medium
I6	OR 39/Shasta Way Intersection	Modify signal phasing to provide protected/permitted phasing on Shasta Way.	$195,000	Low

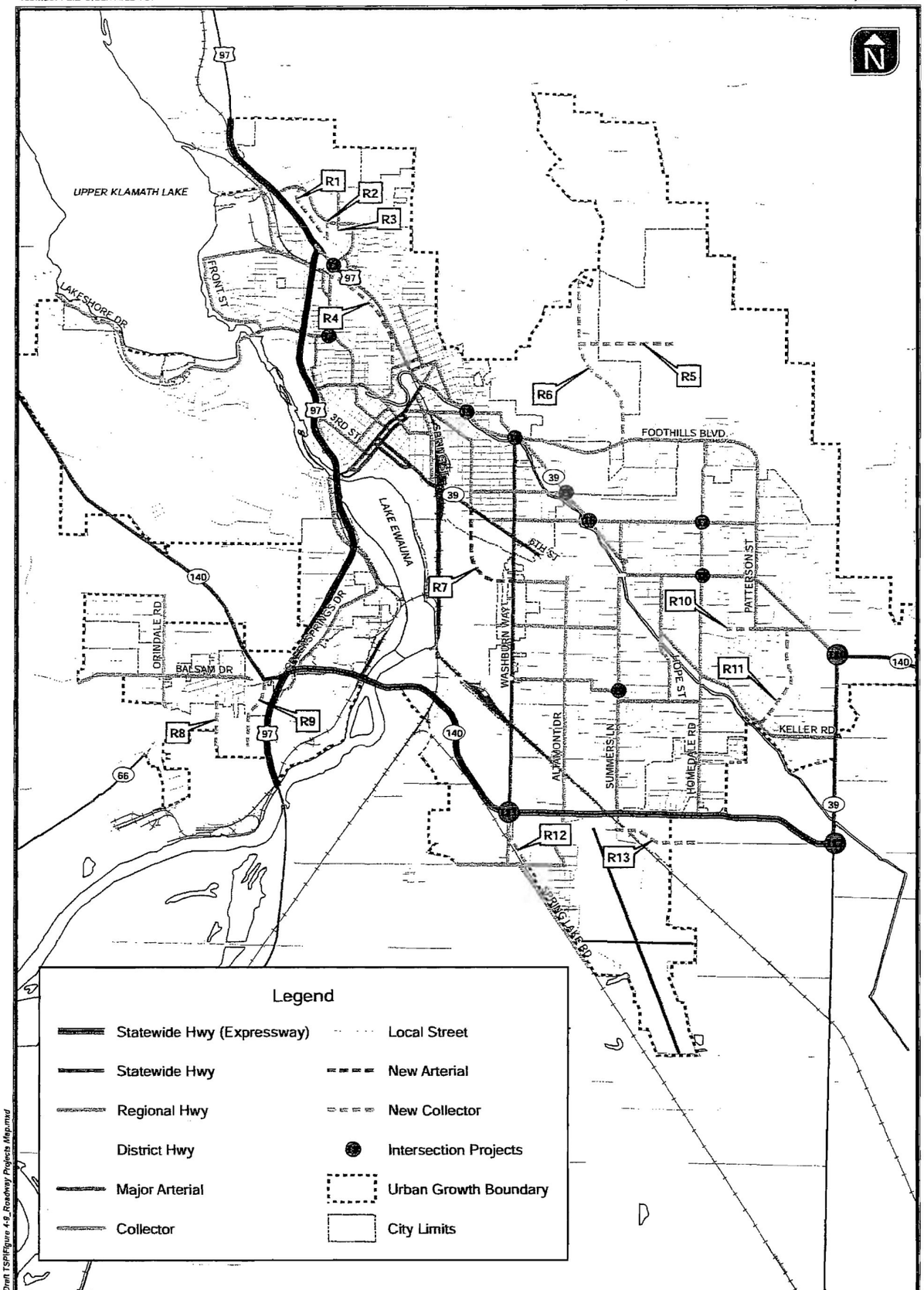
Project Number	Name	Description	Cost	Priority
I7	Shasta Way/Homedale Road Intersection	Install traffic signal.	$507,000	Development Driven
I8	Homedale Road/OR 39 Intersection	Construct eastbound right-turn lane. Would likely impact adjacent parking lot.	$743,000	High
I9	Summers Lane/Clinton Avenue Intersection	Install traffic signal.	$507,000	Medium
I10	OR 39/OR 140 (Big Y) Intersection	Construct southbound left-turn lane. Would require second receiving lane and would likely impact adjacent parcels.	$825,000	High
I11	Washburn Way/OR 140 Eastbound Ramps Intersection	Install traffic signal	$507,000	High
I12	OR 39/OR 140 (South of Big Y) Intersection	Install traffic signal	$507,000	Medium
		Total:	$86,482,000	

Table 4-11 summarizes the total cost estimates for the planned roadway studies, safety improvements/studies, roadways projects, and intersections projects that are detailed in the Roadway Facilities Plan.

TABLE 4-11: TOTAL ROADWAY FACILITY PLAN COST SUMMARY

Priority	Studies	Safety	Roadway	Intersection	Total Needs
High	$400,000	$170,000	$14,209,000	$2,270,000	
Medium	$0	$160,000	$2,169,000	$1,685,000	
Low	$100,000	$240,000	$0	$1,229,000	
Total	$500,000	$570,000	$16,378,000	$6,912,000	
Development Drive	-	-	$64,413,000	$507,000	
Total	$500,000	$570,000	$80,791,000	$5,591,000	$87,552,000

Detailed project descriptions and complete cost estimates can be found in *Appendix 1D and 1E*, respectively.



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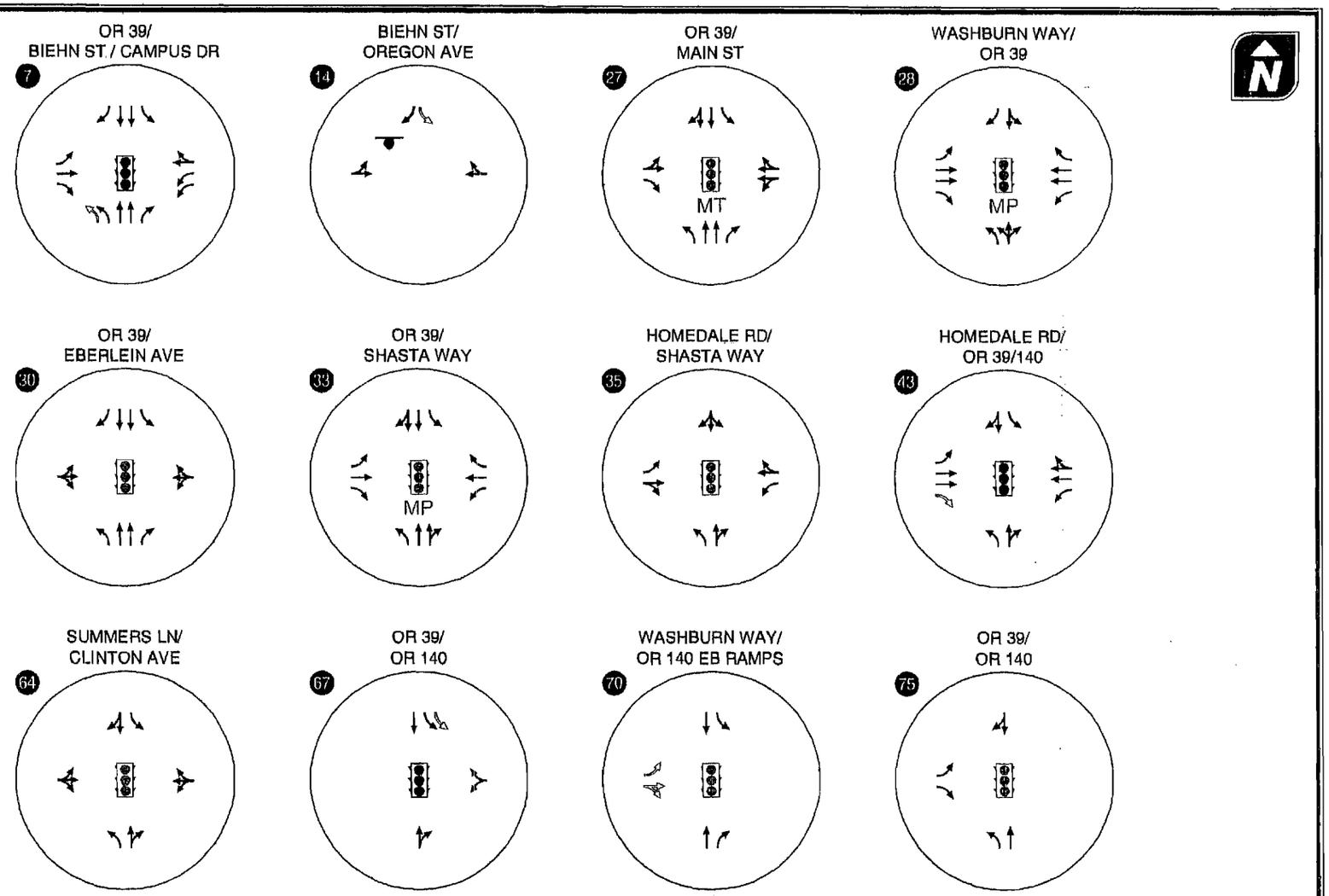
Roadway Projects Map

Figure 4-9



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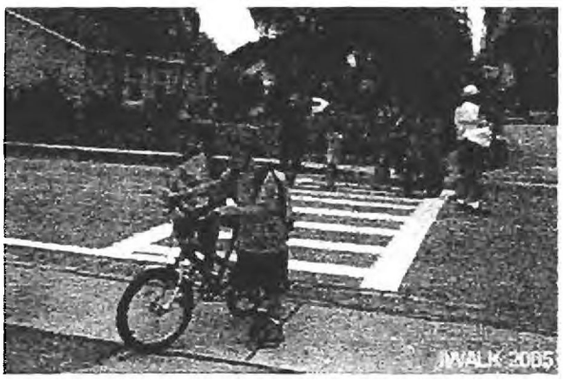
Section 5 Pedestrian Facilities Plan

5 PEDESTRIAN FACILITIES PLAN



The pedestrian system within the Klamath Falls urban area currently consists of on-street pedestrian facilities and a small network of multi-use trails. Future plans for improvements to the pedestrian system are focused on strategic additions to the multi-use path system and enhancements to the on-street pedestrian facility network to better serve area schools and facilitate local walking trips. The following sections describe the existing pedestrian network inventory and the specific pedestrian projects planned.

Existing Pedestrian Network

Pedestrian facilities serve a variety of needs, including:

- Relatively short trips (generally considered to be under a mile) to major pedestrian attractors, such as schools, parks, and public facilities;
- Recreational trips (e.g., jogging or hiking) and circulation within parks;
- Access to transit (generally trips under 1/2-mile to bus stops); and,
- Commute trips, where mixed-use development is provided and/or people have chosen to live near where they work.

Pedestrian facilities should be integrated with transit stops and effectively separate pedestrians from conflicts with vehicular traffic. Furthermore, pedestrian facilities should provide continuous connections among neighborhoods, schools, employment areas, and nearby pedestrian attractors. Pedestrian facilities usually refer to sidewalks or paths, but also include pedestrian crossing treatments for high volume roadways.

Within the Klamath Falls urban area, sidewalks are provided on one or both sides of some of the major roadways (i.e., arterials and collectors). Noticeable gaps in the sidewalk network exist along Nevada Avenue, Eldorado Boulevard, Spring Street, Washburn Way, Altamont Drive, Hope Street, Patterson Street, Laverne Avenue, Clinton Avenue, Harlan Drive, and Keller Road. Existing pedestrian facilities within the urban area are shown in Figure 5-1.

Planned Pedestrian Projects

Table 5-1 describes the planned pedestrian projects intended to provide better pedestrian connections within the urban area and facilitate an increase of pedestrian trips in the future.

TABLE 5-1: PLANNED PEDESTRIAN PROJECTS

Project Number	Name	Description	Cost	Priority
P1	Daggett Avenue Sidewalks: El Dorado Avenue to Clairmont Drive	Would add sidewalks to both sides of the street	$355,000	High
P2	El Dorado Avenue Sidewalks: Van Ness to Daggett Avenue	Would add sidewalks to one side of the street	$820,000	High
P3	Washburn Way Sidewalks: Crater Lake Parkway to Shasta Way	Would add sidewalks to both sides of the street	$1,523,000	High
P4	Eberlein Avenue Sidewalks: Washburn Way to Canal	Would add sidewalks to both sides of the street	$620,000	High
P5	Crest Street and Clinton Street Sidewalks: Hilyard Avenue to Summers Lane	Would add sidewalks to both sides of the street	$2,900,000	High
P6	Laverne Avenue Sidewalks: Washburn Way to Crest Street	Would add sidewalks to both sides of the street	$1,665,000	High
		Total:	$7,883,000	

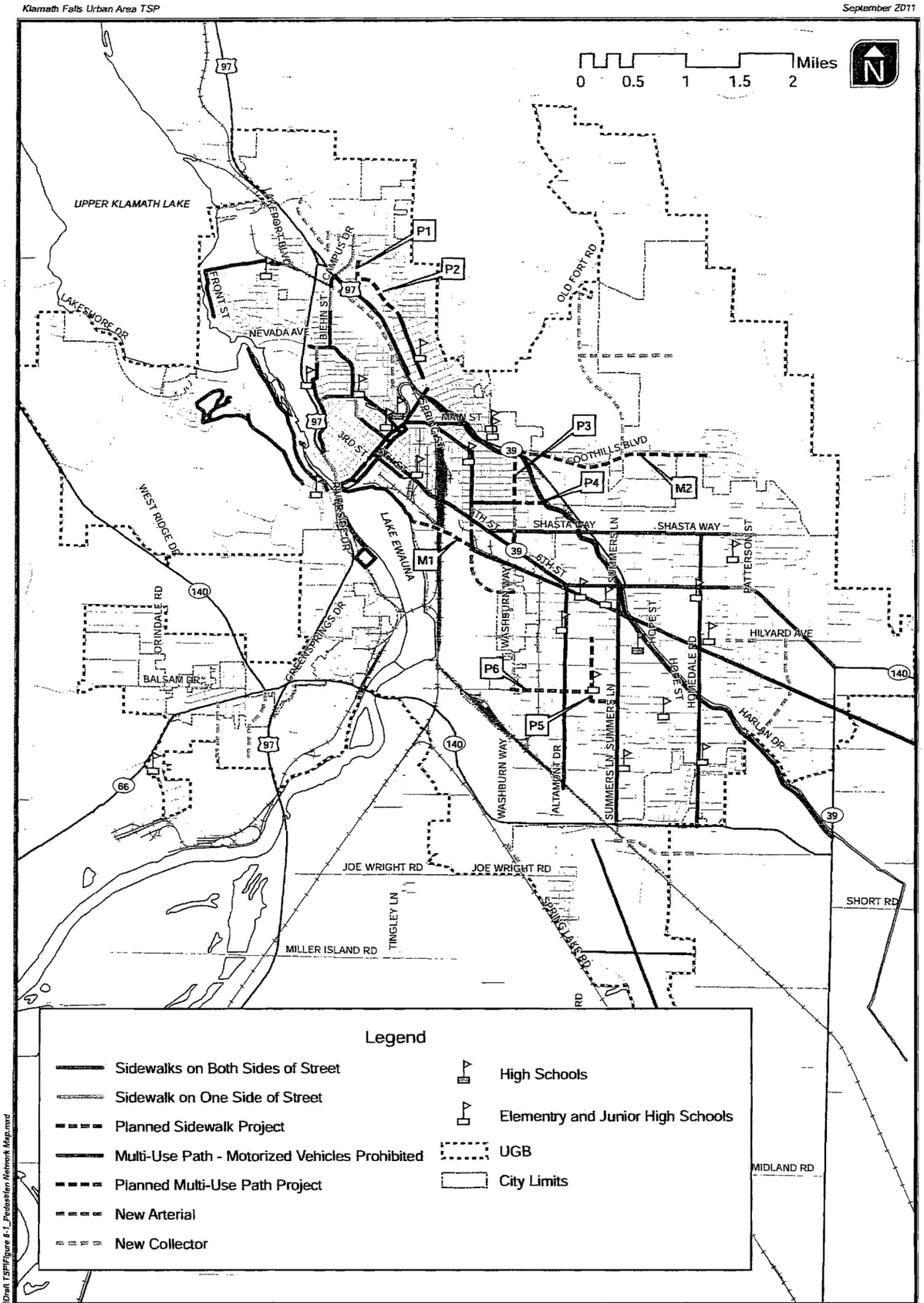
Figure 5-1 shows the location and extent of the planned pedestrian improvements relative to the existing pedestrian facilities within the Klamath Falls urban area. Figure 5-1 includes the projects identified in Table 5-1 to fill in sidewalk gaps in the existing roadway network (shown in red dashed lines) as well as sidewalk facilities that will be constructed as a result of planned future roadways (shown in blue and green).

Table 5-2 summarizes the total cost estimates for the planned pedestrian projects that are detailed in the Pedestrian Facilities Plan.

Detailed project descriptions and complete cost estimates can be found in *Appendix 1D and 1E*, respectively.

TABLE 5-2: TOTAL PEDESTRIAN FACILITY PLAN COST SUMMARY

Priority	Pedestrian Projects
High	$7,883,000
Medium	$0
Low	$0
Total	$7,883,000



H:\proj\file\11172 - Klamath Falls TSP\gis\Draft TSP\Figure 5-1_Pedestrian Network Map.mxd

Pedestrian Network Map

Figure 5-1

Section 6 Bicycle Facilities Plan

6 BICYCLE FACILITIES PLAN

The existing bicycle facilities within the Klamath Falls urban area currently exist on portions of Washburn Way, Biehn Street, and Nevada Avenue. Other bicycle travel within the urban area is on facilities with paved shoulders wide enough to accommodate bicycle travel, on facilities where bicycles can safely be accommodated with vehicular traffic, or on existing multi-use pathways. The following sections describe the existing bicycle facility network and planned improvements for the future.

Existing Bicycle Network

Similar to pedestrian facilities, bicycle facilities (including dedicated bicycle lanes in the paved roadway, multi-use paths shared with pedestrians, etc.) serve a variety of trips. These include:

- Trips to major attractors, such as schools, parks and open spaces, retail centers, and public facilities;
- Commute trips;
- Recreational trips; and
- Access to transit, where bicycle storage facilities are available at the stop, or where space is available on bus-mounted bicycle racks.

Bike lanes are currently provided in relatively limited areas scattered throughout the urban area collectively amounting to 5.5 miles in length. There are approximately 11.8 miles of multiuse path facilities for bicycles and pedestrians generally traversing the urban area from the southeast to northwest along the abandoned OC&E (Oregon, California and Eastern) railroad right-of-way as well as along the "A" Canal. The "A" Canal parallels the western side of OR 39 (Klamath Falls-Malin Highway). Existing bicycle and multi-use facilities are shown in Figure 6-1.

Planned Bicycle Projects

The City and County have agreed that bicycle facilities will be constructed on new collectors and arterials built within the urban area. In addition, an effort will be made by each agency to constructed bicycle facilities on existing collectors and arterials that do not currently have dedicated bicycle facilities. These facilities will be addressed by the following approach:

- Evaluate the feasibility and cost of installing bicycle facilities on arterials and collectors, starting with the highest traveled arterials.
- If retrofitting is feasible, explore the advantages and disadvantages of striping actual lanes versus using bicycle symbols.

This approach will systematically evaluate the existing transportation system and install bicycle facilities where appropriate throughout the urban area.

In addition to systematically evaluating the existing roadway system, specific bicycle and multi-use pathway projects have been identified as priorities for the urban area. The purpose of these projects is to provide more connected bicycle facilities within the urban area and better accommodate both recreational and commuter trips. Table 6-1 describes these specific projects.

TABLE 6-1: BICYCLE AND MULTI-USE PATHWAY PROJECTS

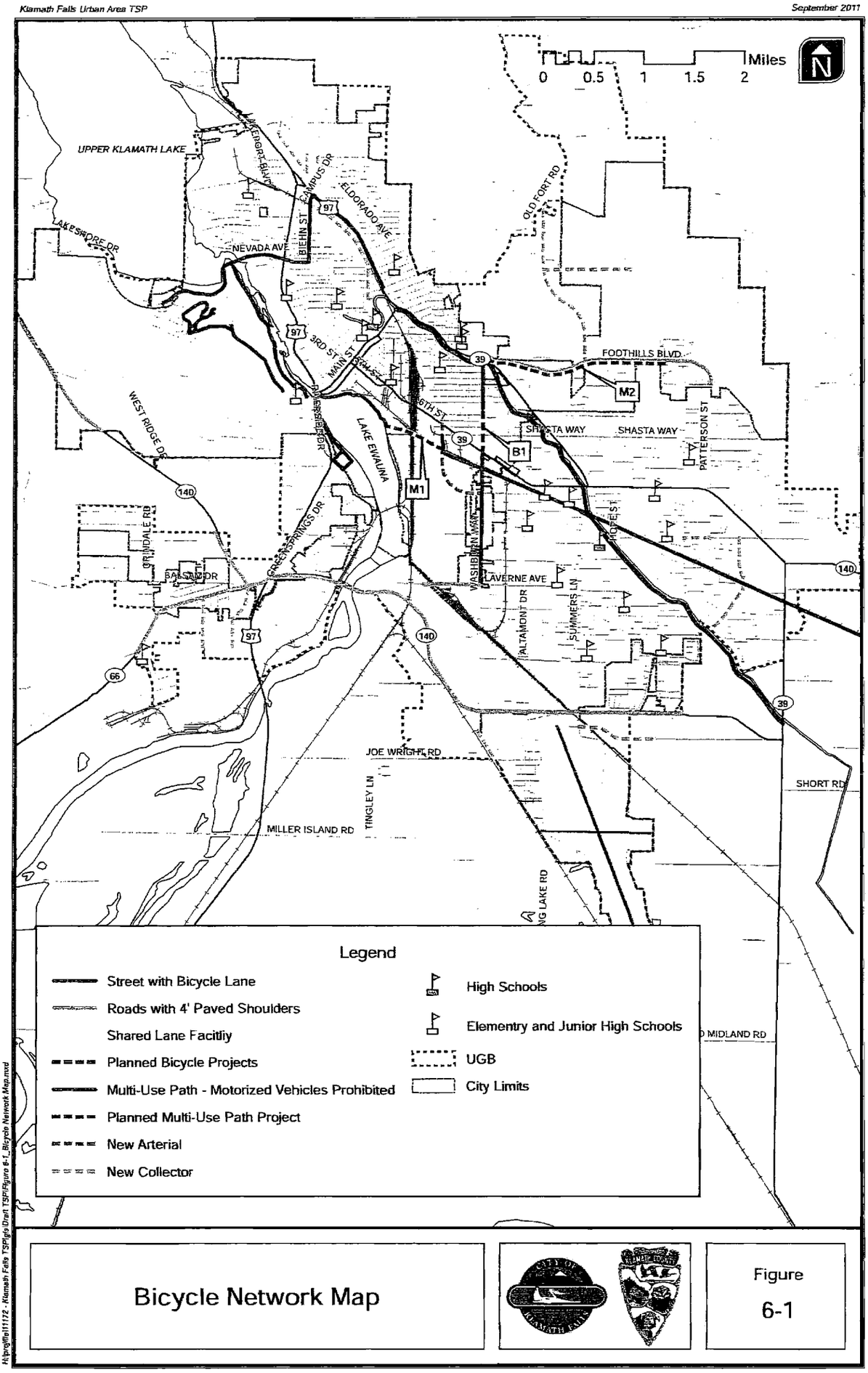
Project Number	Name	Description	Cost	Priority
B1	Washburn Way Bicycle Lanes: Eberlein Avenue to South 6th Street	Would add bike lanes to both sides of the street	$2,570,000	High
M1	Extend OC&E trail to downtown	Would extend the existing alignment of the OC&E trail to serve downtown Klamath Falls	$5,485,000	High
M2	New Multi-Use Path Along Foothillls Boulevard	Would construct a multi-use path along Foothills Boulevard to serve users in the area.	$1,410,000	High
		Total:	$9,465,000	

Figure 6-1 shows the location and extent of the planned bicycle and multi-use pathway projects relative to the existing bicycle and multi-use pathway network. Figure 6-1 includes the projects identified in Table 6-1 to fill in high priority gaps in the existing roadway/multi-use path network as well as bicycle lanes that will be constructed as a result of planned future roadways.

Table 6-2 summarizes the total cost estimates for the planned pedestrian projects that are detailed in the Pedestrian Facilities Plan. Detailed cost estimates and complete cost estimates can be found in *Appendix 1D and 1E,* respectively.

TABLE 6-2: TOTAL BICYCLE FACILITY PLAN COST SUMMARY

Priority	Bicycle Projects	Multi-use Path Projects
High	$2,570,000	$1,410,000
Medium	$0	$0
Low	$0	$0
Total	$2,570,000	$6,895,000



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Bicycle Network Map

Figure 6-1

Section 7 Transit System Plan

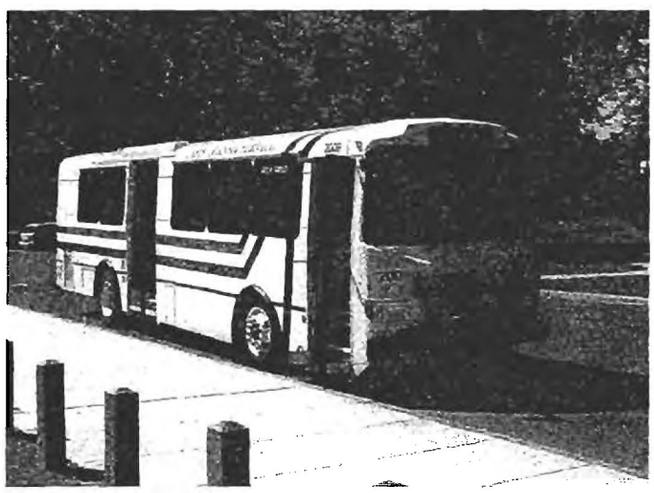
7 TRANSIT SYSTEM PLAN

Existing Transit System

Basin Transit Services (BTS) is the public transit agency for the Greater Klamath Falls Urban Area. The Transit District extends from Terminal City in the north to Kingsley Field (i.e., Klamath Falls Airport) in the south and from the Klamath Falls city limits to an area just beyond OR 39 in the east. Within this area, BTS provides three forms of service: 1) Fixed Route Bus Service; 2) Dial-A-Ride Services and 3) Historical Trolley Tours. Each of these services is discussed below.

FIXED ROUTE BUS SERVICE

As can be seen in Figure 7-1, there were six fixed routes in operation in the Klamath Falls urban area in 2011 and two key transit centers: 1) Downtown Transit Center at 7th Street & Pine Street; and 2) Fairgrounds Transit Center at Altamont Drive & South 6th Street. Routes 1 and 2 are considered the mainline providing a northwest to southeastern backbone of service from Oregon Institute of Technology (OIT) to Klamath Community College (KCC) and points in between. Routes 3 through 6 provide supplemental coverage in the area. Routes 3 and 5 serve the western portions of the urban area, Route 4 provides coverage in the northeastern portion of the urban area and Route 6 covers the southern portion. No bus routes currently extend far enough south to provide service to the airport. The fixed bus routes do have stops located within ¼-mile of the Amtrak Station in downtown Klamath Falls; however, there are no stops at the train station.



BTS provides service on their fixed routes Monday through Saturday; service is not provided on Sundays. Headways on all fixed routes are approximately 1 hour with stops in downtown and on South 6th Street being served multiple times per hour due to the over lapping routes in these areas.

DIAL-A-RIDE SERVICE

Dial-A-Ride service by BTS provides curb-to-curb transportation within the Basin Transit Service District for customers over 60 years old and/or those with disabilities who are unable to use the fixed route bus service. The specific qualifying definition of disabled/handicapped is:

Handicapped persons means those individuals who, by reason of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity or disability, including those who are non-ambulatory wheelchair bound and those with semi-ambulatory capabilities are unable without special facilities or special planning or design to utilize mass transportation facilities and services as effectively as persons who are not so affected (49 CFR, Chapter IV, Part 609.3).

Customers must be pre-certified to use the BTS dial-a-ride service; the certification includes filling out a form available online. http://www.basintransit.com/download.shtml

Dial-A-Ride service is available Monday through Friday from 6:00 a.m. to 7:00 p.m. and Saturday from 10:00 a.m. to 4:00 p.m. Service is not provided on Sundays, New Years Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, or Christmas Day.

HISTORICAL TROLLEY TOURS

Historical bus tours on a rubber-tired trolley are provided Tuesday through Saturday starting and ending at the Klamath County Museum in downtown Klamath Falls. The trolley is operated under Linkville Trolley Company, which is funded through cooperative efforts by the City of Klamath Falls, Klamath County and Basin Transit Service.

Future Transit System Improvements

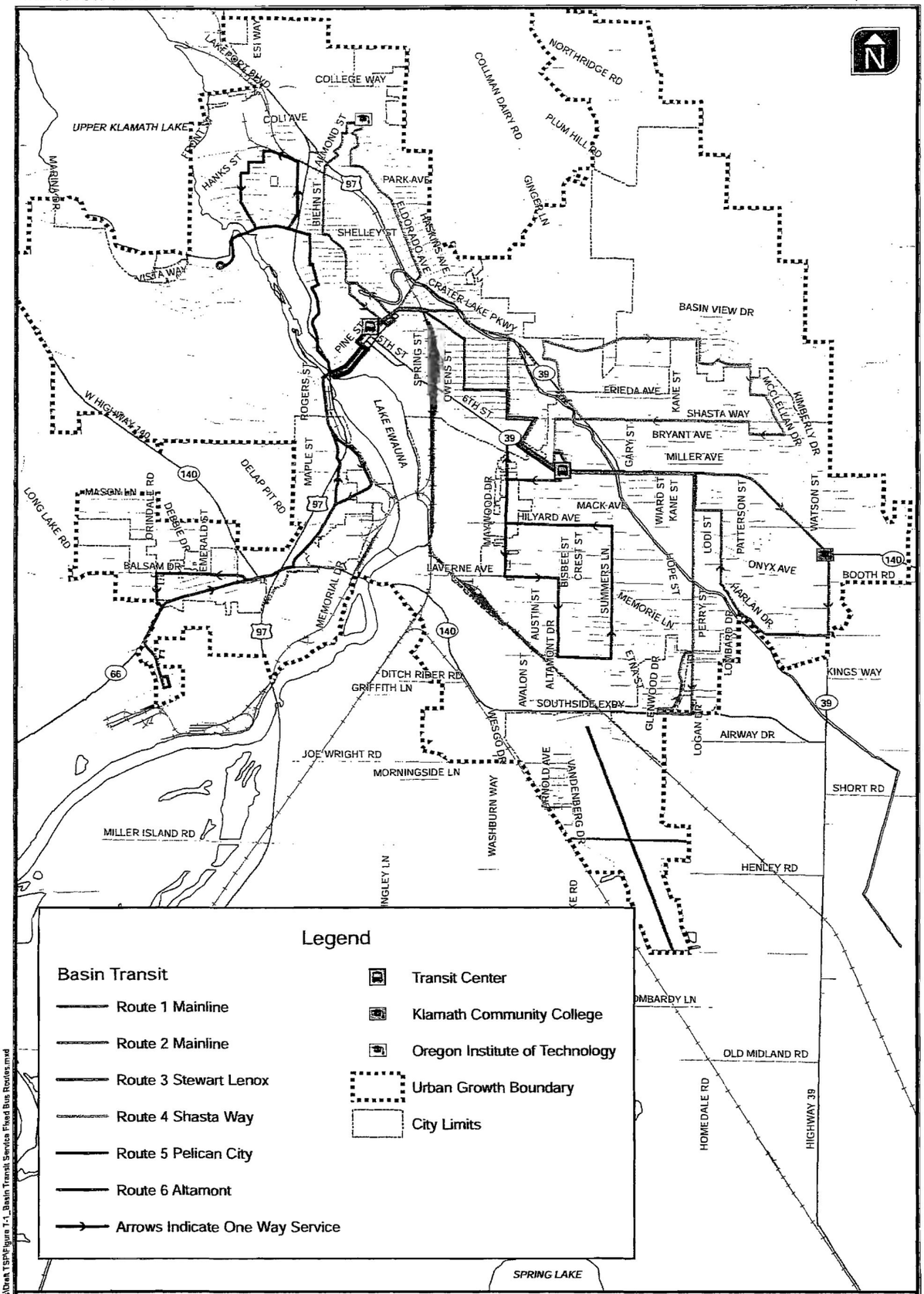
Future improvements to the BTS system were developed based on forecasted land use densities and the identification of areas that would be transit supportive. The projects shown in Table 7-1 are intended to better serve this increase in transit supportive areas.

TABLE 7-1: TRANSIT PROJECTS

Project Number	Name	Description	Operations Costs	Priority
T1	Route 1 frequency	Would increase frequency of service on Route 1	$1,300,000/year	Low
T2	Route 1 operating hours	Would extend operating hours of Route 1	$300,000/year	Low
T3	Route 2 route modification	Would modify Route 2 to serve downtown and South 6th Street	N/A	Low
T4	Route 5 route modification	Would modify Route 5 to serve OIT, Dan O'Brien Way, Pelican City, and Downtown	N/A	Low
		Total:	$1,600,000/year	

Future Transit Study

As of September 2011, the BTS is scheduled to update the transit system plan for the Klamath Falls Urban Area. Upon completion of this study, the updated plan should be referenced for future planned improvements to the transit system.



Basin Transit Service Fixed Bus Routes

Figure 7-1

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Section 8 Rail, Air, Pipeline, & Surface Water Plans

8 Rail, Air, Pipeline, & Surface Water Plans

This section addresses the rail, air, pipeline, and surface water plans for the Klamath Falls urban area. Each subsection below describes each respective network and how it operates within the urban area. No future projects have been identified for any of these service areas as the service is provided by private entities.

Rail Service

The primary track owners and freight line operators in the Klamath Basin are Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) railroads. Freight rail lines connect Klamath Falls to Redding, California in the south via UP's Cascade Line and to Keddie, California via BNSF's line. To the north, Klamath Falls is connected to Eugene through UP's Cascade Line and to Bend through shared trackage rights between UP and BNSF. Amtrak's Coast Staralight Line operates on UP's Cascade Line. The Cascade Line is a Class 4 Line per the Federal Rail Administration's standards; the maximum speed for freight trains on the line is 60 mph and the maximum speed for passenger trains is 80 mph. The railroad system within the urban area and the rail line owners are shown in Figure 8-1.

Air Service

Klamath Falls Airport serves the City of Klamath Falls, Klamath County and surrounding local region. The airport facility, Kingsley Field, is located about 5 miles southeast of downtown Klamath Falls; it is operated by the City of Klamath Falls. The most recent airport planning document (currently the *Klamath Falls Airport Master Plan, January 2005)* should be referenced for airport planning issues.

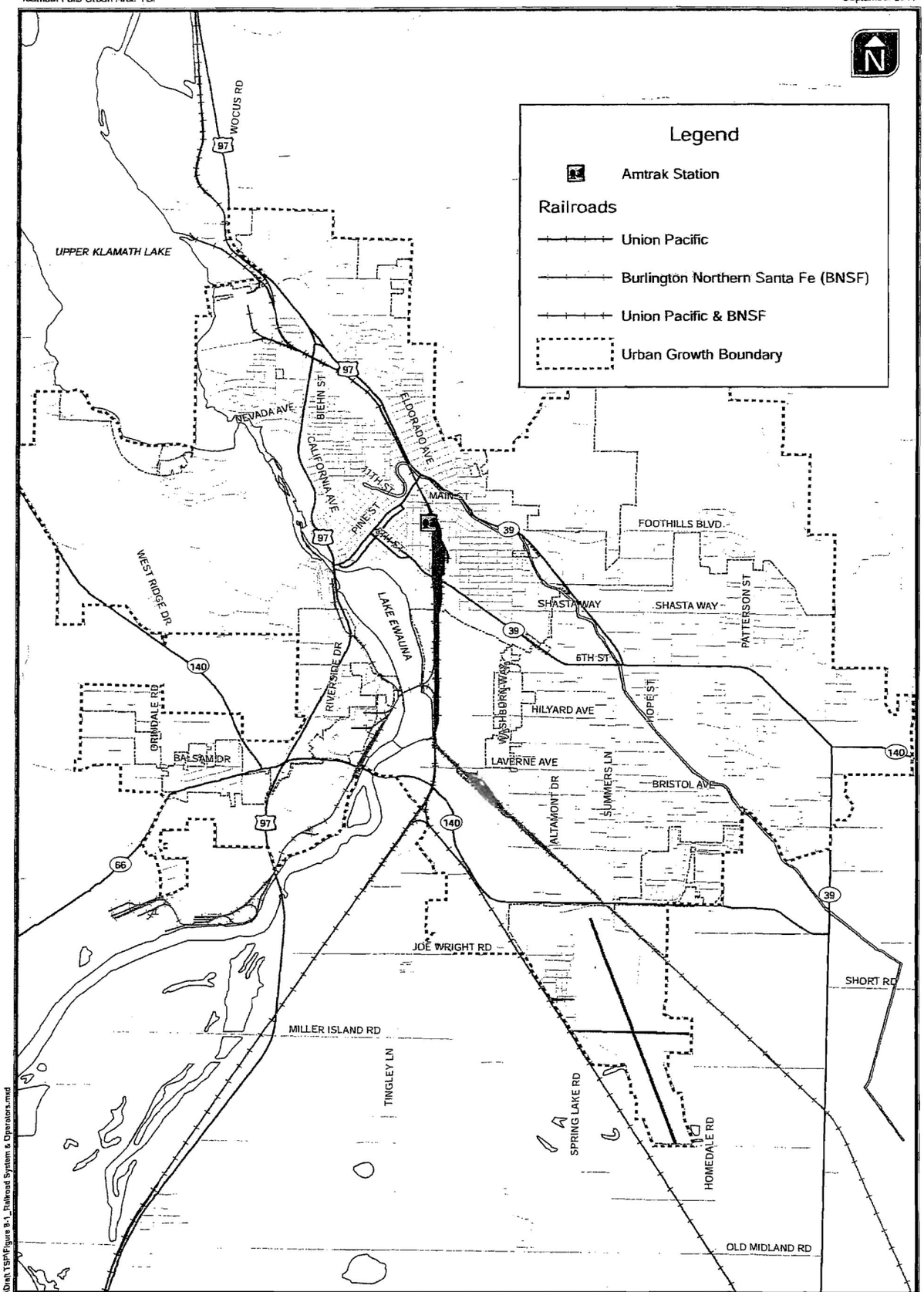
Klamath Falls Airport is classified as a non-hub primary commercial service airport in the National Plan of Integrated Airport Systems 2001-2005, and is classified in the Oregon Aviation Plan as a Category 1, Commercial Service Airport. It serves virtually all of the aviation needs of the Greater Klamath Basin, including all of Klamath County and parts of Siskiyou and Modoc Counties in California. The Klamath Falls Airport serves a mixture of military, commercial, and general aviation use. Much of the airport's use, however, is from general aviation (non-military, non-scheduled) users, such as non-scheduled air-taxi service, U.S. Forest Service fire suppression, agricultural spray applicators, flight school, scenic flights, corporate aviation, and air cargo. Military use of the Klamath Falls Airport is also substantial, and includes refueling of military aircraft; emergency support, air traffic control, and disaster relief by the Oregon Air National Guard; and military training.

Pipeline Service

Pipeline transportation within the Klamath Falls urban area includes transmissions lines for electricity, television, telephone services as well as transport of water, sanitary sewer, and a major north-south transmission line for natural gas.

Surface Water Transportation

While Klamath Falls is located on one of the largest lakes in Pacific Northwest, Upper Klamath Lake, water transportation is limited to recreational uses of the lake. The nearest port is located in Coos Bay, Oregon and is an international/national shipping facility.



Railroad System & Operators

Figure 8-1

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Section 9 Vision Projects

9 VISION PROJECTS PLAN

Several studies have been conducted within the Klamath Falls urban area in recent years that analyzed particular areas in detail and developed plans to accommodate specific future growth scenarios. These studies often assumed build-out of the area being analyzed, thus assessing the "worst-case" scenario for that are in terms of future trip generation. However, the TSP analysis assumed a more broad-based future scenario based on the Klamath Falls Urban Area Travel Demand Model where development was spread throughout the urban area rather than focused in one particular location. As such, the sub-area plans that were developed identified projects that were not observed to be necessary with the 2035 forecast year for the TSP. These sub-area plans include:

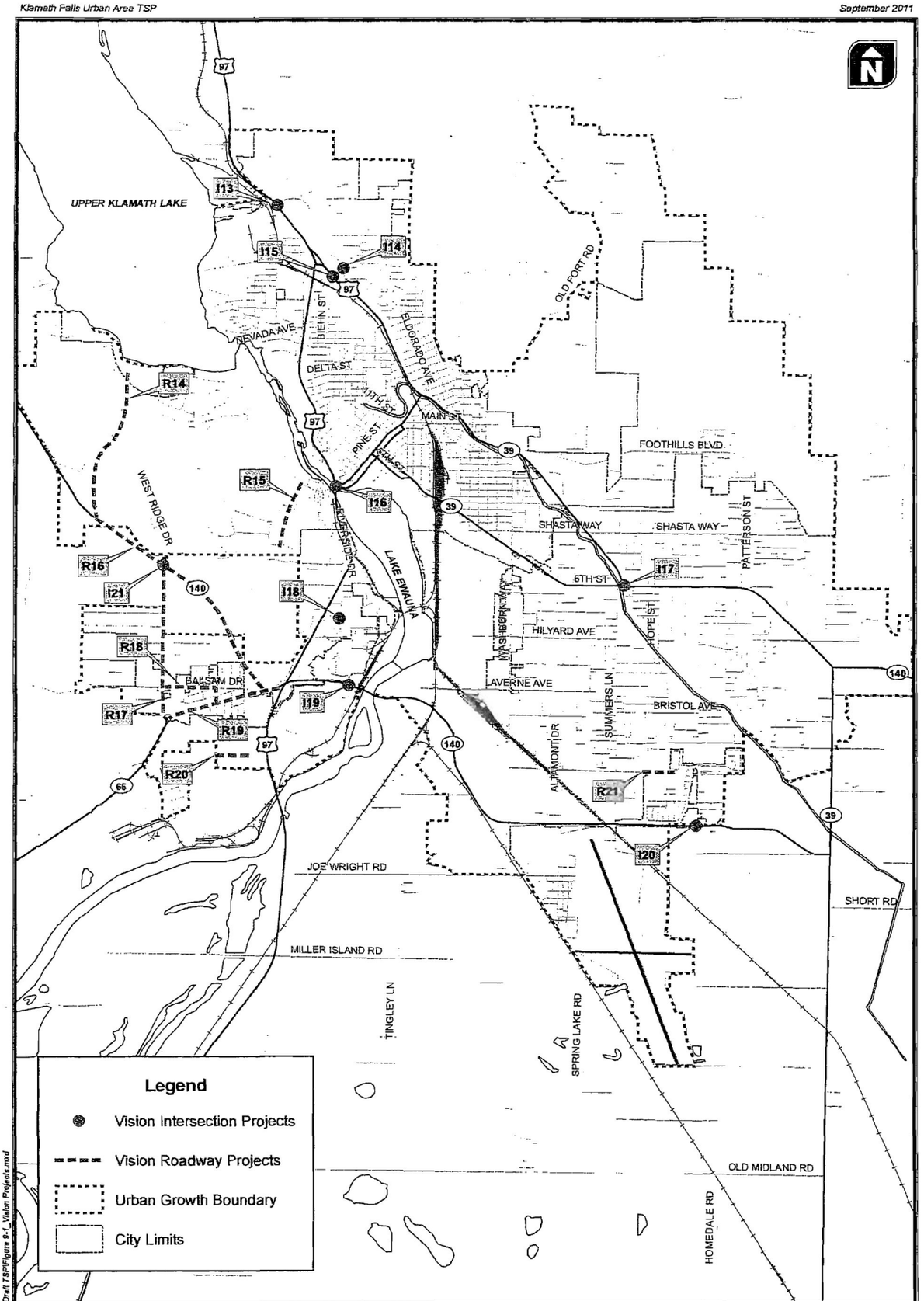
- Klamath Falls Westside Refinement Plan (2006) (Reference 5)
- Orindale/Balsam Sub-Area Master Plan (2007) (Reference 6)
- Klamath Falls Campus Sub-Area Master Plan (2008) (Reference 7)

These plans are provided in *Technical Appendix 2F, Technical Appendix 2G, and Technical Appendix 2H,* respectively.

If concentrated development occurs in the future, one or more of the projects identified by the sub-area plans may be necessary within the TSP horizon. As such, projects identified in the sub-area plans and not previously mentioned in the TSP have been identified as "vision projects," meaning the need for these projects is anticipated to be beyond the horizon year of the TSP but could occur sooner if growth and development over the next 20 years is more concentrated in some areas than others. Therefore, development projects shall be responsible for dedicating and preserving the appropriate right-of-ways and, if deemed necessary, construct the improvements to accommodate their respective impacts.

TABLE 9-1: VISION PROJECTS

Project Number	Name	Description	Priority
I13	Dan O'Brien Way Interchange	Would construct an interchange at the US 97/Dan O'Brien Way intersection	Vision
I14	Campus Way/Dahlia Street Intersection Improvements	Would install additional turn lanes at the Campus Way/Dahlia Street intersection	Vision
I15	Campus Way/Biehn Steet/OR 39	Would construct a flyover at the Campus Way/Biehn Street/OR 39 intersection	Vision
I16	Main Street Ramp Improvements	Would improve the US 97/Main Street interchange	Vision
I17	Summers Lane/Crater Lake Parkway Intersections	Would align Crater Lake Parkway with the existing Summers Lane/South 6th Street Intersection	Vision
I18	Greensprings Drive/Dover Avenue/Riverside Drive Improvements	Would reconstruct the existing 5-legged intersection	Vision
I19	Memorial Drive Undercrossing	Would construct an undercrossing at the Memorial Drive/OR 140 intersection	Vision
I20	Homedale Road Interchange	Would construct an interchange at the Homedale Road/OR 140 intersection	Vision
I21	Orindale Road Interchange	Would construct an interchange at the Orindale Road/OR 140 intersection	Vision
R14	New Roadway	Would construct a new roadway from OR 140 to Lakeshore Drive	Vision
R15	Cypress Avenue Extension	Would extend Cypress Avenue to serve planned development in west Klamath Falls	Vision
R16	OR 140 Upgrade	Would upgrade OR 140 west of OR 66 to a 5-lane section with bike lanes	Vision
R17	Orindale Road Upgrade	Would upgrade Orindale Road to a minor collector	Vision
R18	Balsam Drive Upgrade	Would upgrade Balsam Drive to a minor collector	Vision
R19	OR 66 Upgrade	Would upgrade OR 66 to a 5-lane major arterial between OR 140 and Orindale Road	Vision
R20	New Minor Collector Construction	Would construct a new minor collector between Emerald Street and planned roadway south of the OR 140/OR 66 intersection	Vision
R21	Anderson Avenue Extension	Would extend Anderson Avenue from Gettle Street to Glenwood Drive	Vision



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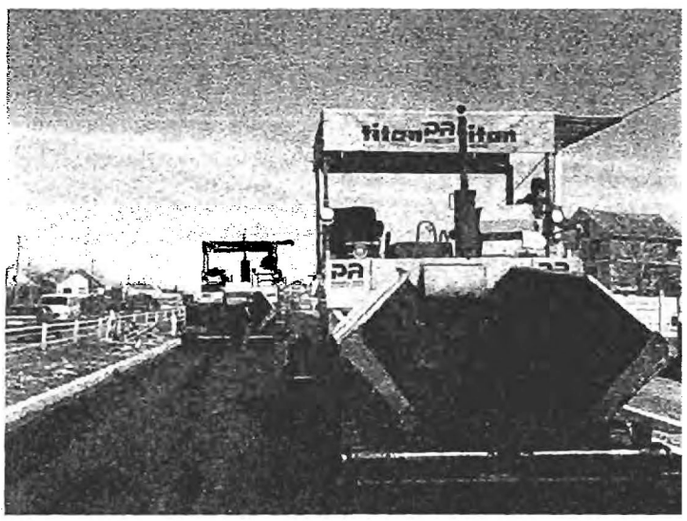
Vision Projects

Figure 9-1

Section 10 Transportation Funding Plan

10 TRANSPORTATION FUNDING PLAN

Transportation facilities within the Klamath Falls urban area fall under the jurisdiction of: 1) City of Klamath Falls; 2) Klamath County; or 3) ODOT. This section discusses the City and County's existing funding sources for capital improvement project as well as operations and maintenance activities.



Planned Capital Improvements

Table 10-1 summarizes the estimated costs for capital improvement projects that are planned for in this TSP. This list excludes recommended studies and rather focuses are projects that would typically be funded by capital improvement dollars from the City or County.

TABLE 10-1: TOTAL CAPITAL IMPROVEMENT PROJECTS

Priority	Safety[1]	Roadway	Intersection	Pedestrian	Bicycle	Multi-use Path	Total
High (0-5 years)	$150,000/year -or- $3,750,000/25 years	$14,209,000	$2,270,000	$7,883,000	$2,570,000	$5,485,000	$32,417,000
Medium (5-15 year)		$2,169,000	$1,685,000	$0	$0	$0	$3,854,000
Low (15-25 years)		$0	$1,229,000	$0	$0	$0	$1,229,000
Total		$16,378,000	$5,184,000	$7,883,000	$2,570,000	$5,485,000	$37,500,000
Development Drive	-	$64,413,000	$507,000	-	-	-	$64,920,000
Grand Total							**$102,420,000**

Note: [1]The safety program would dedicate a total of $150,000/year to the study of safety concerns within the urban area and the construction of planned improvements.

City of Klamath Falls

Funding sources for capital projects as well as operation and maintenance for transportation facilities within the city limits come from the City's Street Division. For capital improvement projects, the Street Division currently receives monies from an area specific System Development Charges (SDC), from

ODOT via the Surface Transportation Program (STP), and from Klamath County. A breakdown of each is below (as of 2010).

- **Area Specific System Development Charges** – These are received from the Stewart Lennox area at a rate of $2,258.52 per single-family home.
- **STP Monies** – On an annual basis, the City receives an average of approximately $200,000 in STP funds from ODOT, though distributions fluctuate slightly from year to year.
- **Klamath County** – On an annual basis, the City has historically received funding from Klamath County through the Secure Rural Schools Fund (Federal Forest Receipts) in the amount of approximately $750,000 to $800,000 (approximate average amount over the last 24 years). Approximately $150,000 of these funds is allocated to operations and maintenance activities. It should be noted that, this funding source is anticipated to cease in 2012 unless new federal legislation is passed.

Other funding sources such as gas tax revenues and franchise fees supplement the Federal Forest Receipts and STP funds and are used for operations and maintenance activities. Combined, these monies makeup the City's operations and maintenance budget. A summary of these funds from 2007-2010 is provided in Table 10-1.

TABLE 10-1: FUNDING SOURCES FOR CITY OF KLAMATH FALLS PUBLIC WORKS

Year	Federal Forest Receipts	Gas Tax	Franchise Fees	STP Funds	Total[1]
2007	$150,000	$946,362	$607,748	$200,000	**$1,904,110**
2008	$150,000	$897,845	$702,432	$224,040	**$1,974,317**
2009	$150,000	$807,471	$716,559	$211,460	**$1,885,490**
2010	$150,000	$879,105	$716,858	$218,393	**$1,964,356**
Forecasted 2011	TBD	TBD	TBD	TBD	**TBD**
Forecasted 2012	TBD	TBD	TBD	TBD	**TBD**
Forecasted 2013	TBD	TBD	TBD	TBD	**TBD**

Notes: [1]Amounts rounded to nearest dollar.

The balance of the Federal Forest receipt dollars has historically been used for capital projects, which the City has assumed to be $550,000/year for budgeting purposes. However, this money has at times needed to be allocated towards activities other than capital improvement projects, making $550,000 the maximum amount available, though not a certainty.

FORECASTED FUNDS

Monies from the Federal Forest Receipts comprise approximately 17% ($370,000) of their funding and the federal forest receipts funds are expected to cease in two years. Without alternative funding sources, the City's funds available for capital improvement projects will likely decrease.

Klamath County

Funding sources for capital projects as well as operation and maintenance for County roadways consist of Federal Forest Receipts, Motor Vehicle Apportionment, and STP Funds. Table 10-2 summarizes the amount from each of these sources in the last three years as well as the forecasted allotment from each source for the next three years.

TABLE 10-2: FUNDING SOURCES FOR KLAMATH COUNTY PUBLIC WORKS

Year	Federal Forest Receipts	Motor Vehicle Apportionment	STP Funds	Total[1]
2008	$10,962,222	$3,446,505	$479,172	**$14,887,899**
2009	$9,876,312	$3,079,096	$437,260	**$13,392,668**
2010	$8,883,833	$3,361,938	$455,859	**$12,701,630**
Forecasted 2011	$7,534,300	$3,862,000	$457,890	**$11,854,190**
Forecasted 2012	$4,944,226	$4,988,000	$450,000	**$10,382,226**
Forecasted 2013	$674,106	$5,000,000	$450,000	**$6,124,106**

Notes: [1]Amounts rounded to nearest dollar.

The majority of this money is used for the operation and maintenance of the existing County transportation system. For planning purposes, the County has historically had approximately $750,000 available per year for capital projects, though actual expenditures have varied from year to year.

FORECASTED FUNDS

Klamath County Public Works Department budget has been steadily declining in recent years from a high of $14.8 million in 2008 to $12.7 million in 2010. The declining trend is forecasted to continue with an anticipated 2013 budget of $6.1 million. Similar to the City, the primary cause of the decrease is the decreasing amount of funds from Federal Forest Receipts. In 2010, Federal Forest Receipts comprised 70% ($8,883,833) of Klamath County's budget. To maintain funds near current values, the

County will also need to consider alternative funding sources, assuming the Federal Forest Receipts cease in the future.

Financially-constrained Plan

As has been suggested, if the Federal Forest Receipt revenue source ceases in the future, the City and County both expect to have effectively $0 to spend on capital improvement projects without the introduction of an additional revenue source. Given the present uncertainty surrounding the future of the Federal Forest Receipts, the cost constrained plan for projects within the urban area is effectively nothing, meaning no future funds for capital improvement projects are currently reliable.

Section 11 Implementation Ordinances

11 Implementation Ordinances

The TPR requires that local jurisdictions amend land use regulations to reflect and implement the TSP. To that end, regulatory language was developed for both the City of Klamath Falls and Klamath County in order to comply with the TPR and to ensure that local ordinances are consistent with the updated Klamath Falls Urban Area TSP. Implementation language can be found in *Technical Appendix 1B*, Recommended Ordinance Amendments and is based on *Tables 1 and 2 in Technical Appendix 1B.*

The ordinance language in *Technical Appendix 1B* provides specific text amendments to the City of Klamath Falls Community Development Ordinance (CDO) and Klamath County Land Development Code (LDC) that meet TPR requirements. To the extent possible, proposed language was developed and formatted to be consistent with the existing structure of the subject regulatory document in order to expedite a code amendment process. Amendments in *Technical Appendix 1B* will be adopted by the City and County concurrently with the adoption of the Urban Area TSP or through a subsequent hearing process, to amend the respective local ordinances. Further amendments to the CDO or LDC may result from the public hearing process, or may be necessary in order to ensure consistency within the ordinance documents and to more seamlessly integrate new criteria with existing requirements.

Section 12 References

12 REFERENCES

1. The Oregon Department of Transportation. *Oregon Highway Plan*. 1999.

2. Transportation Research Board, *Highway Capacity Manual,* 2000.

3. Transportation Research Board, *National Corporative Highway Research Program (NCHRP), Report 255,* 1982.

4. Transportation Research Board, *Access Management Manual,* 2003.

5. Kittelson & Associates, *Klamath Falls Westside Refinement Plan,* 2006.

6. Kittelson & Associates, *Orindale/Balsam Sub-Area Master Plan,* 2007.

7. Kittelson & Associates, *Klamath Falls Campus Sub-Area Master Plan*, 2008.

KLAMATH FALLS
URBAN AREA
TRANSPORTATION SYSTEM PLAN

TECHNICAL APPENDIX

APPENDICES

Technical Appendices, Volume 1

Technical Appendices, Volume 2 (Separate Document)

Appendix 1A Public Involvement Plan

INTERAGENCY AND PUBLIC INVOLVEMENT PROGRAM

As part of the Klamath Falls Urban Area TSP update, interagency and public involvement occurred through: a Technical Advisory Committee (TAC) and Citizen Advisory Committee (CAC) that had regular meetings; two public Open Houses and virtual open houses involving local citizens, property owners, and business owners; public comments posted on the project website; and, a joint work session of the City of Klamath Falls and Klamath County Planning Commissions, Klamath Falls City Council, and Klamath County Commissioners that was open to the public. An overview of the TAC and CAC meetings and open houses is summarized below.

Technical and Community Advisory Committees

The TAC and CAC guided the planning work and were responsible for reviewing all work products, providing input on all planning recommendations such as the project study area, goals and objectives, level of public involvement, technical analysis, and the proposed alternatives. Ultimately the TAC and CAC helped select the projects and policies included in the TSP. A Project Management Team (PMT) performed a coordination function, planning and executing project management tasks related to project schedule, meeting logistics, and final project recommendations. The PMT included representation from ODOT, the City of Klamath Falls, Klamath County, and the consultant team and were all members of the TAC.

Membership on the TAC and CAC was established through input from City, County, and ODOT representatives. A list of TAC and CAC members is included in Table 1A-1.

TABLE 1A-1: PROJECT PARTICIPANTS

Project Management Team (PMT)	
Mark Willrett, PE *City of Klamath Falls*	Stan Strickland *Klamath County*
Sandra Fox *City of Klamath Falls*	Dennis Nelson, PE *Klamath County*
Devin Hearing *Oregon Department of Transportation*	Bill Adams *Klamath County*
Susan Wright, PE *Kittelson & Associates, Inc.*	Darci Rudzinski *Angelo Planning Group*
Technical Advisory Committee (TAC)	
Mark Willrett, PE *City of Klamath Falls*	Stan Strickland *Klamath County*
Sandra Fox *City of Klamath Falls*	Dennis Nelson, PE *Klamath County*
Devin Hearing *Oregon Department of Transportation*	Bill Adams *Klamath County*
Mike Stinson *Oregon Department of Transportation*	Peter Schuytema *Oregon Department of Transportation*
C. David Lanning *ODOT Rail*	Ernie Palmer *Basin Area Transit Service*
John Longley *City of Klamath Falls*	
Citizen Advisory Committee	
Cole Chase *City Planning Commission*	Bud Hart *City Council*
Greg Taylor *City Council*	Tim Thompson *County Planning Commission*
Al Switzer *Board of County Commissioners*	Roger Lindgren *County Road Advisory Committee/OIT*
Mike Moore *Parking Board*	Shawn Snoozy *Klamath County School District*
Sam McGuire *Klamath Falls City Schools*	Randy Bednar *County Bike and Pedestrian Committee*
Clidia Gibson *SPOKES*	Jeff Monson *Commute Options of Central Oregon*
Chip Massie *Chamber of Commerce*	

Consultant Team	
Kittelson & Associates, Inc.	*Angelo Planning Group*
Marc Butorac, PE, Project Principal	Darci Rudzinski, AICP
Susan Wright, PE, Project Manager	
Erin Ferguson, PE	
Matt Kittelson	

Public Involvement Plan

To ensure that adequate project coordination and public participation occurred throughout the development of the Klamath Falls Urban Area TSP, a series of joint TAC and CAC meetings, public workshops and virtual open houses, and public joint work sessions were held over the course of the project. A summary of all of the meetings associated with the project, as well as the meeting objectives, are summarized in 0.

TABLE 1A-2: MEETING SUMMARY

Meeting Event	Date/Location	Meeting Purpose/Objectives
TAC/CAC Meeting #1	Monday, November 15, 2010 City of Klamath Falls	Provided an opportunity for project stakeholders to become familiar with the project scope, schedule and key deliverables. Discussed draft Technical Memorandum #1 and #2
TAC/CAC Meeting #2	Wednesday, January 19, 2011 City of Klamath Falls	Discussed Technical Memorandum #3 and #4, which evaluated existing and future conditions and presented the results.
Public Workshop #1	Wednesday, January 19, 2011 Community Meeting Room 133 North 4th Street Klamath Falls, OR	Provided an opportunity for community members to share their ideas, thoughts, concerns and desires related to Klamath Falls in its present state and the future of Klamath Falls. Also presented the results of the existing and future conditions analyses. A Virtual Open House was also available for those unable to attend to have information discussed available online and to submit their comments electronically.
TAC/CAC Meeting #3	Tuesday, March 29, 2011 City of Klamath Falls	Discussed Technical Memorandum #5, which summarized the alternatives analysis conducted.
Adopting Bodies Joint Work Session #1	Tuesday, March 29, 2011 Klamath County Commissioners Chambers	Discussed project findings to date and outlined project tasks yet to be completed.
Access Spacing Discussion	Monday, June 6, 2011 City of Klamath Falls	Discussed existing and potential access spacing standards with City, County, and ODOT staff.

TAC/CAC Meeting #4	Monday, June 6th, 2011 City of Klamath Falls	Discussed Technical Memorandum #6, which summarizes the preferred plan and the cost constrained plan.
Public Workshop #2	Wednesday, June 29, 2011 Klamath Falls City Council Chambers 500 Klamath Avenue Klamath Falls, Oregon	Provided an opportunity for community members to hear review the projects included in the draft preferred plan and provide input. A general project update was also provided. A Virtual Open House was also available for those unable to attend to have information discussed available online and to submit their comments electronically.
TAC/CAC Meeting #5	Tuesday, September 6th, 2011 City of Klamath Falls	Discussed the Draft TSP.
Adopting Bodies Joint Work Session #2	Monday, September 19, 2011 TBD	

Appendix 1B Recommended Ordinance Amendments

Angelo planning group LAND USE PLANNING • TRANSPORTATION PLANNING • PROJECT MANAGEMENT

Memorandum

Date: September 12, 2011

To: Mark Willrett, City of Klamath Falls
Stan Strickland, Klamath County

cc: Project Management Team, Technical Advisory Committee, Citizens Advisory Committee

From: Darci Rudzinski and Shayna Rehberg

Re: Klamath Falls Urban Area Transportation System Plan Update
Recommended Ordinance Amendments WORK SESSION REVIEW DRAFT

I. Introduction

This memorandum presents draft amendment language for the City of Klamath Falls Community Development Ordinance (CDO) and the Klamath County Land Development Code (LDC). The proposed language reflects issues that have been raised during the update of the Urban AreaTransportation System Plan (TSP) and identified during the initial regulatory review conducted for Task 2 of this project's scope of work (see Technical Memorandum #1). The intent of the proposed amendments is to ensure consistency between local code requirements, policy language, and the TSP as well as bring local ordinances into greater compliance with the Oregon Transportation Planning Rule (TPR). These objectives correspond to those established in Task 6.

A summary list of proposed changes and corresponding TPR requirements follows;[1] proposed amendments to the City's CDO begins on page 5 and proposed County LDC language begins on page 16. Code amendment language is presented such that language recommended for addition to the code is underlined and language recommended for removal from the code is ~~struck through~~.

Proposed amendments will not be adopted until which time the City and County initiate a legislative action, either concurrent with the adoption of the Urban Area TSP or through a subsequent hearing process, to amend the respective local ordinances.

[1] For reference seethe TPR http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_012.html; a summary of relevant Transportation Planning Rule requirements can also be found in Technical Memorandum #1, Table 1.

Ordinance Section	Description of Amendment	Corresponding TPR Citation
City of Klamath Falls Community Development Ordinance		
Chapter 10 General Provisions		
10.610 Notice of Hearing.	Notice to and coordination with ODOT and other affected agencies.	660-12-0045(1)(c) 660-12-0045(2)(f)
10.815 Agency Involvement.	Notice to and coordination with ODOT and other affected agencies.	660-12-0045(2)(d)
Chapter 11 Land Development Review		
11.415 Required Findings. [Change of Zone – Major Parcels]	Compliance with TPR -0060. Note: Similar language should be included for legislative and quasi-judicial amendments to code and map amendments procedures/ requirements, a section that the CDO does not currently have. The Amendment procedures are listed in the Comprehensive Plan. Should TPR -0060 related policy language reside in the TSP instead, thereby revising the Comprehensive Plan's amendment procedures, or should the CDC be revised to include all amendment procedures?	660-12-0045(2)(g) Through the Urban Area TSP update, the 20-year transportation improvement needs have been determined and corresponding funding sources identified for "reasonably likely" determination [TSP Citation]
11.805 Design Standards.	Cross-reference to TIS requirements and new language requiring connectivity for all modes.	660-12-0045(4)(b)
11.810 Tentative Plan Content.	Cross-reference to TIS requirements.	
11.815 Review Criteria.	Cross-reference to TIS requirements.	
11.820 Approval of Tentative Subdivision Plan.	Conditions of approval added to address needed transportation improvements.	660-12-0045(2)(e)
Chapter 12 Land Use		
12.005 Uses Permitted by Zone.	Permitted transportation improvements.	660-12-0045(1)(b)
Chapter 14 Private Site and Public Facility Standards		
14.010 Off-Street Parking Requirements.	Carpool and vanpool requirements.	660-12-0045(4)(d)
14.048 Vehicle Parking Variance Criteria.	Transit-related and carpool/vanpool parking	660-12-0045(4)(e)

Ordinance Section	Description of Amendment	Corresponding TPR Citation
	reduction.	
14.050 Access and Driveways.	Replace access spacing requirements with a citation to Table 4-3 in the Urban Area TSP. Model code language pertaining to access consolidation, shared access. Also includes pedestrian circulation/access requirements within commercial, industrial, multifamily development and required connections to transit. Originally proposed for subdivision design standards (11.805) in Tech Memo #1. Similar recommendations in 1998 TSP, Appendix G. (Did not include the recommendation from this plan "Walkways shall be provided to the street for every 330 feet of frontage.")	660-12-0045(2)(a) 660-12-0045(3)(b) 660-12-0045(3)(e) 660-12-0045(4)(b) 660-12-0045(4)(f)
14.051 Traffic Impact Study Requirements.	New TIS requirements (from Guidelines developed by Kittelson).	660-12-0045(2)(b) 660-12-0045(2)(e) 660-12-0045(3)(c)
14.445 Location. [NEW SECTION]	Bike lanes shall be located on collectors and arterials; cross-reference to Urban Area TSP standards.	660-12-0045(3)(b)
Klamath County Land Development Code		
Chapter 10 General Provisions		
Article 11 Definitions	Added "certain transportation improvements" to the list of Extensive Impact Services and Utilities.	660-12-0045(1)(b)
Chapter 20 Review Procedures		
21.040 – Notice, Hearing and Appeal	Notice to ODOT.	660-12-0045(1)(c)
Chapter 30 Public Hearings, Notice and Appeal		
32.030 – Types of Notice	Notice to and coordination with ODOT and other affected agencies.	660-12-0045(1)(c) 660-12-0045(2)(d) 660-12-0045(2)(f)
Chapter 40 Application Procedures		

Ordinance Section	Description of Amendment	Corresponding TPR Citation
41.060 – Site Plan Requirements	Site plan requirement to include non-vehicular access and circulation [new section] and Cross-reference to TIS requirements.	
44.030 Review Criteria	CUP review criteria; compliance with the TSP. Cross-reference to conditions of approval related to transportation impacts.	
46.030 Review Criteria	Land subdivision; transportation improvements. Cross-reference to TIS requirements.	
46.050 Preliminary Subdivision Plan Requirements	Show non-vehicular access and circulation.	*Cross-reference to walkways and pedestrian connections required by Article 71.*
47.030 - Review Criteria	Quasi-Judicial Zone Change; Compliance with TPR -0060.	660-12-0060
48.030 - Review Criteria	Quasi-Judicial Comprehensive Plan Designation Change; Compliance with TPR -0060.	660-12-0060
49.030 - Review Criteria	Legislative Amendment to Code/Plan; Compliance with TPR -0060.	660-12-0060
Chapter 50 Land Use Zones		
50.040 – Transportation-Related Uses [New Section]	Permitted transportation improvements.	660-12-0045(1)(b)
Chapter 60 Planning Department Development Standards		
68.030 – Off-Street Parking Requirements	Bicycle parking standards for Urban Area consistent with the City CDO. Carpool and vanpool requirements. Transit-related and carpool/vanpool parking reduction.	660-12-045(3)(a) 660-12-0045(4)(d) 660-12-0045(4)(e)
Chapter 70 Public Works Department Development Standards		
71.020 – Vehicular Access and Circulation	"Non-vehicular" added to section title and included in the text of the purpose statement.	660-12-0045(3)(b)
71.020 - Access Standards	Citation to Table 4-3 in the Urban Area TSP.	660-12-0045(2)(a)

Ordinance Section	Description of Amendment	Corresponding TPR Citation
71.050 - Improvements in the Klamath Falls Urban Area	Sidewalks and bike lanes required on arterials and collectors.	660-12-0045(3)(b)
71.100 - Cul-de-sacs	Pedestrian connectivity and pedestrian way standards consistent with City CDO.	660-12-0045(3)(b)
71.150 - Blocks	Block standards for Urban Area consistent with City CDO.	Model Development Code
71.190 - Non-Vehicular Access and Circulation [New Section]	Pedestrian circulation/access requirements within commercial, industrial, multifamily development and required connections to transit. (Language consistent to proposed City CDO amendments.)	660-12-0045(3)(b) 660-12-0045(3)(e) 660-12-0045(4)(b) 660-12-0045(4)(f)
71.200 - Traffic Impact Study [New Section]	New TIS requirements (from Guidelines developed by Kittelson).	660-12-0045(2)(b) 660-12-0045(2)(e) 660-12-0045(3)(c)

City of Klamath Falls Community Development Ordinance

CHAPTER 10
GENERAL PROVISIONS

NOTIFICATION REQUIREMENTS

10.605 Public Hearings. Unless otherwise required by this Ordinance, any hearing before the Commission or Council required by any provision of Chapters 10 to 14 shall be a public hearing held in accordance with the notification and procedure requirements hereinafter provided.

10.610 Notice of Hearing.
(2) Notice of any hearing shall be given not less than twenty (20) days prior to the evidentiary hearing, or ten (10) days if two or more evidentiary hearings are allowed as follows:

a. By publication once in a local newspaper of general circulation;
b. By providing notice to all local electronic media;
c. By first class mail to applicant and all property owners as shown on the ownership list filed with the application. However, failure to receive such notice shall not invalidate any of the proceedings involved if the City can demonstrate by affidavit that such notice was given, by mail.
d. Any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the City or is otherwise potentially affected by the proposal. For proposals located adjacent to a state roadway or where proposals are expected to have an impact on a state transportation facility, notice of the hearing shall be sent to ODOT; and
e. Where applicable, by posting in accordance with Section 10.615.

ADMINISTRATIVE REVIEW

10.815 Agency Involvement. To assure affected agencies involvement in the planning process, every application may be referred to appropriate local, state and federal agencies for their review and comment. For application sites located adjacent to a state roadway or where proposals may have an impact on a state transportation facility, notice of a complete application shall be sent to ODOT. The Planning Department shall utilize procedures as outlined in the Klamath Falls Urban Growth Boundary Management Agreement in notifying appropriate Klamath County Departments for review and comment and/or recommendation.

CHAPTER 11
LAND DEVELOPMENT REVIEW

CHANGE OF ZONE - MAJOR PARCELS

11.415 Required Findings. Prior to making a recommendation on the proposed change of zone, the Commission shall analyze the following criteria and incorporate such analysis in their decision:
(1) The change of zone is in conformance with the Comprehensive Plan and all other provisions of Chapters 10 to 14 and any applicable street plans.
(2) The property affected by the change of zone is adequate in size and shape to facilitate those uses that are normally allowed in conjunction with such zoning.
(3) The property affected by the proposed change of zone is properly related to streets to adequately serve the type of traffic generated by such uses that may be permitted therein.

a) Transportation Planning Rule Compliance. A proposed comprehensive plan amendment, zone change or land use regulation change, whether initiated by the city or by a private interest, shall be reviewed to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012- 0060 (the Transportation Planning Rule – "TPR"). "Significant" means the proposal would:

i. Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);
ii. Change standards implementing a functional classification system; or
iii. As measured at the end of the planning period identified in the adopted transportation system plan:

1. Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;
2. Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP; or
3. Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.

b) Amendments to the comprehensive plan and land use regulations that significantly affect a transportation facility shall ensure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the TSP. This shall be accomplished by one or a combination of the following:

i. Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.
ii. Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of Section -0060 of the TPR.

iii. Altering land use designations, densities, or design requirements to reduce demand for vehicle travel and meet travel needs through other modes of transportation.
iv. Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.

c) Traffic impact study: A Traffic Impact Study shall be submitted with a zone change application pursuant to Section 14.051, Traffic Impact Study Requirements.

(4) The proposed change of zone will have no adverse effect on abutting property of the permitted uses thereof.

TENTATIVE SUBDIVISION PLAN

11.805 Design Standards.

[...]
(10) Access to Subdivision. All major means of access to a subdivision or major partition shall be from existing streets fully improved to City standards and which in judgment of the Public Works Director, have the capacity to carry all anticipated traffic from the development. Capacity of the surrounding transportation system shall be assessed pursuant to the requirements of Section 14.051, Traffic Impact Study Requirements. Streets, sidewalks, and walkways/pathways in the subdivision shall be planned to provide connections to surrounding commercial areas, activity centers, and transit stops, pursuant to Section 14.050.

[...]
(12) Cul De Sacs. A cul de sac shall be as short as possible and shall have a maximum length of five hundred feet (500') and a minimum length of two hundred and fifty feet (250'). All cul de sacs shall terminate with a circular turnaround. The City may require the applicant to provide a sidewalk or bikeway between the cul de sac and adjacent streets in order to enhance accessibility and connectivity.

11.810 Tentative Plan Content.
[...]
(8) A traffic impact study as required by Section 14.051, Traffic Impact Study Requirements.

11.815 Review Criteria. Prior to making a decision on the proposed tentative plan, the Commission shall analyze the following criteria and incorporated such analysis in their decision:
[...]
(7) The tentative plan complies with the Comprehensive Plan and Chapters 10 to 14 and other applicable local and state regulations. The tentative subdivision plan must be found to be in compliance with the Urban Area Transportation System Plan; transportation system impacts

associated with the subdivision shall be assessed pursuant to the requirements of Section 14.051, Traffic Impact Study Requirements.

11.820 Approval of Tentative Subdivision Plan.

1. Tentative Plan. The Commission shall review the plan and the report of the staff. The Commission may approve the tentative plan as submitted or as modified or reject it. The Commission's decision shall be based upon, but shall not be limited to, the Comprehensive Plan and all other adopted plans supplementary to it.

a) Within forty five (45) days of its decision, the Commission shall forward to the Council a copy of such decision and any supporting information. The Council shall review the tentative plan, the report of the staff and the decision of the Commission and may approve, modify or reject the decision. The Planning Director shall provide the developer with written notice of the Council's action within five (5) days of such action. Such written notice shall include findings relative to the above mentioned factors. Approval of the tentative plan shall not constitute final acceptance of the plat of the proposed subdivision; however, approval of a tentative plan shall be binding upon the City for the purposes of the preparation of the final plat. The City may require only such changes in the final plat as are necessary for compliance with the terms of its approval of the tentative plan.

b) Conditions of approval: The Council may deny, approve, or approve a development proposal with appropriate conditions needed to meet transportation operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of approval that may apply include:

1) Crossover and/or reciprocal easement agreements for all adjoining parcels to facilitate future access between parcels.

2) Access for new developments that have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.

3) Right-of-way dedications for future planned roadway improvements.

4) Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

CHAPTER 12
LAND USE

12.005 Uses Permitted by Zone

1. The following transportation-related improvements and activities are permitted outright in all City zones, unless otherwise specified in individual zones.

a. Normal operation, maintenance, repair, and preservation projects of existing transportation facilities.

b. Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.

c. Projects specifically identified in the Urban Area Transportation System Plan.
d. Landscaping as part of a transportation facility.
e. Emergency measures necessary for the safety and protection of property.
f. Acquisition of right-of-way for public roads, highways, and other transportation improvements designated in the Urban Area Transportation System Plan, except for those that are located in exclusive farm use or forest zones.
g. Construction of a street or road as part of an approved subdivision or land partition approved that is consistent with the applicable land division regulations.

2. The following transportation-related improvements and activities are permitted conditionally/subject to Minor Design Review (Section 11.000) in all City zones, unless otherwise specified in individual zones.
a. Construction, reconstruction, or widening of highways, roads, bridges or other transportation projects that are:
(1) Not improvements designated in the Transportation System Plan; or
(2) Not designed and constructed as part of a subdivision or planned development subject to site plan and/or conditional use review.
(3) An application is subject to review under a Minor Design Review process; however the decision criteria in that section do not apply to transportation improvements. In order to be approved, the site plan permit shall comply with the Urban Area Transportation System Plan and applicable standards of this title, and shall address the criteria below. For State projects that require an Environmental Impact Statement (EIS) or EA (Environmental Assessment), the draft EIS or EA shall be reviewed and used as the basis for findings to comply with the following criteria:
(a) The project is designed to be compatible with existing land use and social patterns, including noise generation, safety, and zoning.
(b) The project is designed to minimize avoidable environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.
(c) The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.
(d) The project includes provision for bicycle and pedestrian circulation as consistent with the Comprehensive Plan and other requirements of this ordinance.

CHAPTER 14
PRIVATE SITE AND PUBLIC FACILITY STANDARDS

OFF STREET PARKING AND LOADING

14.010 Off-Street Parking Requirements.

(5) Carpool and Vanpool Parking. Large employers (those with 50 employees or more working the same hours or shift) shall dedicate 10% of the required parking spaces for carpools and vanpools.

a) These designated spaces shall be the closest parking spaces to the building entrance normally used by employees, with the exception of disabled/handicap accessible parking spaces.
b) Carpool and vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only" along with specific hours of use.
c) Any other use establishing carpool and vanpool spaces may reduce the minimum parking requirement by 3 spaces for each carpool/vanpool space created.

14.048 Vehicle Parking Variance Criteria.

Upon submission of documentation by the applicant of how the project meets the following criteria, the Director may approve a variation to the parking requirements of Section 14.010 , if the Director finds that:

1. The parking needs of the use will be adequately served; and either
2. Shared Parking is provided consistent with the requirements of Section 14.025(4); or
3. The applicant provides an acceptable proposal for an alternate modes of transportation program, including a description of existing and proposed facilities and assurances that the use of alternate modes of transportation will continue to reduce the need for on-site parking on an on-going basis.

a) Transit-related parking reduction. The number of minimum required parking spaces may be reduced by up to 10% if:
   1) The proposal is located within a ¼ mile of an existing or planned transit route, and;
   2) Transit-related amenities such as transit stops, pull-outs, shelters, park-and-ride lots, transit-oriented development, and transit service on an adjacent street are present or will be provided by the applicant.
b) Carpool and Vanpool Parking. The number of minimum required parking spaces may be reduced by 3 spaces for each carpool/vanpool space created, pursuant to Subsection 14.010(5).

SITE ACCESS AND ~~BOUNDARIES~~ CIRCULATION

14.050 Access and Driveways.

1. All new development and redevelopment shall meet the ~~following~~ access ~~design~~ spacing standards~~:~~ in Table 4-3 of the Urban Area Transportation System Plan.

~~(a) On Category 4 highways and 5-lane arterial streets, maintain 500-foot spacing (centerline-to-centerline) between either public or private access on both sides of the roadway and both sides of the proposed access point.~~

~~(b) On Category 5 highways and 3-lane arterials, 300-foot spacing (centerline-to-centerline) between either public or private access on both sides of the roadway and both sides of the proposed access point.~~

~~(c) On Category 6 highways, 150-foot spacing (centerline-to-centerline) between either public or private access on both sides of the roadway and both sides of the roadway and both sides of the proposed access point.~~

2. For each single family dwelling, a private access driveway shall be provided which shall be at least 10 feet in width. For two or more dwelling units, a private access driveway shall be provided; the improved portion of which shall be at least 20 feet in width. When parking is to be permitted on either or both sides of such driveway, there shall be provided a parking lane on that side of the driveway of at least eight feet in width. For two or more dwelling units, if the driveway dead ends, a turnaround area of not less than 20 feet in diameter shall be provided, which is other than the private driveway service to the dwelling.

3. The surface of driveways shall be of material meeting the standards of Subsection 14.040 (1). All driveways shall be well drained so as to prevent ponding greater than one half inch in depth or two feet in diameter and the provisions for drainage shall be approved by the City Engineer.

4. Access points to an industrial or commercial site from a street shall be located to minimize traffic congestion and hazard. No access point shall be allowed which would direct industrial or commercial traffic into a residential zone. Wherever possible, access points shall be so located so as to serve more than one industrial or commercial site or use.

~~5. All Proposed zone changes, subdivisions, partitions, new development and or/redevelopment shall provide a traffic impact study to the City of Klamath Falls and Oregon Department of Transportation if the proposed use:~~

~~a) Directly accesses a state highway; or~~

~~b) Requires a comprehensive plan amendment; or~~

~~a. Under the TSP, there is a recognized traffic safety or operations deficiency in streets impacted by the proposed land use action;~~

~~and the proposed use exceeds the thresholds defined as:~~

~~b. trip generation threshold- 50 newly generated trips (inbound and outbound) during the adjacent street peak hour; or ,~~

~~c. mitigation threshold - installation of any traffic control device and/or construction of geometric improvements that will affect the progression or operation of traffic travelling on, entering, or exiting the highway; or,~~

~~d. Heavy vehicle trip generation threshold - 20 newly generated heavy vehicle trips (inbound and outbound) during the day.~~

5. When the site of development or redevelopment has frontage on roads with different functional classifications, the site shall take access on the road with the lower functional classification.

6. The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.

a) Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b) Reciprocal access and crossover easement agreements shall be recorded for all shared driveways, including pathways, on all affected properties at the time of final plat approval or as a condition of site development approval.

c) Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.

7. For new commercial, light industrial, and multi-family residential development, internal pedestrian circulation shall be provided through sidewalks and walkways/pathways, pursuant to the following standards:

a) Walkways shall be provided connecting building entrances and streets adjoining the site.

b) Connections shall be direct and driveway crossings minimized.

c) Walkways shall be at least five-feet-wide, raised, include curbing, or have different paving material when crossing driveways.

d) Pedestrian connections to adjoining properties shall be provided except where such a connection cannot be accommodated due to topographical constraints or where existing development on adjacent sites preclude connections. Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property.

8. Transit Access. New commercial and light industrial buildings within 600 feet of an exsiting or planned transit facility, as identified in the Urban Area TSP, shall provide for pedestrian access to transit through the following measures:

a) Either locate buildings within 20 feet of the transit facility, a transit street, or an intersecting street or provide a pedestrian plaza at the transit facility or a street intersection;

b) Provide a reasonably direct pedestrian connection between the transit facility and building entrances on the site;

c) Provide a transit passenger landing pad accessible to disabled persons;

d) Provide an easement or dedication for a passenger shelter if requested by the transit provider; and

e) Provide lighting at the transit facility.

14.051 Traffic Impact Study Requirements.

1. A traffic impact study shall be developed by a Professional Engineer under the following conditions.

a) The proposed development generates 50 or more peak-hour trips or 500 or more daily trips.

b) An access spacing exception is required for the site access driveway(s) and the development generates 25 or more peak-hour trips or 250 or more daily trips.

c) The proposed development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.

d) The proposed development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.

2. Submittal requirements: The study shall~~and~~ include the following minimum requirements:

a)~~1.~~ The analysis shall include alternates other than what the developer originally submits as a proposal for access.

b)~~2.~~ The analysis of alternate access proposals shall include:

1)~~a.~~ Existing daily and appropriate design peak hour counts, by traffic movements, at intersections that would be affected by traffic generated by the development.

2)~~b.~~ Projected daily and appropriate design peak hour volumes for these same intersections and at the proposed access points after completion of the development. If the development is to be constructed in phases, projected traffic volumes at the completion of each phase shall be determined.

3)~~c.~~ Trip Generation shall be calculated using the Institute of Transportation Engineers' manual "Trip Generation – 5th Edition" or other, more current, and/or applicable information.

4)~~d.~~ A determination of the need for a traffic signal based on warrants in the "Manual on Uniform Traffic Control Devices".

~~3. The recommendations made in the report shall be specific and based on a minimum level of service when the development has been completed. As an example, if a traffic signal is recommended, the recommendations should include the type of traffic signal control and what movements should be signalized. If a storage lane for right turns or left turns is needed, the recommendations should include the amount of storage needed. If several intersections are involved for signalization, and an interconnected system is considered, specific analysis should be made concerning progression of traffic between intersections.~~

c)4. The internal circulation of parking lots must be analyzed to the extent that it can be determined whether the points of access will operate properly.

d)~~5~~. An analysis of the impacts to neighboring driveway access points and adjacent streets affected by the proposed new development driveways.

e)~~6~~. A discussion of bike and pedestrian use and the availability of transit to serve the development.

f) The recommendations made in the report shall be specific and based on a minimum level of service when the development has been completed. As an example, if a traffic signal is recommended, the recommendations should include the type of traffic signal control and what movements should be signalized. If a storage lane for right turns or left turns is needed, the recommendations should include the amount of storage needed. If several intersections are involved for signalization, and an interconnected system is considered, specific analysis should be made concerning progression of traffic between intersections.

3. Review criteria and procedure. The following criteria should be used in reviewing a transportation impact analysis:

a) The road system is designed to meet the projected traffic demand at full build-out.

b) Proposed driveways do not adversely affect the functional characteristics of the surrounding roadways.

c) Adequate intersection and stopping sight distance is available at all driveways.

d) Proposed driveways meet the City and County's access spacing standard or sufficient justification is provided to allow a deviation from the spacing standard.

e) Opportunities for providing joint or crossover access have been pursued.

f) The site does not rely upon the surrounding roadway network for internal circulation.

g) The road system provides adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.

h) A pedestrian path system is provided that links buildings with parking areas, entrances to the development, open space, recreational facilities, and other community facilities in accordance with the state Transportation Planning Rule.

4. Conditions of Approval. As part of every land use action, the City of Klamath Falls and/or Klamath County, and ODOT (if access to a state roadway is proposed) will be required to identify conditions of approval needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of approval that may apply include:

a) Crossover easement agreements for all adjoining parcels to facilitate future access between parcels.

b) Conditional access permits for new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.

c) Right-of-way dedications for future planned roadway improvements.

d) Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

BIKEWAYS

14.445 Location. Bike lanes shall be located on collectors and arterials in the city and Urban Area. This includes the construction of new collectors and arterials and the reconstruction and re-surfacing of existing collectors and arterials. Refer to the cross-sections in the Urban Area Transportation System Plan and engineering standards for design and dimensions.

Klamath County Land Development Code

CHAPTER 10
GENERAL PROVISIONS

Article 11 Definitions

ESSENTIAL SERVICES:
Facilities and services which are necessary and accessory to the principle land use or development, and involve infrastructure such as pipelines, power lines and poles, distribution feeders, meter boxes and pump-houses. Essential services may include, but are not limited to water, sewer, natural gas, cable and electric power service, and certain transportation improvements, as specified in Section 50.040.A.

EXTENSIVE IMPACT SERVICES AND UTILITIES:
Any public or private facilities, services and utilities which may have a substantial impact on surrounding land uses. Typical uses include, but are not limited to: airports, detention and correction institutions, fairgrounds, disposal sites, incinerators, commercial power generating facilities, sports arenas and stadiums, outdoor theaters and amphitheaters, vehicular raceways, electrical transmission towers over 200 feet in height, commercial communication towers, recycle centers, natural gas or petroleum transmission pipelines, and certain transportation improvements, as specified in Section 50.040.B.

CHAPTER 20
REVIEW PROCEDURES

ARTICLE 20 BASIC PROVISIONS
20.040 - CONDITIONS OF APPROVAL
A. General Authorization to Impose Conditions of Approval
In approving any type of development application, the Review Body is authorized to impose such conditions as may be necessary to assure compliance with the applicable provisions of this code, the Comprehensive Plan, the Urban Area Transportation System Plan, the state Transportation Planning Rule, or other requirements of law. Any conditions attached to approvals will be directly related to the impacts of the proposed use or development and will be roughly proportional in both extent and amount to the anticipated impacts of the proposed use or development.

1. In the case of transportation impacts, conditions needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system may be imposed. Conditions of approval that may apply include but are not limited to:

a. Crossover and/or reciprocal easement agreements for all adjoining parcels to facilitate future access between parcels.
b. Access for new developments that have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.
c. Right-of-way dedications for future planned roadway improvements.
d. Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

ARTICLE 21 PRE-APPLICATION CONFERENCE PROCEDURE

21.040 - NOTICE, HEARING AND APPEAL Because a pre-application conference is not a land use decision, no notice, hearing or appeals shall be provided. The discussions of a pre-application conference shall not be binding on any party. For application sites located adjacent to a state roadway or where proposals are expected to have an impact on a state transportation facility, ODOT shall be invited to participate in the conference.

CHAPTER 30
PUBLIC HEARINGS, NOTICE AND APPEAL

ARTICLE 32 PUBLIC NOTICE
32.030 - TYPES OF NOTICE

C. Mailed Public Hearing Notice - Notice of a quasi-judicial land use hearing shall be mailed by first class mail in the following manner: *(ORS 197.763(3))*

1. No later than 20 days prior to the date of the scheduled review or hearing:
   a. To all owners of real property within 500 feet, including rights-of-way and water bodies, of the subject property for actions involving land planned and zoned for farm or forestry use;
   b. To all owners of real property within 250 feet, including rights-of-way and water bodies, of the subject property for actions involving property outside an urban growth boundary that is not zoned for farm or forest use;
   c. To all owners of real property within 100 feet, including rights-of-way and water bodies, of the subject property for actions wholly or partially within an Urban Growth Boundary;
   d. To a public use airport owner if: (ORS 215.416(7) [...]
   e. To each mailing address for tenants of a mobile home park for a zone change involving property encompassing all or part of a mobile home park as identified in ORS 446.003. Such notice may not be mailed more than 40 days before the date of the first hearing on a zone change. *(ORS 215.223(7))*
   f. To all property owners affected by a legislative zone change involving a substantial area and number of property owners in accordance with ORS 215.503, if applicable.

g. Notice shall also be provided to any neighborhood or community organization formally recognized by the Board of Commissioners and whose boundaries include the site. *(ORS 197.763(2)(b))*

h. Any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the County or is otherwise potentially affected by the proposal. For application sites located adjacent to a state roadway or where proposals may have an impact on a state transportation facility, notice of the decision shall be sent to ODOT.

D. Mailed Tentative Decision Notice - Notice of a quasi-judicial land use decision made without a hearing shall be mailed by first class mail in the following manner: *(ORS 215.416(11)(a))*

1. No later than 5 days following a written decision rendered pursuant to a Type II Administrative Review Procedure, provided the notice states the 12-day period for appeal of the tentative decision starts on the date the tentative decision is mailed:

a. To all owners of real property within 750 feet, including rights-of-way and water bodies, of the subject property for actions involving land planned and zoned for farm or forestry use;

b. To all owners of real property within 250 feet, including rights-of-way and water bodies, of the subject property for actions involving property outside an urban growth boundary that is not zoned for farm or forest use;

c. To all owners of real property within 100 feet, including rights-of-way and water bodies, of the subject property for actions wholly or partially within an Urban Growth Boundary;

d. To any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the County or is otherwise potentially affected by the proposal. For application sites located adjacent to a state roadway or where proposals are expected to have an impact on a state transportation facility, notice shall be sent to ODOT

CHAPTER 40
APPLICATION PROCEDURES

ARTICLE 41
SITE PLAN REVIEW

41.060 - SITE PLAN REQUIREMENTS
Site plans shall include the following information:
A. Tax lot number and street address;
B. Dimensions of property, scale, and north arrow;
C. Location, name, width and surface type of adjacent streets;
D. Location, dimensions and surface type of existing or proposed driveways or parking areas;

E. Location, dimensions (including height), and use or occupancy of all existing and proposed structures on the property, including accessory structures, decks, balconies, and other structural elements;
F. Distance from property lines to existing and proposed structures, septic tanks, drain lines, and wells;
G. Location of water and drainage features and the flow direction of any ponds, channels, creeks, swales or other drainage facilities effecting the proposed use;
H. Location, type, and dimensions of proposed on-site sewage disposal and water supply, if any;
I. Location and descriptions of any topographic or developed features on the site, such as rock outcrops, excavations, etc.;
J. Location and dimensions of all easements;
K. Landscaping as required by Article 65;
L. Signs as required by Article 66;
M. Parking as required in Article 68;
N. Vehicular access and circulation as required by Article 71;
O. Non-vehicular access and circulation as required by Article 71;
~~O~~P. Other appropriate information that otherwise may be required by this code, including a Traffic Impact Study pursuant to Section 71.200;
~~P~~Q. Signature of applicant.

ARTICLE 44
CONDITIONAL USE PERMIT

44.030 - REVIEW CRITERIA
A. The use complies with policies of the Comprehensive Plan;
B. The use is in conformance with all other required standards and criteria of this code; and
C. The location, size, design, and operating characteristics of the proposed use will not have a significant adverse impact on the livability, value or appropriate development of abutting properties and the surrounding area. This includes impacts on the transportation system to be determined pursuant to Section 71.200.
D. Conditions - The review body may grant a Conditional Use Permit subject to such reasonable conditions, pursuant to Section 20.040, based on findings of fact that it deems necessary to ensure compliance with the Klamath County Comprehensive Plan, Land Development code, Urban Area Transportation System Plan, and sound land use planning principles.

ARTICLE 46
LAND SUBDIVISION

46.030 - REVIEW CRITERIA
[...]
B. A subdivision plat shall be reviewed against the following criteria:

1. The subdivision development complies with policies of the Comprehensive Plan, including the policies and standards of the Urban Area Transportation System Plan;
2. The subdivision plat is in conformance with all standards and criteria of this code and applicable state statutes;
3. The site of the proposed subdivision is physically suitable for the type and density of the proposed development;
4. The street plan for the proposed subdivision will permit its development in a safe and efficient manner in accordance with the Comprehensive Plan and this code and transportation improvements, consistent with the findings from a Traffic Impact Study pursuant to Section 71.200;
5. The street plan for the proposed subdivision will permit the development of adjoining land in a safe and efficient manner in accordance with the Comprehensive Plan and this code; and
6. The existing and proposed infrastructure and public facilities and services required by this code are adequate to serve the proposed development.

46.050 - PRELIMINARY SUBDIVISION PLAT REQUIREMENTS
[...]
D. Required Information - All preliminary subdivision plats shall show the following information:

1. Existing Conditions:
   a. The location, width, and names of all existing or platted streets, ways or other public ways within or adjacent to the proposed subdivision, easements, railroad rights-of-way, and other important features, including but not limited to section lines and corners, city and school district boundaries;
   b. For subdivision within urban growth boundaries, contour lines shall [...]
2. Proposed Development:
   a. All streets showing the location, widths, names, approximate grades, and approximate radii of curves and the relationship of all streets to any projected streets. This shall include any walkways and pedestrian connections as required by Article 71, Vehicular and Non-Vehicular Access and Circulation;
   [...]

E. Accompanying Statement. A separate statement containing the following information shall accompany the preliminary subdivision plat if the following information cannot be shown practically on the preliminary subdivision plat:

1. Proposed uses of the property and present zoning;
2. Existing and/or proposed deed restrictions, if any;
3. A statement of the improvements proposed to be made or installed, the time such improvements are proposed to be made or completed, and the procedures the subdivider proposes to use;
4. A statement of what provisions are proposed for water supply, sewage disposal and drainage; and

5. Identification of the irrigation district involved and provisions for delivering irrigation water to the lots in the subdivision.

F. Drainage Plan. A drainage plan, prepared in accordance with Article 73 shall accompany all preliminary subdivision plats in the Klamath Falls Urban Area.

G. Evidence that the applicant has contacted the Environmental Health Department regarding the provision of on-site sewage disposal and other requirements, as applicable.

H. A Traffic Impact Study as may be required by Section 71.200.

ARTICLE 47
CHANGE OF ZONE DESIGNATION (QUASI-JUDICIAL)

47.030 - REVIEW CRITERIA

A. A request for a change of zone designation may only be approved if it meets all applicable review criteria.

B. A request for a change of zone designation shall be reviewed against the following criteria:

1. The proposed change of zone designation is in conformance with the Comprehensive Plan and does not afford special privileges to an individual property owner not available to the general public or outside the overall public interest for the change;

2. The property affected by the change of zone designation is adequate in size and shape to facilitate any uses allowed in conjunction with such zoning;

3. The property affected by the proposed change of zone designation is properly related to streets and roads and to other public facilities and infrastructure to adequately serve the types of uses allowed in conjunction with such zoning and the proposed change is in compliance with the Transportation Planning Rule (TPR) OAR 660-012-0060;

4. Traffic impact study: A Traffic Impact Study shall be submitted with a zone change application pursuant to Section 71.091, Traffic Impact Study.

~~4.~~ 5. The proposed change of zone designation will have no significant adverse effect on the appropriate use and development of adjacent properties; and

~~5.~~ 6. The proposed change is supported by specific studies or other factual information, which documents the need for the change.

ARTICLE 48
CHANGE OF COMPREHENSIVE PLAN DESIGNATION
(QUASI-JUDICIAL)

48.030 - REVIEW CRITERIA

A. A request for a change of Comprehensive Plan designation may only be approved if it meets all applicable review criteria;

B. A request for a change of Comprehensive Plan designation shall be reviewed against the following criteria:

1. The proposed change is supported by specific studies or other factual information, which documents the public need for the change;
2. The proposed change complies with policies of the Comprehensive Plan and policies and standards of the Urban Area Transportation System Plan; and
3. The proposed change complies with the Oregon State wide Planning Goals and Administrative Rules, including compliance with the TPR (OAR 660-012-0060). Exceptions to the Statewide Planning Goals, shall be based upon Statewide Planning Goal 2, Part II (Exceptions) as interpreted by Oregon Administrative Rules (OAR Chapter 660, Division 4).
4. Traffic impact study: A Traffic Impact Study shall be submitted with a zone change application pursuant to Section 71.091, Traffic Impact Study.

ARTICLE 49
LEGISLATIVE AMENDMENT TO THE KLAMATH COUNTY
COMPREHENSIVE PLAN, LAND DEVELOPMENT CODE, OR ZONING MAP

49.030 - REVIEW CRITERIA
A. An amendment to the Comprehensive Plan or Land Development Code may only be approved if it meets all applicable review criteria.
B. An amendment to the Comprehensive Plan or Land Development Code shall be reviewed against the following criteria:

1. The proposed amendment is supported by specific studies or other factual information, which documents the public need for the change;
2. The proposed amendment complies with policies of the Comprehensive Plan and policies and standards of the Urban Area Transportation System Plan; and
3. The proposed amendment complies with the Oregon Statewide Planning Goals, ~~and~~ state statutes, and administrative rules, including compliance with the TPR (OAR 660-012-0060).
4. Traffic impact study: A Traffic Impact Study shall be submitted with a zone change application pursuant to Section 71.091, Traffic Impact Study.

CHAPTER 50
LAND USE ZONES

ARTICLE 50
BASIC PROVISIONS
50.010 – PURPOSE
50.020 – LIST OF BASIC ZONES
50.030 – LIST OF SPECIAL PURPOSE ZONES
50.040 – TRANSPORTATION-RELATED USES

A. The following transportation-related improvements and activities are considered "Essential Services" uses and are permitted outright in all County zones, unless otherwise specified in individual zones.

1. Normal operation, maintenance, repair, and preservation activities of existing transportation facilities.
2. Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.
3. Projects specifically identified in the Urban Area Transportation System Plan.
4. Landscaping as part of a transportation facility.
5. Emergency measures necessary for the safety and protection of property.
6. Acquisition of right-of-way for public roads, highways, and other transportation improvements designated in the Urban Area Transportation System Plan, except for those that are located in exclusive farm use or forest zones.
7. Construction of a street or road as part of an approved subdivision or land partition approved that is consistent with the applicable land division regulations.

B. The following transportation-related improvements and activities are considered "Extensive Impact Services and Utilities" uses and are permitted conditionally in all County zones, unless otherwise specified in individual zones.

1. Construction, reconstruction, or widening of highways, roads, bridges or other transportation projects that are:
   a. Not improvements designated in the Urban Area Transportation System Plan; or
   b. Not designed and constructed as part of a subdivision or planned development subject to site plan and/or conditional use review.
   c. An application for site plan review is subject to review under Article 41. In addition, the site plan permit shall comply with the Urban Area Transportation System Plan and applicable standards of this title, and shall address the criteria below. For State projects that require an Environmental Impact Statement (EIS) or EA (Environmental Assessment), the draft EIS or EA shall be reviewed and used as the basis for findings to comply with the following criteria:
      (1) The project is designed to be compatible with existing land use and social patterns, including noise generation, safety, and zoning.

(2) The project is designed to minimize avoidable environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.
(3) The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.
(4) The project includes provision for bicycle and pedestrian circulation as consistent with the Comprehensive Plan and other requirements of this ordinance.

CHAPTER 60
PLANNING DEPARTMENT DEVELOPMENT STANDARDS

ARTICLE 68
OFF-STREET PARKING AND LOADING

68.030 – OFF-STREET PARKING REQUIREMENTS
A. The following off-street parking requirements shall apply to all buildings, structures, developments and land uses unless otherwise specified in this code.
[Parking standards table remains unchanged.]
B. Carpool and Vanpool Parking. Large employers (those with 50 employees or more working the same hours or shift) shall dedicate 10% of the required parking spaces for carpools and vanpools.

1. These designated spaces shall be the closest parking spaces to the building entrance normally used by employees, with the exception of disabled/handicap accessible parking spaces.
2. Carpool and vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only" along with specific hours of use.
3. Any other use establishing carpool and vanpool spaces may reduce the minimum parking requirement by 3 spaces for each carpool/vanpool space created.

C. Transit-related parking reduction. The number of minimum required parking spaces may be reduced by up to 10% if:

1. The proposal is located within a ¼ mile of an existing or planned transit route, and;
2. Transit-related amenities such as transit stops, pull-outs, shelters, park-and-ride lots, transit-oriented development, and transit service on an adjacent street are present or will be provided by the applicant.

D. Bicycle Parking Standards
1. The following bicycle parking standards are applicable only inside an Urban Unincorporated Community or within an Urban Growth Boundary for which Klamath County has jurisdiction. The Klamath Falls Urban Area is exempt from this Bicycle Parking Standards section due to an adopted Urban Area Transportation System Plan (KC ORD. 44.68 Acknowledged November 12, 1998).
[***Subsection 2. and the County standards remain unchanged.***]

3. In the Klamath Falls Urban Area, bicycle parking facilities shall be provided for all new or expanded multi dwelling residential, institutional, commercial and industrial uses. Bicycle parking shall be provided as follows:

1. One bicycle parking space shall be provided for every twelve (12) required off street parking spaces, with a minimum of one bicycle parking space.
2. Required bicycle parking facilities shall be located no further than fifty feet (50') from a public entrance.
3. Bicycle parking facilities may be provided in a dedicated area within a building that is accessible to bicycle storage.

4. Bicycle Parking Design Guidelines. The following guidelines are applicable to bicycle parking facilities in the Klamath Falls Urban Area:

1. Bicycle parking facilities shall either be stationary racks, which accommodate bicyclist's locks securing the frame and both wheels or lockable rooms or enclosures in which the bicycle is stored.
2. Bicycle parking spaces shall be at least six feet (6') long and two feet (2') wide. Upright bicycle storage structures are exempted from the parking space length standard.
3. A five-foot (5') aisle for bicycle maneuvering shall be provided and maintained beside or between each row of bicycle parking.
4. Bicycle racks or lockers shall be anchored to the ground surface or to a structure.

CHAPTER 70
PUBLIC WORKS DEPARTMENT DEVELOPMENT STANDARDS

ARTICLE 71
VEHICULAR AND NON-VEHICULAR ACCESS AND CIRCULATION

71.010 - PURPOSE
The purpose of these standards is to ensure safe ingress and egress to and from properties; to minimize street congestion and traffic hazards; to provide safe and convenient access to businesses, public services, and places of public assembly; and to make vehicular and non-vehicular circulation more compatible with surrounding land uses.

71.020 - ACCESS STANDARDS
A. Vehicular Access - Vehicular access shall be provided to all lots or parcels from a dedicated street. Developments fronting on an arterial street or road may be required to provide a frontage or service road.
B. Director of Public Works Approval - Access to property fronting upon a county or public road shall be subject to the approval of the Director of Public Works.
C. Oregon Department of Transportation (ODOT) Approval - Access to property fronting upon a state highway shall be subject to the permits issued by ODOT.
D. Rural County Road Access Management – Minimum Centerline Spacing Standards

[***Rural County spacing standards remain unchanged.***]

E. Klamath Falls Urban Growth Area Access Spacing Standards - All new development and redevelopment shall meet the access spacing standards in Table 4-3 of the Urban Area Transportation System Plan.
F. When the site of development or redevelopment in the Urban Area has frontage on roads with different functional classifications, the site shall take access on the road with the lower functional classification.
G. The County or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. In the Klamath Falls Urban Growth Area, access to and from off-street parking areas shall not permit backing onto a public street.

71.050 - IMPROVEMENTS IN THE KLAMATH FALLS URBAN AREA
The following roadway improvements shall be required for all subdivisions within the Klamath Falls Urban Growth Area unless otherwise specified, and shall be provided at the expense of the developer:
~~A. Concrete curbs, gutters, sidewalks and paved roadways a minimum width of 36 feet shall be provided where the average lot size of the development is not greater than 20,000 square feet;~~
~~B. Concrete curbs, gutters and paved roadways a minimum width of 36 feet shall be provided where the average lot size of the development is greater than 20,000 square feet and not greater than 43,560 square feet (1 acre);~~
~~C. Roadways paved to a minimum width of 24 feet with gravel shoulders improved to a minimum width of 4 feet and drainage facilities as required by the Director of Public Works shall be provided where the average lot size of the development is greater than 43,560 square feet (1 acre);~~
All roads that are functionally classified as arterials or collectors shall provide sidewalks and bikeways (e.g. bicycle lanes) on both sides of the roadway, except as determined otherwise by the Director of Public Works.
~~D~~B. As required by the Director of Public Works, all rights-of-way shall be cleared between the catch points of cuts or fills of the approved cross section. The entire right-or-way shall be cleared of all flammable brush, limbs, logs and stumps outside of slope limits to the full width of the right-of-way;
~~E~~C. When necessary for public convenience and safety, the review body may require pedestrian ways to permit access to cul-de-sacs, to pass through oddly shaped or unusually long blocks, or to provide access to schools, parks or other public or private areas. Pedestrian ways shall be no less than 10 feet in width with an improved surface no less than 8 feet in width, and shall be dedicated to the public.

~~F~~D. All development shall be designed and constructed in accordance with the Department of Public Works Standard Drawings, as may be revised.

71.100 - CUL-DE-SACS
A. The length of a cul-de-sac shall be measured along the centerline of the roadway from the right-of-way line to the farthest point of the cul-de-sac.
B. All cul-de-sacs shall terminate with a circular turn around having a right-of-way not less than 50 feet radius and an improved turnaround of not less than 40 feet radius, unless otherwise specified in this code.
C. In urban areas a cul-de-sac shall not exceed 500 feet in length or serve more than 18 dwelling units. The review body may require a pedestrian way or bikeway between the cul-de-sac and adjacent streets in order to enhance accessibility and connectivity. Pedestrian ways shall be no less than 10 feet in width with an improved surface no less than 8 feet in width, and shall be dedicated to the public;
D. In rural areas, a cul-de-sac shall not exceed 700 feet in length, unless otherwise specified in this code.
E. The maximum grade of a cul-de-sac turnaround shall not exceed 3%.

71.150 - BLOCKS
A. The length, width and shape of blocks shall be designed with regard to providing a safe and efficient layout of building sites when considering topography, access, circulation and safety.
B. Blocks shall not exceed 1,320 feet when measured from road centerline to road centerline. In the Klamath Falls Urban Growth Area, block length shall not exceed 600 feet to improve connectivity for vehicular and non-vehicular traffic.

71.190 – NON-VEHICULAR ACCESS AND CIRCULATION
1. For new commercial, light industrial, and multi-family residential development, internal pedestrian circulation shall be provided through sidewalks and walkways/pathways, pursuant to the following standards:

a) Walkways shall be provided connecting building entrances and streets adjoining the site.
b) Connections shall be direct and driveway crossings minimized.
c) Walkways shall be at least five-feet-wide, raised, include curbing, or have different paving material when crossing driveways.
d) Pedestrian connections to adjoining properties shall be provided except where such a connection cannot be accommodated due to topographical constraints or where existing development on adjacent sites preclude connections. Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property.

2. Transit Access. New commercial and light industrial buildings within 600 feet of an existing or planned transit facility, as identified in the Urban Area TSP, shall provide for pedestrian access to transit through the following measures:

a) Either locate buildings within 20 feet of the transit facility, a transit street, or an intersecting street or provide a pedestrian plaza at the transit facility or a street intersection;
b) Provide a reasonably direct pedestrian connection between the transit facility and building entrances on the site;
c) Provide a transit passenger landing pad accessible to disabled persons;
d) Provide an easement or dedication for a passenger shelter if requested by the transit provider; and
e) Provide lighting at the transit facility.

71.200 – Traffic Impact Study

A. A traffic impact study shall be developed by a Professional Engineer under the following conditions.

1. The proposed development generates 50 or more peak-hour trips or 500 or more daily trips.
2. An access spacing exception is required for the site access driveway(s) and the development generates 25 or more peak-hour trips or 250 or more daily trips.
3. The proposed development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.
4. The proposed development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.

B. Submittal requirements: The study shall include the following minimum requirements:

1. The analysis shall include alternates other than what the developer originally submits as a proposal for access.
2. The analysis of alternate access proposals shall include:
   a. Existing daily and appropriate design peak hour counts, by traffic movements, at intersections that would be affected by traffic generated by the development.
   b. Projected daily and appropriate design peak hour volumes for these same intersections and at the proposed access points after completion of the development. If the development is to be constructed in phases, projected traffic volumes at the completion of each phase shall be determined.
   c. Trip Generation shall be calculated using the Institute of Transportation Engineers' manual "Trip Generation – 5th Edition" or other, more current, and/or applicable information.
   d. A determination of the need for a traffic signal based on warrants in the "Manual on Uniform Traffic Control Devices".
3. The internal circulation of parking lots must be analyzed to the extent that it can be determined whether the points of access will operate properly.

4. An analysis of the impacts to neighboring driveway access points and adjacent streets affected by the proposed new development driveways.
5. A discussion of bike and pedestrian use and the availability of transit to serve the development.
6. The recommendations made in the report shall be specific and based on a minimum level of service when the development has been completed. As an example, if a traffic signal is recommended, the recommendations should include the type of traffic signal control and what movements should be signalized. If a storage lane for right turns or left turns is needed, the recommendations should include the amount of storage needed. If several intersections are involved for signalization, and an interconnected system is considered, specific analysis should be made concerning progression of traffic between intersections.

C. Review criteria and procedure. The following criteria should be used in reviewing a transportation impact analysis:

1. The road system is designed to meet the projected traffic demand at full buildout.
2. Proposed driveways do not adversely affect the functional characteristics of the surrounding roadways.
3. Adequate intersection and stopping sight distance is available at all driveways.
4. Proposed driveways meet the County's access spacing standard or sufficient justification is provided to allow a deviation from the spacing standard.
5. Opportunities for providing joint or crossover access have been pursued.
6. The site does not rely upon the surrounding roadway network for internal circulation.
7. The road system provides adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.
8. A pedestrian path system is provided that links buildings with parking areas, entrances to the development, open space, recreational facilities, and other community facilities in accordance with the state Transportation Planning Rule.

D. Conditions of Approval. As part of every land use action, Klamath County and the City of Klamath Falls, and ODOT (if access to a state roadway is proposed) will be required to identify conditions of approval needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of approval that may apply include:

1. Crossover easement agreements for all adjoining parcels to facilitate future access between parcels.
2. Conditional access permits for new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.
3. Right-of-way dedications for future planned roadway improvements.
4. Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

Appendix 1C Transportation Impact Analysis Guidelines

TRANSPORTATION IMPACT ANALYSIS REQUIREMENTS

INTENT AND PURPOSE

A transportation impact analysis (TIA) provides an objective assessment of the anticipated modal transportation impacts associated with a specific land use action. A TIA is useful for answering important transportation-related questions such as:

- Can the existing transportation system accommodate the proposed development from a capacity and safety standpoint?
- What transportation system improvements are necessary to accommodate the proposed development?
- How will access to the proposed development affect the traffic operations on the existing transportation system?
- What transportation impacts will the proposed development have on the adjacent land uses, including commercial, institutional, and residential uses?
- Will the proposed development meet current standards for roadway design?
- Does the proposed development comply with the TSP?

Throughout the development of the TIA (and beginning as early as possible), cooperation/coordination between City of Klamath Falls, Klamath County, and ODOT staff (as applicable), the applicant, and the applicant's traffic engineer is encouraged to provide an efficient and effective process.

If a TIA is not required, a Transportation Assessment Letter shall be submitted indicating that the proposed land use is exempt. The letter should also detail site trip generation requirements confirming the exempt status and verify site-access driveways meeting applicable sight distance requirements.

City of Klamath Falls and Klamath County staff may, at their discretion, and depending on the specific situation, require additional study components in a TIA beyond what is outlined in this section or waive requirements deemed inappropriate.

These requirements are for development applications that are expected to affect City and/or County operated facilities. For development applications that require an ODOT access permit, land use zoning changes, or comprehensive plan modifications, applicable ODOT requirements should be referenced and ODOT should be consulted during the project scoping process.

The City of Klamath Falls and Klamath County assume no liability for any costs or time delays (either direct or consequential) associated with the preparation and review of a transportation impact analysis.

1. **When a Transportation Impact Analysis is Required.** A TIA shall be required when:
    a. The development generates 50 or more peak-hour trips or 500 or more daily trips;
    b. An access spacing exception is required for the site access driveway(s) and the development generates 25 or more peak-hour trips or 250 or more daily trips;
    c. The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour; or
    d. The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.
    e. A major construction project is anticipated significantly impede normal traffic flow or roadway capacity, as determined by the Public Works Director.
    f. A construction project is anticipated to cause significant deterioration of the roadway infrastructure, as determined by the Public Works Director.
2. **When a Transportation Assessment Letter is Required.** If a TIA is not required, the applicant's traffic engineer shall submit a transportation assessment letter to the City and/or County indicating the proposed land use action is exempt. This letter shall outline the trip-generating characteristics of the proposed land use and verify that the site-access driveways or roadways meet the City of Klamath Falls or Klamath County sight-distance and access spacing requirements and roadway design standards.
3. **Scoping Memorandum.** For either a TIA or Transportation Assessment Letter, a scoping memorandum shall be prepared and submitted to the City, County, and/or ODOT. This memorandum should detail the proposed analysis approach, relevant assumptions, project background information, assumed trip generation and trip distribution for the site, and proposed study facilities, at a minimum.
4. **Contents of a Transportation Impact Analysis.** As a guide in the preparation of a transportation impact analysis, the City of Klamath Falls and Klamath County recommend the following format be used to document the analysis.
    a. **Table of Contents.** Listing of all sections, figures, and tables included in the report.
    b. **Executive Summary.** Summary of the findings and recommendations contained within the report.

c. **Introduction.** Proposed land use action, including site location, building square footage, and project scope. Map showing the proposed site, building footprint, access driveways, and parking facilities. Map of the study area, which shows site location and surrounding roadway facilities.

d. **Existing Conditions.** Existing site conditions and adjacent land uses. Roadway characteristics (all transportation facilities and modal opportunities located within the study area, including roadway functional classifications, street cross section descriptions, posted speeds, bicycle and pedestrian facilities, on-street parking, and transit facilities). Existing lane configurations and traffic control devices at the study area intersections. Existing traffic volumes and operational analysis of the study area roadways and intersections. Roadway and intersection crash history analysis.

e. **Background Conditions** (without the proposed land use action). Approved developments and funded transportation improvements in the study area. Traffic growth assumptions. Addition of traffic from other planned developments. Background traffic volumes and operational analysis.

f. **Full Buildout Traffic Conditions** (with the proposed land use action). Description of the proposed development plans. Trip-generation characteristics of the proposed development (including trip reduction documentation). Trip distribution assumptions. Full buildout traffic volumes and intersection operational analysis. Intersection and site-access driveway queuing analysis. Expected safety impacts. Recommended roadway and intersection mitigations (if necessary).

g. **Site Circulation Review.** Evaluate internal site access and circulation. Review pedestrian paths between parking lots and buildings. Ensure adequate throat depth is available at the driveways and that vehicles entering the site do not block the public facilities. Review truck paths for the design vehicle.

h. **Turn Lane Warrant Evaluation.** Evaluate the need to provide turn lanes at the site driveways.

i. **Conclusions and Recommendations.** Bullet summary of key conclusions and recommendations from the transportation impact analysis.

j. **Appendix.** Traffic counts summary sheets, crash analysis summary sheets, and existing/background/full buildout traffic operational analysis worksheets. Other analysis summary sheets such as queuing and signal warrant analyses.

K. **Figures.** The following list of figures should be included in the Transportation Impact Analysis: Site Vicinity Map; Existing Lane Configurations and Traffic Control Devices; Existing Traffic Volumes and Levels of Service (all peak hours evaluated); Future Year

Background Traffic Volumes and Levels of Service (all peak hours evaluated); Proposed Site Plan; Future Year Assumed Lane Configurations and Traffic Control Devices; Estimated Trip Distribution Pattern; Site-Generated Traffic Volumes (all peak hours evaluated); Full Buildout Traffic Volumes and Levels of Service (all peak hours evaluated).

L. **Preparer Qualifications.** An Oregon-registered professional engineer (Civil or Traffic) shall prepare the Transportation Impact Analyses. In addition, the preparer should have extensive experience in the methods and concepts associated with transportation impact studies.

5. **Study Area.** The study area shall include, at a minimum, all site-access points and intersections (signalized and unsignalized) adjacent to the proposed site. If the proposed site fronts an arterial or collector street; the study shall include all intersections along the site frontage and within the access spacing distances extending out from the boundary of the site frontage. Beyond the minimum study area, the transportation impact analysis shall evaluate all intersections that receive site-generated trips that comprise at least 10% or more of the total intersection approach volume. In addition to these requirements, the City or County Public Works Director (or his/her designee) shall determine any additional intersections or roadway links that might be adversely affected as a result of the proposed development. The applicant and the Public Works Director (or his/her designee) will agree on these intersections prior to the start of the transportation impact analysis, preferably with input from ODOT. The required study area may need to be expanded to comply with ODOT requirements.
6. **Study Years to be Analyzed in the Transportation Impact Analysis**. A level-of-service analysis shall be performed for all study roadways and intersections for the following horizon years:
    a. **Existing Year.** Evaluate all existing study roadways and intersections under existing conditions.
    b. **Background Year.** Evaluate the study roadways and intersections in the year the proposed land use is expected to be fully built out, without traffic from the proposed land use. This analysis should include traffic from all approved developments that impact the study intersections, or planned developments that are expected to be fully built out in the horizon year.
    c. **Full Buildout Year**. Evaluate the expected roadway, intersection, and land use conditions resulting from the background growth and the proposed land use action assuming full build-out and occupancy. For phased developments, an analysis shall be performed during each year a phase is expected to be completed.

d. **Twenty-Year Analysis.** For all land use actions requesting a Comprehensive Plan Amendment and/or a Zone Change, a long-term level-of-service analysis shall be performed for all study intersections assuming buildout of the proposed site with and without the comprehensive plan designation and/or zoning designation in place. The analysis should be performed using the future year traffic volumes identified in the Transportation System Plan (TSP). If the applicant's traffic engineer proposes to use different future year traffic volumes, justification for not using the TSP volumes must be provided along with documentation of the forecasting methodology. The required study area may need to be expanded to comply with ODOT requirements.

7. **Study Time Periods to be Analyzed in the Transportation Impact Analysis.** Within each horizon year, a level-of-service analysis shall be performed for the time period(s) that experience the highest degree of network travel. These periods typically occur during the mid-week (Tuesday through Thursday) morning (7:00 a.m. to 9:00 a.m.), mid-week evening (4:00 p.m. to 6:00 p.m.), and Saturday afternoon (12:00 p.m. to 3:00 p.m.) periods. The transportation impact analysis should always address the weekday a.m. and p.m. peak hours when the proposed lane use action is expected to generate 25 trips or more during the peak time periods. If the applicant can demonstrate that the peak-hour trip generation of the proposed land use action is negligible during one of the two peak study periods and the peak trip generation of the land use action corresponds to the roadway system peak, then only the worst-case study period need be analyzed.

   Depending on the proposed land use action and the expected trip-generating characteristics of that development, consideration of non-peak travel periods may be appropriate. Examples of land uses that have non-typical trip generating characteristics include schools, movie theaters, and churches. The Public Works Director (or his/her designee) and applicant should discuss the potential for additional study periods prior to the start of the transportation impact analysis.

8. **Traffic Count Requirements.** Once the study periods have been determined, turning movement counts should be collected at all study area intersections to determine the base traffic conditions. These turning movement counts should typically be conducted during the weekday (Tuesday through Thursday) between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m., depending on the proposed land use. Historical turning movement counts may be used if the data are less than 2 years old, but must be factored to meet the existing traffic conditions.

9. **Trip Generation for the Proposed Development.** To determine the impacts of a proposed development on the surrounding transportation network, the trip-generating characteristics of

that development must be estimated. Trip-generating characteristics should be obtained from one of the following acceptable sources:

a. Institute of Transportation Engineers (ITE) *Trip Generation Manual* (latest edition).

b. Specific trip generation studies that have been conducted for the particular land use action for the purposes of estimating peak-hour trip-generating characteristics. The Public Works Director (or his/her designee) should approve the use of these studies prior to their inclusion in the transportation impact analysis.

c. In addition to new site-generated trips, several land uses typically generate additional trips that are not added to the adjacent traffic network. These trips include pass-by trips and internal trips and are considered to be separate from the total number of new trips generated by the proposed development. The procedures listed in the most recent version of the *Trip Generation Handbook* (ITE) should be used to account for pass-by, diverted link, and internal trips.

10. **Trip Distribution**. Estimated site-generated traffic from the proposed development should be distributed and assigned on the existing or proposed arterial/collector street network. Trip distribution methods should be based on a reasonable assumption of local travel patterns and the locations of off-site origin/destination points within the site vicinity. Acceptable trip distribution methods should be based on one of the following procedures:

a. An analysis of local traffic patterns and intersection turning movement counts gathered within the previous 12 months.

b. A detailed market study specific to the proposed development and surrounding land uses.

c. Using the Klamath Falls travel demand model with a select-zone analysis.

11. **Intersection Operation Standards**. The City of Klamath Falls and Klamath County evaluate intersection operational performance based on level of service.

a. **Intersection Levels of Service**. The City of Klamath Falls and Klamath County require all intersections within the study area to maintain an acceptable level of service (LOS) upon full buildout of the proposed land use action. LOS calculations for signalized intersections are based on the average control delay per vehicle, while LOS calculations for unsignalized intersections are based on the average control delay for the worst or critical movement. All LOS calculations should be made using the methods identified in the most recent version of the *Highway Capacity Manual*, published by the Transportation Research Board. The minimum acceptable level of service for signalized intersections is LOS "D" while the minimum acceptable level of service for unsignalized

intersections is LOS "E". Any intersections not operating at these standards will be considered to be unacceptable.

12. **Review Policy and Procedure.** The following criteria should be used in reviewing a transportation impact analysis as part of a subdivision or site plan review.
    a. The road system is designed to adequately meet the projected traffic demand at full build-out.
    b. Proposed driveways do not adversely affect the functional characteristics of the surrounding roadways.
    c. Adequate intersection and stopping sight distance is available at all driveways.
    d. Proposed driveways meet the City and County's access spacing standard or sufficient justification is provided to allow a deviation from the spacing standard.
    e. Opportunities for providing joint or crossover access have been pursued.
    f. The site does not rely upon the surrounding roadway network for internal circulation.
    g. The road system provides adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.
    h. A pedestrian path system is provided that links buildings with parking areas, entrances to the development, open space, recreational facilities, and other community facilities per the Transportation Planning Rule.
13. **Conditions of Approval.** As part of every land use action, the City of Klamath Falls and/or Klamath County, and ODOT (if access to a state roadway is proposed) will be required to identify conditions of approval needed to meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of Approval that should be evaluated as part of subdivision and site plan reviews include:
    a. Crossover easement agreements for all adjoining parcels to facilitate future access between parcels.
    b. Conditional access permits for new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.
    c. Right-of-way dedications for future planned roadway improvements.
    d. Half-street improvements along site frontages that do not have full-buildout improvements in place at the time of development.

Appendix 1D Prospectus Sheets

Project #: B1	Washburn Way Bicycle Lanes:Eberlein Avenue to South 6th Street

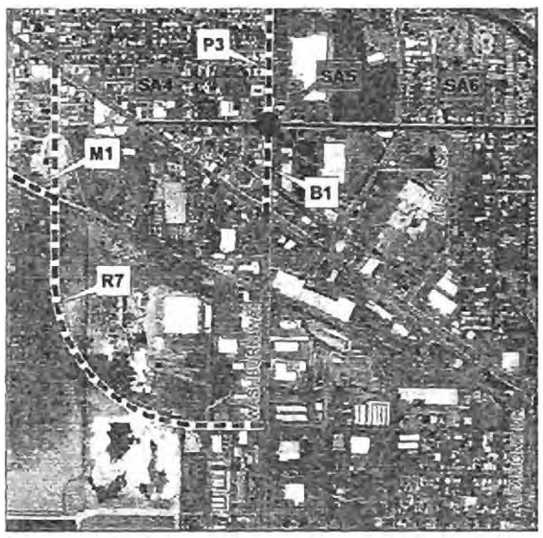
Description: Would add bike lanes to both sides of the street

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Bicycle	Major Arterial	0-5 Years	$2,570,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☑	☑	☐	☑	☑

Project Location:



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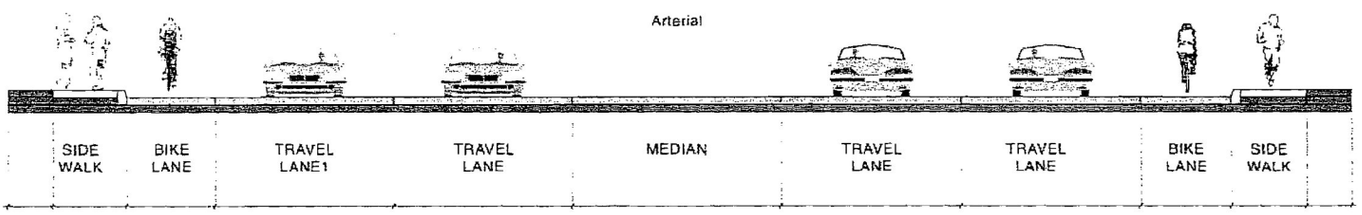

›ject #: M1	Extend OC&E trail to downtown

Description: Would extend the existing alignment of the OC&E trail to serve downtown Klamath Falls

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Multi-use Path	N/A	0-5 Years	$5,485,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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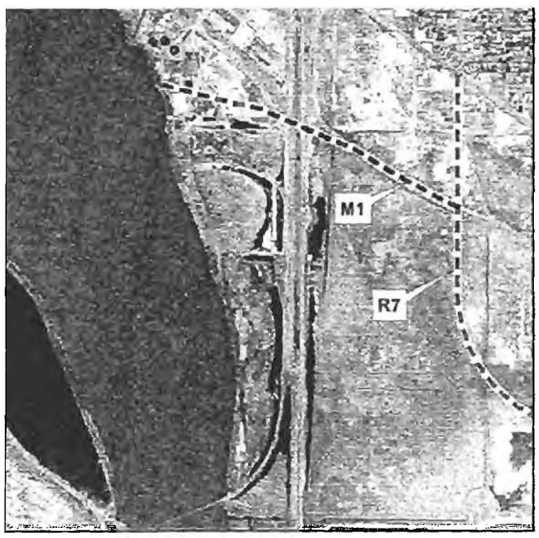
Project Location:



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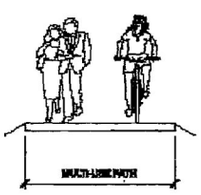

Project #: M2	New Multi-Use Path Along Foothillls Boulevard

Description: Would construct a new multi-use path from Washburn Way to Homedale Road

Category:	Functional Classification:	Time Frame:	Total Cost:
Muli-use Pathw	N/A	0-5 Years	$1,410,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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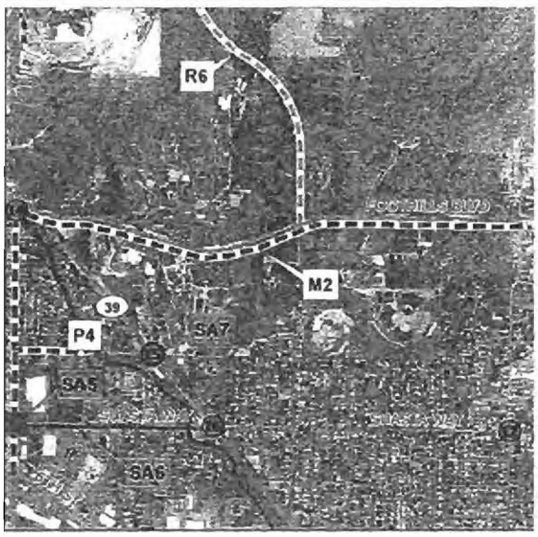
Project Location:



Project Image:

Project #: P1	Daggett Avenue Sidewalks: El Dorado Avenue to Clairmont Drive

Description: Would add sidewalks to both sides of the street

Category:	Functional Classification:	Time Frame:	Total Cost:
Pedestrian	Local Road	0-5 Years	$355,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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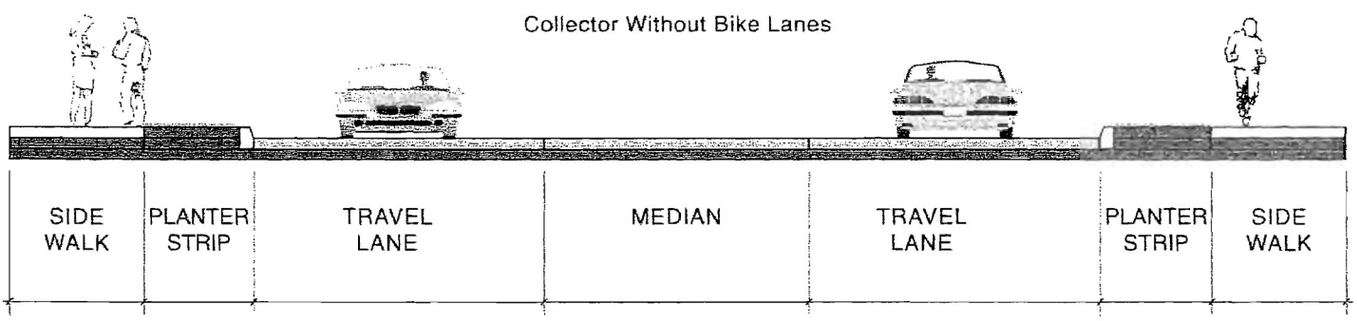
Project Location:

Project Image:



Project #: P2	El Dorado Avenue Sidewalks: Van Ness to Daggett Avenue

Description: Would add sidewalks to one side of the street

Category:	Functional Classification:	Time Frame:	Total Cost:
Pedestrian	Collector	0-5 Years	$820,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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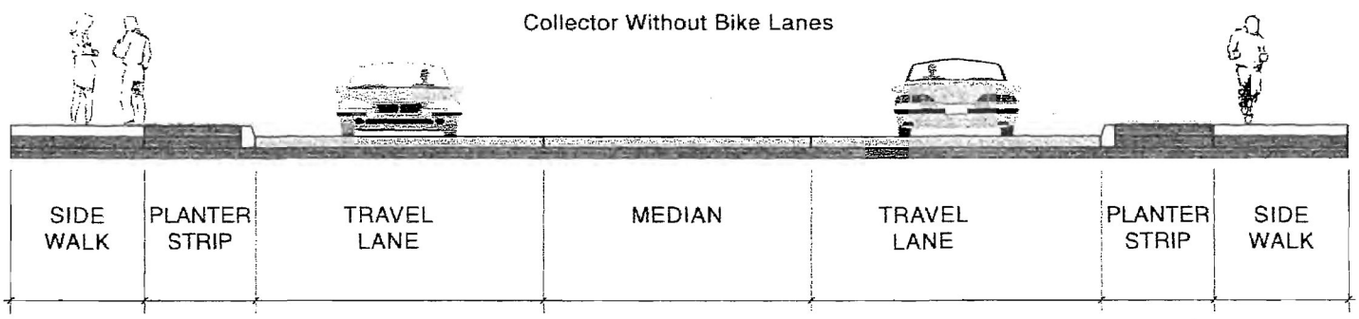
Project Location:

Project Image:



ject #: P3	Washburn Way Sidewalks: Crater Lake Parkway to Shasta Way

Description: Would add sidewalks to both sides of the street

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Pedestrian	Major Arterial	0-5 Years	$1,523,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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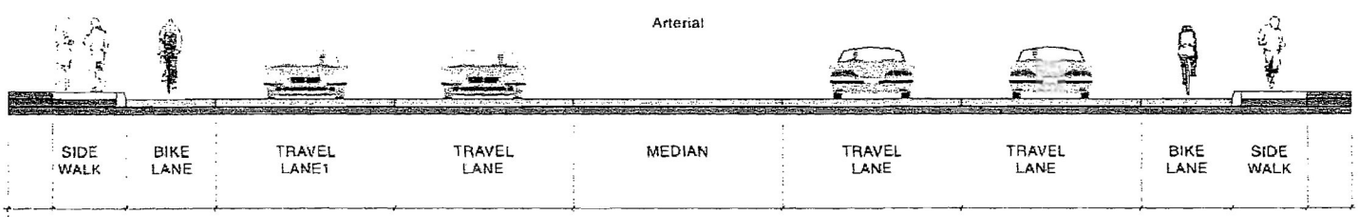
Project Location:

Project Image:



›ject #: P4	Eberlein Avenue Sidewalks: Washburn Way to Canal

Description: Would add sidewalks to both sides of the street

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Pedestrian	Collector	0-5 Years	$620,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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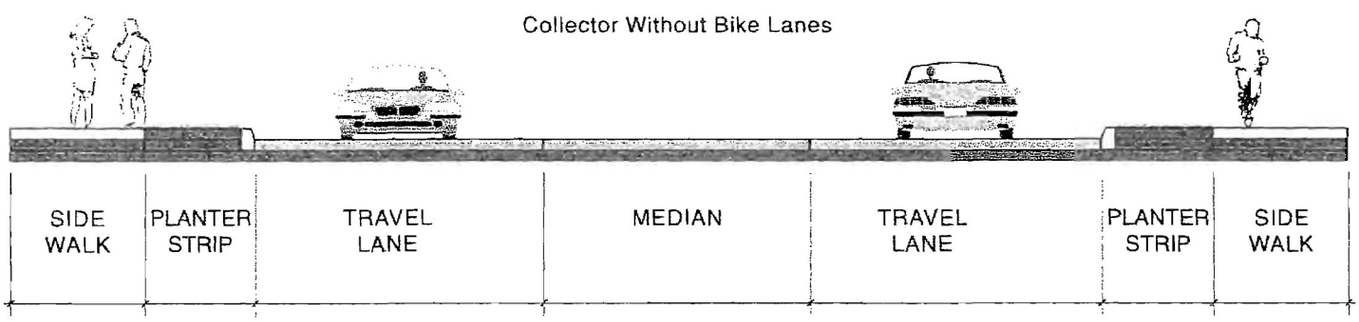
Project Location:

Project Image:



›ject #: P5	Crest Street and Clinton Street Sidewalks: Hilyard Avenue to Summers Lane

Description: Would add sidewalks to both sides of the street

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Pedestrian	Collector	0-5 Years	$2,900,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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Project Location:

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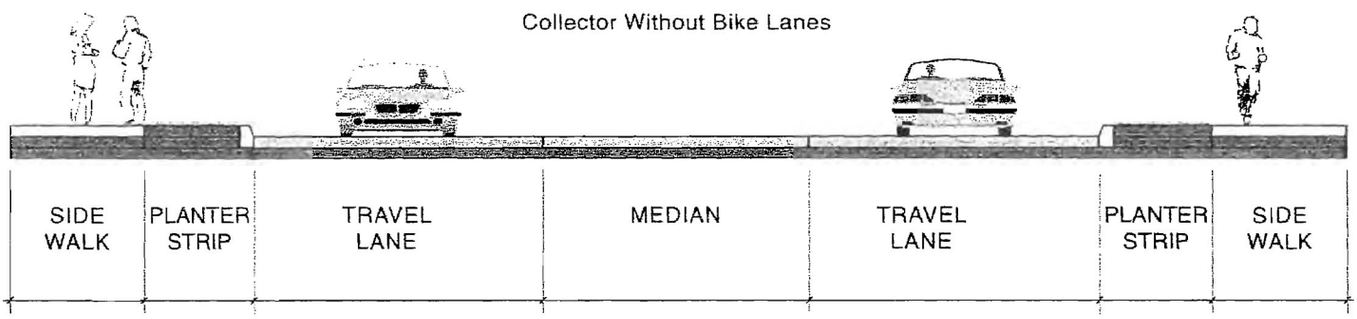

›ject #: P6	Crest Avenue Street andto Clinton Street Sidewalks: Hilyard Avenue to Summer Lane

Description: Would add sidewalks to both sides of the street

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Pedestrian	Collector	0-5 Years	$1,665,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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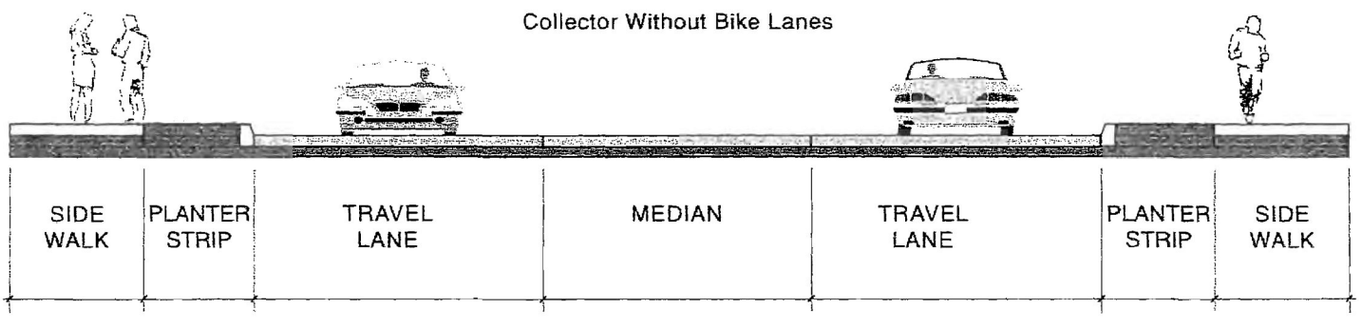
Project Location:

Project Image:



ɔject #: I1	**OR 39/Biehn Street/Campus Drive Intersection**

Description: Construct a northbound left-turn lane. Would require the construction of an additional receiving lane.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	15-25 Years	$839,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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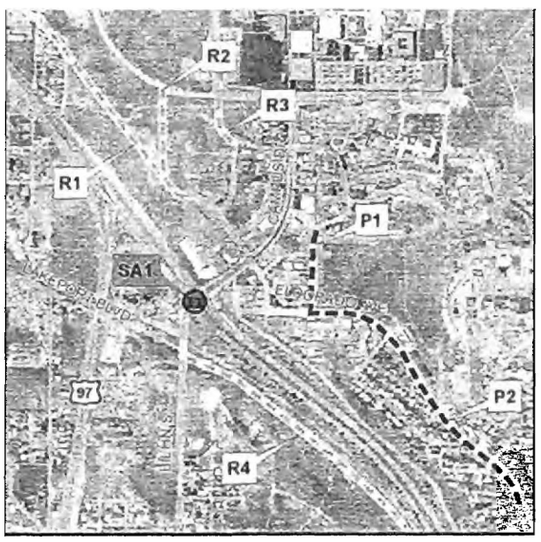
Project Location:



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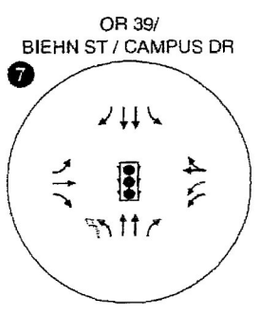

ıject #: 12	Biehn Street/Oregon Avenue Intersection

Description: Construct a southbound left-turn lane.

Category:	Functional Classification:	Time Frame:	Total Cost:
Intersection	Collector	5-15 Years	$164,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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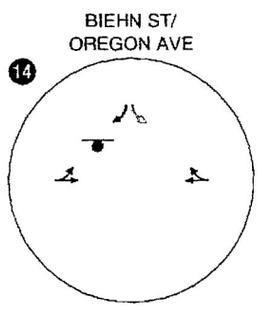
Project Location:

Project Image:



ject #: I3	**Main Street/OR 39 Intersection**

Description: Modify signal timings to better serve existing and future demand.

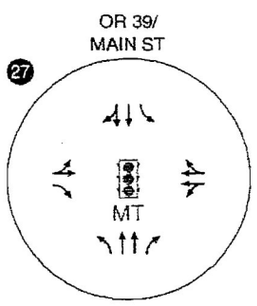
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	15-25 Years	$195,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



ɔject #: I4	**OR 39/Washburn Way Intersection**

Description: Modify signal phasing to provide protected/permitted phasing northbound, permitted phasing southbound, overlap phasing for eastbound right-turn, and overlap phasing for southbound right-turn.

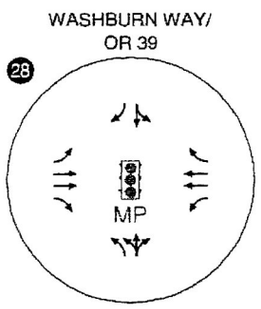
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	0-5 Years	$195,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



ɔject #: I5	Eberlein Avenue/OR 39 Intersection

Description: Install traffic signal.

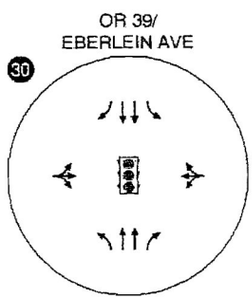
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	5-15 Years	$507,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



ɔject #: I6	**OR 39/Shasta Way Intersection**

Description: Modify signal phasing to provide protected/permitted phasing on Shasta Way.

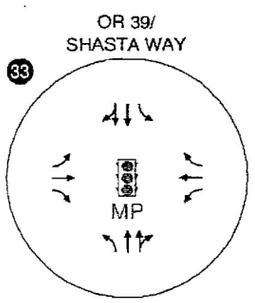
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	15-25 Years	$195,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



›ject #: 17	Shasta Way/Homedale Road Intersection

Description: Install traffic signal.

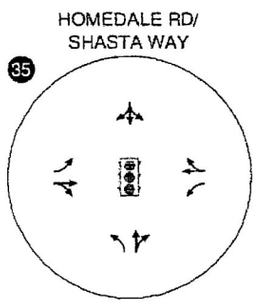
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	Collector	5-15 Years	$507,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



Project #: 18	**Homedale Road/OR 39 Intersection**

Description: Construct eastbound right-turn lane. Would likely impact adjacent parking lot.

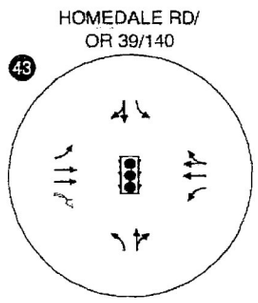
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	0-5 Years	$743,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



ɔject #: I9	**Summers Lane/Clinton Avenue Intersection**

Description: Install traffic signal.

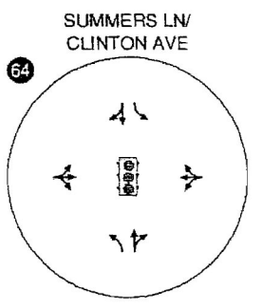
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	Collector	5-15 Years	$507,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



ɔject #: I10	**OR 39/OR 140 (Big Y) Intersection**

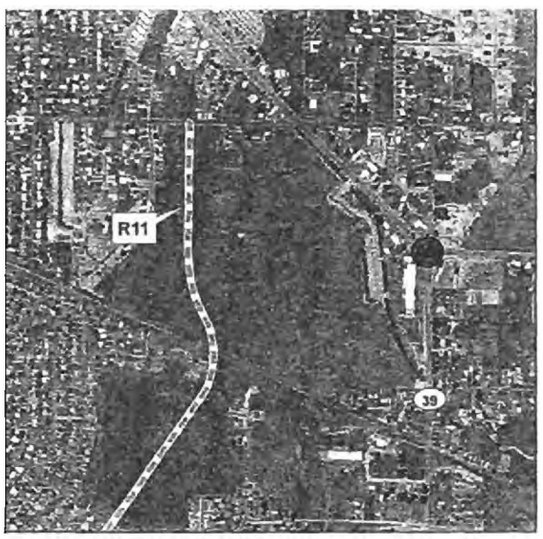
Description: Construct southbound left-turn lane. Would require second receiving lane and would likely impact adjacent parcels.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway	0-5 Years	$825,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☐	☑	☐

Project Location:



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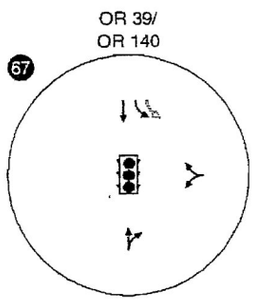


›ject #: I11	Washburn Way/OR 140 Eastbound Ramps Intersection

Description: Install traffic signal

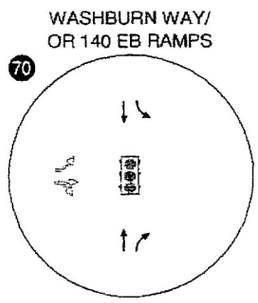
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway/Collector	0-5 Years	$507,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:

Project Image:



›ject #: I12	OR 39/OR 140 (South of Big Y) Intersection

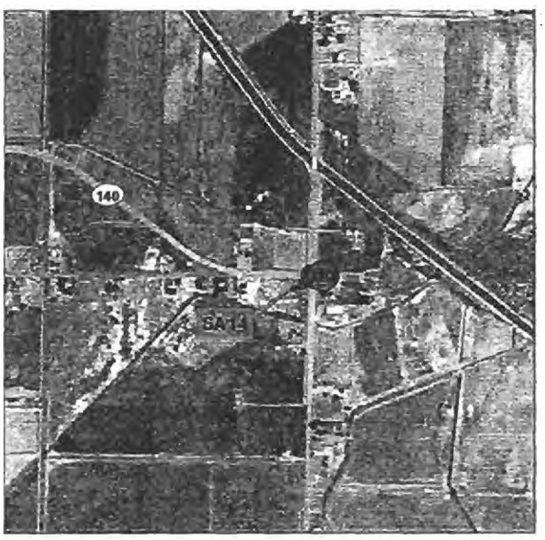
Description: Install traffic signal

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Intersection	State Highway	5-15 Years	$507,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☐	☑	☑	☐

Project Location:



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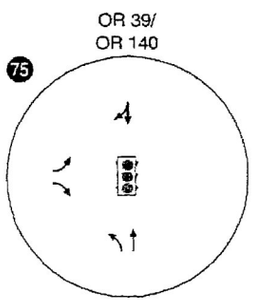


›ject #: R1	New Minor Collector from Dan O'Brien Way to Dahlia Street

Description: Would create a new connection from Dan O'Brien Way to Dahlia Street.

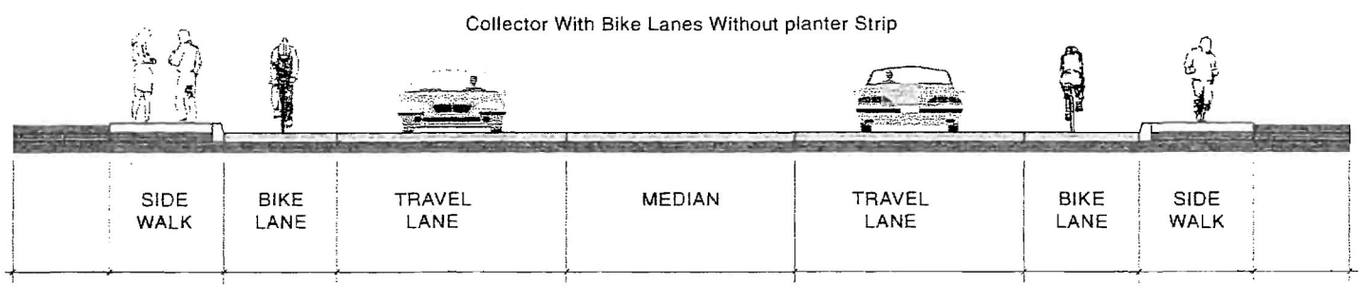
Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$8,216,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:

Project Image:



ject #: R2	**Daggett Avenue Extension**

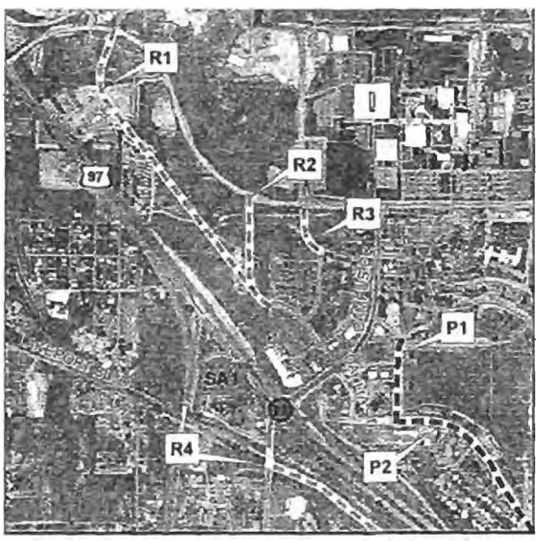
Description: Would extend existing Daggett Avenue alignment north to Dan O'Brien Way.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Local Road	N/A	$1,738,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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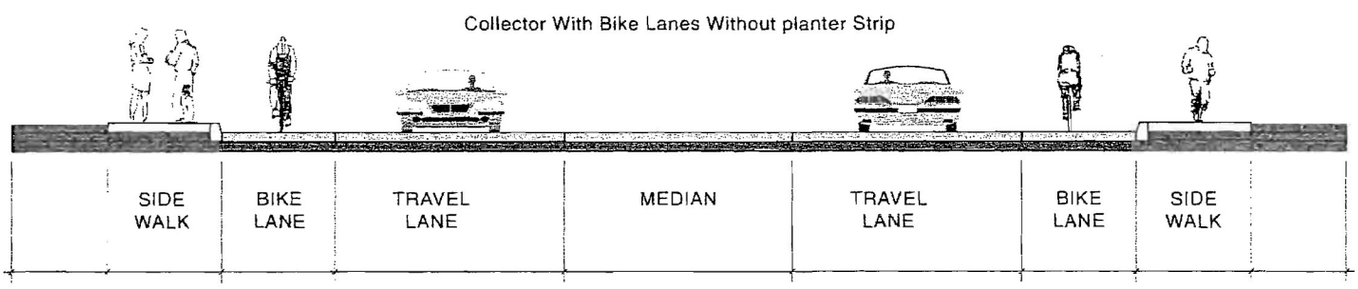


ject #: R3	**Dahila Street Extension**

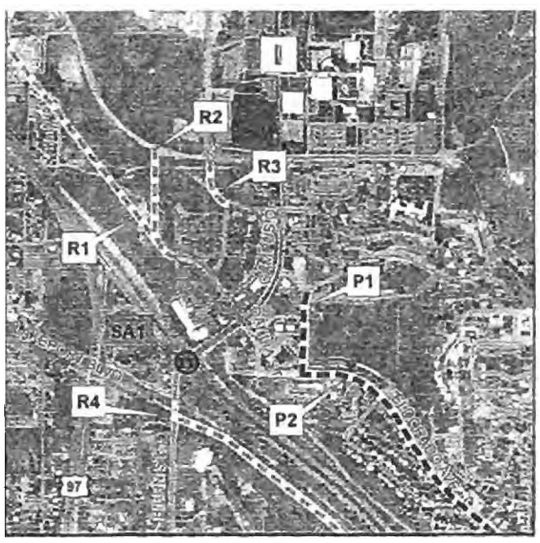
Description: Would extend existing Dahila Street alignment north to Dan O'Brien Way (near Industrial Park Drive)

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Collector	N/A	$882,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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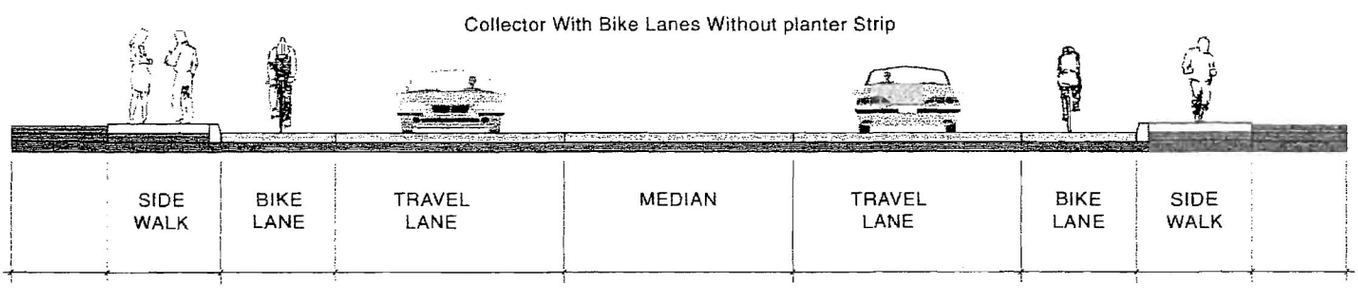


›ject #: R4	Crescent Avenue Extension

Description: Would extend the existing Crescent Avenue alignment north to Biehn Street.

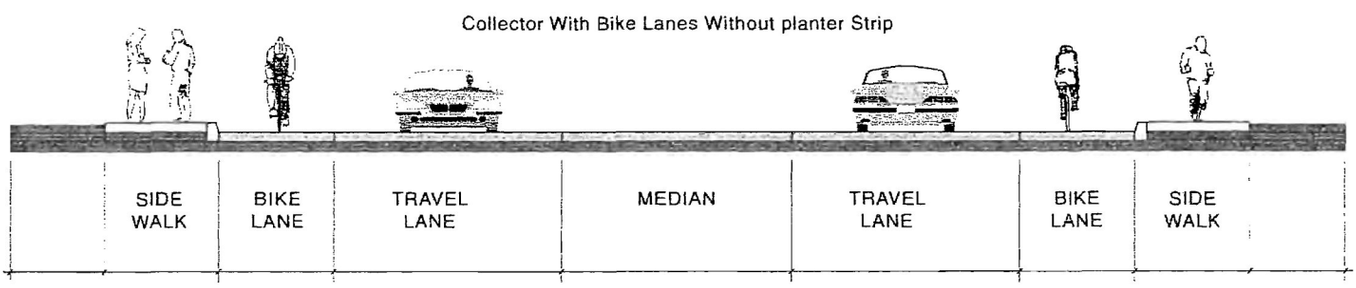
Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$6,753,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:

Project Image:



)ject #: R5	**Basin View Roadway**

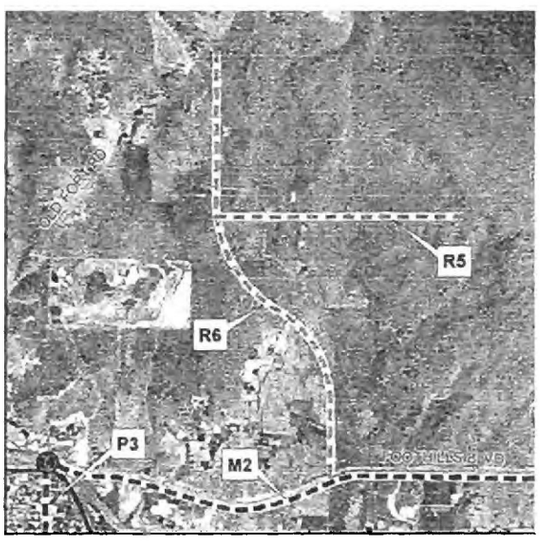
Description: Roadway would serve Basin View development area.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Collector	N/A	$8,654,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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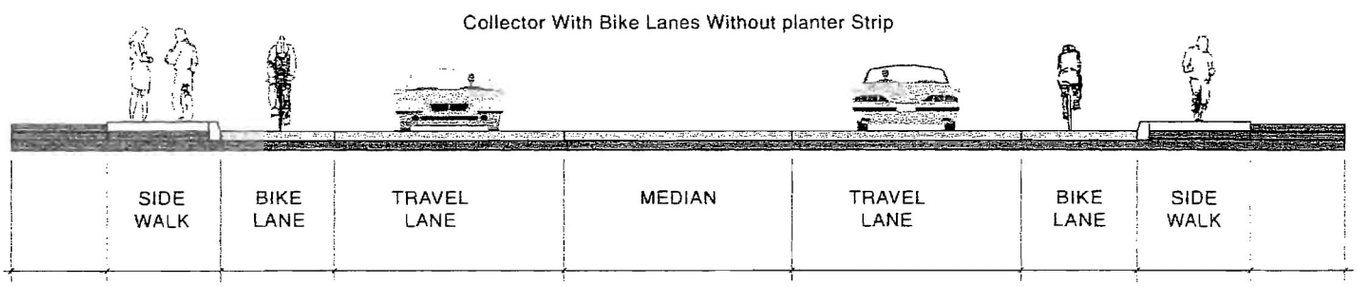


Project #: R6	Roadway from Foothill Blvd to Old Fort Road

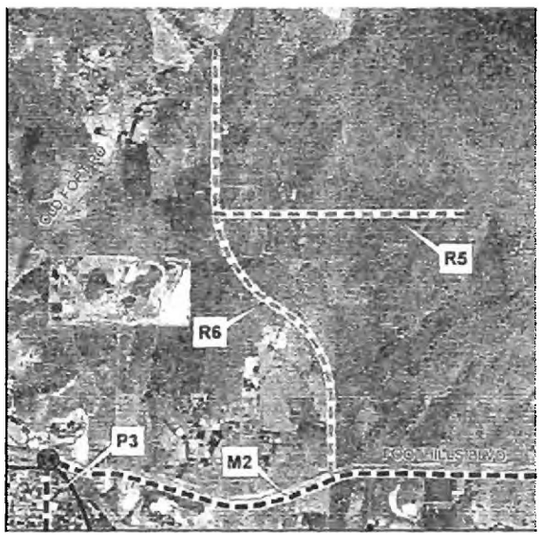
Description: Roadway would extend north from Foothills Boulevard to Old Fort Road.

Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$17,455,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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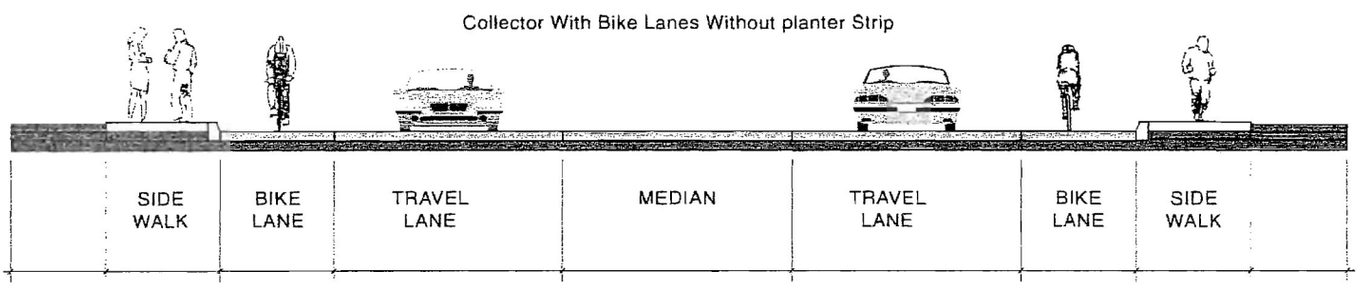


›ject #: R7	**East Main Street Extension**

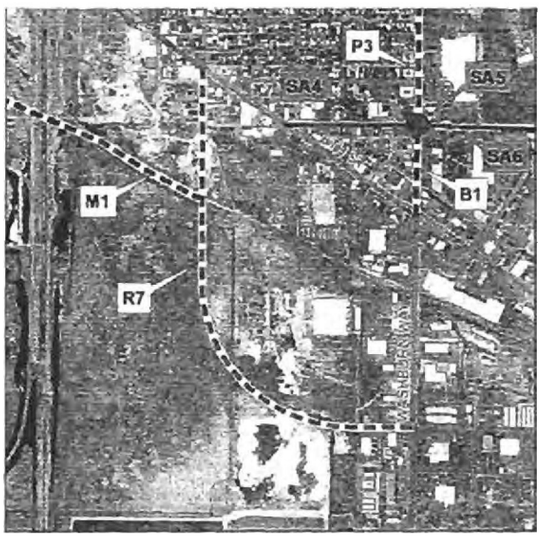
Description: Would extend East main Street from the intersection of East main Street/South 6th Street to the intersection of Washburn Way/Crosby Avenue.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Collector	N/A	$11,820,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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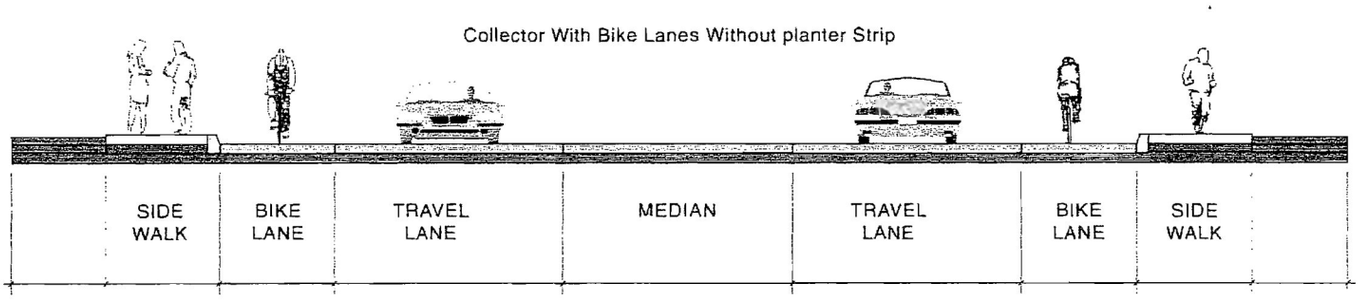


›ject #: R8	Upgrade Emerald Street

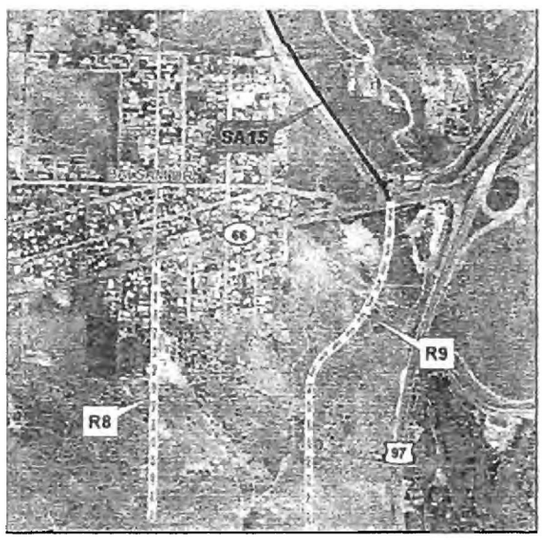
Description: Would upgrade Emerald Street south of OR 66 to serve future development in the area.

Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$1,666,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☐	☐	☑	☑	☐	☐

Project Location:



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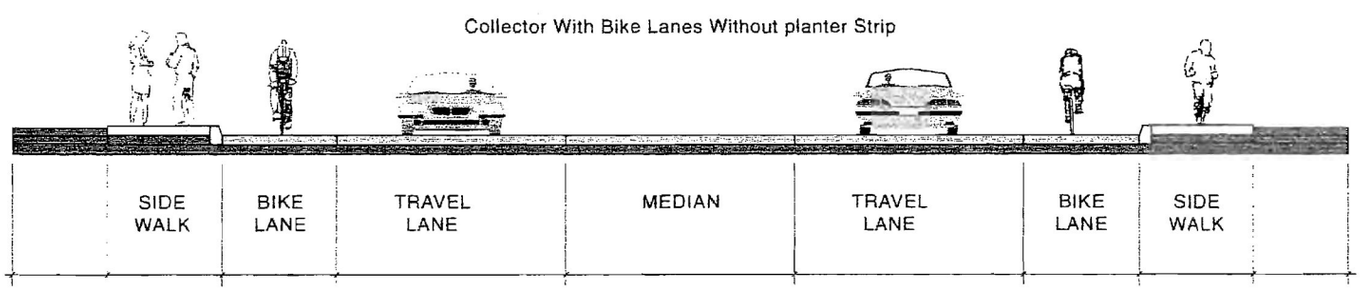


›ject #: R9	New Roadway South of OR 66/OR140

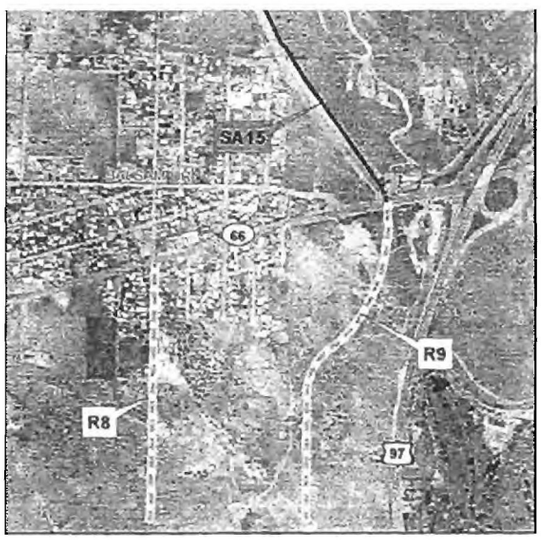
Description: Would construct a new roadway that would extend south from the OR66/OR140 intersection.

Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$2,574,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:



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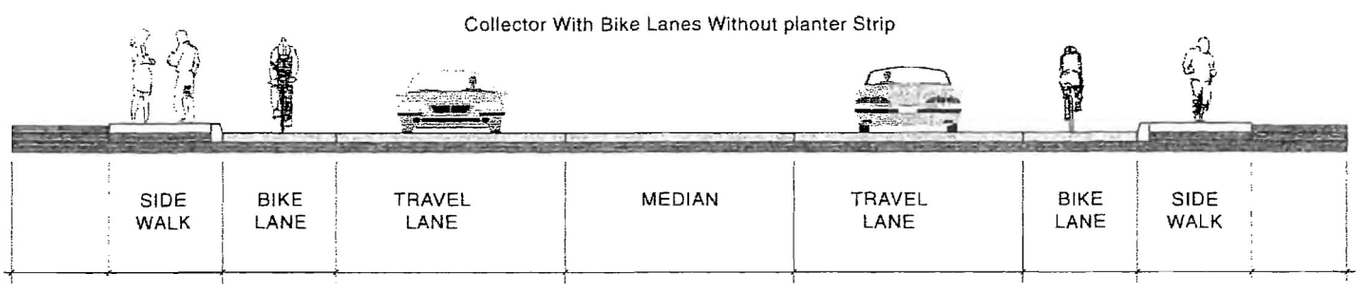

ject #: R10	**Hilyard Avenue Extension**

Description: Would connect the eastern portion of Hilyard Avenue to Homedale Road.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Local Road	5-15 Years	$2,168,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
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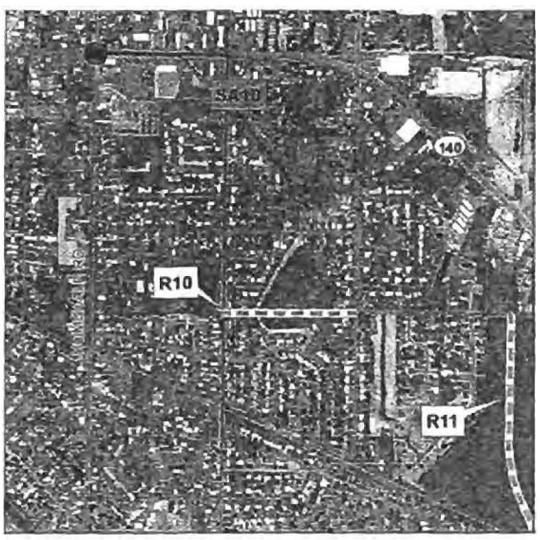
Project Location:



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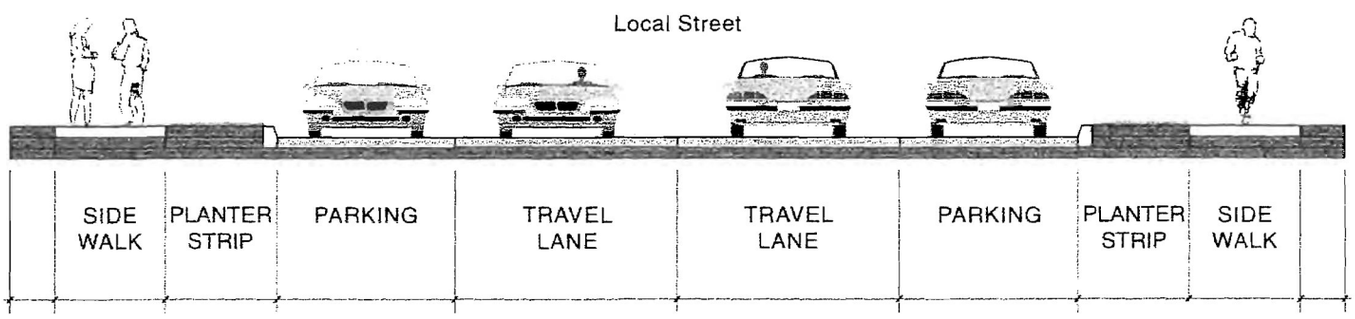


ıject #: R11	New Collector from Hilayrd Avenue to Harlan Drive

Description: Would create a new connection from Hilyard Avenue to Harland Drive.

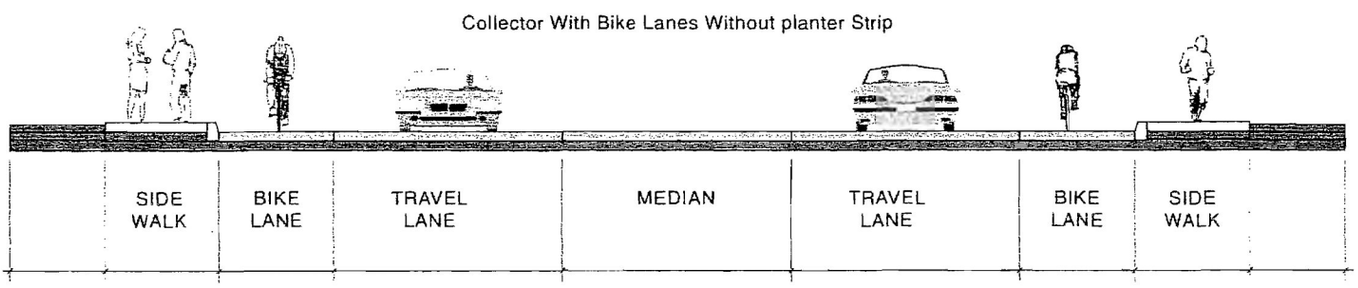
Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	Collector	N/A	$6,651,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:

Project Image:



›ject #: R12	Washburn Way Realignment

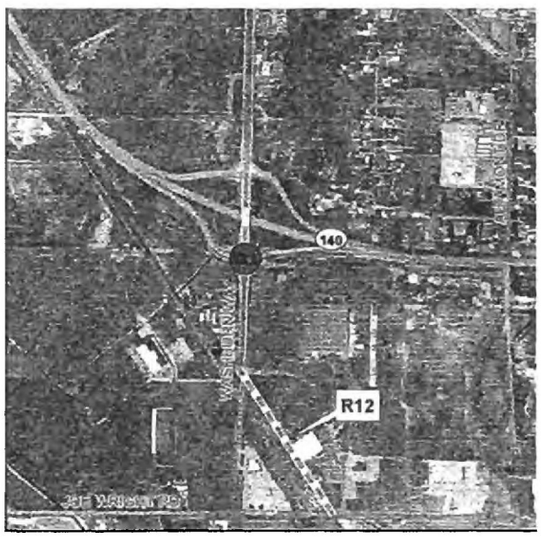
Description: Would realign Washburn Way to connect with Joe Wright Road east of the railroad track alignment

Category:	Functional Classification:	Time Frame:	Total Cost:
Roadway	N/A	0-5 Years	$2,389,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☐	☐	☐

Project Location:



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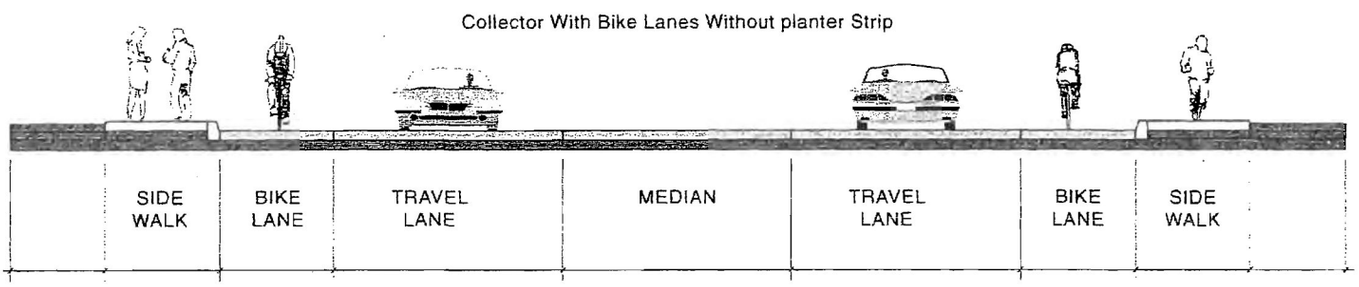


ject #: R13	**Brett Way Extension**

Description: Would extend Brett Way from Summer Lane to Homedale Road

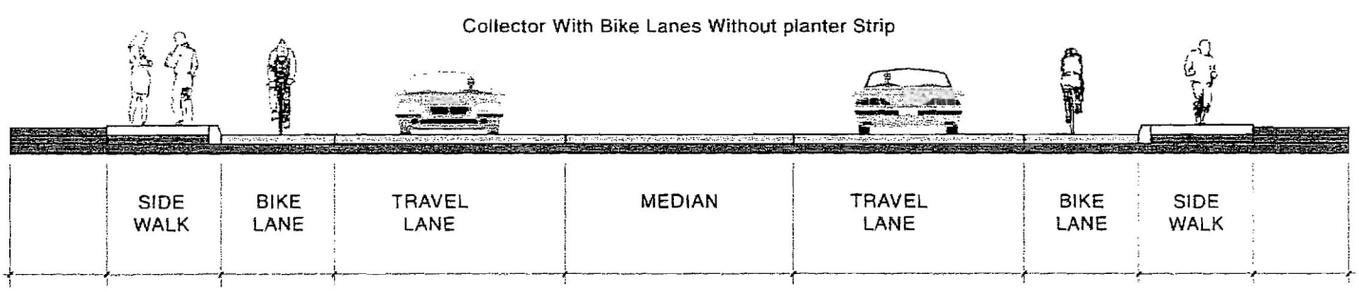
Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Roadway	Collector	N/A	$9,824,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☐	☐	☐	☑	☑	☐	☑

Project Location:

Project Image:



Project #: SA1	Improve bicycle facilities at the intersection of Biehn Street/Campus Drive

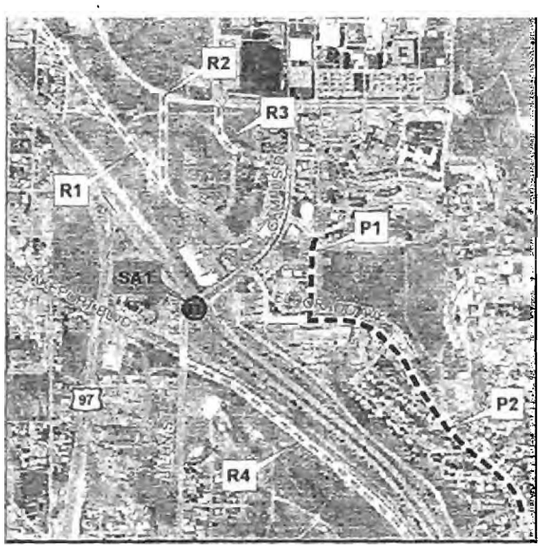
Description: Would improve bicycle facilities at the intersection of Biehn Street/Campus Drive by providing clearer routes through the intersection for bicycle users.

Category:	Functional Classification:	Time Frame:	Total Cost:
Bicycle	State Highway/Collector	0-5 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☑	☑	☐	☑	☑

Project Location:



Project Image:

ject #: SA2	Bicycle crossing of OR 39

Description: Would provide a bicycle connection across OR 39 from Esplanade Avenue to Melrose Street

Category:	Functional Classification:	Time Frame:	Total Cost:
Bicycle	N/A	0-5 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☑	☑	☐	☑	☑

Project Location:

Project Image:

ject #: SA3	**Safety Improvements on Klamath Avenue from Main Street to 3rd Street**

Description: City monitor on an annual basis.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	Major Arterial	15-25 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

ıject #: SA4	Safety Improvements on Shasta Way from South 6th Street to Washburn Way

Description: Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street. Investigate feasibility of installing a raised median.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	Collector	15-25 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

ject #: SA5	Safety Improvements at Washburn Way & Shasta Way

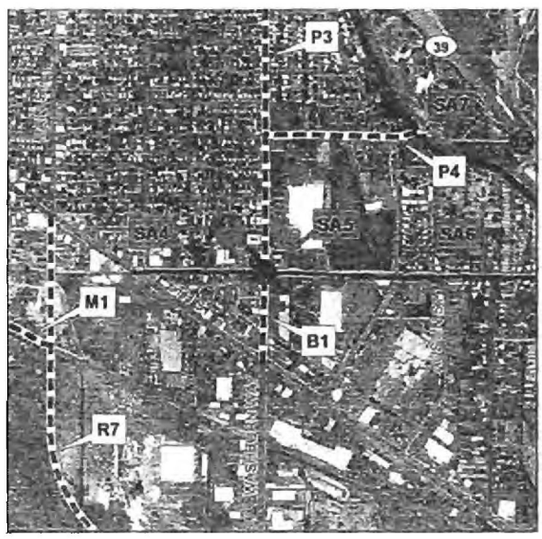
Description: Conduct site visit to confirm traffic signal head visibility on southbound approach. Depending on visibility, investigate ways to improve signal head visibility such as installing near-side traffic signals for approaching vehicles.

Category:	Functional Classification:	Time Frame:	Total Cost:
Safety	Major Arterial/Collector	15-25 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:



Project Image:

›ject #: SA6	**Safety Improvements on Shasta Way from Washburn Way to OR 39**

Description: Conduct a focused safety study of the segment in conjunction with PRJ-2. Focus of study to identify contributing factors to crashes and determine potential countermeasures to reduce crashes.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	Collector	5-15 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

›ject #: SA7	**Safety Improvements at OR 39 & Eberlein Avenue**

Description: Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate. Evaluate possible realignment options.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	State Highway/Collector	15-25 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

ject #: SA8	Improve bicycle facilities at the intersection of Summers Lane/South 6th Street

Description: Would improve bicycle and pedestrian facilities at the intersection of Summers Lane/South 6th Street. Should be considered in conjunction with project I18.

Category:	Functional Classification:	Time Frame:	Total Cost:
Bicycle/Pedestr	Major Arterial/Collector	0-5 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☑	☑	☐	☑	☑

Project Location:

Project Image:

ject #: SA9	Safety Improvements on South 6th Street from Summers Lane to Fargo Street

Description: Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street.

Category:	Functional Classification:	Time Frame:	Total Cost:
Safety	State Highway	0-5 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

ıject #: SA10	Safety Improvements on South 6th Street from Homedale Road to Madison Street

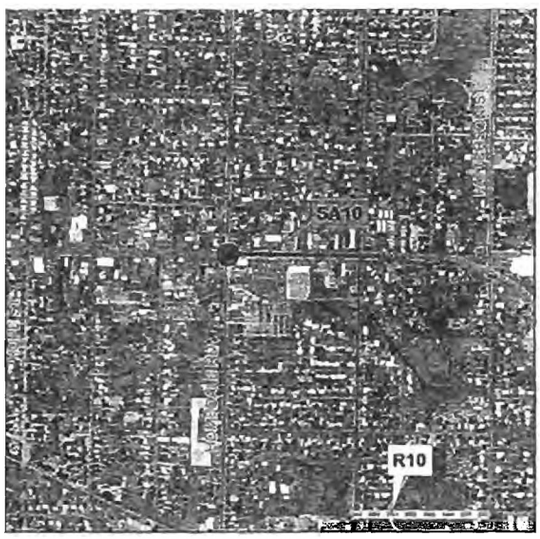
Description: Conduct access management project to decrease the number of access driveways and increase access spacing between driveways along South 6th Street. Investigate feasibility of installing a raised median.

Category:	Functional Classification:	Time Frame:	Total Cost:
Safety	State Highway	5-15 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:



Project Image:

›ject #: SA11	Safety Improvements at Altamont Drive & Laverne Avenue

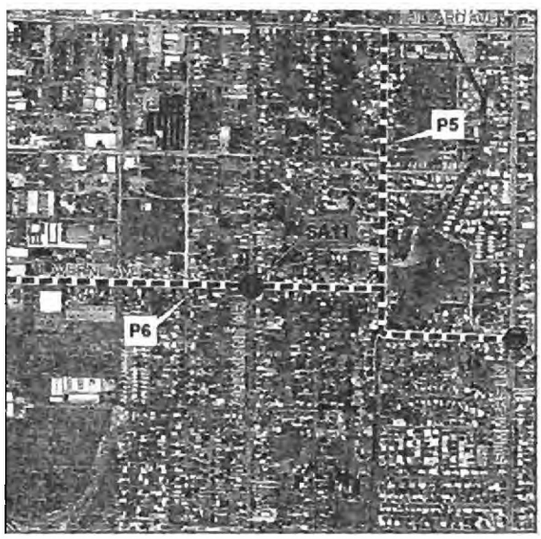
Description: Conduct intersection study to determine existing available sight distance, prevailing speeds on major street, and feasibility of a roundabout. Develop and compare alternative improvement measures to reduce crashes.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	Major Arterial/Collector	0-5 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:



Project Image:

ɔject #: SA12	Safety Improvements at OR 140 & Summers Lane

Description: Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate. Consider railroad crossing treatments.

Category:	Functional Classification:	Time Frame:	Total Cost:
Safety	Major Arterial/Collector	5-15 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

›ject #: SA13	Safety Improvements at OR 140 & Homedale Drive

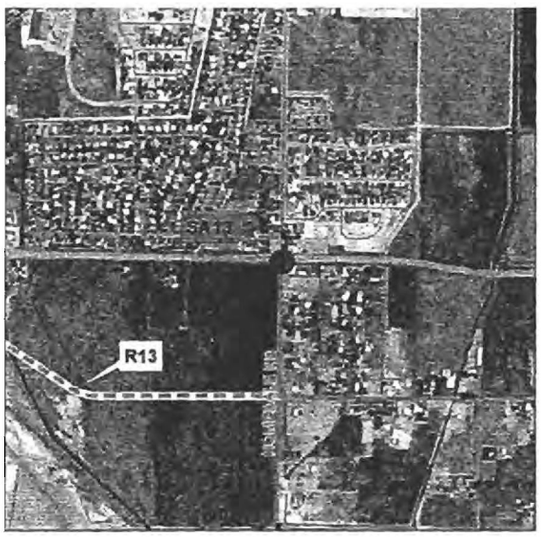
Description: Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	State Highway/Collector	15-25 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:



Project Image:

ɔject #: SA14	Safety Improvements at OR 140 & OR 39 (South of Big Y)

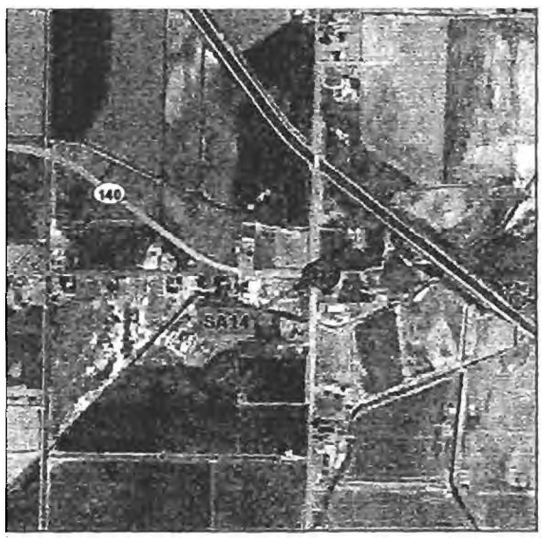
Description: Conduct sight distance and speed studies to determine adequate sight distance for prevailing speeds. Consult and apply treatments from the Highway Safety Manual, NCHRP 613 Guidelines for Selection of Speed Reduction Treatments at High Speed Intersections and other similar resources as appropriate.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	State Highway	5-15 Years	$30,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:



Project Image:

›ject #: SA15	Safety Improvements on OR 140 from Western UGB to OR 66

Description: Conduct study to determine feasibility of shoulder rumble strips, increased roadside delineation and other similar measures to mitigate crashes. Based on study, implement mitigation measures.

Category:	**Functional Classification:**	**Time Frame:**	**Total Cost:**
Safety	State Highway	15-25 Years	$50,000

Project Goals Met:

Safe and Efficient	Access for All	Bike and Ped	Local Circulation	Economic Development	Mobility and Access	Limit Transportation Impacts
☑	☑	☐	☐	☐	☐	☐

Project Location:

Project Image:

Appendix 1E Cost Estimates

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R1: New Minor Collector from Dan O'Brien Way to Dahlia Street

Project Sheet: R1

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	17,360	$15.00	$260,406
Embankment (Fill)	cu. yd.	6,542	$20.00	$130,832
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	136,000	$8.00	$1,088,000
New Curb	lin. ft.	6,800	$15.00	$102,000
New Sidewalk & Concrete Median	sq. ft.	40,800	$5.00	$204,000
Pavement markings	lin. ft.	13,600	$1.00	$13,600
Signage	each	17	$500.00	$8,500
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$1,807,338*
Storm Drainage System		% of Subtotal A	20%	$361,468
Landscape Improvement		% of Subtotal A	5%	$90,367
Street Lighting	each	34	$7,000.00	$238,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	11,180	$150.00	$1,677,000
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$2,416,835*
Subtotal 1 (Subtotals A + B)				$4,224,173
Mobilization		% of Subtotal 1	10%	$422,417
Erosion Control		% of Subtotal 1	5%	$211,209
Traffic Control		% of Subtotal 1	5%	$211,209
Subtotal 2 (Mobilization & Traffic Control)				$844,835
Total (Subtotals 1 + 2)				$5,069,007
Plus Contingencies		% of Total	30%	$1,520,702
Estimated Construction Cost				**$6,589,709**
Architectural/Engineering		% of Est. Cost	15%	$988,456
Construction Management		% of Est. Cost	10%	$658,971
Estimated Professional Fees				**$1,647,427**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$8,237,136**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R2: Daggett Avenue Extension

Project Sheet: R2

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	5,872	$15.00	$88,079
Embankment (Fill)	cu. yd.	2,213	$20.00	$44,252
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	46,000	$8.00	$368,000
New Curb	lin. ft.	2,300	$15.00	$34,500
New Sidewalk & Concrete Median	sq. ft.	13,800	$5.00	$69,000
Pavement markings	lin. ft.	4,600	$1.00	$4,600
Signage	each	6	$500.00	$3,000
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$611,431*
Storm Drainage System		% of Subtotal A	20%	$122,286
Landscape Improvement		% of Subtotal A	5%	$30,572
Street Lighting	each	12	$7,000.00	$80,500
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$283,358*
Subtotal 1 (Subtotals A + B)				$894,788
Mobilization		% of Subtotal 1	10%	$89,479
Erosion Control		% of Subtotal 1	5%	$44,739
Traffic Control		% of Subtotal 1	5%	$44,739
Subtotal 2 (Mobilization & Traffic Control)				$178,958
Total (Subtotals 1 + 2)				$1,073,746
Plus Contingencies		% of Total	30%	$322,124
Estimated Construction Cost				**$1,395,869**
Architectural/Engineering		% of Est. Cost	15%	$209,380
Construction Management		% of Est. Cost	10%	$139,587
Estimated Professional Fees				**$348,967**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,744,837**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R3: Dahila Street Extension

Project Sheet: R3

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	2,808	$15.00	$42,125
Embankment (Fill)	cu. yd.	1,058	$20.00	$21,164
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	22,000	$8.00	$176,000
New Curb	lin. ft.	1,100	$15.00	$16,500
New Sidewalk & Concrete Median	sq. ft.	6,600	$5.00	$33,000
Pavement markings	lin. ft.	2,200	$1.00	$2,200
Signage	each	3	$500.00	$1,500
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$292,489*
Storm Drainage System		% of Subtotal A	20%	$58,498
Landscape Improvement		% of Subtotal A	5%	$14,624
Street Lighting	each	6	$7,000.00	$38,500
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$161,622*
Subtotal 1 (Subtotals A + B)				$454,111
Mobilization		% of Subtotal 1	10%	$45,411
Erosion Control		% of Subtotal 1	5%	$22,706
Traffic Control		% of Subtotal 1	5%	$22,706
Subtotal 2 (Mobilization & Traffic Control)				$90,822
Total (Subtotals 1 + 2)				$544,933
Plus Contingencies		% of Total	30%	$163,480
Estimated Construction Cost				**$708,413**
Architectural/Engineering		% of Est. Cost	15%	$106,262
Construction Management		% of Est. Cost	10%	$70,841
Estimated Professional Fees				**$177,103**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$885,516**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R4: Crescent Avenue Extension

Project Sheet: R4

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	23,488	$15.00	$352,314
Embankment (Fill)	cu. yd.	8,850	$20.00	$177,008
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	184,000	$8.00	$1,472,000
New Curb	lin. ft.	9,200	$15.00	$138,000
New Sidewalk & Concrete Median	sq. ft.	55,200	$5.00	$276,000
Pavement markings	lin. ft.	18,400	$1.00	$18,400
Signage	each	23	$500.00	$11,500
Pavement Removal	sq. ft.	19,500	$2.00	$39,000
			Subtotal A (Roadworks)	*$2,484,222*
Storm Drainage System		% of Subtotal A	20%	$496,844
Landscape Improvement		% of Subtotal A	5%	$124,211
Street Lighting	each	46	$7,000.00	$322,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$993,056*
Subtotal 1 (Subtotals A + B)				$3,477,278
Mobilization		% of Subtotal 1	10%	$347,728
Erosion Control		% of Subtotal 1	5%	$173,864
Traffic Control		% of Subtotal 1	5%	$173,864
Subtotal 2 (Mobilization & Traffic Control)				$695,456
Total (Subtotals 1 + 2)				$4,172,733
Plus Contingencies		% of Total	30%	$1,251,820
Estimated Construction Cost				**$5,424,553**
Architectural/Engineering		% of Est. Cost	15%	$813,683
Construction Management		% of Est. Cost	10%	$542,455
Estimated Professional Fees				**$1,356,138**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$6,780,691**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R5: Roadway from Foothill Blvd to Homedale Road Extension

Project Sheet: R5

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	30,636	$15.00	$459,540
Embankment (Fill)	cu. yd.	11,544	$20.00	$230,880
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	240,000	$8.00	$1,920,000
New Curb	lin. ft.	12,000	$15.00	$180,000
New Sidewalk & Concrete Median	sq. ft.	72,000	$5.00	$360,000
Pavement markings	lin. ft.	24,000	$1.00	$24,000
Signage	each	30	$500.00	$15,000
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$3,189,420*
Storm Drainage System		% of Subtotal A	20%	$637,884
Landscape Improvement		% of Subtotal A	5%	$159,471
Street Lighting	each	60	$7,000.00	$420,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$1,267,355*
Subtotal 1 (Subtotals A + B)				$4,456,775
Mobilization		% of Subtotal 1	10%	$445,678
Erosion Control		% of Subtotal 1	5%	$222,839
Traffic Control		% of Subtotal 1	5%	$222,839
Subtotal 2 (Mobilization & Traffic Control)				$891,355
Total (Subtotals 1 + 2)				$5,348,130
Plus Contingencies		% of Total	30%	$1,604,439
Estimated Construction Cost				**$6,952,569**
Architectural/Engineering		% of Est. Cost	15%	$1,042,885
Construction Management		% of Est. Cost	10%	$695,257
Estimated Professional Fees				**$1,738,142**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$8,690,711**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R6: Extend Homedale Road to Old Fort Road

Project Sheet: R6

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	61,272	$15.00	$919,080
Embankment (Fill)	cu. yd.	23,088	$20.00	$461,760
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	480,000	$8.00	$3,840,000
New Curb	lin. ft.	24,000	$15.00	$360,000
New Sidewalk & Concrete Median	sq. ft.	144,000	$5.00	$720,000
Pavement markings	lin. ft.	48,000	$1.00	$48,000
Signage	each	60	$500.00	$30,000
Pavement Removal	sq. ft.	50,000	$2.00	$100,000
			Subtotal A (Roadworks)	*$6,478,840*
Storm Drainage System		% of Subtotal A	20%	$1,295,768
Landscape Improvement		% of Subtotal A	5%	$323,942
Street Lighting	each	120	$7,000.00	$840,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$2,509,710*
Subtotal 1 (Subtotals A + B)				$8,988,550
Mobilization		% of Subtotal 1	10%	$898,855
Erosion Control		% of Subtotal 1	5%	$449,428
Traffic Control		% of Subtotal 1	5%	$449,428
Subtotal 2 (Mobilization & Traffic Control)				$1,797,710
Total (Subtotals 1 + 2)				$10,786,260
Plus Contingencies		% of Total	30%	$3,235,878
Estimated Construction Cost				**$14,022,138**
Architectural/Engineering		% of Est. Cost	15%	$2,103,321
Construction Management		% of Est. Cost	10%	$1,402,214
Estimated Professional Fees				**$3,505,535**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$17,527,673**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R8: Upgrade Emerald Street

Project Sheet: R8

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	5,617	$15.00	$84,249
Embankment (Fill)	cu. yd.	2,116	$20.00	$42,328
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	44,000	$8.00	$352,000
New Curb	lin. ft.	2,200	$15.00	$33,000
New Sidewalk & Concrete Median	sq. ft.	13,200	$5.00	$66,000
Pavement markings	lin. ft.	4,400	$1.00	$4,400
Signage	each	6	$500.00	$3,000
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$584,977*
Storm Drainage System		% of Subtotal A	20%	$116,995
Landscape Improvement		% of Subtotal A	5%	$29,249
Street Lighting	each	11	$7,000.00	$77,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$273,244*
Subtotal 1 (Subtotals A + B)				$858,221
Mobilization		% of Subtotal 1	10%	$85,822
Erosion Control		% of Subtotal 1	5%	$42,911
Traffic Control		% of Subtotal 1	5%	$42,911
Subtotal 2 (Mobilization & Traffic Control)				$171,644
Total (Subtotals 1 + 2)				$1,029,866
Plus Contingencies		% of Total	30%	$308,960
Estimated Construction Cost				**$1,338,825**
Architectural/Engineering		% of Est. Cost	15%	$200,824
Construction Management		% of Est. Cost	10%	$133,883
Estimated Professional Fees				**$334,706**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,673,531**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R9: New Roadway South of OR 66/OR140

Project Sheet: R9

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	8,170	$15.00	$122,544
Embankment (Fill)	cu. yd.	3,078	$20.00	$61,568
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	64,000	$8.00	$512,000
New Curb	lin. ft.	3,200	$15.00	$48,000
New Sidewalk & Concrete Median	sq. ft.	19,200	$5.00	$96,000
Pavement markings	lin. ft.	6,400	$1.00	$6,400
Signage	each	8	$500.00	$4,000
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$850,512*
Storm Drainage System		% of Subtotal A	20%	$170,102
Landscape Improvement		% of Subtotal A	5%	$42,526
Street Lighting	each	16	$7,000.00	$112,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	1	$100,000.00	$100,000
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$474,628*
Subtotal 1 (Subtotals A + B)				$1,325,140
Mobilization		% of Subtotal 1	10%	$132,514
Erosion Control		% of Subtotal 1	5%	$66,257
Traffic Control		% of Subtotal 1	5%	$66,257
Subtotal 2 (Mobilization & Traffic Control)				$265,028
Total (Subtotals 1 + 2)				$1,590,168
Plus Contingencies		% of Total	30%	$477,050
Estimated Construction Cost				**$2,067,218**
Architectural/Engineering		% of Est. Cost	15%	$310,083
Construction Management		% of Est. Cost	10%	$206,722
Estimated Professional Fees				**$516,805**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$2,584,023**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R10: Hilyard Avenue Extension

Project Sheet: R10

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	7,148	$15.00	$107,226
Embankment (Fill)	cu. yd.	2,694	$20.00	$53,872
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	56,000	$8.00	$448,000
New Curb	lin. ft.	2,800	$15.00	$42,000
New Sidewalk & Concrete Median	sq. ft.	16,800	$5.00	$84,000
Pavement markings	lin. ft.	5,600	$1.00	$5,600
Signage	each	7	$500.00	$3,500
Pavement Removal	sq. ft.	13,500	$2.00	$27,000
			Subtotal A (Roadworks)	*$771,198*
Storm Drainage System		% of Subtotal A	20%	$154,240
Landscape Improvement		% of Subtotal A	5%	$38,560
Street Lighting	each	14	$7,000.00	$98,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$340,800*
Subtotal 1 (Subtotals A + B)				$1,111,998
Mobilization		% of Subtotal 1	10%	$111,200
Erosion Control		% of Subtotal 1	5%	$55,600
Traffic Control		% of Subtotal 1	5%	$55,600
Subtotal 2 (Mobilization & Traffic Control)				$222,400
Total (Subtotals 1 + 2)				$1,334,397
Plus Contingencies		% of Total	30%	$400,319
Estimated Construction Cost				**$1,734,716**
Architectural/Engineering		% of Est. Cost	15%	$260,207
Construction Management		% of Est. Cost	10%	$173,472
Estimated Professional Fees				**$433,679**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$2,168,395**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R11: New Collector from Hilyard Avenue to Harlan Drive

Project Sheet: R11

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	22,977	$15.00	$344,655
Embankment (Fill)	cu. yd.	8,658	$20.00	$173,160
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	180,000	$8.00	$1,440,000
New Curb	lin. ft.	9,000	$15.00	$135,000
New Sidewalk & Concrete Median	sq. ft.	54,000	$5.00	$270,000
Pavement markings	lin. ft.	18,000	$1.00	$18,000
Signage	each	23	$500.00	$11,500
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$2,392,315*
Storm Drainage System		% of Subtotal A	20%	$478,463
Landscape Improvement		% of Subtotal A	5%	$119,616
Street Lighting	each	45	$7,000.00	$315,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
HAWK at OC&E Trail	each	1	$70,000.00	$70,000
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$1,033,079*
Subtotal 1 (Subtotals A + B)				$3,425,394
Mobilization		% of Subtotal 1	10%	$342,539
Erosion Control		% of Subtotal 1	5%	$171,270
Traffic Control		% of Subtotal 1	5%	$171,270
Subtotal 2 (Mobilization & Traffic Control)				$685,079
Total (Subtotals 1 + 2)				$4,110,473
Plus Contingencies		% of Total	30%	$1,233,142
Estimated Construction Cost				**$5,343,614**
Architectural/Engineering		% of Est. Cost	15%	$801,542
Construction Management		% of Est. Cost	10%	$534,361
Estimated Professional Fees				**$1,335,904**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$6,679,518**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R12: Washburn Way Realignment

Project Sheet: R12

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	8,170	$15.00	$122,544
Embankment (Fill)	cu. yd.	3,078	$20.00	$61,568
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	64,000	$8.00	$512,000
New Curb	lin. ft.	3,200	$15.00	$48,000
New Sidewalk & Concrete Median	sq. ft.	19,200	$5.00	$96,000
Pavement markings	lin. ft.	6,400	$1.00	$6,400
Signage	each	8	$500.00	$4,000
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$850,512*
Storm Drainage System		% of Subtotal A	20%	$170,102
Landscape Improvement		% of Subtotal A	5%	$42,526
Street Lighting	each	16	$7,000.00	$112,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$374,628*
Subtotal 1 (Subtotals A + B)				$1,225,140
Mobilization		% of Subtotal 1	10%	$122,514
Erosion Control		% of Subtotal 1	5%	$61,257
Traffic Control		% of Subtotal 1	5%	$61,257
Subtotal 2 (Mobilization & Traffic Control)				$245,028
Total (Subtotals 1 + 2)				$1,470,168
Plus Contingencies		% of Total	30%	$441,050
Estimated Construction Cost				**$1,911,218**
Architectural/Engineering		% of Est. Cost	15%	$286,683
Construction Management		% of Est. Cost	10%	$191,122
Estimated Professional Fees				**$477,805**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$2,389,023**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

R13: Brett Way Extension

Project Sheet: R13

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	21,512	$15.00	$322,677
Embankment (Fill)	cu. yd.	8,014	$20.00	$160,284
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	171,000	$8.00	$1,368,000
New Curb	lin. ft.	7,600	$15.00	$114,000
New Sidewalk & Concrete Median	sq. ft.	45,600	$5.00	$228,000
Pavement markings	lin. ft.	15,200	$1.00	$15,200
Signage	each	19	$500.00	$9,500
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$2,217,661*
Storm Drainage System		% of Subtotal A	20%	$443,532
Landscape Improvement		% of Subtotal A	5%	$110,883
Street Lighting	each	38	$7,000.00	$266,000
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	8,000	$150.00	$1,200,000
Railroad Crossing & Signalization	each	1	$750,000.00	$750,000
			Subtotal B (Other)	*$2,820,415*
Subtotal 1 (Subtotals A + B)				$5,038,076
Mobilization		% of Subtotal 1	10%	$503,808
Erosion Control		% of Subtotal 1	5%	$251,904
Traffic Control		% of Subtotal 1	5%	$251,904
Subtotal 2 (Mobilization & Traffic Control)				$1,007,615
Total (Subtotals 1 + 2)				$6,045,692
Plus Contingencies		% of Total	30%	$1,813,707
Estimated Construction Cost				**$7,859,399**
Architectural/Engineering		% of Est. Cost	15%	$1,178,910
Construction Management		% of Est. Cost	10%	$785,940
Estimated Professional Fees				**$1,964,850**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$9,824,249**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

M2: New Multi-Use Path Along Foothills Boulevard

Project Sheet: M2

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	5,550	$15.00	$83,250
Embankment (Fill)	cu. yd.	3,700	$20.00	$74,000
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	100,000	$5.00	$500,000
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$657,250*
Storm Drainage System		% of Subtotal A	5%	$32,863
Landscape Improvement		% of Subtotal A	5%	$32,863
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$0.00	$0
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$65,725*
Subtotal 1 (Subtotals A + B)				$722,975
Mobilization		% of Subtotal 1	10%	$72,298
Erosion Control		% of Subtotal 1	5%	$36,149
Traffic Control		% of Subtotal 1	5%	$36,149
Subtotal 2 (Mobilization & Traffic Control)				$144,595
Total (Subtotals 1 + 2)				$867,570
Plus Contingencies		% of Total	30%	$260,271
Estimated Construction Cost				**$1,127,841**
Architectural/Engineering		% of Est. Cost	15%	$169,176
Construction Management		% of Est. Cost	10%	$112,784
Estimated Professional Fees				**$281,960**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,409,801**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

P1: Daggett Avenue Sidewalks

Project Sheet: P1

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	566	$15.00	$8,492
Embankment (Fill)	cu. yd.	377	$20.00	$7,548
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	1,700	$15.00	$25,500
New Sidewalk & Concrete Median	sq. ft.	10,200	$5.00	$51,000
Pavement markings	lin. ft.	1,700	$1.00	$1,700
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$94,240*
Storm Drainage System		% of Subtotal A	20%	$18,848
Landscape Improvement		% of Subtotal A	5%	$4,712
Street Lighting	each	9	$7,000.00	$59,500
Private Utility Coordination	Lump/Sum	1	$5,000.00	$5,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$88,060*
Subtotal 1 (Subtotals A + B)				$182,299
Mobilization		% of Subtotal 1	10%	$18,230
Erosion Control		% of Subtotal 1	5%	$9,115
Traffic Control		% of Subtotal 1	5%	$9,115
Subtotal 2 (Mobilization & Traffic Control)				$36,460
Total (Subtotals 1 + 2)				$218,759
Plus Contingencies		% of Total	30%	$65,628
Estimated Construction Cost				**$284,387**
Architectural/Engineering		% of Est. Cost	15%	$42,658
Construction Management		% of Est. Cost	10%	$28,439
Estimated Professional Fees				**$71,097**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$355,484**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

P2: El Dorado Avenue Sidewalks

Project Sheet: P2

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	1,032	$15.00	$15,485
Embankment (Fill)	cu. yd.	688	$20.00	$13,764
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	1,700	$15.00	$25,500
New Sidewalk & Concrete Median	sq. ft.	18,600	$5.00	$93,000
Pavement markings	lin. ft.	3,100	$1.00	$3,100
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$150,849*
Storm Drainage System		% of Subtotal A	20%	$30,170
Landscape Improvement		% of Subtotal A	5%	$7,542
Street Lighting	each	31	$7,000.00	$217,000
Private Utility Coordination	Lump/Sum	1	$15,000.00	$15,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$269,712*
Subtotal 1 (Subtotals A + B)				$420,561
Mobilization		% of Subtotal 1	10%	$42,056
Erosion Control		% of Subtotal 1	5%	$21,028
Traffic Control		% of Subtotal 1	5%	$21,028
Subtotal 2 (Mobilization & Traffic Control)				$84,112
Total (Subtotals 1 + 2)				$504,673
Plus Contingencies		% of Total	30%	$151,402
Estimated Construction Cost				**$656,075**
Architectural/Engineering		% of Est. Cost	15%	$98,411
Construction Management		% of Est. Cost	10%	$65,607
Estimated Professional Fees				**$164,019**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$820,093**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

P3: Washburn Way Sidewalks

Project Sheet: P3

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	2,420	$15.00	$36,297
Embankment (Fill)	cu. yd.	1,510	$20.00	$30,192
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	6,800	$15.00	$102,000
New Sidewalk & Concrete Median	sq. ft.	40,800	$5.00	$204,000
Pavement markings	lin. ft.	6,800	$1.00	$6,800
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$379,289*
Storm Drainage System		% of Subtotal A	20%	$75,858
Landscape Improvement		% of Subtotal A	5%	$18,964
Street Lighting	each	41	$7,000.00	$287,000
Private Utility Coordination	Lump/Sum	1	$20,000.00	$20,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$401,822*
Subtotal 1 (Subtotals A + B)				$781,111
Mobilization		% of Subtotal 1	10%	$78,111
Erosion Control		% of Subtotal 1	5%	$39,056
Traffic Control		% of Subtotal 1	5%	$39,056
Subtotal 2 (Mobilization & Traffic Control)				$156,222
Total (Subtotals 1 + 2)				$937,334
Plus Contingencies		% of Total	30%	$281,200
Estimated Construction Cost				**$1,218,534**
Architectural/Engineering		% of Est. Cost	15%	$182,780
Construction Management		% of Est. Cost	10%	$121,853
Estimated Professional Fees				**$304,633**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,523,167**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

P4: Eberlein Avenue Sidewalks

Project Sheet: P4

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	999	$15.00	$14,985
Embankment (Fill)	cu. yd.	666	$20.00	$13,320
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	3,000	$15.00	$45,000
New Sidewalk & Concrete Median	sq. ft.	18,000	$5.00	$90,000
Pavement markings	lin. ft.	3,000	$1.00	$3,000
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$166,305*
Storm Drainage System		% of Subtotal A	20%	$33,261
Landscape Improvement		% of Subtotal A	5%	$8,315
Street Lighting	each	15	$7,000.00	$105,000
Private Utility Coordination	Lump/Sum	1	$5,000.00	$5,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$151,576*
Subtotal 1 (Subtotals A + B)				$317,881
Mobilization		% of Subtotal 1	10%	$31,788
Erosion Control		% of Subtotal 1	5%	$15,894
Traffic Control		% of Subtotal 1	5%	$15,894
Subtotal 2 (Mobilization & Traffic Control)				$63,576
Total (Subtotals 1 + 2)				$381,458
Plus Contingencies		% of Total	30%	$114,437
Estimated Construction Cost				**$495,895**
Architectural/Engineering		% of Est. Cost	15%	$74,384
Construction Management		% of Est. Cost	10%	$49,589
Estimated Professional Fees				**$123,974**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$619,868**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

Crest Street and Clinton Street Sidewalks: Hilyard Avenue to Summers Lane

Project Sheet: P5

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	2,964	$15.00	$44,456
Embankment (Fill)	cu. yd.	1,976	$20.00	$39,516
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	8,900	$15.00	$133,500
New Sidewalk & Concrete Median	sq. ft.	53,400	$5.00	$267,000
Pavement markings	lin. ft.	8,900	$1.00	$8,900
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$493,372*
Storm Drainage System		% of Subtotal A	20%	$98,674
Landscape Improvement		% of Subtotal A	5%	$24,669
Street Lighting	each	45	$7,000.00	$311,500
Private Utility Coordination	Lump/Sum	1	$20,000.00	$20,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$454,843*
Subtotal 1 (Subtotals A + B)				$948,214
Mobilization		% of Subtotal 1	10%	$94,821
Erosion Control		% of Subtotal 1	5%	$47,411
Traffic Control		% of Subtotal 1	5%	$47,411
Subtotal 2 (Mobilization & Traffic Control)				$189,643
Total (Subtotals 1 + 2)				$1,137,857
Plus Contingencies		% of Total	30%	$341,357
Estimated Construction Cost				**$1,479,214**
Architectural/Engineering		% of Est. Cost	15%	$221,882
Construction Management		% of Est. Cost	10%	$147,921
Estimated Professional Fees				**$369,804**
Right-of-Way	sq. ft.	53,400	$20.00	$1,068,000
Estimated Property Acquisition Cost				**$1,068,000**
Estimated Project Cost				**$2,917,018**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

P5: Laverne Avenue Sidewalks: Washburn Way to Crest Street

Project Sheet: P6

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	2,664	$15.00	$39,960
Embankment (Fill)	cu. yd.	1,776	$20.00	$35,520
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	8,000	$15.00	$120,000
New Sidewalk & Concrete Median	sq. ft.	48,000	$5.00	$240,000
Pavement markings	lin. ft.	8,000	$1.00	$8,000
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$443,480*
Storm Drainage System		% of Subtotal A	20%	$88,696
Landscape Improvement		% of Subtotal A	5%	$22,174
Street Lighting	each	40	$7,000.00	$280,000
Private Utility Coordination	Lump/Sum	1	$20,000.00	$20,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$410,870*
Subtotal 1 (Subtotals A + B)				$854,350
Mobilization		% of Subtotal 1	10%	$85,435
Erosion Control		% of Subtotal 1	5%	$42,718
Traffic Control		% of Subtotal 1	5%	$42,718
Subtotal 2 (Mobilization & Traffic Control)				$170,870
Total (Subtotals 1 + 2)				$1,025,220
Plus Contingencies		% of Total	30%	$307,566
Estimated Construction Cost				**$1,332,786**
Architectural/Engineering		% of Est. Cost	15%	$199,918
Construction Management		% of Est. Cost	10%	$133,279
Estimated Professional Fees				**$333,197**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,665,983**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

B1: Washburn Way Bicycle Lanes

Project Sheet: B1

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	6,194	$15.00	$92,907
Embankment (Fill)	cu. yd.	2,753	$20.00	$55,056
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	37,200	$8.00	$297,600
New Curb	lin. ft.	6,200	$15.00	$93,000
New Sidewalk & Concrete Median	sq. ft.	37,200	$5.00	$186,000
Pavement markings	lin. ft.	62,000	$1.00	$62,000
Signage	each	16	$500.00	$8,000
Pavement Removal	sq. ft.	37,200	$2.00	$74,400
			Subtotal A (Roadworks)	*$868,963*
Storm Drainage System		% of Subtotal A	20%	$173,793
Landscape Improvement		% of Subtotal A	5%	$43,448
Street Lighting	each	31	$7,000.00	$217,000
Private Utility Coordination	Lump/Sum	1	$15,000.00	$15,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$449,241*
Subtotal 1 (Subtotals A + B)				$1,318,204
Mobilization		% of Subtotal 1	10%	$131,820
Erosion Control		% of Subtotal 1	5%	$65,910
Traffic Control		% of Subtotal 1	5%	$65,910
Subtotal 2 (Mobilization & Traffic Control)				$263,641
Total (Subtotals 1 + 2)				$1,581,845
Plus Contingencies		% of Total	30%	$474,553
Estimated Construction Cost				**$2,056,398**
Architectural/Engineering		% of Est. Cost	15%	$308,460
Construction Management		% of Est. Cost	10%	$205,640
Estimated Professional Fees				**$514,099**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$2,570,497**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I1: OR 39/Biehn Street/Campus Way - Modify Signal Timing

Project Sheet: I1

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	1,249	$15.00	$18,731
Embankment (Fill)	cu. yd.	455	$20.00	$9,102
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	10,200	$8.00	$81,600
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	2,100	$5.00	$10,500
Pavement markings	lin. ft.	2,700	$1.00	$2,700
Signage	each	3	$500.00	$1,500
Pavement Removal	sq. ft.	2,100	$2.00	$4,200
			Subtotal A (Roadworks)	*$128,333*
Storm Drainage System		% of Subtotal A	20%	$25,667
Landscape Improvement		% of Subtotal A	5%	$6,417
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$20,000.00	$20,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$302,083*
Subtotal 1 (Subtotals A + B)				$430,417
Mobilization		% of Subtotal 1	10%	$43,042
Erosion Control		% of Subtotal 1	5%	$21,521
Traffic Control		% of Subtotal 1	5%	$21,521
Subtotal 2 (Mobilization & Traffic Control)				$86,083
Total (Subtotals 1 + 2)				$516,500
Plus Contingencies		% of Total	30%	$154,950
Estimated Construction Cost				**$671,450**
Architectural/Engineering		% of Est. Cost	15%	$100,717
Construction Management		% of Est. Cost	10%	$67,145
Estimated Professional Fees				**$167,862**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$839,312**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I2: Biehn Street/Oregon Avenue - SB Left-Turn Lane

Project Sheet: I2

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	500	$15.00	$7,493
Embankment (Fill)	cu. yd.	200	$20.00	$3,996
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	3,600	$8.00	$28,800
New Curb	lin. ft.	300	$15.00	$4,500
New Sidewalk & Concrete Median	sq. ft.	1,800	$5.00	$9,000
Pavement markings	lin. ft.	900	$1.00	$900
Signage	each	2	$500.00	$1,000
Pavement Removal	sq. ft.	1,800	$2.00	$3,600
			Subtotal A (Roadworks)	*$59,289*
Storm Drainage System		% of Subtotal A	20%	$11,858
Landscape Improvement		% of Subtotal A	5%	$2,964
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$24,822*
Subtotal 1 (Subtotals A + B)				$84,111
Mobilization		% of Subtotal 1	10%	$8,411
Erosion Control		% of Subtotal 1	5%	$4,206
Traffic Control		% of Subtotal 1	5%	$4,206
Subtotal 2 (Mobilization & Traffic Control)				$16,822
Total (Subtotals 1 + 2)				$100,933
Plus Contingencies		% of Total	30%	$30,280
Estimated Construction Cost				**$131,213**
Architectural/Engineering		% of Est. Cost	15%	$19,682
Construction Management		% of Est. Cost	10%	$13,121
Estimated Professional Fees				**$32,803**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$164,016**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I3: Main Street/OR 39 - Modify Signal Timing

Project Sheet: I3

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$0.00	$0
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	1	$100,000.00	$100,000
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$100,000*
Subtotal 1 (Subtotals A + B)				$100,000
Mobilization		% of Subtotal 1	10%	$10,000
Erosion Control		% of Subtotal 1	5%	$5,000
Traffic Control		% of Subtotal 1	5%	$5,000
Subtotal 2 (Mobilization & Traffic Control)				$20,000
Total (Subtotals 1 + 2)				$120,000
Plus Contingencies		% of Total	30%	$36,000
Estimated Construction Cost				**$156,000**
Architectural/Engineering		% of Est. Cost	15%	$23,400
Construction Management		% of Est. Cost	10%	$15,600
Estimated Professional Fees				**$39,000**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$195,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I4: OR 39/Washburn Way - Modify Signal Phasing

Project Sheet: I4

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$0.00	$0
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	1	$100,000.00	$100,000
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$100,000*
Subtotal 1 (Subtotals A + B)				$100,000
Mobilization		% of Subtotal 1	10%	$10,000
Erosion Control		% of Subtotal 1	5%	$5,000
Traffic Control		% of Subtotal 1	5%	$5,000
Subtotal 2 (Mobilization & Traffic Control)				$20,000
Total (Subtotals 1 + 2)				$120,000
Plus Contingencies		% of Total	30%	$36,000
Estimated Construction Cost				**$156,000**
Architectural/Engineering		% of Est. Cost	15%	$23,400
Construction Management		% of Est. Cost	10%	$15,600
Estimated Professional Fees				**$39,000**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$195,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I5: Eberlein Avenue/OR 39 - Install Traffic Signal

Project Sheet: I5

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$260,000*
Subtotal 1 (Subtotals A + B)				$260,000
Mobilization		% of Subtotal 1	10%	$26,000
Erosion Control		% of Subtotal 1	5%	$13,000
Traffic Control		% of Subtotal 1	5%	$13,000
Subtotal 2 (Mobilization & Traffic Control)				$52,000
Total (Subtotals 1 + 2)				$312,000
Plus Contingencies		% of Total	30%	$93,600
Estimated Construction Cost				**$405,600**
Architectural/Engineering		% of Est. Cost	15%	$60,840
Construction Management		% of Est. Cost	10%	$40,560
Estimated Professional Fees				**$101,400**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$507,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I6: OR 39/Shasta Way - Modify Signal Phasing

Project Sheet: I6

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$0.00	$0
New Traffic Signal	each	0	$250,000.00	$0
Traffic Signal Modification	each	1	$100,000.00	$100,000
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$100,000*
Subtotal 1 (Subtotals A + B)				$100,000
Mobilization		% of Subtotal 1	10%	$10,000
Erosion Control		% of Subtotal 1	5%	$5,000
Traffic Control		% of Subtotal 1	5%	$5,000
Subtotal 2 (Mobilization & Traffic Control)				$20,000
Total (Subtotals 1 + 2)				$120,000
Plus Contingencies		% of Total	30%	$36,000
Estimated Construction Cost				**$156,000**
Architectural/Engineering		% of Est. Cost	15%	$23,400
Construction Management		% of Est. Cost	10%	$15,600
Estimated Professional Fees				**$39,000**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$195,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I7: Shasta Way/Homedale Road - Install Traffic Signal

Project Sheet: I7

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$260,000*
Subtotal 1 (Subtotals A + B)				$260,000
Mobilization		% of Subtotal 1	10%	$26,000
Erosion Control		% of Subtotal 1	5%	$13,000
Traffic Control		% of Subtotal 1	5%	$13,000
Subtotal 2 (Mobilization & Traffic Control)				$52,000
Total (Subtotals 1 + 2)				$312,000
Plus Contingencies		% of Total	30%	$93,600
Estimated Construction Cost				**$405,600**
Architectural/Engineering		% of Est. Cost	15%	$60,840
Construction Management		% of Est. Cost	10%	$40,560
Estimated Professional Fees				**$101,400**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$507,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I8: Homedale Road/OR 39 - Construct EB Right-Turn Lane

Project Sheet: I8

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	833	$15.00	$12,488
Embankment (Fill)	cu. yd.	333	$20.00	$6,660
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	6,000	$8.00	$48,000
New Curb	lin. ft.	500	$15.00	$7,500
New Sidewalk & Concrete Median	sq. ft.	3,000	$5.00	$15,000
Pavement markings	lin. ft.	1,500	$1.00	$1,500
Signage	each	3	$500.00	$1,500
Pavement Removal	sq. ft.	2,100	$2.00	$4,200
			Subtotal A (Roadworks)	*$96,848*
Storm Drainage System		% of Subtotal A	20%	$19,370
Landscape Improvement		% of Subtotal A	5%	$4,842
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$284,212*
Subtotal 1 (Subtotals A + B)				$381,059
Mobilization		% of Subtotal 1	10%	$38,106
Erosion Control		% of Subtotal 1	5%	$19,053
Traffic Control		% of Subtotal 1	5%	$19,053
Subtotal 2 (Mobilization & Traffic Control)				$76,212
Total (Subtotals 1 + 2)				$457,271
Plus Contingencies		% of Total	30%	$137,181
Estimated Construction Cost				**$594,453**
Architectural/Engineering		% of Est. Cost	15%	$89,168
Construction Management		% of Est. Cost	10%	$59,445
Estimated Professional Fees				**$148,613**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$743,066**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I9: Summers Lane/Clinton Aveneu - Install Traffic Signal

Project Sheet: I9

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$260,000*
Subtotal 1 (Subtotals A + B)				$260,000
Mobilization		% of Subtotal 1	10%	$26,000
Erosion Control		% of Subtotal 1	5%	$13,000
Traffic Control		% of Subtotal 1	5%	$13,000
Subtotal 2 (Mobilization & Traffic Control)				$52,000
Total (Subtotals 1 + 2)				$312,000
Plus Contingencies		% of Total	30%	$93,600
Estimated Construction Cost				**$405,600**
Architectural/Engineering		% of Est. Cost	15%	$60,840
Construction Management		% of Est. Cost	10%	$40,560
Estimated Professional Fees				**$101,400**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$507,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I10: OR 39/OR140 (Big Y) - Construct SB Left-Turn Lane

Project Sheet: I10

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	833	$15.00	$12,488
Embankment (Fill)	cu. yd.	333	$20.00	$6,660
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	6,000	$8.00	$48,000
New Curb	lin. ft.	500	$15.00	$7,500
New Sidewalk & Concrete Median	sq. ft.	3,000	$5.00	$15,000
Pavement markings	lin. ft.	2,500	$1.00	$2,500
Signage	each	1	$500.00	$500
Pavement Removal	sq. ft.	3,000	$2.00	$6,000
			Subtotal A (Roadworks)	*$98,648*
Storm Drainage System		% of Subtotal A	20%	$19,730
Landscape Improvement		% of Subtotal A	5%	$4,932
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$50,000.00	$50,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$324,662*
Subtotal 1 (Subtotals A + B)				$423,309
Mobilization		% of Subtotal 1	10%	$42,331
Erosion Control		% of Subtotal 1	5%	$21,165
Traffic Control		% of Subtotal 1	5%	$21,165
Subtotal 2 (Mobilization & Traffic Control)				$84,662
Total (Subtotals 1 + 2)				$507,971
Plus Contingencies		% of Total	30%	$152,391
Estimated Construction Cost				**$660,363**
Architectural/Engineering		% of Est. Cost	15%	$99,054
Construction Management		% of Est. Cost	10%	$66,036
Estimated Professional Fees				**$165,091**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$825,453**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I11: Washburn Way/OR 140 EB Ramps - Install Traffic Signal

Project Sheet: I11

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$260,000*
Subtotal 1 (Subtotals A + B)				$260,000
Mobilization		% of Subtotal 1	10%	$26,000
Erosion Control		% of Subtotal 1	5%	$13,000
Traffic Control		% of Subtotal 1	5%	$13,000
Subtotal 2 (Mobilization & Traffic Control)				$52,000
Total (Subtotals 1 + 2)				$312,000
Plus Contingencies		% of Total	30%	$93,600
Estimated Construction Cost				**$405,600**
Architectural/Engineering		% of Est. Cost	15%	$60,840
Construction Management		% of Est. Cost	10%	$40,560
Estimated Professional Fees				**$101,400**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$507,000**

KLAMATH FALLS URBAN AREA TRANSPORTATION SYSTEM PLAN

I12: OR 39/OR 140 (South of Big Y) - Install Traffic Signal

Project Sheet: I12

Note: The Construction Cost Index for 2010 was estimated to be 219

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Excavation (Cut)	cu. yd.	0	$15.00	$0
Embankment (Fill)	cu. yd.	0	$20.00	$0
Pavement Rehabilitation	sq. ft.	0	$4.00	$0
New Pavement	sq. ft.	0	$8.00	$0
New Curb	lin. ft.	0	$15.00	$0
New Sidewalk & Concrete Median	sq. ft.	0	$5.00	$0
Pavement markings	lin. ft.	0	$1.00	$0
Signage	each	0	$500.00	$0
Pavement Removal	sq. ft.	0	$2.00	$0
			Subtotal A (Roadworks)	*$0*
Storm Drainage System		% of Subtotal A	20%	$0
Landscape Improvement		% of Subtotal A	5%	$0
Street Lighting	each	0	$7,000.00	$0
Private Utility Coordination	Lump/Sum	1	$10,000.00	$10,000
New Traffic Signal	each	1	$250,000.00	$250,000
Traffic Signal Modification	each	0	$100,000.00	$0
Retaining Walls (less than 5 feet)	sq. ft.	0	$50.00	$0
Structures	sq. ft.	0	$150.00	$0
Railroad Crossing & Signalization	each	0	$750,000.00	$0
			Subtotal B (Other)	*$260,000*
Subtotal 1 (Subtotals A + B)				$260,000
Mobilization		% of Subtotal 1	10%	$26,000
Erosion Control		% of Subtotal 1	5%	$13,000
Traffic Control		% of Subtotal 1	5%	$13,000
Subtotal 2 (Mobilization & Traffic Control)				$52,000
Total (Subtotals 1 + 2)				$312,000
Plus Contingencies		% of Total	30%	$93,600
Estimated Construction Cost				**$405,600**
Architectural/Engineering		% of Est. Cost	15%	$60,840
Construction Management		% of Est. Cost	10%	$40,560
Estimated Professional Fees				**$101,400**
Right-of-Way	sq. ft.	0	$20.00	$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$507,000**

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305 Main Street
Klamath Falls, OR 97601

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Dept of Land Conservation & Development
635 Capitol Street NE, Suite 150
Salem, OR 97301-2540

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