

AGENDA COVER MEMO

W. L. A.

DATE: February 22, 2006
TO: Lane County Board of Commissioners
DEPARTMENT: Public Works Department
PRESENTED BY: Tom Stinchfield, Transportation Planning Engineer

TITLE: DISCUSSION/Update on the I-5/Franklin Boulevard Interchange Process

I. MOTION

N.A.

II. ISSUE

The Oregon Department of Transportation (ODOT) has requested a decision by the cities of Eugene and Springfield and Lane County on whether to continue with additional refinement planning for a potential interchange on I-5 at Franklin Boulevard. The question posed is:

Should we conduct a detailed planning study (Refinement Plan) to help define the problem, refine, compare, and recommend a solution(s), followed by a decision whether to include the project in the RTP?

III. DISCUSSION

A. Background

For the past year, ODOT has been managing a process to assess the potential for a new interchange on Interstate I-5 at Franklin Boulevard. The primary study area is a ½-mile radius from the point where I-5 crosses Franklin Boulevard, and includes the jurisdictions of Lane County, Eugene and Springfield. The Board of County Commissioners has previously received updates by staff and ODOT on May 18, 2005 and November 9, 2005.

The attached ODOT memo dated February 9, 2006 (see Attachment 1), gives background information and states ODOT's current position on further study at the interchange. See Attachment 1, page 3, ODOT Position on Further Analysis.

The City of Eugene will be holding a work session on February 15th to discuss the same materials and issues. We will provide an update of their discussions and decisions at this Board meeting. In their Council Agenda packet (See Attachment 2), the City of Eugene staff is recommending the City approve the continued study of the I-5 @ Franklin interchange (including I-5 @ Glenwood) with a refinement planning process, with a financial contribution for the local match of federal funds.

B. Analysis

Attachments 3 through 8 document the work of the consultants and project team to date. It includes details on existing conditions, traffic analysis, costs and financial analysis,

Who will be the lead agency(s) locally?

ODOT has indicated they no longer want to be in lead role on further study. This means that responsibility would fall to one or more local agencies. Given both cities' interest in specific development strategies on both sides of the freeway, county staff does not think it makes sense that Lane County would take on a lead role.

Who will provide the local match?

The new highway bill includes a \$400,000 earmark for further refinement study. The local match amount will be approximately \$40,000. By policy, ODOT does not match earmarks that are not on their approved statewide list. Eugene staff is proposing to put up half of this amount. Council action on this will be reported on the 22nd. County staff suggests that if the cities or ODOT want county participation, they should make the request through the update of the CIP currently underway.

C. Alternatives / Options

1. Approve a motion to support continuation of the study at I-5/Franklin Boulevard
 - a. If approved, should the county offer to be a lead agency?
 - b. If approved, should the county offer local match?
2. Approve a motion to oppose continuation of the study.
3. Take no action and wait to see what actions are taken by both cities first.

D. Recommendation

Option 3. Wait and see if Eugene and Springfield are in agreement on how to proceed.

E. Timing

The Eugene City Council will be discussing this matter on February 15th at their noon meeting. The City of Springfield will discuss after the Board meeting on the evening of February 27th.

IV. IMPLEMENTATION/FOLLOW-UP

County staff will continue to participate in staff committees on this issue with ODOT, consultants, and city staffs as necessary. We assume that the Board supports this level of activity without any further specific direction from the Board.

V. ATTACHMENTS

- Attachment 1 February 9, 2006 memo from Tom Boyatt, ODOT Planner
- Attachment 2 Eugene City Council Agenda Item Summary for February 15, 2006
- Attachment 3 January 25, 2006 Summary of three public open houses
- Attachment 4 November 4, 2005 memo on Analysis of Potentials Users (System Traffic)
- Attachment 5 October 14, 2005 memo on Traffic Forecasts
- Attachment 6 November 1, 2005 memo on Engineering, Environment, and Costs
- Attachment 7 November 1, 2005 memo on Potential Revenue Sources
- Attachment 8 September 30, 2005 memo on Existing Conditions and Constraints



Oregon

Theodore R. Kulongoski, Governor

Department of Transportation

Area Manager/Project Manager

644 'A' Street
Springfield, OR 97477

(541) 726-2552

FAX (541) 726-2509

February 9, 2006

To: Lane County Board of County Commissioners

From: Tom Boyatt, ODOT Senior Planner

Re: I-5/Franklin Proposed Interchange
Community Dialogue Decision

Background

During the past year the Oregon Department of Transportation has managed a multi-jurisdictional process to assess the potential for new interchange ramp connections between Interstate 5 and Franklin Blvd. This process, originally conceived as a 'community dialogue', included a high level technical assessment of potential interchange concept categories, existing conditions and potential constraints, engineering and cost analysis, and potential revenue sources. The process also included public involvement through public open houses, meetings with neighborhood and stakeholder groups, and information made available via the internet. Both the Springfield and Eugene City Councils and the Lane County Board of Commissioners have been briefed twice during the course of the project, providing input and validating the community dialogue process. The final step in the current decision process is to ask each of the three elected bodies to make a decision about whether or not to move ahead with additional refinement planning for a potential upgrade to the I-5@ Franklin interchange. The recently adopted federal transportation bill, SAFETEA-LU, includes a \$400,000 earmark to continue to assess ramp connections at this location. This would be the source of funding for any further analysis. ODOT policy is that local communities pay the match requirement for federal earmark projects which are not on the ODOT's adopted earmark priority list. Studying a potential I-5 @ Franklin interchange is not an ODOT earmark priority.

Public Involvement

At the last round of elected officials briefings in November, ODOT project staff summarized the technical findings from the high level analysis completed in order to inform this phase of the project. Since the November briefings, ODOT staff have met with both the Laurel Hill Valley and Fairmount Neighborhood Groups at regularly scheduled monthly meetings, and the project team has hosted three public open houses. Input received at the open houses and by email through January 25, 2006 is presented in the attached Public Open House Summary Memo

(CH2MHill, January 25, 2006). Approximately 150 people attended the three open houses in December 2005, submitting 138 comment forms. 38 emails were received by January 24, 2006. Open House comment forms tested whether or not the study should go forward and provided space for general comments. 54 respondents felt the study should go forward, 20 felt a study should go forward with conditions, 25 felt the study should not go forward unless conditions were added, and 34 felt the study should not go forward. The overwhelming majority of email comments were opposed to the project citing concerns about river, parks, natural area and neighborhood impacts, and the best use of limited transportation dollars. When all input is combined from open house comment forms and emails, the top comments are: Prefer Category 4, Glenwood Interchange, if choice is made to invest (54); Concern for environmental impacts to park, wetland and river (48); and, Believe any option would require further information about impacts to local traffic and circulation on nearby roads and through neighborhoods (37).

ODOT Project Assessment

ODOT staff have reviewed and discussed the technical and public output from the community dialogue phase of the project. The following points related to the proposed I/5@Franklin ramp connections are material to moving forward:

- The objective first cut technical analysis finds no state highway transportation problem to ‘solve’ at this location, in terms of congestion or safety issues. This process involved local staff and is completely transparent.
- Community interest in the project is divided, with strong opinion on both sides.
- It is important to prioritize and address other large projects which are driven by documented technical need.
- The next step in the planning process would be development of a Refinement Plan. ODOT does not want to set false expectations as to outcomes, but recognizes the local jurisdictions may wish to pursue interchange planning for local reasons, and that an earmark is secured to go to the next step. (ODOT policy is that local communities pay the earmark match requirement for earmark projects which are not on the state’s adopted earmark priority list.)

The work done to date suggests that new ramp connections at Franklin are much more of a community access and development project than a state transportation project driven by current congestion or safety problems:

- There are no existing or projected capacity or safety problems at the Glenwood or Judkins Point interchanges out to 2020. (ODOT 2000 State of the Interstate Report).
- New ramp connections at Franklin add as much as 20% more traffic on I-5 north of Franklin for local and regional travel, depending on the category of interchange option assessed¹. (October 14, 2005 Kittleson Traffic Forecasts Memo).

¹ Four categories of interchange configurations were studied: Full Interchange at Franklin, Partial Interchange at Franklin, Split Interchange where moves to and from the north are at Franklin and moves to and from the south are at a rebuilt Glenwood Interchange, Reconstructed Glenwood Interchange Full Urban Diamond.

- New ramp connections at Franklin causes traffic to reroute from local streets and lower order highways onto I-5 in order to link to I-105/OR 126 and Beltline Highway. (October 14, 2005 Kittleson Traffic Forecasts Memo).
- New ramp connections at Franklin provide a more direct route between I-5 and the redeveloping Glenwood Riverfront area to the east and Franklin/University of Oregon corridor to the west, and ultimately to the downtowns of both Eugene and Springfield.

Finally, public input suggests that while new ramp connections do have public support, there are also a group of stakeholders who have significant concerns about the proposed project concept. This opposition is largely from citizens who are concerned about possible impacts to Alton Baker Park, the Whilamut Natural Area, the Willamette River and surrounding natural environment, and from residents in the Fairmount and Laurel Hill Valley neighborhoods who are concerned about Franklin Blvd. traffic impacts, impacts to the Walnut Mixed Use center concept, and neighborhood traffic and noise impacts.

Community Dialogue Decision

The question before this elected body today has been refined and agreed to by the multi-jurisdictional project management team (PMT). The PMT believe it is important for each jurisdiction to respond to the same question:

Should we conduct a detailed planning study (Refinement Plan) to help define the problem, refine, compare and recommend a solution(s), followed by a decision whether to include the project in the RTP?

ODOT Position on Further Analysis

The information produced thus far does not reveal any particular transportation problem that would be solved by adding ramps to the I-5 @ Franklin Interchange. Consequently, ODOT does not see a clear transportation system justification within the next 20 years for developing interchange ramps between I-5 and Franklin Boulevard at this time. However, ODOT would not preclude further consideration of this action if some other community problem could be identified and successfully addressed by adding ramps at the I-5 @ Franklin Interchange with no additional degradation to the state transportation system. If the decision is made locally to move ahead with refinement planning for I-5 @ Franklin and explore other possible justifications for making such an investment, ODOT will participate with the following understanding:

Given the technical information and public input the project has generated to date, and with respect to the community's ability to move forward on a project such as this, ODOT would commit to co-managing a more detailed refinement planning effort where ODOT staff manages procurement, contract administration, and the technical aspects of a refinement plan, and the local jurisdictions provide the staff resources needed to manage both the public and local political (multi-jurisdiction) processes. This work would need to be funded by the \$400,000 SAFETEA-LU earmark and the required local match.

EUGENE CITY COUNCIL

AGENDA ITEM SUMMARY



I-5 Franklin Interchange

Meeting Date: February 15, 2006
Department: Public Works Engineering
www.eugene-or.gov

Agenda Item Number: A
Staff Contact: Lisa Gardner
Contact Telephone Number: (541) 682-5378

ISSUE STATEMENT

This work session is an opportunity for the City Council to receive an update on the outreach process conducted for the I-5 Franklin Proposed Interchange project in December of 2005. The Council is requested to approve the continuation of the project through a refinement study process. The refinement study will be funded by a \$400,000 SAFTEA-LU earmark requiring a ten percent local match. If a refinement study is approved, then an FY07 General Fund decision package will be prepared for the City's estimated \$20,000 share of the local match

BACKGROUND

Over the past year, the Oregon Department of Transportation (ODOT) has engaged in a "Community Dialogue" on the potential for new interchange ramp connections between Interstate 5 and Franklin Boulevard. This process was initiated at the request of the Cities of Eugene and Springfield. ODOT's commitment to this process has included both funding the process and managing the contract administration and technical work program of the consultant team and project management team. The scope of the process has included a technical scan of eight interchange concepts. The results of the technical scan were summarized in four technical memos: 1) existing conditions and potential constraints; 2) engineering/environmental and cost analysis; 3) traffic forecasts; and 4) potential revenue sources. The process also had a public involvement component that included engaging citizen groups, business owners and residents, and holding a series of public workshops.

At the November 14th work session ODOT indicated that Council would be provided with an opportunity to give a "thumbs up, or thumbs down" following the scheduled public workshops in December 2005. At the February 15th work session, ODOT will provide a summary of the results of the public workshops, and will provide information on ODOT's assessment of the project, and their potential role in further study of the project. In the attached memo, ODOT states that the study has not identified a state transportation problem that would be solved by adding ramps to the I-5 interchange at Franklin Boulevard, and therefore does not see a transportation justification for developing interchange ramps at this location within the next 20 years. However, ODOT does state that they would not preclude further consideration of this action if the decision is made locally to move forward with the refinement planning process for I-5 Franklin, and to explore other possible justifications for interchange improvements at this location. ODOT participation in the refinement

planning process would be to commit to co-manage a more detailed refinement planning effort where ODOT staff manages procurement, contract administration, and the technical aspects of a refinement plan. ODOT participation in this process would be dependent on local jurisdictions commitment to providing staff resources needed to manage both the public and local political processes, as well as allocation of ten percent local funds to match the \$400,000 SAFTEA-LU earmark.

Because of proximity, both the I-5 interchange @ Franklin and I-5 interchange @ Glenwood have been included within the scope of the process to date. ODOT has concluded that there is no transportation problem at Franklin, but does not preclude the identification of other issues such as improved access to downtown Eugene, the University of Oregon, and Glenwood that could be addressed through interchange improvements. The Regional Transportation Plan (RTP) identifies two projects on the Illustrative list: 1) I-5 @ Willamette River/Franklin Boulevard Interchange, and 2) I-5 @ Glenwood Interchange. The description of the Glenwood project is to reconfigure the interchange to address weaving and associated safety issues. The appropriation of \$400,000 in the SAFETEA-LU transportation bill provides an opportunity to further study potential solutions to the transportation problems and other identified issues at the Glenwood interchange.

COUNCIL OPTIONS

City Council options include:

1. Approve the continued study of the I-5 @ Franklin interchange (including I-5 @ Glenwood) with a refinement planning process, with a financial contribution for the local match of federal funds.
2. Approve the continued study of the I-5 @ Franklin interchange (including I-5 @ Glenwood) with a refinement planning process, without a City of Eugene local match contribution.
3. Decline to support the refinement planning process.

CITY MANAGER'S RECOMMENDATION

The City Manager recommends supporting the continued study of the I-5 @ Franklin interchange (including I-5 @ Glenwood) with a refinement planning process. If approved, an FY07 General Fund decision package will be prepared to provide the City's share of the local match to the \$400,000 SAFTEA-LU earmark.

SUGGESTED MOTION

Move to approve the continued study of the I-5 @ Franklin interchange (including I-5 @ Glenwood) with a refinement planning process, with a financial contribution for the local match of federal funds.

ATTACHMENTS

- Attachment A – ODOT Memo (Tom Boyatt, Senior Planner) dated February 6, 2006 to Eugene City Council
- Attachment B – Public Open House Summary

FOR MORE INFORMATION

Staff Contact: Lisa Gardner
Telephone: (541) 682-5378
Staff E-Mail: lisa.a.gardner@ci.eugene.or.us

MEMORANDUM

CH2MHILL

Public Open House Summary: I-5 Willamette River Crossing / Glenwood Facility Plan Phase II

PREPARED FOR: Tom Boyatt, ODOT

PREPARED BY: Linda Girard, CH2M HILL
Brandy Steffen, CH2M HILL

CC: Project Management Team
Sam Seskin, CH2M HILL
Tim Burkhardt, CH2M HILL

DATE: Revised: January 25, 2006

The Oregon Department of Transportation hosted three public open houses in early December 2005 to discuss the possibility of a new interchange at I-5 and Franklin Boulevard in Eugene and Springfield.

Open houses were held on three different occasions to provide multiple opportunities for interested parties to participate:

Thursday, December 1, 2005, 4:00 p.m. – 8:00 p.m.
Springfield City Hall, Library Room
225 Fifth Street, Springfield

Monday, December 5 2005, 4:00 p.m. – 8:00 p.m.
Northwest Youth Corps, Community Room
2621 Augusta Street, Eugene

Thursday, December 8, 2005 4:00 p.m. – 8:00 p.m.
Eugene Library, Bascom-Tykeson Room
100 W. 10th Avenue, Eugene

A press release announcing the meetings was issued to the Eugene Register Guard, the Springfield News, the Eugene Weekly and the Daily Emerald and to local radio and television stations by Lou Torres, ODOT Region 2 Public Information Officer. Notification, in the form of a postcard and email was sent to an “interested parties” mailing list and e-mail notification was made to representatives of nearby neighborhoods. An article on the project which included Open House information was published in the Eugene Register Guard on Saturday, November 26, 2005.

An open house format was used at the meetings, allowing members of the public to attend at their convenience, have the opportunity to discuss results of the preliminary analysis on a potential interchange and ask questions of ODOT, its consultant team and local agency staff. Attendees were asked to complete a comment form indicating their level of interest in making a new interchange at I-5 and Franklin Boulevard a regional transportation priority for the Eugene/Springfield area. Approximately 150 people attended the three open houses.

The following items were on display at the meeting:

- Introduction, purpose of the study and the open house
- Preliminary Interchange Concepts¹
- Environmental and Land Use Conditions
- Economic Development and Accessibility Benefits
- Traffic and Circulation Benefits
- Traffic Issues
- Cost and Constructability Issues
- Stakeholder and Policy Issues

Handouts distributed at the open house included the following:

- Comment form
- Background information paper





As of January 24, 2006, a total of 135 comment sheets were received at the open houses and 38 comments were received via email. The comments are summarized below. Copies of each of the actual comment sheets are provided as a separate document.

¹ Categories for Interchanges:

- Category 1: Full Interchange at Franklin Boulevard, with either a Diamond or Cloverleaf design
- Category 2: Partial Interchange at Franklin Boulevard, with either a Partial Diamond or Partial Cloverleaf design
- Category 3: Split Interchange at Franklin and Glenwood Boulevard, with either a Two Half-Diamonds or Connected Diamonds design
- Category 4: Full Interchange at Glenwood Boulevard, with either a Full Diamond design

Summary of Public Comments

TABLE 1.
SUMMARY OF ALL THREE OPEN HOUSES AND EMAILED COMMENTS.

Should the study go forward?	Number of Responses	Locations
 Yes	54	26 - Thursday, December 1, 2005 - Springfield City Hall, 4-8 pm 7 - Monday, December 5, 2005 - Northwest Youth Corps, Eugene, 4-8 pm 21 - Thursday, December 8, 2005 - Eugene Library, 4-8 pm
 Yes, but . . .	20	4 - Thursday, December 1, 2005 - Springfield City Hall, 4-8 pm 10 - Monday, December 5, 2005 - Northwest Youth Corps, Eugene, 4-8 pm 6 - Thursday, December 8, 2005 - Eugene Library, 4-8 pm
 No, unless . . .	25	1 - Thursday, December 1, 2005 - Springfield City Hall, 4-8 pm 16 - Monday, December 5, 2005 - Northwest Youth Corps, Eugene, 4-8 pm 8 - Thursday, December 8, 2005 - Eugene Library, 4-8 pm
 No	35	4 - Thursday, December 1, 2005 - Springfield City Hall, 4-8 pm 12 - Monday, December 5, 2005 - Northwest Youth Corps, Eugene, 4-8 pm 19 - Thursday, December 8, 2005 - Eugene Library, 4-8 pm
No circle chosen	1	
Not applicable	38	Email Messages Received (through January 24, 2006)
	Total = 173	

Most common comments from all answers and days (including emails):

- Prefer Category 4 (54) if the choice had to be made to build
- Concern for the environmental impacts, the Alton Baker and Whilamut parks, the wetlands, and the river (48)
- Feel that any option would require further information about impacts to local traffic, including the impact to local neighborhoods and other roads in the area (43)
- Concern for noise impacts and mitigation (24)
- Current access works well or no need for this study (24)
- Better signage is necessary for solving the problem (with or without other actions taken) (15)
- Feel that improvements would create an economic boost for the area (14)
- Need to consider alternative transportation, including bikes, pedestrians, rail, and buses (with or without other actions taken) (13)
- Prefer category 1 (7)

TABLE 2.
OPEN HOUSE #1 (DECEMBER 1, 2005 – SPRINGFIELD CITY HALL)





Should the study go forward?	Number of Responses	Most common responses
 Yes	26	Category 1 (2); Category 2 (2); Category 4 (7). It will bring economic benefit to the area (5); this project will determine the future of the area and relieve other areas (5); concern for the park/environment/river (1).
 Yes, but . . .	4	Category 1 (1); Category 2 (1); Category 4 (2). Economic concerns (1); examine local and regional plans first (1); focus on access to the University (1).
 No, unless . . .	1	Category 4 (1).
 No	4	Need more facts and figures about transportation needs (1); concern for the park/environment/river (2); not a good use of money (2); would rather encourage alternative transportation instead of single auto use (2); should have better signage instead (1).

TABLE 3.
OPEN HOUSE #2 (DECEMBER 5, 2005 – NORTHWEST YOUTH CORPS, EUGENE)









Should the study go forward?	Number of Responses	Most common responses
 Yes	7	Category 1 (1). Concerns for noise and mitigation (2); what about neighborhood acceptance and concerns (2); it will bring economic benefit to the area and is needed for the downtown and to create a 'front door' (2); concern for the park/environment/river (1); concern over funding source (1); promote alternative transport/bikes (1); keep the on/off, north-south ramps on same junction (1).
 Yes, but . . .	10	Category 1 (1); Category 2 (1); Category 4 (2). Concern for environment/park/river (3); concern for access into and out of, preservation, and negative impacts to Laurel Hill Valley Neighborhood (6); concern over traffic distribution into neighborhoods and maintaining local access to I-5 (3); need more information (2); economic benefits seem substantial (1); concern that this project is taking money away from other projects (1); would like to see the impacts to traffic/congestion at other interchanges due to this project (1); think outside of the box (1); need to upgrade the I-5 ramps at Glenwood (1); must keep Glenwood exit open and functional (1); diamond ramps are a waste of time and money (1); concern about hazardous was and related expenses (1); plan for long term future growth (1).
 No, unless. . .	16	Prefer Category 4 (8). concern for noise (6); concern for environment/river/park/wetlands (7); concern for impact to neighborhood (1); concern about increased traffic and congestion (3); maintain local access to I-5, Laurel Hill, and Glenwood (5); maintain bike access to Riverfront (1); impacts outweigh benefits (1); don't divert money away from other projects (2); must give local concerns high priority (1); how necessary is this project (1); limit reconstruction to Glenwood (2); unless traffic becomes a severe problem (1); consider alternative funding options (1); improve signage (1); no more than 2 bridges, otherwise eyesore and environmentally damaging (1); need better estimates of future growth/demand (1).
 No	12	Use Category 4 if needed (3). Neighborhood, historical, and environmental resources would be crushed (2); money should be spent on failing infrastructure (4); use signage to improve traffic flow (1); rethink site of UO arena (1); concern for the environment (4); cost is prohibitive (3); current exits work well (2); concern of building downstream of dams (1); consider peak oil (1); purpose of I-5 is to access downtowns only (1); all categories would diminish access from neighborhoods to Franklin Blvd for bikers (1); concern for noise (1); should be developed on a long-term schedule (1); impacts outweigh the benefits (1).
	1	Did not choose a response, only said "great presentation"

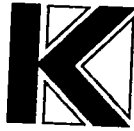
TABLE 4.
OPEN HOUSE #3 (DECEMBER 8, 2005 – EUGENE PUBLIC LIBRARY)

Should the study go forward?	Number of Responses	Most common responses
 Yes	21	Category 1 (2); Category 2 (2); Category 3 (1); Diamond on north side of river (1); Category 4 (6). Should be studied as part of new I-5 bridge (2); address all concerns (1); Use new bridge to improve intersections and interchanges (2); study traffic reduction on 30 th (1); help vitality/economics of both cities (4); creates an entrance (2); need roads to handle increased population and demand (4); focus on giving other towns access to the metro area (1); mitigating noise (1); concern for environment/river/park (2); keep full interchange at Franklin Blvd./off ramp (2); will help to redevelop Glenwood (1); would alleviate congestion (1); need to start planning despite lack of money (2); would improve access to downtowns (2); reduce pressure at Bellline entrance (1); interest in aesthetics (1); start obtaining right of way for light rail to Vancouver, BC (1); move Franklin further from the river (1); Is there a demand for this? (1); easy access to UO (2).
 Yes, but . . .	6	Category 2 (1); Category 4 (1); consider a split clover with East side having a connection close to Glenwood exit (1); create a diamond at Glenwood and make north bound ramp to Hwy. 99 a two way local access (1). Full interchange at Franklin seems like overkill (1); perhaps left lane exit/entrance ramps (1); concerned about sound mitigation (1); preserve local connection from Laurel Valley to Franklin (1); improve traffic merge with Glenwood interchange (1); take funds from WEP (1); needs to be combined with better streets in Glenwood (1); consider local connections to downtown Eugene (1); consider a bridge to Astes Street on north side of Willamette (1).
 No, unless . . .	8	Category 4 (4). Is it needed? (1); noise reduction/mitigation (1); retain local access (1); does the cost outweigh the benefit? (1); need a traffic impact study on the Fairmount Neighborhood (1); concern parks/river/environment (6); don't need an expensive gateway (1); money better spent on Bellline congestion (1); need to shift to mass transit/alternative transportation options (1). What are the opportunity costs for these options? (1); should be a high priority part of the picture for further study (1); cost unreasonable for Categories 1-3 (3); consider the visual impacts (1); not needed until another hospital is sited in the Glenwood area (1); unsure, but inclined to support Category 4 with improved signage (1); no additional bridges are built (1); pedestrian and bike traffic should be planned for (1).
 No	19	Category 4 (1). Prefer no build, or Category 4 if required (5); concern for noise pollution in local neighborhoods (4); concern for entrances/exits from Laurel Hill to Franklin (2); concerned about the impact to old, established neighborhoods (3); better signage (4); concern for environment/park/river (9); currently adequate access from North and South (4); access is better than most cities (1); aesthetic concerns (1); no real need for this (7); additional interstate traffic will threaten nodal potential along BRT corridor (1); poor cost/benefit ratio (7); this would encourage local traffic on a congested I-5 corridor (1); this would discourage public transportation (1); only good would be if a hospital were built in Glenwood (1); only advantage is to UO's arena, which I oppose, and Springfield downtown, however, that is growing north so this wouldn't help (1); Categories 1-3 cause more problems than they solve (2); would a new interchange divert funds from other needed projects? (2); would

		<p>the interchange comply with federal and state policies? (1); please give up on this project (1); Franklin Blvd. can barely handle traffic now (2); opposed to bridging Glenwood Blvd. with Aspen Street to provide connection with Centennial (1); best option is alternative transportation, such as high speed rail and better service from LTD (2); how does it rank in priority with other projects? (1); What is the purpose/need? (2); What other options are being considered? (1); Why not fix the existing on/off access? (1); show me the money (1); the benefits to convenience or economics don't outweigh the cost in money and to environment (1); I-5 improvements have more than adequately addressed access issues into/out of Eugene from the north (1); reason for this is the new UO arena. The solution is hiring traffic control people for infrequent arena events and adding the cost to arena rental fees (1).</p>
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**TABLE 5.
COMMENTS RECEIVED VIA EMAIL (AS OF JANUARY 24, 2006)**

Number of Emails Received	Most common responses
38	<p>Concern for the environment, river, riparian habitat, and wetlands (34); need to provide non-motorized transportation options and consider the energy crisis and oil dependency (2); consider basic transportation needs for all, not just car owners (1); keep walkways and park paths contiguous (1); a new interchange would be an ecological and economical mistake (3); protecting the river corridor is more important than speed and efficiency (2); this natural area is a unique resource for an urban area, please preserve it (2); this area offers educational opportunities that will be lost if construction occurs (4); the park will be a desirable and valuable place for company relocations, tourists and natives in years to come (1); the Citizen Planning Committee for the Whilamut Natural Area of Alton Baker Park passed a motion to protect the scenic views and wildlife habitat of the greenway and recommends that no additional bridges be constructed within the riverside border of the park (1).</p> <p>Work on improving the Glenwood Interchange instead (22); update and improve signage (7); propose site between Glenwood and the river (1); Franklin interchange is an expensive project without transportation value and no clear problem (10); don't see the need for this project (1); Glenwood exit allows for the Willamette Replacement bridge to be a signature gateway (1); focus on the Delta Highway improvements instead (1); putting more traffic onto Franklin Blvd is negative because it increases crime, create a "freeway" stop character to the proposed Walnut Station and the Fairmount Neighborhood, and Eugene already an exit for this area of town (1).</p> <p>Concern for noise (4); concern for increased traffic and noise within local neighborhoods (5); aesthetic concerns (8); on/off ramps crossing the Willamette are wrong (4); safety concerns for water recreation (1); concern for increased traffic on Franklin (2); safety concern for Walnut traffic light (1); concern for the cost (7); other projects could use the money more than this one (2); concern for sustainability (1).</p>


KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

610 SW ALDER, SUITE 700 • PORTLAND, OR 97205 • (503) 228-5230 • FAX (503) 273-8169

MEMORANDUM

Date: November 4, 2005

Project #: 7068

To: Tim Burkhardt & Sam Seskin, CH2M Hill

From: Julia Kuhn

Project: I-5/Willamette River Crossing

Subject: Analysis of Potential Users of new I-5/Franklin Interchange

As a follow-up to our October Project Management Team (PMT) meeting for the I-5/Willamette River Crossing Project, we have coordinated with Lane Council of Governments (LCOG) staff to perform an analysis of potential users of a new interchange at Franklin Boulevard. This memorandum summarizes the results of the analysis.

Per our request, LCOG staff performed select link analyses for how travelers might choose to use a new I-5 northbound on-ramp and new I-5 southbound off-ramp at Franklin Boulevard. These analyses were conducted for the full diamond interchange scenario (Category 1) in year 2025. We believe the results would be similar for any of the interchange categories that include new northbound on-ramps and southbound off-ramps at Franklin Boulevard. A summary of this analysis is provided in Tables 1 and 2.

Key findings from this analysis, as summarized in the tables include:

- Approximately 20 percent of the users of the new interchange would travel to/from I-5 north of Coburg.
- Within the study area, 20 percent of the northbound on-ramp trips and 23 percent of the southbound off-ramp trips are to/from the Glenwood area; the remaining trips are to/from Eugene
- Approximately 60 percent of the originations at the northbound on-ramp and 68 percent the destinations from the southbound off-ramp would be from areas south of Franklin in the vicinity of Walnut and Agate (including those south of 24th Avenue)
- Approximately 20 percent of the trips from the study area would use the interchange to access Springfield via I-5 to ORE 126.

- Approximately 45 – 50 percent of the trips from the study area would use the interchange to travel to the Beltline area

Table 1 Northbound On-Ramp Potential Users

From Origination to I-5 Ramp	Percentage of Total Volume on Ramp	To Destination from I-5 Ramp	Percentage of Total Volume on Ramp
Glenwood	20%	I-5 North	18%
Residential near Moon Mountain	11%	Coburg	9%
Walnut – Agate neighborhoods	38%	Beltline East of I-5	35%
South of 24 th Avenue	20%	Beltline West of I-5	10%
Downtown Eugene	11%	I-105 West	7%
Total	100%	126/Pioneer Parkway	8%
		126/Mohawk	5%
		126/Marcola/52 nd	7%
		126 east of Main	<< 1%
		Total	100%

Table 2 Southbound Off-Ramp Potential Users

From Origination to I-5 Ramp	Percentage of Total Volume on Ramp	To Destination from I-5 Ramp	Percentage of Total Volume on Ramp
I-5 North	20%	Glenwood	23%
Coburg	10%	Walnut – Agate neighborhoods	49%
Beltline East of I-5	32%	South of 24 th Avenue	19%
Beltline West of I-5	11%	Downtown Eugene	9%
I-105 West	6%	Total	100%
126/Pioneer Parkway	9%		
126/Mohawk	3%		
126/Marcola/52 nd	9%		
126 east of Main	<< 1%		
Total	100%		

Please let us know if you have any questions regarding this analysis.

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MEMORANDUM

Date: October 14, 2005**Project #:** 7068**To:** Sam Seskin and Tim Burkhardt, CH2M Hill**From:** Julia Kuhn and Lani Tribbett**Project:** I-5/Willamette River Crossing**Subject:** Traffic Forecasts – Task 5

As part of Task 5 activities on the I-5/Willamette River Crossing project, we have prepared the following memorandum to summarize our analysis of projected traffic volumes for four potential interchange configurations at Franklin Boulevard. The interchange alternatives evaluated include:

- **Category #1:** Creation of a fully directional I-5 interchange at Franklin Boulevard. This could occur as a full diamond or cloverleaf configuration.
- **Category #2:** Modification of the existing Franklin Boulevard to provide ramps to/from the north on I-5. Our analyses assumed that the new southbound off-ramp and northbound on-ramp would provide access to Franklin both eastbound and westbound. The existing ramps to/from the south at this location would remain in their current configuration (i.e., access to the west only).
- **Category #3:** Reconstruction of the Franklin and Glenwood interchanges to create two partial interchanges. The Franklin interchange would provide access to/from the north and the Glenwood interchange would provide access to/from the south. The two partial interchanges could be connected through the use of (A) the existing street system (i.e., Glenwood Boulevard and Franklin Boulevard) or (B) via frontage roads along I-5.

Each of these scenarios was compared to a 2025 “no build” condition. This “no build” condition assumes that the existing ramp configurations remain in-place but other system improvements on the fiscally constrained Regional Transportation Plan list are constructed. The categories of interchange concepts are graphically depicted in the Task 4 memorandum prepared by CH2M Hill and Kittelson & Associates, Inc. under separate cover.

The Task 4 memorandum also discusses a fourth category of improvements that include the upgrade of the Glenwood interchange to a conventional diamond. From a traffic modeling perspective, this would not substantively change the traffic forecasts at this location because all

of the movements to/from the north and south are provided for today. For this reason, a discreet modeling scenario to represent this interchange improvement was not modeled.

The analysis in this memo is intended for use as background information in this phase of project planning. While current and future link volumes are the subject of this memo, we have not attempted to address or evaluate any other interchange or intersection operational, safety, access or other transportation issues or deficiencies in the vicinity of I-5, Franklin and Glenwood. This analysis is not intended to address, or be sufficient to develop, a statement of Purpose and Need for a project.

ANALYSIS METHODOLOGY

Daily and weekday p.m. peak hour traffic forecasts for each of the scenarios were prepared by Lane Council of Governments (LCOG) staff. Each of these scenarios was based on LCOG's fiscally constrained condition for year 2025.

The forecasts were post-processed using the procedures outlined in National Cooperative Highway Research Program (NCHRP) Report 2-55. This procedure accounts for a combination of existing traffic volumes, and base (year 2002) and future year 2025 model forecasts. The reasonableness of the volumes calculated using the 2-55 was reviewed at each location, especially in instances when the existing model differed significantly from the existing traffic counts.

Traffic volumes were reported at key roadway links within the overall study area for the I-5/Willamette River Crossing project, including:

- I-5: north of Franklin Boulevard, and between the Franklin and Glenwood interchanges
- Franklin Boulevard: east of Glenwood Boulevard, near Walnut Street, and near 11th Avenue
- Glenwood Boulevard: south of Franklin Boulevard
- Agate Street: south of Franklin Boulevard
- Ferry Street Bridge
- Franklin Boulevard/I-5 interchange
- Glenwood Boulevard/I-5 interchange

The likely number of travel lanes needed on each study roadway segment was identified based the forecast traffic volumes and on sketch-level estimates of roadway capacity by facility type.

ANALYSIS FINDINGS

Based on the 2-55 methodology, Figures 1 – 6 depict the post-processed year 2025 traffic volumes used for each of the interchange alternatives during an average weekday. In general, the NCHRP 2-55 yielded reasonable results to reflect year 2025 conditions. As discussed in our August 8, 2005 memorandum, the existing year 2002 LCOG model over-forecasts Franklin Boulevard interchange ramp volumes and under-forecasts Glenwood Interchange ramp volumes

as compared to Oregon Department of Transportation (ODOT) traffic counts at each location. This discrepancy was accounted for in the post-processing.

Figures 1 – 6 reflect a range of traffic volumes on each roadway segment. The range is presented because the LCOG forecasts appear to reflect a certain degree of fluctuations due to potential overcapacity conditions system wide. These fluctuations can be “smoothed” by presenting ranges. At the level of analysis we’re performing as part of this phase of the process, the ranges are appropriate as they can help inform stakeholders about the number of travel lanes that would be required on each facility in each scenario but do not identify precise intersection delays or volume-to-capacity ratios.

Roadway Volume Comparisons

Table 1 presents a comparison of the daily traffic volume forecasts on key roadway links for each interchange category.

Table 1 Approximate Roadway Traffic Volumes (vehicles per day)

Location	Year 2002	Year 2025					2025 Needed Cross-Section
		No Build/ Category 4	Category 1	Category 2	Category 3A	Category 3B	
I-5 North of Franklin	50,000 – 55,000	75,000 – 80,000	90,000 – 95,000	90,000 – 95,000	95,000 – 100,000	95,000 – 100,000	8 lanes
I-5 North of Glenwood	60,000 – 65,000	90,000 – 95,000	80,000 – 85,000	85,000 – 90,000	65,000 – 70,000	60,000 – 65,000	8 lanes; Category 3 may only require 6
Franklin east of Glenwood	15,000 – 20,000	30,000 – 35,000	25,000 – 30,000	25,000 – 30,000	25,000 – 30,000	25,000 – 30,000	5 lanes
Franklin near Walnut	25,000 – 30,000	40,000 – 45,000	40,000 – 45,000	45,000 – 50,000	35,000 – 40,000	40,000 – 45,000	7 lanes
Franklin near 11 th	30,000 – 35,000	40,000 – 45,000	40,000 – 45,000	40,000 – 45,000	35,000 – 40,000	40,000 – 45,000	7 lanes
Glenwood south of Franklin	3,000 – 5,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	15,000 – 20,000	5,000 – 10,000	3 lanes except 3A which may require 5 lanes
Agate south of Franklin	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	2 – 3 lanes
Ferry Street Bridge	55,000 – 65,000*	65,000 – 70,000	65,000 – 70,000	65,000 – 70,000	65,000 – 70,000	65,000 – 70,000	6 lanes

Note: Category 1 = full interchange at Franklin; Category 2 = new ramps to/from the north at Franklin; Category 3A = split configuration using Franklin and Glenwood to connect the two interchanges; Category 3B = split configuration using frontage roads along I-5; Category 4 = upgrade Glenwood to a conventional diamond

*Ferry Street volumes estimated from model. No traffic volume counts were available for Ferry Street at time of analysis.

As shown in Table 1, for the most part, there is little fluctuation in traffic volumes between each of the categories. The fluctuation that does occur does not change the number of travel lanes that will likely be needed on each of the roadway segments evaluated. The traffic volumes on I-5 north of Franklin may increase by up to 20 percent if the ramps are provided to/from the north at Franklin; however, the estimated increase may not change the number of lanes needed.

In addition, when compared to the no build, any of the considered modifications to the Franklin and Glenwood Boulevard interchanges would not create the need to change the number of travel lanes provided at any of the locations beyond what is forecast in the existing LCOG fiscally constrained scenario. The only exception to this is Glenwood south of Franklin. If a split diamond option were pursued in which Glenwood was used as the connection between the two interchanges (in lieu of frontage roads), Glenwood may need to be widened to a five-lane facility.

Interchange Comparisons

A comparison of the daily traffic volume forecasts at each of the interchanges is shown in Table 2.

Table 2 Approximate Interchange Traffic Volumes (vehicles per day)

Location	Year 2002	Year 2025					Comment
		No Build	Category 1	Category 2	Category 3A	Category 3B	
<i>Franklin Boulevard Interchange</i>							
NB Off	4,500 – 5,500	5,000 – 6,000	5,500 – 6,500	6,500 – 7,500	N/A	N/A	Ramp terminals may require two lanes
NB On	N/A	N/A	10,000 – 11,000	10,500 – 11,500	11,000 – 12,000	11,000 – 12,000	Two-lane on-ramp?
SB Off	N/A	N/A	8,000 – 9,000	10,000 – 11,000	11,000 – 12,000	11,500 – 12,500	Ramp terminal may require two or three lanes
SB On	4,500 – 5,500	5,500 – 6,500	5,500 – 6,500	6,500 – 7,500	N/A	N/A	One-lane on-ramp
<i>Glenwood Boulevard Interchange</i>							
NB Off	1,000 – 1,500	2,500 – 3,500	3,500 – 4,500	3,500 – 4,500	7,500 – 8,500	9,000 – 10,000	Split configuration may require two lanes at ramp terminal
NB On	4,000 – 5,000	6,000 – 7,000	2,000 – 3,000	3,000 – 4,000	N/A	N/A	One-lane on-ramp
SB Off	5,500 – 6,500	9,500 – 10,500	8,000 – 9,000	9,000 – 10,000	N/A	N/A	Two-lane ramp terminal
SB On	< 1,000	3,000 – 4,000	3,500 – 4,500	3,500 – 4,500	5,500 – 6,500	7,000 – 8,000	One-lane on-ramp

Note: Category 1 = full interchange at Franklin; Category 2 = new ramps to/from the north at Franklin; Category 3A = split configuration using Franklin and Glenwood to connect the two interchanges; Category 3B = split configuration using frontage roads along I-5

As shown in Table 2, new ramps at Franklin to/from the north could carry between 8,000 – 12,000 vehicles per day, depending on the interchange category considered. This level of volume in combination with the through volume on Franklin would require turn lanes for all directions and in some cases might warrant a dual left-turn or dual right-turn lane.

In addition, a northbound on-ramp at Franklin could cause a fairly significant decrease in northbound on-ramp volumes at Glenwood as compared to the no build condition. This is likely reflective of the reduction in out-of-direction travel that is created under the existing configuration to access I-5 from Franklin.

Finally, as expected, a split interchange configuration would significantly increase volumes on the northbound off-ramp and southbound on-ramp at Glenwood Boulevard.

Changes in System Traffic Patterns

In addition to the traffic volume analysis, the travel pattern changes associated with each of the scenarios were compared to the no build condition. The results of this travel pattern analysis are discussed below.

With the addition of ramps to/from the north on I-5 at Franklin, the Ferry Street Bridge could experience a slight decline in traffic volumes (approximately 1,500 – 3,000 vehicles per day, depending on the configuration considered). Some of the traffic using the Ferry Street Bridge to access downtown Eugene and the neighborhoods west of Agate in the no build condition would reroute to I-5 and the new ramps at Franklin Boulevard. This rerouting could create a slight increase in traffic volumes on the north-south streets south of Franklin between Agate and Walnut.

On the Springfield-side of I-5, Franklin may experience an approximately 5,000 vehicles per day decrease in traffic volumes with new ramps to/from the north at Franklin. With these new ramps, traffic that was routed from destinations west of I-5 to ORE 126 and destinations to the east via Springfield's surface streets would be rerouted to connect to ORE 126 via I-5 instead. This rerouting would result in slight decreases on surface streets in Springfield, such as Pioneer Parkway and Main Street.

SUMMARY OF FINDINGS

A new interchange at Franklin Boulevard that increases accessibility to both Springfield and Eugene would not alter the number of travel lanes needed on any of the adjacent facilities evaluated as part of our analysis as compared to an existing interchange configuration. Further, there is little fluctuation in traffic volumes between the categories to change the number of lanes required on any new ramp considered.

In all the concepts, volumes east of I-5 on Franklin would decrease, and volumes on the Ferry Street Bridge would slightly decrease. Traffic on I-5 north of Franklin would increase. Volumes on individual I-5 ramps would vary depending on the concept and associated ramp configuration.

It is expected that more detailed information on traffic and transportation issues associated with a new interchange would be addressed as part of a subsequent refinement planning effort.

TECHNICAL MEMORANDUM

Engineering/Environmental and Cost Analysis: I-5 Willamette River Crossing/Glenwood Facility Plan Phase II

PREPARED FOR: Tom Boyatt/ODOT

PREPARED BY: Heather Fuller/CH2M HILL
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COPIES: Project Management Team

DATE: Revised: November 1, 2005

Introduction

This technical memorandum summarizes the consultant team's review of the interchange concepts developed with consideration of the existing environment and potential engineering and environmental constraints. The memo documents information previously presented to the Project Management Team regarding the physical and operational influence areas of the interchange concepts. It also describes general construction feasibility and opportunities for phasing of the concepts and provides "order-of-magnitude" cost information, defined by the American Association of Cost Engineers as estimates developed in the absence of detailed engineering data.

This memorandum comprises Deliverable 4A of CH2M HILL's scope of work for the I-5 Willamette River Crossing/Glenwood Facility Plan Phase II project.

Description of Conceptual Interchange Solutions

As part of this high-level transportation systems planning effort, conceptual interchange solutions have been developed in broad categories. These categories are intended to represent a wide range of potential solutions and the range of engineering, environmental, and social considerations for each. The range of solutions recognizes that there is a partial interchange at I-5 and Franklin Boulevard to the south. These ramps to OR 99 provide access to and from the west (Eugene). As is discussed below under Adjacent Interchange Relationships, these ramps are in the operational influence area of the Glenwood interchange ramps. Therefore, one end of the interchange concept spectrum would consider a reconstructed interchange that provides complete movements in all directions to and from I-5 at Franklin Boulevard. The interchange spacing between Franklin Boulevard and Glenwood Boulevard is not consistent with contemporary interchange planning and design practice. Therefore, a pure concept would be one that considers the new, full interchange at Franklin Boulevard that takes the place of movements currently provided by the existing Glenwood and OR 99 movements. In this concept, the Glenwood interchange would be removed.

Recognizing the potential engineering and environmental constraints of constructing a full interchange at Franklin Boulevard, the other limit of the range of conceptual solutions would be a reconstructed Glenwood interchange with capacity and features to serve all traffic movements and all user types. Under this end of the solution spectrum, the reconstructed interchange would serve all movements of the existing interchange and arterial system and the existing OR 99 ramps at Franklin Boulevard would be removed. With the potential range of conceptual interchange solutions identified, there are several conceptual solutions that fit somewhere between these extremes. The following discussion provides an overview of the four broad categories of conceptual interchange solutions and a brief discussion of the eight interchange concepts developed.

- **Category 1: Full Interchange** – The solutions in this category would provide a reconstructed interchange at Franklin Boulevard to provide full movements in all directions. The concepts can differ in how they include or remove the existing OR 99 ramps and how they provide ramps to and from the north. The Diamond 1 concept removes the OR 99 ramps while the Diamond 2 maintains them. Current design practice would dictate the Diamond 2 concept must also address the close spacing to the Glenwood ramps such as by removing the ramps or providing other interchange ramp solutions.

The Partial Cloverleaf concept in Category 1 provides the same full access as the diamond schemes while reducing the overall spread of roadways in the river. The loop ramps would keep more of the ramps on the land (versus in the river) and place the river-portion of the ramps closer to the I-5 mainline. It is highly probable that the loop concepts would require their own river bridges, albeit located adjacent to the I-5 bridge.

- **Category 2: Partial Interchange** – The solutions in this category consider the OR 99 ramps and engineering constraints of reconstructing ramps to and from the south. These concepts focus on providing new Franklin Boulevard access to and from the north using either diagonal ramps of the diamond forms or loop ramps of the partial cloverleaf form. The concepts may or may not directly affect the ramp spacing at the Glenwood interchange; however, future studies of any interchange solutions will require analyzing the traffic operations and interaction between these closely spaced interchanges.
- **Category 3: Split Interchange** - These concepts acknowledge the actual interrelated operations of the existing Franklin Boulevard and Glenwood Interchanges. Drivers use these two interchanges and the arterial connections of Franklin Boulevard and Glenwood Boulevard as an integrated system to make all movements to and from I-5 from all directions. The concept solutions in this category build upon the existing relationship of the freeway and arterial network. The Two ½ Diamond concept adds new ramps to and from the north at Franklin Boulevard and reconstructs the existing ramps to and from the south at Glenwood Boulevard. This concept would remove the OR 99 and north Glenwood ramps and rely on the arterial system to complete complementary movements. The Split Interchange concept in this category maintains the interrelationship between the two interchanges but would create new connections between Glenwood and Franklin Boulevard instead of relying on the arterial network.
- **Category 4: Glenwood Interchange** – The concept recognizes the Glenwood interchange is an older interchange design that no longer meets current or future needs. The concept

reconstructs the Glenwood interchange to a modern form meeting all user needs. Reconstructing the ramps would require addressing the overlap of the operational and design influence area between the closely spaced Glenwood and Franklin interchanges; solutions could potentially include connections such as those mentioned in Category 3. To complete the full spectrum of conceptual system planning concepts, this category could take the form of a reconstructed Glenwood interchange with the OR 99 ramps removed. All access to the area from I-5 would occur at the reconstructed interchange with the arterials of Glenwood and Franklin Boulevard serving as the linkages to Springfield and Eugene.

Adjacent Interchange Relationships

The existing OR 99 ramps provide access with I-5 at Franklin Boulevard to and from the west. These ramps were originally the OR 99 mainline prior to construction of the Willamette River bridge and the development and designation of I-5. Access to and from the east is provided via the Glenwood interchange, which provides access to north and southbound I-5. At the Glenwood interchange, the northbound on-ramp and southbound off-ramp are within the operational influence area of the OR 99 ramps at Franklin Boulevard. In the northbound direction, traffic from the Glenwood ramp is merging onto I-5 in the general location that northbound traffic is exiting from I-5 to OR 99. In the southbound direction, the southbound OR 99 ramp is merging onto I-5 while accelerating up the relatively steep and long southbound I-5 grade. This is occurring in the general location that exiting southbound traffic from I-5 is decelerating to negotiate the loop ramp at Glenwood. The spacing of the existing ramps means that any concepts considered for either interchange will require an evaluation of the traffic operations between these two locations.

To the north and south of the existing partial interchange at Franklin and full interchange at Glenwood are the I-105/OR 126 interchange and 30th Avenue interchange, respectively. The I-105/OR 126 interchange to the north is approximately 3600 feet from the centerline of Franklin Boulevard. It would be prudent to consider including a future auxiliary lane between any potential north and southbound ramps to Franklin Boulevard and the I-105/OR 126 ramps. However, because of the spacing and the relative ease of including an auxiliary lane, no further analyses of I-105/OR 126 interchange forms have been conducted during this preliminary planning activity. To the south, the 30th Avenue interchange is approximately two miles from the Glenwood overpass of I-5. This distance is sufficiently long that the 30th Avenue interchange does not need to be included in this preliminary planning activity. Future planning activities as part of investigating access opportunities at Franklin Boulevard will need to include traffic operational analyses of the segments between 30th Avenue and I-105/OR 126.

Design, Construction and Environmental Feasibility

Assessing the feasibility to design, permit, and construct the concepts at this early stage of development is intended to identify major constraints and impacts that may be encountered if the concept were to be carried forward for further review. However, this review has been conducted with limited environmental data and very limited engineering data. Also, any capacity improvements to I-5 that might be identified in the future – such as additional through lanes – are not considered in this review as they are beyond the current scope of work.

From a technical perspective, all of the interchange concepts developed can be constructed. At this stage of review the intent is to provide a first glimpse of the scope of improvements for each concept, the potential impacts, and construction cost information.

The following sources were reviewed in assessing the engineering and environmental constraints within the corridor where the concepts are proposed:

- Aerial and ground level photographs of the study corridor
- Topographic mapping collected by ODOT for the temporary I-5 Willamette River Bridge, which covers a portion of the study corridor
- Limited spot elevation data for some of the existing roads and railroad provided by ODOT
- The draft CH2M HILL memorandum dated August 11, 2005, entitled *Existing conditions and Potential Constraints: I-5 Willamette River Crossing/Glenwood Facility Plan Phase II* which covered planning and land use, wetlands, fisheries, rare, threatened and endangered species, historic and cultural resources, and hazardous materials (herein referred to as the Environmental Constraints Memorandum)

Potential Engineering Constraints

The study corridor includes many engineering constraints, in addition to the environmental constraints identified and summarized in the Environmental Constraints Memorandum. The engineering constraints found within the study corridor include:

- Topography – The existing I-5 alignment crosses the Willamette River and follows along the base of the Laurel Hill Neighborhood, an older residential area which rises steeply above a rock outcropping along the west side of the freeway. Continuing south, the freeway climbs toward the Glenwood interchange along a route excavated into the existing terrain with steep side slopes rising approximately 20-30 feet high on either side of the freeway. The Laurel Grove Cemetery sits above the freeway on the east side immediately north of the Glenwood interchange.
- Electrical Transmission Lines – There are many overhead power lines within the study corridor, but the most significant and difficult to relocate are the high-voltage electric transmission lines. These lines require larger separation clearances between the electric lines and roads and other facilities. A large high-voltage electric transmission line follows a parallel alignment to the freeway along the east side of I-5, beginning several thousand feet north of the river, crossing the river alongside the freeway, and then turning and following the railroad tracks south and east away from the freeway. This