KLAMATH FALLS
WEST SIDE REFINEMENT PLAN

Transportation System Plan

Submitted: May 24, 2006

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Introduction and Background

The Klamath Falls West Side Refinement Plan amends the 1998 Klamath Falls Urban Area Transportation System Plan (TSP), and addresses an area commonly known as the West Side, a developing area in the Urban Growth Boundary of Klamath Falls. When the original TSP process was initiated (pre-1998), population forecasts were made for potential areas of growth for a 20-year planning horizon; the West Side was not expected to grow in the near term, and thus, transportation issues were not anticipated nor addressed. The West Side area falls under both the City of Klamath Falls and Klamath County, and the West Side Refinement Plan is a joint effort by the City of Klamath Falls, Klamath County, and Oregon Department of Transportation (ODOT). The jurisdictions, state, and developers will benefit from the West Side Refinement Plan as it identifies, locates, and sets priorities for future transportation improvements.

The West Side land area consists of approximately 2,000 acres located west of Highway 97, south of Lakeshore Drive and north of Oregon 140 West/Oregon 66. Of these 2,000 acres, 500 are outside the Urban Growth Boundary (UGB). Subsequent to the 1998 adoption of the TSP, plans have been approved or pending for approximately 3,827 single-family homes, including two Planned Unit Developments (PUDs) totaling about 1,500 acres and a proposed Destination Resort of approximately 300 acres. Although development started in the West Side as early as the 1920's and 1930's, growth has increased significantly in recent years with the approval of the Southview PUD in 2000 and the Castle Ridge Destination Resort in 2004. Neither of these developments was addressed in the 1998 Klamath Falls Urban Area TSP. Additional development proposals have been submitted and are in the review process.

The increased development activity, both now and in the future, will impact the transportation system. As a result, the TSP must be amended to account for the additional development and subsequent traffic in the West Side. This amendment must also identify transportation facilities and services required to support the planned land uses on the West Side as identified by the City and County in a manner consistent with Oregon's Transportation Planning Rule (TPR).

There are eight approved and proposed developments that will have cumulative traffic impacts in the West Side study area, which are shown in Figure 1 and listed in Table 1. Within the study area, major highways (US 97, OR 66, and OR 140) and their associated interchanges were included in the analysis, as well as the City and County local arterial, collector, and local street system.

This document lays out a transportation plan for safe, affordable, and accessible transportation facilities for all users within the West Side study area. As such, the Plan includes an assessment of the existing transportation system; an evaluation of the impacts of growth on the transportation system; an identification of possible alternative improvements; an identification of improvement projects that are included in the preferred alternative; and transportation financing.

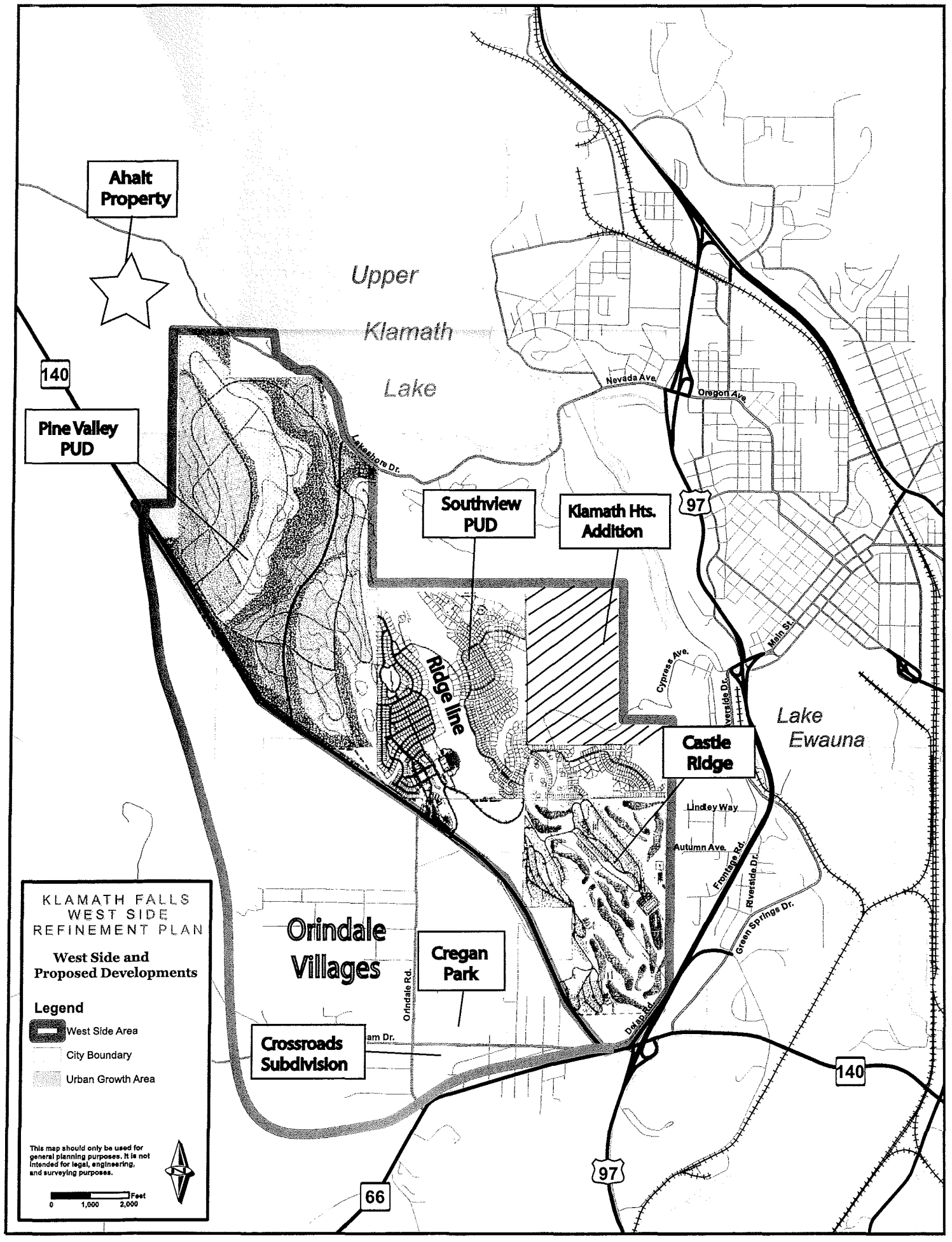

Ahalt Property
Upper Klamath Lake
140
Pine Valley PUD
Lakeshore Dr.
Nevada Ave.
Oregon Ave.
Southview PUD
Klamath Hts. Addition
97
Ridge line
Cypress Ave.
Riverside Dr.
Main St.
Lake Ewauna
Castle Ridge
Lindley Way
Autumn Ave.
Frontage Rd.
Riverside Dr.
Green Springs Dr.
Orindale Villages
Orindale Rd.
Cregan Park
Crossroads Subdivision
140
97
66
KLAMATH FALLS
WEST SIDE
REFINEMENT PLAN
West Side and Proposed Developments
Legend
West Side Area
City Boundary
Urban Growth Area
This map should only be used for general planning purposes. It is not intended for legal, engineering, and surveying purposes.
Feet
0
1,000
2,000

Table 1. Proposed Developments for Klamath Falls West Side

Name	Approved	Status	Single-Family Homes	Other Planned Land Uses
Pine Valley PUD	1979 Approved	Revised preliminary plan approved in 1986 Plans approved April 2006	Up to 2,200 Up to 778	Incidental Private restaurant/club
Southview PUD	2000	Preliminary plan approved in 2002	1,330	Light industry, Commercial core, retail core
Klamath Heights Addition	1930's	Platted	446	Incidental
Castle Ridge DRO	2004	Preliminary plan approved in 2004	244	Resort hotel, golf course, multi-family
Ahalt Property/ Buckridge	Not approved	Unknown	25 homes	None
Cregan Park and adjacent lands		Platted and unplatted	Up to 591	None
Crossroads	Not approved	Preliminary proposed plans under development	143	None
Orindale Villages	Not approved	Preliminary proposed plans under development	270	None
			Total: 3,827	

The following goals and objectives were developed by the project Citizen Advisory Committee (made up of property owners and neighborhood watch members), the Technical Advisory Committee (made up of representatives from the City, County, State, and Basin Transit Service), and public input gathered over the last year.

Goals (*as identified in the 1998 Klamath Falls Urban Area Transportation System Plan*):

1. Ensure a safe and efficient transportation system, allowing access into and through the community for all users.
2. Improve personal mobility and access to transportation services throughout the region using a variety of travel modes.
3. Improve the movement of goods and delivery services throughout the region using a variety of travel modes.
4. Improve area-wide quality of life by: 1) increasing the compatibility of regional transportation system development with existing and future land use patterns; and 2) minimizing the impacts of transportation system development on the natural and built environment.
5. Improve the local circulation system to reduce the community's reliance on Highways 97, 140, and 66.
6. Ensure adequate capacity for future travel demand on collector and arterial streets and on the local highways to enable economic development in the community.
7. Ensure the integration of adequate bike and pedestrian facilities throughout the community, especially to connect residential areas with schools and activity centers.

8. Develop recommendations for improving the overall safety and efficiency of the transportation system by: 1) managing access to and development along state highway facilities; 2) promoting transportation demand management strategies (i.e., carpooling, telecommuting, etc.) and 3) drafting ordinances to ensure safe and convenient connections between land use and transportation.
9. Ensure sustained funding for needed transportation improvement projects.

Objectives:

1. The main focus of the project is the current and future land use and traffic impacts west of Highway 97.
2. Traffic impacts from future development on Klamath Falls' West Side should be identified and mitigated.
3. Any transportation alternatives to mitigate future traffic impacts should be realistic, affordable, and fully constructed when land uses reach 100% build-out (approximately the year 2025).
4. Future transportation improvements should be phased to correspond with traffic growth in Klamath Falls' West Side.
5. The functional classification of Lakeshore Drive should not be changed.
6. New access points on OR 140 should meet ODOT requirements for traveling public's safety and mobility standards, and should be consistent with the Oregon Highway Plan, and the ODOT Highway Design Manual.
7. These project objectives should be consistent and reinforce existing TSP goals, and once the project is complete, be incorporated and amended in their entirety into the existing 1998 Klamath Falls Urban Area TSP.

Existing Traffic Conditions (2005)

To determine the transportation impacts of future development, the project team evaluated traffic conditions in 2005 and 2025; the latter is when all developments in the West Side are expected to be built out. Two primary measures of effectiveness were used to assess the operation of at-grade traffic intersections and highway interchanges: level of service (LOS) and volume-to-capacity (v/c) ratios. Note that the State uses v/c ratios for State facilities while the City and County use LOS.

Level of service and volume-to-capacity analyses were conducted at each of the study intersections and summarized in Table 2. As shown, all study area intersections for the West Side Study area currently operate at an acceptable level of service with acceptable volume-to-capacity ratios during the peak hour.

Table 2. Existing (2005) Traffic Operations – 30th Highest Hour

Signalized Intersections	Volume-to- Capacity	Level of Service	Average Delay (seconds per vehicle)
OR 140 at OR 66	0.30	A	6.5
Unsignalized Intersections	**Volume-to- Capacity (critical movement)**	**Level of Service**	**Delay (seconds per vehicle)**
OR 66 at Balsam Drive	0.19	C	17.2
OR 140 at Delap Pit Road	0.05	C	19.1
OR 140 at US 97 SB Ramps	0.34	C	15.0
OR 140 at US 97 NB Ramps	0.10	C	15.2
OR 140 at Green Springs Drive	0.46	D	25.2
OR 66 at Orindale Road	0.02	B	12.6
Orindale Road at Balsam Drive	0.05	A	9.7
OR 140 at Orindale Road	0.01	B	10.7
Green Springs at Riverside at Dover	0.07	B	10.9
Riverside Drive at Frontage Road	0.01	A	9.8
Riverside Drive at Lindley Way	0.04	B	10.4
Riverside Drive at Green Springs	0.01	A	9.2
Riverside Drive at Main Street	0.17	A	9.3
Main Street at US 97 SB ramps	0.17	C	21.3
Main Street at US 97 NB ramps	0.06	C	18.3
Main Street at US 97 NB off-ramp	0.21	B	13.4
Nevada Avenue at Montelius Street	0.11	C	20.9
Nevada Avenue at US 97 SB ramps	0.04	B	13.5
Nevada Avenue at US 97 NB ramps	0.10	B	14.7

Future Traffic Conditions (2025)

To gauge the transportation impacts of current and future growth, the project team evaluated future traffic conditions in 2025 assuming no new highway, arterial, collector, or local street improvements beyond those already funded. These 2025 traffic conditions are summarized below.

Table 3. Future 2025 Traffic Operations without New Improvements

Signalized Intersections	Volume-to- Capacity	Level of Service	Average Delay (seconds per vehicle)
OR 140 at OR 66	0.49	A	8.8
Unsignalized Intersections	**Volume-to- Capacity (critical movement)**	**Level of Service**	**Delay (seconds per vehicle)**
OR 66 at Balsam Drive	0.47	E	35.2
OR 140 at Delap Pit Road	0.24	F	53.9
OR 140 at US 97 SB Ramps	1.20	F	79.9
OR 140 at US 97 NB Ramps	0.48	E	39.0
OR 140 at Green Springs Drive	2.68	F	452.2
OR 66 at Orindale Road	0.04	C	16.4
Orindale Road at Balsam Drive	0.08	B	10.4
OR 140 at Orindale Road	0.02	C	15.7
Green Springs at Riverside at Dover	0.12	B	12.3
Riverside Drive at Frontage Road	0.02	B	10.5
Riverside Drive at Lindley Way	0.05	B	11.4
Riverside Drive at Green Springs	0.02	A	9.5
Riverside Drive at Main Street	0.28	B	10.1
Main Street at US 97 SB ramps	0.70	F	95.8
Main Street at US 97 NB ramps	0.22	E	40.1
Main Street at US 97 NB off-ramp	0.37	C	21.4
Nevada Avenue at Montelius Street	0.27	F	60.9
Nevada Avenue at US 97 SB ramps	0.11	C	19.5
Nevada Avenue at US 97 NB ramps	0.24	D	26.5

As shown in the table above, the following intersections and highway interchanges will degrade to a level of service E or F (or unacceptable v/c ratios) by 2025 if no new intersections or highway interchanges are constructed or improved:

- OR 66 at Balsam Drive
- OR 140 at Delap Pit Road
- OR 140 at US 97 SB Ramps
- OR 140 at US 97 NB Ramps
- OR 140 at Green Springs Drive
- Main Street at US 97 SB ramps
- Main Street at US 97 NB ramps
- Nevada Avenue at Montelius Street

Unfortunately, the interchange areas of Highway 140 and US 97 and Main Street and US 97 are projected to degrade to unacceptable levels by 2025. The analysis indicates that an interchange access management plan and improvements to these interchanges will be needed by 2025 or sooner, if the majority of the proposed developments reach build out.

In addition, improvements are needed for the intersection of Nevada Avenue-Oregon Avenue at Montelius Street by 2025.

Transportation System Plan Improvements

Seventeen packages of transportation system alternatives to mitigate future traffic impacts were developed and analyzed for the Klamath Falls West Side Refinement Plan. Meetings and workshops were held with ODOT, City staff, County staff, stakeholders, City Council members, County Commissioners, and neighborhood associations to discuss the West Side development and potential transportation solutions. These meetings and workshops included the following:

- December 22, 2004 – Technical Advisory Committee Meeting
- January 26, 2005 – Agency Coordination Meeting
- January 27, 2005 – Technical Advisory Committee Meeting
- March 2, 2005 – Citizen Advisory Committee Meeting
- March 3, 2005 – Technical Advisory Committee Meeting
- May 16, 2005 – City Council and Planning Commission work sessions
- May 17, 2005 – Stewart-Lennox and Lindley/Autumn Neighborhood meeting
- June 20, 2005 – Project Workshop with ODOT, City staff, County staff, and stakeholders
- September 2, 2005 – Project Workshop with ODOT, City staff, County staff, stakeholders, City Council members, County Commissioners
- October 14, 2005 – Project Workshop with ODOT, City staff, County staff, stakeholders, City Council members, County Commissioners
- January 30, 2006 – Public Comment Meeting
- April 3, 2006 – City Council Work Session

Surveys identifying potential solutions were given to workshop and public open house attendees with a scoring range of 1-5; 1 was strongly disagree and 5 was strongly agree. The summary of responses is provided in Table 4.

As shown in Table 4, the score represents the weighted average of scoring responses ranging from Strongly Disagree (1 point), Somewhat Disagree (2 points), Neutral (3 points), Somewhat Agree (4 points) and Strongly Agree (5 points).

The project "statements" receiving an overall agree from the scoring results follow:

- OR 140 should remain as it is today: an Expressway with limited or no stops.
- Protecting the Hwy 97, OR 140, and OR 66 interchange from traffic "overload" should be a top priority for the project.
- The developments proposed for the West Side should have a more interconnected street network.
- Any alternatives to mitigate traffic impacts should be affordable and cost-effective.
- OR 140 should be five lanes from Pine Valley to OR 66 to accommodate future traffic from West Side.

The project "statements" receiving an overall somewhat agree from the scoring results follow:

- An east-west collector or arterial street should be connected to Cypress Avenue to relieve future traffic congestion in the West Side.
- Green Springs Drive at OR 140 should be closed, and improvements to Memorial Drive at OR 140 should be a priority.
- Roadway improvements/mitigation should be concentrated on the state highway system and re-build interchanges.

The project "statements" receiving an overall somewhat disagree from the scoring results follow:

- OR 140 should be turned into an urban arterial with traffic signals spaced every mile.
- An east-west collector or arterial street should be connected to either Lindley Way or Autumn Avenue to relieve future traffic congestion in the West Side.
- An east-west collector or arterial street should be connected to Moore Parkway/Lakeshore to relieve future traffic congestion in the West Side.
- A bridge connection from the West Side to the northeast into the Klamath Falls central business district should be a priority.
- OR 66 Re-route/relocation should be a top priority.

The transportation system alternatives were refined based on input at these meetings and workshops as well as the technical analysis conducted by the project team. The Transportation System Plan improvements developed for the West Side represent the best consensus solution to accommodate the current and future projected traffic on the roadway network that also meets the project goals and objectives listed previously. This transportation solution includes multi-modal improvements with multi-use paths for pedestrians and bicyclists in the area.

Multiple transportation options were studied to connect the West Side area with the City of Klamath Falls. The options included a range of transportation improvements in multiple corridors, such as extensions of existing roads, new collector streets, long-span bridges, interchanges, and signalized intersections. These options were analyzed using transportation model runs from the Oregon Department of Transportation (ODOT) Transportation Planning and Analysis Unit (TPAU). The purpose of modeling was to find a combination of transportation improvements to balance the transportation system, so roadway improvements could be incrementally phased as the pace of development warrants.

The future horizon year for the modeling was year 2025, and the model sensitivity tests assumed approximately 3,827 single-family homes would be constructed in the West Side. The 2025 land use consisted of the projected growth for each of the developments in the West Side study area and a reduced amount of growth for Pine Valley PUD with up to 778 residential units as proposed in their development proposal and traffic study submitted in August 2005 for approval. This land use scenario represents growth most likely to occur in the West Side Area and was used in further model runs evaluated for 2025. In addition, the 2025 ODOT TPAU travel demand model includes projected growth over the next 20 years in areas outside of the West Side area.

Table 5 depicts selected results from the alternative testing process. The testing indicated that focusing all growth-related traffic into one corridor (either a state highway or a single local collector street connection) would quickly absorb the remaining traffic capacity in the corridor and hasten the need for major capital improvements. For example, concentrating all improvements on OR 140 (shown as alternative #4 below), results in approximately 68% of all future traffic moving through the US 97/OR 140/OR 66 interchange. This results in a significant decrease in the useful life of the existing interchange and increases the cost and complexity of the required interchange replacement.

Likewise, concentrating future traffic growth on the local street connections will result in significant capital expenditures in multiple corridors. Alternative #5, also listed in Table 1, shows that approximately 75% of future traffic could be directed toward local collector streets. However, the local collector scenario is only viable if at least three collector street connections are constructed. Unfortunately, terrain and elevation make any collector street connection problematic. Each of the six options has unique benefits and challenges which include topography, functional classification, cultural and archeological concerns, impacts to existing infrastructure, the built environment, and cost.

Table 5. State Highway Focused Plan versus Collector Street Focused Plan

Alternative Number	Alternative Focus	Definition	Improvements	Percentage of Traffic on City & County Roadways	Percentage of Traffic on State Highways
4	State Highway Focus	Concentrate traffic onto the state system	OR 140	32%	68%
5	Collector Street Focus	Concentrate traffic on the local system	Pine Valley Drive Bridge over US 97 Moore Parkway	75%	25%

The analysis showed a need to make both highway and collector street improvements to balance traffic growth and disperse traffic throughout the transportation network. The purpose of a collector street connection is to provide an alternative travel route for future residents of Klamath Falls' West Side. The future collector street should provide a direct connection between the main population centers in the West Side and the transportation network to Klamath Falls destinations. The collector street should provide a longer period before capacity improvements are needed for OR 140 and help moderate the cost and complexity of the future US 97/OR 140/US 66 interchange replacement project. Lastly, the collector street should further community goals and objectives and support the balanced transportation goals of the Klamath Falls' Transportation System Plan.

The project team has studied six potential collector street connections, which are listed below:

- A north-south collector street through Pine Valley from OR 140 to Lakeshore Drive
- Moore Parkway
- Cypress Avenue
- Lindley Way
- A new bridge over US 97 and the Link River
- Causeway between Lindley and Cypress

Overall, the Technical Advisory Committee developed seventeen alternatives to evaluate the above collector street connections in various combinations. Model sensitivity tests were conducted for the alternatives, and the results of each alternative were compared.

Below is a short description of the collector street connections tested:

- **A north-south collector street through Pine Valley from OR 140 to Lakeshore Drive.** Approved first in the late 1970's, the first Pine Valley master plan depicted a north-south collector street connection between OR 140 and Lakeshore. It is one of the only locations where a north-south connection can be made in the geographically rugged West Side.

- **Moore Parkway.** A collector road extended north from Southview connecting to Lakeshore east of Moore Park. Potentially constructed along a power line easement, the parkway could potentially impact cultural or archeological sites above the Link River.

- **Cypress Avenue.** An extension of Cypress Avenue west past Riverside Elementary into the West Side and connecting with Southview. The Cypress connection is currently narrow with substandard curves. It connects a historic neighborhood with downtown Klamath Falls.

- **Lindley Way.** Currently a local neighborhood street, Lindley Way is a dead-end road with multiple single-family homes on either side. There is an easement across the Castle Ridge development that would allow a local street connection between Lindley Way and Southview.

- **A new bridge over US 97 and the Link River.** Directly connecting the West Side with the residential northern end of downtown Klamath Falls, a new bridge connection was proposed to span across US 97 and the Link River to provide an alternate way to downtown instead of Cypress Avenue.

- **Causeway between Lindley and Cypress.** The causeway between Lindley and Cypress would also provide an alternative route to the east. It was proposed to connect from the West Side to Greensprings Drive and further east to the Southside Bypass.

An evaluation comparing the traffic volumes between the six different collector streets was completed using ODOT TPAU model sensitivity tests. From that analysis, the Cypress Avenue connection attracts the most trips to and from the West Side when comparing the collector street connections.

From the alternatives evaluation, the Cypress Avenue connection would be a key component of the West Side transportation network:

- Cypress Avenue connection provides a direct access to downtown Klamath Falls
- Cypress Avenue connection provides an indirect access to the state highway (US 97) via Main Street
- Vehicle miles traveled are reduced (out of direction travel reduced) which is consistent with the Oregon Transportation Planning Rule
- Cypress Avenue connection provides shortest travel time to the majority of trip destinations
- Transportation improvements are already needed to Cypress Avenue

When comparing the Moore Parkway connection at Lakeshore Drive to the Cypress Avenue connection, the Cypress Avenue connection attracts and carries significantly more trips than the Moore Parkway connection. In regards to geometry, significant curve and sight distance issues exist at the connection of Moore Parkway and Lakeshore Drive. Due to a combination of a strong community sentiment to preserve Moore Park and its adjacent environmentally sensitive areas, the Moore Parkway connection was removed at the direction of the Klamath Falls City Council.

The technical analysis indicates that Cypress Avenue is the top-ranked corridor for connecting the West Side to the greater City of Klamath Falls. This finding from the alternatives evaluation has been generally supported by the public comments we received from participants in the open houses, workshops, and letters. The comments support the technical recommendation.

Because of technical engineering issues and a desire of the Technical Advisory Committee to keep the plan flexible, we have also recommended that more than one collector street connection be kept in the plan in order to preserve as many future options as possible. As a result, the technical team proposes the following:

- Option 1 – Cypress Avenue is the preferred collector street connection for connecting the West Side to the Klamath Falls' regional transportation network.

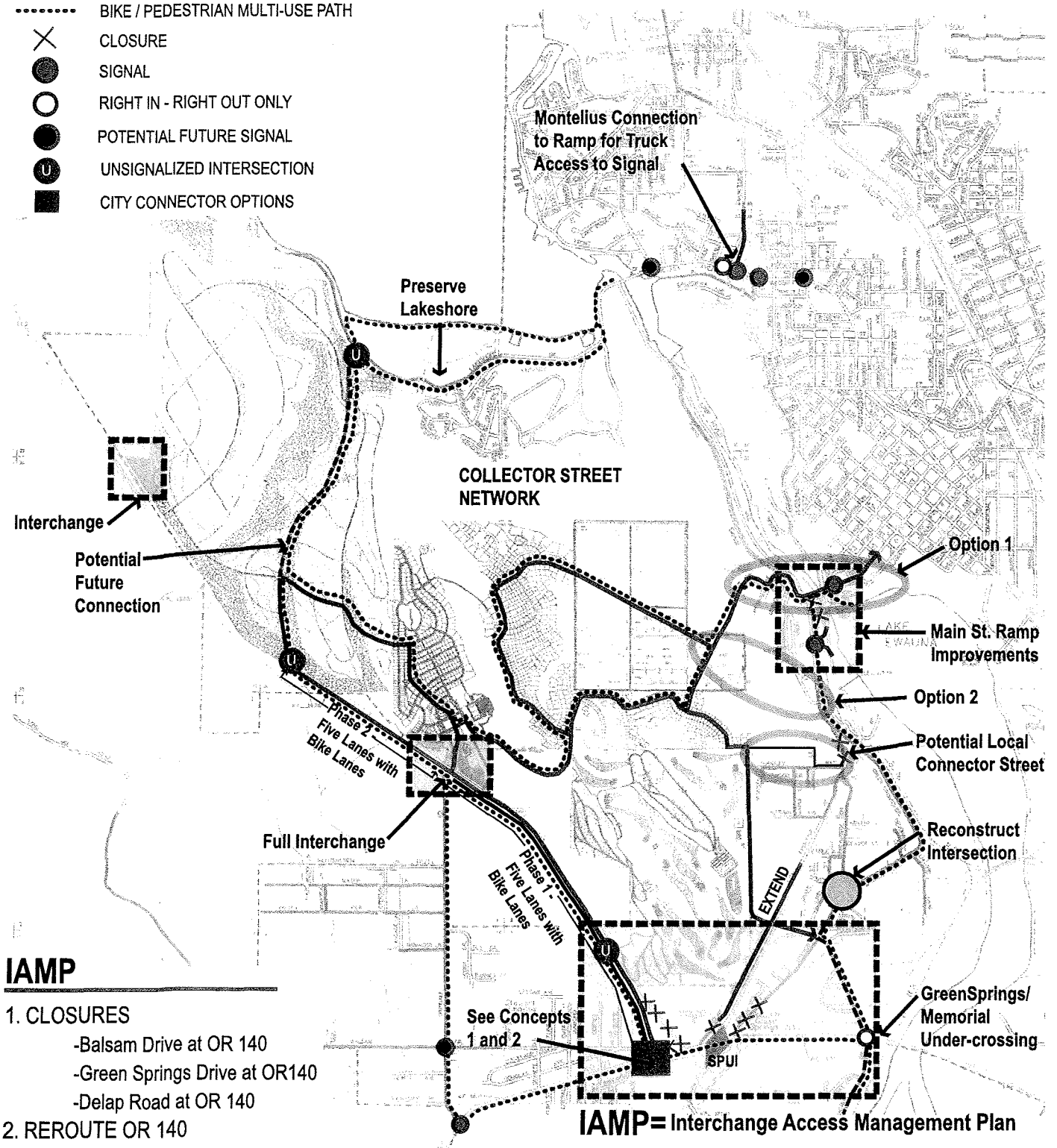
- Option 2 – A collector street north of Lindley Way is an alternate connection for connecting the West Side to the Klamath Falls' regional transportation network.

The technical team does not recommend further consideration of Lindley Way as a collector street connection although a local street connection is a possible option.

The Transportation System Plan improvements are shown in the following figure. The project list, brief description of each project, and estimated costs are provided in Table 6. The total estimated cost of the projects shown in Table 6 is $95 million dollars. The project priority for short term and long term is defined in the table for each project as short term from 1 to 5 years and long term from 6 to 20 years.

KLAMATH FALLS WEST SIDE

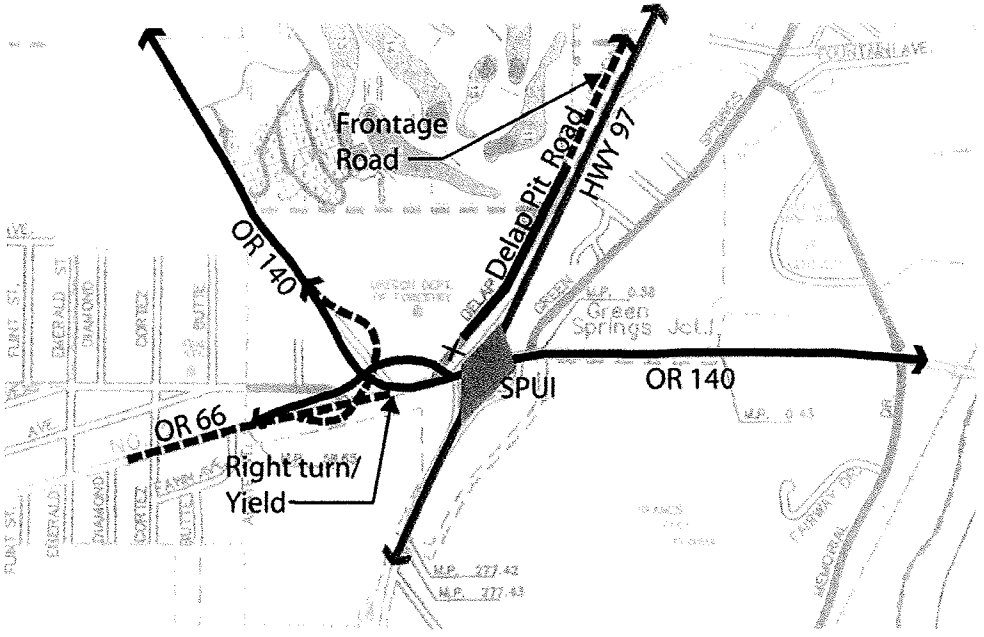
TRANSPORTATION SYSTEM PLAN IMPROVEMENTS
Figure 2



IAMP

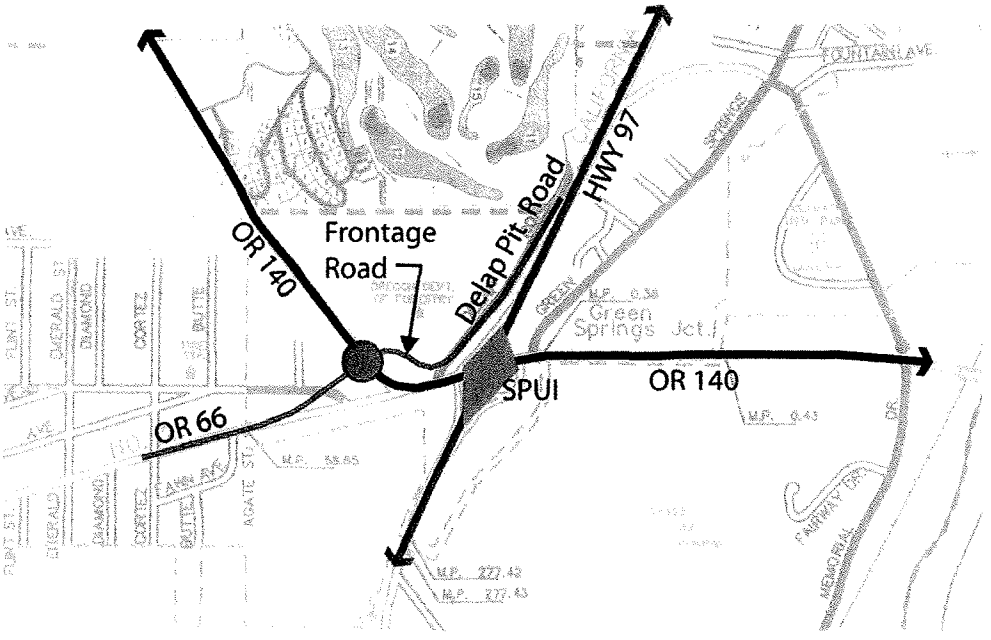
1. CLOSURES
   - -Balsam Drive at OR 140
   - -Green Springs Drive at OR140
   - -Delap Road at OR 140
2. REROUTE OR 140
3. SINGLE POINT URBAN INTERCHANGE (SPUI)
4. EXTEND FRONTAGE RD.
5. RELOCATE GREEN SPRINGS DRIVE AT 0R140

Figure 3. Oregon 140/Oregon 66



Concept #1

Figure 4. Oregon 140/Oregon 66



Concept #2

Note: OR 140 at OR 66/Delap Pit Road is shown with a traffic signal in Concept #2.

Table 6. Transportation System Improvements

Roadway Improvement Projects	Cost Estimate	Priority
IAMP and interchange reconstruction project – single-point urban interchange (SPUI) at US 97 and Oregon 140, traffic signalization of SPUI ramps at OR 140. Closure of Balsam Drive at OR 66. Closure of Delap Pit Road at OR 140. Improve a local street connection between Balsam Drive and OR 66. Close Green Springs at existing OR 140 location. Modified access for Delap Pit Road, Balsam Drive, and Green Springs.	$ 30 million	Short term for IAMP / Long term for project construction
OR 140 widen – 5 lanes with bike lanes from Pine Valley to OR 66	$ 10 million	Short term
OR 140 realignment to the west at OR 66	$ 5 million	Long term
Green Springs Drive/Memorial Drive Under-Crossing (right-in/right-out only access to Oregon 140)	$ 6 million	Long term
Main Street Interchange Improvements including traffic signalization at ramps and relocation of US 97 southbound ramps to Riverside Drive, and left turn channelization on Riverside Drive.	$ 12 million	Long term
Green Springs Drive/Riverside Drive at Dover – intersection reconstruction including channelization and left turn lanes. Closure of Riverside at Green Springs north of Lindley Way (Green Springs to function as main street).	$ 2 million	Long term
Pine Valley PUD – local street (not gated) connection from OR 140 to Lakeshore Drive – *potential future connection*		
Local street connection between Pine Valley PUD and Southview		
OR 140 at Orindale Road – full interchange	$ 8 million	Long term
OR 140 at Pine Valley – interchange or left turn fly-over ramps	$ 5 million	Long term
Option #1 - Cypress Connection with sidewalks and multi-use path	$ 6 million	Long term
Option #2 – Collector Street north of Lindley with bike lanes and sidewalks	$ 8 million	Long term
Multi-Use Path connections	$ 10 million	Long term
Intersection Improvement Projects	**Cost Estimate**	**Priority**
OR 140 at Orindale Road – traffic signalization (interim only)	$ 150,000	Short term
OR 66 at Orindale Road – traffic signalization	$ 150,000	Short term
Orindale Road at Balsam Drive – construct NB and SB left turn lanes – review traffic control (potential signalization)	$ 250,000	Long term
Nevada – Oregon Avenue at US 97 ramps – traffic signalization	$ 300,000	Short term
Nevada Avenue at Montelius – intersection reconstruction to a right-in/right-out only for Montelius access to Nevada Avenue	$ 100,000	Short term
Total *	**$ 95 million**	

* Total assumes Option #1 connection as part of the improvements package
Note: Short term defined as 1 to 5 years and long term as 6 to 20 years

Intersections	Volume-to-Capacity	Level of Service	Delay (seconds per vehicle)
OR 140 at Pine Valley Drive	0.53	C	24.3
OR 140 at Castle Ridge Drive	0.14	C	16.6

* Traffic signalization included

The traffic analysis for the plan assumes that the connection from Pine Valley to Lakeshore Drive is eliminated. As a result, the intersection of OR 140 at Pine Valley Drive operates at level of service C during the future 2025 PM peak hour; however, this intersection meets Signal Warrant 3, Peak Hour (*Manual on Uniform Traffic Control Devices, 2003 edition*) for 2025 AM conditions. From the goals and objectives of this project and input from project meetings and workshops, traffic signals are not recommended along Oregon 140. Therefore, this intersection is recommended to be replaced with an interchange that meets ODOT's spacing standards, or to have turn restrictions when signal warrants are met.

Conclusions

The West Side Refinement Plan balances State, City, County, and a private developer interest to ensure this area of Klamath Falls has a well-functioning transportation system to accommodate additional development growth. The phased improvements will allow travelers to select from several options to travel between the West Side and Klamath Falls historic downtown core. The improvements accommodate motorists, bicyclists, and pedestrians.